

# Product Data Sheet

## Amphenol RADSOK® SurLok™ Non-Environmental Connectors for Power Distribution Applications

The Metal SurLok™ is a field installable, high reliability alternative to common compression lugs. An industry standard U-Indent/Clamshell or 4-indenter crimp tool may be used to perform the crimp termination on the wire thus eliminates the need of purchasing special torque tools.

Amphenol Metal SurLok™ is designed as an alternative to the bolt-on compression lugs while meeting or exceeding the electrical performance, eliminating tools and increasing reliability.

Additional features include the RADSOK® High Amperage Socket Contact Technology which utilizes the high tensile strength properties of the stamped and formed, high conductivity alloy grid to produce the low insertion force while maintaining large conductive surface area.

The Metal SurLok™ is available in a variety of common wire sizes and use in Medical, Heavy Equipment, Process Control, Rail/Mass Transit and Telecom/Infocom markets. Any applications that use high current, frequently plugged and unplugged cables or a “plug and play” setup would be an ideal “fit” for the Metal SurLok™ solution.

Additional benefits of the RADSOK® Metal SurLok™ include:

- Easy Field Install – Crimp with Standard Color-coded Dies (U-die and 4 Indenter)
- Integral Locking Feature
- **RoHS** Compliant
- High Current Rating
- High Reliability
- High Ampacity
- High Cycle Durability

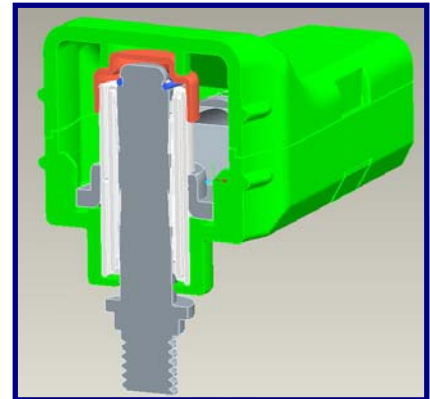
### Technical Specifications:

UL Listed Under File UL1977

Engagement Force: ~2lbs-5lbs mating insertion & ~10lbs-15lbs locking.

Separation Force: ~10lbs-15lbs.

Contact surfaces are silver plated on pin and socket. Wire crimp barrel is matte tin per industry standards.



Top: Cross section view showing mating pin.  
Bottom Left: Seven sizes, color coded crimps.  
Bottom Right: Typical upper half housing.

Wire Size	RADSOK® Size	Current Rating	SurLok™ Kit <sup>(1)</sup> Part Number	Lug Only <sup>(2)</sup> Part Number	Conductor Max Dia	Crimp Code
8 AWG	3.6mm	70 Amps	C10-647183-081	C10-647159-081	0.17 in.	Red 21
6 AWG	5.7mm	100 Amps	C10-647184-061	C10-647166-061	0.21	Blue 24
4 AWG	5.7mm	125 Amps	C10-647184-041	C10-647166-041	0.27	Gray 29
2 AWG	8.0mm	175 Amps	C10-647185-021	C10-647173-021	0.35	Green 37
1 AWG	8.0mm	200 Amps	C10-647185-011	C10-647173-011	0.38	Pink 42
1/0 AWG	10.3mm	250 Amps	C10-647186-1X1	C10-647161-1X1	0.44	Black 45
2/0 AWG	10.3mm	300 Amps	C10-647186-2X1	C10-647161-2X1	0.50	Orange 50

Pin Dia	Max Current	Part Number	Thread (male)
3.6mm.	70 Amps	C10-647175-001	M3x0.5
5.7mm	125 Amps	C10-647176-001	M5x0.8
8.0mm	200 Amps	C10-647177-001	M8x1.25
10.3mm	300 Amps	C10-647178-001	M10x1.5

Notes: (1) SurLok™ Kit contains the wire crimp lug, plus a two-piece dielectric clamshell housing. Housing is available in black color as standard. Consult factory for alternate color options.

(2) Lug only specifies the wire crimp RADSOK® SurLok™ lug, less the plastic housings.

**Amphenol**

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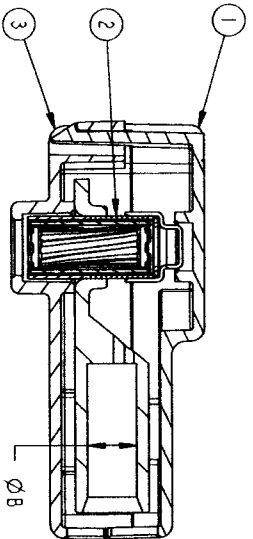
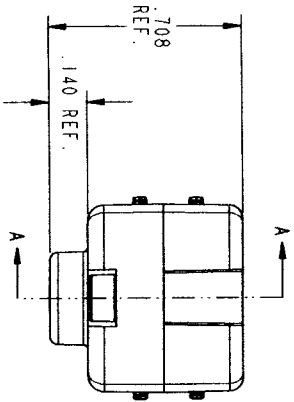
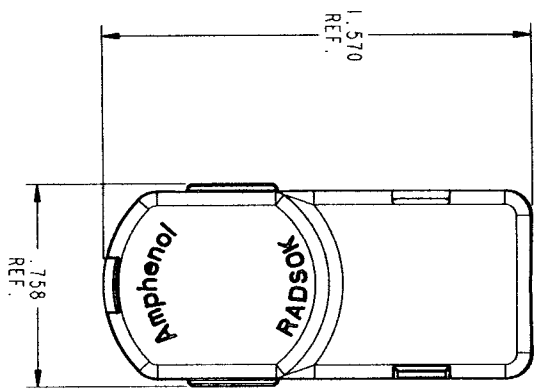
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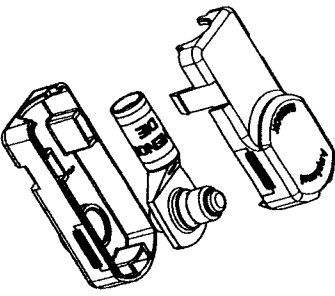
1

PART NUMBER	WIRE GAGE	ØB	ITEM #2	RADSOX FINISH
10-647183-081	8 AWG	.180	10-647159-081	SILVER
10-647183-084	8 AWG	.180	10-647159-084	NICKEL
10-647183-085	8 AWG	.180	10-647159-085	GOLD

REV	DATE	REVISIONS	DATE



SECTION A-A



SCALE 1:500

# PRELIMINARY

- 4) ASSEMBLY HOUSINGS ARE UL 94 V-0 RATED.
- 3) THE MAXIMUM WIRE JACKET OD IS 0.292 DIAMETER.
- 2) CONNECTOR SHOWN MATES WITH PIN CONTACT PART NUMBER C10-647175-00( ) OR EQUIV.
- 1) LUG MUST BE CRIMPED TO WIRE BEFORE TOP & BOTTOM HOUSINGS ARE SNAPPED TOGETHER FOR FINAL ASSEMBLY.

**NOTES:**  
 THE USE OF THIS DOCUMENT IS UNLIMITED.  
 HOWEVER, DOCUMENTS REFERENCED HEREON  
 MAY CONTAIN LIMITED RIGHTS DATA.

N/A	PROBABLE INFORMATION
N/A	PROBABLE INFORMATION
N/A	PROBABLE INFORMATION

UNLESS OTHERWISE SPECIFIED	SPECIFICATIONS
LINEAR DIMENSIONS ARE IN INCHES	
TOLERANCES:	
.XXXX ± .005 ANGLES ±2°	
.XX ± .01	
.X ± .01	
DIM. & TOL. PER ASME Y14.4M.	
DRW PER MIL-DTL-31000.	
OTHER APPROPRIATE STDS. PER 9-3800	
STRAIGHTENING	
STRAIGHTENING	
STRAIGHTENING	

MATERIAL SPEC.	PROCESS SPEC.
N/A	N/A

POB	QTY	PART NUMBER	DESCRIPTION	NOTE
3	1	10-647160-001	3.6MM SURLOK BOTTOM HOUSING	
2	1	SEE CHART	3.6MM SURLOK METAL ASSEMBLY	
1	1	10-647160-002	3.6MM SURLOK TOP HOUSING	

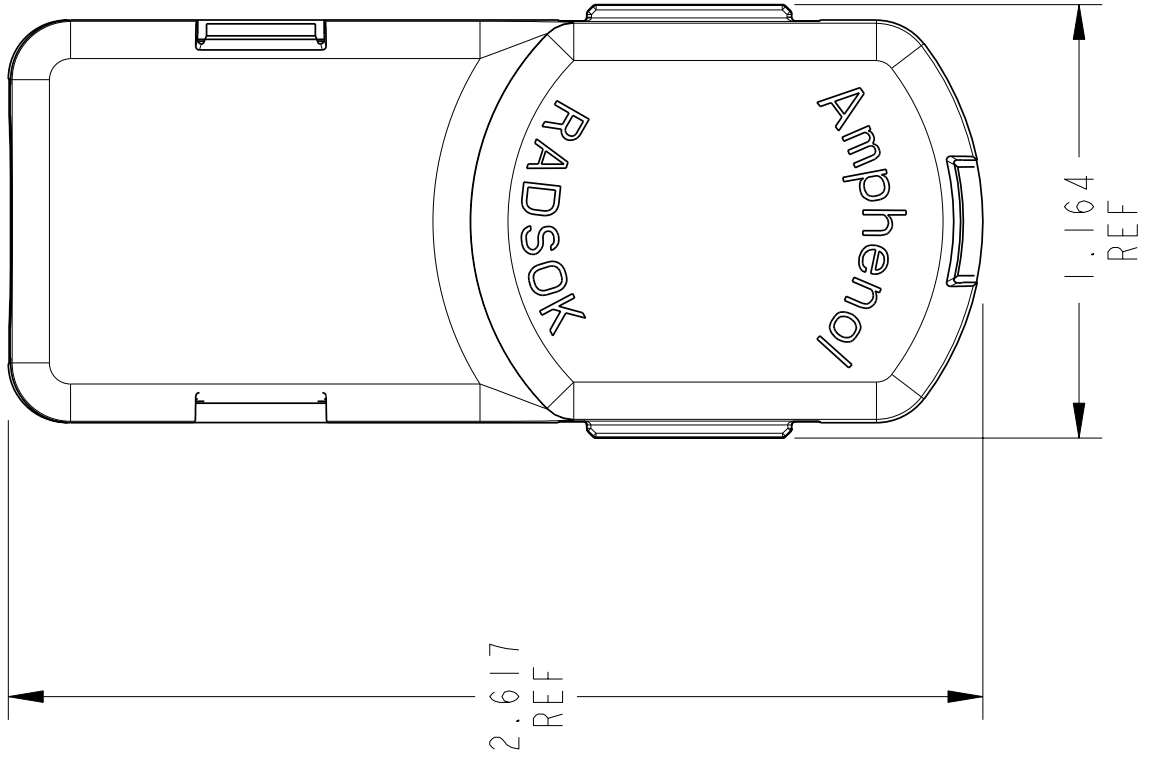
**AMPHENOL CORPORATION**  
 36MM SURLOK RADSOX ASSEMBLY



3

PART NUMBER	WIRE GAGE	Q
10-647185-011	1 AWG	3
10-647185-014	1 AWG	3
10-647185-015	1 AWG	3
10-647185-021	2 AWG	3
10-647185-024	2 AWG	3
10-647185-025	2 AWG	3

4



4

3

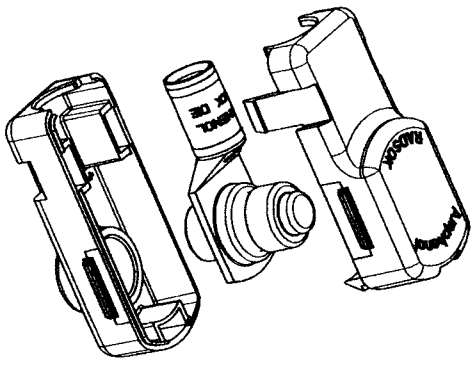
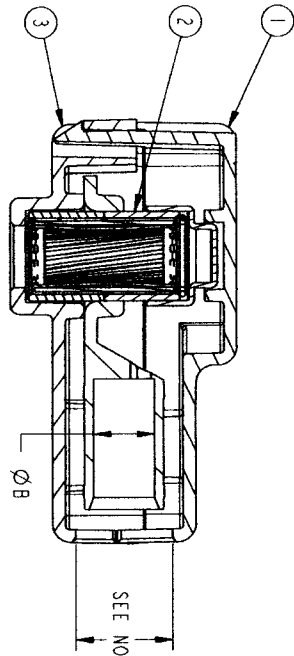
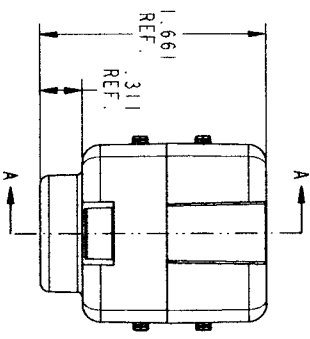
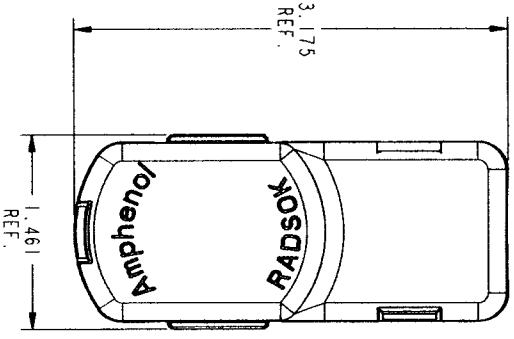
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10-647186-1 (X1) 1984799-01

REVISIONS	
REV	DESCRIPTION
1	
2	
3	
4	

PART NUMBER	WIRE GAGE	Ø B	ITEM #2	RADSOK FINISH
10-647186-1X1	1/0 AWG	.390	10-647161-1X1	SILVER
10-647186-1X4	1/0 AWG	.390	10-647161-1X4	NICKEL
10-647186-1X5	1/0 AWG	.390	10-647161-1X5	GOLD
10-647186-2X1	2/0 AWG	.450	10-647161-2X1	SILVER
10-647186-2X4	2/0 AWG	.450	10-647161-2X4	NICKEL
10-647186-2X5	2/0 AWG	.450	10-647161-2X5	GOLD



SCALE 1.000

PRELIMINARY

- 4) ASSEMBLY HOUSINGS ARE UL 94 V-0 RATED.
- 3) THE MAXIMUM WIRE JACKET OD IS .605 DIAMETER.
- 2) CONNECTOR SHOWN MATES WITH PIN CONTACT PART NUMBER C10-647178-001 ) OR EQUIV.
- 1) LUG MUST BE CRIMPED TO WIRE BEFORE TOP & BOTTOM HOUSINGS ARE SNAPPED TOGETHER FOR FINAL ASSEMBLY.

NOTES:

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PRO/ENGINEER INFORMATION: PROJECT: 10-647186-1; DRAWING NAME: 10-647186-1 (X1); NEXT ASSEMBLY:

UNLESS OTHERWISE SPECIFIED	MATERIAL SPEC.
LINER DIMENSIONS ARE IN INCHES	N/A
TOLERANCES:	
.XXX ± .005 ANGLES ±2°	
.XXX ± .010	
.XXX ± .015	
.XXX ± .020	
.XXX ± .030	
.XXX ± .040	
.XXX ± .050	
.XXX ± .060	
.XXX ± .070	
.XXX ± .080	
.XXX ± .090	
.XXX ± .100	
OTHER AMPEREOL SIDS. PER 9-3800	
STRAIGHT TOLER. OUT	
DEFINITE MAX.	

APPROVALS	DATE
DESIGNED BY: J. SANDOZ	
CHECKED BY: J. SANDOZ	
THIRD ANGLE PROJECTION	

POS	QTY	PART NUMBER	DESCRIPTION	NOTE
3	1	10-647183-001	10.3MM SURLOK BOTTOM HOUSING	
2	1	SEE CHART	10.3MM SURLOK METAL ASSEMBLY	
1	1	10-647183-002	10.3MM SURLOK TOP HOUSING	

PARTS LIST

AMPHENOL CORPORATION

10.3MM SURLOK RADSOK ASSEMBLY

SCALE: 1.0 REF: 10-647185 SHEET 1 OF 1

10-647186-1 (X1) SHEET 1 OF 1 A

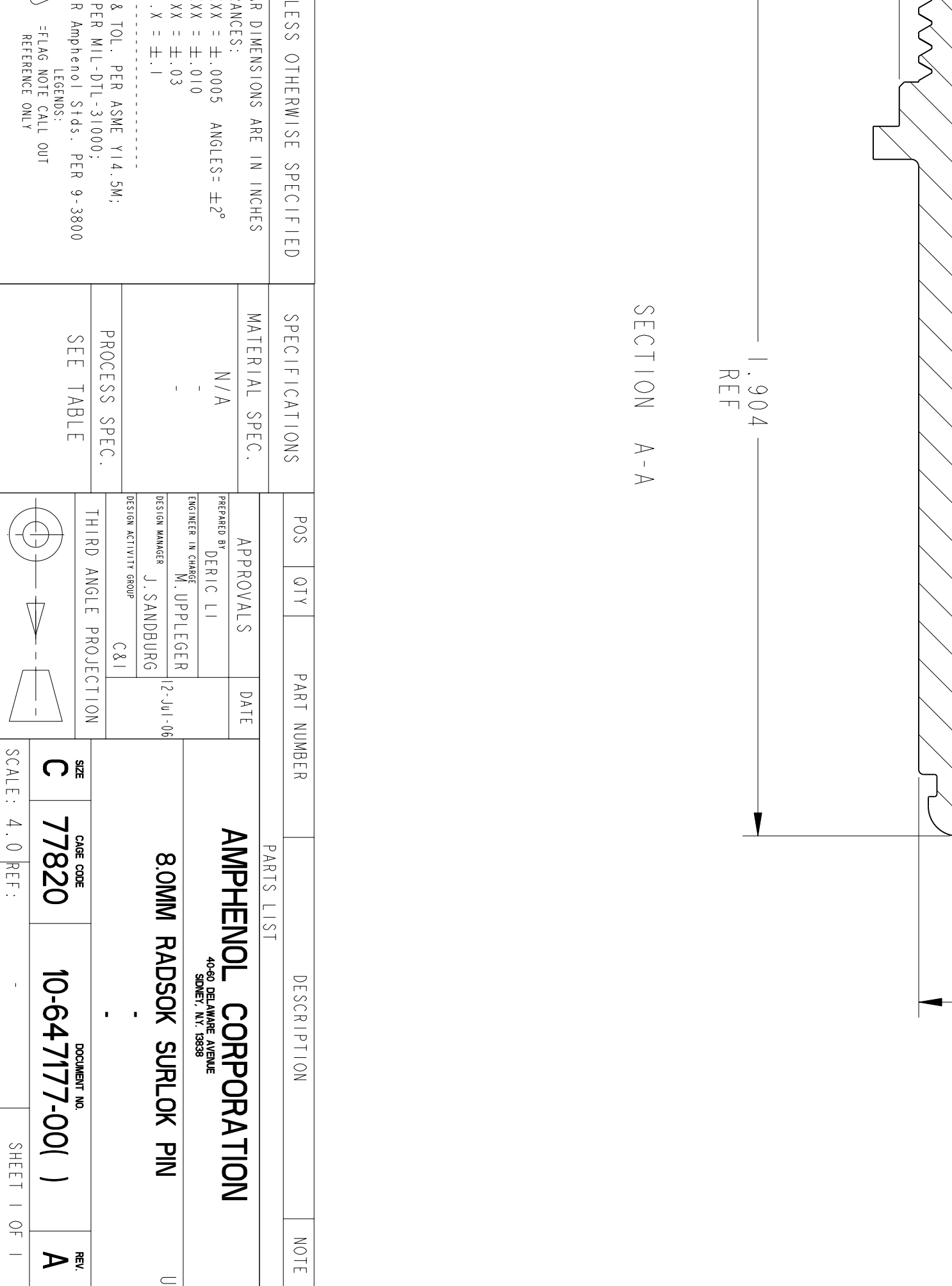
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2

1

1.904 REF

SECTION A-A



LESS OTHERWISE SPECIFIED

SPECIFICATIONS

ALL DIMENSIONS ARE IN INCHES  
 ANGLES: XX = ±.0005 ANGLE = ±2°  
 XX = ±.010  
 XX = ±.03  
 X = ±.1

& TOL. PER ASME Y14.5M;  
 PER MIL-DTL-31000;  
 R Amphinol Stds. PER 9-3800  
 LEGENDS:  
 - FLAG NOTE CALL OUT  
 REFERENCE ONLY

MATERIAL SPEC.

N/A

-

-

PROCESS SPEC.

SEE TABLE

POS

QTY

PART NUMBER

DESCRIPTION

NOTE

APPROVALS

DATE

PREPARED BY  
DERIC LI

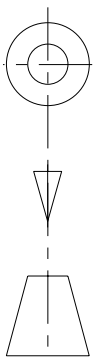
ENGINEER IN CHARGE  
M. UPPLERGER

DESIGN MANAGER  
J. SANDBURG

DESIGN ACTIVITY GROUP  
C&I

12-Jul-06

THIRD ANGLE PROJECTION



PARTS LIST

**AMPHENOL CORPORATION**  
 4050 DELAWARE AVENUE  
 SIDNEY, N.Y. 13838  
**8.0MM RADSOX SURLOK PIN**

SIZE

CAGE CODE

DOCUMENT NO.

REV.

C 77820

REF:

-

10-647177-00( )

A

SCALE: 4.0

SHEET 1 OF 1

.223  
REF

1.169  
REF

SECTION A-A

.224  
REF

ALL DIMENSIONS ARE IN INCHES  
 ANGLES:  
 XX = ±.0005 ANGLE = ±2°  
 XX = ±.010  
 XX = ±.03  
 X = ±.1

& TOL. PER ASME Y14.5M;  
 PER MIL-DTL-31000;  
 R Amphenol Stds. PER 9-3800  
 LEGENDS:  
 - FLAG NOTE CALL OUT  
 REFERENCE ONLY

SPECIFICATIONS

MATERIAL SPEC.  
N/A

PROCESS SPEC.  
-

SEE TABLE

POS

QTY

PART NUMBER

DESCRIPTION

NOTE

APPROVALS

DATE

PREPARED BY  
DERIC LI

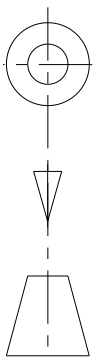
ENGINEER IN CHARGE  
J. SANDBURG

DESIGN MANAGER  
J. SANDBURG

DESIGN ACTIVITY GROUP  
C&I

25-Jul-06

THIRD ANGLE PROJECTION



PARTS LIST  
**AMPHENOL CORPORATION**  
 4050 DELAWARE AVENUE  
 SIDNEY, N.Y. 13838  
**5.7MM RADSOK SURLOK PIN**

SIZE

CAGE CODE

DOCUMENT NO.

REV.

C 77820 10-647176-00( )

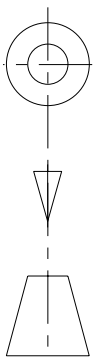
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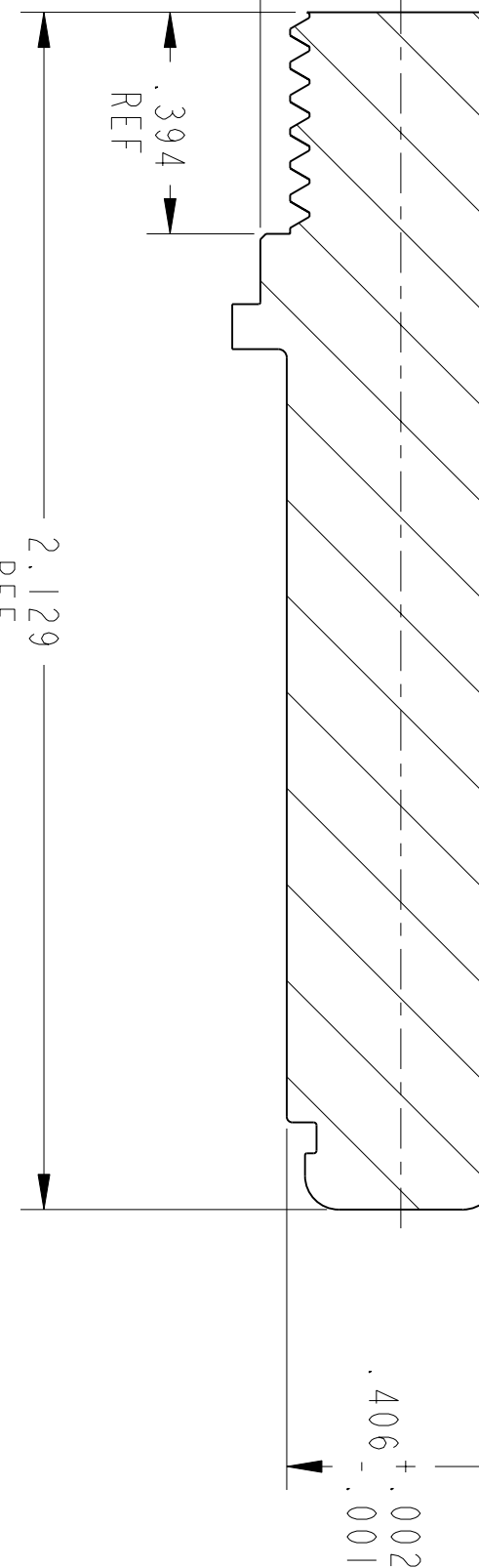
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SHEET 1 OF 1

.935  
REF

SECTION A-A

LESS OTHERWISE SPECIFIED		SPECIFICATIONS		POS	QTY	PART NUMBER	DESCRIPTION	NOTE
ALL DIMENSIONS ARE IN INCHES ANGLES: XX = ±.0005    ANGLES= ±2° XX = ±.010 XX = ±.03 X = ±.1		MATERIAL SPEC. N/A - - PROCESS SPEC. SEE TABLE		APPROVALS PREPARED BY: DERIC LI ENGINEER IN CHARGE: M. UPPLERGER DESIGN MANAGER: J. SANDBURG DESIGN ACTIVITY GROUP: C&I		31-Jul-06	PARTS LIST <b>AMPHENOL CORPORATION</b> 40-50 DELAWARE AVENUE SIDNEY, N.Y. 13838 <b>3.6MM RADSOK SURLOK PIN</b>	
& TOL. PER ASME Y14.5M; PER MIL-DTL-31000; R Amphenol Stds. PER 9-3800 LEGENDS: -FLAG NOTE CALL OUT REFERENCE ONLY		THIRD ANGLE PROJECTION 		SIZE: <b>C</b> CAGE CODE: <b>77820</b> SCALE: 8.0	REF: 10-647177-00( ) DOCUMENT NO.: <b>10-647175-00( )</b>	SHEET 1 OF 1 REV: <b>A</b>		



SECTION A-A

LESS OTHERWISE SPECIFIED  
 DIMENSIONS ARE IN INCHES  
 ANGLES:  
 XX = ±.0005 ANGLE = ±2°  
 XX = ±.010  
 XX = ±.03  
 X = ±.1  
 & TOL. PER ASME Y14.5M:  
 PER MIL-DTL-31000:  
 R Amphinol Stds. PER 9-3800  
 LEGENDS:  
 - FLAG NOTE CALL OUT  
 REFERENCE ONLY

SPECIFICATIONS	MATERIAL SPEC.
	N/A
	PROCESS SPEC.
	SEE TABLE

POS	QTY	PART NUMBER
APPROVALS		
PREPARED BY	DERIC LI	DATE
ENGINEER IN CHARGE	J. SANGBURG	25-Jul-06
DESIGN MANAGER	J. SANDBURG	
DESIGN ACTIVITY GROUP	C&I	
THIRD ANGLE PROJECTION		

PARTS LIST			
<b>AMPHENOL CORPORATION</b> 40-50 DELAWARE AVENUE SIDNEY, N.Y. 13838			
10.3MM RADSOK SURLOK PIN			
SIZE	CAGE CODE	DOCUMENT NO.	REV.
C	77820	10-647178-00( )	A
SCALE: 3.0	REF: 10-647177-00( )	SHEET 1 OF 1	

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[CS3106A10SL3S004](#) [CS3106A-18-73S](#) [CS3108A-14S-52S](#) [CS3108A-28-51S](#) [6162-233-1277](#) [6162-324-1231](#) [M243082296Z](#)  
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