

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

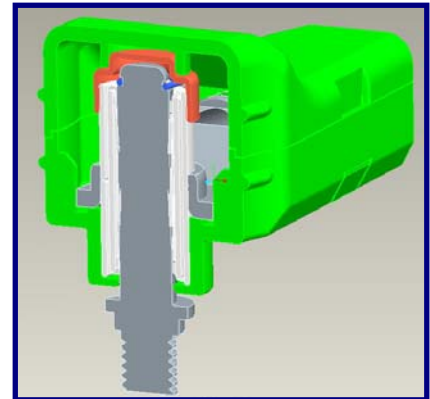
Technical Specifications:

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 ⁽¹⁾ Part Number	Lug Only ⁽²⁾ 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

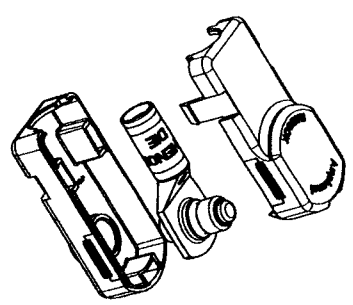
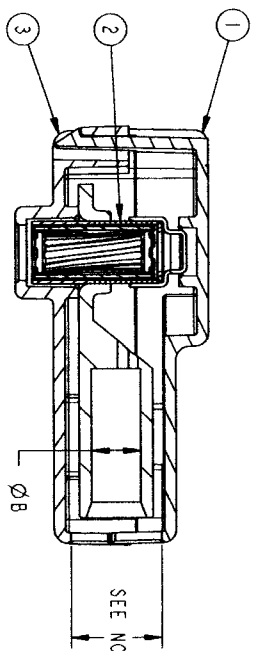
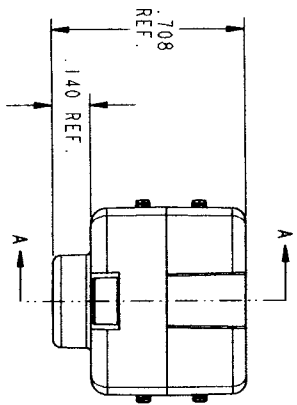
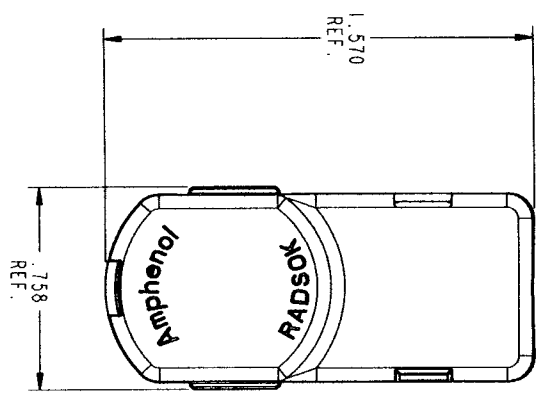
Notes: (1) SurLok™ Kit contains the wire crimp lug, plus a two-piece dielectric clamshell housing. Housing is available in black color as standard. Consult factory for alternate color options.

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

Amphenol

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



SCALE 1.500

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 C10-647175-001) 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.

SECTION A-A

PRELIMINARY

POS	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	

PARTS LIST

AMPHENOL CORPORATION
36MM SURLOK RADSOX ASSEMBLY

APPROVALS	DATE
DESIGNED BY: ERIC LI	
DESIGNED BY: SANDORING	
DESIGNED BY: J. SANDORING	
DESIGNED BY: C&I	

UNLESS OTHERWISE SPECIFIED	SPECIFICATIONS
LINEAR DIMENSIONS ARE IN INCHES	N/A
TOLERANCES:	
.XXX ± .005 ANGLES ±2°	
.XX ± .010	
.X ± .01	
Ø ± .01	
DIM. & TOL. PER ASME Y14.5M	
DIM PER MIL-DTL-31000	
OTHER AMPHENOL SIDS PER 9-3800	
PER MIL-DTL-31000	
PER MIL-DTL-31000	
PER MIL-DTL-31000	

PROJ/ENGINEER INFORMATION
Proj/Model Used:
Drawings Name:
Drawings Number:
Drawings Revision:
Drawings Date:
Drawings Author:
Drawings Checker:
Drawings Approver:
Drawings Date:
Drawings Revision:
Drawings Date:
Drawings Revision:

MATERIAL SPEC.
N/A

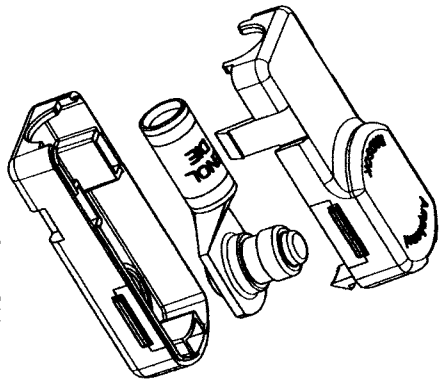
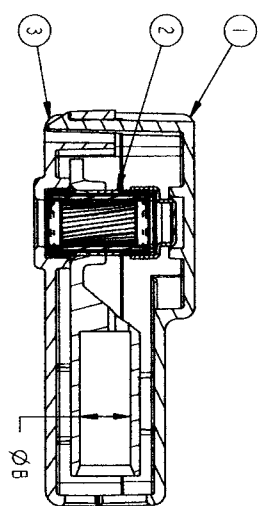
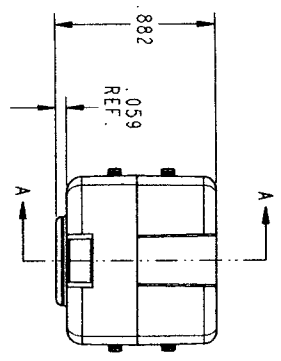
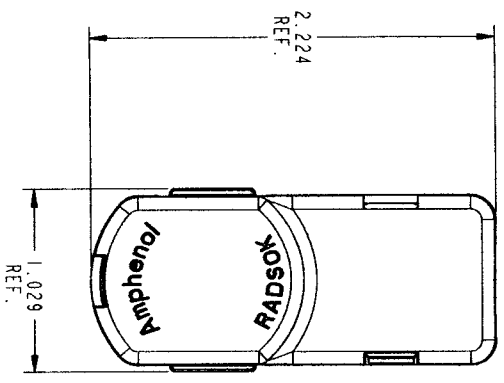
PROCESS SPEC.
N/A

THIRD ANGLE PROJECTION

SCALE	DATE	REV	DATE
SCALE: 2.0 REF.			

PART NUMBER	WIRE GAGE	ØB	ITEM #2	RADSOX FINISH
10-647184-041	4 AWG	.280	10-647166-041	SILVER
10-647184-044	4 AWG	.280	10-647166-044	NICKEL
10-647184-045	4 AWG	.280	10-647166-045	GOLD
10-647184-061	6 AWG	.220	10-647166-061	SILVER
10-647184-064	6 AWG	.220	10-647166-064	NICKEL
10-647184-065	6 AWG	.220	10-647166-065	GOLD

REVISONS	
LT#	DATE



4) ASSEMBLY HOUSINGS ARE UL 94 V-0 RATED.

3) THE MAXIMUM WIRE JACKET OD IS 0.370 DIAMETER.

2) CONNECTOR SHOWN MATES WITH PIN CONTACT PART NUMBER C10-647176-001) OR EQUIV.

1) LUG MUST BE CRIMPED TO WIRE BEFORE TOP & BOTTOM HOUSINGS ARE SNAPPED TOGETHER FOR FINAL ASSEMBLY.

NOTES:

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SECTION A-A

PRELIMINARY

POS	QTY	PART NUMBER	DESCRIPTION	NOTE
3	1	10-647172-002	5.7MM SURLOK BOTTOM HOUSING	
2	1	SEE CHART	5.7MM SURLOK METAL ASSEMBLY	
1	1	10-647172-002	5.7MM SURLOK TOP HOUSING	

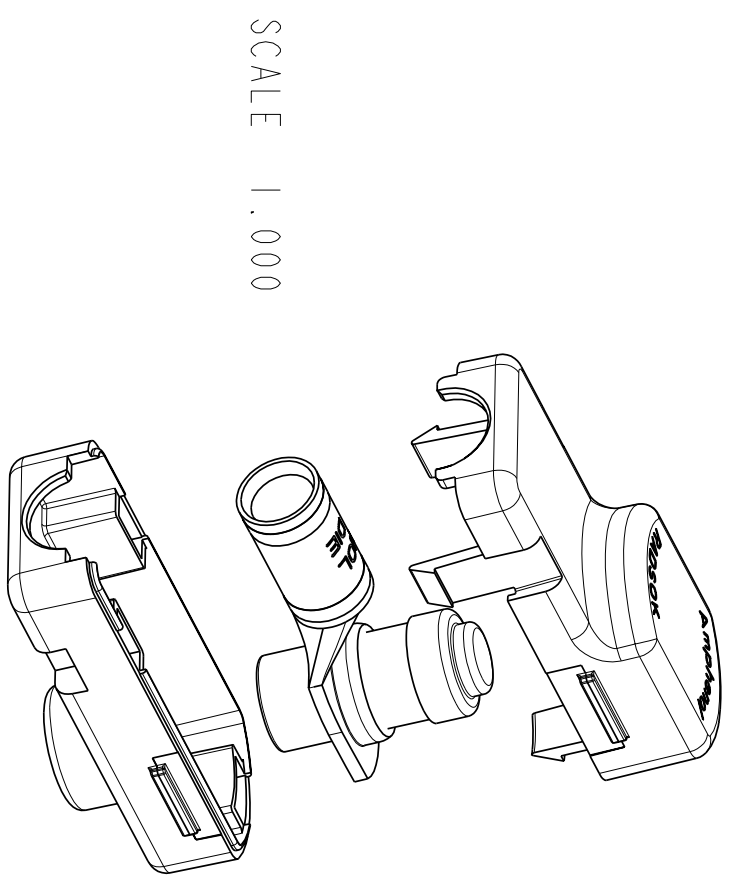
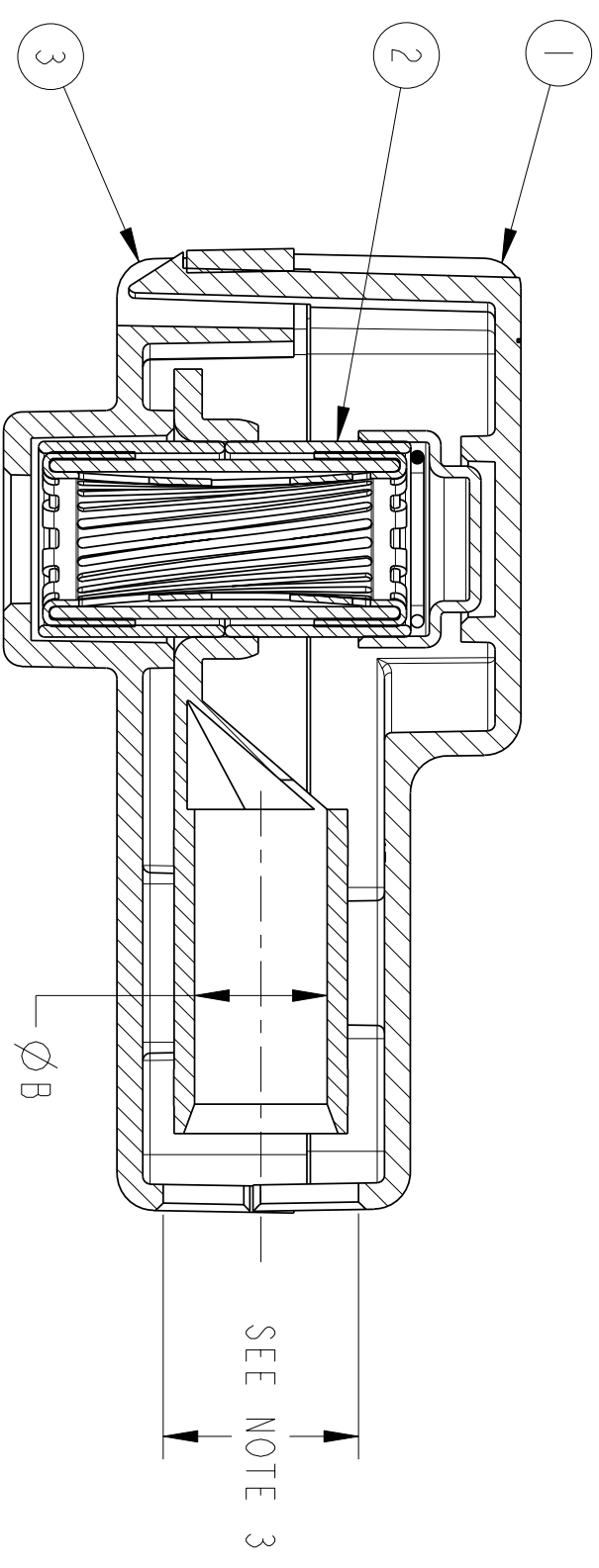
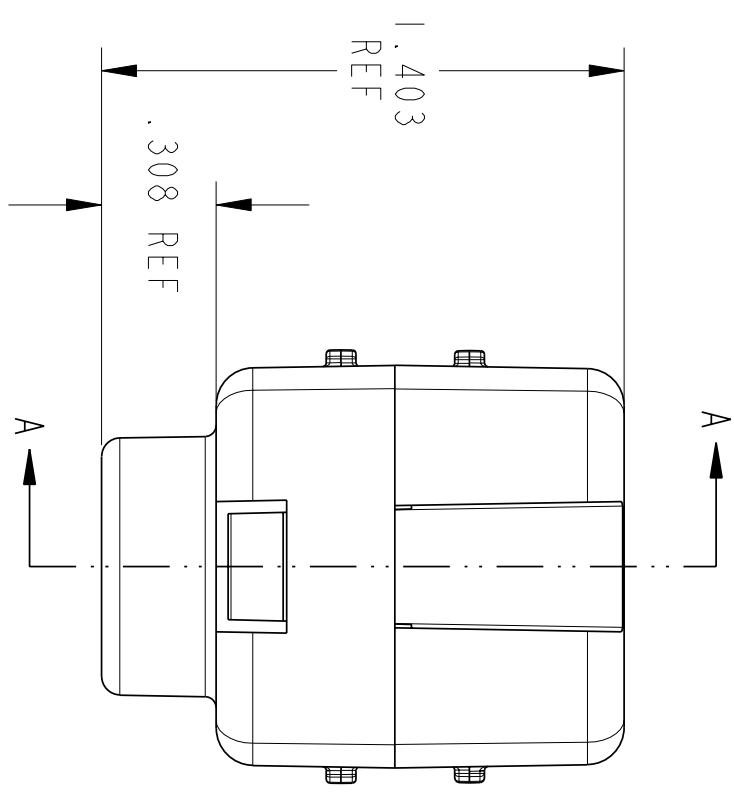
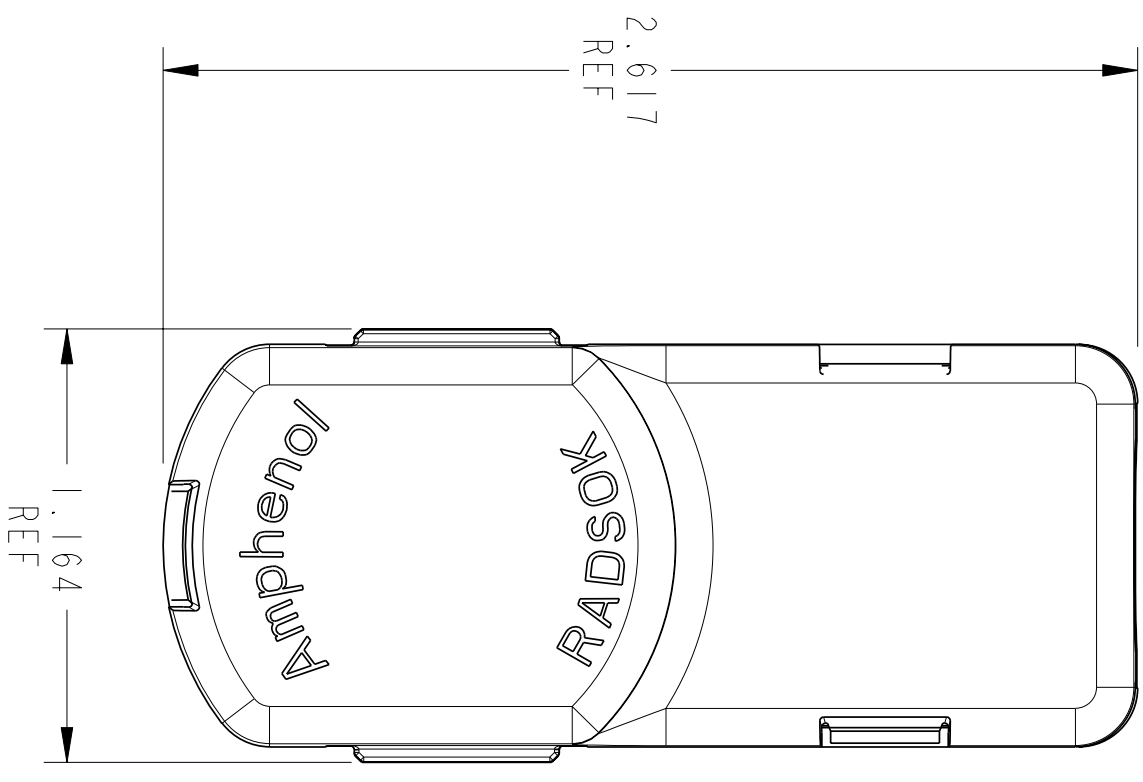
AMPHENOL CORPORATION
 57MM SURLOK RADSOX ASSEMBLY

APPROVALS	DATE
DESIGNER: DERIC LI	
PREPARED BY: SANDBURG	
DATE: 10-14-90	
THIRD ANGLE PROJECTION	

SCALE: 1.0 REF.	C	77820	10-64784-01 X 1	SHEET 1 OF 1
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PART NUMBER	WIRE GAGE	Ø B	ITEM #2	RADSOK FINISH
10-647185-011	1 AWG	.360	10-647173-011	SILVER
10-647185-014	1 AWG	.360	10-647173-014	NICKEL
10-647185-015	1 AWG	.360	10-647173-015	GOLD
10-647185-021	2 AWG	.310	10-647173-021	SILVER
10-647185-024	2 AWG	.310	10-647173-024	NICKEL
10-647185-025	2 AWG	.310	10-647173-025	GOLD

REV	1 OF 1 SHEETS	10-58179-01
REVISIONS		
LTR	DESCRIPTION	DATE
A	INITIAL RELEASE	



SCALE 1.000

- 4) ASSEMBLY HOUSINGS ARE UL 94 V-0 RATED.
- 3) THE MAXIMUM WIRE JACKET OD IS .505 DIAMETER.
- 2) CONNECTOR SHOWN MATES WITH PIN CONTACT PART NUMBER C10-647177-00() OR EQUIV.
- 1) LUG MUST BE CRIMPED TO WIRE BEFORE TOP & BOTTOM HOUSINGS ARE SNAPPED TOGETHER FOR FINAL ASSEMBLY.

NOTES:

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10-647185-01 () SHEET 1 OF 1 A

UNLESS OTHERWISE SPECIFIED

LINEAR DIMENSIONS ARE IN INCHES
 TOLERANCES:
 .XXXX = ±.0005 ANGLES = ±2°
 .XXX = ±.010
 .XX = ±.03
 .X = ±.1

DIM. & TOL. PER ASME Y14.5M;
 DRW PER MIL-DTL-31000;
 OTHER AMPHENOL STDS. PER 9-3800
 LEGENDS:
 - FLAG NOTE CALL OUT
 REFERENCE ONLY

SPECIFICATIONS

MATERIAL SPEC. N/A

PROCESS SPEC. N/A

APPROVALS

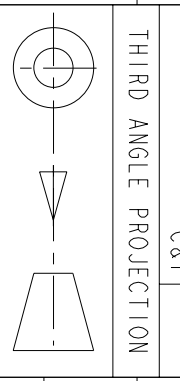
PREPARED BY: W. UPPLERGER
 ENGINEER IN CHARGE: J. SANDBURG
 DESIGN MANAGER: D. GALLUSSER
 DESIGN ACTIVITY GROUP: C&I
 DATE: 11-Jul-06

PARTS LIST

POS	QTY	PART NUMBER	DESCRIPTION	NOTE
3	1	10-647174-001	8MM SURLOK BOTTOM HOUSING	
2	1	SEE CHART	8MM SURLOK METAL ASSEMBLY	
1	1	10-647174-002	8MM SURLOK TOP HOUSING	

AMPHENOL CORPORATION
 4050 DELAWARE AVENUE
 SENECA, N.Y. 13858

8MM SURLOK RADSOX ASSEMBLY

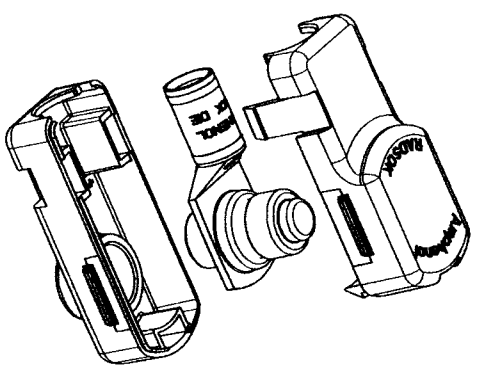
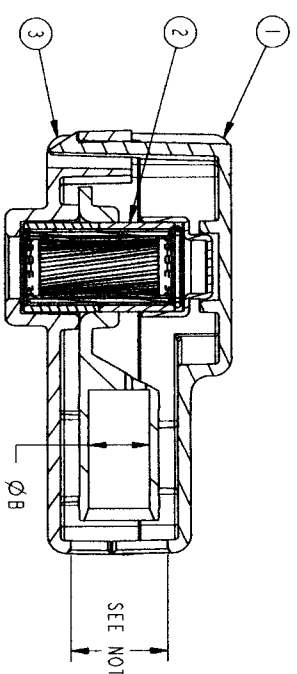
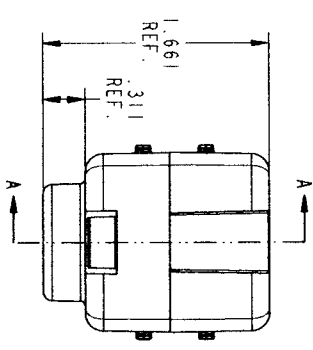
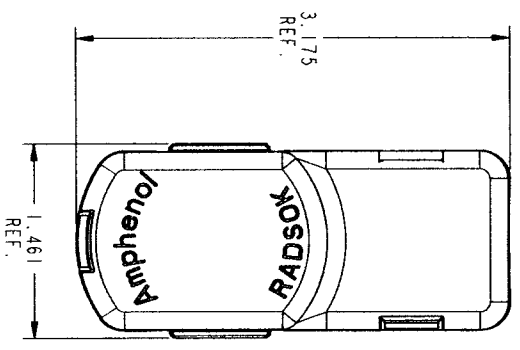


SCALE: 2.0 REF:
 SIZE: C CASE CODE: 77820 DOCUMENT NO: 10-647185-01 () REV: A

IMAGED / Aug . 22 2006, 10:13 AM

PART NUMBER	WIRE GAGE	ØB	ITEM #2	RADSOX 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

REV	DATE	DESCRIPTION	DATE
1			



SCALE 1.000

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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SECTION A-A

PRELIMINARY

POS	QTY	PART NUMBER	DESCRIPTION	NOTE
3	1	10-647163-001	10.3MM SURLOK BOTTOM HOUSING	
2	1	SEE CHART	10.3MM SURLOK METAL ASSEMBLY	
1	1	10-647163-002	10.3MM SURLOK TOP HOUSING	

AMPHENOL CORPORATION

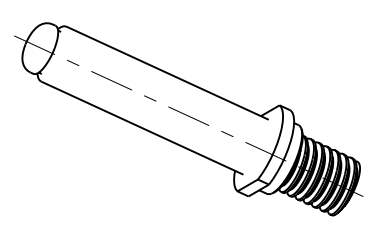
10.3MM SURLOK RADSOX ASSEMBLY

UNLESS OTHERWISE SPECIFIED
 LINEAR DIMENSIONS ARE IN INCHES
 TOLERANCES:
 .XXX ± .005 ANGLES ±2°
 .XX ± .010
 .X ± .01
 DIM. & TOL. PER ASME Y14.5M;
 DIM PER MIL-DTL-31000;
 OTHER ANGLED SIDS PER 9-3800
 SURF. TEXTURE: 32
 REFERENCE OUT

MATERIAL SPEC: N/A
 PROCESS SPEC: N/A

APPROVALS: DATE
 DESIGNED BY: BERIC LI
 DRAWN BY: SUPPLEGER
 CHECKED BY: SANDBURG
 THIRD ANGLE PROJECTION

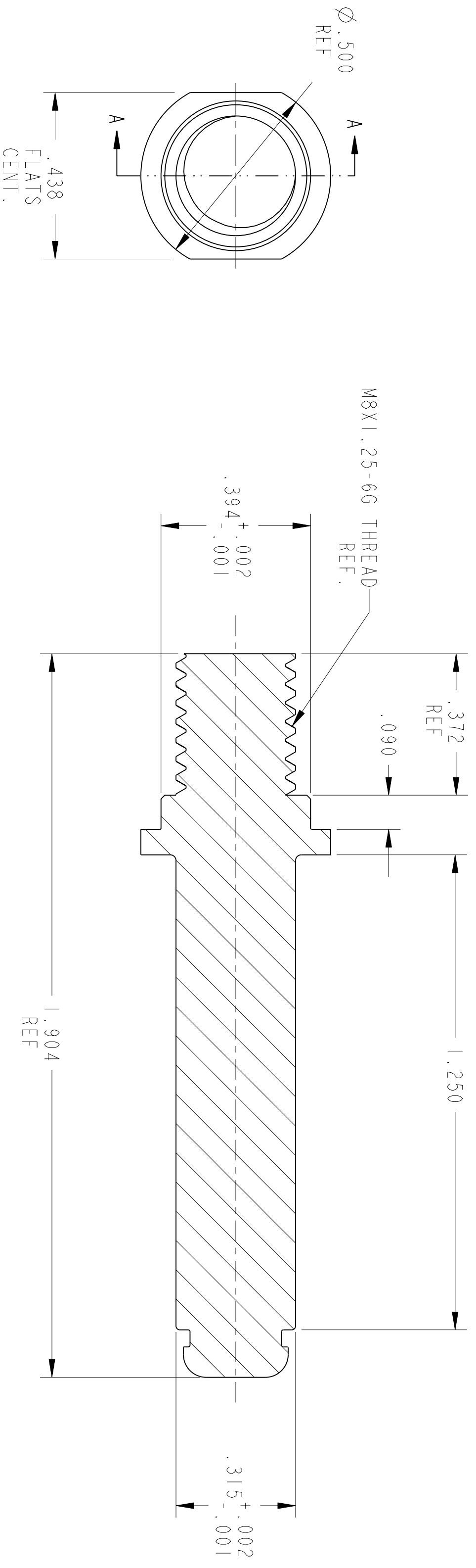
SCALE: 1.0 REF: 10-647185
 SHEET 1 OF 1



SCALE 1.000

PART NUMBER	FINISH
10-647177-001	SILVER PER 9-6800-1
10-647177-004	NICKEL PER 9-885
10-647177-005	GOLD PER 9-6800-5

REV.	1 OF 1 SHEETS	100-211749-01	REVISIONS	DATE
A			INITIAL RELEASE	



SECTION A-A

3) PLATED PIN IS MADE FROM 10-647177-00B

2) THE REFERENCED MATERIAL SHALL BE CERTIFIED COMPLIANT TO THE 2002/95/EC ROHS DIRECTIVE AS AMENDED PER 2005/516/EC.

1) APPROX. SURFACE AREA: 2.461 SQ. IN. (1587.74 SQ. MM.)

NOTES:

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DOCUMENT NO. 10-647177-00() SHEET 1 OF 1 REV. A

PRO/ENGINEER INFORMATION	PRO/E MODEL USED:
N/A	10-647177-000.PRM
N/A	Drawing Name: 10-647177-000
N/A	NEXT ASSEMBLY

UNLESS OTHERWISE SPECIFIED
LINEAR DIMENSIONS ARE IN INCHES
TOLERANCES:
.XXXX = ±.0005 ANGLES = ±2°
.XXX = ±.010
.XX = ±.03
.X = ±.1

SPECIFICATIONS
MATERIAL SPEC.
N/A

POS	QTY	PART NUMBER	NOTE

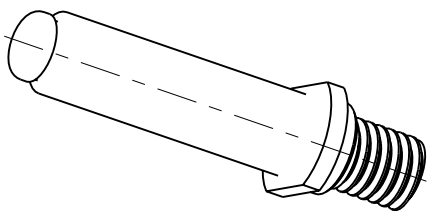
APPROVALS	DATE	THIRD ANGLE PROJECTION
PREPARED BY: DERIC LI ENGINEER IN CHARGE: M. UPLEGER DESIGN MANAGER: J. SANDBURG DESIGN ACTIVITY GROUP	12-Jul-06	C&I

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

PROCESS SPEC.
SEE TABLE

SIZE	DATE CODE	DOCUMENT NO.	REV.
C	77820	10-647177-00()	A

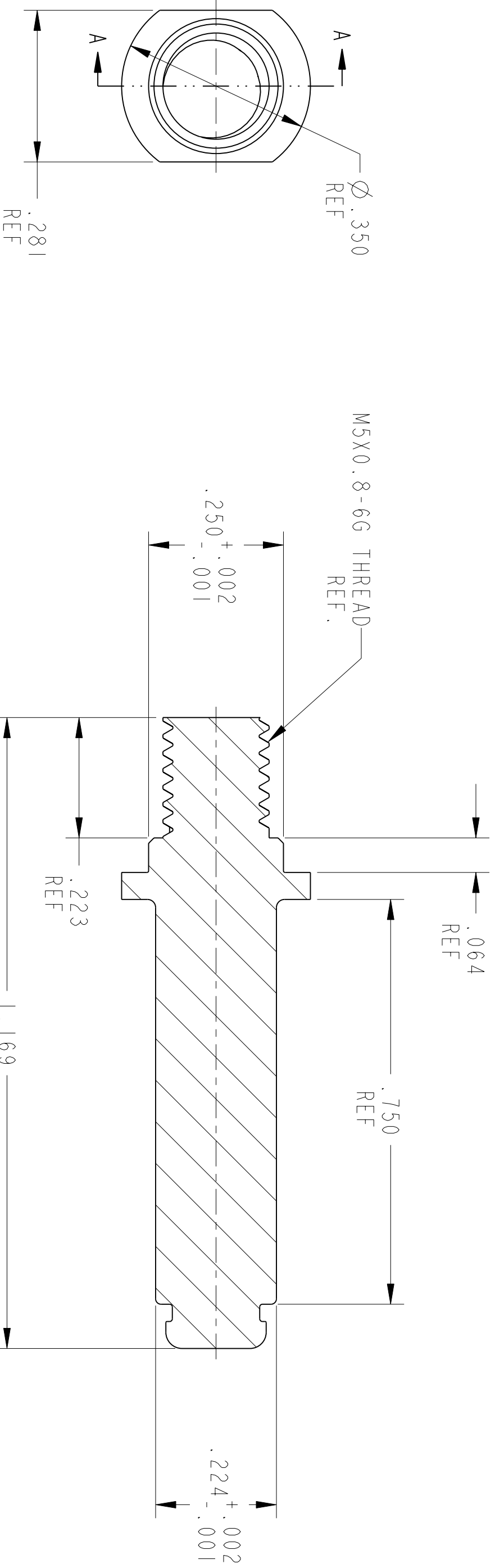
PARTS LIST	DESCRIPTION	NOTE
	AMPHENOL CORPORATION 40-60 DELAWARE AVENUE SHELTON, CT 06484	
	8.0MM RADSOX SURLOK PIN	U



SCALE 2.000

PART NUMBER	FINISH
10-647176-001	SILVER PER 9-6800-1
10-647176-004	NICKEL PER 9-885
10-647176-005	GOLD PER 9-6800-5

REV.	1 OF 1 SHEETS	() 100-921749-01	REV. A
REVISIONS		DATE	INITIAL
A	INITIAL RELEASE		



SECTION A-A

3) PLATED PIN IS MADE FROM 10-647176-00B

2) THE REFERENCED MATERIAL SHALL BE CERTIFIED COMPLIANT TO THE 2002/95/EC ROHS DIRECTIVE AS AMENDED PER 2005/516/EC.

1) APPROX. SURFACE AREA: 1.041 SQ. IN. (671.61 SQ. MM.)

NOTES:

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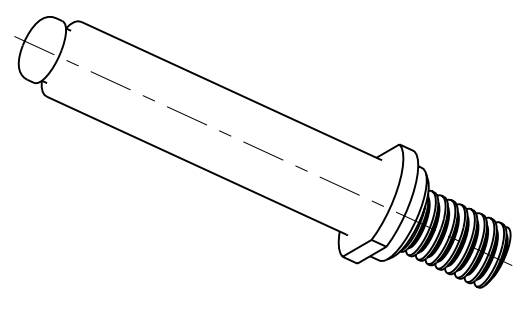
REV.	1 OF 1 SHEETS	() 100-921749-01	REV. A
REVISIONS		DATE	INITIAL
A	INITIAL RELEASE		

UNLESS OTHERWISE SPECIFIED	SPECIFICATIONS
LINEAR DIMENSIONS ARE IN INCHES	MATERIAL SPEC.
TOLERANCES:	N/A
.XXXX = ±.0005 ANGLES- ±2°	
.XXX = ±.010	
.XX = ±.03	
.X = ±.1	
DIM. & TOL. PER ASME Y14.5M;	PROCESS SPEC.
DRM PER MIL-DTL-31000;	SEE TABLE
OTHER Amphenol Stds. PER 9-3800	
LEGENDS:	
-FLAG NOTE CALL OUT	
REFERENCE ONLY	

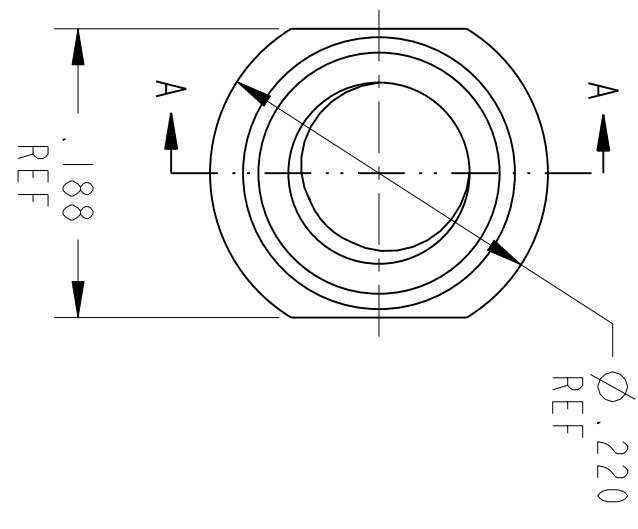
POS.	QTY.	PART NUMBER	NOTE
APPROVALS <td></td> <td></td> <td></td>			
PREPARED BY: DERIC LI <td></td> <td></td> <td></td>			
ENGINEER IN CHARGE: J. SANDBURG <td></td> <td></td> <td></td>			
DESIGN MANAGER: J. SANDBURG <td></td> <td></td> <td></td>			
DESIGN ACTIVITY GROUP: C&I <td></td> <td></td> <td></td>			
THIRD ANGLE PROJECTION <td></td> <td></td> <td></td>			

SIZE	DATE CODE	DOCUMENT NO.	REV.
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SCALE: 5.0 REF: 10-647177-00()		SHEET 1 OF 1	

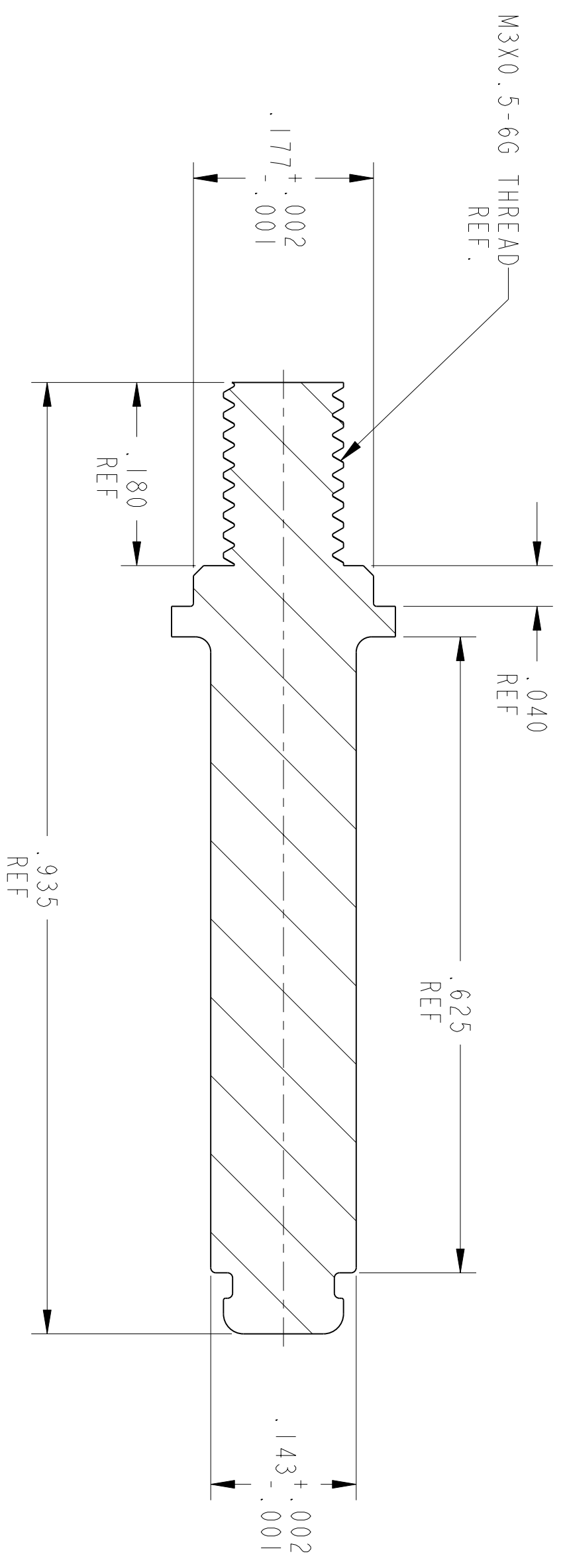
AMPHENOL CORPORATION
40-60 DELAWARE AVENUE
SHELTON, N.H. 03888
5.7MM RADSOX SURLOK PIN



SCALE 3.000



PART NUMBER	FINISH
10-647175-001	SILVER PER 9-6800-1
10-647175-004	NICKEL PER 9-885
10-647175-005	GOLD PER 9-6800-5



SECTION A-A

- 3) PLATED PIN IS MADE FROM 10-647175-00B
- 2) THE REFERENCED MATERIAL SHALL BE CERTIFIED COMPLIANT TO THE 2002/95/EC ROHS DIRECTIVE AS AMENDED PER 2005/516/EC.
- 1) APPROX. SURFACE AREA: .564 SQ. IN. (363.87 SQ. MM.)

NOTES:

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REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	

UNLESS OTHERWISE SPECIFIED
LINEAR DIMENSIONS ARE IN INCHES
TOLERANCES:
.XXXX = ±.0005 ANGLES - ±2°
.XXX = ±.010
.XX = ±.03
.X = ±.1

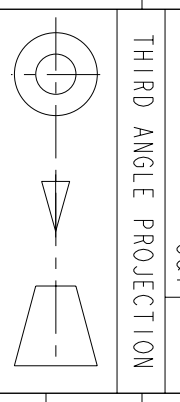
SPECIFICATIONS
MATERIAL SPEC. N/A
PROCESS SPEC. SEE TABLE

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

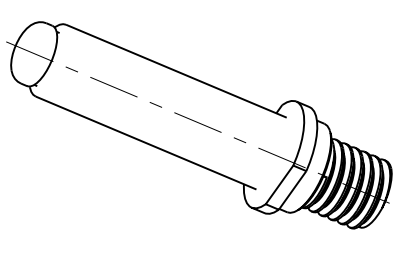
APPROVALS	DATE
PREPARED BY: DERIC LI	
ENGINEER IN CHARGE: M. UPLEGER	
DESIGN MANAGER: J. SANDBURG	31-Jul-06
DESIGN ACTIVITY GROUP: C&I	

POS	QTY	PART NUMBER	DESCRIPTION	NOTE
			AMPHENOL CORPORATION 40-60 DELAWARE AVENUE SHELTON, N.H. 03888	
			36MM RADSOX SURLOK PIN	

PRO/ENGINEER INFORMATION
Part/e Model Used: 10-647175-000 PART
Drawing Name: 10-647175-000

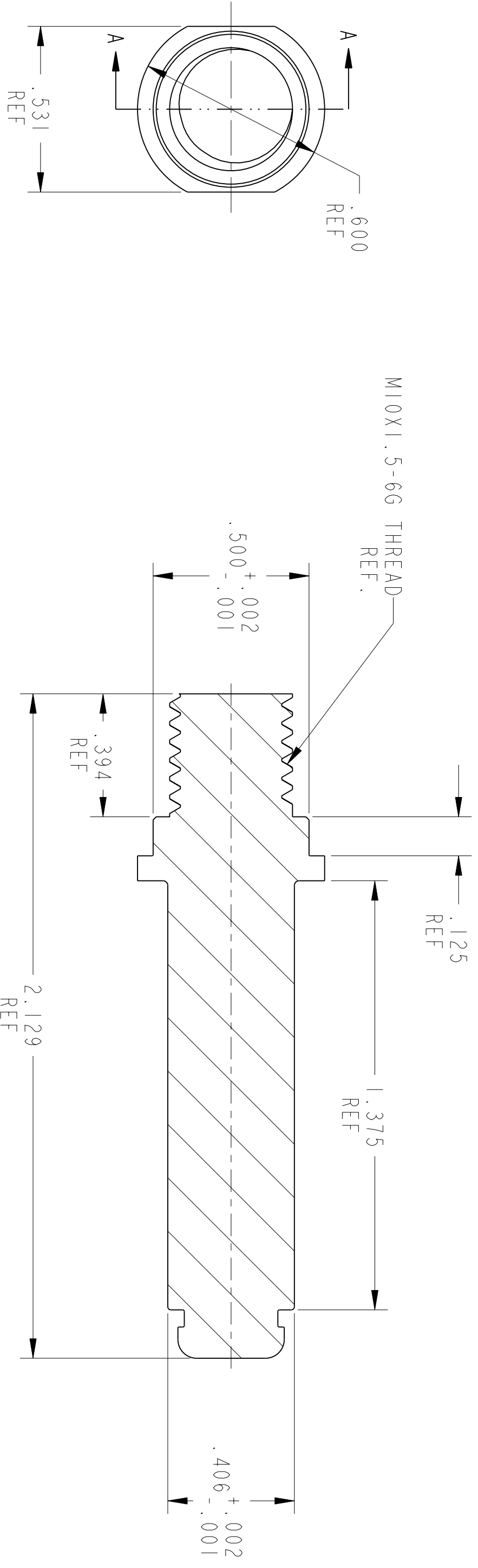


SIZE	DATE CODE	DOCUMENT NO.	REV.
C	77820	10-647175-001)	A



SCALE 1.000

PART NUMBER	FINISH
10-647178-001	SILVER PER 9-6800-1
10-647178-004	NICKEL PER 9-885
10-647178-005	GOLD PER 9-6800-5



SECTION A-A

- 3) PLATED PIN IS MADE FROM 10-647178-00B
- 2) THE REFERENCED MATERIAL SHALL BE CERTIFIED COMPLIANT TO THE 2002/95/EC ROHS DIRECTIVE AS AMENDED PER 2005/516/EC.
- 1) APPROX. SURFACE AREA: 3.502 SQ. IN. (2259.35 SQ. MM.)

NOTES:

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

REV.	1 OF 1 SHEETS	REVISIONS	DATE
A		INITIAL RELEASE	

UNLESS OTHERWISE SPECIFIED
 LINEAR DIMENSIONS ARE IN INCHES
 TOLERANCES:
 .XXXX = ±.0005 ANGLES - ±2°
 .XXX = ±.010
 .XX = ±.03
 X = ±.1
 DIM. & TOL. PER ASME Y14.5M;
 DRW PER MIL-DTL-31000;
 OTHER AMPHENOL STDS. PER 9-3800
 LEGENDS:
 -FLAG NOTE CALL OUT
 REFERENCE ONLY

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

APPROVALS	DATE	PART NUMBER	DESCRIPTION	NOTE
PREPARED BY: DERIC LI ENGINEER IN CHARGE: J. SANGBURG DESIGN MANAGER: J. SANDBURG DESIGN ACTIVITY GROUP: C&I	25-Jul-06			

PARTS LIST
 AMPHENOL CORPORATION
40-60 DELAWARE AVENUE
 SHERBORN, MA 01968
 103MM RADSOX SUPROK PIN

SIZE	DATE CODE	DOCUMENT NO.	REV.
C	77820	10-647178-00()	A

SCALE: 3.0 REF: 10-647177-00() SHEET 1 OF 1