

STAMPED AND FORMED CONTACTS, PG 1 of 2

Click on [blue underlined](#) part numbers to be taken to their spec sheets.

OPTIONS

PART NUMBER: [AT62-14-01XX](#)
DESCRIPTION: CONTACT, SOCKET, STAMPED, SIZE 16

MATERIAL:
 CONTACT BODY: COPPER ALLOY
 HOOD: STAINLESS STEEL
PLATING SUFFIX CODE:
 XX=22 NICKEL PLATING
 XX=44 GOLD PLATING
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: ATT-16-00, MFX-3950 & MFX-3953
CRIMPER SPECIFICATIONS: S2-15223 & S2-15224
CRIMP INFORMATION DRAWING: S2-15221 & S2-15222
CONTACTS PER REEL: APPROX. 4000 (PARTIAL REELS AVAILABLE)



PART NUMBER: [AT62-16-01XX](#)
DESCRIPTION: CONTACT, SOCKET, STAMPED, SIZE 16

MATERIAL:
 CONTACT BODY: COPPER ALLOY
 HOOD: STAINLESS STEEL
PLATING SUFFIX CODE:
 XX=22 NICKEL PLATING
 XX=44 GOLD PLATING
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: ATT-16-00, ATT-16-01, MFX-3950 & MFX-3953
CRIMPER SPECIFICATIONS: S2-15223 & S2-15224
CRIMP INFORMATION DRAWING: S2-15221 & S2-15222
CONTACTS PER REEL: APPROX. 4000 (PARTIAL REELS AVAILABLE)



PART NUMBER: [AT62-16-06XX](#)
DESCRIPTION: CONTACT, SOCKET, STAMPED, SIZE 16

MATERIAL:
 CONTACT BODY: COPPER ALLOY
 HOOD: STAINLESS STEEL
PLATING SUFFIX CODE:
 XX=22 NICKEL PLATING
 XX=44 GOLD PLATING
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: ATT-16-01, MFX-3950 & MFX-3953
CRIMPER SPECIFICATIONS: S2-15223 & S2-15224
CRIMP INFORMATION DRAWING: S2-15221 & S2-15222
CONTACTS PER REEL: APPROX. 4000 (PARTIAL REELS AVAILABLE)



PART NUMBER: [AT60-14-01XX](#)
DESCRIPTION: CONTACT, PIN, STAMPED, SIZE 16

MATERIAL: COPPER ALLOY
PLATING SUFFIX CODE:
 XX=22 NICKEL PLATING
 XX=44 GOLD PLATING
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: ATT-16-00, MFX-3950 & MFX-3953
CRIMPER SPECIFICATIONS: S2-15223 & S2-15224
CRIMP INFORMATION DRAWING: S2-15221 & S2-15222
CONTACTS PER REEL: APPROX. 4000 (PARTIAL REELS AVAILABLE)

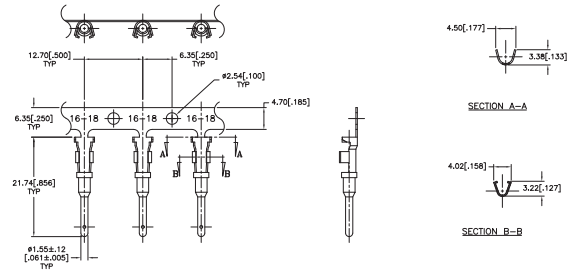


STAMPED AND FORMED CONTACTS, PG 2 of 2

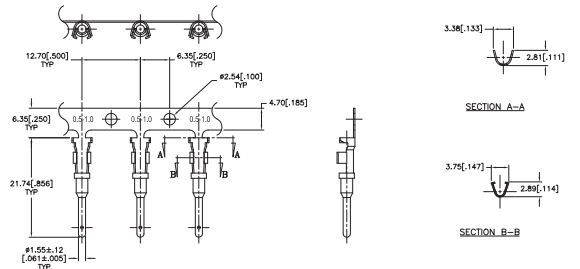
Click on [blue underlined part numbers](#) to be taken to their spec sheets.

OPTIONS

PART NUMBER: [AT60-16-01XX](#)
DESCRIPTION: CONTACT, PIN, STAMPED, SIZE 16
MATERIAL: COPPER ALLOY
PLATING SUFFIX CODE:
 XX=22 NICKEL PLATING
 XX=44 GOLD PLATING
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: ATT-16-00, ATT-16-01, MFX-3950 & MFX-3953
CRIMPER SPECIFICATIONS: S2-15223 & S2-15224
CRIMP INFORMATION DRAWING: S2-15221 & S2-15222
CONTACTS PER REEL: APPROX. 4000 (PARTIAL REELS AVAILABLE)



PART NUMBER: [AT60-16-06XX](#)
DESCRIPTION: CONTACT, PIN, STAMPED, SIZE 16
MATERIAL: COPPER ALLOY
PLATING SUFFIX CODE:
 XX=22 NICKEL PLATING
 XX=44 GOLD PLATING
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: ATT-16-01, MFX-3950 & MFX-3953
CRIMPER SPECIFICATIONS: S2-15223 & S2-15224
CRIMP INFORMATION DRAWING: S2-15221 & S2-15222
CONTACTS PER REEL: APPROX. 4000 (PARTIAL REELS AVAILABLE)



SOLID/MACHINED CONTACTS

Click on [blue underlined part numbers](#) to be taken to their spec sheets.

OPTIONS

MILITARY-STYLE

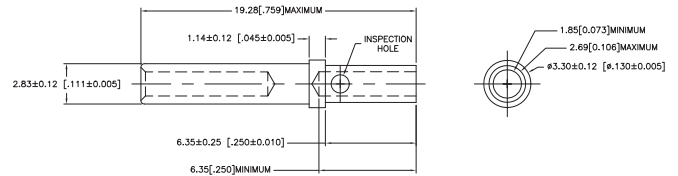
PART NUMBER: [AT60-202-16XX](#)
DESCRIPTION: CONTACT, PIN, SOLID MACHINED, SIZE 16
MATERIAL: COPPER ALLOY
PLATING SUFFIX CODE:
 XX=141 NICKEL PLATING
 XX=31 GOLD PLATING
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: CA-5D12 & CA-5E12
CRIMPER SPECIFICATIONS: S2-15219 & S2-15220
CRIMP INFORMATION DRAWING: S2-15218



PART NUMBER: [AT62-201-16XX](#)
DESCRIPTION: CONTACT, SOCKET, SOLID MACHINED, SIZE 16
MATERIAL:
 CONTACT BODY: COPPER ALLOY
 HOOD: STAINLESS STEEL
PLATING SUFFIX CODE:
 XX=141 NICKEL PLATING
 XX=31 GOLD PLATING
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: CA-5D12 & CA-5E12
CRIMPER SPECIFICATIONS: S2-15219 & S2-15220
CRIMP INFORMATION DRAWING: S2-15218



PART NUMBER: [65-54942-14](#)
DESCRIPTION: CONTACT, SOCKET, ROCKSOLID, SIZE 16
AWG RANGE: 14AWG
MATERIAL: COPPER ALLOY
PLATING: GOLD
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: CA-5D12 & CA-5E12
CRIMPER SPECIFICATIONS: S2-15219 & S2-15220
CRIMP INFORMATION DRAWING: S2-15218

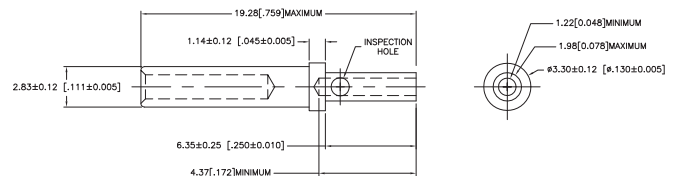


ROCKSOLID™ CONTACTS

PART NUMBER: [65-54942-16](#)
DESCRIPTION: CONTACT, SOCKET, ROCKSOLID, SIZE 16
AWG RANGE: 16AWG
MATERIAL: COPPER ALLOY
PLATING: GOLD
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: CA-5D12 & CA-5E12
CRIMPER SPECIFICATIONS: S2-15219 & S2-15220
CRIMP INFORMATION DRAWING: S2-15218

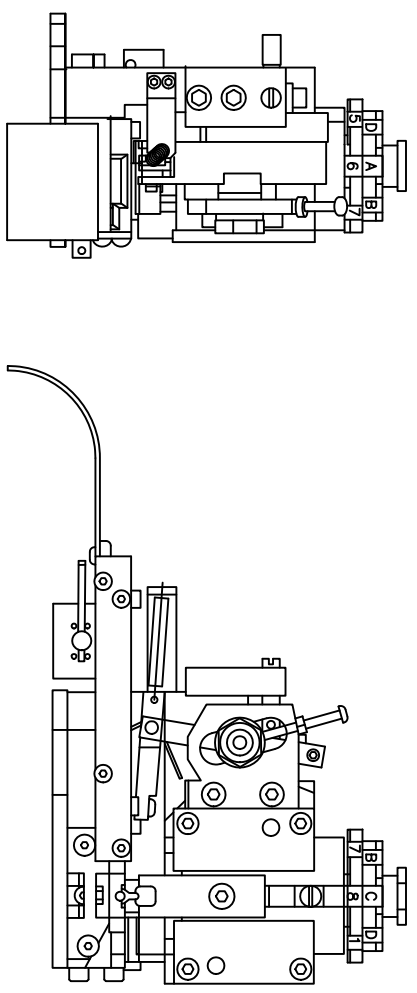


PART NUMBER: [65-54942-20](#)
DESCRIPTION: CONTACT, SOCKET, ROCKSOLID, SIZE 16
AWG RANGE: 20AWG
MATERIAL: COPPER ALLOY
PLATING: GOLD
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: CA-5D12 & CA-5E12
CRIMPER SPECIFICATIONS: S2-15219 & S2-15220
CRIMP INFORMATION DRAWING: S2-15218

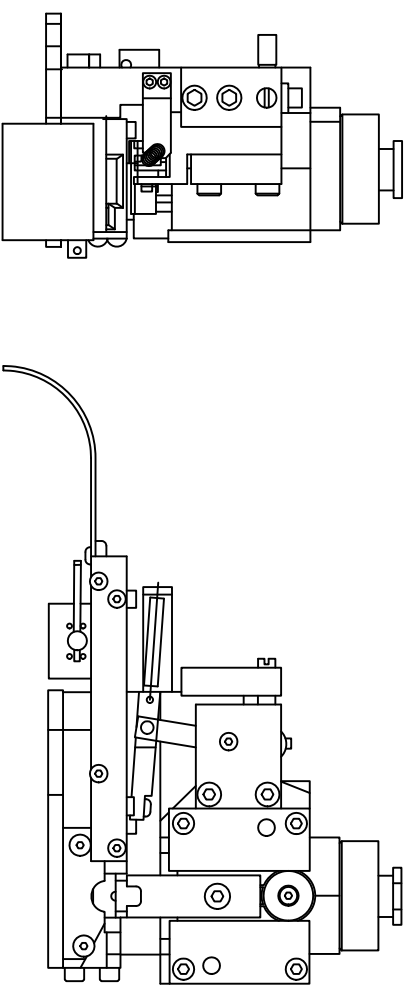


4 3 2 1

REVOLUTIONS		DESCRIPTION	DATE	BY	APPR
REV	ZONE	ECO	RELEASE NUMBER	B.D.B.	M.R.F.
A1	-	-	016571	6/12/08	



SINE PART NUMBER	MFX-3950
DEUTSCH PART NUMBER	DCT16-02-00
TYCO PART NUMBER	1-3-1385344-1, 2, 3, 4, 5 & 7



SINE PART NUMBER	MFX-3953
DEUTSCH PART NUMBER	DCT1620-02-00

ALL REFERENCES TO DEUTSCH PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO DEUTSCH INDUSTRIAL PRODUCTS.
ALL REFERENCES TO TYCO PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO TYCO ELECTRONICS.

QUANTITY	PART NUMBER	DESCRIPTION	ITEM
MATERIALS LIST			

UNLESS OTHERWISE SPECIFIED		SIGNATURES		DATE	
1) All dimensions are in inches.		DESIGNED BY	BERNIM	6/9/09	
2) Pl. DEC 30.00		CHECKED BY	TONCE	6/9/09	
3) Pl. DEC 30.00		ENGINEER	BERNIM		
4) Fabrication Standards Per:		APPROVAL	BERNIM	6/9/09	
5) Pl. DEC 30.00		CUSTOMER			
6) Pl. DEC 30.00		APPROVAL			

PROCESS SPECIFICATIONS:	MA	THE USE OF THIS DRAWING IS LIMITED TO THE SPECIFICATIONS, AND PERFORMANCE PRESENTED HEREIN. ALL DIMENSIONS ARE SUBJECT TO NORMAL TOLERANCES UNLESS OTHERWISE SPECIFIED. DRAWING REVISED HEREON MAY CONTAIN UNREVISED RIGHTS DATA.
CUSTOMER:	CRIMPER INFORMATION	MFX-3950 & MFX-3953
SIZE	10K44	S2-15224
SCALE	NONE	S2-15224
SHEET	1	OF 1

A

B

C

D

4 3 2 1

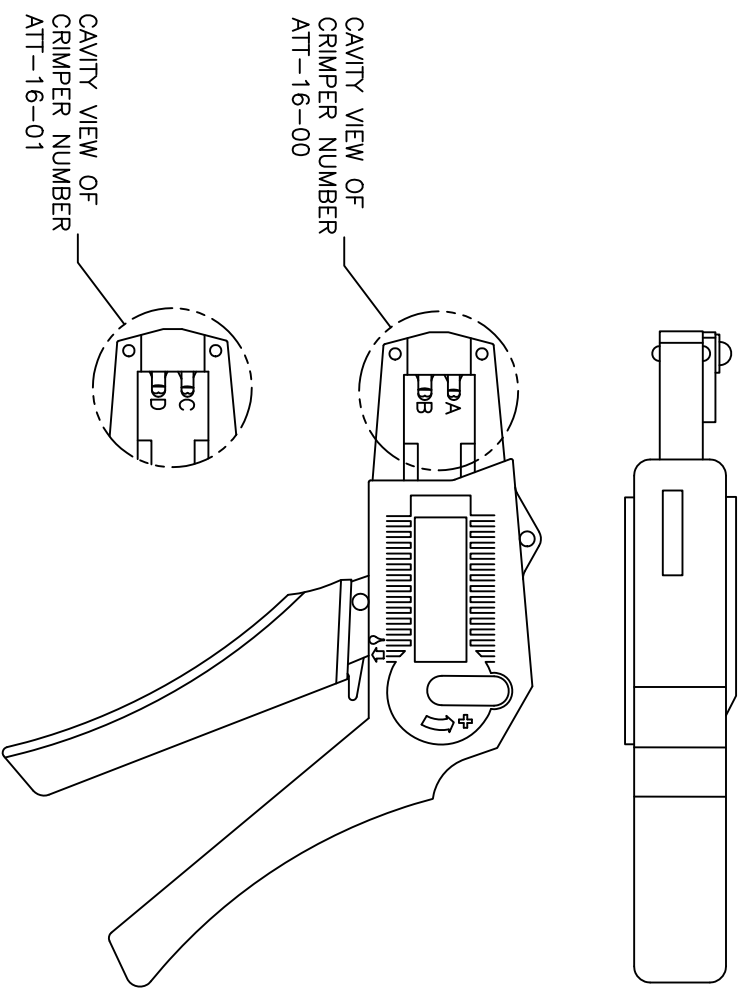
REVISIONS					
REV	ECO	DESCRIPTION	DATE	BY	APPR
A1	-	RELEASE NUMBER 016571	6/12/09	B.D.B.	M.R.F.

USE CRIMPER NUMBER:
ATT-16-00 WITH CAVITY A & B

CONTACT P/N:	INSULATION ϕ	CAVITY	WIRE SIZE
AT60-16-01**	.075 - .140	B	1.5mm ²
AT62-16-01**	[1.91 - 3.56]	A	16AWG
		A	1.0mm ²
AT60-14-01**	.095 - .150	B	14AWG
AT62-14-01**	[2.41 - 3.81]	B	2.0mm ²
		B	1.5mm ²
		A	1.5mm ²
		A	16AWG
		A	1.0mm ²
AT60-16-06**	.055 - .100	A	16AWG
AT62-16-06**	[1.40 - 2.54]	A	1.0mm ²

USE CRIMPER NUMBER:
ATT-16-01 WITH CAVITY C & D

CONTACT P/N:	INSULATION ϕ	CAVITY	WIRE SIZE
AT60-16-01**	.075 - .140	D	18AWG
AT62-16-01**	[1.91 - 3.56]	D	.75mm ²
AT60-16-06**	.055 - .100	D	18AWG
AT62-16-06**	[1.40 - 2.54]	D	.75mm ²
		C	.50mm ²



CAVITY VIEW OF
CRIMPER NUMBER
ATT-16-00

CAVITY VIEW OF
CRIMPER NUMBER
ATT-16-01

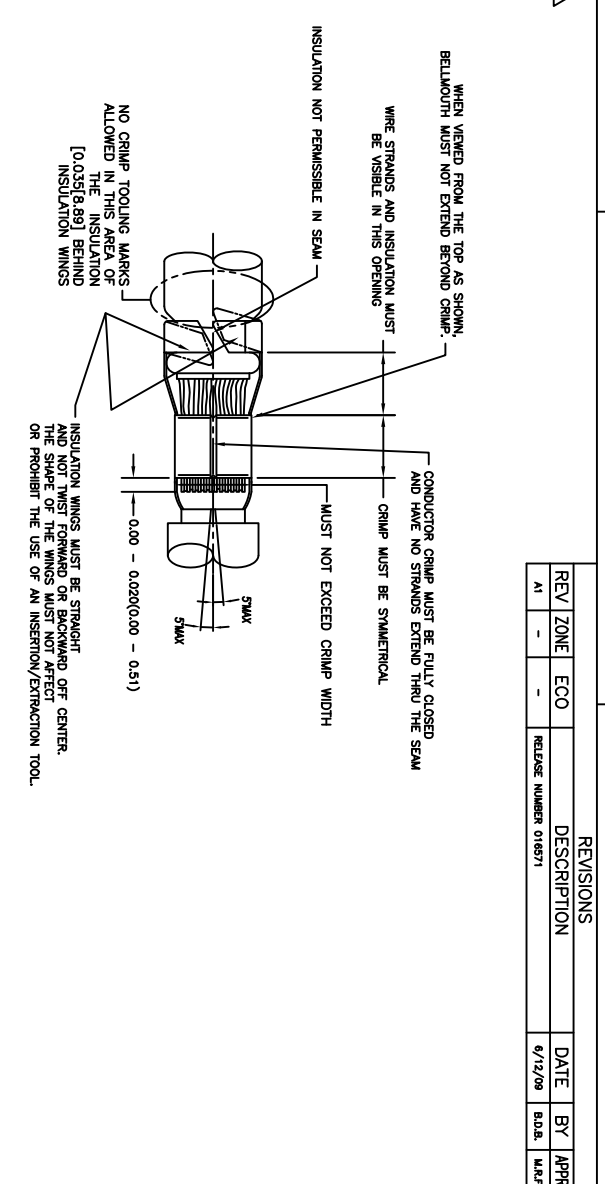
ALL REFERENCES TO DEUTSCH PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO DEUTSCH INDUSTRIAL PRODUCTS.

- NOTES (UNLESS OTHERWISE SPECIFIED):
- ALL DIMENSIONS IN INCHES [MILLIMETERS]
 - FOR PLATING CODES ** SEE CONTACT DATA DRAWINGS.
 - THIS TOOL IS FOR CRIMPING SIZE 16 CONTACTS ONLY TO WIRES LISTED IN THE CHARTS.
 - DEUTSCH IPD CROSS REFERENCE PART NUMBERS ARE DTT-16-00 AND DTT-16-01.

QUANTITY	PART NUMBER	DESCRIPTION	ITEM
MATERIALS LIST			
<p>SINE Systems Corporation A Subsidiary of Amphenol Corporation 44724 Morley Drive Clifton Township, NJ 08036</p> <p>INSTRUCTIONS: ATT-16-00 & 01 CRIMPER, HAND, STAMPED CONTACTS</p>			
<p>UNLESS OTHERWISE SPECIFIED</p> <p>1) All dimensions are in inches.</p> <p>2) Tolerances are as follows: 3) Finish: .0005 4) Hole Reference: A</p>		<p>SIGNATURES</p> <p>DATE</p> <p>6/8/09</p> <p>6/8/09</p> <p>6/8/09</p>	
<p>PROCESS SPECIFICATIONS</p> <p>N/A</p>		<p>THE USE OF THIS DOCUMENT IS UNLIMITED DESIGN FEATURES. SPECIAL DATA SHEETS ARE THE PROPERTY OF AMPHENOL CORP. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.</p> <p>DOCUMENTS REFERENCED HEREON ARE:</p> <p>AMPHENOL LIMITED LIABILITY CO.</p>	
<p>NOT AST'S</p>		<p>SIZE: PCD NO/DWG NO: B 16K44</p> <p>SCALE: NONE</p> <p>S2-15223</p> <p>SHEET 1 OF 1</p>	

REVISONS		DATE	BY	APP	
REV	ZONE	ECO	DESCRIPTION	DATE	
1	-	-	RELEASE NUMBER 016871	6/12/08	B.D.B.

STAMPED CONTACT PART NUMBER 106=PIN 106=SOCKET	SIZE	CONDUCTOR WIRE SIZE	CRIMP HEIGHT	CRIMP WIDTH	CONDUCTOR PUNCH NUMBER	CONDUCTOR ANVIL NUMBER	CRIMP TENSILE REFERENCE
A780-14-011x	16	14 AWG	0.055(1.40)	0.094(2.39)	AT17-002-0200	AT17-101-0200	28(111)
A782-14-011x	16	16 AWG	0.059(1.27)	0.094(2.39)	AT17-002-0200	AT17-101-0200	28(111)
A780-16-011x	16	14 AWG	0.055(1.40)	0.094(2.39)	AT17-003-0200	AT17-103-0200	28(111)
A782-16-011x	16	16 AWG	0.059(1.27)	0.094(2.39)	AT17-003-0200	AT17-103-0200	28(111)
A780-16-066x	16	18 AWG	0.048(1.22)	0.094(2.39)			
A782-16-066x	16	18 AWG	0.048(1.22)	0.094(2.39)			
INSULATION RANGE 0.055-0.100(1.40-2.54)							



CROSS REFERENCE

SINE PART NUMBER	DEUTSCH PART NUMBER
MX-3950	DC116-02-00
AT17-002-0200	1017-002-0200
AT17-003-0200	1017-003-0200
AT17-101-0200	1017-101-0200
AT17-103-0200	1017-103-0200
AT17-210-0200	1017-210-0200
AT17-211-0200	1017-211-0200
AT17-213-0200	1017-213-0200
AT17-214-0200	1017-214-0200
AT17-217-0200	1017-217-0200
AT17-218-0200	1017-218-0200
AT17-310-0200	1017-310-0200
AT17-311-0200	1017-311-0200
AT17-313-0200	1017-313-0200
AT17-304-0200	1017-304-0200
AT17-317-0200	1017-317-0200
AT17-318-0200	1017-318-0200

INSULATION DIAMETER RANGE	INSULATION PUNCH NUMBER	INSULATION ANVIL NUMBER
0.120-0.150	AT17-210-0200	AT17-310-0200
0.105-0.125	AT17-211-0200	AT17-311-0200
0.085-0.111	AT17-213-0200	AT17-313-0200
0.075-0.105	AT17-214-0200	AT17-304-0200
0.065-0.094	AT17-217-0200	AT17-317-0200
0.050-0.075	AT17-218-0200	AT17-318-0200

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN INCHES(mm).
2. FORCES ARE IN POUNDS(LBS) AND NEWTONS(N).
3. "X"= PLATING SUFFIX. SEE INDIVIDUAL CONTACT DRAWING.
4. WIRE STRIP LENGTH: 0.175±0.029(4.45±0.74). BROKEN OR MISSING CONDUCTOR STRANDS ARE NOT ACCEPTABLE.
5. USE A BLADE MICROMETER (0.100(2.54) MIN SPACING AND 0.060(0.010(1.50)(0.040) ANVIL) TO MEASURE THE CONDUCTOR CRIMP. SEE SECTION AA.
6. CRIMP TENSILE STRENGTH IS DETERMINED AT A PULL RATE SPEED OF 1.00 INCH(25.4) PER MINUTE. INSULATION WINGS ARE REMOVED FOR TEST. ACTUAL CRIMP TENSILE STRENGTH DEPENDS ON WIRE/CONDUCTOR SIZE. VALUES ON THIS SPECIFICATION ARE FOR REFERENCE ONLY.
7. INSULATION DIAMETER RANGE IS DETERMINED BY CONNECTOR AND ITS WIRE SEAL SIZE. SEE CONNECTOR DRAWING FOR INSULATION RANGE.
8. INSULATION CRIMP DIAMETER SHOULD BE THE EQUAL OR LESS THAN THE DIAMETER OF THE WIRE INSULATION (HARD OR TEFLON INSULATION MAY BE AN EXCEPTION). INSULATION CRIMP SHALL NOT AFFECT REMOVAL TOOL PERFORMANCE AND SHALL NOT DAMAGE CONNECTOR BROWNESEAL.
9. CONDUCTOR TYPE ARE PER SAE J1128(AWG) AND ISO 6722(METRIC)
10. FOR CONTACT MATERIAL AND PERFORMANCE DATA, SEE DRAWING S2-15217.
11. REFER TO S2-15223 AND S2-15224 AND CROSS REFERENCE CHARTS FOR CRIMP TOOL DATA.

ALL REFERENCES TO DEUTSCH PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO DEUTSCH INDUSTRIAL PRODUCTS.

QUANTITY	PART NUMBER	MATERIALS LIST	DESCRIPTION	ITEM
1	MX-3950	ROTOR	SINE SYSTEMS CORPORATION	
1	AT17-002-0200	CRIMP	A Subsidiary of Amphenol Corporation	
1	AT17-101-0200	CRIMP	44724 Moley Drive	
1	AT17-103-0200	CRIMP	Clinton Township, MI 48036	
1	AT17-210-0200	CRIMP		
1	AT17-211-0200	CRIMP		
1	AT17-213-0200	CRIMP		
1	AT17-214-0200	CRIMP		
1	AT17-217-0200	CRIMP		
1	AT17-218-0200	CRIMP		
1	AT17-310-0200	CRIMP		
1	AT17-311-0200	CRIMP		
1	AT17-313-0200	CRIMP		
1	AT17-304-0200	CRIMP		
1	AT17-317-0200	CRIMP		
1	AT17-318-0200	CRIMP		

DATE	4/7/09
DESIGNED BY	BERNIE
CHECKED BY	BERNIE
APPROVED BY	BERNIE
DATE	6/8/09

DATE	4/7/09
DESIGNED BY	BERNIE
CHECKED BY	BERNIE
APPROVED BY	BERNIE
DATE	6/8/09

DATE	4/7/09
DESIGNED BY	BERNIE
CHECKED BY	BERNIE
APPROVED BY	BERNIE
DATE	6/8/09

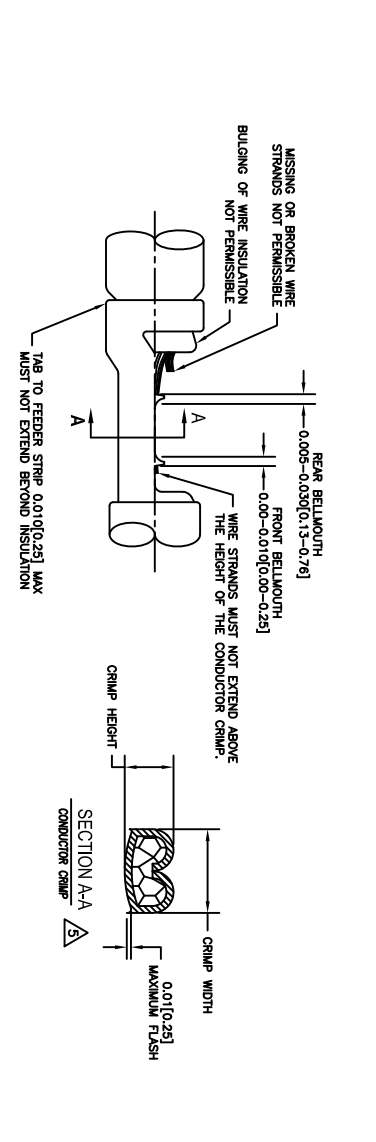
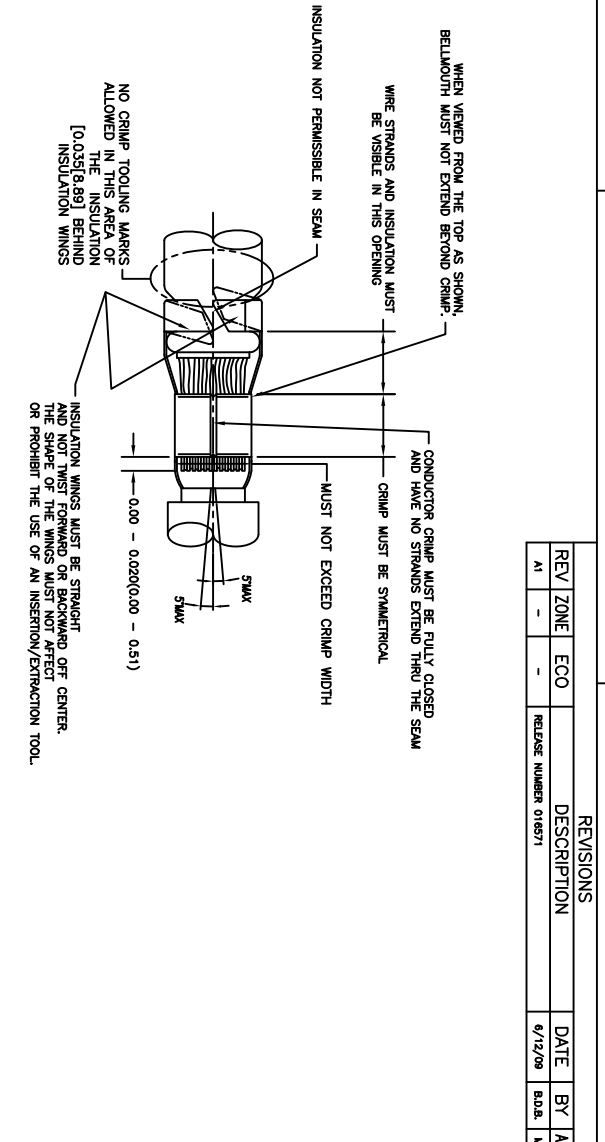
REVISIONS			DESCRIPTION		DATE		BY		APP	
REV	ZONE	ECO	RELEASE NUMBER	DATE	B.O.B.	M.F.F.				
A1	-	-	016571	6/12/09						

STAMPED CONTACT PART NUMBER (1009-PIN 1009=SOCKET)	SIZE	CONDUCTOR WIRE SIZE	CRIMP HEIGHT		CRIMP WIDTH		CONDUCTOR PUNCH NUMBER	CONDUCTOR ANVIL NUMBER	CRIMP TENSILE REFERENCE (LB/IN)
			+0.011(+0.002 INCH /+0.03(+0.05 mm))	-0.001	± 0.013 INCH (± 0.08 mm)	± 0.013 INCH (± 0.08 mm)			
A160-14(01)xx	16	14 AWG 2.00mm ²	0.0591(+.40)	-0.001	0.094(+.39)	± 0.013 INCH (± 0.08 mm)			
A162-14(01)xx	16	1.50mm ²	0.0531(+.39)	-0.001	0.094(+.39)	± 0.013 INCH (± 0.08 mm)			
INSULATION RANGE 0.095(+0.150)(2.1(+3.81))			0.0501(+.27)	-0.001	0.094(+.39)				
		16 AWG 1.00mm ²	0.0481(+.24)	-0.001	0.094(+.39)				
		14 AWG 2.00mm ²	0.0591(+.40)	-0.001	0.094(+.39)				
		2.00mm ²	0.0591(+.40)	-0.001	0.094(+.39)				
		1.50mm ²	0.0531(+.39)	-0.001	0.094(+.39)				
		16 AWG 1.00mm ²	0.0501(+.27)	-0.001	0.094(+.39)				
		18 AWG 0.75mm ²	0.0481(+.24)	-0.001	0.094(+.39)				
A160-16(06)xx	16	16 AWG 1.00mm ²	0.0591(+.27)	-0.001	0.092(+.01)				
A162-16(06)xx	16	18 AWG 0.75mm ²	0.0481(+.24)	-0.001	0.092(+.01)				
INSULATION RANGE 0.059(+0.100)(1.4(+2.54))			0.0481(+.22)	-0.001	0.092(+.01)				
		20 AWG 0.50mm ²	0.0481(+.14)	-0.001	0.092(+.01)				

CROSS REFERENCE

SINE PART NUMBER	DEUTSCH PART NUMBER
MPX-3953	DC11 620-02-00
A117-083-0200	1017-083-0200
A117-082-0200	1017-082-0200
A117-183-0200	1017-183-0200
A117-182-0200	1017-182-0200
A117-225-0200	1017-225-0200
A117-226-0200	1017-226-0200
A117-227-0200	1017-227-0200
A117-228-0200	1017-228-0200
A117-229-0200	1017-229-0200
A117-230-0200	1017-230-0200
A117-325-0200	1017-325-0200
A117-326-0200	1017-326-0200
A117-327-0200	1017-327-0200
A117-328-0200	1017-328-0200
A117-329-0200	1017-329-0200
A117-330-0200	1017-330-0200

- NOTES: UNLESS OTHERWISE SPECIFIED**
- 1. ALL DIMENSIONS ARE IN INCHES(mm).
 - 2. FORCES ARE IN POUNDS(LBS) AND NEWTONS(N).
 - 3. "X"=PLATING SUFFIX. SEE INDIVIDUAL CONTACT DRAWING.
 - 4. WIRE STRIP LENGTH: 0.175 \pm 0.0294(4.5 \pm 0.54). BROKEN OR MISSING CONDUCTOR STRANDS ARE NOT ACCEPTABLE. USE A BLADE MICROMEETER (0.100[2.54] MIN SPINDLE AND 0.060[0.010][1.500[0.40] ANVIL) TO MEASURE THE CONDUCTOR CRIMP. SEE SECTION AA
 - 5. CRIMP TENSILE STRENGTH IS DETERMINED AT A PULL RATE SPEED OF 1.00 INCH(2.54) PER MINUTE. INSULATION WINGS ARE REMOVED FOR TEST. ACTUAL CRIMP TENSILE STRENGTH DEPENDS ON WIRE/CONDUCTOR SIZE. VALUES ON THIS SPECIFICATION ARE FOR REFERENCE ONLY.
 - 6. INSULATION DIAMETER RANGE IS DETERMINED BY CONNECTOR AND ITS WIRE SEAL SIZE. SEE CONNECTOR DRAWING FOR INSULATION RANGE.
 - 7. INSULATION CRIMP DIAMETER SHOULD BE THE EQUAL OR LESS THAN THE DIAMETER OF THE WIRE INSULATION (HARD OR TEFION INSULATION MAY BE AN EXCEPTION). INSULATION CRIMP SHALL NOT AFFECT REMOVAL TOOL PERFORMANCE AND SHALL NOT DAMAGE CONNECTOR GROMMET SEAL.
 - 8. CONDUCTOR TYPE ARE PER SAE U1128(AWG) AND ISO 6122(METRIC)
 - 9. FOR CONTACT MATERIAL AND PERFORMANCE DATA. SEE DRAWING S2-15217.
 - 10. REFER TO S2-15223 AND S2-15224 AND CROSS REFERENCE CHARTS FOR CRIMP TOOL DATA.



QUANTITY	PART NUMBER	DESCRIPTION	ITEM
		SINE SYSTEMS CORPORATION	

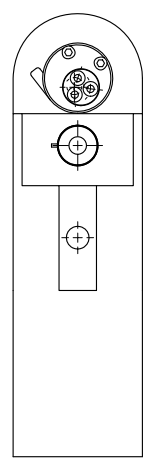
UNLESS OTHERWISE SPECIFIED	SIGNATURES	DATE
1) All dimensions are in inches.	DRAWN: POTER	4/7/09
2) R. DEC 30.00	CHECKED: RONE	6/8/09
3) R. DEC 30.00	DESIGNED: BERNIM	6/8/09
4) R. DEC 30.00	APPROVAL: BERNIM	6/8/09

SINE SYSTEMS CORPORATION
A Subsidiary of Amphenol Corporation
44724 Moley Drive
Clinton Township, MI 48036

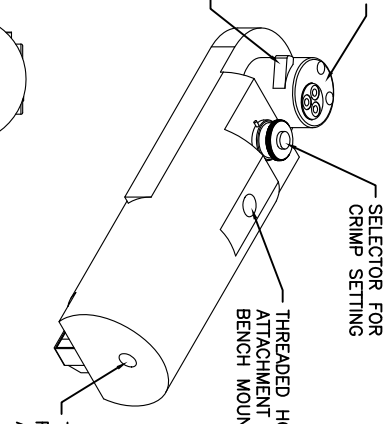
PROCESS SPECIFICATIONS	THE USE OF THIS DRAWING IS SPECIFIC TO THE PRODUCT AND PERFORMANCE DATA. ANY CHANGES TO MATERIALS, DIMENSIONS OR TOLERANCES ARE SUBJECT TO REVISION. DOCUMENTS REFERRED HEREON MAY CONTAIN REVISED HEREON DATA.
MA	

REVISONS		DESCRIPTION	DATE	BY	APPR
REV	ZONE	ECO	RELEASE NUMBER	B.D.B.	M.R.F.
A1	-	-	016571	6/12/09	

CONTACT LOCATOR "TURRET"
THREE POSITION FOR SIZE
12, 16 & 20 MALE AND
FEMALE CONTACTS



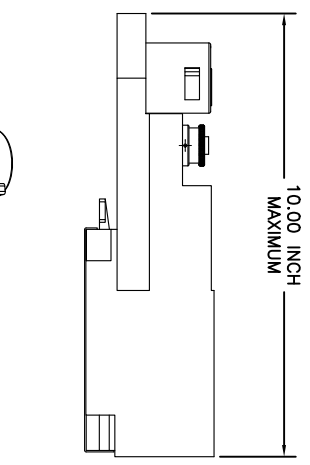
"TURRET"
RELEASE LATCH



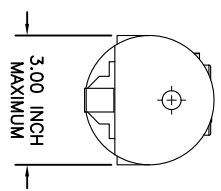
SELECTOR FOR
CRIMP SETTING

THREADED HOLE FOR
ATTACHMENT OF
BENCH MOUNT FIXTURE

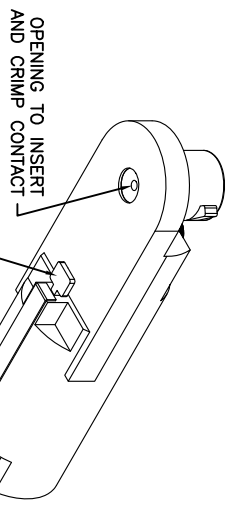
THREADED OPENING
FOR COMPRESSED
AIR FITTING



10.00 INCH
MAXIMUM



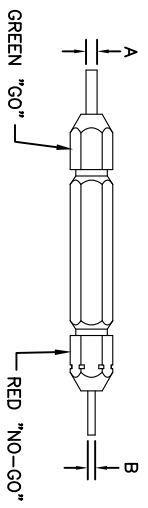
3.00 INCH
MAXIMUM



VALVE TO
CYCLE CRIMP

OPENING TO INSERT
AND CRIMP CONTACT

GAGE PART NO.	A GO DIA.	B NO-GO DIA.	SELECTOR NUMBER
G125	.0390	.0440	4



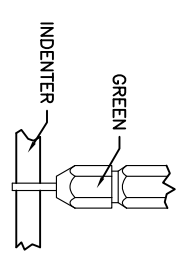
A
GREEN "GO"

B
RED "NO-GO"

GAGING INSTRUCTIONS
CAUTION!
DO NOT CRIMP GAGE!

"GO" GAGING: OPERATE TOOL TO FULLY CLOSED POSITION. INSERT "GO" GAGE END AS SHOWN. GAGE MUST PASS FREELY BETWEEN INDENTER TIPS.

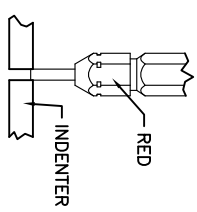
"NO-GO" GAGING: OPERATE TOOL TO FULLY CLOSED POSITION. INSERT "NO-GO" GAGE END AS SHOWN. THE "NO-GO" MAY PARTIALLY ENTER THE INDENTER OPENING, BUT MUST NOT PASS COMPLETELY THROUGH THE OPENING.



GREEN

INDENTER

SELECTOR NUMBER	A $\pm .0001$ GO DIA.	B $\pm .0001$ NO-GO DIA.
1	.0280	.0330
2	.0320	.0370
3	.0360	.0410
4	.0390	.0440
5	.0450	.0500
6	.0520	.0570
7	.0590	.0640
8	.0880	.0730



RED

INDENTER

- THE CA-5E12 IS A COMPRESSED AIR OPERATED HAND CRIMPER FOR ELECTRICAL CONTACTS. IT IS ADJUSTABLE TO 3 CONTACT SIZES (12, 16 & 20) AND 8 INDENTER CRIMP POSITIONS FOR DIFFERENT WIRE SIZES (12AWG THRU 26 AWG).
- 80-120 PSI COMPRESSED AIR.
- WEIGHT: 3.1 LBS
- SELECTING CONTACT SIZE: PRESS THE RELEASE LATCH ON SIDE OF THE CONTACT LOCATOR "TURRET". ROTATE TO THE DESIRED CONTACT SIZE. THE TOP OF THE "TURRET" IS EMBOSSED WITH THE CONTACT SIZES.
- SELECTING WIRE SIZE: GRASP THE SELECTOR AND ROTATE TO THE DESIRED NUMBER.

CONTACT SIZE	LOCATOR "TURRET" POSITION COLOR	26 AWG WIRE	24 AWG WIRE	22 AWG WIRE	20 AWG WIRE	18 AWG WIRE	16 AWG WIRE	14 AWG WIRE	12 AWG WIRE
20-20	RED	1	2	3	4				
16-22	BLUE	4	5	6					
16-20	BLUE	1	2	3	4				
16-16	BLUE				4	5	6		
12-16	YELLOW				4	5	6		
12-12	YELLOW							7	8

QUANTITY	PART NUMBER	DESCRIPTION	ITEM
		MATERIALS LIST	

SINE Systems Corporation
A Subsidiary of Amphipol Corporation
44724 Mowley Drive
Canton Township, MI 48036

INSTRUCTIONS FOR CA-5E12 CRIMPER, PNEUMATIC

SIZE: 10K44
SCALE: NONE
S2-15220
SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED:
1) All dimensions are in inches.
2) Finish: .0005
3) Pl. Spec. 40.00
4) Pl. Spec. 40.00
5) Pl. Spec. 40.00
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8) Pl. Spec. 40.00
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100) Pl. Spec. 40.00

REV ZONE		ECO		REVISIONS		DESCRIPTION		DATE	BY	APPR
AI	-	-	-	RELEASE NUMBER	016571	6/12/09	B.D.B.	M.R.F.		

CONTACT LOCATOR
"TURRET"
THREE POSITIONS FOR
SIZE 12, 16 & 20 MALE
AND FEMALE CONTACTS

"TURRET" RELEASE LATCH

6.25 INCH
MAXIMUM
OPEN

2.30 INCH
MAXIMUM
CLOSED

SELECTOR FOR CRIMP
SETTING

1.125 INCH MAX.

9.75 INCH MAXIMUM

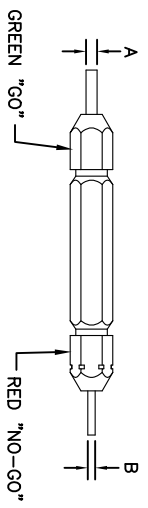
1.00 INCH MAX.

- NOTES:
- THE CA-5D12 IS A HAND OPERATED CRIMPER FOR ELECTRICAL CONTACTS. IT IS ADJUSTABLE TO 3 CONTACT SIZES (12, 16 & 20) AND 8 INDENTER CRIMP POSITIONS FOR DIFFERENT WIRE SIZES (12AWG THRU 26 AWG).
 - WEIGHT: 1.64 LBS
 - SELECTING CONTACT SIZE: PRESS THE RELEASE LATCH ON SIDE OF THE CONTACT LOCATOR "TURRET". ROTATE TO THE DESIRED CONTACT SIZE. THE TOP OF THE "TURRET" IS EMBOSSED WITH THE CONTACT SIZES.
 - SELECTING WIRE SIZE: REMOVE THE LOCKING CLIP. GRASP THE SELECTOR AND ROTATE TO THE DESIRED NUMBER.

GAGE PART NO.	A GO DIA.	B NO-GO DIA.	SELECTOR NUMBER
G125	.0390	.0440	4

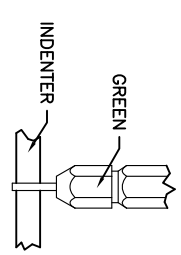
GAGING INSTRUCTIONS

CAUTION!
DO NOT CRIMP GAGE!



"GO" GAGING: OPERATE TOOL TO FULLY CLOSED POSITION. INSERT "GO" GAGE END AS SHOWN. GAGE MUST PASS FREELY BETWEEN INDENTER TIPS.

"NO-GO" GAGING: OPERATE TOOL TO FULLY CLOSED POSITION. INSERT "NO-GO" GAGE END AS SHOWN. THE "NO-GO" MAY PARTIALLY ENTER THE INDENTER OPENING, BUT MUST NOT PASS COMPLETELY THROUGH THE OPENING.



SELECTOR NUMBER	A GO DIA.	B NO-GO DIA.
1	.0280	.0330
2	.0320	.0370
3	.0360	.0410
4	.0390	.0440
5	.0450	.0500
6	.0520	.0570
7	.0590	.0640
8	.0880	.0730

CONTACT SIZE	LOCATOR "TURRET" POSITION	WIRE COLOR	1	2	3	4	5	6	7	8
20-20	RED	1	2	3	4					
16-22	BLUE	4	5	6						
16-20	BLUE	1	2	3	4					
16-16	BLUE	4	5	6						
12-16	YELLOW	4	5	6						
12-12	YELLOW									8

QUANTITY PART NUMBER MATERIALS LIST DESCRIPTION ITEM

UNLESS OTHERWISE SPECIFIED:
 1) All dimensions are in inches.
 2) Pl. DEC 2000
 3) Pl. DEC 2000
 4) Pl. DEC 2000
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 98) Pl. DEC 2000
 99) Pl. DEC 2000
 100) Pl. DEC 2000

PROCESS SPECIFICATIONS:
 NONE
 APPROVAL: BERNIM 6/3/09
 CUSTOMER: BERNIM 6/3/09
 THE USE OF THIS DRAWING IS LIMITED TO THE SPECIFICATIONS AND REQUIREMENTS OF THE ORIGINAL DRAWING. ANY REVISIONS OR MODIFICATIONS ARE SUBJECT TO ORIGINAL DRAWING. REVISED HEREON. ALL DIMENSIONS REFERENCED HEREON ARE IN UNITS OF INCHES UNLESS OTHERWISE SPECIFIED.
 SIZE: 10K44
 SCALE: NONE
 INSTRUCTIONS FOR CA-5D12 CRIMPER, HAND, MACHINED CONTACTS
 S2-15219
 SHEET 1 OF 1

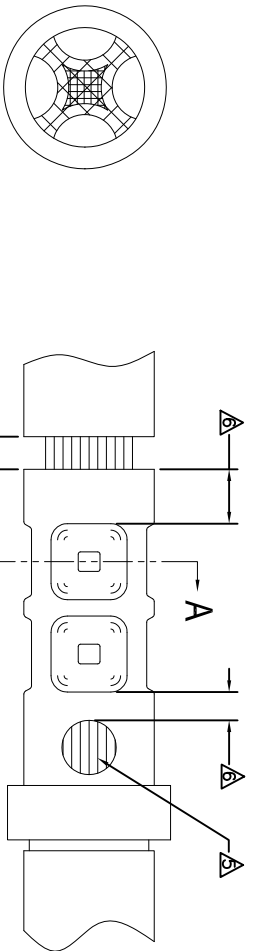
REVOLUTIONS		DESCRIPTION	DATE	BY	APPR
REV	ZONE	ECO	RELEASE NUMBER 016571	B.D.B.	M.R.F.
A1	-	-			

CONTACT P/N	SIZE TYPE	WIRE SIZE	REF. ONLY TENSILE LBS[N]
AT60-202-16XX	16PIN	1.5mm ² 16AWG	35[156]
AT62-201-16XX	16SOC	1.0mm ² 18AWG 0.75mm ² 20AWG	25[111]
			20[89]

RECOMMENDED STRIP LENGTH	
CONTACT SIZE	STRIP LENGTH INCH[MM]
16	0.250-0.312[6.35-7.92]

CRIMP TOOLING						
CONTACT SIZE	CRIMP TOOL PART NUMBER	CONTACT LOCATOR "TURRET" POSITION	WIRE SELECTOR NUMBER	GO GAGE INCH[MM]	"NOGO" GAGE INCH[MM]	REMARKS
16	CA-5D12 CA-5E12	BLUE	6	0.052[1.32]	0.057[1.45]	
16	CA-5D12 CA-5E12	BLUE	4	0.039[.991]	0.044[1.12]	SIZE 16 WITH 20 AWG WIRE

- NOTES: UNLESS OTHERWISE SPECIFIED
- 1. MINIMUM +/-0.0005 [0.013] TOLERANCE STEEL GAGE PINS. DO NOT CRIMP GAGE PINS. CLOSE DIE, THEN USE GAGE PINS.
 - 2. WHEN XX=31, CONTACT PLATING IS GOLD WHEN XX=141, CONTACT PLATING IS NICKEL.
 - 3. PULL RATE OF 1.0 IN [25.4] PER MINUTE. ACTUAL STRENGTH DEPENDS ON WIRE SIZE.
 - 4. FOR CONTACT PERFORMANCE, MATERIAL SPECIFICATIONS AND APPLICATION DETAILS, SEE DRAWING S2-15217. CONDUCTOR STRANDS MUST BE VISIBLE THRU THE INSPECTION HOLE PRIOR TO CRIMP.
 - 5. PROPER CRIMP TOOLING WILL PRODUCE A CRIMP CENTERED BETWEEN THE INSPECTION HOLE AND CRIMP BARREL END.
 - 6. WIRE SIZES PER SAE J1128 AND J1560 [DIN 72551-6] REFERENCE INSTRUCTION MANUALS S2-15219 AND S2-15220 FOR CA-5D12 AND CA-5E12 HAND AND PNEUMATIC CRIMPER.
 - 7. THE CRIMP HEIGHT DIMENSION AFTER CRIMPING MAY VARY FROM THE VALUES LISTED FOR THE "GO-NOGO" PINS.



QUANTITY	PART NUMBER	DESCRIPTION	ITEM
	MATERIALS LIST		

SIGNATURES	DATE	DATE
DESIGNER: BERNIM	6/3/09	
CHECKER: RONE	6/3/09	
ENGINEER: BERNIM		
APPROVAL: BERNIM	6/3/09	

UNLESS OTHERWISE SPECIFIED	PROCESS SPECIFICATIONS	THE USE OF THIS DRAWING IS LIMITED TO THE SPECIFICATIONS AND PERFORMANCE PRESENTED HEREON. ANY OTHER USE IS AT THE USER'S RISK. ALL DIMENSIONS ARE UNLESS OTHERWISE SPECIFIED.
1) All dimensions are in inches. 2) See Section 1 of Proforma 31/04 3) Pl. SEE 40016 4) Proforma Standard Per: a) 100% SS-20020	MA	CRIMP INFORMATION SOLID MACHINED CONTACTS
SCALE: NONE	SIZE: FSDA NONE	SIZE: FSDA NONE
	10K44	10K44
	S2-15218	S2-15218
	SHEET 1 OF 1	SHEET 1 OF 1

REVISIONS			
REV	ZONE	ECO	DESCRIPTION
A1	-	-	RELEASE NUMBER 016571
DATE	BY	APPR	
6/12/08	B.D.B.	M.R.F.	

SOLID CONTACT SIZE	SOLID CONTACT PART NUMBERS		WIRE SIZE AVG (mm ²)	RECOMMENDED STRIP LENGTH INCH (mm)	MIN CONTACT RETENTION LBS (N)	REF CRIMP TENSILE LBS (N)	MAX RATED AMPS @125°C CONTINUOUS
	PIN	SOCKET					
16	AT60-202-16**	AT62-201-16**	16-20 [1.5-0.5]	0.25-0.31 [6.35-7.92]	25 [1111]	35-20 [156-89]	13

S&P CONTACT SIZE	STAMPED CONTACT PART NUMBERS		WIRE SIZE AVG (mm ²)	WIRE INSULATION O.D. RANGE	RECOMMENDED STRIP LENGTH INCH (mm)	MIN CONTACT RETENTION LBS (N)	REF CRIMP TENSILE LBS (N)	MAX RATED AMPS @125°C CONTINUOUS
	PIN	SOCKET						
16	AT60-14-01**	AT62-14-01**	14-16 [2.0-1.0]	.100 - .150 [2.54 - 3.81]	0.150-0.200 [3.81-5.08]	25 [1111]	25 [1111]	13
16	AT60-16-01**	AT62-16-01**	16-18 [1.0-0.75]	.075 - .100 [1.90 - 2.54]	0.150-0.200 [3.81-5.08]	25 [1111]	25 [1111]	13
16	AT60-16-06**	AT62-16-06**	18-20 [0.75-0.50]	.055 - .095 [1.40 - 2.41]	0.150-0.200 [3.81-5.08]	25 [1111]	25-15 [111+67]	13

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE INCHES(MM).
2. ALL FORCES ARE IN LBS(POUNDS) AND "N" (NEWTONS).
3. CONTACT RETENTION TEST PULL RATE SHALL BE 1.0 INCH(25.4) PER MINUTE MAXIMUM. WIRE SIZE WILL AFFECT THE TRUE STRENGTH OF THE CRIMP.
4. WIRE SIZES AND INSULATION RANGES ARE FOR REFERENCE ONLY. THE ACTUAL INSULATION RANGE DEPENDS ON CONNECTOR GROMMET SEALING SIZE.

SEE SPECIFICATIONS LISTED BELOW FOR INDIVIDUAL CRIMP INFORMATION:

"SOLID" CONTACTS	SIZE	"STAMPED" CONTACTS	SIZE
	S2-15218	S2-15222	16
		S2-15221	16/20

- △ MAXIMUM RATED CURRENT IN CHART DEPENDS ON CONTACT SIZE. ACTUAL RATED CURRENT DEPENDS ON WIRE SIZE.
- △ CONTACT FACTORY FOR ALL AVAILABLE PLATING ON SPECIFIC CONTACTS.
- △ AMPHENOL SINE PERFORMANCE SPECIFICATIONS REQUIRE THE USE OF AMPHENOL SINE APPROVED TOOLING.

CONTACT RESISTANCE STRENGTH (LESS DROP THROUGH WIRE)				
WIRE AWG	TEST CURRENT	MILLIVOLT DROP SOLID	MILLIVOLT DROP S&P	
14	18	60	100	
16	13	60	100	
18	10	60	100	
20	7.5	60	100	

MATERIAL SPECIFICATION AND PLATING ** CODES	
PIN: COPPER ALLOY	
SOCKET: COPPER ALLOY WITH STAINLESS STEEL SLEEVE	
SOLID MACHINED CONTACT PLATING OPTIONS: △	31= GOLD 141= NICKEL
STAMPED CONTACT PLATING OPTIONS: △	22= NICKEL 44= GOLD 89= SELECTIVE GOLD*
GOLD* PLATING IS AVAILABLE (RECOMMENDED) FOR ONLY (<5V) CIRCUIT APPLICATIONS	
MATERIALS AND PLATINGS ARE ROHS COMPLIANT	

PART NUMBER		DESCRIPTION		ITEM
MATERIALS LIST				
QUANTITY	UNLESS OTHERWISE SPECIFIED	SIGNATURES	DATE	
	1) All dimensions are in inches.	DRAWN: POTER	4/5/09	
	2) All tolerances are as shown.	CHECKED: RONE	6/3/09	
	3) Pl. DEC 30.00 1 Position 31/14	ENGINEER: BERNU		
	4) Pl. DEC 30.00 1 Angles 31"	APPROVAL: BERNU	6/3/09	
	5) Fabrication Standards Per: SS-20020	CUSTOMER:		
	6) Pl. DEC 30.00 1	APPROVAL:		
	7) Pl. DEC 30.00 1	CUSTOMER:		
	8) Pl. DEC 30.00 1	APPROVAL:		
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	49) Pl. DEC 30.00 1	CUSTOMER:		
	50) Pl. DEC 30.00 1	APPROVAL:		
	51) Pl. DEC 30.00 1	CUSTOMER:		
	52) Pl. DEC 30.00 1	APPROVAL:		
	53) Pl. DEC 30.00 1	CUSTOMER:		
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	55) Pl. DEC 30.00 1	CUSTOMER:		
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