

TABLE OF CONTENTS

INTRODUCTION.....	3-4
-------------------	-----

RING LOCKED INSERTS

STANDARD INSERTS SERIES

SLRJ100() – COARSE INTERNAL AND COARSE EXTERNAL THREADS.....	5
SLRDJ100() – WITH COUNTER BORE.....	6
SLRJ200() – FINE INTERNAL AND COARSE EXTERNAL THREADS.....	7
SLRDJ200() – WITH COUNTERBORE.....	8
SLRJ300() – FINE INTERNAL AND FINE EXTERNAL THREADS.....	9
SLRDJ300() – WITH COUNTERBORE.....	10
SLRJ900() – COARSE INTERNAL AND FINE EXTERNAL THREADS.....	11
SLRDJ900() – WITH COUNTERBORE.....	12

SOLID INSERTS

SLR1000() – SOLID, FINE EXTERNAL THREAD.....	13
SLR1100() – SOLID, COARSE EXTERNAL THREAD.....	14

BLIND INSERTS

SLRJ1200() – BLIND, FINE INTERNAL AND COARSE EXTERNAL THREAD.....	15
SLRJ2000() – BLIND, COARSE INTERNAL AND COARSE EXTERNAL THREAD.....	16

HYDRAULIC INSERTS

SLRJ1700() – HYDRAULIC (150 PSI).....	17
--	----

HIGH STRENGTH

SLRDJ3600()	18
--------------------	----

RESIN LOCK INSERT

SL05-13008() – POLYIMIDE.....	19
--------------------------------	----

RING LOCKED STUDS

STANDARD STUD SERIES

SLSF() - FINE THREAD NUT END AND COARSE OR FINE THREAD STUD END	20-21
SLSC() – COARSE THREAD NUT END AND COARSE OR FINE THREAD STUD END.....	22-23
SLSFJ() – FINE THREAD NUT END AND COARSE OR FINE THREAD STUD END	24-25
SLSFTJ() – FINE THREAD NUT END AND COARSE OR FINE THREAD STUD END	26-27
SLS()FJ – FINE THREAD NUT END AND COARSE OR FINE THREAD STUD END	28-29
SLSFA() & SLSFB() – FOR AND20000 SERIES PADS, FINE THREAD NUT END AND COARSE THREAD STUD END	30

HIGH STRENGTH STUD SERIES

SLSF()5902() – (TERMINAL), SHORT, MEDIUM AND LONG STUD END LENGTH.....	31-33
--	-------

HYDRAULIC STUD 150 PSI SERIES

SLSHF() – FINE THREAD NUT END AND COARSE THREAD STUD END.....	34
--	----

LOCKRINGS

SLRLRR() - MS51990-().....	35-36
SLRL() – THIN.....	37
SLRLRR1997() – HIGH STRENGTH – MS51997.....	38

KEY RING INSERTS & STUDS

Please contact us for information 949-474-6000

APPENDICES

INTERCHANGEABILITY TABLES.....	39-54
--------------------------------	-------

Note: Installation and Removal tools go to McKinnon Industries – a Shur-Lok company.
All other products not indicated please contact Shur-Lok Corporation 949-474-6000

Fastening The Future



NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is intended under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing to hold SHUR-LOK CORPORATION harmless from any and all claims, damages, losses, costs, expenses, and attorney's fees which may be incurred by SHUR-LOK CORPORATION in connection with this design. All patent rights herein are expressly reserved.

The purchaser warrants strength to meet the standard design loads and parameters. SHUR-LOK assumes no liability for parts not subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

REV	CONTR.	DATE	DRAWN	CHKD	APPD	REL
NC	27F803	SALES RELEASE			27M590	EM

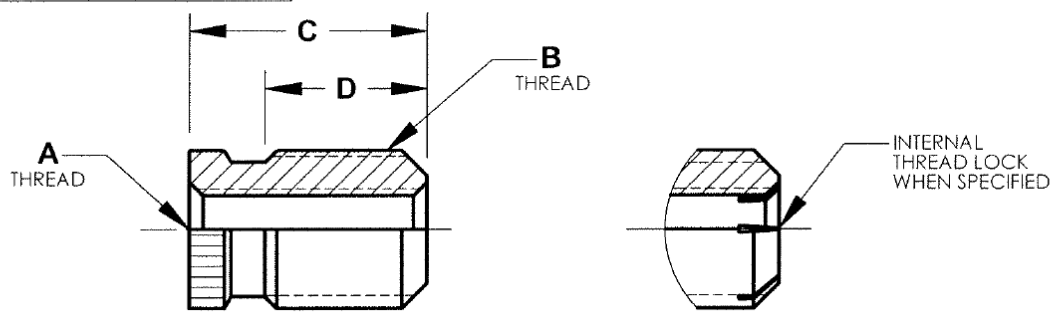


TABLE I

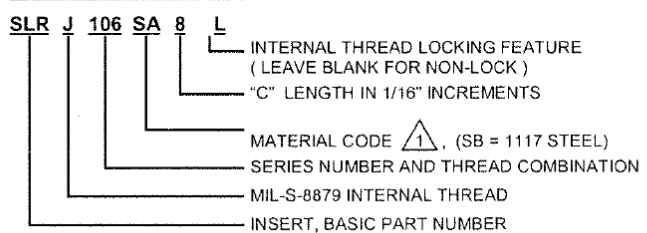
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF.	MILITARY PART NO.	INTERNAL THREAD	EXTERNAL THREAD	A	B	C	D
SLRJ102SB4	MS51991-102	SLRLRR16SB5	MS51990-102P	UNJC-3B	1800-24	.250	.150		
SLRJ103SB5	MS51991-103	SLRLRR19SB6	MS51990-103P	1380-32	2160-24	.310	.190		
SLRJ104SB6	MS51991-104	SLRLRR21SB6	MS51990-104P	1640-32	2600-20	.350	.250		
SLRJ105SB7	MS51991-105	SLRLRR24SB7	MS51990-105P	1900-24	3125-18	.440	.290		
SLRJ106SB8	MS51991-106	SLRLRR28SB8	MS51990-106P	2500-20	3750-16	.500	.330		
SLRJ107SB9	MS51991-107	SLRLRR35SB9	MS51990-107P	3125-16	5000-19	.580	.380		
SLRJ108SB10	MS51991-108	SLRLRR38SB9	MS51990-108P	.3750-18	5625-12	.620	.420		
SLRJ109SB11	MS51991-109	SLRLRR47SB10	MS51990-109P	.4375-14	6250-11	.690	.460		
SLRJ110SB12	MS51991-110	SLRLRR58SB11	MS51990-110P	.5000-15	7500-10	.750	.450		

NOTES:

- 1 MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB0018 FOR OTHER MATERIALS.
- 2 HEAT TREAT: NONE.
- 3 FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- 4 THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, MIL-S-7742 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- 5 INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR MS51995.

- 6 INSERT LENGTHS SHOWN ARE BASED ON INSTALLATION IN 2024-T4 ALUMINUM AND IN SUCH MATERIALS WILL ACCOMODATE TENSION LOADS UP TO THE STRENGTH OF A MATING BOLT HEAT TREATED TO 145,000 PSI UTS.
- IF THIS DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, LONGER INSERT LENGTHS SHOULD BE SPECIFIED. MATING BOLTS SHOULD HAVE A THREAD ENGAGEMENT OF 1.5 DIAMETERS, IF INSERT HAS A THREAD LOCK THE BOLT SHOULD EXTEND THROUGH THE INSERT 2 PITCHES INCLUDING CHAMFER
- 7 MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
- 8 OTHER MS51991 INSERTS AND MS51990 LOCKRINGS ARE ALSO AVAILABLE.

EXAMPLE OF PART CODING



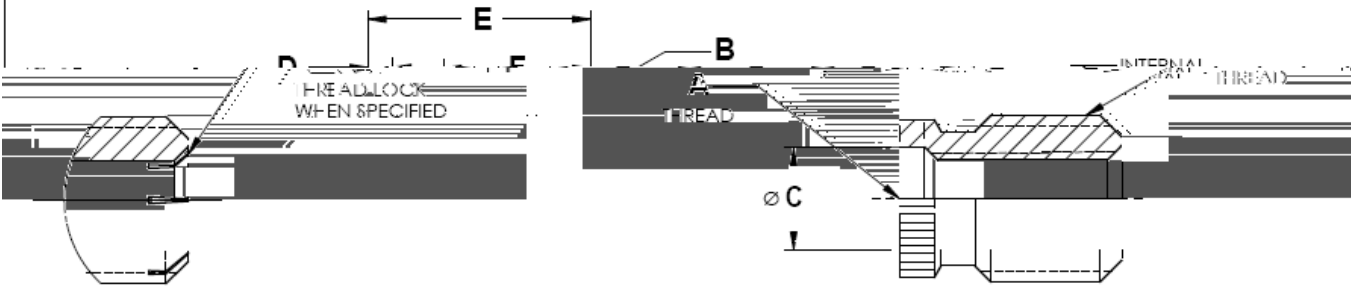
UNLESS OTHERWISE SPECIFIED DRAWING INTERPRETATION PER CSMC/CP WORKMANSHIP PRACTICES PER WK1002 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT BREAK ALL SHARP EDGES (2) (R) MAX ALL FILED RADIUS (2) (R) MAX 125 (R) 2 ALL SURFACES TOLERANCES XX XXX ANGLES (XX) (X XX) ±.03 ±.010 ±.2* ±.010 ±.025 DIMENSION IN [] ARE MILLIMETERS	SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA TITLE INSERT - RING LOCKED COARSE THREAD INTERNAL COARSE THREAD EXTERNAL DRAWING NO. SLRJ100 SCALE NONE SIZE A CASE NO. 97393 SHEET 1 OF 1
	DRAWN K. GAZI	27F803	
	CHECKED D. KOEPPER	27MAR03	
	APPROVED K. GAZI	27MAR03	
REV	NC		

SALES DRAWING
SOLIDWORKS DWG

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTN	EDNO	DATE	DRWEN	CHG	APPD	REL
NC	20525	SALES RELEASE		27MAR03		EM



NAL D ED	C DIA	D	E	F
±	±.015	±.005	±.015	±.015
-24	.113	.040	.250	.150
-24	.140	.040	.310	.190
-20	.166	.047	.380	.250
-18	.196	.062	.440	.290
-16	.257	.080	.500	.330
-13	.323	.095	.560	.360
-12	.386	.100	.620	.420
-11	.453	.100	.690	.460
-10	.516	.109	.750	.490

LENGTHS SHOWN ARE BASED ON OPERATION IN 2024-T4 ALUMINUM AND WILL UPDATE TENSION LOADS UP TO THE RATIO OF A MATING BOLT HEAT TREATED TO 100 PSI UTS.

DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, INSERT LENGTHS SHOULD BE SPECIFIED. BOLTS SHOULD HAVE A THREAD ENGAGEMENT OF 1.5 DIAMETERS. IF IT HAS A THREAD LOCK THE BOLT SHOULD GO THROUGH THE INSERT 2 PITCHES LONG CHAMFER

LOCKRING IS NOT INCLUDED WITH INSERT. BE ORDERED SEPARATELY.

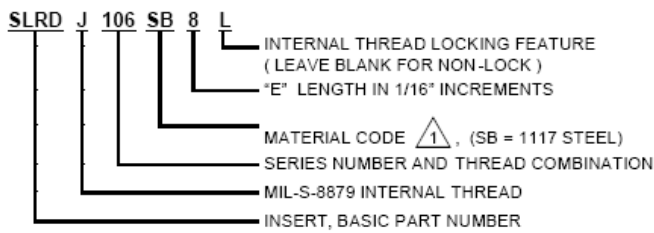
MS51990 LOCKRINGS ARE ALSO AVAILABLE.

TABLE I

SHUR-LOK INSERT PART NO.	LOCKRING		INTERNAL THREAD UNJC-3B	EXTERNAL THREAD MODIF
	SHUR-LOK PART NO. REF	MILITARY PART NO. REF		
SLRDJ102SB4	SLRLRR16SB5	MS51990-102P	.1120-40	.1900
SLRDJ103SB5	SLRLRR18SB6	MS51990-103P	.1380-32	.2160
SLRDJ104SB6	SLRLRR21SB6	MS51990-104P	.1640-32	.2500
SLRDJ105SB7	SLRLRR24SB7	MS51990-105P	.1900-24	.3125
SLRDJ106SB8	SLRLRR28SB8	MS51990-106P	.2500-20	.3750
SLRDJ107SB9	SLRLRR33SB9	MS51990-107P	.3125-18	.5000
SLRDJ108SB10	SLRLRR38SB9	MS51990-108P	.3750-16	.5625
SLRDJ109SB11	SLRLRR47SB10	MS51990-109P	.4375-14	.6250
SLRDJ110SB12	SLRLRR56SB11	MS51990-110P	.5000-13	.7500

- NOTES:
- MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
 - HEAT TREAT: NONE.
 - FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3.
 - THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H28/2 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
 - INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019.
 - INSERT INSTALLATION ACCORDING TO 145, IF THIS MATERIAL LONGER MATING ENGAGEMENT IF INSERT EXTEND INCLUDE
 - MATING IT MUST
 - OTHER

EXAMPLE OF PART CODING



DATE	27FEB03	SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
REV	27MAR03	TITLE: INSERT - RING LOCKED WITH CBORE FINE THREAD INTERNAL COARSE THREAD EXTERNAL	
	27MAR03	DRAWING NO.	REV: NC
		SLRDJ100	
SCALE	NONE	SIZE	A
CASE NO.	97393	SHEET 1 OF 1	

UNLESS OTHERWISE SPECIFIED	SIGNATURE
DRAWING INTERPRETATION PER COM4012 WORKMANSHIP PRACTICES PER UNJ1002 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILLET RADI .020 (0.5) MAX TIS (1.5) ALL SURFACES.	DRAWN: K. GAZI
TOLERANCES: XX .XX ANGLES (XX) (XX) ±.02 ±.010 ±.02	CHECKED: D. KOEPPPE
DIMENSION IN [] ARE MILLIMETERS	APPROVED: K. GAZI
	MFG:
	D.A.
	ESR NO.

SALES DRAWING
SOLIDWORKS DWG

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	ED. NO.	DATE	DRAWN	CHECKED	APPROV.	REL.
NC	20521	SALES RELEASE		27MAR03		EM

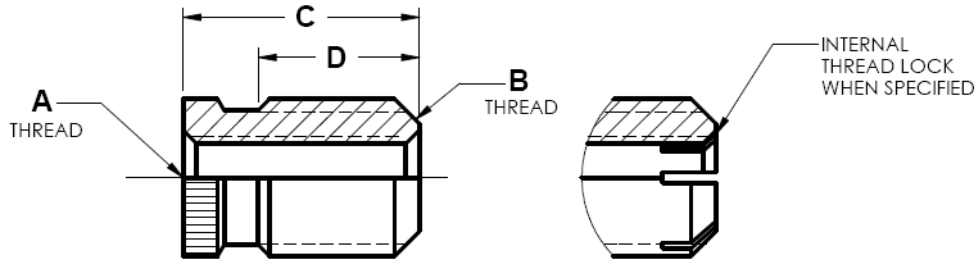


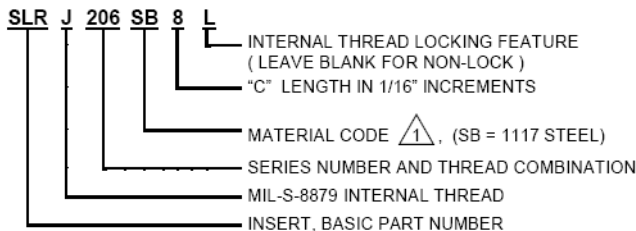
TABLE I

STUD		LOCKRING		A	B	C	D
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF.	MILITARY PART NO.	INTERNAL THREAD	EXTERNAL THREAD		
	△ 8	△ 7	△ 7 △ 8	UNJF-3B	△ 4	±.015	±.015
SLRJ202SB4	MS51991-202	SLRLRR16SB5	MS51990-102P	.1120-48	.1900-24	.250	.150
SLRJ203SB5	MS51991-203	SLRLRR18SB6	MS51990-103P	.1380-40	.2160-24	.310	.190
SLRJ204SB6	MS51991-204	SLRLRR21SB6	MS51990-104P	.1640-36	.2500-20	.380	.250
SLRJ205SB7	MS51991-205	SLRLRR24SB7	MS51990-105P	.1900-32	.3125-18	.440	.290
SLRJ206SB8	MS51991-206	SLRLRR28SB8	MS51990-106P	.2500-28	.3750-16	.500	.330
SLRJ207SB9	MS51991-207	SLRLRR33SB9	MS51990-107P	.3125-24	.5000-13	.560	.360
SLRJ208SB10	MS51991-208	SLRLRR38SB9	MS51990-108P	.3750-24	.5625-12	.620	.420
SLRJ209SB11	MS51991-209	SLRLRR47SB10	MS51990-109P	.4375-20	.6250-11	.690	.460
SLRJ210SB12	MS51991-210	SLRLRR56SB11	MS51990-110P	.5000-20	.7500-10	.750	.490

NOTES:

1. MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
2. HEAT TREAT: NONE.
3. FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
4. THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, MIL-S-7742 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
5. INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR MS51995.
6. INSERT LENGTHS SHOWN ARE BASED ON INSTALLATION IN 2024-T4 ALUMINUM AND IN SUCH MATERIALS WILL ACCOMMODATE TENSION LOADS UP TO THE STRENGTH OF A MATING BOLT HEAT TREATED TO 145,000 PSI UTS. IF THIS DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, LONGER INSERT LENGTHS SHOULD BE SPECIFIED. MATING BOLTS SHOULD HAVE A THREAD ENGAGEMENT OF 1.5 DIAMETERS. IF INSERT HAS A THREAD LOCK, THE BOLT SHOULD EXTEND THROUGH THE INSERT 2 PITCHES INCLUDING CHAMFER.
7. MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
8. OTHER MS51991 INSERTS AND MS51990 LOCKRINGS ARE ALSO AVAILABLE.

EXAMPLE OF PART CODING



<small>UNLESS OTHERWISE SPECIFIED</small> DRAWING INTERPRETATION PER CMMAR12 WORKMANSHIP PRACTICES PER W4-1005. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILLET RADI: .020 (0.5) MAX. T25 (1.2) ALL SURFACES. TOLERANCES XX .XXX ANGLES (X)X (X)X ±.03 ±.010 ±.01 ±.015 ±.025 DIMENSIONS IN PARENS IN INCHES	SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA TITLE INSERT - RING LOCKED FINE THREAD INTERNAL COARSE THREAD EXTERNAL DRAWING NO. SLRJ200 SCALE SIZE A CAGE NO.	REV.	
	DRAWN	K. GAZI		27FEB03	NC
	CHECKED	D. KOEPPER		27MAR03	
	APPROVED	K. GAZI		27MAR03	

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION and all design, manufacturing, reproduction and distribution rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to copy or disclose any information regarding the design, use, or manufacture of the product in other projects or for any other business purpose in the design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability for parts not subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for the intent to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

REV	CON NO	DATE	DESIGN	CHECKED	APPRO	REF
NC	20626	SALES RELEASE			27MAR03	EM

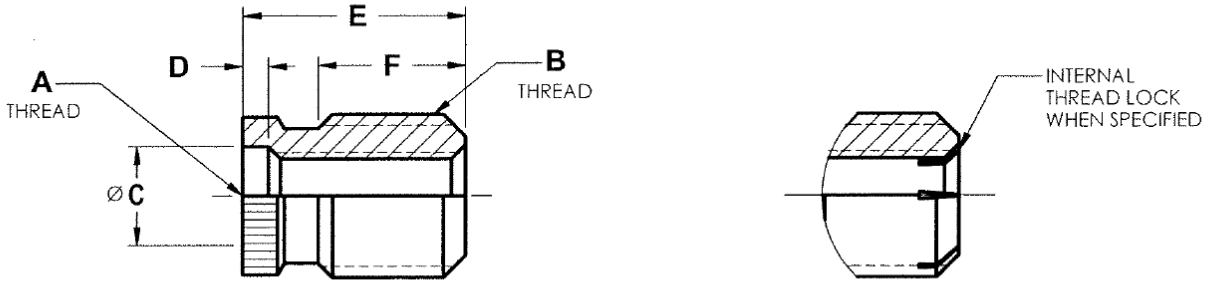


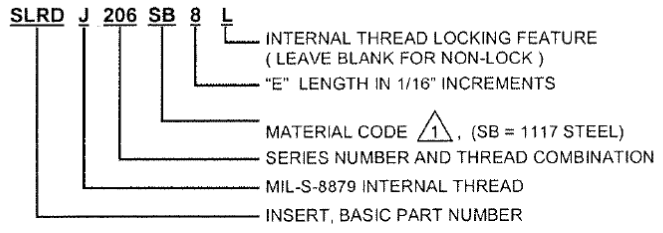
TABLE I

SHUR-LOK INSERT PART NO.	LOCKRING		A	B	C	D	E	F
	SHUR-LOK PART NO. REF	MILITARY PART NO. REF	INTERNAL THREAD	EXTERNAL THREAD MODIFIED	DIA			
	$\triangle 7$	$\triangle 7$ $\triangle 8$	UNJF-3B	$\triangle 4$	$\pm .015$	$\pm .015$	$\pm .015$	$\pm .015$
SLRDJ202SB4	SLRLRR16SB5	MS51990-102P	.1120-48	.1900-24	.113	.040	.250	.150
SLRDJ203SB5	SLRLRR18SB6	MS51990-103P	.1380-40	.2160-24	.140	.040	.310	.190
SLRDJ204SB6	SLRLRR21SB6	MS51990-104P	.1640-36	.2500-20	.166	.047	.380	.250
SLRDJ205SB7	SLRLRR24SB7	MS51990-105P	.1900-32	.3125-18	.196	.062	.440	.290
SLRDJ206SB8	SLRLRR26SB8	MS51990-106P	.2500-28	.3750-16	.257	.080	.500	.330
SLRDJ207SB9	SLRLRR33SB9	MS51990-107P	.3125-24	.5000-13	.323	.095	.560	.360
SLRDJ208SB10	SLRLRR38SB9	MS51990-108P	.3750-24	.5625-12	.386	.100	.620	.420
SLRDJ209SB11	SLRLRR47SB10	MS51990-109P	.4375-20	.6250-11	.453	.100	.690	.460
SLRDJ210SB12	SLRLRR56SB11	MS51990-110P	.5000-20	.7500-10	.516	.109	.750	.490

NOTES:

- $\triangle 1$ MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- HEAT TREAT: NONE.
- FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- $\triangle 4$ THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, MIL-S7742 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019.
- INSERT LENGTHS SHOWN ARE BASED ON INSTALLATION IN 2024-T4 ALUMINUM AND IN SUCH MATERIALS WILL ACCOMMODATE TENSION LOADS UP TO THE STRENGTH OF A MATING BOLT HEAT TREATED TO 145,000 PSI UTS. IF THIS DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, LONGER INSERT LENGTHS SHOULD BE SPECIFIED. MATING BOLTS SHOULD HAVE A THREAD ENGAGEMENT OF 1.5 DIAMETERS. IF INSERT HAS A THREAD LOCK, THE BOLT SHOULD EXTEND THROUGH THE INSERT 2 PITCHES INCLUDING CHAMFER.
- $\triangle 7$ MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
- $\triangle 8$ OTHER MS51990 LOCKRINGS ARE ALSO AVAILABLE.

EXAMPLE OF PART CODING



SALES DRAWING
SOLIDWORKS DWG

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA
DRAWN: K. GAZI		D. KOEPPER		27FEB03	
CHECKED: D. KOEPPER		K. GAZI		27MAR03	TITLE
APPROVED: K. GAZI				27MAR03	INSERT - RING LOCKED WITH CBORE FINE THREAD INTERNAL COARSE THREAD EXTERNAL
MFG.		DRAWING NO.			REV
CA		SLRDJ200			NC
ESR NO.		SCALE	SIZE	CAGE NO.	SHEET 1 OF 1
		NONE	A	97393	

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDNO	DATE	DRWN	CHKD	APPD	REL
NC	20522	SALES RELEASE			27MAR03	EM

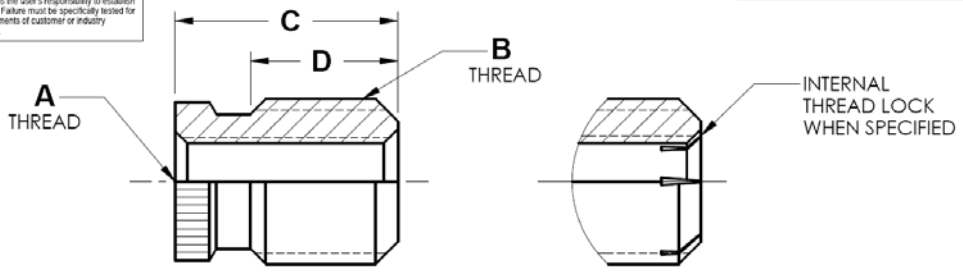


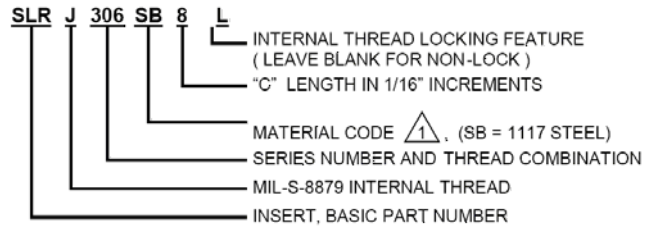
TABLE I

STUD		LOCKRING		A	B	C	D
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF	MILITARY PART NO. REF	INTERNAL THREAD	EXTERNAL THREAD		
	⑧	⑦	⑦ ⑧	UNJF-3B	④	±.015	±.015
SLRJ302SB4	----	SLRLRR16SB5	MS51990-102P	.1120-48	.1900-32	.250	.150
SLRJ303SB5	----	SLRLRR18SB6	MS51990-103P	.1380-40	.2160-28	.310	.190
SLRJ304SB6	----	SLRLRR21SB6	MS51990-104P	.1640-36	.2500-28	.380	.250
SLRJ305SB7	----	SLRLRR24SB7	MS51990-105P	.1900-32	.3125-24	.440	.290
SLRJ306SB8	----	SLRLRR28SB8	MS51990-106P	.2500-28	.3750-24	.500	.330
SLRJ307SB9	----	SLRLRR31SB9	----	.3125-24	.4375-20	.560	.380
SLRJ308SB10	----	SLRLRR38SB9	MS51990-108P	.3750-24	.5000-20	.620	.420
SLRJ309SB11	----	SLRLRR47SB10	MS51990-109P	.4375-20	.6250-18	.690	.460
SLRJ310SB12	----	SLRLRR56SB11	MS51990-110P	.5000.20	.7500-16	.750	.490
SLRJ311SB14	MS51991-311	SLRLRR64SB11	MS51990-111P	.5625-18	.8750-14	.880	.620
SLRJ312SB16	MS51991-312	SLRLRR72SB11	MS51990-112P	.6250-18	1.0000-14	1.000	.740
SLRJ312SB16F	MS51991-312.1	SLRLRR72SB11	MS51990-112P	.6250-18	1.0000-12	1.000	.740
SLRJ313SB18	MS51991-313	SLRLRR82SB12	MS51990-113P	.7500-16	1.1250-12	1.120	.800
SLRJ314SB20	MS51991-314	SLRLRR90SB12	MS51990-114P	.8750-14	1.2500-12	1.250	.900
SLRJ315SB22F	MS51991-315	SLRLRR100SB12	MS51990-115P	1.0000-12	1.3750-12	1.380	1.020
SLRJ315SB22	---	SLRLRR100SB12	MS51990-115P	1.0000-14UNJS	1.3750-12	1.380	1.020

NOTES:

- ① MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB0018 FOR OTHER MATERIALS.
- HEAT TREAT: NONE.
- FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- ④ THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H28/2 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR MS51995.
- INSERT LENGTHS SHOWN ARE BASED ON INSTALLATION IN 2024-T4 ALUMINUM AND IN SUCH MATERIALS WILL ACCOMODATE TENSION LOADS UP TO THE STRENGTH OF A MATING BOLT HEAT TREATED TO 145,000 PSI UTS. IF THIS DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, LONGER INSERT LENGTHS SHOULD BE SPECIFIED. MATING BOLTS SHOULD HAVE A THREAD ENGAGEMENT OF 1.5 DIAMETERS. IF INSERT HAS A THREAD LOCK, THE BOLT SHOULD EXTEND THROUGH THE INSERT 2 PITCHES INCLUDING CHAMFER
- ⑦ MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
- ⑧ OTHER MS51991 INSERTS AND MS51990 LOCKRINGS ARE ALSO AVAILABLE.

EXAMPLE OF PART CODING



**SALES DRAWING
SOLIDWORKS DWG**

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE		SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
DRAWING INTERPRETATION PER CMM4012 WORKMANSHIP PRACTICES PER WAH1006. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX. ALL FILLET RADI .020 (0.5) MAX. 125 (RZ) ALL SURFACES.		DRAWN: K. GAZI		27FEB03		TITLE: INSERT - RING LOCKED FINE THREAD INTERNAL FINE THREAD EXTERNAL	
TOLERANCES: .XX .XXX ANGLES (XX) (XXX) .X .1 .125 .156 .250 .375 .500 .750 .125 (RZ) ALL SURFACES.		CHECKED: D. KOEPPER		27MAR03		DRAWING NO. SLRJ300	
DIMENSION IN [] ARE MILLIMETERS		APPROVED: K. GAZI		27MAR03		REV. NC	
		MFG.				SCALE: NONE	
		Q.A.				SIZE: A	
		ESR NO.				CASE NO: 97393	
						SHEET 1 OF 1	

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION and its design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to divulge or disclose any information regarding it to any unauthorized person, or to incorporate it in other projects and special fixtures peculiar to his design. All patent rights herein are expressly reserved by SHUR-LOK CORPORATION Irvine, California.

This part has sufficient strength to meet the intended design needs and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

ETR	EGH NO	DATE	DRAWN	CHKD	APPD	REL
NC	20627	SALES RELEASE		27MAR03		EM

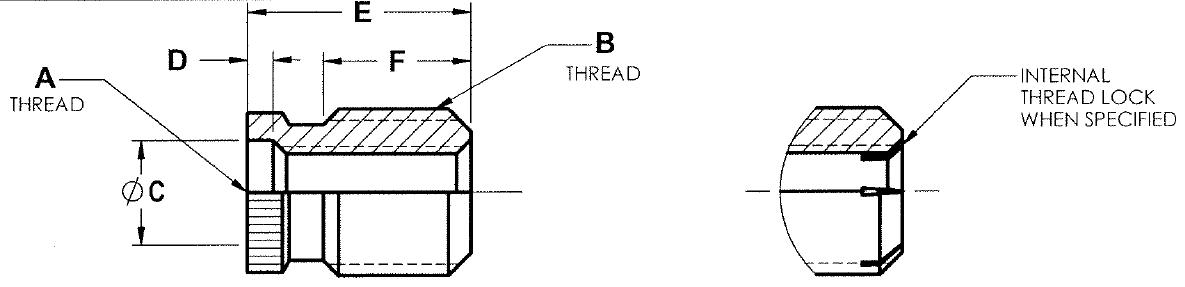


TABLE I

SHUR-LOK INSERT PART NO.	LOCKRING		A INTERNAL THREAD UNJF-3B	B EXTERNAL THREAD MODIFIED 4	C DIA ±.005	D ±.005	E ±.015	F ±.015
	SHUR-LOK PART NO. REF 7	MILITARY PART NO. REF 7 8						
SLRDJ302SB4	SLRLRR16SB5	MS51990-102P	.1120-48	.1900-32	.113	.040	.250	.150
SLRDJ303SB5	SLRLRR18SB6	MS51990-103P	.1380-40	.2150-28	.140	.040	.310	.190
SLRDJ304SB6	SLRLRR21SB6	MS51990-104P	.1640-36	.2500-28	.166	.047	.380	.250
SLRDJ305SB7	SLRLRR24SB7	MS51990-105P	.1900-32	.3125-24	.196	.062	.440	.290
SLRDJ306SB8	SLRLRR28SB8	MS51990-106P	.2500-28	.3750-24	.257	.080	.500	.330
SLRDJ307SB9	SLRLRR31SB9	---	.3125-24	.4375-20	.323	.095	.560	.380
SLRDJ308SB10	SLRLRR38SB9	MS51990-108P	.3750-24	.5000-20	.386	.100	.620	.420
SLRDJ309SB11	SLRLRR47SB10	MS51990-109P	.4375-20	.6250-18	.453	.100	.690	.460
SLRDJ310SB12	SLRLRR56SB11	MS51990-110P	.5000-20	.7500-16	.516	.109	.750	.490
SLRDJ311SB14	SLRLRR64SB11	MS51990-111P	.5625-18	.8750-14	.578	.125	.880	.620
SLRDJ312SB16	SLRLRR72SB11	MS51990-112P	.6250-18	1.0000-14	.640	.140	1.000	.740
SLRDJ313SB18	SLRLRR82SB12	MS51990-113P	.7500-16	1.1250-12	.765	.156	1.120	.800
SLRDJ314SB20	SLRLRR90SB12	MS51990-114P	.8750-14	1.2500-12	.890	.178	1.250	.900

NOTES:

- MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- HEAT TREAT: NONE.
- FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-G-8879 CLASS 3B, MIL-S-7942 CLASS 3B, OR AN EQUAL CLASS 3 TAPPED HOLE.
- MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
- INSERT LENGTHS SHOWN ARE BASED ON INSTALLATION IN 2024-T4 ALUMINUM AND IN SUCH MATERIALS WILL ACCOMMODATE TENSION LOADS UP TO THE STRENGTH OF A MATING BOLT HEAT TREATED TO 145,000 PSI UTS. IF THIS DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, LONGER INSERT LENGTHS SHOULD BE SPECIFIED. MATING BOLTS SHOULD HAVE A THREAD ENGAGEMENT OF 1.5 DIAMETERS. IF INSERT HAS A THREAD LOCK, THE BOLT SHOULD EXTEND THROUGH THE INSERT 2 PITCHES TO PREVENT CHAMFER.

PER SHUR-LOK TSB 0018

INTERNAL THREAD LOCKING FEATURE (LEAVE BLANK FOR NON-LOCK)

"B" LENGTH IN "P" INCREMENTS

MATERIAL CODE (1117-1117-STEEL)

SERIES NUMBER AND THREAD COMBINATION

INSERT BASIC PART NUMBER

N
REV
EQ
F1

UNLESS OTHERWISE SPECIFIED

DRAWING INTERPRETATION PER CC-4010

ALL DIMENSIONS APPLY AFTER PLATING AND FINISH TO THE ADJUNCTION OF SOLID FILL SURFACES

BREAK ALL SHARP EDGES .02 (D) MAX

ALL PILET RADI .001 (D) MAX

20/10 ALL SURFACES

ISOLERANGES

2X .003 .003 .003 .003 .003 .003

4X .010 .010 .010 .010 .010 .010

DIMENSION IN {} ARE MILLIMETERS

SIGNATURE: K. GAZI, DATE: 27FEB03

CHECKED: D. KOEPPER, DATE: 27MAR03

APPROVED: K. GAZI, DATE: 27MAR03

SHUR-LOK CORPORATION IRVINE, CALIFORNIA

TITLE: INSERT - RING LOCKED WITH CORE FINE THREAD INTERNAL FINE THREAD EXTERNAL

DRAWING NO: 0101000

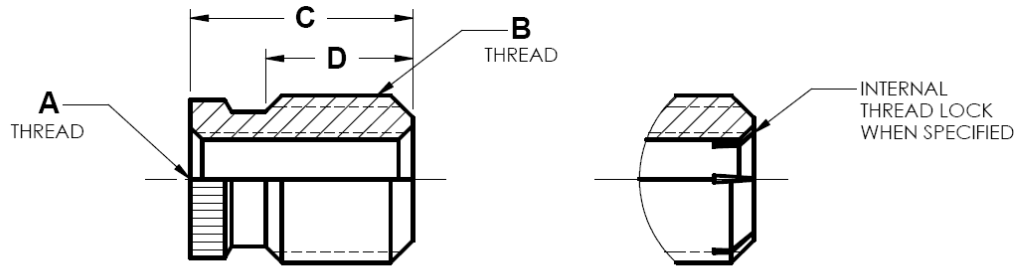
SCALE: NONE, SIZE: A, CAGE NO: 97393, SHEET 10

SALES DRAWING
SOLIDWORKS DWG

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability for parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

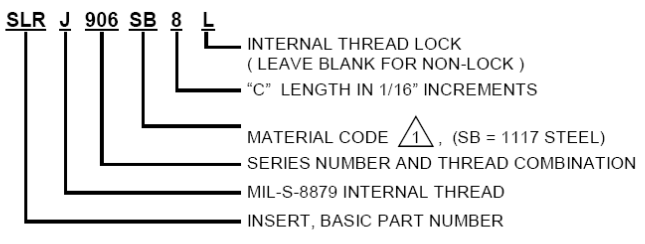
LTR	EON NO.	DATE	DRAWN	CHECKED	APPRO.	REL.
NC	20523	SALES RELEASE		27MAR03		EM



STUD	LOCKRING		A	B	C	D
	SHUR-LOK PART NO. REF	MILITARY PART NO. REF				
SLRJ902SB4	SLRLRR16SB5	MS51990-102P	.1120-40UNJC	.1900-32	.250	.150
SLRJ903SB5	SLRLRR18SB6	MS51990-103P	.1380-32UNJC	.2160-28	.310	.190
SLRJ904SB6	SLRLRR21SB6	MS51990-104P	.1640-32UNJC	.2500-28	.380	.250
SLRJ905SB7	SLRLRR24SB7	MS51990-105P	.1900-24UNJC	.3125-24	.440	.290
SLRJ906SB8	SLRLRR28SB8	MS51990-106P	.2500-20UNJC	.3750-24	.500	.330
SLRJ907SB9	SLRLRR31SB9	----	.3125-18UNJC	.4375-20	.560	.380
SLRJ908SB10	SLRLRR38SB9	MS51990-108P	.3750-16UNJC	.5000-20	.620	.420
SLRJ909SB11	SLRLRR47SB10	MS51990-109P	.4375-14UNJC	.6250-18	.690	.460
SLRJ910SB12	SLRLRR56SB11	MS51990-110P	.5000-13UNJC	.7500-16	.750	.490
SLRJ911SB14	SLRLRR64SB11	MS51990-111P	.5625-12UNJC	.8750-14	.880	.620
SLRJ912SB16	SLRLRR72SB11	MS51990-112P	.6250-11UNJC	1.0000-14	1.000	.740
SLRJ913SB18	SLRLRR82SB12	MS51990-113P	.7500-10UNJC	1.1250-12	1.120	.800
SLRJ914SB20	SLRLRR90SB12	MS51990-114P	.8750-9UNJC	1.1250-12	1.250	.900
SLRJ915SB22	SLRLRR100SB12	MS51990-115P	1.0000-8UNJC	1.3750-12	1.380	1.020

- NOTES:
- MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
 - HEAT TREAT: NONE.
 - FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
 - THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, MIL-S-7742 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
 - INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019.
 - INSERT LENGTHS SHOWN ARE BASED ON INSTALLATION IN 2024-T4 ALUMINUM AND WILL ACCOMODATE TENSION LOADS UP TO THE STRENGTH OF A MATING BOLT HEAT TREATED TO 145,000 PSI UTS. IF THIS DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, LONGER INSERT LENGTHS SHOULD BE SPECIFIED. MATING BOLTS SHOULD HAVE A THREAD ENGAGEMENT OF 1.5 DIAMETERS. IF INSERT HAS A THREAD LOCK THE BOLT SHOULD EXTEND THROUGH THE INSERT 2 PITCHES INCLUDING CHAMFER.
 - MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
 - OTHER MS51991 INSERTS AND MS51990 LOCKRINGS ARE ALSO AVAILABLE.

EXAMPLE OF PART CODING



<small>UNLESS OTHERWISE SPECIFIED</small> DRAWING INTERPRETATION PER CCMM012 WORKMANSHIP PRACTICES PER WAH005. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILLET RADI .020 (0.51) MAX. <small>125 (1.2)</small> ALL SURFACES TOLERANCES .XX .XXX ANGLES (X.X) (XXX) ±.03 ±.010 ±.2° ±0.8 ±0.25 DIMENSION IN [] ARE MILLIMETERS	SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA TITLE INSERT - RING LOCKED COARSE THREAD INTERNAL FINE THREAD EXTERNAL DRAWING NO. SLRJ900 SCALE NONE SIZE A CASE NO. 97393 SHEET 1 OF 1	
	DRAWN	K. GAZI		27FEB03
	CHECKED	D. KOEPPER		27MAR03
	APPROVED	K. GAZI		27MAR03
MFG.			REV. NC	

SALES DRAWING
SOLIDWORKS DWG

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design created by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights herein are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	ECNO.	DATE	DRAWN	CHKD	APPO	REL
NC	20528	SALES RELEASE			27MAR03	EM

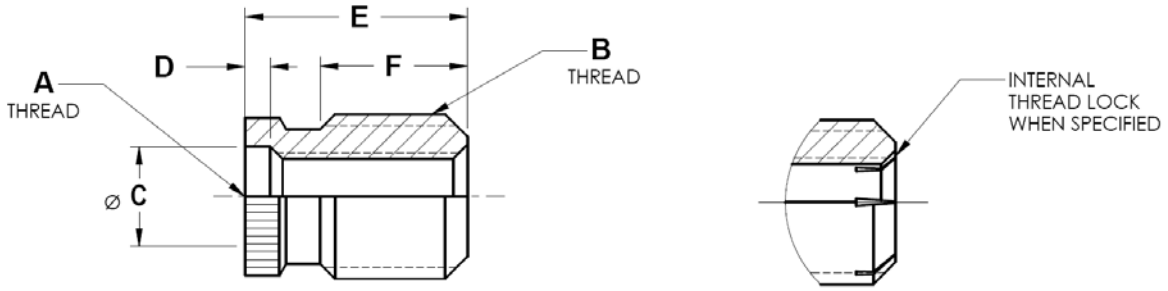


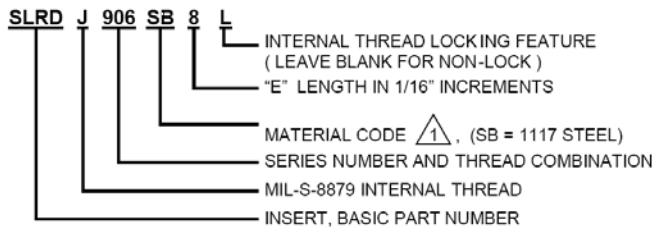
TABLE I

SHUR-LOK INSERT PART NO.	LOCKRING		A INTERNAL THREAD CLASS-3B	B EXTERNAL THREAD MODIFIED 4	C DIA ±.005	D ±.005	E ±.015	F ±.015
	SHUR-LOK PART NO. REF 7	MILITARY PART NO. REF 7 8						
SLRDJ902SB4	SLRLRR16SB5	MS51990-102P	.1120-40UNJC	.1900-32	.113	.040	.250	.150
SLRDJ903SB5	SLRLRR18SB6	MS51990-103P	.1380-32UNJC	.2160-28	.140	.040	.310	.190
SLRDJ904SB6	SLRLRR21SB6	MS51990-104P	.1640-32UNJC	.2500-28	.166	.047	.380	.250
SLRDJ905SB7	SLRLRR24SB7	MS51990-105P	.1900-24UNJC	.3125-24	.196	.062	.440	.290
SLRDJ906SB8	SLRLRR28SB8	MS51990-106P	.2500-20UNJC	.3750-24	.257	.080	.500	.330
SLRDJ907SB9	SLRLRR31SB9	----	.3125-18UNJC	.4375-20	.323	.095	.560	.380
SLRDJ908SB10	SLRLRR38SB9	MS51990-108P	.3750-16UNJC	.5000-20	.386	.100	.620	.420
SLRDJ909SB11	SLRLRR47SB10	MS51990-109P	.4375-14UNJC	.6250-18	.453	.100	.690	.460
SLRDJ910SB12	SLRLRR56SB11	MS51990-110	.5000-13UNJC	.7500-16	.516	.109	.750	.490
SLRDJ911SB14	SLRLRR64SB11	MS51990-111P	.5625-12UNJC	.8750-14	.578	.125	.880	.620
SLRDJ912SB16	SLRLRR72SB11	MS51990-112P	.6250-11UNJC	1.0000-14	.640	.140	1.000	.740
SLRDJ913SB18	SLRLRR82SA12	MS51990-113P	.7500-10UNJC	1.1250-12	.765	.156	1.120	.800

NOTES:

- MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- HEAT TREAT: NONE.
- FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H28/2 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019.
- INSERT LENGTHS SHOWN ARE BASED ON INSTALLATION IN 2024-T4 ALUMINUM AND WILL ACCOMMODATE TENSION LOADS UP TO THE STRENGTH OF A MATING BOLT HEAT TREATED TO 145,000 PSI UTS. IF THIS DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, LONGER INSERT LENGTHS SHOULD BE SPECIFIED. MATING BOLTS SHOULD HAVE A THREAD ENGAGEMENT OF 1.5 DIAMETERS. IF INSERT HAS A THREAD LOCK THE BOLT SHOULD EXTEND THROUGH THE INSERT 2 PITCHES INCLUDING CHAMFER.
- MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
- OTHER MS51990 LOCKRINGS ARE ALSO AVAILABLE.

EXAMPLE OF PART CODING



SALES DRAWING
SOLIDWORKS DWG

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE		SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
DRAWING INTERPRETATION PER CMM012 WORKMANSHIP PRACTICES PER WAI1006 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILLET RADI .020 (0.5) MAX 125 (5.1) ALL SURFACES		DRAWN: K. GAZI		27FEB03		TITLE: INSERT - RING LOCKED WITH CBORE COARSE THREAD INTERNAL FINE THREAD EXTERNAL	
TOLERANCES XX .XXX ANGLE [XX] [XXX] ØR .Ø10 Ø* Ø.8 Ø.25		CHECKED: D. KOEPPER		27MAR03		DRAWING NO: SLRDJ900	
DIMENSION IN [] ARE MILLIMETERS		APPROVED: K. GAZI		27MAR03		REF: NC	
		MFG:				SCALE: NONE	
		QA:				SIZE: A	
		ESR NO:				CASE NO: 97393	
						SHEET 1 OF 1	

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability for parts subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDN NO.	DATE	DRAWN	CHECKED	APPRO	REL
NC	20531	SALES RELEASE		27MAR03		EM

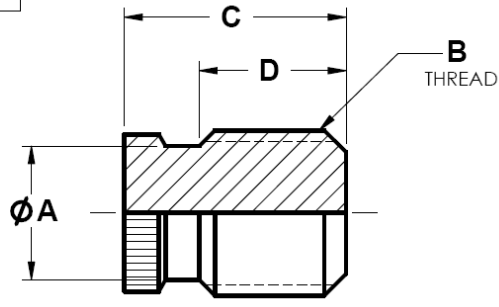


TABLE I

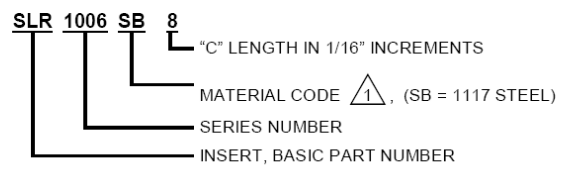
SHUR-LOK INSERT PART NO.	LOCKRING		A DIA MIN	B EXTERNAL THREAD	C ±.015	D ±.015
	SHUR-LOK PART NO. REF △6	MILITARY PART NO. REF △6 △7				
SLR1002SB4	SLRLRR16SB5	MS51990-102P	.143	.1900-32	.250	.150
SLR1003SB5	SLRLRR18SB6	MS51990-103P	.170	.2160-28	.310	.190
SLR1004SB6	SLRLRR21SB6	MS51990-104P	.192	.2500-28	.380	.250
SLR1005SB7	SLRLRR24SB7	MS51990-105P	.243	.3125-24	.440	.290
SLR1006SB8	SLRLRR28SB8	MS51990-106P	.300	.3750-24	.500	.330
SLR1007SB9	SLRLRR31SB9	----	.353	.4375-20	.560	.380
SLR1008SB10	SLRLRR38SB9	MS51990-108P	.442	.5000-20	.620	.420
SLR1009SB11	SLRLRR38SB9	MS51990-108P	.442	.5625-18	.690	.480
SLR1010SB12	SLRLRR47SB10	MS51990-109P	.548	.6250-18	.750	.520
SLR1011SB14	SLRLRR56SB11	MS51990-110P	.668	.7500-16	.880	.620
SLR1012SB16	SLRLRR64SB11	MS51990-111P	.763	.8750-14	1.000	.740
SLR1013SB18	SLRLRR72SB11	MS51990-112P	.877	1.0000-14	1.120	.870

NOTES:

- 1. MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- 2. HEAT TREAT: NONE.
- 3. FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- 4. INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019.

- 5. THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H2B/2 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- 6. MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
- 7. OTHER MS51990 LOCKRINGS ARE ALSO AVAILABLE.

EXAMPLE OF PART CODING



**SALES DRAWING
SOLIDWORKS DWG**

<small>UNLESS OTHERWISE SPECIFIED</small> DRAWING INTERPRETATION PER CCM4012 WORKMANSHIP PRACTICES PER WAH1005 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILLET RADII .020 (0.5) MAX. <small>125</small> <small>125</small> <small>125</small> <small>125</small> ALL SURFACES TOLERANCES .XX .XX ANGLES [X.X] [X.X] ±.03 ±.010 ±.2° ±0.8° ±0.25° DIMENSION IN [] ARE MILLIMETERS	SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
	DRAWN K. GAZI	27FEB03		TITLE
	CHECKED D. KOEPPER	27MAR03		INSERT - RING LOCKED, SOLID FINE THREAD EXTERNAL
	APPROVED K. GAZI	27MAR03		DRAWING NO.
MFG.			SLR1000	
QA			REV NC	
ESR NO 83001BH	SCALE NONE	SIZE A	CAGE NO. 97393	
			SHEET 1 OF 1	

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability for parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDN NO.	DATE	DRAWN	CHECKED	APPRO	REL
NC	20532	SALES RELEASE			27MAR03	EM

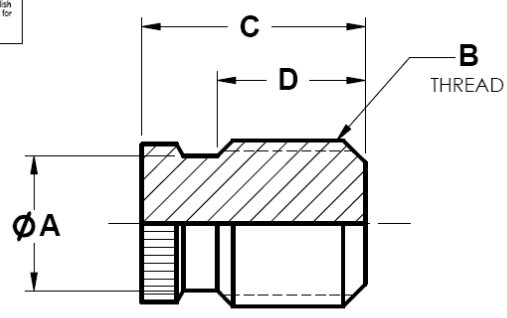


TABLE I

SHUR-LOK INSERT PART NO.	LOCKRING		A DIA MIN	B EXTERNAL THREAD	C ±.015	D ±.015
	SHUR-LOK PART NO. REF 6	MILITARY PART NO. REF 6 7				
SLR1102SB4	SLRLRR16SB5	MS51990-102P	.143	.1900-24	.250	.150
SLR1103SB5	SLRLRR18SB6	MS51990-103P	.170	.2160-24	.310	.190
SLR1104SB6	SLRLRR18SB6	MS51990-104P	.192	.2500-20	.380	.250

SLR1105SB7	SLRLRR24SB7	MS51990-105P	.243	.3125-16	.440
SLR1106SB8	SLRLRR28SB8	MS51990-106P	.300	.3750-16	.500
SLR1107SB9	SLRLRR31SB9	---	.353	.4375-14	.560
SLR1108SB10	SLRLRR38SB9	MS51990-108P	.365	.5000-13	.620
SLR1109SB11	SLRLRR38SB9	MS51990-108P	.440	.5625-12	.690
SLR1110SB12	SLRLRR47SB10	MS51990-109P	.548	.6250-11	.750
SLR1111SB14	SLRLRR56SB11	MS51990-110P	.607	.7500-10	.880
SLR1112SB16	SLRLRR64SB11	MS51990-111P	.710	.8750-9	1.000
SLR1113SB18	SLRLRR72SB11	MS51990-112P	.817	1.0000-8	1.120

NOTES:

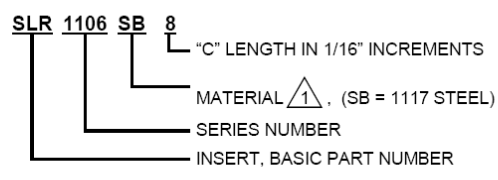
- 1 MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- 2. HEAT TREAT: NONE.
- 3. FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- 4 THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, MIL-S-7742 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- 5. INSERTS ARE INSTALLED AND REPER SHUR-LOK TSB 0019.
- 6 MATING LOCKRING IS NOT INCLUDED IT MUST BE ORDERED SEPARATE
- 7 OTHER MS51990 LOCKRINGS ARE AVAILABLE

MOVED

DED WITH INSERT. ONLY.

IS ALSO AVAILABLE

EXAMPLE OF PART CODING



SHUR-LOK CORPORATION
IRVINE, CALIFORNIA

INTERNAL RING LOCKED, SOLID
EXTERNAL THREAD

SLR1100	REV: NC
A	CAGE NO. 97393 SHEET 1 OF 1

SALES DRAWING
SOLIDWORKS DWG

UNLESS OTHERWISE SPECIFIED	SIGNATURE	DATE		S	
DRAWING INTERPRETATION PER CCAM012 WORKMANSHIP PRACTICES PER WA1005. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILLET RADI .001 (0.01) MAX. 125 (1.2) ALL SURFACES.	DRAWN K. GAZI	27FEB03			TITLE
TOLERANCES XX .XX ANGLES [X.X] [X.XX] ±.03 ±.010 ±.2* ±[0.8] ±[0.25]	CHECKED D. KOEPPER	27MAR03			INSERT COAR
DIMENSION IN [] ARE MILLIMETERS	APPROVED K. GAZI	27MAR03			DRAWING NO.
	MFG.		SCALE	SIZE	
	Q.A.		NONE		
	ESR NO.				

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDN NO.	DATE	DRAWN	CHECKED	APPRO	REL
NC	20533	SALES RELEASE			27MAR03	EM
A	21941	26NOV03	DL	BS	BS	EM

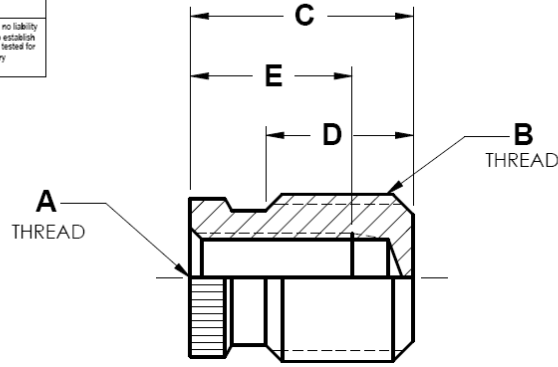


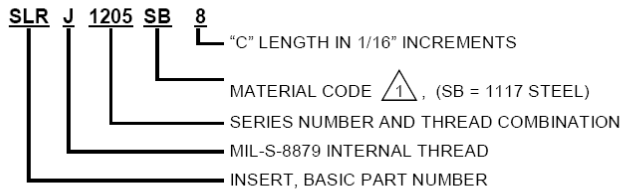
TABLE I

SHUR-LOK INSERT PART NO.	LOCKRING		A INTERNAL THREAD UNJF-3B	B EXTERNAL THREAD 4	C ±.015	D ±.015	E MINIMUM FULL THREAD DEPTH
	SHUR-LOK PART NO. REF 6	MILITARY PART NO. REF 6 7					
SLRJ1202SB4	SLRLRR16AB5	MS51990-102P	.1120-48	.1900-24	.310	.210	.16
SLRJ1203SB6	SLRLRR18AB6	MS51990-103P	.1380-40	.2160-24	.380	.260	.19
SLRJ1204SB7	SLRLRR21AB6	MS51990-104P	.1640-36	.2500-20	.440	.310	.25
SLRJ1205SB8	SLRLRR24AB7	MS51990-105P	.1900-32	.3125-18	.500	.350	.28
SLRJ1206SB10	SLRLRR28AB8	MS51990-106P	.2500-28	.3750-16	.620	.450	.38
SLRAJ1207SB11	SLRLRR33AB9	MS51990-107P	.3125-24	.5000-13	.690	.490	.41
SLRJ1208SB13	SLRLRR38AB9	MS51990-108P	.3750-24	.5625-12	.810	.600	.53
SLRJ1209SB16	SLRLRR47AB10	MS51990-109P	.4375-20	.6250-11	1.000	.770	.66
SLRJ1210SB17	SLRLRR56AB11	MS51990-110P	.5000-20	.7500-10	1.060	.810	.72


NOTES:

- 1 MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- 2 HEAT TREAT: NONE.
- 3 FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- 4 THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, MIL-S-7742 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- 5 INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019.
- 6 MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
- 7 OTHER MS51990 LOCKRINGS ARE ALSO AVAILABLE.

EXAMPLE OF PART CODING



**SALES DRAWING
SOLIDWORKS DWG**

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE		 SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
DRAWING INTERPRETATION PER CC14012 WORKMANSHIP PRACTICES PER WAI1005. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX. ALL FILET RADII .03 (0.5) MAX. 125 (R.2) ALL SURFACES.		DRAWN	K. GAZI	27FEB03	TITLE		
TOLERANCES XX .XXX ANGLES [X.X] [X.XX] ±.03 ±.010 ±.2° ±(0.8) ±(0.25)		CHECKED	D. KOEPPER	27MAR03	DRAWING NO.		REV.
DIMENSION IN () ARE MILLIMETERS		APPROVED	K. GAZI	27MAR03	SLRJ1200		A
		MFG.			SCALE	SIZE	CAGE NO.
		Q.A.			NONE	A	97393
		ESR NO.					SHEET 1 OF 1

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights herein are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDNO.	DATE	DRAWN	CHECKED	APPRO.	REL.
NC	20534	SALES RELEASE			27MAR03	EM

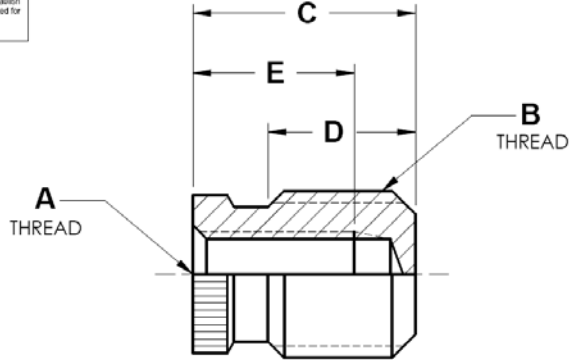


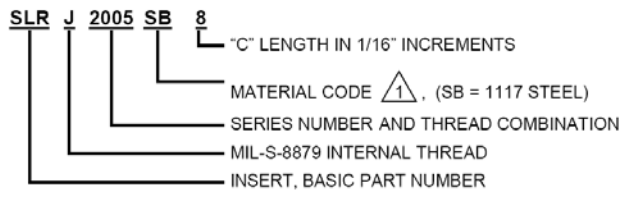
TABLE I

SHUR-LOK INSERT PART NO.	LOCKRING		A INTERNAL THREAD UNJC CLASS-3B	B EXTERNAL THREAD 4	C ±.015	D ±.015	E MINIMUM FULL THREAD DEPTH
	SHUR-LOK PART NO. REF 6	MILITARY PART NO. REF 6 7					
SLRJ2002SB5	SLRLRR16SB5	MS51990-102P	.1120-40UNJC	.1900-24	.310	.210	.12
SLRJ2003SB6	SLRLRR18SB6	MS51990-103P	.1380-32UNJC	.2160-24	.380	.260	.16
SLRJ2004SB7	SLRLRR21SB6	MS51990-104P	.1640-32UNJC	.2500-20	.440	.310	.22
SLRJ2005SB8	SLRLRR24SB7	MS51990-105P	.1900-24UNJC	.3125-18	.500	.350	.25
SLRJ2006SB10	SLRLRR28SB8	MS51990-106P	.2500-20UNJC	.3750-16	.620	.450	.31
SLRJ2007SB11	SLRLRR33SB9	MS51990-107P	.3125-18UNJC	.5000-13	.690	.490	.38
SLRJ2008SB13	SLRLRR38SB9	MS51990-108P	.3750-16UNJC	.5625-12	.810	.600	.44
SLRJ2009SB16	SLRLRR47SB10	MS51990-109P	.4375-14UNJC	.6250-11	1.000	.770	.50
SLRJ2010SB17	SLRLRR56SB11	MS51990-110	.5000-13UNJC	.7500-10	1.060	.810	.62

NOTES:

- 1 MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- 2 HEAT TREAT: NONE.
- 3 FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- 4 THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, MIL-S-7742 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE
- 5 INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019.
- 6 MATING LOCKRING IS NOT INCLUDED WITH INSERT. IT MUST BE ORDERED SEPARATELY.
- 7 OTHER MS51990 LOCKRINGS ARE ALSO AVAILABLE.

EXAMPLE OF PART CODING



**SALES DRAWING
SOLIDWORKS DWG**

<small>UNLESS OTHERWISE SPECIFIED</small> DRAWING INTERPRETATION PER CMM412 WORKMANSHIP PRACTICES PER WA11005 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT BREAK ALL SHARP EDGES .02 (0.8) MAX ALL FILLET RADI .020 (0.5) MAX 125 (R2) / ALL SURFACES TOLERANCES .XX .XXX ANGLES (X.X) (X.XX) .03 .010 .005 .0025 DIMENSION IN [] ARE MILLIMETERS	SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA TITLE INSERT - RING LOCKED, BLIND COARSE THREAD INTERNAL COARSE THREAD EXTERNAL DRAWING NO. SLRJ2000 REV NC
	DRAWN K. GAZI	27FEB03	
	CHECKED D. KOEPPER	27MAR03	
	APPROVED 27MAR03	27MAR03	
MFG.			SCALE NONE
Q.A.			SIZE A
ESR NO.			CAGE NO. 97383
			SHEET 1 OF 1

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDN NO.	DATE	DRAWN	CHECKED	APPRO	REL
NC	20530	SALES RELEASE		02APR03		EM

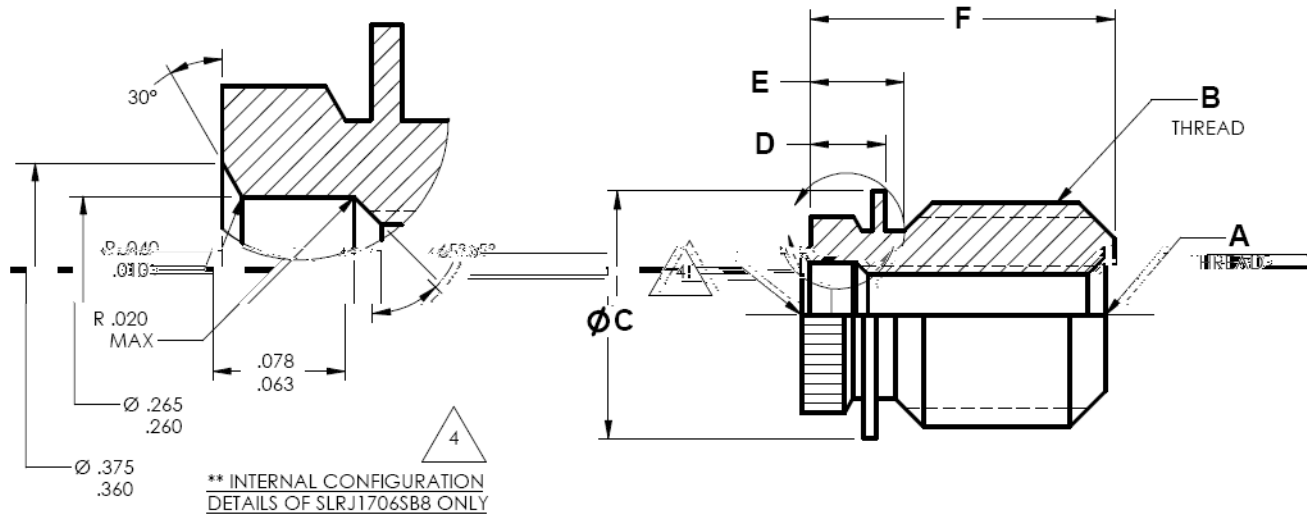


TABLE I

INSERT PART NUMBER	LOCKRING PART NUMBER 7 REF	A INTERNAL THREAD CLASS-3B	B EXTERNAL THREAD CLASS-3A	C DIA ±.005	D ±.015	E ±.005	F ±.015
** SLRJ1706SB8	SLRL33SB7	.2500-28UNJF	.4375-20UNF	.510	.176	.276	.500
SLRJ1707SB8	SLRL38SB7	.3125-24UNJF	.5000-20UNF	.588	.176	.276	.500
SLRJ1708SB8	SLRL47SB8	.3750-24UNJF	.6250-18UNF	.729	.191	.302	.500
SLRJ1709SB9	SLRL47SB8	.4375-20UNJF	.6250-18UNF	.729	.191	.302	.560
SLRJ1710SB9	SLRL56SB8	.5000-20UNJF	.7500-16UNF	.870	.191	.316	.560
SLRJ1711SB9	SLRL56SB8	.5625-18UNJF	.7500-16UNF	.870	.191	.316	.560
SLRJ1713SB10	SLRL72SB8	.7500-16UNJF	1.0000-14UNS	1.120	.191	.334	.620

NOTES:

- MATERIAL: 1117 STEEL PER ASTM A108. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- INSERTS ARE INSTALLED PER SHUR-LOK TSB 0019.
- INTERNAL CONFIGURATION MEETS THE REQUIREMENTS OF AS33649 EXCEPT SLRJ1706SB8.
- REFER TO SHUR-LOK SLAS3078 SERIES DRAWINGS 3000 PSI EXTERNAL SEALING CONFIGURATION.
- PROPERLY INSTALLED WITH DESIGNER'S CHOICE OF PACKING RING, THESE FASTENERS WILL EFFECT AN EXTERNAL SEAL OF 150 PSI. FOR O-RING INFORMATION SEE SHUR-LOK TSB 0019.
- THE HYDRAULIC INSERT IS USED IN CONJUNCTION WITH A THIN-SERIES "SLRL-SERIES" LOCKRING.

SALES DRAWING
SOLIDWORKS DWG

<small>UNLESS OTHERWISE SPECIFIED</small> DRAWING INTERPRETATION PER CMM4012 WORKMANSHIP PRACTICES PER W411005 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILLET RADI .020 (0.5) MAX 125 (5.2) ALL SURFACES. TOLERANCES XX XXX ANGLES (X)X (X)X ±.03 ±.010 ±.005 ±.0025 DIMENSION IN [] ARE MILLIMETERS	SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA TITLE INSERT - RING LOCKED, HYDRAULIC (150 PSI) DRAWING NO. SLRJ1700 SCALE NONE SIZE A CASE NO. 97393 SHEET 1 OF 1
	DRAWN K. GAZI	28MAR03	
	CHECKED D. KOEPPER	01APR03	
	APPROVED K. GAZI	02APR03	
MFG.			REV. NC
Q.A.			
ESR NO.			

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to local conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDN NO.	DATE	DRWEN	CHKED	APPD	REL.
NC	20529	SALES RELEASE			22APR03	EM
A	22600	23SEP04	J.N	J.N	N.P	EM

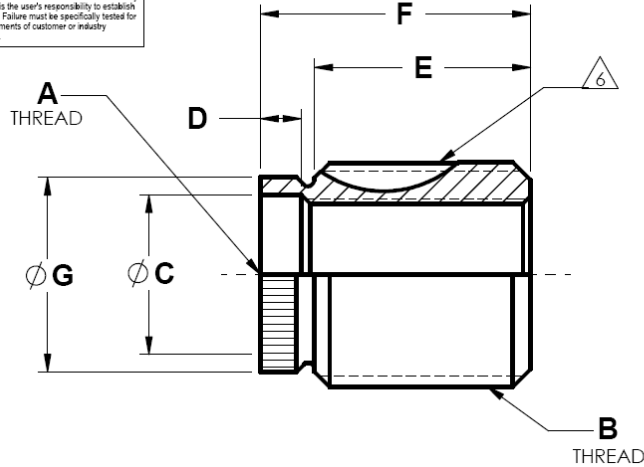


TABLE I

INSERT PART NUMBER	LOCKRING PART NUMBER	A INTERNAL THREAD UNJF-3B MIL-S-8879	B EXTERNAL THREAD $\triangle 4$			C DIA $\pm .005$	D $\pm .005$	E $\pm .015$	F $\pm .015$	G DIA $\pm .005$
			SIZE	PITCH DIA	MINOR DIA					
SLRDJ3604L	SLRL21SB4	.1640-32	.3125-18	.2769 - .2789	.2373 - .2468	.170	.075	.200	.280	.232
SLRDJ3605L	SLRL24SB5	.1900-32	.3750-16	.3347 - .3372	.2906 - .3011	.196	.075	.210	.310	.286
SLRDJ3606L	SLRL28SB5	.2500-28	.4375-14	.3916 - .3941	.3411 - .3529	.257	.083	.270	.380	.347
SLRDJ3607L	SLRL33SB6	.3125-24	.5000-13	.4506 - .4531	.3963 - .4087	.320	.097	.350	.470	.410
SLRDJ3608L	SLRL38SB7	.3750-24	.5625-12	.5091 - .5116	.4873 - .4998	.382	.097	.480	.620	.490
SLRDJ3609L	SLRL43SB7	.4375-20	.6250-11	.5668 - .5693	.5498 - .5603	.445	.113	.610	.750	.542

NOTES:

- MATERIAL: 4140 STEEL OR EQUIVALENT.
- HEAT TREAT: 160-180 KSI UTS.
- FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3. CARBON WAX LUBRICANT MFR'S OPTION ON PARTS WITH THREAD LOCK.

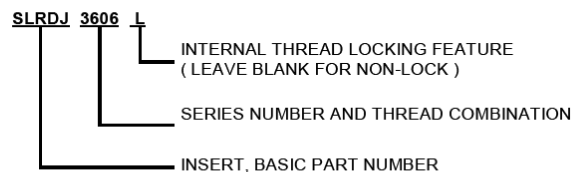
$\triangle 4$ THE EXTERNAL THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, MIL-S-7742 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.

5. INSERTS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019.

$\triangle 6$ INTERNAL THREAD LOCKING FEATURE COMPLIES WITH APPLICABLE PORTION OF SPECIFICATION

NASM 25027 FOR 450°F.

EXAMPLE OF PART CODING



CIFIED ER COM102 R PLATING OF SOLID 1 (0.01) MAX K.	SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA
	DRAWN K. GAZI	28MAR03	
	CHECKED D. KOEPPER	01APR03	
	APPROVED K. GAZI	22APR03	
MFG.			TITLE INSERT - RING LOCKED HIGH STRENGTH
Q.A.			DRAWING NO. SLRDJ3600
ESR NO.	SCALE NONE	SIZE A	CASE NO. 97393
			REV. A
			SHEET 1 OF 1

UNLESS OTHERWISE SPEC

DRAWING INTERPRETATION:
WORKMANSHIP PRACTICES
ALL DIMENSIONS APPLY AFTER
AND PRIOR TO THE ADDITION
FILM LUBRICANT.
BREAK ALL SHARP EDGES. O
ALL FILED RADI (0.01) U
125 [1.2] ALL SURFACES.

TOLERANCES
XX .XX ANGLES [X]
±.03 ±.010 ±.2° ±0.0

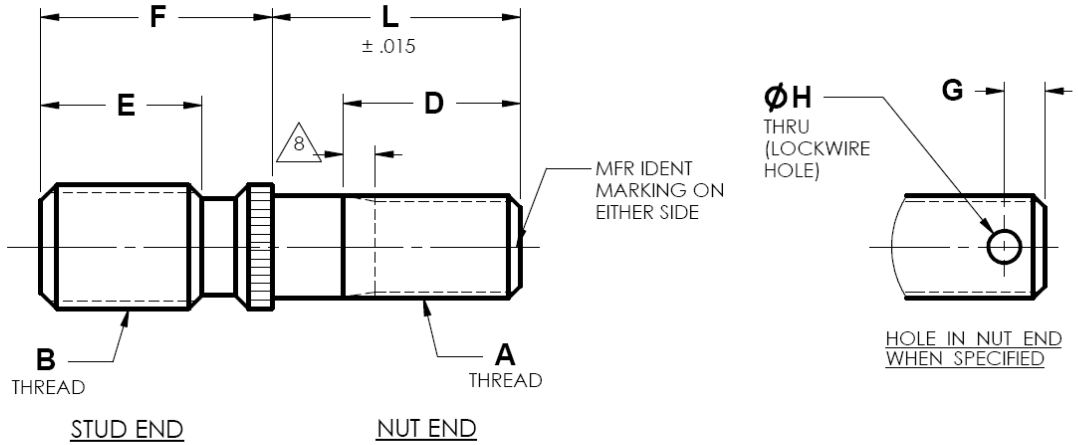
DIMENSION IN [] ARE MILLI

SALES DRAWING
SOLIDWORKS DWG

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EON NO	DATE	DRAWN	CHKD	APPO	REL
NC	20506	SALES RELEASE			27MAR03	EM



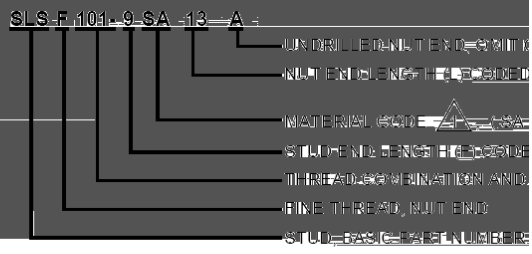
NOTES:

- 1 MATERIAL: 4130 STEEL PER MIL-S-6758. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
2. HEAT TREAT: 125,000 PSI UTS MIN.
3. FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TY II, CLASS 3.
- 4 THE NUT END WILL BE THREADED TO ITS FULL LENGTH UNLESS OTHERWISE SPECIFIED.
- 5 IF THIS DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, LONGER STUD END LENGTHS THAN SHOWN ABOVE IN COLUMN 'F' SHOULD BE SPECIFIED.
6. STUDS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR MS51995.
7. STUD END THREAD LENGTHS SHOWN ARE BASED ON INSTALLATION IN 2024-T4 ALUMINUM AND WILL ACCOMODATE TENSION LOADS UP TO 100% OF THE TENSILE STRENGTH OF THE STUD OR SHORTER THAN COLUMN 'C'.

- 8 MAXIMUM INCOMPLETE THREADS.
- 9 IF A LOCKWIRE IS NOT INCLUDED WITH THE STUD, IT MUST BE ORDERED SEPARATELY.

- 10 THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH IS NOT LISTED IN MIL-S-6758. CONTACT SHUR-LOK FOR THE PITCH DIAMETER, MINOR DIAMETER, OR NATIONAL CLASS 3 TAPPED HOLE.

EXAMPLE OF PART CODING:



OTHERWISE SPECIFIED	SIGNATURE	DATE	<p>SHUR-LOK CORPORATION IRVINE, CALIFORNIA</p>
	DRAWN K. GAZI	03FEB03	
	CHECKED D. KOEPPER	27MAR03	
	APPROVED K. GAZI	27MAR03	
TITLES			<p>STUD - RING LOCKED FINE THREAD NUT END FINE OR COARSE THREAD STUD END</p>
DRAWING NO.			
MFG.			<p>SLSF</p>
Q.A.			
ESR NO.			<p>SCALE NONE SIZE A CASE NO. 97393 SHEET 1 OF 2</p>

REPREPARATION PER CCMA012 HIP PRACTICES PER WAI1002. IONS APPLY AFTER PLATING TO THE ADDITION OF SOLID JANT. SHARP EDGES .02 (0.5) MAX RADII .02 (0.5) MAX.

L SURFACES

TOLERANCES

ANGLES [XX] [XXX] ±2° ±[0.8] ±[0.25]

IN IN [] ARE MILLIMETERS

UNLESS DRAWING IS WORKMAN: ALL DIMEN AND PRIOR FILM (LUBR) BREAK ALL ALL FILLET 125 (1.2) ✓ AI

XX .XXX ±.03 ±.01 DIMENSK





SALES DRAWING
SOLIDWORKS DWG

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.





LTR	EON NO	DATE	DRAWN	CHKD	APPO	REL
NC	20506	SALES RELEASE			27MAR03	EM

TABLE I

STUD		LOCKRING		A	B	C	D	E	F	G	H
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF 	MILITARY PART NO. REF 	NUT END THREAD UNF-3A	STUD END (COARSE) THREAD 		±.015	±.015	±.015	±.015	DIA
SLSF71-4SA(L/A)	MS51989-102-(L)	SLRLRR16SA5	MS51990-102P	.1380-.40	.1640-.32	-7	.380	.140	.250	-----	-----
SLSF81-6SA(L/A)	MS51989-103-(L)	SLRLRR18SA6	MS51990-103P	.1640-.36	.1900-.24	-8	.410	.230	.380	.110	.070
SLSF91-7SA(L/A)	MS51989-104-(L)	SLRLRR21SA6	MS51990-104P	.1900-.32	.2500-.20	-8	.440	.280	.440	.120	.070
SLSF101-9SA(L/A)	MS51989-105-(L)	SLRLRR24SA7	MS51990-105P	.2500-.28	.3125-.18	-9	.500	.390	.560	.160	.076
SLSF111-11SA(L/A)	MS51989-106-(L)	SLRLRR28SA8	MS51990-106P	.3125-.24	.3750-.16	-10	.560	.510	.690	.160	.076
SLSF121-12SA(L/A)	MS51989-107-(L)	SLRLRR33SA9	MS51990-107P	.3750-.24	.4375-.14	-11	.620	.520	.750	.170	.106
SLSF131-13SA(L/A)	MS51989-108-(L)	SLRLRR38SA9	MS51990-108P	.4375-.20	.5000-.13	-12	.690	.570	.810	.170	.106
SLSF141-14SA(L/A)	MS51989-109-(L)	SLRLRR47SA10	MS51990-109P	.5000-.20	.5625-.12	-14	.810	.630	.880	.190	.106
SLSF151-16SA(L/A)	MS51989-110-(L)	SLRLRR47SA10	MS51990-109P	.5625-.18	.6250-.11	-16	.940	.720	1.000	.220	.141
SLSF161-18SA(L/A)	MS51989-111-(L)	SLRLRR56SA11	MS51990-110P	.6250-.18	.7500-.10	-17	1.000	.820	1.120	.220	.141
SLSF181-21SA(L/A)	MS51990-112-(L)	SLRLRR64SA11	MS51990-111P	.7500-.16	.8750-.9	-19	1.120	.990	1.310	.220	.141

FINE THREAD NUT END AND COARSE THREAD STUD END

TABLE II


STUD		LOCKRING		A	B	C	D	E	F	G	H
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF 	MILITARY PART NO. REF 	NUT END THREAD UNF-3A	STUD END (FINE) THREAD 		±.015	±.015	±.015	±.015	DIA
SLSF71-4SA(L/A)	MS51989-102-(L)	SLRLRR16SA5	MS51990-102P	.1380-.36	.1900-.32	-7	.380	.140	.250	-----	-----
SLSF81-6SA(L/A)	MS51989-103-(L)	SLRLRR18SA6	MS51990-103P	.1900-32	.2500-20	-8	.440	.280	.440	.120	.070
SLSF91-7SA(L/A)	MS51989-104-(L)	SLRLRR21SA6	MS51990-104P	.2500-28	.3125-18	-9	.500	.390	.560	.160	.076
SLSF101-9SA(L/A)	MS51989-105-(L)	SLRLRR24SA7	MS51990-105P	.3125-24	.3750-16	-10	.560	.510	.690	.160	.076
SLSF111-11SA(L/A)	MS51989-106-(L)	SLRLRR28SA8	MS51990-106P	.3750-24	.4375-14	-11	.620	.520	.750	.170	.106
SLSF121-12SA(L/A)	MS51989-107-(L)	SLRLRR33SA9	MS51990-107P	.4375-20	.5000-13	-12	.690	.570	.810	.170	.106
SLSF131-13SA(L/A)	MS51989-108-(L)	SLRLRR38SA9	MS51990-108P	.5000-20	.5625-12	-14	.810	.630	.880	.190	.106
SLSF141-14SA(L/A)	MS51989-109-(L)	SLRLRR47SA10	MS51990-109P	.5625-18	.6250-11	-16	.940	.720	1.000	.220	.141
SLSF151-16SA(L/A)	MS51989-110-(L)	SLRLRR47SA10	MS51990-109P	.6250-18	.7500-10	-17	1.000	.820	1.120	.220	.141
SLSF161-18SA(L/A)	MS51989-111-(L)	SLRLRR56SA11	MS51990-110P	.7500-16	.8750-9	-19	1.120	.990	1.310	.220	.141

UT END AND COARSE STUD END

.1380-.36	.1900-.32	0	.410	.280	.300	.310	.070				
.1900-32	.2500-28	0	.440	.370	.440	.120	.070				
.2500-28	.3125-24	0	.420	.560	.160	.076					
.3125-24	.3750-24	0	.560	.550	.690	.160	.076				
.3750-24	.4375-20	0	.620	.650	.750	.170	.106				
.4375-20	.5000-20	0	.690	.670	.810	.170	.106				
.5000-20	.5625-18	0	.810	.670	.800	.190	.106				
.5625-18	.6250-18	0	.940	.780	1.000	.220	.141				
.6250-18	.7500-16	0	1.000	.880	1.120	.220	.141				
.7500-16	.8750-14	0	1.120	1.050	1.310	.220	.141				

FINE THREAD NUT END AND COARSE STUD END

SLSF71-4SA(L/A)	MS51989-102-(L)	SLRLRR16SA5	MS51990-102P	.1380-.36	.1900-.32	-7	.380	.140	.250	-----	-----
SLSF81-6SA(L/A)	MS51989-103-(L)	SLRLRR18SA6	MS51990-103P	.1900-32	.2500-20	-8	.440	.280	.440	.120	.070
SLSF91-7SA(L/A)	MS51989-104-(L)	SLRLRR21SA6	MS51990-104P	.2500-28	.3125-18	-9	.500	.390	.560	.160	.076
SLSF101-9SA(L/A)	MS51989-105-(L)	SLRLRR24SA7	MS51990-105P	.3125-24	.3750-16	-10	.560	.510	.690	.160	.076
SLSF111-11SA(L/A)	MS51989-106-(L)	SLRLRR28SA8	MS51990-106P	.3750-24	.4375-14	-11	.620	.520	.750	.170	.106
SLSF121-12SA(L/A)	MS51989-107-(L)	SLRLRR33SA9	MS51990-107P	.4375-20	.5000-13	-12	.690	.570	.810	.170	.106
SLSF131-13SA(L/A)	MS51989-108-(L)	SLRLRR38SA9	MS51990-108P	.5000-20	.5625-12	-14	.810	.630	.880	.190	.106
SLSF141-14SA(L/A)	MS51989-109-(L)	SLRLRR47SA10	MS51990-109P	.5625-18	.6250-11	-16	.940	.720	1.000	.220	.141
SLSF151-16SA(L/A)	MS51989-110-(L)	SLRLRR47SA10	MS51990-109P	.6250-18	.7500-10	-17	1.000	.820	1.120	.220	.141
SLSF161-18SA(L/A)	MS51989-111-(L)	SLRLRR56SA11	MS51990-110P	.7500-16	.8750-9	-19	1.120	.990	1.310	.220	.141

EIEQ R CCMA02 R WA1002 PLATING IF SOLID 0.5 MAX C [XXX] ±0.25 ETERS	SIGNATURE	DATE	 SHUR-LOK CORPORATION IRVINE, CALIFORNIA TITLE STUD - RING LOCKED FINE THREAD NUT END FINE OR COARSE THREAD STUD END DRAWING NO. SLSF REV. NC SCALE SIZE CASE NO. SHEET 2 OF 2	
	DRAWN	K. GAZI		03FEB03
	CHECKED	D. KOEPPER		27MAR03
	APPROVED	K. GAZI		27MAR03
MFG.				
Q.A.				

SALES DRAWING
SOI IDWORKS DWG

UNLESS OTHERWISE SPEC

DRAWING INTERPRETATION PER WORKMANSHIP PRACTICES PER ALL DIMENSIONS APPLY AFTER AND PRIOR TO THE ADDITION OF FILM LUBRICANT. BREAK ALL SHARP EDGES 0.2 ALL FILET RADI: R0.0 (0.01) MA 125 (3.2) ALL SURFACES.

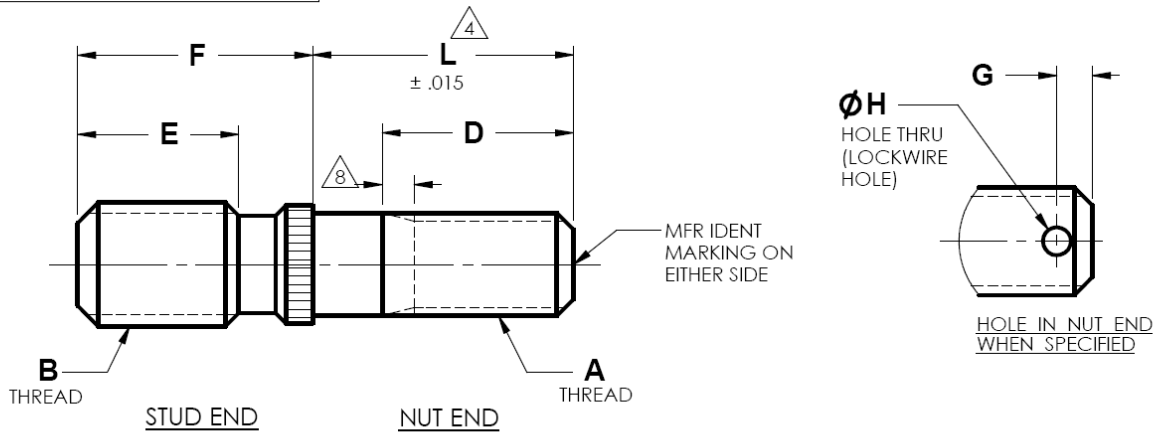
TOLERANCES
 .XX .XXX ANGLES [X]
 ±.03 ±.010 ±.2° ±.0.8

DIMENSION IN [] ARE MILLIM

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

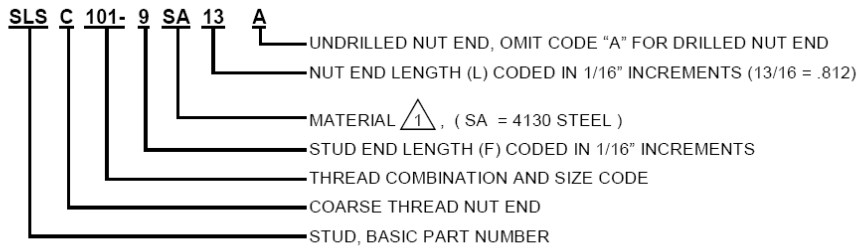
LTR	EDN NO.	DATE	DRAWN	CHECKED	APPRO	REL
NC	20508	SALES RELEASE			27MAR03	EM



NOTES:

- 1 MATERIAL: 4130 STEEL PER MIL-S-6758. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- 2 FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3.
- 3 THE NUT END WILL BE THREADED TO ITS FULL LENGTH WHEN LENGTH CODE 'L' IS EQUAL TO OR SHORTER THAN COLUMN 'C'. IF LENGTH CODE 'L' IS LONGER THAN COLUMN 'C' AND IF REQUIRED TO BE THREADED FULL LENGTH, USE PREFIX 'SLSFT' (EXAMPLE: SLSFT101-9SA10A) FOR 'L' CODES, SEE EXAMPLE OF PART CODING.
- 4 THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H28/2 CLASS B OR NATIONAL CLASS 3 TAPPED HOLE.
- 5 STUDS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR PER MS51995.
- 6 STUD END THREAD LENGTHS SHOWN ARE BASED ON INSTALLATION IN 2024-T4 ALUMINUM AND WILL ACCOMMODATE TENSION LOADS UP TO THE STRENGTH OF THE NUT END. IF THIS DESIGN CRITERIA IS REQUIRED IN PARENT MATERIALS OF LOWER MECHANICAL PROPERTIES, LONGER STUD END LENGTHS THAN SHOWN ABOVE IN COLUMN "F" SHOULD BE SPECIFIED.
- 7 MAX 2 INCOMPLETE THREADS.
- 8 MATING LOCKRING IS NOT INCLUDED WITH STUD. IT MUST BE ORDERED SEPARATELY.

EXAMPLE OF PART CODING



UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE		SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
DRAWING INTERPRETATION PER CCMS012 WORKMANSHIP PRACTICES PER WAI1005. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX. ALL FILET RADII .020 (0.51) MAX. (25 (1.2)) ALL SURFACES. <td colspan="2">DRAWN K. GAZI</td> <td colspan="2">00FEB03</td> <td colspan="2" rowspan="4">TITLE STUD - RING LOCKED COARSE THREAD NUT END COARSE OR FINE THREAD STUD END</td>		DRAWN K. GAZI		00FEB03		TITLE STUD - RING LOCKED COARSE THREAD NUT END COARSE OR FINE THREAD STUD END	
TOLERANCES XX .XX .XX ANGLES [XX] [XXX] ±.03 ±.010 ±.2* ±(0.8) ±(0.25)		CHECKED D. KOEPPER		27MAR03			
DIMENSION IN [] ARE MILLIMETERS		APPROVED K. GAZI		27MAR03			
		MFG					
		QA				DRAWING NO. SLSC	
		ESR NO.				REV N	
		SCALE NONE		SIZE A		CASE NO. 97393	
						SHEET 1 OF 2	





**SALES DRAWING
SOLIDWORKS DWG**

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.





LTR	EDN NO.	DATE	DRAWN	CHECKED	APPRO	REL
NC	20508	SALES RELEASE			27MAR03	EM

TABLE I

STUD		LOCKRING		A	B	C	D	E	F	G	H
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF	MILITARY PART NO. REF	NUT END THREAD	STUD END THREAD						
				UNC-3A			±.015	±.015	±.015	±.015	DIA
SLSC71-4SA(L)A	MS51989-302-(L)	SLRLRR16SA5	MS51990-102P	.1380-32	.1640-32	-8	.380	.140	.250	-----	-----
SLSC81-6SA(L)A	MS51989-303-(L)	SLRLRR18SA6	MS51990-103P	.1640-32	.1900-24	-8	.410	.230	.380	.110	.070
SLSC91-7SA(L)A	MS51989-304-(L)	SLRLRR21SA6	MS51990-104P	.1900-24	.2500-20	-9	.440	.280	.440	.120	.070
SLSC101-9SA(L)A	MS51989-305-(L)	SLRLRR24SA7	MS51990-105P	.2500-20	.3125-18	-10	.500	.390	.560	.160	.076
SLSC111-11SA(L)A	MS51989-306-(L)	SLRLRR28SA8	MS51990-106P	.3125-18	.3750-16	-11	.560	.510	.690	.160	.076
SLSC121-12SA(L)A	MS51989-307-(L)	SLRLRR33SA9	MS51990-107P	.3750-16	.4375-14	-12	.620	.520	.750	.170	.106
SLSC131-13SA(L)A	MS51989-308-(L)	SLRLRR38SA9	MS51990-108P	.4375-14	.5000-13	-14	.690	.570	.810	.170	.106
SLSC141-14SA(L)A	MS51989-309-(L)	SLRLRR47SA10	MS51990-109P	.5000-13	.5625-12	-16	.810	.630	.880	.190	.106
SLSC151-16SA(L)A	MS51989-310-(L)	SLRLRR47SA10	MS51990-109P	.5625-12	.6250-11	-17	.940	.720	1.000	.220	.141
SLSC161-18SA(L)A	MS51989-411-(L)	SLRLRR56SA11	MS51990-110P	.6250-11	.7500-10	-17	1.000	.820	1.120	.220	.141
SLSC171-21SA(L)A	MS51990-412-(L)	SLRLRR64SA11	MS51990-111P	.7500-10	.8750-14	-19	1.120	.990	1.310	.220	.141


COARSE THREAD NUT END AND COARSE THREAD STUD END

TABLE II

STUD		LOCKRING		A	B	C	D	E	F	G	H
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF	MILITARY PART NO. REF	NUT END THREAD	STUD END THREAD						
				UNC-3A			±.015	±.015	±.015	±.015	DIA
SLSC72-4SA(L)A	MS51989-402-(L)	SLRLRR16SA5	MS51990-102P	.1380-32	.1640-36	-7	.380	.140	.250	-----	-----
SLSC82-6SA(L)A	MS51989-403-(L)	SLRLRR18SA6	MS51990-103P	.1640-32	.1900-32	-8	.410	.230	.380	.110	.070
SLSC92-7SA(L)A	MS51989-404-(L)	SLRLRR21SA6	MS51990-104P	.1900-24	.2500-28	-8	.440	.280	.440	.120	.070
SLSC102-11SA(L)A	MS51989-405-(L)	SLRLRR24SA7	MS51990-105P	.2500-20	.3125-24	-9	.500	.390	.560	.160	.076
SLSC112-11SA(L)A	MS51989-406-(L)	SLRLRR28SA8	MS51990-106P	.3125-18	.3750-24	-10	.560	.510	.690	.160	.076
SLSC122-12SA(L)A	MS51989-407-(L)	SLRLRR33SA9	MS51990-107P	.3750-16	.4375-20	-11	.620	.520	.750	.170	.106
SLSC132-13SA(L)A	MS51989-408-(L)	SLRLRR38SA9	MS51990-108P	.4375-14	.5000-20	-12	.690	.570	.810	.170	.106
SLSC142-14SA(L)A	MS51989-409-(L)	SLRLRR47SA10	MS51990-109P	.5000-13	.5625-18	-14	.810	.630	.880	.190	.106
SLSC152-16SA(L)A	MS51989-410-(L)	SLRLRR47SA10	MS51990-109P	.5625-12	.6250-18	-16	.940	.720	1.000	.220	.141
SLSC162-18SA(L)A	MS51989-411-(L)	SLRLRR56SA11	MS51990-110P	.6250-11	.7500-16	-17	1.000	.820	1.120	.220	.141
SLSC182-21SA(L)A	MS51990-412-(L)	SLRLRR64SA11	MS51990-111P	.7500-10	.8750-14	-19	1.120	.990	1.310	.220	.141

COARSE THREAD NUT END AND FINE THREAD STUD END

**SALES DRAWING
SOLIDWORKS DWG**

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE				SHUR-LOK CORPORATION IRVINE, CALIFORNIA			
DRAWING INTERPRETATION PER CC04012 WORKMANSHIP PRACTICES PER WAH005. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILLET RADII .020 (0.5) MAX. 125 (1.2) ALL SURFACES		DRAWN K. GAZI		03FEB03				TITLE STUD - RING LOCKED COARSE THREAD NUT END COARSE OR FINE THREAD STUD END			
TOLERANCES XX .XX .XX ANGLES [X] [XX] [XXX] ±.03 ±.010 ±.2 ±.018 ±.025		CHECKED D. KOEPPER		27MAR03		DRAWING NO.					
DIMENSION IN [] ARE MILLIMETERS		APPROVED K. GAZI		27MAR03		SCALE NONE		SIZE A		CAGE NO. 97393	
		MFG.				SHEET 2 OF 2		SLSC		NC	

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDN NO.	DATE	DRWEN	CHKED	APPO	REL.
NC	20509	SALES RELEASE			27MAR03	EM
A	22591	20SEP04	J.N	J.N	N.P	E.M

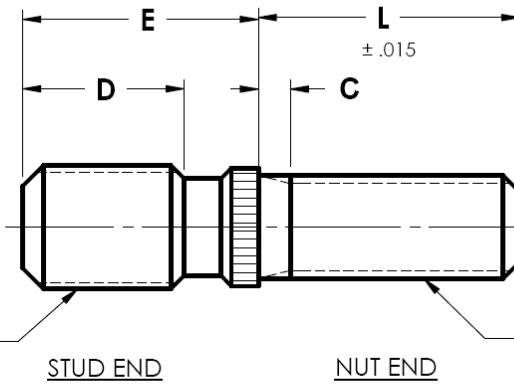


TABLE I

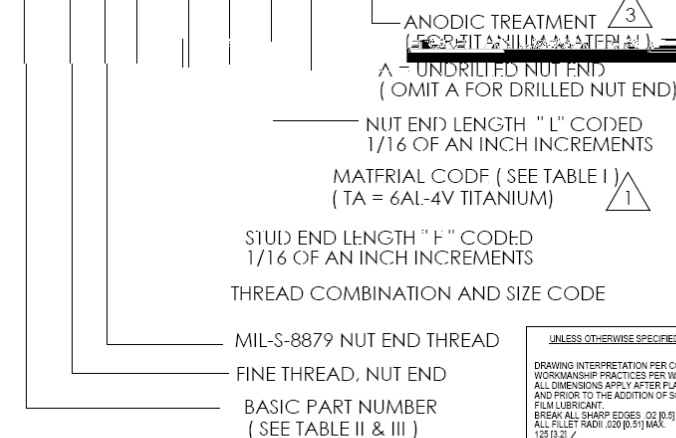
CODE	MATERIAL	SPECIFICATION	HEAT TREAT	FINISH
SA	4130 STEEL	MIL-S - 6758	125 KSI UTS MIN	CAD PLATE PER QQ-P-416, TYPE II, CLASS 3
SB	1117 STEEL	ASTM A108	NONE	
SM	303 SE CRES	ASTM A582 OR AMS5640		
SN	4340 STEEL OR 4140 STEEL	AMS6415, AMS6484 OR AMS6382	160 - 180 KSI UTS MIN	CAD PLATE PER QQ-P-416, TYPE II, CLASS 3
SU	A286 CRES	AMS5731, AMS5732, AMS5734 OR AMS5737	130 KSI UTS MIN	PASSIVATE PER AMS - QQ - P - 35
			140 - 200 KSI UTS MIN $\triangle 7$	CLEAN, DESCALE AND PASSIVATE PER ASTM A380 $\triangle 7$
S3	718 CRES	AMS5662	180 KSI UTS MIN	PASSIVATE PER AMS - QQ - P - 35
TA	6AL - 4V TITANIUM	AMS4967 OR MIL-T-9047 CONDITION A.	130 KSI UTS MIN	ANODIC TREATMENT PER AMS2488, TYPE II $\triangle 3$
TB	6AL - 4V TITANIUM	AMS4967	160 KSI UTS MIN	

NOTES:

- 1 MATERIAL: 4130 STEEL PER MIL - S - 6758. FOR OTHER MATERIAL SEE TABLE I.
2. HEAT TREAT: 125 KSI UTS MIN. (SEE TABLE I)
- 3 FINISH: SEE TABLE I. FOR TITANIUM WITH ANODIC TREATMENT PER AMS2488 - TYPE II, ADD SUFFIX EO301
- 4 THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO MIL-S-8879 CLASS 3B, FED-S1D-H28/2 CLASS 3B, OR NATIONAL CLASS 3 TAPEED HOLE.
- 5 STUDS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR PER MS51995.
- 6 MATING LOCKRING IS NOT INCLUDED WITH STUD. IT MUST BE ORDERED SEPARATELY.
- 7 THESE REQUIREMENTS ARE FOR PARTS INTERCHANGEABLE WITH MILITARY PART NUMBER MS51551C () SERIES.

EXAMPLE OF PART CODING

SLS F J 101 - 13 TA 15 A - EO301



UNLESS OTHERWISE SPECIFIED
DRAWING INTERPRETATION PER COMAS12 WORKMANSHIP PRACTICES PER WAI1026. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX. ALL FILLET RADIUS .020 (0.51) MAX. 125 (1.27) MIN.

SIGNATURE	DATE
DRAWN K. GAZI	03FEB03
CHECKED D. KOEPPER	27MAR03
APPROVED K. GAZI	27MAR03



SHUR-LOK CORPORATION
IRVINE, CALIFORNIA

TITLE STUD - RING LOCKED FINE THREAD NUT END
CODE OF FINE THREAD STUD END

SFJ
CAGE NO. 97393 SHEET 1 OF 2

SALES DRAWING
SOLIDWORKS DWG

DIMENSION IN [] ARE MILLIMETERS

SCALE NONE SIZE A

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDN NO.	DATE	DRWEN	CHKED	APPO	REL.
NC	20509	SALES RELEASE			27MAR03	EM
A	22591	20SEP04	JN	JN	N.P	EM

	C	D	E
MAX			
	±.015	±.015	±.015
.076	.250	.380	.500
	.380	.500	
	.500	.620	
.082	.280	.440	
	.410	.560	
	.540	.690	
.091	.390	.560	
	.510	.690	
	.630	.810	
.103	.510	.690	
	.700	.880	
	.880	1.060	
.103	.520	.750	
	.710	.940	
	.890	1.120	
.120	.570	.810	
	.760	1.000	
	.950	1.190	

STUD		LOCKRING		A	B
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF	MILITARY PART NO. REF	NUT END THREAD UNJF-3A	STUD END THREAD
SLSFJ81-6SA(5 THRU 8)A	MS51551D103 (5 THRU 8)	SLRLRR18SA6	MS51990-103P	.1640-36	.1900-32
SLSFJ81-8SA(5 THRU 8)A	MS51551D103A(5 THRU 8)				
SLSFJ81-10SA(5 THRU 8)A	MS51551D103B(5 THRU 8)				
SLSFJ91-7SA(6 THRU 8)A	MS51551D104 (6 THRU 8)	SLRLRR21SA6	MS51990-104P	.1900-32	.2500-20
SLSFJ91-9SA(6 THRU 8)A	MS51551D104A(6 THRU 8)				
SLSFJ91-11SA(6 THRU 8)A	MS51551D104B(6 THRU 8)				
SLSFJ101-9SA(6 THRU 9)A	MS51551D105 (6 THRU 9)	SLRLRR24SA7	MS51990-105P	.2500-28	.3125-18
SLSFJ101-11SA(6 THRU 9)A	MS51551D105A(6 THRU 9)				
SLSFJ101-13SA(6 THRU 9)A	MS51551D105B(6 THRU 9)				
SLSFJ111-11SA(8 THRU 10)A	MS51551D106 (8 THRU 10)	SLRLRR28SA8	MS51990-106P	.3125-24	.3750-16
SLSFJ111-14SA(8 THRU 10)A	MS51551D106A(8 THRU 10)				
SLSFJ111-17SA(8 THRU 10)A	MS51551D106B(8 THRU 10)				
SLSFJ121-12SA(9 THRU 11)A	MS51551D107 (9 THRU 11)	SLRLRR33SA9	MS51990-107P	.3750-24	.4375-14
SLSFJ121-15SA(9 THRU 11)A	MS51551D107A(9 THRU 11)				
SLSFJ121-18SA(9 THRU 11)A	MS51551D107B(9 THRU 11)				
SLSFJ131-13SA(10 THRU 12)A	MS51551D108 (10 THRU 12)	SLRLRR38SA9	MS51990-108P	.4375-20	.5000-13
SLSFJ131-16SA(10 THRU 12)A	MS51551D108A(10 THRU 12)				
SLSFJ131-19SA(10 THRU 12)A	MS51551D108B(10 THRU 12)				

TABLE III: FINE THREAD NUT END, FINE THREAD STUD END

	C	D	E
MAX			
	±.015	±.015	±.015
.076	.250	.380	.500
	.380	.500	
	.500	.620	
.082	.310	.440	
	.430	.560	
	.560	.690	
.091	.420	.560	
	.550	.690	
	.670	.810	
.103	.550	.690	
	.740	.880	
	.920	1.060	
.103	.550	.750	
	.740	.940	
	.920	1.120	
.120	.810	.810	
	.800	1.000	
	.990	1.190	

STUD		LOCKRING		A	B
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF	MILITARY PART NO. REF	NUT END THREAD UNJF-3A	STUD END THREAD
SLSFJ82-6SA(5 THRU 8)A	MS51551D203 (5 THRU 8)	SLRLRR18SA6	MS51990-103P	.1640-36	.1900-32
SLSFJ82-8SA(5 THRU 8)A	MS51551D203A(5 THRU 8)				
SLSFJ82-10SA(5 THRU 8)A	MS51551D203B(5 THRU 8)				
SLSFJ92-7SA(6 THRU 8)A	MS51551D204 (6 THRU 8)	SLRLRR21SA6	MS51990-104P	.1900-32	.2500-28
SLSFJ92-9SA(6 THRU 8)A	MS51551D204A(6 THRU 8)				
SLSFJ92-11SA(6 THRU 8)A	MS51551D204B(6 THRU 8)				
SLSFJ102-9SA(6 THRU 9)A	MS51551D205 (6 THRU 9)	SLRLRR24SA7	MS51990-105P	.2500-28	.3125-24
SLSFJ102-11SA(6 THRU 9)A	MS51551D205A(6 THRU 9)				
SLSFJ102-13SA(6 THRU 9)A	MS51551D205B(6 THRU 9)				
SLSFJ112-11SA(8 THRU 10)A	MS51551D206 (8 THRU 10)	SLRLRR28SA8	MS51990-106P	.3125-24	.3750-24
SLSFJ112-14SA(8 THRU 10)A	MS51551D206A(8 THRU 10)				
SLSFJ112-17SA(8 THRU 10)A	MS51551D206B(8 THRU 10)				
SLSFJ122-12SA(9 THRU 11)A	MS51551D207 (9 THRU 11)	SLRLRR33SA9	MS51990-107P	.3750-24	.4375-20
SLSFJ122-15SA(9 THRU 11)A	MS51551D207A(9 THRU 11)				
SLSFJ122-18SA(9 THRU 11)A	MS51551D207B(9 THRU 11)				
SLSFJ132-13SA(10 THRU 12)A	MS51551D208 (10 THRU 12)	SLRLRR38SA9	MS51990-108P	.4375-20	.5000-20
SLSFJ132-16SA(10 THRU 12)A	MS51551D208A(10 THRU 12)				
SLSFJ132-19SA(10 THRU 12)A	MS51551D208B(10 THRU 12)				

SHUR-LOK CORPORATION
IRVINE, CALIFORNIA

FUD - RING LOCKED
NEUTRAL THREAD NUT END
OR FINE THREAD STUD END

SLSFJ

REV. **A**

CASE NO. 97393 SHEET 2 OF 2


**SALES DRAWING
SOLIDWORKS DWG**

UNLESS OTHERWISE SPECIFIED

DRAWING INTERPRETATION PER CMM4012 WORKMANSHIP PRACTICES PER WAI1005 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILLET RADI .020 (0.5) MAX. 125 (5) ALL SURFACES.

TOLERANCES
XX .00X ANGLES [X] [X] [X] [X]
±.03 ±.010 ±2° ±0.8° ±0.25°

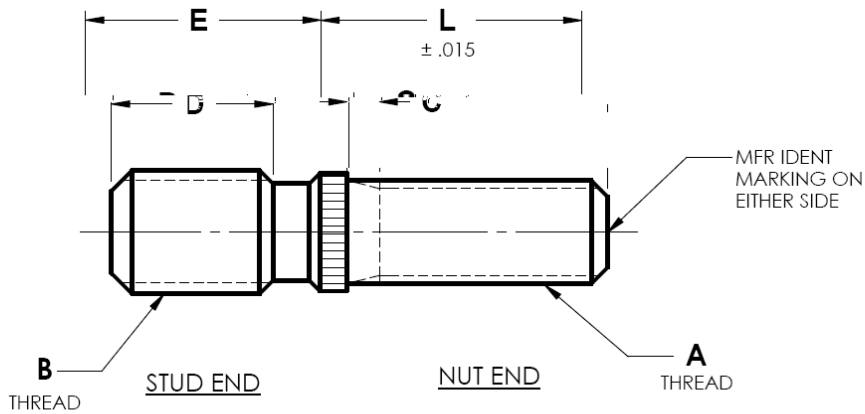
DIMENSION IN [] ARE MILLIMETERS

SIGNATURE	DATE	 SI S FI COARSE DRAWING NO. SCALE NONE SIZE
DRAWN: K. GAZI	03FEB03	
CHECKED: D. KOEPPER	27MAR03	
APPROVED: K. GAZI	27MAR03	
MFG: _____	_____	
QA: _____	_____	
ESR NO.		

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. This submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

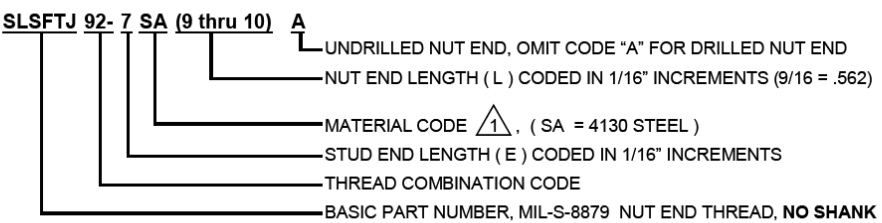
LTR	EDN NO.	DATE	DRAWN	CHECKED	APPROVED	REL.
NC	20510	SALES RELEASE			27MAR03	EM



NOTES:

- 1 MATERIAL: 4130 STEEL PER MIL-S-6758. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
2. HEAT TREAT: 125,000 PSI UTS MIN.
3. FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3.
4. STUDS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR PER MS51995.
- 5 THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H28/2 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- 6 MATING LOCKRING IS NOT INCLUDED WITH STUD IT MUST BE ORDERED SEPARATELY.

EXAMPLE OF PART CODING



SLSFTJ		REV.
SLSFTJ		NC
SIZE	CASE NO.	SHEET 1 OF 2
A	97393	

UNLESS OTHERWISE SPECIFIED		SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA
DRAWING INTERPRETATION PER COMAS12 WORKMANSHIP PRACTICES PER WA11005.		DRAWN: K. GAZI	02FEB03	
A. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.		APPROVED: K. GAZI		27MAR03
B. BREAK ALL SHARP EDGES, 0.01 (0.5) MAX.		MFG.		DRAWING NO.
C. ALL SURFACES.		Q.A.		SCALE
D. TOLERANCES:		ESR NO.		NONE
E. ANGLES: 22° ±0.25				
F. DIMENSION IN [] ARE MILLIMETERS				

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to local conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	ECN NO.	DATE	DRAWN	CHECKED	APPRO	REL.
NC	20510	SALES RELEASE			27MAR03	EM

TABLE I

STUD		LOCKRING		A	B	C	D	E
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF	MILITARY PART NO. REF	NUT END THREAD UNJF-3A	STUD END THREAD			
							±.015	±.015
SLSFTJ81-6SA(9 THRU 10)A	MS51551D03 (9 THRU 10)	SLRLRR18SA6	MS51990-103P	.1640-36	.1900-24	.076	.230	.440
SLSFTJ81-8SA(9 THRU 10)A	MS51551D03A (9 THRU 10)						.360	.560
SLSFTJ81-10SA(9 THRU 10)A	MS51551D103B (9 THRU 10)						.480	.690
SLSFTJ91-7SA(9 THRU 10)A	MS51551D104 (9 THRU 10)	SLRLRR21SA6	MS51990-104P	.1900-32	.2500-20	.082	.380	.390
SLSFTJ91-9SA(9 THRU 10)A	MS51551D104A (9 THRU 10)						.500	.510
SLSFTJ91-11SA(9 THRU 10)A	MS51551D104B (9 THRU 10)						.620	.630
SLSFTJ101-11SA(10 THRU 11)A	MS51551D105 (10 THRU 11)	SLRLRR24SA7	MS51990-105P	.2500-28	.3125-18	.091	.280	.560
SLSFTJ101-11SA(10 THRU 10)A	MS51551D105A (10 THRU 11)						.410	.690
SLSFTJ101-13SA(10 THRU 11)A	MS51551D105B (10 THRU 11)						.540	.810
SLSFTJ111-11SA(11 THRU 12)A	MS51551D106 (11 THRU 12)	SLRLRR28SA8	MS51990-106P	.3125-24	.3750-16	.103	.510	.690
SLSFTJ111-14SA(11 THRU 12)A	MS51551D106A(11 THRU 12)						.700	.880
SLSFTJ111-17SA(11 THRU 12)A	MS51551D106B(11 THRU 12)						.880	1.060
SLSFTJ121-12SA(12 THRU 13)A	MS51551D107 (12 THRU 13)	SLRLRR33SA9	MS51990-107P	.3750-24	.4375-14	.103	.520	.750
SLSFTJ121-15SA(12 THRU 13)A	MS51551D107A(12 THRU 13)						.710	.940
SLSFTJ121-18SA(12 THRU 13)A	MS51551D107B(12 THRU 13)						.890	1.120
SLSFTJ131-13SA(13 THRU 14)A	MS51551D108 (13 THRU 14)	SLRLRR38SA9	MS51990-108P	.4375-20	.5000-13	.120	.570	.810
SLSFTJ131-16SA(13 THRU 14)A	MS51551D108D(13 THRU 14)						.760	1.000
SLSFTJ131-19SA(13 THRU 14)A	MS51551D108B(13 THRU 14)						.950	1.190
SLSFTJ141-14SA(15 THRU 16)A	MS51551D109(15 THRU 16)	SLRLRR47SA10	MS51990-109P	.5000-12	.5625-12	.120	.630	.880
SLSFTJ141-17SA(15 THRU 16)A	MS51551D109A(15 THRU 16)						.810	1.060
SLSFTJ141-21SA(15 THRU 16)A	MS51551D109B(15 THRU 16)						1.060	1.310

**FINE THREAD NUT END
COARSE THRAD STUD END**

TABLE II

STUD		LOCKRING		A	B	C	D	E
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF	MILITARY PART NO. REF	NUT END THREAD UNJF-3A	STUD END THREAD			
							±.015	±.015
SLSFTJ82-6SA(9 THRU 10)A	MS51551D203 (9 THRU 10)	SLRLRR18SA6	MS51990-103P	.1640-36	.1900-32	.076	.250	.440
SLSFTJ82-8SA(9 THRU 10)A	MS51551D203A (9 THRU 10)						.380	.560
SLSFTJ82-10SA(9 THRU 10)A	MS51551D203B (9 THRU 10)						.500	.690
SLSFTJ92-7SA(9 THRU 10)A	MS51551D204 (9 THRU 10)	SLRLRR21SA6	MS51990-104P	.1900-32	.2500-28	.082	.310	.390
SLSFTJ92-9SA(9 THRU 10)A	MS51551D204A (9 THRU 10)						.430	.510
SLSFTJ92-11SA(9 THRU 10)A	MS51551D204B (9 THRU 10)						.560	.630
SLSFTJ102-9SA(10 THRU 11)A	MS51551D205 (10 THRU 11)	SLRLRR24SA7	MS51990-105P	.2500-28	.3125-24	.091	.420	.560
SLSFTJ102-11SA(10 THRU 10)A	MS51551D205A (10 THRU 11)						.550	.690
SLSFTJ102-13SA(10 THRU 11)A	MS51551D205B (10 THRU 11)						.670	.810
SLSFTJ112-11SA(11 THRU 12)A	MS51551D206 (11 THRU 12)	SLRLRR28SA8	MS51990-106P	.3125-24	.3750-24	.103	.550	.690
SLSFTJ112-14SA(11 THRU 12)A	MS51551D206A(11 THRU 12)						.740	.880
SLSFTJ112-17SA(11 THRU 12)A	MS51551D206B(11 THRU 12)						.920	1.060
SLSFTJ122-12SA(12 THRU 13)A	MS51551D207 (12 THRU 13)	SLRLRR33SA9	MS51990-107P	.3750-24	.4375-20	.103	.550	.750
SLSFTJ122-15SA(12 THRU 13)A	MS51551D207A(12 THRU 13)						.740	.940
SLSFTJ122-18SA(12 THRU 13)A	MS51551D207B(12 THRU 13)						.920	1.120
SLSFTJ132-13SA(13 THRU 14)A	MS51551D208 (13 THRU 14)	SLRLRR38SA9	MS51990-108P	.4375-20	.5000-20	.120	.610	.810
SLSFTJ132-16SA(13 THRU 14)A	MS51551D208D(13 THRU 14)						.800	1.000
SLSFTJ132-19SA(13 THRU 14)A	MS51551D208B(13 THRU 14)						.990	1.190
SLSFTJ142-14SA(15 THRU 16)A	MS51551D209(15 THRU 16)	SLRLRR47SA10	MS51990-109P	.5000-12	.5625-18	.120	.670	.880
SLSFTJ142-17SA(15 THRU 16)A	MS51551D209A(15 THRU 16)						.850	1.060
SLSFTJ142-21SA(15 THRU 16)A	MS51551D209B(15 THRU 16)						1.100	1.310

**FINE THREAD NUT END
FINE THRAD STUD END**

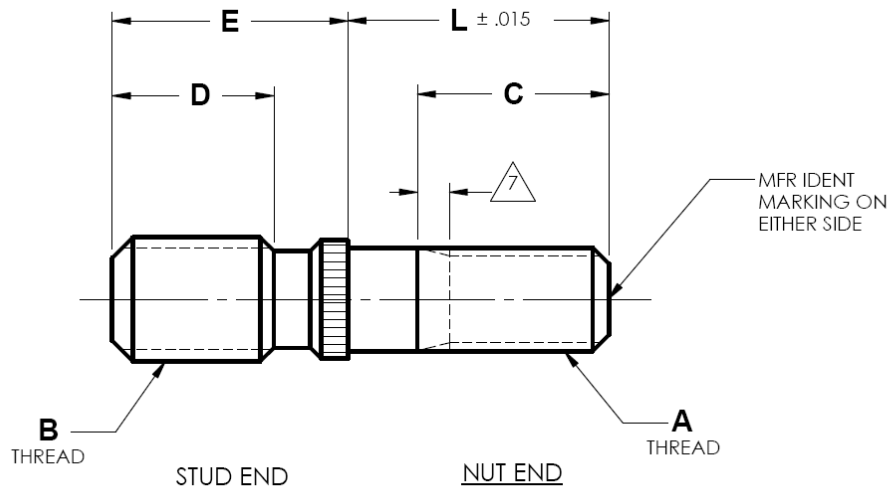
**SALES DRAWING
SOLIDWORKS DWG**

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE		SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
DRAWING INTERPRETATION PER CMM402 WORKMANSHIP PRACTICES PER WAH1005 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.9) MAX ALL FILED RADII (.0010-.01) MAX. 125 (1.2) ALL SURFACES.		DRAWN K. GAZI		03FEB03			
TOLERANCES XX .XXX ANGLES [X.X] [X.XX] ±.03 ±.010 ±.2° ±0.8 [±0.25] DIMENSION IN [] ARE MILLIMETERS		CHECKED D. KOEPPER		27MAR03		DRAWING NO.	
		APPROVED K. GAZI		27MAR03		REV. NC	
		MFG.				SCALE NONE	
		Q.A.				SIZE A	
		ESR NO.				CASE NO. 97393	
						SHEET 2 OF 2	

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

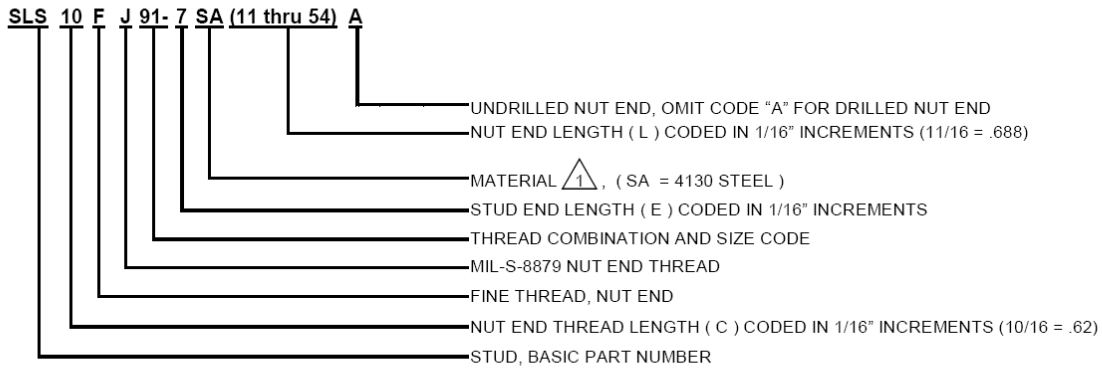
LTR	ECN NO.	DATE	DRAWN	CHECKED	APPROVED	REL.
NC	20511	SALES RELEASE			27MAR03	EM



NOTES:

- 1 MATERIAL: 4130 STEEL PER MIL-S-6758. SEE SHUR-LOK TSB 0018 TABLE I, FOR OTHER MATERIALS.
- 2. HEAT TREAT: 125,000 PSI UTS MIN.
- 3. FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3.
- 4 THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H28/2 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- 5. STUDS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR PER MS1995.
- 6 MATING LOCKRING IS NOT INCLUDED WITH STUD IT MUST BE ORDERED SEPARATELY.
- 7 2 MAX INCOMPLETE THREADS.
- 8. STUDS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR PER MS1995.
- 9 WHEN STUD END THREAD IS REQUIRED TO BE STANDARD THREAD (NOT SPECIAL PITCH), ADD SUFFIX CODE TO PART NUMBER AS FOLLOWS:
 "EO254" - FOR THD PER FED-STD-H28/2 CLASS 3A
 "EO302" - FOR THD PER MIL-S-8879 CLASS 3A.

EXAMPLE OF PART CODING



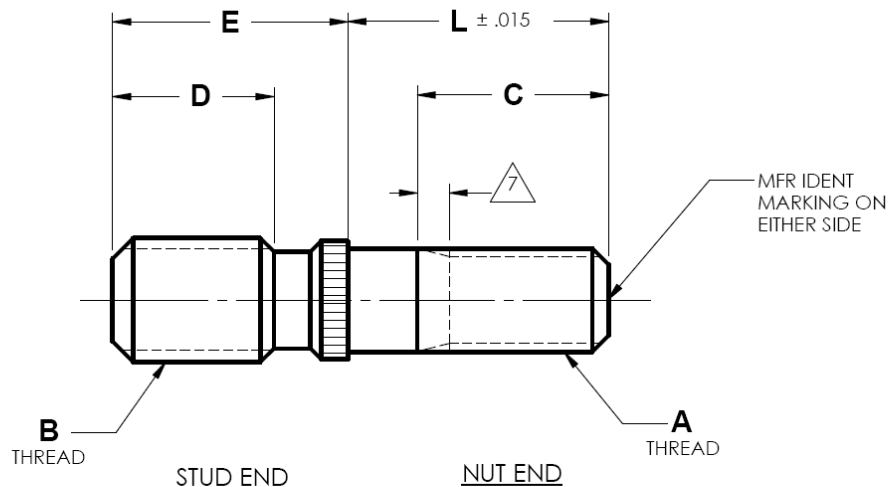
**SALES DRAWING
SOLIDWORKS DWG**

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE		SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
DRAWING INTERPRETATION PER CCM402 WORKMANSHIP PRACTICES PER W41005. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX. ALL FILED RADII .002 (0.1) MAX. 125 (L2) ALL SURFACES.		DRAWN	K. GAZI		03FEB03		
TOLERANCES		CHECKED	D. KOEPPER		27MAR03		TITLE STUD - RING LOCKED FINE THREAD NUT END COARSE AND FINE THREAD STUD END
.XX .XXX ANGLES (X.X) (X.XX) ±.03 ±.010 ±.2° ±0.8 ±0.25		APPROVED	K. GAZI		27MAR03		
DIMENSION IN [] ARE MILLIMETERS		MFG.					DRAWING NO.
		Q.A.					SLS-(-)FJ
		ESR NO.					REV NC
		SCALE	NONE		SIZE		A
		CAGE NO.	97393		SHEET 1 OF 2		

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability for parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

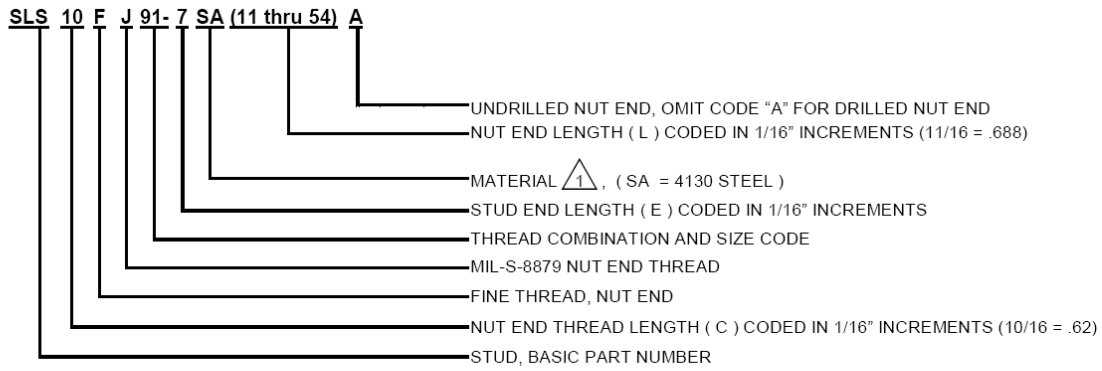
LTR	EON NO.	DATE	DRAWN	CHECKED	APPRO	REL
NC	20511	SALES RELEASE			27MAR03	EM



NOTES:

- 1 MATERIAL: 4130 STEEL PER MIL-S-6758. SEE SHUR-LOK TSB 0018 TABLE I, FOR OTHER MATERIALS.
- 2. HEAT TREAT: 125,000 PSI UTS MIN.
- 3. FINISH: CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3.
- 4 THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H28/2 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- 5. STUDS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR PER MS51995.
- 6 MATING LOCKRING IS NOT INCLUDED WITH STUD IT MUST BE ORDERED SEPARATELY.
- 7 2 MAX INCOMPLETE THREADS.
- 8. STUDS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR PER MS51995.
- 9 WHEN STUD END THREAD IS REQUIRED TO BE STANDARD THREAD (NOT SPECIAL PITCH), ADD SUFFIX CODE TO PART NUMBER AS FOLLOWS:
 "EO254" - FOR THD PER FED-STD-H28/2 CLASS 3A
 "EO302" - FOR THD PER MIL-S-8879 CLASS 3A.

EXAMPLE OF PART CODING



**SALES DRAWING
SOLIDWORKS DWG**

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE		SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
DRAWING INTERPRETATION PER CCM402 WORKMANSHIP PRACTICES PER WAH005. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX. ALL FILET RADIUS .005 (0.1) MAX. 125 (1.2) ALL SURFACES.		DRAWN	K. GAZI		03FEB03		
TOLERANCES		CHECKED	D. KOEPPER		27MAR03		TITLE
.XX .XXX ANGLES [D.X] [D.XX] ±.03 ±.010 ±.2° ±0.8 [±0.25]		APPROVED	K. GAZI		27MAR03		STUD - RING LOCKED FINE THREAD NUT END COARSE AND FINE THREAD STUD END
DIMENSION IN [] ARE MILLIMETERS		MFG.					DRAWING NO.
		Q.A.					SLS(-)FJ
		ESR NO.					REV. NC
		SCALE	NONE		SIZE A		CAGE NO. 97393
						SHEET 1 OF 2	

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to local conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDN NO.	DATE	DRAWN	CHKD	APPO	REL
NC	22839	SALES RELEASE			23FEB05	EM

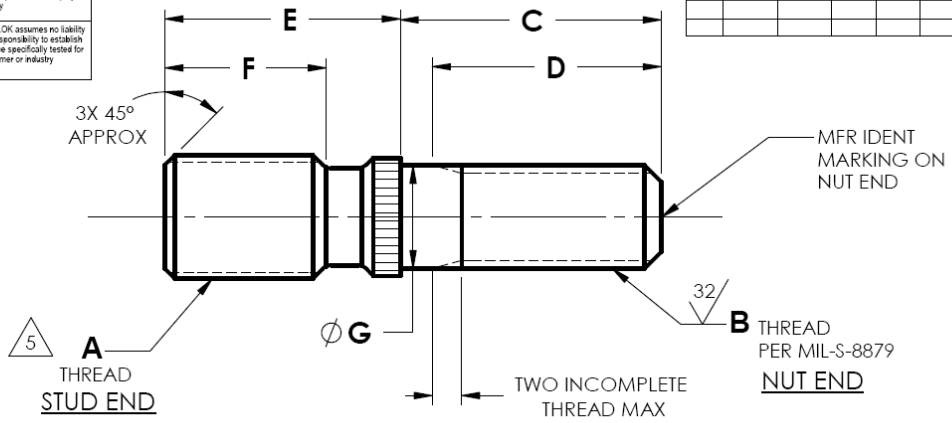


TABLE I

CODE	MATERIAL	SPECIFICATION	HEAT TREAT	FINISH
SU	A286 CRES	AMS5731, AMS5732, AMS5734 OR AMS5737	130 KSI UTS MIN	PASSIVATE PER AMS - QQ - P - 35
			140 - 200 KSI UTS MIN	CLEAN, DESCALE AND PASSIVATE PER ASTM A380

TABLE II

SHUR-LOK PART NUMBER	GENERAL ELECTRIC PART NUMBER	A STUD END THREAD 5	B NUT END THREAD UNJF-3A	C	D	E	F	Ø G	MATING LOCKRING 7
SLSFAJ121-12SU-16.5A	4038T93P05	.4380-14NS	.3750-24	1.02-1.04	.812 MIN	.735-.765	.505-.535	.370-.375	SLRLRR33SU9

NOTES:

- CUSTOMER: GENERAL ELECTRIC
DRAWING NUMBER: 4038T93
- MATERIAL: SEE TABLE I
- HEAT TREAT: SEE TABLE I
- FINISH: SEE TABLE I
- THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER PER MS51989 - APPLICABLE SIZE.
- MUST CONFORM TO GENERAL ELECTRIC SPEC:
a) M50TF9, CL-A (VENDOR DESIGNED PARTS)
b) P23TF4, CL-A (REVISION LETTER MARKING). MARKING SHALL INCLUDE LATEST REV LETTER.
- MATING LOCKRING IS NOT INCLUDED WITH STUD. IT MUST BE ORDERED SEPARATELY.

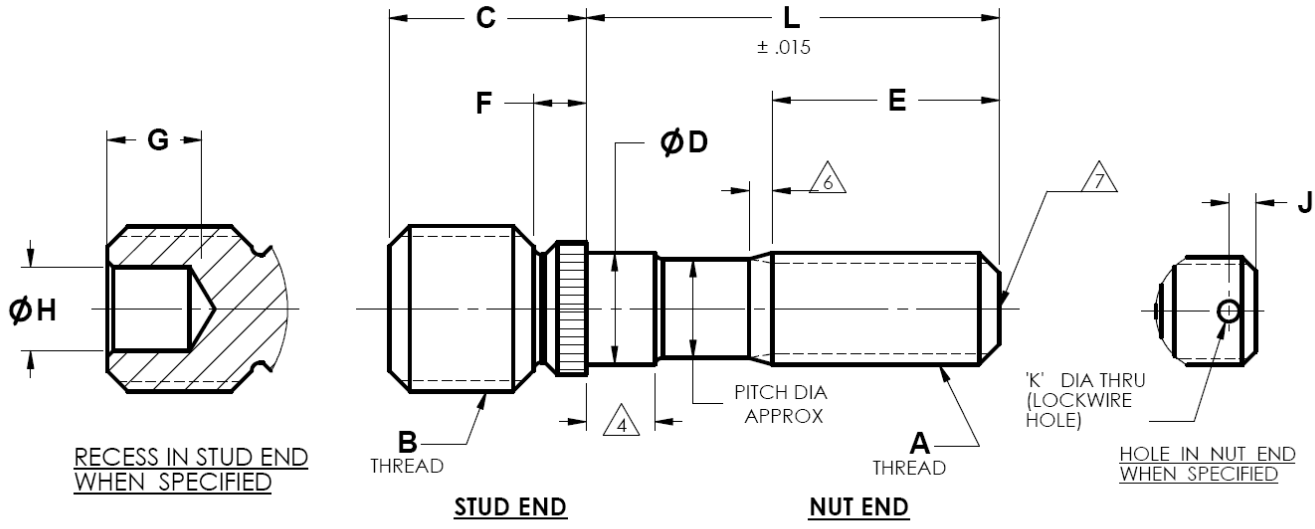
**SALES DRAWING
SOLIDWORKS DWG**

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA
DRAWING INTERPRETATION PER CMM4012 WORKMANSHIP PRACTICES PER VIA11005. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX. ALL FILET RADI .008 (0.2) MAX. 125 (1.2) ALL SURFACES.		DRAWN	J. NGUYEN	17FEB05	
TOLERANCES XX .XX ANGLES [X.X] [X.X] ±.03 ±.010 ±.2° ±.0 [8] ±.0 [25]		CHECKED	J. NGUYEN	17FEB05	TITLE
DIMENSION IN [] ARE MILLIMETERS		APPROVED	N. PATEL	23FEB05	STUD - LOCKED IN
		MFG.	G. BROCKWAY	23FEB05	DRAWING NO.
		Q.A.			SLSFAJ121-12SU-16.5A
		ESR NO.			REV. NC
		SCALE	NONE	SIZE	A
				CAGE NO.	97393
					SHEET 1 OF 1

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

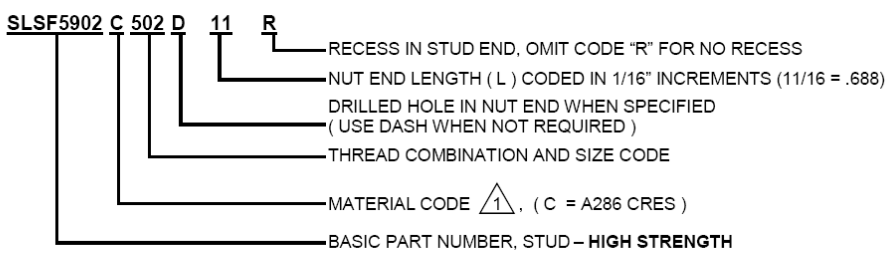
LTR	EDN NO.	DATE	DRAWN	CHECKED	APPRO	REL
NC	20514	SALES RELEASE			27MAR03	EM



NOTES:

- 1 MATERIAL: A286 CRES PER AMS5731, AMS5732, AMS5734 OR AMS5737. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- 2. HEAT TREAT: 140,000 PSI UTS MIN.
- 3. FINISH: CLEAN DESCALE AND PASSIVATE PER ASTM A380.
- 4 WHEN "L" LENGTH CODE IS EQUAL TO OR LONGER THAN CODES SHOWN IN COLUMN "M", SHANK LENGTH WILL BE (D MAX/2). OTHERWISE IT WILL BE REDUCED.
- 5 THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H28/2 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- 6 MAX 2 INCOMPLETE THREADS.
- 7 MANUFACTURER'S IDENTIFICATION MARKING.
- 8 MATING LOCKRING IS NOT INCLUDED WITH STUD. IT MUST BE ORDERED SEPARATELY.
- 9. STUDS ARE INSTALLED AND REMOVED PER SHUR-LOK TSB 0019 OR PER MS51995.

EXAMPLE OF PART CODING



**SALES DRAWING
SOLIDWORKS DWG**

<small>UNLESS OTHERWISE SPECIFIED</small> DRAWING INTERPRETATION PER CC4M012 WORKMANSHIP PRACTICES PER WAH005 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILET RADIUS .020 (0.5) MAX. 125 [A,2] <small>ALL SURFACES</small> <small>TOLERANCES</small> .XX .XXX ANGLES [D,X] [D,XX] ±.03 ±.010 ±.2° ±.0.8 [±0.25] DIMENSION IN [] ARE MILLIMETERS	SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA TITLE STUD - RING LOCKED HIGH STRENGTH SHORT, MEDIUM AND LONG DRAWING NO. SLSF5902 REV. NC	
	DRAWN K. GAZI	03FEB03		
	CHECKED D. KOEPPER	27MAR03		
	APPROVED K. GAZI	27MAR03		
ESR NO.	SCALE NONE	SIZE A	CAGE NO. 97393	SHEET 1 OF 3

NOTICE: This drawing embodies a CONFIDENTIAL, proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	ED. NO.	DATE	DRAWN	CHECKED	APPRO	REL
NC						SEE SHEET 1

TABLE I : SHORT STUD END LENGTH




STUD		LOCKRING		A	B	C	D
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF 	MILITARY PART NO. REF 	NUT END THREAD UNJF-3A	STUD END THREAD 	±.020	DIA
SLSF5902C502 - (10 THRU 64)	MS51992C502 - (10 THRU 64)	SLRLRR1997E102	MS51997E102P	.1900-32	.3125-24	.386	.186-.189
SLSF5902C503 - (13 THRU 64)	MS51992C503 - (13 THRU 64)	SLRLRR1997E103	MS51997E103P	.2500-28	.3750-24	.486	.246-.249
SLSF5902C504 - (15 THRU 64)	MS51992C504 - (15 THRU 64)	SLRLRR1997E104	MS51997E104P	.3125-24	.4375-20	.627	.309-.312
SLSF5902C505 - (17 THRU 64)	MS51992C505 - (17 THRU 64)	SLRLRR1997E105	MS51997E105P	.3750-24	.5000-20	.762	.371-.374
SLSF5902C506 - (19 THRU 64)	MS51992C506 - (19 THRU 64)	SLRLRR1997E106	MS51997E106P	.4375-20	.6250-18	.808	.433-.437
SLSF5902C507 - (20 THRU 64)	MS51992C507 - (20 THRU 64)	SLRLRR1997E107	MS51997E107P	.5000-20	.7500-16	.883	.495-.499
SLSF5902C508 - (23 THRU 64)	MS51992C508 - (23 THRU 64)	SLRLRR1997E108	MS51997E108P	.6250-18	.8750-14	1.153	.620-.624

TABLE I CONTINUED


STUD		E	F	G	H	J	K	M
SHUR-LOK PART NO.	MILITARY PART NO.	±.015	±.015	REF	±.005	±.015	DIA + .005 - .002	
SLSF5902C502 - (10 THRU 64)	MS51992C502 - (10 THRU 64)	.469	.128	.205	.174	.120	.067	10
SLSF5902C503 - (13 THRU 64)	MS51992C503 - (13 THRU 64)	.594	.142	.281	.202	.160	.067	13
SLSF5902C504 - (15 THRU 64)	MS51992C504 - (15 THRU 64)	.688	.176	.380	.205	.160	.067	15
SLSF5902C505 - (17 THRU 64)	MS51992C505 - (17 THRU 64)	.750	.200	.480	.222	.170	.096	17
SLSF5902C506 - (19 THRU 64)	MS51992C506 - (19 THRU 64)	.812	.200	.517	.324	.170	.096	19
SLSF5902C507 - (20 THRU 64)	MS51992C507 - (20 THRU 64)	.875	.200	.563	.438	.190	.096	20
SLSF5902C508 - (23 THRU 64)	MS51992C508 - (23 THRU 64)	1.000	.255	.773	.470	.220	.128	23

TABLE II : MEDIUM STUD END LENGTH





STUD		LOCKRING		A	B	C	D
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF 	MILITARY PART NO. REF 	NUT END THREAD UNJF-3A	STUD END THREAD 	±.020	DIA
SLSF5902C642 - (10 THRU 64)	MS51992C642 - (10 THRU 64)	SLRLRR1997E102	MS51997E102P	.1900-32	.3125-24	.386	.186-.189
SLSF5902C643 - (13 THRU 64)	MS51992C643 - (13 THRU 64)	SLRLRR1997E103	MS51997E103P	.2500-28	.3750-24	.486	.246-.249
SLSF5902C644 - (15 THRU 64)	MS51992C644 - (15 THRU 64)	SLRLRR1997E104	MS51997E104P	.3125-24	.4375-20	.627	.309-.312
SLSF5902C645 - (17 THRU 64)	MS51992C645 - (17 THRU 64)	SLRLRR1997E105	MS51997E105P	.3750-24	.5000-20	.762	.371-.374
SLSF5902C646 - (19 THRU 64)	MS51992C646 - (19 THRU 64)	SLRLRR1997E106	MS51997E106P	.4375-20	.6250-18	.808	.433-.437
SLSF5902C647 - (20 THRU 64)	MS51992C647 - (20 THRU 64)	SLRLRR1997E107	MS51997E107P	.5000-20	.7500-16	.883	.495-.499
SLSF5902C648 - (23 THRU 64)	MS51992C648 - (23 THRU 64)	SLRLRR1997E108	MS51997E108P	.6250-18	.8750-14	1.153	.620-.624

TABLE II CONTINUED

STUD		E	F	G	H	J	K	M
SHUR-LOK PART NO.	MILITARY PART NO.	±.015	±.015	REF	±.005	±.015	DIA + .005 - .002	
SLSF5902C642 - (10 THRU 64)	MS51992C642 - (10 THRU 64)	.469	.128	.252	.174	.120	.067	10
SLSF5902C643 - (13 THRU 64)	MS51992C643 - (13 THRU 64)	.594	.142	.353	.202	.160	.067	13
SLSF5902C644 - (15 THRU 64)	MS51992C644 - (15 THRU 64)	.688	.176	.478	.205	.160	.067	15
SLSF5902C645 - (17 THRU 64)	MS51992C645 - (17 THRU 64)	.750	.200	.611	.222	.170	.096	17
SLSF5902C646 - (19 THRU 64)	MS51992C646 - (19 THRU 64)	.812	.200	.657	.324	.170	.096	19
SLSF5902C647 - (20 THRU 64)	MS51992C647 - (20 THRU 64)	.875	.200	.718	.438	.190	.096	20
SLSF5902C648 - (23 THRU 64)	MS51992C648 - (23 THRU 64)	1.000	.255	.984	.470	.220	.128	23



SHUR-LOK CORPORATION
IRVINE, CALIFORNIA

TITLE: STUD - RING LOCKED
HIGH STRENGTH
SHORT, MEDIUM AND LONG

DRAWING NO. **SLSF5902** REV. **NC**

SCALE: NONE SIZE **A** CASE NO. 97393 SHEET 2 OF 3

SALES DRAWING
SOLIDWORKS DWG

NOTICE: This drawing and/or design is CONFIDENTIAL, proprietary design or product of SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and distribution regarding this drawing is expressly reserved. This document and/or design is intended for a specific purpose, and the recipient agrees to accept the design and to supply of materials and information regarding its use and intended purpose, and is responsible for other projects and equipment that may be developed. All patent rights herein are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

The part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability for use in conditions not covered by design parameters. It is the user's responsibility to conduct a stress/strain analysis for part performance. The stress/strain analysis must be specifically noted for during part qualification in order for this release to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	CHKD	DATE	DRAWN	CHKD	APPD	REL.
NC						SEE SHEET 1

TABLE III : LONG STUD END LENGTH





STUD		LOCKRING		A	B	C	D
SHUR-LOK PART NO.	MILITARY PART NO.	SHUR-LOK PART NO. REF 	MILITARY PART NO. REF 	NUT END THREAD UNJF-3A	STUD END THREAD 	$\pm .020$	DIA
SLSF5902C802 - (10 THRU 64)	MS51992C802 - (10 THRU 64)	SLRLRR1997E102	MS51997E102P	1900-32	3125-18	.511	.186 - .189
SLSF5902C803 - (13 THRU 64)	MS51992C803 - (13 THRU 64)	SLRLRR1997E103	MS51997E103P	2500-28	3750-16	.673	.246-.249
SLSF5902C804 - (15 THRU 64)	MS51992C804 - (15 THRU 64)	SLRLRR1997E104	MS51997E104P	3125-24	4375-14	.868	.309-.312
SLSF5902C805 - (17 THRU 64)	MS51992C805 - (17 THRU 64)	SLRLRR1997E105	MS51997E105P	3750-24	5000-13	1.076	.371-.374
SLSF5902C806 - (19 THRU 64)	MS51992C806 - (19 THRU 64)	SLRLRR1997E106	MS51997E106P	4375-20	6250-11	1.155	433-.437
SLSF5902C807 - (20 THRU 64)	MS51992C807 - (20 THRU 64)	SLRLRR1997E107	MS51997E107P	5000-20	7500-10	1.267	495-.499
SLSF5902C808 - (23 THRU 64)	MS51992C808 - (23 THRU 64)	SLRLRR1997E108	MS51997E108P	6250-18	8750-9	1.656	620-.624

TABLE III CONTINUED

STUD		E	F	G	H	J	K	M
SHUR-LOK PART NO.	MILITARY PART NO.	$\pm .015$	$\pm .015$	REF	DIA $\pm .005$	$\pm .015$	DIA $+ .005$ $- .002$	
SLSF5902C802 - (10 THRU 64)	MS51992C802 - (10 THRU 64)	.469	.128	.330	.146	.120	.067	10
SLSF5902C803 - (13 THRU 64)	MS51992C803 - (13 THRU 64)	.594	.142	.468	.157	.160	.067	13
SLSF5902C804 - (15 THRU 64)	MS51992C804 - (15 THRU 64)	.688	.176	.621	.153	.160	.067	15
SLSF5902C805 - (17 THRU 64)	MS51992C805 - (17 THRU 64)	.750	.200	.794	.146	.170	.096	17
SLSF5902C806 - (19 THRU 64)	MS51992C806 - (19 THRU 64)	.812	.200	.864	.239	.170	.096	19
SLSF5902C807 - (20 THRU 64)	MS51992C807 - (20 THRU 64)	.875	.200	.947	.369	.190	.096	20
SLSF5902C808 - (23 THRU 64)	MS51992C808 - (23 THRU 64)	1.000	.255	1.276	.378	.220	.128	23

SALES DRAWING
SOLIDWORKS DWG

		SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
TITLE STUD - RING LOCKED HIGH STRENGTH SHORT, MEDIUM AND LONG			
DRAWING NO.		REV.	
SLSF5902		NC	
SCALE NONE	SIZE A	CAGE NO. 97363	SHEET 3 OF 3

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically tested for during part qualification in order for this interval to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LTR	EDN NO	DATE	DRAWN	CHEK	APPR	REL
NC	20516	SALES RELEASE		27MAR03		EM

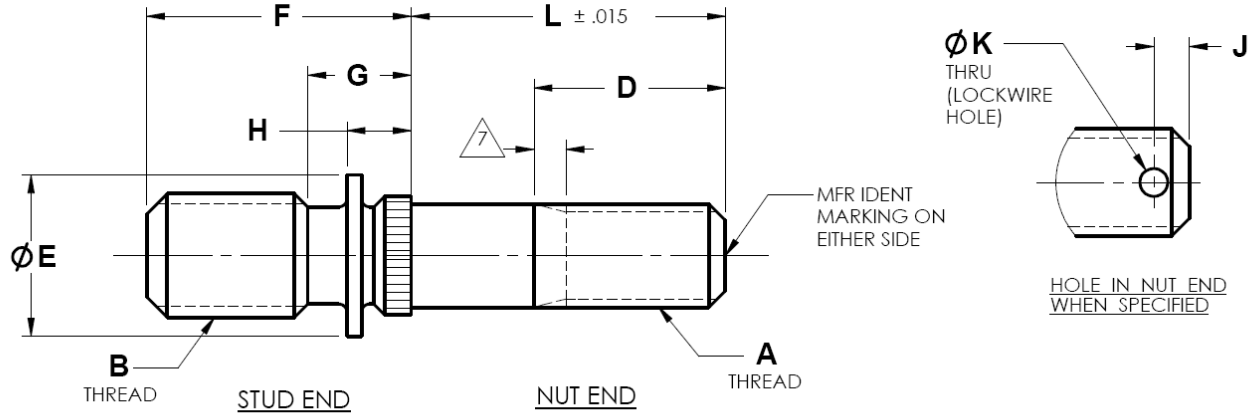


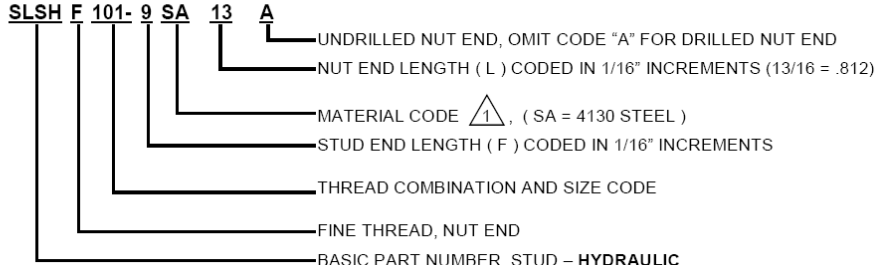
TABLE I

STUD PART NUMBER	LOCKRING PART NUMBER REF	A NUT END THREAD	B STUD END THREAD	C	D	E DIA	F	G	H	J	K
	8	UNF-3A	5	4	±.015	+ .000 - .005	±.015	±.005	±.005	±.015	DIA
SLSHF101-9SA(JA)	SLRL24SA5	.2500-28	.3125-18	-10	.500	.371	.560	.221	.138	.160	.076
SLSHF111-11SA(JA)	SLRL28SA6	.3125-24	.3750-16	-11	.560	.433	.690	.240	.147	.160	.076
SLSHF121-12SA(JA)	SLRL33SA7	.3750-24	.4375-14	-12	.620	.510	.750	.283	.176	.170	.106
SLSHF131-13SA(JA)	SLRL38SA7	.4375-20	.5000-13	-13	.690	.588	.810	.291	.176	.170	.106
SLSHF144-14SA(JA)	SLRL47SA8	.5000-20	.6250-11	-15	.810	.729	.880	.327	.191	.190	.106
SLSHF151-16SA(JA)	SLRL47SA8	.5625-18	.6250-11	-17	.940	.729	1.000	.327	.191	.220	.141
SLSHF161-18SA(JA)	SLRL56SA8	.6250-18	.7500-10	-18	1.000	.870	1.120	.341	.191	.220	.141
SLSHF181-21SA(JA)	SLRL64SA8	.7500-16	.8750-9	-20	1.120	.995	1.310	.358	.191	.220	.141
SLSHF201-24SA(JA)	SLRL72SA8	.8750-14	1.0000-8	-22	1.250	1.120	1.500	.378	.191	.250	.141

NOTES:

- 1 MATERIAL: 4130 STEEL PER MIL-S-6758. SEE SHUR-LOK TSB 0018 FOR OTHER MATERIALS.
- 2 HEAT TREAT: 125,000 PSI UTS MIN.
- 3 FINISH: CADMIUM PLATE PER AMS SPEC 4116, TYPE I, CLASS C.
- 4 DIMENSION "L" WILL BE THREADED ITS FULL LENGTH WHEN IT IS "C" DASH LENGTH OR SHORTER. FOR NUT END LENGTH SEE PART CODING.
- 5 THE STUD END THREAD HAS A SPECIAL PITCH DIAMETER AND MINOR DIAMETER WHICH INSTALLS INTO A MIL-S-8879 CLASS 3B, FED-STD-H28/2 CLASS 3B, OR NATIONAL CLASS 3 TAPPED HOLE.
- 6 HYDRAULIC STUDS ARE INSTALLED PER SHUR-LOK TSB 0015.
- 7 MAX 2 INCOMPLETE THREADS.
- 8 MATING LOCKRING IS NOT INCLUDED WITH STUD. IT MUST BE ORDERED SEPARATELY.

EXAMPLE OF PART CODING



<small>UNLESS OTHERWISE SPECIFIED</small> DRAWING INTERPRETATION PER CCMD02 WORKMANSHIP PRACTICES PER WAH005 ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX ALL FILET RADI .005 (0.1) MAX .125 (3.2) ALL SURFACES. TOLERANCES .XX .XXX ANGLES [D.X] [D.XX] ±.03 ±.010 ±.2" ±0.8] ±0.25] DIMENSION IN [] ARE MILLIMETERS	SIGNATURE	DATE	SHUR-LOK CORPORATION IRVINE, CALIFORNIA TITLE STUD RING LOCKED HYDRAULIC, 150 PSI DRAWING NO. SLSHF REV NC	
	DRAWN	K. GAZI		03FEB03
	CHECKED	D. KOEPPER		27MAR03
	APPROVED	K. GAZI		27MAR03
MFG.			SCALE NONE	
Q.A.			SHEET 1 OF 1	

SALES DRAWING
SOLIDWORKS DWG

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design developed by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sales rights regarding the same are expressly reserved. It is intended under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disseminate any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights herein are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability for parts not subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failures for part performance. The Mean Time Between Failures must be specifically stated for design part qualification in order for the internal to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LR	CHK NO.	DATE	DRAWN	CHKD	APPO	REL.
NC	22651	SALES RELEASE			29OCT04	EM
A	22750	07JAN05	J.N	G.B	J.N	EM

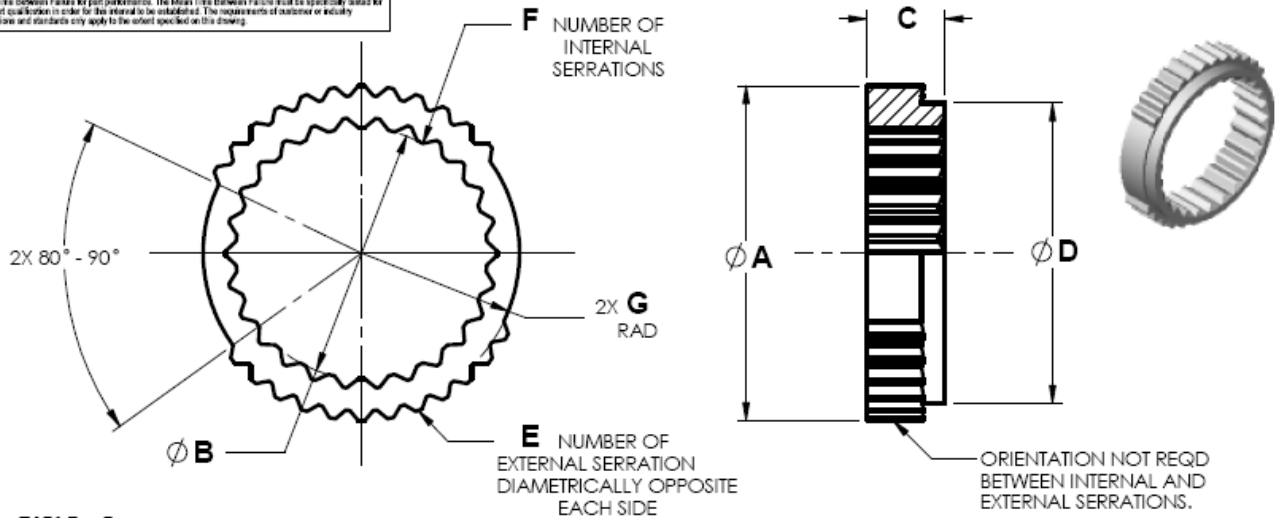
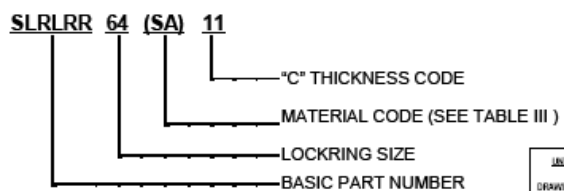


TABLE I

LOCKRING				ϕA	ϕB	C	ϕD	E	F	G RAD
(1117 MATERIAL)	MILITARY PART NO. REF	(A286 MATERIAL)	MILITARY PART NO. REF	+0.005 -0.004	+0.004 -0.003	+0.005	+0.005	REF		REF
SLRLRR16SA5	MS51990-102P	SLRLRR16SU5	MS51990E102P	.274	.161	.084	.223	10	14	.120
SLRLRR18SA6	MS51990-103P	SLRLRR18SU6	MS51990E103P	.308	.189	.099	.255	10	16	.135
SLRLRR21SA6	MS51990-104P	SLRLRR21SU6	MS51990E104P	.354	.213	.099	.298	12	13	.159
SLRLRR24SA7	MS51990-105P	SLRLRR24SU7	MS51990E105P	.399	.266	.112	.343	12	17	.180
SLRLRR28SA8	MS51990-106P	SLRLRR28SU8	MS51990E106P	.468	.323	.138	.400	14	20	.214
SLRLRR31SA9	-	SLRLRR31SU9	-	.514	.375	.145	.452	16	23	.236
SLRLRR33SA9	MS51990-107P	SLRLRR33SU9	MS51990E107P	.545	.390	.145	.480	18	24	.252
SLRLRR38SA7	-	SLRLRR38SU7	-	.624	.468	.112	.560	20	26	.293
SLRLRR38SA9	MS51990-108P	SLRLRR38SU9	MS51990E108P	.624	.468	.145	.560	20	26	.293
SLRLRR47SA10	MS51990-109P	SLRLRR47SU10	MS51990E109P	.767	.574	.161	.702	22	26	.362
SLRLRR56SA11	MS51990-110P	SLRLRR56SU11	MS51990E110P	.910	.695	.176	.837	24	30	.431
SLRLRR64SA11	MS51990-111P	SLRLRR64SU11	MS51990E111P	1.040	.795	.176	.958	20	30	.492
SLRLRR72SA11	MS51990-112P	SLRLRR72SU11	MS51990E112P	1.170	.908	.176	1.078	22	38	.551
SLRLRR82SA12	MS51990-113P	SLRLRR82SU12	MS51990E113P	1.326	1.035	.193	1.232	20	36	.629
SLRLRR90SA12	MS51990-114P	SLRLRR90SU12	MS51990E114P	1.456	1.189	.193	1.371	20	48	.692
SLRLRR100SA12	MS51990-115P	SLRLRR100SU12	MS51990E115P	1.611	1.282	.193	1.509	16	42	.770

- NOTES:
- 1 MATERIAL (SEE TABLE III)
FOR EXAMPLE: SA - 4130 ALLOY STEEL
PER AMS 6370 OR 4140 PER AMS 6382
OR 8740 PER AMS 6322.
 - 2 FINISH : SEE TABLE III
 - 3 HARDNESS: SEE TABLE III
 - 4. MACHINED SURFACES TO BE 125 MICRINCH Ra,
EXCEPT SERRATIONS.

EXAMPLE OF PART CODING



**SALES DRAWING
SOLIDWORKS DWG**

UNLESS OTHERWISE SPECIFIED		SIGNATURE		DATE		SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
DRAWING INTERPRETATION PER COMPANY WORKMANSHIP PRACTICES PER PARTS AND PRIOR TO THE ADDITION OF SOLID FILLSUBS/CAM		DRAWN	J. NGUYEN		29OCT04		
BREAK ALL SHARP EDGES 02 (0.5) MAX ALL FILLET RADI 020 (0.5) MAX TO (L/A) ALL SURFACES		CHECKED	J. NGUYEN		29OCT04	DRAWING NO.	
TOLERANCES		APPROVED	N. PATEL		29OCT04		REV.
.XX .XX ANGLES (X.X) (X.X) ±.01 ±.010 ±.02 ±.010 ±.02		MFG.				A	
DIMENSION IN () ARE MILLIMETERS		QA					
		ERR NO.		SCALE	NONE	SIZE	A
				DWG NO.	97383	SHEET	1 OF 2

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sale rights regarding the same are expressly reserved. It is understood under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights herein are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability if parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically noted for during part qualification in order for the intent to be established. The requirements of customer or industry specifications and standards city apply to the extent specified on this drawing.

LR	REV. NO.	DATE	DRAWN	CHECKED	APPROVED	FILED
A						SEE SHEET 1

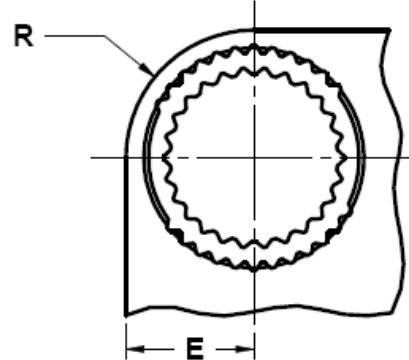


TABLE II

SHUR-LOK PART NO.	MILITARY PART NO. REF	SHUR-LOK PART NO.	MILITARY PART NO. REF	CBORE DIA +.003 -.000		R MIN	E MIN
				AL	MAG		
SLRLRR16SA5	MS51990-102P	SLRLRR16SU5	MS51990E102P	.250	.258	.17	.155
SLRLRR18SA6	MS51990-103P	SLRLRR18SU6	MS51990E103P	.281	.291	.20	.175
SLRLRR21SA6	MS51990-104P	SLRLRR21SU6	MS51990E104P	.328	.337	.22	.200
SLRLRR24SA7	MS51990-105P	SLRLRR24SU7	MS51990E105P	.375	.381	.25	.230
SLRLRR28SA8	MS51990-106P	SLRLRR28SU8	MS51990E106P	.437	.448	.31	.270
SLRLRR31SA9	-	SLRLRR31SU9	-	.484	.495	.34	.300
SLRLRR33SA9	MS51990-107P	SLRLRR33SU9	MS51990E107P	.515	.526	.36	.320
SLRLRR38SA7	-	SLRLRR38SU7	-	.593	.601	.42	.365
SLRLRR38SA9	MS51990-108P	SLRLRR38SU9	MS51990E108P	.593	.601	.42	.365
SLRLRR47SA10	MS51990-109P	SLRLRR47SU10	MS51990E109P	.734	.747	.50	.450
SLRLRR56SA11	MS51990-110P	SLRLRR56SU11	MS51990E110P	.875	.888	.62	.535
SLRLRR64SA11	MS51990-111P	SLRLRR64SU11	MS51990E111P	1.000	1.015	.69	.605
SLRLRR72SA11	MS51990-112P	SLRLRR72SU11	MS51990E112P	1.125	1.139	.75	.675
SLRLRR82SA12	MS51990-113P	SLRLRR82SU12	MS51990E113P	1.281	1.298	.89	.765
SLRLRR90SA12	MS51990-114P	SLRLRR90SU12	MS51990E114P	1.406	1.427	.95	.830
SLRLRR100SA12	MS51990-115P	SLRLRR100SU12	MS51990E115P	1.562	1.579	1.06	.915


TABLE III

CODE	MATERIAL	SPECIFICATION	HEAT TREAT	FINISH
SA	4130 STEEL OR 4140 STEEL OR 8740 STEEL	PER AMS 6370 OR PER AMS 6382 OR PER AMS 6322	CASE HARDEN 36-45 HRC	CAD PLATE PER QQ-P-416, TYPE II, CLASS 3
SB	1117 STEEL	ASTM A108		
SM	303 SE CRES	ASTM A581 OR ASTM A582	NONE	PASSIVATE PER AMS - QQ - P - 35
SU	A286 CRES	AMS5731, AMS5732, OR AMS5734	269 HB MIN	PASSIVATE PER AMS - QQ - P - 35
S3C	718 CRES	AMS5662	230 KSI UTS MIN	

LOCKRING INSTALLATION:

"R" AND "E" ARE MINIMUM BOSS DIMENSIONS FOR INSTALLATION INTO ALUMINUM OR MAGNESIUM PARENT MATERIAL.

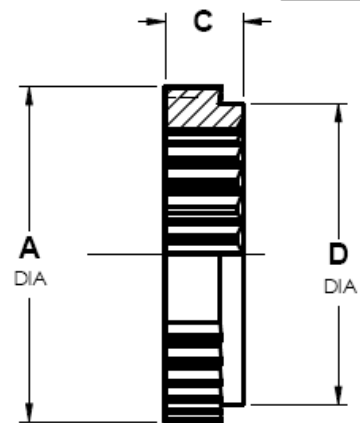
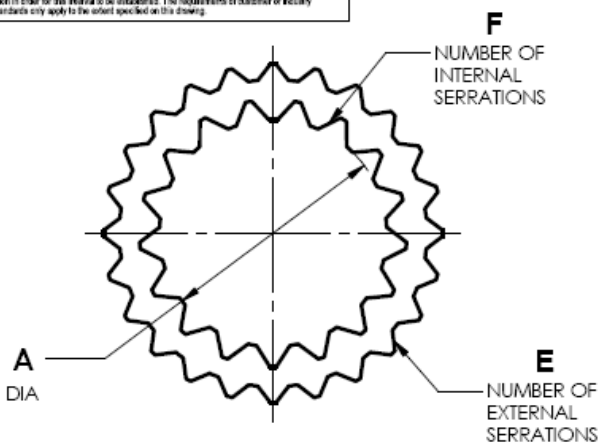
**SALES DRAWING
SOLIDWORKS DWG**

		SHUR-LOK CORPORATION IRVINE, CALIFORNIA	
TITLE		LOCKRING MS51990-() TYPE	
DRAWING NO.		SLRLRR	
SCALE		SIDE	
NONE		A	
DAGENO.		SHEET 2 OF 2	
97363			

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design originated by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sales rights regarding the same are expressly reserved. It is submitted under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights hereto are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability of parts are subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failure for part performance. The Mean Time Between Failure must be specifically stated for design part qualification in order for the material to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LR	ECR NO.	DATE	DRAWN	CHKD	APPR	REL.
NC	20996	SALES RELEASE			12MAR03	EM
A	21989	18DEC03	BS	NP	BS	EM
B	22894	03FEB05	DL	NP	NP	EM



NOTES:

1 MATERIAL: SB - 1117 STEEL PER ASTM A108.
SU - A286 CRES PER AMS5731 OR AMS5734.

NOTE: SEE SHUR-LOK TSB0018 FOR OTHER MATERIALS.

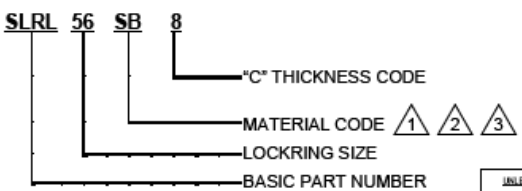
2 FINISH: SB - CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CL3.
SU - PASSIVATE PER AMS-QQ-P-35.

3 HARDNESS: SB - CASE HARDENED TO 36-45 HRC.
SU - HARDENED TO 289 HB MIN.
NOTE: FOR 1117 STEEL CASE HARDENED TO 50-60 HRC, ADD SUFFIX E0238 TO LOCKRING PART NUMBER. (EXAMPLE: SLRL56SB8E0238)

TABLE I

LOCKRING PART NUMBER		A DIA	B DIA	C	D DIA	E	F
(1117 MATERIAL)	(A286 MATERIAL)	±.005	±.005	±.005	±.005		
SLRL21SB4	SLRL21SU4	.354	.213	.068	.298	24	13
SLRL24SB5	SLRL24SU5	.399	.266	.081	.343	24	17
SLRL28SB5	SLRL28SU5	.468	.323	.081	.400	26	20
SLRL28SB6	SLRL28SU6	.468	.323	.099	.400	26	20
SLRL31SB6	SLRL31SU6	.514	.375	.099	.452	30	23
SLRL33SB6	SLRL33SU6	.545	.390	.099	.480	34	24
SLRL33SB7	SLRL33SU7	.545	.390	.115	.480	34	24
SLRL38SB7	SLRL38SU7	.624	.468	.115	.560	36	26
SLRL38SB9	SLRL38SU9	.624	.468	.145	.560	36	26
SLRL43SB7	SLRL43SU7	.699	.520	.115	.636	36	26
SLRL47SB8	SLRL47SU8	.767	.574	.130	.702	40	26
SLRL56SB8	SLRL56SU8	.910	.695	.130	.837	44	30
SLRL64SB8	SLRL64SU8	1.040	.795	.130	.958	38	30
SLRL72SB8	SLRL72SU8	1.170	.908	.130	1.078	40	38

EXAMPLE OF PART CODING



SALES DRAWING
SOLIDWORKS DWG

UNLESS OTHERWISE SPECIFIED

DRAWING INTERPRETATION PER COMBUSTION WORKSHOP PRACTICES PER PARTS. ALL DIMENSIONS APPLY AFTER PLATING AND PRIOR TO THE ADDITION OF SOLID FILM LUBRICANT. BREAK ALL SHARP EDGES .02 (0.5) MAX. ALL FLEET RADI .005 (0.5) MAX. 125 (1/4) ALL SURFACES.

TOLERANCES:
XX .XX ANGLES (X.X) (X.X)
±.03 ±.010 ±.02" ±.010 ±.025

DIMENSION IN () ARE MILLIMETERS

SIGNATURE		DATE		SHUR-LOK CORPORATION IRVINE, CALIFORNIA
DRAWN: K. GAZI		12MAR03		
CHECKED: T. RIVERON		12MAR03		TITLE
APPROVED: K. GAZI		12MAR03		LOCKRING - THIN
MFG. ---		---		DRAWING NO.
QA. ---		---		SLRL
EGR NO.		SCALE	SIDE	REV. B
		NONE	A	
				CAGE NO. 97383
				SHEET 1 OF 1

NOTICE: This drawing embodies a CONFIDENTIAL proprietary design developed by SHUR-LOK CORPORATION, and all design, manufacturing, reproduction, use and sales rights regarding the same are expressly reserved. It is intended under a confidential relationship for a specific purpose, and the recipient agrees by accepting this drawing not to supply or disclose any information regarding it to any unauthorized person, or to incorporate in other projects any special features peculiar to this design. All patent rights herein are expressly reserved by SHUR-LOK CORPORATION, Irvine, California.

This part has sufficient strength to meet the intended design loads and parameters. SHUR-LOK assumes no liability for parts not subjected to load conditions that exceed the design parameters. It is the user's responsibility to establish a Mean Time Between Failures for part performance. The Mean Time Between Failures must be specifically stated for design part qualification in order for the material to be established. The requirements of customer or industry specifications and standards only apply to the extent specified on this drawing.

LR	ECR NO.	DATE	DRAWN	CHKD	APPR	REL.
NC	22649	SALES RELEASE			29OCT04	EM

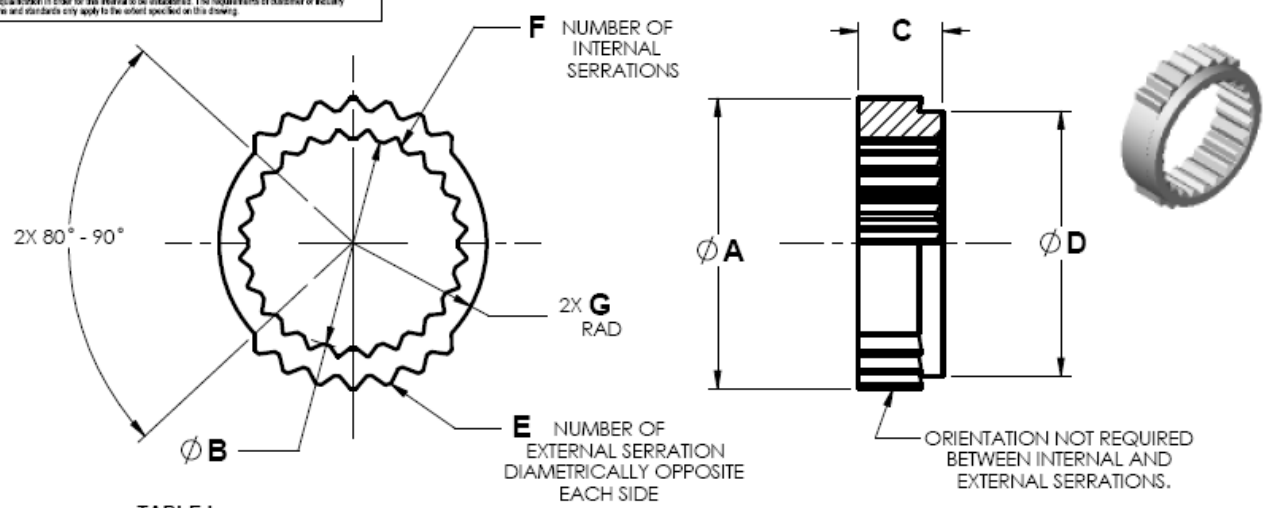


TABLE I

SHUR - LOK SLRLRR1997 DASH NUMBER	SHUR - LOK SLRLRR1997 DASH NUMBER	ϕA + .005 - .004	ϕB + .004 - .003	C + .010 - .005	ϕD + .008 - .007	E	F	G RAD $\pm .005$
- 102	E102	.353	.213	.100	.305	4	13	.154
- 103	E103	.416	.266	.110	.368	5	17	.186
- 104	E104	.478	.323	.138	.430	6	20	.217
- 105	E105	.541	.390	.157	.493	7	24	.248
- 106	E106	.657	.468	.157	.606	7	26	.304
- 107	E107	.782	.574	.161	.731	8	26	.366
- 108	E108	.907	.695	.213	.856	9	30	.429
- 109	E109	1.034	.794	.213	.981	10	30	.492

EXAMPLE OF PART CODING

SHUR-LOK 1997

NOTES:

- 1 FINISH:
 - a) FOR 1117 STEEL PER ASTM A108.
 - b) "E" A286 CRCS PER AMS5731, AMS5734 OR AMS5737.
- 2 FINISH:
 - a) FOR 1117 STEEL: CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3.
 - b) FOR A286 CRCS: PASSIVATE PER AMS-QQ-P-35.
- 3 HEAT TREAT:
 - a) FOR 1117 STEEL: HEAT TREAT TO 36-45 HRC. / 4
 - b) FOR A286 CRCS: HEAT TREAT TO 269 HB MIN.
- 4 FOR MATERIAL 1117 STEEL, HEAT TREAT TO 35-60 HRC, ADD SJ FIX IEO238 TO LOCKING PART NUMBER (EX: SLRLRR1997-104IEO238)

E

DASH NUMBER (SEE TABLE I)

MATERIAL CODE 1 2 3

BASIC PART NUMBER

SALLS DRAWING
SOLIDWORKS DWG

UNLESS OTHERWISE SPECIFIED

DRAWN: J. NGUYEN
CHECKED: J. NGUYEN
APPROVED: N. PATEL

DATE: 29OCT04

TITLE: LOCKRING, HIGH-STRENGTH

DRAWING NO.: SLRLRR1997

SCALE: NONE

SIZE: A

DATE: 29OCT04

SCALE: NONE

SIZE: A

DATE: 29OCT04

SCALE: NONE

SIZE: A

SHUR-LOK CORPORATION
IRVINE, CALIFORNIA

LOCKRING,
HIGH-STRENGTH

SLRLRR1997

REV. NC

SCALE: NONE

SIZE: A

DATE: 29OCT04

SCALE: NONE

SIZE: A

DATE: 29OCT04

SCALE: NONE

SIZE: A

**MS51990
LOCKRINGS**

MS PART NUMBER	ROSAN P/N	SHUR-LOK P/N
MS51990-102P	RLRR16SB5	SLRLRR16SB5
MS51990-103P	RLRR18SB6	SLRLRR18SB6
MS51990-104P	RLRR21SB6	SLRLRR21SB6
MS51990-105P	RLRR24SB7	SLRLRR24SB7
MS51990-106P	RLRR28SB8	SLRLRR28SB8
MS51990-107P	RLRR33SB9	SLRLRR33SB9
MS51990-108P	RLRR38SB9	SLRLRR38SB9
MS51990-109P	RLRR47SB10	SLRLRR47SB10
MS51990-110P	RLRR56SB11	SLRLRR56SB11
MS51990-111P	RLRR64SB11	SLRLRR64SB11
MS51990-112P	RLRR72SB11	SLRLRR72SB11
MS51990-113P	RLRR82SB12	SLRLRR82SB12
MS51990-114P	RLRR90SB12	SLRLRR90SB12
MS51991-115P	RLRR100SB12	SLRLRR100SB12

MS PART NUMBER	ROSAN P/N	SHUR-LOK P/N
MS51990E102P	RLRR16SU5	SLRLRR16SB5
MS51990E103P	RLRR18SU6	SLRLRR18SU6
MS51990E104P	RLRR21SU6	SLRLRR21SU6
MS51990E105P	RLRR24SU7	SLRLRR24SU7
MS51990E106P	RLRR28SU8	SLRLRR28SU8
MS51990E107P	RLRR33SU9	SLRLRR33SU9
MS51990E108P	RLRR38SU9	SLRLRR38SY9
MS51990E109P	RLRR47SU10	SLRLRR47SU10
MS51990E110P	RLRR56SU11	SLRLRR56SU11
MS51990E111P	RLRR64SU11	SLRLRR64SU11
MS51990E112P	RLRR72SU11	SLRLRR72SU11
MS51990E113P	RLRR82SU12	SLRLRR82SU12
MS51990E114P	RLRR90SU12	SLRLRR90SU12
MS51990E115P	RLRR100SU12	SLRLRR100SU12

**MS51997
LOCKRINGS**

MS PART NUMBER	ROSAN P/N	SHUR-LOK P/N
MS51997-102P	RLRR1997-102	SLRLRR1997-102
MS51997-103P	RLRR1997-103	SLRLRR1997-103
MS51997-104P	RLRR1997-104	SLRLRR1997-104
MS51997-105P	RLRR1997-105	SLRLRR1997-105
MS51997-106P	RLRR1997-106	SLRLRR1997-106
MS51997-107P	RLRR1997-107	SLRLRR1997-107
MS51997-108P	RLRR1997-108	SLRLRR1997-108
MS51997-109P	RLRR1997-109	SLRLRR1997-109
MS51997E102P	RLRR1997E-102	SLRLRR1997-102
MS51997E103P	RLRR1997E-103	SLRLRR1997-103
MS51997E104P	RLRR1997E-104	SLRLRR1997-104
MS51997E105P	RLRR1997E-105	SLRLRR1997-105
MS51997E106P	RLRR1997E-106	SLRLRR1997-106
MS51997E107P	RLRR1997E-107	SLRLRR1997-107
MS51997E108P	RLRR1997E-108	SLRLRR1997-108
MS51997E109P	RLRR1997E-109	SLRLRR1997-109

MS51989 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51989-102-(*)	SLSF71-4SA(*)A	SF71-4SA(*)A
MS51989-103-(*)	SLSF81-6SA(*)A	SF81-6SA(*)A
MS51989-104-(*)	SLSF91-7SA(*)A	SF91-7SA(*)A
MS51989-105-(*)	SLSF101-9SA(*)A	SF101-9SA(*)A
MS51989-106-(*)	SLSF111-11SA(*)A	SF111-11SA(*)A
MS51989-107-(*)	SLSF121-12SA(*)A	SF121-12SA(*)A
MS51989-108-(*)	SLSF131-13SA(*)A	SF131-13SA(*)A
MS51989-109-(*)	SLSF141-14SA(*)A	SF141-14SA(*)A
MS51989-110-(*)	SLSF151-16SA(*)A	SF151-16SA(*)A
MS51989-111-(*)	SLSF161-18SA(*)A	SF161-18SA(*)A
MS51989-112-(*)	SLSF181-21SA(*)A	SF181-21SA(*)A
MS51989E102-(*)	SLSF71-4SU(*)A	SF71-4SU(*)A
MS51989E103-(*)	SLSF81-6SU(*)A	SF81-6SU(*)A
MS51989E104-(*)	SLSF91-7SU(*)A	SF91-7SU(*)A
MS51989E105-(*)	SLSF101-9SU(*)A	SF101-9SU(*)A
MS51989E106-(*)	SLSF111-11SU(*)A	SF111-11SU(*)A
MS51989E107-(*)	SLSF121-12SU(*)A	SF121-12SU(*)A
MS51989E108-(*)	SLSF131-13SU(*)A	SF131-13SU(*)A
MS51989E109-(*)	SLSF141-14SU(*)A	SF141-14SU(*)A
MS51989E110-(*)	SLSF151-16SU(*)A	SF151-16SU(*)A
MS51989E111-(*)	SLSF161-18SU(*)A	SF161-18SU(*)A
MS51989E112-(*)	SLSF181-21SU(*)A	SF181-21SU(*)A
MS51989-103D(*)	SLSF81-6SA(*)	SF81-6SA(*)
MS51989-104D(*)	SLSF91-7SA(*)	SF91-7SA(*)
MS51989-105D(*)	SLSF101-9SA(*)	SF101-9SA(*)
MS51989-106D(*)	SLSF111-11SA(*)	SF111-11SA(*)
MS51989-107D(*)	SLSF121-12SA(*)	SF121-12SA(*)
MS51989-108D(*)	SLSF131-13SA(*)	SF131-13SA(*)
MS51989-109D(*)	SLSF141-14SA(*)	SF141-14SA(*)
MS51989-110D(*)	SLSF151-16SA(*)	SF151-16SA(*)
MS51989-111D(*)	SLSF161-18SA(*)	SF161-18SA(*)
MS51989-112D(*)	SLSF181-21SA(*)	SF181-21SA(*)
MS51989E103D(*)	SLSF81-6SU(*)	SF81-6SU(*)
MS51989E104D(*)	SLSF91-7SU(*)	SF91-7SU(*)
MS51989E105D(*)	SLSF101-9SU(*)	SF101-9SU(*)
MS51989E106D(*)	SLSF111-11SU(*)	SF111-11SU(*)
MS51989E107D(*)	SLSF121-12SU(*)	SF121-12SU(*)
MS51989E108D(*)	SLSF131-13SU(*)	SF131-13SU(*)
MS51989E109D(*)	SLSF141-14SU(*)	SF141-14SU(*)
MS51989E110D(*)	SLSF151-16SU(*)	SF151-16SU(*)
MS51989E111D(*)	SLSF161-18SU(*)	SF161-18SU(*)
MS51989E112D(*)	SLSF181-21SU(*)	SF181-21SU(*)

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51989-202-(*)	SLSF72-4SA(*)A	SF72-4SA(*)A
MS51989-203-(*)	SLSF82-6SA(*)A	SF82-6SA(*)A
MS51989-204-(*)	SLSF92-7SA(*)A	SF92-7SA(*)A
MS51989-205-(*)	SLSF102-9SA(*)A	SF102-9SA(*)A
MS51989-206-(*)	SLSF112-11SA(*)A	SF112-11SA(*)A
MS51989-207-(*)	SLSF122-12SA(*)A	SF122-12SA(*)A
MS51989-208-(*)	SLSF132-13SA(*)A	SF132-13SA(*)A
MS51989-209-(*)	SLSF142-14SA(*)A	SF142-14SA(*)A
MS51989-210-(*)	SLSF152-16SA(*)A	SF152-16SA(*)A
MS51989-211-(*)	SLSF162-18SA(*)A	SF162-18SA(*)A
MS51989-212-(*)	SLSF182-21SA(*)A	SF182-21SA(*)A
MS51989E202-(*)	SLSF72-4SU(*)A	SF72-4SU(*)A
MS51989E203-(*)	SLSF82-6SU(*)A	SF82-6SU(*)A
MS51989E204-(*)	SLSF92-7SU(*)A	SF92-7SU(*)A
MS51989E205-(*)	SLSF102-9SU(*)A	SF102-9SU(*)A
MS51989E206-(*)	SLSF112-11SU(*)A	SF112-11SU(*)A
MS51989E207-(*)	SLSF122-12SU(*)A	SF122-12SU(*)A
MS51989E208-(*)	SLSF132-13SU(*)A	SF132-13SU(*)A
MS51989E209-(*)	SLSF142-14SU(*)A	SF142-14SU(*)A
MS51989E210-(*)	SLSF152-16SU(*)A	SF152-16SU(*)A
MS51989E211-(*)	SLSF162-18SU(*)A	SF162-18SU(*)A
MS51989E212-(*)	SLSF182-21SU(*)A	SF182-21SU(*)A
MS51989-203D(*)	SLSF82-6SA(*)	SF82-6SA(*)
MS51989-204D(*)	SLSF92-7SA(*)	SF92-7SA(*)
MS51989-205D(*)	SLSF102-9SA(*)	SF102-9SA(*)
MS51989-206D(*)	SLSF112-11SA(*)	SF112-11SA(*)
MS51989-207D(*)	SLSF122-12SA(*)	SF122-12SA(*)
MS51989-208D(*)	SLSF132-13SA(*)	SF132-13SA(*)
MS51989-209D(*)	SLSF142-14SA(*)	SF142-14SA(*)
MS51989-210D(*)	SLSF152-16SA(*)	SF152-16SA(*)
MS51989-211D(*)	SLSF162-18SA(*)	SF162-18SA(*)
MS51989-212D(*)	SLSF182-21SA(*)	SF182-21SA(*)
MS51989E203D(*)	SLSF82-6SU(*)	SF82-6SU(*)
MS51989E204D(*)	SLSF92-7SU(*)	SF92-7SU(*)
MS51989E205D(*)	SLSF102-9SU(*)	SF102-9SU(*)
MS51989E206D(*)	SLSF112-11SU(*)	SF112-11SU(*)
MS51989E207D(*)	SLSF122-12SU(*)	SF122-12SU(*)
MS51989E208D(*)	SLSF132-13SU(*)	SF132-13SU(*)
MS51989E209D(*)	SLSF142-14SU(*)	SF142-14SU(*)
MS51989E210D(*)	SLSF152-16SU(*)	SF152-16SU(*)
MS51989E211D(*)	SLSF162-18SU(*)	SF162-18SU(*)
MS51989E212D(*)	SLSF182-21SU(*)	SF182-21SU(*)

MS51989 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51989-402-(*)	SLSC72-4SA(*)A	SC72-4SA(*)A
MS51989-403-(*)	SLSC82-6SA(*)A	SC82-6SA(*)A
MS51989-404-(*)	SLSC92-7SA(*)A	SC92-7SA(*)A
MS51989-405-(*)	SLSC102-9SA(*)A	SC102-9SA(*)A
MS51989-406-(*)	SLSC112-11SA(*)A	SC112-11SA(*)A
MS51989-407-(*)	SLSC122-12SA(*)A	SC122-12SA(*)A
MS51989-408-(*)	SLSC132-13SA(*)A	SC132-13SA(*)A
MS51989-409-(*)	SLSC142-14SA(*)A	SC142-14SA(*)A
MS51989-410-(*)	SLSC152-16SA(*)A	SC152-16SA(*)A
MS51989-411-(*)	SLSC162-18SA(*)A	SC162-18SA(*)A
MS51989-412-(*)	SLSC182-21SA(*)A	SC182-21SA(*)A
MS51989E402-(*)	SLSC72-4SU(*)A	SC72-4SU(*)A
MS51989E403-(*)	SLSC82-6SU(*)A	SC82-6SU(*)A
MS51989E404-(*)	SLSC92-7SU(*)A	SC92-7SU(*)A
MS51989E405-(*)	SLSC102-9SU(*)A	SC102-9SU(*)A
MS51989E406-(*)	SLSC112-11SU(*)A	SC112-11SU(*)A
MS51989E407-(*)	SLSC122-12SU(*)A	SC122-12SU(*)A
MS51989E408-(*)	SLSC132-13SU(*)A	SC132-13SU(*)A
MS51989E409-(*)	SLSC142-14SU(*)A	SC142-14SU(*)A
MS51989E410-(*)	SLSC152-16SU(*)A	SC152-16SU(*)A
MS51989E411-(*)	SLSC162-18SU(*)A	SC162-18SU(*)A
MS51989E412-(*)	SLSC182-21SU(*)A	SC182-21SU(*)A
MS51989-403D(*)	SLSC82-6SA(*)	SC82-6SA(*)
MS51989-404D(*)	SLSC92-7SA(*)	SC92-7SA(*)
MS51989-405D(*)	SLSC102-9SA(*)	SC102-9SA(*)
MS51989-406D(*)	SLSC112-11SA(*)	SC112-11SA(*)
MS51989-407D(*)	SLSC122-12SA(*)	SC122-12SA(*)
MS51989-408D(*)	SLSC132-13SA(*)	SC132-13SA(*)
MS51989-409D(*)	SLSC142-14SA(*)	SC142-14SA(*)
MS51989-410D(*)	SLSC152-16SA(*)	SC152-16SA(*)
MS51989-411D(*)	SLSC162-18SA(*)	SC162-18SA(*)
MS51989-412D(*)	SLSC182-21SA(*)	SC182-21SA(*)
MS51989E403D(*)	SLSC82-6SU(*)	SC82-6SU(*)
MS51989E404D(*)	SLSC92-7SU(*)	SC92-7SU(*)
MS51989E405D(*)	SLSC102-9SU(*)	SC102-9SU(*)
MS51989E406D(*)	SLSC112-11SU(*)	SC112-11SU(*)
MS51989E407D(*)	SLSC122-12SU(*)	SC122-12SU(*)
MS51989E408D(*)	SLSC132-13SU(*)	SC132-13SU(*)
MS51989E409D(*)	SLSC142-14SU(*)	SC142-14SU(*)
MS51989E410D(*)	SLSC152-16SU(*)	SC152-16SU(*)
MS51989E411D(*)	SLSC162-18SU(*)	SC162-18SU(*)
MS51989E412D(*)	SLSC182-21SU(*)	SC182-21SU(*)

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51989-302-(*)	SLSC71-4SA(*)A	SC71-4SA(*)A
MS51989-303-(*)	SLSC81-6SA(*)A	SC81-6SA(*)A
MS51989-304-(*)	SLSC91-7SA(*)A	SC91-7SA(*)A
MS51989-305-(*)	SLSC101-9SA(*)A	SC101-9SA(*)A
MS51989-306-(*)	SLSC111-11SA(*)A	SC111-11SA(*)A
MS51989-307-(*)	SLSC121-12SA(*)A	SC121-12SA(*)A
MS51989-308-(*)	SLSC131-13SA(*)A	SC131-13SA(*)A
MS51989-309-(*)	SLSC141-14SA(*)A	SC141-14SA(*)A
MS51989-310-(*)	SLSC151-16SA(*)A	SC151-16SA(*)A
MS51989-311-(*)	SLSC161-18SA(*)A	SC161-18SA(*)A
MS51989-312-(*)	SLSC181-21SA(*)A	SC181-21SA(*)A
MS51989E302-(*)	SLSC71-4SU(*)A	SC71-4SU(*)A
MS51989E303-(*)	SLSC81-6SU(*)A	SC81-6SU(*)A
MS51989E304-(*)	SLSC91-7SU(*)A	SC91-7SU(*)A
MS51989E305-(*)	SLSC101-9SU(*)A	SC101-9SU(*)A
MS51989E306-(*)	SLSC111-11SU(*)A	SC111-11SU(*)A
MS51989E307-(*)	SLSC121-12SU(*)A	SC121-12SU(*)A
MS51989E308-(*)	SLSC131-13SU(*)A	SC131-13SU(*)A
MS51989E309-(*)	SLSC141-14SU(*)A	SC141-14SU(*)A
MS51989E310-(*)	SLSC151-16SU(*)A	SC151-16SU(*)A
MS51989E311-(*)	SLSC161-18SU(*)A	SC161-18SU(*)A
MS51989E312-(*)	SLSC181-21SU(*)A	SC181-21SU(*)A
MS51989-303D(*)	SLSC81-6SA(*)	SC81-6SA(*)
MS51989-304D(*)	SLSC91-7SA(*)	SC91-7SA(*)
MS51989-305D(*)	SLSC101-9SA(*)	SC101-9SA(*)
MS51989-306D(*)	SLSC111-11SA(*)	SC111-11SA(*)
MS51989-307D(*)	SLSC121-12SA(*)	SC121-12SA(*)
MS51989-308D(*)	SLSC131-13SA(*)	SC131-13SA(*)
MS51989-309D(*)	SLSC141-14SA(*)	SC141-14SA(*)
MS51989-310D(*)	SLSC151-16SA(*)	SC151-16SA(*)
MS51989-311D(*)	SLSC161-18SA(*)	SC161-18SA(*)
MS51989-312D(*)	SLSC181-21SA(*)	SC181-21SA(*)
MS51989E303D(*)	SLSC81-6SU(*)	SC81-6SU(*)
MS51989E304D(*)	SLSC91-7SU(*)	SC91-7SU(*)
MS51989E305D(*)	SLSC101-9SU(*)	SC101-9SU(*)
MS51989E306D(*)	SLSC111-11SU(*)	SC111-11SU(*)
MS51989E307D(*)	SLSC121-12SU(*)	SC121-12SU(*)
MS51989E308D(*)	SLSC131-13SU(*)	SC131-13SU(*)
MS51989E309D(*)	SLSC141-14SU(*)	SC141-14SU(*)
MS51989E310D(*)	SLSC151-16SU(*)	SC151-16SU(*)
MS51989E311D(*)	SLSC161-18SU(*)	SC161-18SU(*)
MS51989E312D(*)	SLSC181-21SU(*)	SC181-21SU(*)

MS51992 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51992A642-8	SLSFT5902A642-8	SFT5902A642-8
MS51992A642-(9 thru 64)	SLSFT5902A642-(9 thru 64)	SFT5902A642-(9 thru 64)
MS51992A643-9	SLSFT5902A642-8	SFT5902A643-9
MS51992A634-10	SLSFT5902A642-8	SFT5902A643-10
MS51992A643-11	SLSFT5902A642-8	SFT5902A643-11
MS51992A643-(12 thru 64)	SLSFT5902A643-(12 thru 64)	SFT5902A643-(12 thru 64)
MS51992A644-11	SLSFT5902A644-12	SFT5902A644-11
MS51992A644-12	SLSFT5902A644-13	SFT5902A644-12
MS51992A644-(13 thru 64)	SLSFT5902A644-(13 thru 64)	SFT5902A644-(13 thru 64)
MS51992A645-12	SLSFT5902A645-12	SFT5902A645-12
MS51992A645-13	SLSFT5902A645-13	SFT5902A645-13
MS51992A645-(14 thru 64)	SLSFT5902A645-(14 thru 64)	SFT5902A642-(14 thru 64)
MS51992A646-15	SLSFT5902A646-15	SFT5902A646-15
MS51992A646-(16 thru 64)	SLSFT5902A646-(16 thru 64)	SFT5902A646-(16 thru 64)
MS51992A647-16	SLSFT5902A647-16	SFT5902A647-16
MS51992A647-(17 thru 64)	SLSFT5902A647-(17 thru 64)	SFT5902A647-(17 thru 64)
MS51992A648-18	SLSFT5902A642-8	SFT5902A648-18
MS51992A648-(19 thru 64)	SLSFT5902A648-(19 thru 64)	SFT5902A648-(19 thru 64)
MS51992A802-8	SLSFT5902A802-8	SFT5902A802-8
MS51992A802-(9 thru 64)	SLSFT5902A802-(9 thru 64)	SFT5902A802-(9 thru 64)
MS51992A803-9	SLSFT5902A803-9	SFT5902A803-9
MS51992A803-10	SLSFT5902A803-10	SFT5902A803-10
MS51992A803-11	SLSFT5902A803-11	SFT5902A803-11
MS51992A803-(12 thru 64)	SLSFT5902A803-(12 thru 64)	SFT5902A803-(12 thru 64)
MS51992A804-11	SLSFT5902A804-11	SFT5902A804-11
MS51992A804-12	SLSFT5902A804-12	SFT5902A804-12
MS51992A804-(13 thru 64)	SLSFT5902A804-(13 thru 64)	SFT5902A804-(13 thru 64)
MS51992A805-12	SLSFT5902A805-12	SFT5902A805-12
MS51992A805-13	SLSFT5902A805-12	SFT5902A805-12
MS51992A805-(14 thru 64)	SLSFT5902A805-(14 thru 64)	SFT5902A805-(14 thru 64)
MS51992A806-15	SLSFT5902A806-15	SFT5902A806-15
MS51992A806-(16 thru 64)	SLSFT5902A806-(16 thru 64)	SFT5902A806-(16 thru 64)
MS51992A807-16	SLSFT5902A806-16	SFT5902A807-16
MS51992A807-(17 thru 64)	SLSFT5902A806-(17 thru 64)	SFT5902A807-(17 thru 64)
MS51992A808-18	SLSFT5902A808-18	SFT5902A808-18
MS51992A808-(19 thru 64)	SLSFT5902A808-(19 thru 64)	SFT5902A808-(19 thru 64)

MS51992 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51992B502-8	SLSFT5902B502-8	SFT5902B502-8
MS51992B502-(9 thru 64)	SLSFT5902B502-(9 thru 64)	SFT5902B502-(9 thru 64)
MS51992B503-9	SLSFT5902B503-9	SFT5902B503-9
MS51992B503-10	SLSFT5902B503-10	SFT5902B503-10
MS51992B503-11	SLSFT5902B503-11	SFT5902B503-11
MS51992B503-(12 thru 64)	SLSFT5902B503-(12 thru 64)	SFT5902B503-(12 thru 64)
MS51992B504-11	SLSFT5902B504-11	SFT5902B504-11
MS51992B504-12	SLSFT5902B504-12	SFT5902B504-12
MS51992B504-(13 thru 64)	SLSFT5902B504-(13 thru 64)	SFT5902B504-(13 thru 64)
MS51992B505-12	SLSFT5902B505-12	SFT5902B505-12
MS51992B505-13	SLSFT5902B505-13	SFT5902B505-13
MS51992B505-(14 thru 64)	SLSFT5902B505-(14 thru 64)	SFT5902B505-(14 thru 64)
MS51992B506-15	SLSFT5902B506-15	SFT5902B506-15
MS51992B506-(16 thru 64)	SLSFT5902B506-(16 thru 64)	SFT5902B506-(16 thru 64)
MS51992B507-16	SLSFT5902B507-16	SFT5902B507-16
MS51992B507-(17 thru 64)	SLSFT5902B507-(17 thru 64)	SFT5902B507-(17 thru 64)
MS51992B508-18	SLSFT5902B508-18	SFT5902B508-18
MS51992B508-(19 thru 64)	SLSFT5902B508-(19 thru 64)	SFT5902B508-(19 thru 64)
MS51992C502-8	SLSFT5902C502-8	SFT5902C502-8
MS51992C502-8(9 thru 64)	SLSFT5902C502-(9 thru 64)	SFT5902C502-(9 thru 64)
MS51992C503-9	SLSFT5902C503-9	SFT5902C503-9
MS51992C503-10	SLSFT5902C503-10	SFT5902C503-10
MS51992C503-11	SLSFT5902C503-11	SFT5902C503-11
MS51992C503-(12 thru 64)	SLSFT5902C503-(12 thru 64)	SFT5902C503-(12 thru 64)
MS51992C504-11	SLSFT5902C504-11	SFT5902C504-11
MS51992C504-12	SLSFT5902C504-12	SFT5902C504-12
MS51992C504-(13 thru 64)	SLSFT5902C504-(13 thru 64)	SFT5902C504-(13 thru 64)
MS51992C505-12	SLSFT5902C505-12	SFT5902C505-12
MS51992C505-13	SLSFT5902C505-12	SFT5902C505-12
MS51992C505-(14 thru 64)	SLSFT5902C505-(14 thru 64)	SFT5902C505-(14 thru 64)
MS51992C506-15	SLSFT5902C506-15	SFT5902C506-15
MS51992C506-(16 thru 64)	SLSFT5902C506-(16 thru 64)	SFT5902C506-(16 thru 64)
MS51992C507-16	SLSFT5902C506-16	SFT5902C507-16
MS51992C507-(17 thru 64)	SLSFT5902C506-(17 thru 64)	SFT5902C507-(17 thru 64)
MS51992C508-18	SLSFT5902C508-18	SFT5902C508-18
MS51992C508-(19 thru 64)	SLSFT5902C508-(19 thru 64)	SFT5902C508-(19 thru 64)

MS51992 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51992C642-8	SLSFT5902C642-8	SFT5902C642-8
MS51992C642-(9 thru 64)	SLSFT5902C642-(9 thru 64)	SFT5902C642-(9 thru 64)
MS51992C643-9	SLSFT5902C643-9	SFT5902C643-9
MS51992C643-10	SLSFT5902C643-10	SFT5902C643-10
MS51992C643-11	SLSFT5902C643-11	SFT5902C643-11
MS51992C643-(12 thru 64)	SLSFT5902C643-(12 thru 64)	SFT5902C643-(12 thru 64)
MS51992C644-11	SLSFT5902C644-11	SFT5902C644-11
MS51992C644-12	SLSFT5902C644-12	SFT5902C644-12
MS51992C644-(13 thru 64)	SLSFT5902C644-(13 thru 64)	SFT5902C644-(13 thru 64)
MS51992C645-12	SLSFT5902C645-12	SFT5902C645-12
MS51992C645-13	SLSFT5902C645-13	SFT5902C645-13
MS51992C645-(14 thru 64)	SLSFT5902C645-(14 thru 64)	SFT5902C645-(14 thru 64)
MS51992C646-15	SLSFT5902C646-15	SFT5902C646-15
MS51992C646-(16 thru 64)	SLSFT5902C646-(16 thru 64)	SFT5902C646-(16 thru 64)
MS51992C647-16	SLSFT5902C647-16	SFT5902C647-16
MS51992C647-(17 thru 64)	SLSFT5902C647-(17 thru 64)	SFT5902C647-(17 thru 64)
MS51992C648-18	SLSFT5902C648-18	SFT5902C648-18
MS51992C648-(19 thru 64)	SLSFT5902C648-(19 thru 64)	SFT5902C648-(19 thru 64)
MS51992C802-8	SLSFT5902C802-8	SFT5902C802-8
MS51992C802-8(9 thru 64)	SLSFT5902C802-(9 thru 64)	SFT5902C802-(9 thru 64)
MS51992C803-9	SLSFT5902C803-9	SFT5902C803-9
MS51992C803-10	SLSFT5902C803-10	SFT5902C803-10
MS51992C803-11	SLSFT5902C803-11	SFT5902C803-11
MS51992C803-(12 thru 64)	SLSFT5902C803-(12 thru 64)	SFT5902C803-(12 thru 64)
MS51992C804-11	SLSFT5902C804-11	SFT5902C804-11
MS51992C804-12	SLSFT5902C804-12	SFT5902C804-12
MS51992C804-(13 thru 64)	SLSFT5902C804-(13 thru 64)	SFT5902C804-(13 thru 64)
MS51992C805-12	SLSFT5902C805-12	SFT5902C805-12
MS51992C805-13	SLSFT5902C805-12	SFT5902C805-12
MS51992C805-(14 thru 64)	SLSFT5902C805-(14 thru 64)	SFT5902C805-(14 thru 64)
MS51992C806-15	SLSFT5902C806-15	SFT5902C806-15
MS51992C806-(16 thru 64)	SLSFT5902C806-(16 thru 64)	SFT5902C806-(16 thru 64)
MS51992C807-16	SLSFT5902C806-16	SFT5902C807-16
MS51992C807-(17 thru 64)	SLSFT5902C806-(17 thru 64)	SFT5902C807-(17 thru 64)
MS51992C808-18	SLSFT5902C808-18	SFT5902C808-18
MS51992C808-(19 thru 64)	SLSFT5902C808-(19 thru 64)	SFT5902C808-(19 thru 64)

MS51992 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51992E502-8	SLSFT5902E502-8	SFT5902E502-8
MS51992E502-(9 thru 64)	SLSFT5902E502-(9 thru 64)	SFT5902E502-(9 thru 64)
MS51992E503-9	SLSFT5902E503-9	SFT5902E503-9
MS51992E503-10	SLSFT5902E503-10	SFT5902E503-10
MS51992E503-11	SLSFT5902E503-11	SFT5902E503-11
MS51992E503-(12 thru 64)	SLSFT5902E503-(12 thru 64)	SFT5902E503-(12 thru 64)
MS51992E504-11	SLSFT5902E504-11	SFT5902E504-11
MS51992E504-12	SLSFT5902E504-12	SFT5902E504-12
MS51992E504-(13 thru 64)	SLSFT5902E504-(13 thru 64)	SFT5902E504-(13 thru 64)
MS51992E505-12	SLSFT5902E505-12	SFT5902E505-12
MS51992E505-13	SLSFT5902E505-13	SFT5902E505-13
MS51992E505-(14 thru 64)	SLSFT5902E505-(14 thru 64)	SFT5902E505-(14 thru 64)
MS51992E506-15	SLSFT5902E506-15	SFT5902E506-15
MS51992E506-(16 thru 64)	SLSFT5902E506-(16 thru 64)	SFT5902E506-(16 thru 64)
MS51992E507-16	SLSFT5902E507-16	SFT5902E507-16
MS51992E507-(17 thru 64)	SLSFT5902E507-(17 thru 64)	SFT5902E507-(17 thru 64)
MS51992E508-18	SLSFT5902E508-18	SFT5902E508-18
MS51992E508-(19 thru 64)	SLSFT5902E508-(19 thru 64)	SFT5902E508-(19 thru 64)
MS51992E642-8	SLSFT5902E642-8	SFT5902E642-8
MS51992E642-8(9 thru 64)	SLSFT5902E642-(9 thru 64)	SFT5902E642-(9 thru 64)
MS51992E643-9	SLSFT5902E643-9	SFT5902E643-9
MS51992E643-10	SLSFT5902E643-10	SFT5902E643-10
MS51992E643-11	SLSFT5902E643-11	SFT5902E643-11
MS51992E643-(12 thru 64)	SLSFT5902E643-(12 thru 64)	SFT5902E643-(12 thru 64)
MS51992E644-11	SLSFT5902E644-11	SFT5902E644-11
MS51992E644-12	SLSFT5902E644-12	SFT5902E644-12
MS51992E644-(13 thru 64)	SLSFT5902E644-(13 thru 64)	SFT5902E644-(13 thru 64)
MS51992E645-12	SLSFT5902E645-12	SFT5902E645-12
MS51992E645-13	SLSFT5902E645-12	SFT5902E645-12
MS51992E645-(14 thru 64)	SLSFT5902E645-(14 thru 64)	SFT5902E645-(14 thru 64)
MS51992E646-15	SLSFT5902E646-15	SFT5902E646-15
MS51992E646-(16 thru 64)	SLSFT5902E646-(16 thru 64)	SFT5902E646-(16 thru 64)
MS51992E647-16	SLSFT5902E646-16	SFT5902E647-16
MS51992E647-(17 thru 64)	SLSFT5902E646-(17 thru 64)	SFT5902E647-(17 thru 64)
MS51992E648-18	SLSFT5902E648-18	SFT5902E648-18
MS51992E648-(19 thru 64)	SLSFT5902E648-(19 thru 64)	SFT5902E648-(19 thru 64)

MS51992 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51992E802-8	SLSFT5902E802-8	SFT5902E802-8
MS51992E802-(9 thru 64)	SLSFT5902E802-(9 thru 64)	SFT5902E802-(9 thru 64)
MS51992E803-9	SLSFT5902E803-9	SFT5902E803-9
MS51992E803-10	SLSFT5902E803-10	SFT590E803-10
MS51992E803-11	SLSFT5902E803-11	SFT5902E803-11
MS51992E803-(12 thru 64)	SLSFT5902E803-(12 thru 64)	SFT5902E803-(12 thru 64)
MS51992E804-11	SLSFT5902E804-11	SFT5902E804-11
MS51992E804-12	SLSFT5902E804-12	SFT5902E804-12
MS51992E804-(13 thru 64)	SLSFT5902E804-(13 thru 64)	SFT5902E804-(13 thru 64)
MS51992E805-12	SLSFT5902E805-12	SFT5902E805-12
MS51992E805-13	SLSFT5902E805-13	SFT5902E805-13
MS51992E805-(14 thru 64)	SLSFT5902E805-(14 thru 64)	SFT5902E805-(14 thru 64)
MS51992E806-15	SLSFT5902E806-15	SFT5902E806-15
MS51992E806-(16 thru 64)	SLSFT5902E806-(16 thru 64)	SFT5902E806-(16 thru 64)
MS51992E807-16	SLSFT5902E807-16	SFT5902E807-16
MS51992E807-(17 thru 64)	SLSFT5902E807-(17 thru 64)	SFT5902E807-(17 thru 64)
MS51992E808-18	SLSFT5902E808-18	SFT5902E808-18
MS51992E808-(19 thru 64)	SLSFT5902E808-(19 thru 64)	SFT5902E808-(19 thru 64)

MS51497 STUDS

MS PART NUMBER	ROSAN P/N	SHUR-LOK P/N
MS51497A642-8	SFR5902A642-8	SLSFR5902A642-8
MS51497A642-(9 thru 64)	SFR5902A642-(9 thru 64)	SLSFR5902A642-(9 thru 64)
MS51497A643-9	SFR5902A643-9	SLSFR5902A643-9
MS51497A643-10	SFR5902A643-10	SLSFR5902A643-10
MS51497A643-11	SFR5902A643-11	SLSFR5902A643-11
MS51497A643-(12 thru 64)	SFR5902A643-(12 thru 64)	SLSFR5902A643-(12 thru 64)
MS51497A644-11	SFR5902A644-11	SLSFR5902A644-11
MS51497A644-12	SFR5902A644-12	SLSFR5902A644-12
MS51497A644-(13 thru 64)	SFR5902A644-(13 thru 64)	SLSFR5902A644-(13 thru 64)
MS51497A645-12	SFR5902A645-12	SLSFR5902A645-12
MS51497A645-13	SFR5902A645-13	SLSFR5902A645-13
MS51497A645-(14 thru 64)	SFR5902A645-(14 thru 64)	SLSFR5902A645-(14 thru 64)
MS51497A646-15	SFR5902A646-15	SLSFR5902A646-15
MS51497A646-(16 thru 64)	SFR5902A646-(16 thru 64)	SLSFR5902A646-(16 thru 64)
MS51497A647-16	SFR5902A647-16	SLSFR5902A647-16
MS51497A647-(17 thru 64)	SFR5902A647-(17 thru 64)	SLSFR5902A647-(17 thru 64)
MS51497A648-18	SFR5902A648-18	SLSFR5902A648-18
MS51497A648-(19 thru 64)	SFR5902A648-(19 thru 64)	SLSFR5902A648-(19 thru 64)
MS51497A802-8	SFR5902A802-8	SLSFR5902A802-8
MS51497A802-8(9 thru 64)	SFR5902A802-(9 thru 64)	SLSFR5902A802-(9 thru 64)
MS51497A803-9	SFR5902A803-9	SLSFR5902A803-9
MS51497A803-10	SFR5902A803-10	SLSFR5902A803-10
MS51992A803-11	SFR5902A803-11	SLSFR5902A803-11
MS51992A803-(12 thru 64)	SFR5902A803-(12 thru 64)	SLSFR5902A803-(12 thru 64)
MS51992A804-11	SFR5902A804-11	SLSFR5902A804-11
MS51992A804-12	SFR5902A804-12	SLSFR5902A804-12
MS51992A804-(13 thru 64)	SFR5902A804-(13 thru 64)	SLSFR5902A804-(13 thru 64)
MS51992A805-12	SFR5902A805-12	SLSFR5902A805-12
MS51992A805-13	SFR5902A805-12	SLSFR5902A805-12
MS51992A805-(14 thru 64)	SFR5902A805-(14 thru 64)	SLSFR5902A805-(14 thru 64)
MS51992A806-15	SFR5902A806-15	SLSFR5902A806-15
MS51992A806-(16 thru 64)	SFR5902A806-(16 thru 64)	SLSFR5902A806-(16 thru 64)
MS51992A807-16	SFR5902A807-16	SLSFR5902A806-16
MS51992A807-(17 thru 64)	SFR5902A807-(17 thru 64)	SLSFR5902A806-(17 thru 64)
MS51992A808-18	SFR5902A808-18	SLSFR5902A808-18
MS51992A808-(19 thru 64)	SFR5902A808-(19 thru 64)	SLSFR5902A808-(19 thru 64)

MS51497 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51497B502-8	SLSFR5902B502-8	SFR5902B502-8
MS51497B502-(9 thru 64)	SLSFR5902B502-(9 thru 64)	SFR5902B502-(9 thru 64)
MS51497B503-9	SLSFR5902B503-9	SFR5902B503-9
MS51497B503-10	SLSFR5902B503-10	SFR5902B503-10
MS51497B503-11	SLSFR5902B503-11	SFR5902B503-11
MS51497B503-(12 thru 64)	SLSFR5902B503-(12 thru 64)	SFR5902B503-(12 thru 64)
MS51497B504-11	SLSFR5902B504-11	SFR5902B504-11
MS51497B504-12	SLSFR5902B504-12	SFR5902B504-12
MS51497B504-(13 thru 64)	SLSFR5902B504-(13 thru 64)	SFR5902B504-(13 thru 64)
MS51497B505-12	SLSFR5902B505-12	SFR5902B505-12
MS51497B505-13	SLSFR5902B505-13	SFR5902B505-13
MS51497B505-(14 thru 64)	SLSFR5902B505-(14 thru 64)	SFR5902B505-(14 thru 64)
MS51497B506-15	SLSFR5902B506-15	SFR5902B506-15
MS51497B506-(16 thru 64)	SLSFR5902B506-(16 thru 64)	SFR5902B506-(16 thru 64)
MS51497B507-16	SLSFR5902B507-16	SFR5902B507-16
MS51497B507-(17 thru 64)	SLSFR5902B507-(17 thru 64)	SFR5902B507-(17 thru 64)
MS51497B508-18	SLSFR5902B508-18	SFR5902B508-18
MS51497B508-(19 thru 64)	SLSFR5902B508-(19 thru 64)	SFR5902B508-(19 thru 64)
MS51497C502-8	SLSFR5902C502-8	SFR5902C502-8
MS51497C502-8(9 thru 64)	SLSFR5902C502-(9 thru 64)	SFR5902C502-(9 thru 64)
MS51497C503-9	SLSFR5902C503-9	SFR5902C503-9
MS51497C503-10	SLSFR5902C503-10	SFR5902C503-10
MS51992C503-11	SLSFR5902C503-11	SFR5902C503-11
MS51992C503-(12 thru 64)	SLSFR5902C503-(12 thru 64)	SFR5902C503-(12 thru 64)
MS51992C504-11	SLSFR5902C504-11	SFR5902C504-11
MS51992C504-12	SLSFR5902C504-12	SFR5902C504-12
MS51992C504-(13 thru 64)	SLSFR5902C504-(13 thru 64)	SFR5902C504-(13 thru 64)
MS51992C505-12	SLSFR5902C505-12	SFR5902C505-12
MS51992C505-13	SLSFR5902C505-12	SFR5902C505-12
MS51992C505-(14 thru 64)	SLSFR5902C505-(14 thru 64)	SFR5902C505-(14 thru 64)
MS51992C506-15	SLSFR5902C506-15	SFR5902C506-15
MS51992C506-(16 thru 64)	SLSFR5902C506-(16 thru 64)	SFR5902C506-(16 thru 64)
MS51992C507-16	SLSFR5902C506-16	SFR5902C507-16
MS51992C507-(17 thru 64)	SLSFR5902C506-(17 thru 64)	SFR5902C507-(17 thru 64)
MS51992C508-18	SLSFR5902C508-18	SFR5902C508-18
MS51992C508-(19 thru 64)	SLSFR5902C508-(19 thru 64)	SFR5902C508-(19 thru 64)

MS51497 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51497C642-8	SLSFR5902C642-8	SFR5902C642-8
MS51497C642-(9 thru 64)	SLSFR5902C642-(9 thru 64)	SFR5902C642-(9 thru 64)
MS51497C643-9	SLSFR5902C643-9	SFR5902C643-9
MS51497C643-10	SLSFR5902C643-10	SFR5902C643-10
MS51497C643-11	SLSFR5902C643-11	SFR5902C643-11
MS51497C643-(12 thru 64)	SLSFR5902C643-(12 thru 64)	SFR5902C643-(12 thru 64)
MS51497C644-11	SLSFR5902C644-11	SFR5902C644-11
MS51497C644-12	SLSFR5902C644-12	SFR5902C644-12
MS51497C644-(13 thru 64)	SLSFR5902C644-(13 thru 64)	SFR5902C644-(13 thru 64)
MS51497C645-12	SLSFR5902C645-12	SFR5902C645-12
MS51497C645-13	SLSFR5902C645-13	SFR5902C645-13
MS51497C645-(14 thru 64)	SLSFR5902C645-(14 thru 64)	SFR5902C645-(14 thru 64)
MS51497C646-15	SLSFR5902C646-15	SFR5902C646-15
MS51497C646-(16 thru 64)	SLSFR5902C646-(16 thru 64)	SFR5902C646-(16 thru 64)
MS51497C647-16	SLSFR5902C647-16	SFR5902C647-16
MS51497C647-(17 thru 64)	SLSFR5902C647-(17 thru 64)	SFR5902C647-(17 thru 64)
MS51497C648-18	SLSFR5902C648-18	SFR5902C648-18
MS51497C648-(19 thru 64)	SLSFR5902C648-(19 thru 64)	SFR5902C648-(19 thru 64)
MS51497C802-8	SLSFR5902C802-8	SFR5902C802-8
MS51497C802-8(9 thru 64)	SLSFR5902C802-(9 thru 64)	SFR5902C802-(9 thru 64)
MS51497C803-9	SLSFR5902C803-9	SFR5902C803-9
MS51497C803-10	SLSFR5902C803-10	SFR5902C803-10
MS51992C803-11	SLSFR5902C803-11	SFR5902C803-11
MS51992C803-(12 thru 64)	SLSFR5902C803-(12 thru 64)	SFR5902C803-(12 thru 64)
MS51992C804-11	SLSFR5902C804-11	SFR5902C804-11
MS51992C804-12	SLSFR5902C804-12	SFR5902C804-12
MS51992C804-(13 thru 64)	SLSFR5902C804-(13 thru 64)	SFR5902C804-(13 thru 64)
MS51992C805-12	SLSFR5902C508-12	SFR5902C805-12
MS51992C805-13	SLSFR5902C805-12	SFR5902C805-12
MS51992C805-(14 thru 64)	SLSFR5902C805-(14 thru 64)	SFR5902C805-(14 thru 64)
MS51992C806-15	SLSFR5902C806-15	SFR5902C806-15
MS51992C806-(16 thru 64)	SLSFR5902C806-(16 thru 64)	SFR5902C806-(16 thru 64)
MS51992C807-16	SLSFR5902C806-16	SFR5902C807-16
MS51992C807-(17 thru 64)	SLSFR5902C806-(17 thru 64)	SFR5902C807-(17 thru 64)
MS51992C808-18	SLSFR5902C808-18	SFR5902C808-18
MS51992C808-(19 thru 64)	SLSFR5902C808-(19 thru 64)	SFR5902C808-(19 thru 64)

MS51497 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51497D502-8	SLSFR5902D502-8	SFR5902D502-8
MS51497D502-(9 thru 64)	SLSFR5902D502-(9 thru 64)	SFR5902D502-(9 thru 64)
MS51497D503-9	SLSFR5902D503-9	SFR5902D503-9
MS51497D503-10	SLSFR5902D503-10	SFR5902D503-10
MS51497D503-11	SLSFR5902D503-11	SFR5902D503-11
MS51497D503-(12 thru 64)	SLSFR5902D503-(12 thru 64)	SFR5902D503-(12 thru 64)
MS51497D504-11	SLSFR5902D504-11	SFR5902D504-11
MS51497D504-12	SLSFR5902D504-12	SFR5902D504-12
MS51497D504-(13 thru 64)	SLSFR5902D504-(13 thru 64)	SFR5902D504-(13 thru 64)
MS51497D505-12	SLSFR5902D505-12	SFR5902D505-12
MS51497D505-13	SLSFR5902D505-13	SFR5902D505-13
MS51497D505-(14 thru 64)	SLSFR5902D505-(14 thru 64)	SFR5902D505-(14 thru 64)
MS51497D506-15	SLSFR5902D506-15	SFR5902D506-15
MS51497D506-(16 thru 64)	SLSFR5902D506-(16 thru 64)	SFR5902D506-(16 thru 64)
MS51497D507-16	SLSFR5902D507-16	SFR5902D507-16
MS51497D507-(17 thru 64)	SLSFR5902D507-(17 thru 64)	SFR5902D507-(17 thru 64)
MS51497D508-18	SLSFR5902D508-18	SFR5902D508-18
MS51497D508-(19 thru 64)	SLSFR5902D508-(19 thru 64)	SFR5902D508-(19 thru 64)
MS51497E502-8	SLSFR5902E502-8	SFR5902E502-8
MS51497E502-8(9 thru 64)	SLSFR5902E502-(9 thru 64)	SFR5902E502-(9 thru 64)
MS51497E503-9	SLSFR5902E503-9	SFR5902E503-9
MS51497E503-10	SLSFR5902E503-10	SFR5902E503-10
MS51992E503-11	SLSFR5902E503-11	SFR5902E503-11
MS51992E503-(12 thru 64)	SLSFR5902E503-(12 thru 64)	SFR5902E503-(12 thru 64)
MS51992E504-11	SLSFR5902E504-11	SFR5902E504-11
MS51992E504-12	SLSFR5902E504-12	SFR5902E504-12
MS51992E504-(13 thru 64)	SLSFR5902E504-(13 thru 64)	SFR5902E504-(13 thru 64)
MS51992E505-12	SLSFR5902E505-12	SFR5902E505-12
MS51992E505-13	SLSFR5902E505-12	SFR5902E505-12
MS51992E505-(14 thru 64)	SLSFR5902E505-(14 thru 64)	SFR5902E505-(14 thru 64)
MS51992E506-15	SLSFR5902E506-15	SFR5902E506-15
MS51992E506-(16 thru 64)	SLSFR5902E506-(16 thru 64)	SFR5902E506-(16 thru 64)
MS51992E507-16	SLSFR5902E506-16	SFR5902E507-16
MS51992E507-(17 thru 64)	SLSFR5902E506-(17 thru 64)	SFR5902E507-(17 thru 64)
MS51992E508-18	SLSFR5902E508-18	SFR5902E508-18
MS51992E508-(19 thru 64)	SLSFR5902E508-(19 thru 64)	SFR5902E508-(19 thru 64)

MS51497 STUDS

MS PART NUMBER	SHUR-LOK P/N	ROSAN P/N
MS51497E642-8	SLSFR5902E642-8	SFR5902E642-8
MS51497E642-(9 thru 64)	SLSFR5902E642-(9 thru 64)	SFR5902E642-(9 thru 64)
MS51497E643-9	SLSFR5902E643-9	SFR5902E643-9
MS51497E643-10	SLSFR5902E643-10	SFR5902E643-10
MS51497E643-11	SLSFR5902E643-11	SFR5902E643-11
MS51497E643-(12 thru 64)	SLSFR5902E643-(12 thru 64)	SFR5902E643-(12 thru 64)
MS51497E644-11	SLSFR5902E644-11	SFR5902E644-11
MS51497E644-12	SLSFR5902E644-12	SFR5902E644-12
MS51497E644-(13 thru 64)	SLSFR5902E644-(13 thru 64)	SFR5902E644-(13 thru 64)
MS51497E645-12	SLSFR5902E645-12	SFR5902E645-12
MS51497E645-13	SLSFR5902E645-13	SFR5902E645-13
MS51497E645-(14 thru 64)	SLSFR5902E645-(14 thru 64)	SFR5902E645-(14 thru 64)
MS51497E646-15	SLSFR5902E646-15	SFR5902E646-15
MS51497E646-(16 thru 64)	SLSFR5902E646-(16 thru 64)	SFR5902E646-(16 thru 64)
MS51497E647-16	SLSFR5902E647-16	SFR5902E647-16
MS51497E647-(17 thru 64)	SLSFR5902E647-(17 thru 64)	SFR5902E647-(17 thru 64)
MS51497E648-18	SLSFR5902E648-18	SFR5902E648-18
MS51497E648-(19 thru 64)	SLSFR5902E648-(19 thru 64)	SFR5902E648-(19 thru 64)
MS51497E802-8	SLSFR5902E802-8	SFR5902E802-8
MS51497E802-8(9 thru 64)	SLSFR5902E802-(9 thru 64)	SFR5902E802-(9 thru 64)
MS51497E803-9	SLSFR5902E803-9	SFR5902E803-9
MS51497E803-10	SLSFR5902E803-10	SFR5902E803-10
MS51992E803-11	SLSFR5902E803-11	SFR5902E803-11
MS51992E803-(12 thru 64)	SLSFR5902E803-(12 thru 64)	SFR5902E803-(12 thru 64)
MS51992E804-11	SLSFR5902E804-11	SFR5902E804-11
MS51992E804-12	SLSFR5902E804-12	SFR5902E804-12
MS51992E804-(13 thru 64)	SLSFR5902E804-(13 thru 64)	SFR5902E804-(13 thru 64)
MS51992E805-12	SLSFR5902E508-12	SFR5902E805-12
MS51992E805-13	SLSFR5902E805-12	SFR5902E805-12
MS51992E805-(14 thru 64)	SLSFR5902E805-(14 thru 64)	SFR5902E805-(14 thru 64)
MS51992E806-15	SLSFR5902E806-15	SFR5902E806-15
MS51992E806-(16 thru 64)	SLSFR5902E806-(16 thru 64)	SFR5902E806-(16 thru 64)
MS51992E807-16	SLSFR5902E806-16	SFR5902E807-16
MS51992E807-(17 thru 64)	SLSFR5902E806-(17 thru 64)	SFR5902E807-(17 thru 64)
MS51992E808-18	SLSFR5902E808-18	SFR5902E808-18
MS51992E808-(19 thru 64)	SLSFR5902E808-(19 thru 64)	SFR5902E808-(19 thru 64)

MS51991 INSERTS

MS* PART NUMBER	SHUR-LOK* P/N	ROSAN* P/N
MS51991-202	SLRJ202SB4	RJ202SB4
MS51991-203	SLRJ203SB5	RJ203SB5
MS51991-204	SLRJ204SB6	RJ204SB6
MS51991-205	SLRJ205SB7	RJ205SB7
MS51991-206	SLRJ206SB8	RJ206SB8
MS51991-207	SLRAJ207SB9	RAJ207SB9
MS51991-208	SLRJ208SB10	RJ208SB10
MS51991-209	SLRJ209SB11	RJ209SB11
MS51991-210	SLRJ210SB12	RJ210SB12
MS51991E202	SLRJ202SU4	RJ202SU4
MS51991E203	SLRJ203SU5	RJ203SU5
MS51991E204	SLRJ204SU6	RJ204SU6
MS51991E205	SLRJ205SU7	RJ205SU7
MS51991E206	SLRJ206SU8	RJ206SU8
MS51991E207	SLRAJ207SU9	RAJ207SU9
MS51991E208	SLRJ208SU10	RJ208SU10
MS51991E209	SLRJ209SU11	RJ209SU11
MS51991E210	SLRJ210SU12	RJ210SU12

MS* PART NUMBER	SHUR-LOK* P/N	ROSAN* P/N
MS51991-202	SLRJ202SB4	RJ202SB4
MS51991-203	SLRJ203SB5	RJ203SB5
MS51991-204	SLRJ204SB6	RJ204SB6
MS51991-205	SLRJ205SB7	RJ205SB7
MS51991-206	SLRJ206SB8	RJ206SB8
MS51991-207	SLRAJ207SB9	RAJ207SB9
MS51991-208	SLRJ208SB10	RJ208SB10
MS51991-209	SLRJ209SB11	RJ209SB11
MS51991-210	SLRJ210SB12	RJ210SB12
MS51991E202	SLRJ202SU4	RJ202SU4
MS51991E203	SLRJ203SU5	RJ203SU5
MS51991E204	SLRJ204SU6	RJ204SU6
MS51991E205	SLRJ205SU7	RJ205SU7
MS51991E206	SLRJ206SU8	RJ206SU8
MS51991E207	SLRAJ207SU9	RAJ207SU9
MS51991E208	SLRJ208SU10	RJ208SU10
MS51991E209	SLRJ209SU11	RJ209SU11
MS51991E210	SLRJ210SU12	RJ210SU12

MS* PART NUMBER	SHUR-LOK* P/N	ROSAN* P/N
MS51991-311	SLRJ311SB14	RJ311SB14
MS51991-312	SLRJ312SB16	RJ312SB16
MS51991-312.1	SLRJ312SB16F	RJ312SB16F
MS51991-313	SLRJ313SB18	RJ313SB18
MS51991-314	SLRJ314SB20	RJ314SB20
MS51991-315	SLRJ315SB22F	RJ315SB22F
MS51991E311	SLRJ311SU14	RJ311SU14
MS51991E312	SLRJ312SU16	RJ312SU16
MS51991E312.1	SLRJ312SU16F	RJ312SU16F
MS51991E313	SLRJ313SU18	RJ313SU18
MS51991E314	SLRJ314SU20	RJ314SU20
MS51991E315	SLRJ315SU22F	RJ315SU22F

MS51993 INSERTS

MS* PART NUMBER	SHUR-LOK* P/N	ROSAN* P/N
MS51993M643	SLRD5903M643	RD5903M643
MS51993M644	SLRD5903M644	RD5903M644
MS51993M645	SLRD5903M645	RD5903M645
MS51993M646	SLRD5903M646	RD5903M646
MS51993M647	SLRD5903M647	RD5903M647
MS51993M648	SLRD5903M648	RD5903M648
MS51993S643	SLRD5903S643	RD5903S643
MS51993S644	SLRD5903S644	RD5903S644
MS51993S645	SLRD5903S645	RD5903S645
MS51993S646	SLRD5903S646	RD5903S646
MS51993S647	SLRD5903S647	RD5903S647
MS51993S648	SLRD5903S648	RD5903S648
MS51993T643	SLRD5903T643	RD5903T643
MS51993T644	SLRD5903T644	RD5903T644
MS51993T645	SLRD5903T645	RD5903T645
MS51993T646	SLRD5903T646	RD5903T646
MS51993T647	SLRD5903T647	RD5903T647
MS51993T648	SLRD5903T648	RD5903T648

MS* PART NUMBER	SHUR-LOK* P/N	ROSAN* P/N
MS51993M503	SLRD5903M503	RD5903M503
MS51993M504	SLRD5903M504	RD5903M504
MS51993M505	SLRD5903M505	RD5903M505
MS51993M506	SLRD5903M506	RD5903M506
MS51993M507	SLRD5903M507	RD5903M507
MS51993M508	SLRD5903M508	RD5903M508
MS51993S503	SLRD5903S503	RD5903S503
MS51993S504	SLRD5903S504	RD5903S504
MS51993S505	SLRD5903S505	RD5903S505
MS51993S506	SLRD5903S506	RD5903S506
MS51993S507	SLRD5903S507	RD5903S507
MS51993S508	SLRD5903S508	RD5903S508
MS51993T503	SLRD5903T503	RD5903T503
MS51993T504	SLRD5903T504	RD5903T504
MS51993T505	SLRD5903T505	RD5903T505
MS51993T506	SLRD5903T506	RD5903T506
MS51993T507	SLRD5903T507	RD5903T507
MS51993T508	SLRD5903T508	RD5903T508

MS* PART NUMBER	SHUR-LOK* P/N	ROSAN* P/N
MS51993M803	SLRD5903M803	RD5903M803
MS51993M804	SLRD5903M804	RD5903M804
MS51993M805	SLRD5903M805	RD5903M805
MS51993M806	SLRD5903M806	RD5903M806
MS51993M807	SLRD5903M807	RD5903M807
MS51993M808	SLRD5903M808	RD5903M808
MS51993S803	SLRD5903S803	RD5903S803
MS51993S804	SLRD5903S804	RD5903S804
MS51993S805	SLRD5903S805	RD5903S805
MS51993S806	SLRD5903S806	RD5903S806
MS51993S807	SLRD5903S807	RD5903S807
MS51993S808	SLRD5903S808	RD5903S808
MS51993T803	SLRD5903T803	RD5903T803
MS51993T804	SLRD5903T804	RD5903T804
MS51993T805	SLRD5903T805	RD5903T805
MS51993T806	SLRD5903T806	RD5903T806
MS51993T807	SLRD5903T807	RD5903T807
MS51993T808	SLRD5903T808	RD5903T808

MS51498 INSERTS

MS* PART NUMBER	SHUR-LOK* P/N	ROSAN* P/N
MS51498M643	SLRDR5903M643	RDR5903M643
MS51498M644	SLRDR5903M644	RDR5903M644
MS51498M645	SLRDR5903M645	RDR5903M645
MS51498M646	SLRDR5903M646	RDR5903M646
MS51498M647	SLRDR5903M647	RDR5903M647
MS51498M648	SLRDR5903M648	RDR5903M648
MS51498S643	SLRDR5903S643	RDR5903S643
MS51498S644	SLRDR5903S644	RDR5903S644
MS51498S645	SLRDR5903S645	RDR5903S645
MS51498S646	SLRDR5903S646	RDR5903S646
MS51498S647	SLRDR5903S647	RDR5903S647
MS51498S648	SLRDR5903S648	RDR5903S648
MS51498T643	SLRDR5903T643	RDR5903T643
MS51498T644	SLRDR5903T644	RDR5903T644
MS51498T645	SLRDR5903T645	RDR5903T645
MS51498T646	SLRDR5903T646	RDR5903T646
MS51498T647	SLRDR5903T647	RDR5903T647
MS51498T648	SLRDR5903T648	RDR5903T648

MS* PART NUMBER	SHUR-LOK* P/N	ROSAN* P/N
MS51498M503	SLRDR5903M503	RDR5903M503
MS51498M504	SLRDR5903M504	RDR5903M504
MS51498M505	SLRDR5903M505	RDR5903M505
MS51498M506	SLRDR5903M506	RDR5903M506
MS51498M507	SLRDR5903M507	RDR5903M507
MS51498M508	SLRDR5903M508	RDR5903M508
MS51498S503	SLRDR5903S503	RDR5903S503
MS51498S504	SLRDR5903S504	RDR5903S504
MS51498S505	SLRDR5903S505	RDR5903S505
MS51498S506	SLRDR5903S506	RDR5903S506
MS51498S507	SLRDR5903S507	RDR5903S507
MS51498S508	SLRDR5903S508	RDR5903S508
MS51498T503	SLRDR5903T503	RDR5903T503
MS51498T504	SLRDR5903T504	RDR5903T504
MS51498T505	SLRDR5903T505	RDR5903T505
MS51498T506	SLRDR5903T506	RDR5903T506
MS51498T507	SLRDR5903T507	RDR5903T507
MS51498T508	SLRDR5903T508	RDR5903T508

MS* PART NUMBER	SHUR-LOK* P/N	ROSAN* P/N
MS51498M803	SLRDR5903M803	RDR5903M803
MS51498M804	SLRDR5903M804	RDR5903M804
MS51498M805	SLRDR5903M805	RDR5903M805
MS51498M806	SLRDR5903M806	RDR5903M806
MS51498M807	SLRDR5903M807	RDR5903M807
MS51498M808	SLRDR5903M808	RDR5903M808
MS51498S803	SLRDR5903S803	RDR5903S803
MS51498S804	SLRDR5903S804	RDR5903S804
MS51498S805	SLRDR5903S805	RDR5903S805
MS51498S806	SLRDR5903S806	RDR5903S806
MS51498S807	SLRDR5903S807	RDR5903S807
MS51498S808	SLRDR5903S808	RDR5903S808
MS51498T803	SLRD5903T803	RDR5903T803
MS51498T804	SLRD5903T804	RDR5903T804
MS51498T805	SLRD5903T805	RDR5903T805
MS51498T806	SLRD5903T806	RDR5903T806
MS51498T807	SLRD5903T807	RDR5903T807
MS51498T808	SLRD5903T808	RDR5903T808