

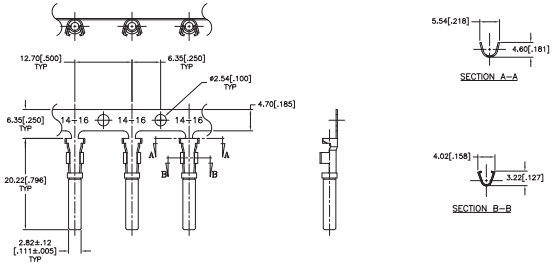
STAMPED AND FORMED CONTACTS, PG 1 of 2

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

OPTIONS

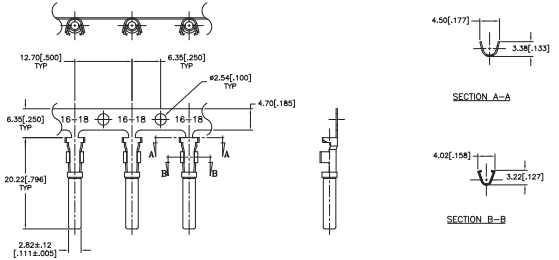
PART NUMBER: [AT62-14-01XX](#)
DESCRIPTION: CONTACT, SOCKET, STAMPED, SIZE 16

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)



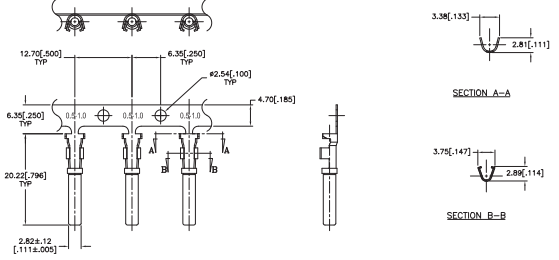
PART NUMBER: [AT62-16-01XX](#)
DESCRIPTION: CONTACT, SOCKET, STAMPED, SIZE 16

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)



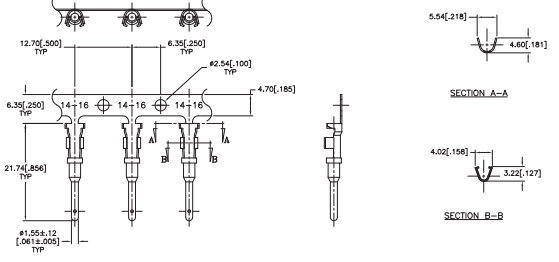
PART NUMBER: [AT62-16-06XX](#)
DESCRIPTION: CONTACT, SOCKET, STAMPED, SIZE 16

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)

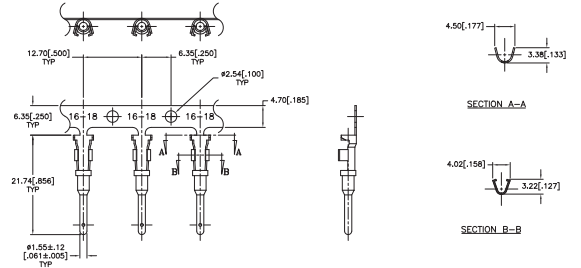


STAMPED AND FORMED CONTACTS, PG 2 of 2

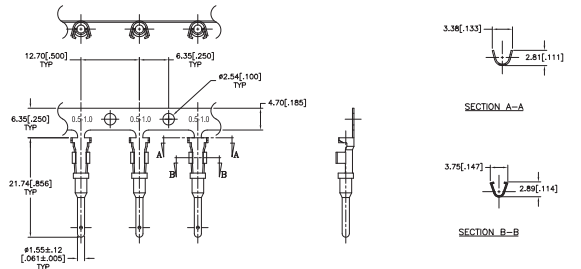
Click on [blue underlined part numbers](#) to be taken to their spec sheets.

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)



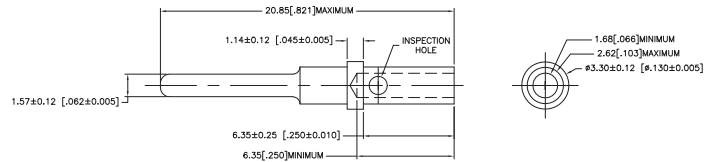
SOLID/MACHINED CONTACTS

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

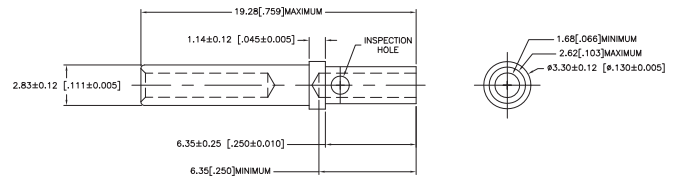
OPTIONS

MILITARY-STYLE

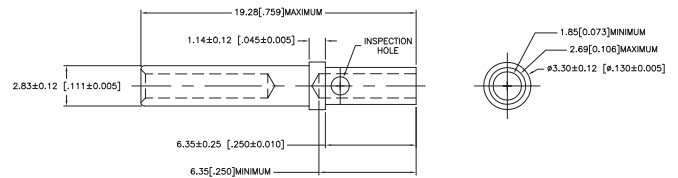
PART NUMBER: [AT60-202-16XX](#)
DESCRIPTION: CONTACT, PIN, SOLID MACHINED, SIZE 16
MATERIAL: COPPER ALLOY
PLATING SUFFIX CODE:
 XX=141 NICKEL PLATING
 XX=31 GOLD PLATING
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: CA-5D12 & CA-5E12
CRIMPER SPECIFICATIONS: S2-15219 & S2-15220
CRIMP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

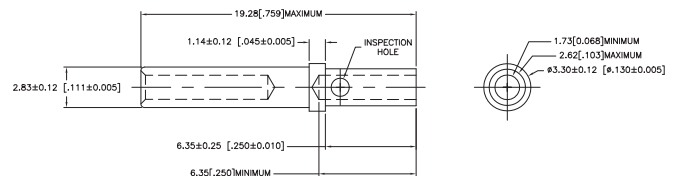


PART NUMBER: [65-54942-14](#)
DESCRIPTION: CONTACT, SOCKET, ROCKSOLID, SIZE 16
AWG RANGE: 14AWG
MATERIAL: COPPER ALLOY
PLATING: GOLD
CONTACT GENERAL DATA SPECIFICATION: S2-15217
AVAILABLE CRIMPERS: CA-5D12 & CA-5E12
CRIMPER SPECIFICATIONS: S2-15219 & S2-15220
CRIMP INFORMATION DRAWING: S2-15218

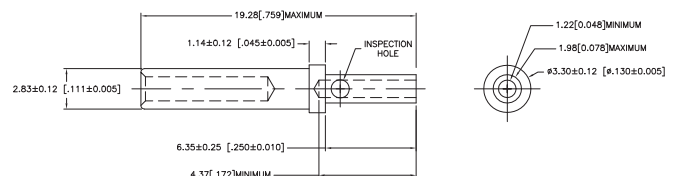


ROCKSOLID™ CONTACTS

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



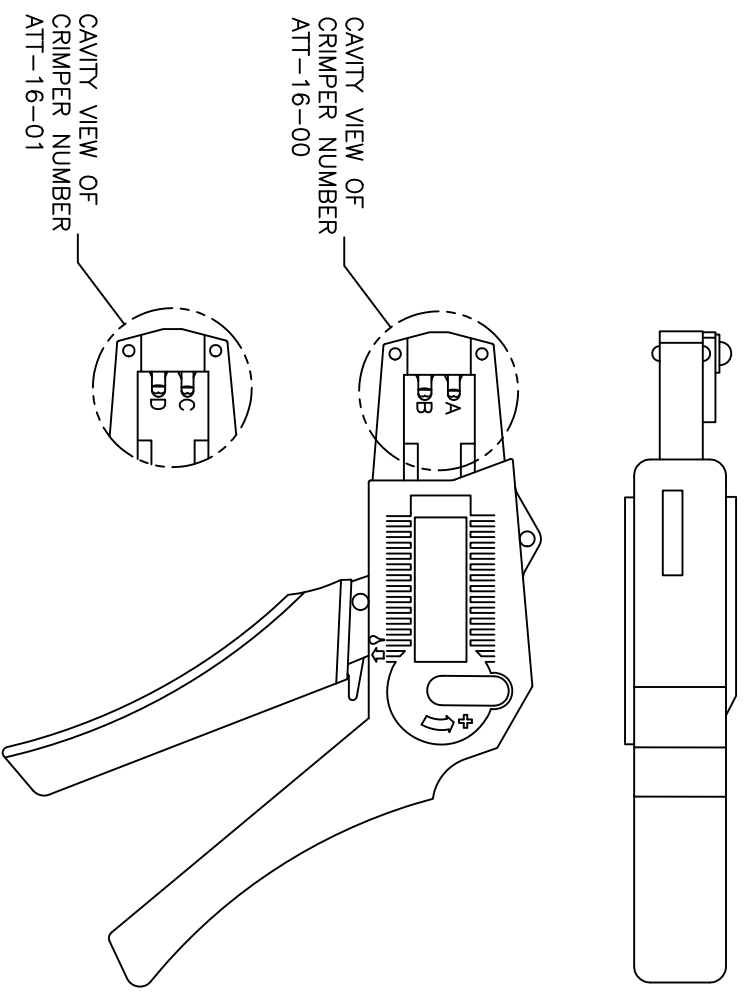
| REVISIONS | | | | | |
|-----------|-----|-----------------------|---------|--------|--------|
| REV | ECO | DESCRIPTION | DATE | BY | APPR |
| A1 | - | RELEASE NUMBER 016571 | 6/12/09 | B.D.B. | M.R.F. |

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 |



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 | ITER# |
|----------|-------------|--------------------------------------|----------|
| | | MATERIALS LIST | |
| | | SINE Systems Corporation | |
| | | A Subsidiary of Amphenol Corporation | |
| | | 44724 Morley Drive | |
| | | Clifton Township, NJ 08036 | |
| | | INSTRUCTIONS, ATT-16-00 & 01 | |
| | | CRIMPER, HAND, STAMPED CONTACTS | |
| | | SIZE: FCSD NO/DWG NO: | REVISION |
| | | B 16K44 | A1 |
| | | SCALE: NONE | |
| | | S2-15223 | |
| | | SHEET 1 OF 1 | |

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

| 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 A782-14-011x INSULATION RANGE 0.095-0.150(2.41-3.81) | 16 | 14 AWG 2.00mm ² 1.50mm ² 16 AWG 1.00mm ² 18 AWG 0.75mm ² | 0.055(1.40) 0.055(1.40) 0.055(1.39) 0.050(1.27) 0.049(1.24) 0.048(1.22) | ±0.003 NCH [±0.08 mm] | AT17-002-0200 AT17-101-0200 | AT17-101-0200 | 28(111) 28(111) |
| A780-16-011x A782-16-011x INSULATION RANGE 0.075-0.140(1.91-3.56) | 16 | 16 AWG 2.00mm ² 1.50mm ² 18 AWG 1.00mm ² 20 AWG 0.50mm ² | 0.055(1.40) 0.055(1.40) 0.051(1.29) 0.050(1.27) 0.048(1.22) 0.045(1.14) | ±0.003 NCH [±0.08 mm] | AT17-003-0200 AT17-103-0200 | AT17-103-0200 | 28(111) 28(111) |

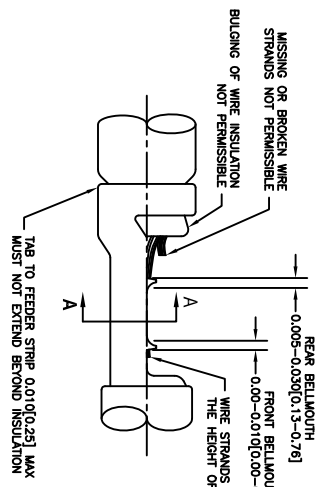
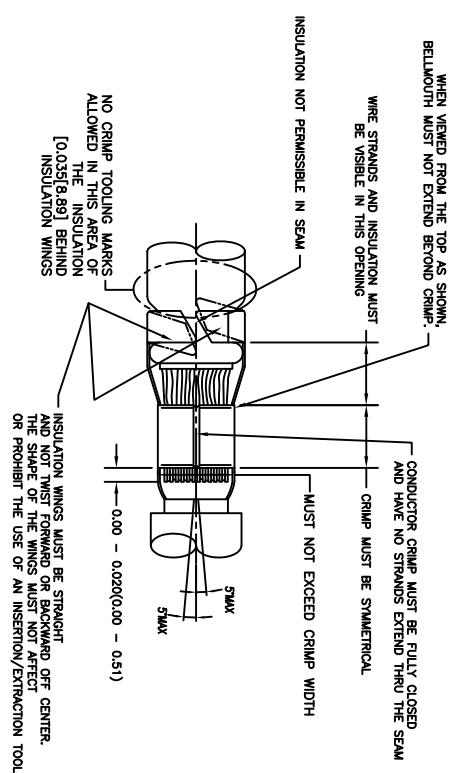
CROSS REFERENCE

| 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 |

| INSULATION DIAMETER RANGE | INSULATION PUNCH NUMBER | INSULATION ANVIL NUMBER |
|---------------------------|-------------------------|-------------------------|
| 0.120-0.150 [3.05-3.81] | AT17-210-0200 | AT17-310-0200 |
| 0.105-0.125 [2.67-3.18] | AT17-211-0200 | AT17-311-0200 |
| 0.085-0.111 [2.16-2.82] | AT17-213-0200 | AT17-313-0200 |
| 0.075-0.105 [1.91-2.67] | AT17-214-0200 | AT17-304-0200 |
| 0.065-0.094 [1.62-2.39] | AT17-217-0200 | AT17-317-0200 |
| 0.050-0.075 [1.27-1.91] | AT17-218-0200 | AT17-318-0200 |

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL DIMENSIONS ARE IN INCHES(mm).
- FORCES ARE IN POUNDS(LBS) AND NEWTONS(N).
- "X"= PLATING SUFFIX. SEE INDIVIDUAL CONTACT DRAWING.
- WIRE STRIP LENGTH: 0.175±0.029(4.45±0.74). BROKEN OR MISSING CONDUCTOR STRANDS ARE NOT ACCEPTABLE.
- USE A BLADE MICROMEETER (0.100(2.54) MIN. AND 0.060(0.010)(1.50(0.040) ANVIL) TO MEASURE THE CONDUCTOR CRIMP. SEE SECTION AA.
- 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.
- INSULATION DIAMETER RANGE IS DETERMINED BY CONNECTOR AND ITS WIRE SEAL SIZE. SEE CONNECTOR DRAWING FOR INSULATION RANGE.
- 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 BROWNIE SEAL.
- CONDUCTOR TYPE ARE PER SAE J1128(AWG) AND ISO 6722(METRIC)
- FOR CONTACT MATERIAL AND PERFORMANCE DATA, SEE DRAWING S2-15217.
- 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 |
|---|-------------|----------------|-------------|------|
| UNLESS OTHERWISE SPECIFIED | | | | |
| 1) All dimensions are in inches. | | | | |
| 2) For SINE 3400 1 Position 31/4 | | | | |
| 3) For SINE 3401 1 Position 31/4 | | | | |
| 4) For SINE 3402 1 Position 31/4 | | | | |
| 5) Production Standard Per: ENGINEER: BERNIM DATE: 6/8/09 | | | | |
| APPROVAL: BERNIM DATE: 6/8/09 | | | | |
| CUSTOMER: N/A | | | | |
| PROCESS SPECIFICATIONS: | | | | |
| THE USE OF THIS DRAWING IS SPECIFIC TO THE DESIGN AND PERFORMANCE OF THE PART. ANY CHANGE IN DESIGN OR PERFORMANCE OF THE PART WITHOUT THE WRITTEN APPROVAL OF AMPHENOL CORP. ALL DIMENSIONS ARE SUBJECT TO REMOVAL DOCUMENTS REFERENCED HEREON UNLESS OTHERWISE SPECIFIED. | | | | |
| DRAWN: ROTT DATE: 4/7/09 | | | | |
| CHECKED: ROTT DATE: 6/8/09 | | | | |
| ENGINEER: BERNIM DATE: 6/8/09 | | | | |
| APPROVAL: BERNIM DATE: 6/8/09 | | | | |
| CUSTOMER: N/A | | | | |
| SIZE: (PUNCH NUMBER) S2-15222 | | | | |
| SCALE: NONE | | | | |
| SHEET: 1 OF 1 | | | | |

| REV | DATE | BY | APP |
|-----|--------|--------|-----|
| 1 | 6/8/09 | BERNIM | |

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

CRIMP DATA, STAMPED CONTACTS FOR CRIMPER MFX-3950

| REVISIONS | | | | | | |
|-----------|------|-----|-----------------------|---------|--------|--------|
| REV | ZONE | ECO | DESCRIPTION | DATE | BY | APPR |
| A1 | - | - | RELEASE NUMBER 016971 | 6/12/09 | B.O.B. | M.F.F. |

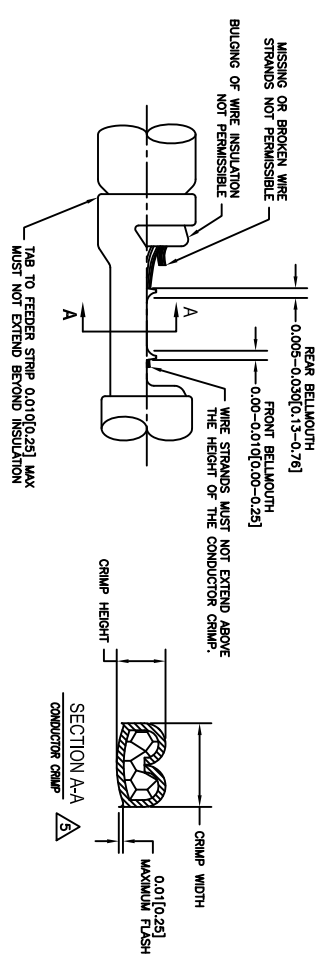
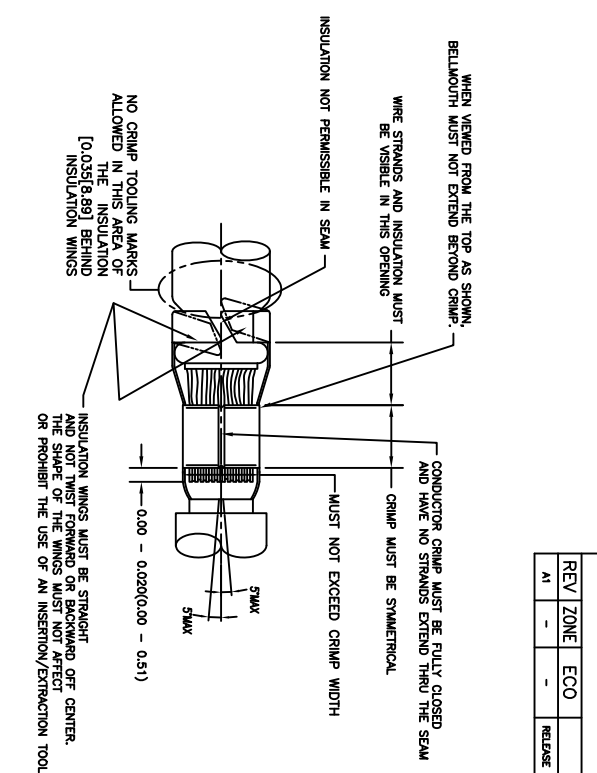
| STAMPED CONTACT PART NUMBER (1009=PIN 1009=SOCKET) | SIZE | CONDUCTOR WIRE SIZE | CRIMP HEIGHT +0.001/-0.002 INCH (+0.025/-0.05 mm) | CRIMP WIDTH ±0.013 INCH (±0.08 mm) | CONDUCTOR PUNCH NUMBER | CONDUCTOR ANVIL NUMBER | CRIMP TENSILE REFERENCE (LBS/IN) |
|---|------|---|--|---|------------------------|---------------------------------|----------------------------------|
| A160-14-011x A162-14-011x INSULATION RANGE 0.095-0.150(2.41-3.81) | 16 | 14 AWG 2.00mm ² 1.50mm ² 16 AWG 1.00mm ² 18 AWG | 0.0591(1.40) 0.0591(1.40) 0.0591(1.40) 0.0501(1.27) 0.0491(1.24) | 0.094(2.39) 0.094(2.39) 0.094(2.39) 0.094(2.39) 0.094(2.39) | | A117-4083-0200 A117-183-0200 | 29(111) |
| A160-16-011x A162-16-011x INSULATION RANGE 0.075-0.140(1.91-3.59) | 16 | 14 AWG 2.00mm ² 1.50mm ² 16 AWG 1.00mm ² 18 AWG | 0.0591(1.40) 0.0591(1.40) 0.0591(1.40) 0.0501(1.27) 0.0491(1.24) | 0.094(2.39) 0.094(2.39) 0.094(2.39) 0.094(2.39) 0.094(2.39) | | A117-4083-0200 A117-183-0200 | 29(111) |
| A160-16-066x A162-16-066x INSULATION RANGE 0.059-0.100(1.49-2.54) | 16 | 16 AWG 1.00mm ² 0.75mm ² 20 AWG 0.50mm ² | 0.0501(1.27) 0.0501(1.27) 0.0491(1.24) 0.0491(1.24) 0.0491(1.24) | 0.079(2.01) 0.079(2.01) 0.079(2.01) 0.079(2.01) 0.079(2.01) | | A117-4082-0200 A117-182-0200 | 29(111) 19(67) |

CROSS REFERENCE

| INSULATION DIAMETER RANGE | INSULATION PUNCH NUMBER | INSULATION ANVIL NUMBER | SINE PART NUMBER | DEUTSCH PART NUMBER |
|---------------------------|-------------------------|-------------------------|------------------|---------------------|
| 0.120-0.150 [3.05-3.81] | A117-225-0200 | A117-326-0200 | MPX-3953 | DCT1620-02-00 |
| 0.105-0.125 [2.67-3.18] | A117-226-0200 | A117-326-0200 | A117-083-0200 | 1017-083-0200 |
| 0.085-0.111 [2.16-2.82] | A117-227-0200 | A117-327-0200 | A117-082-0200 | 1017-082-0200 |
| 0.075-0.105 [1.91-2.67] | A117-228-0200 | A117-328-0200 | A117-183-0200 | 1017-183-0200 |
| 0.063-0.094 [1.62-2.39] | A117-229-0200 | A117-329-0200 | A117-182-0200 | 1017-182-0200 |
| 0.050-0.075 [1.27-1.91] | A117-230-0200 | A117-330-0200 | 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±0.029(4.45±0.74). BROKEN OR MISSING CONDUCTOR STRANDS ARE NOT ACCEPTABLE.
5. USE A BLADE MICROMETER (0.100[2.54] MIN SPINDLE 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(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.
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 GROMMET SEAL.
9. CONDUCTOR TYPE ARE PER SAE J1128(AWG) AND ISO 6122(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.

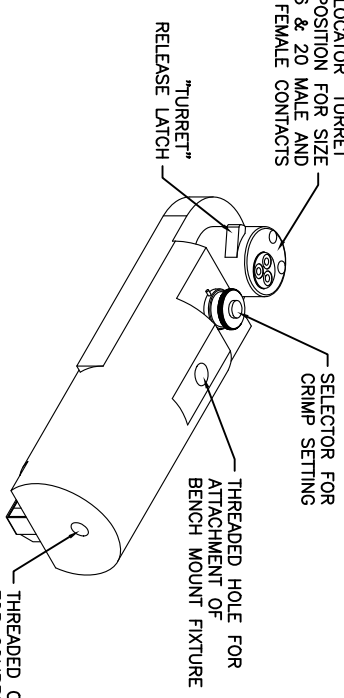
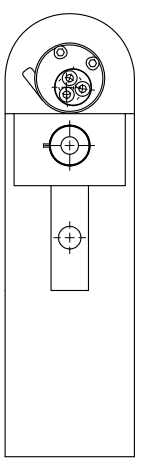


ALL REFERENCES TO DEUTSCH PRODUCTS OR SPECIFICATIONS ARE FOR COMPARISON PURPOSES ONLY, AND REFER TO DEUTSCH INDUSTRIAL PRODUCTS.

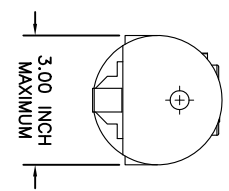
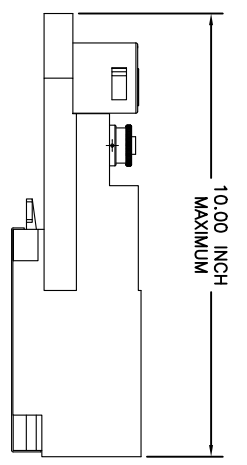
| QUANTITY | PART NUMBER | DESCRIPTION | ITEM |
|---------------------------------------|---|-------------|--------|
| MATERIALS LIST | | | |
| UNLESS OTHERWISE SPECIFIED | | | |
| 1) All dimensions are in inches. | SIGNATURES | | |
| 2) 1 Pt. DEC 54.00 1 Ampere 31/4 | DATE | DATE | DATE |
| 3) Reduction Standard Per: Alpha 31/4 | DATE | DATE | DATE |
| 4) Part: S2-20020 | DATE | DATE | DATE |
| MATERIAL SPECIFICATIONS: | APPROVAL | REVIEW | 6/8/09 |
| NA | CUSTOMER | | |
| PROCESS SPECIFICATIONS: | THE USE OF THIS DRAWING IS SPECIFIC TO THE PART AND PERFORMANCE OF THE PART. ANY CHANGE IN THE PART OR PERFORMANCE OF THE PART WILL BE THE RESPONSIBILITY OF THE CUSTOMER. ALL DIMENSIONS ARE SUBJECT TO NORMAL DOCUMENTS RETAINED HEREON. ANY DOCUMENTS RETAINED HEREON MAY CONTAIN LIMITED RIGHTS DATA. | | |
| SIZE | SCALE | SIZE | SCALE |
| 10K44 | 1:1 | S2-15221 | 1:1 |
| REVISION | BY | DATE | APPR |
| A1 | | | |

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

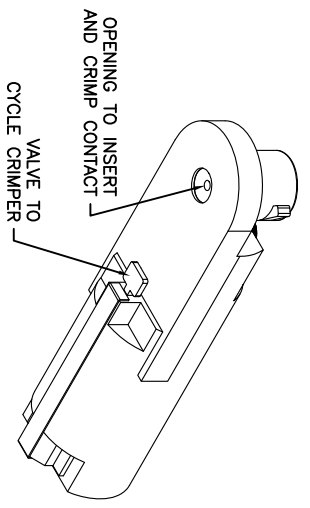
CONTACT LOCATOR "TURRET"
THREE POSITION FOR SIZE
12, 16 & 20 MALE AND
FEMALE CONTACTS



THREADED OPENING
FOR COMPRESSED
AIR FITTING

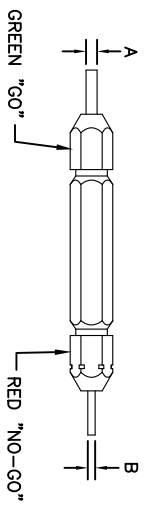


- NOTES:
1. THE CA-5E12 IS A COMPRESSED AIR OPERATED HAND CRIMPER FOR ELECTRICAL CONTACTS. IT IS ADJUSTABLE TO 3 CONTACT SIZES (12, 16 & 20) AND 8 INDENTER CRIMP POSITIONS FOR DIFFERENT WIRE SIZES (12AWG THRU 26 AWG).
 2. 80-120 PSI COMPRESSED AIR.
 3. WEIGHT: 3.1 LBS
 4. SELECTING CONTACT SIZE: PRESS 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.
 5. SELECTING WIRE SIZE: GRASP THE SELECTOR AND ROTATE TO THE DESIRED NUMBER.



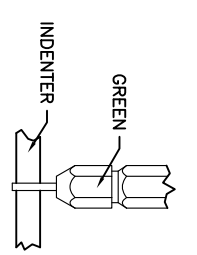
| GAGE PART NO. | A GO DIA. | B NO-GO DIA. | SELECTOR NUMBER |
|---------------|-----------|--------------|-----------------|
| G125 | .0390 | .0440 | 4 |

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 | .0680 | .0730 |

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

| QUANTITY | PART NUMBER | DESCRIPTION | ITEM |
|----------|-------------|-------------|------|
| | | | |

| MATERIALS LIST | | DESCRIPTION | |
|--------------------------------------|------------|-------------|--|
| UNLESS OTHERWISE SPECIFIED | SIGNATURES | DATE | |
| 1. All dimensions are in inches. | DATE: | 6/2/09 | |
| 2. Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 3. Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 4) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 5) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 6) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 7) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 8) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 9) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 10) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 11) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 12) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 13) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 14) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 15) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 16) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 17) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 18) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 19) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
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| 22) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
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| 28) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
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| 35) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 36) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 37) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 38) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 39) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 40) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 41) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 42) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 43) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 44) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 45) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
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| 47) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 48) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 49) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
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| 51) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
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| 54) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
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| 63) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
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| 65) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 66) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 67) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 68) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 69) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 70) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 71) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 72) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 73) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 74) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
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| 79) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 80) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 81) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 82) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 83) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 84) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 85) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 86) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 87) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 88) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 89) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 90) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 91) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 92) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 93) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 94) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 95) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 96) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 97) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 98) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 99) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |
| 100) Pl. SEC 34.00 1 Position 3.1/4" | DATE: | 6/3/09 | |

SINE Systems Corporation
A Subsidiary of Amphenol Corporation
44724 Mowley Drive
Carlton Township, MI 48036

INSTRUCTIONS FOR CA-5E12 CRIMPER, PNEUMATIC

| | | |
|--------|----------|----------|
| SIZE | SCALE | REVISION |
| 10K/44 | S2-15220 | A1 |

| 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.

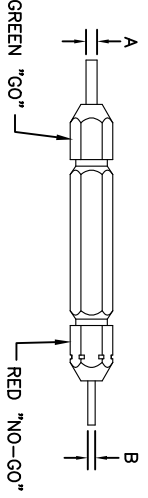
- NOTES:
- THE CA-5D12 IS A HAND OPERATED CRIMPER FOR ELECTRICAL CONTACTS. IT IS ADJUSTABLE TO 3 CONTACT SIZES (12, 16 & 20) AND 8 INDENTER CRIMP POSITIONS FOR DIFFERENT WIRE SIZES (12AWG THRU 26 AWG).
 - WEIGHT: 1.64 LBS
 - SELECTING CONTACT SIZE: PRESS THE RELEASE LATCH ON SIDE OF THE CONTACT LOCATOR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

| CONTACT SIZE | LOCATOR "TURRET" POSITION COLOR | SELECTOR NUMBER | | | | | | | | |
|--------------|---------------------------------|-----------------|---|---|---|---|---|---|---|---|
| | | 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 | | | | | | | 7 | | 8 |

GAGING INSTRUCTIONS

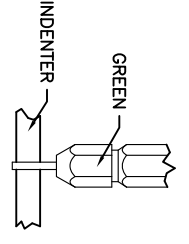
CAUTION!
DO NOT CRIMP GAGE!

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



"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 $\pm .0001$ 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 | .0680 | .0730 |

MATERIALS LIST

SINE Systems Corporation

A Subsidiary of Amphenol Corporation
44724 Moley Drive
Canton Township, MI 48036

INSTRUCTIONS FOR CA-5D12
CRIMPER, HAND, MACHINED CONTACTS

| QUANTITY | PART NUMBER | DESCRIPTION | ITEM |
|----------|-------------|-------------|------|
| | | | |

UNLESS OTHERWISE SPECIFIED
1) All dimensions are in inches.
2) Holes are .0015 tolerance unless otherwise specified.
3) Radii are .0015 tolerance unless otherwise specified.
4) Hole: S2-20020

APPROVALS:
DESIGNER: BERNIM
DATE: 6/3/09
CHECKER: NONE
DATE: 6/3/09
ENGINEER: BERNIM
DATE: 6/3/09

SIZE: 10K44
SCALE: NONE
S2-15219
SHEET: 1 OF 1

A

B

C

D

4

3

2

1

4

3

2

1

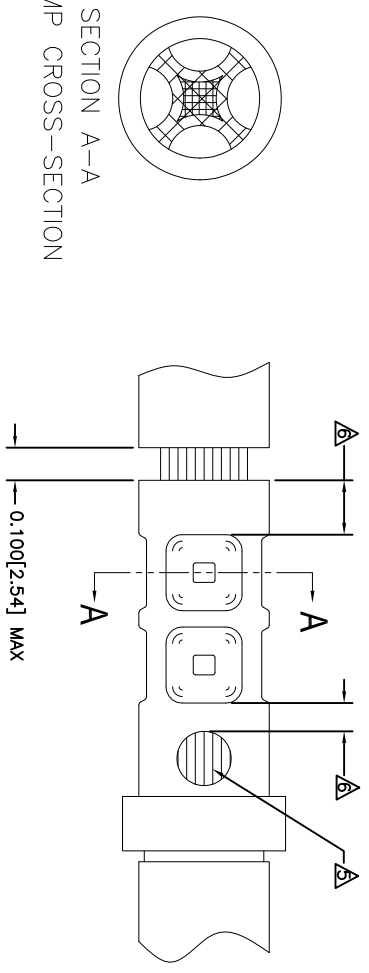
| REVOLUTIONS | | DESCRIPTION | DATE | BY | APPR |
|-------------|------|-------------|-----------------------|--------|--------|
| REV | ZONE | ECO | RELEASE NUMBER 016571 | B.D.B. | M.R.F. |
| A1 | - | - | 6/12/09 | | |

| 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] |
| | | 0.50mm ² | 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 |
|--|-------------|-------------|------|
| UNLESS OTHERWISE SPECIFIED | | | |
| 1) All dimensions are in inches. | | | |
| 2) For dimensions in millimeters, see drawing. | | | |
| 3) Pl. SEE 30.00 [1] Position 31/14 | | | |
| 4) Pl. SEE 30.01 [1] Position 31/14 | | | |
| 5) Fabrication Standards Per: <input type="checkbox"/> U | | | |
| 6) Pl. SEE 30.02 [1] Position 31/14 | | | |
| 7) Pl. SEE 30.03 [1] Position 31/14 | | | |
| 8) Pl. SEE 30.04 [1] Position 31/14 | | | |
| 9) Pl. SEE 30.05 [1] Position 31/14 | | | |
| 10) Pl. SEE 30.06 [1] Position 31/14 | | | |
| 11) Pl. SEE 30.07 [1] Position 31/14 | | | |
| 12) Pl. SEE 30.08 [1] Position 31/14 | | | |
| 13) Pl. SEE 30.09 [1] Position 31/14 | | | |
| 14) Pl. SEE 30.10 [1] Position 31/14 | | | |
| 15) Pl. SEE 30.11 [1] Position 31/14 | | | |
| 16) Pl. SEE 30.12 [1] Position 31/14 | | | |
| 17) Pl. SEE 30.13 [1] Position 31/14 | | | |
| 18) Pl. SEE 30.14 [1] Position 31/14 | | | |
| 19) Pl. SEE 30.15 [1] Position 31/14 | | | |
| 20) Pl. SEE 30.16 [1] Position 31/14 | | | |
| 21) Pl. SEE 30.17 [1] Position 31/14 | | | |
| 22) Pl. SEE 30.18 [1] Position 31/14 | | | |
| 23) Pl. SEE 30.19 [1] Position 31/14 | | | |
| 24) Pl. SEE 30.20 [1] Position 31/14 | | | |
| 25) Pl. SEE 30.21 [1] Position 31/14 | | | |
| 26) Pl. SEE 30.22 [1] Position 31/14 | | | |
| 27) Pl. SEE 30.23 [1] Position 31/14 | | | |
| 28) Pl. SEE 30.24 [1] Position 31/14 | | | |
| 29) Pl. SEE 30.25 [1] Position 31/14 | | | |
| 30) Pl. SEE 30.26 [1] Position 31/14 | | | |
| 31) Pl. SEE 30.27 [1] Position 31/14 | | | |
| 32) Pl. SEE 30.28 [1] Position 31/14 | | | |
| 33) Pl. SEE 30.29 [1] Position 31/14 | | | |
| 34) Pl. SEE 30.30 [1] Position 31/14 | | | |
| 35) Pl. SEE 30.31 [1] Position 31/14 | | | |
| 36) Pl. SEE 30.32 [1] Position 31/14 | | | |
| 37) Pl. SEE 30.33 [1] Position 31/14 | | | |
| 38) Pl. SEE 30.34 [1] Position 31/14 | | | |
| 39) Pl. SEE 30.35 [1] Position 31/14 | | | |
| 40) Pl. SEE 30.36 [1] Position 31/14 | | | |
| 41) Pl. SEE 30.37 [1] Position 31/14 | | | |
| 42) Pl. SEE 30.38 [1] Position 31/14 | | | |
| 43) Pl. SEE 30.39 [1] Position 31/14 | | | |
| 44) Pl. SEE 30.40 [1] Position 31/14 | | | |
| 45) Pl. SEE 30.41 [1] Position 31/14 | | | |
| 46) Pl. SEE 30.42 [1] Position 31/14 | | | |
| 47) Pl. SEE 30.43 [1] Position 31/14 | | | |
| 48) Pl. SEE 30.44 [1] Position 31/14 | | | |
| 49) Pl. SEE 30.45 [1] Position 31/14 | | | |
| 50) Pl. SEE 30.46 [1] Position 31/14 | | | |
| 51) Pl. SEE 30.47 [1] Position 31/14 | | | |
| 52) Pl. SEE 30.48 [1] Position 31/14 | | | |
| 53) Pl. SEE 30.49 [1] Position 31/14 | | | |
| 54) Pl. SEE 30.50 [1] Position 31/14 | | | |
| 55) Pl. SEE 30.51 [1] Position 31/14 | | | |
| 56) Pl. SEE 30.52 [1] Position 31/14 | | | |
| 57) Pl. SEE 30.53 [1] Position 31/14 | | | |
| 58) Pl. SEE 30.54 [1] Position 31/14 | | | |
| 59) Pl. SEE 30.55 [1] Position 31/14 | | | |
| 60) Pl. SEE 30.56 [1] Position 31/14 | | | |
| 61) Pl. SEE 30.57 [1] Position 31/14 | | | |
| 62) Pl. SEE 30.58 [1] Position 31/14 | | | |
| 63) Pl. SEE 30.59 [1] Position 31/14 | | | |
| 64) Pl. SEE 30.60 [1] Position 31/14 | | | |
| 65) Pl. SEE 30.61 [1] Position 31/14 | | | |
| 66) Pl. SEE 30.62 [1] Position 31/14 | | | |
| 67) Pl. SEE 30.63 [1] Position 31/14 | | | |
| 68) Pl. SEE 30.64 [1] Position 31/14 | | | |
| 69) Pl. SEE 30.65 [1] Position 31/14 | | | |
| 70) Pl. SEE 30.66 [1] Position 31/14 | | | |
| 71) Pl. SEE 30.67 [1] Position 31/14 | | | |
| 72) Pl. SEE 30.68 [1] Position 31/14 | | | |
| 73) Pl. SEE 30.69 [1] Position 31/14 | | | |
| 74) Pl. SEE 30.70 [1] Position 31/14 | | | |
| 75) Pl. SEE 30.71 [1] Position 31/14 | | | |
| 76) Pl. SEE 30.72 [1] Position 31/14 | | | |
| 77) Pl. SEE 30.73 [1] Position 31/14 | | | |
| 78) Pl. SEE 30.74 [1] Position 31/14 | | | |
| 79) Pl. SEE 30.75 [1] Position 31/14 | | | |
| 80) Pl. SEE 30.76 [1] Position 31/14 | | | |
| 81) Pl. SEE 30.77 [1] Position 31/14 | | | |
| 82) Pl. SEE 30.78 [1] Position 31/14 | | | |
| 83) Pl. SEE 30.79 [1] Position 31/14 | | | |
| 84) Pl. SEE 30.80 [1] Position 31/14 | | | |
| 85) Pl. SEE 30.81 [1] Position 31/14 | | | |
| 86) Pl. SEE 30.82 [1] Position 31/14 | | | |
| 87) Pl. SEE 30.83 [1] Position 31/14 | | | |
| 88) Pl. SEE 30.84 [1] Position 31/14 | | | |
| 89) Pl. SEE 30.85 [1] Position 31/14 | | | |
| 90) Pl. SEE 30.86 [1] Position 31/14 | | | |
| 91) Pl. SEE 30.87 [1] Position 31/14 | | | |
| 92) Pl. SEE 30.88 [1] Position 31/14 | | | |
| 93) Pl. SEE 30.89 [1] Position 31/14 | | | |
| 94) Pl. SEE 30.90 [1] Position 31/14 | | | |
| 95) Pl. SEE 30.91 [1] Position 31/14 | | | |
| 96) Pl. SEE 30.92 [1] Position 31/14 | | | |
| 97) Pl. SEE 30.93 [1] Position 31/14 | | | |
| 98) Pl. SEE 30.94 [1] Position 31/14 | | | |
| 99) Pl. SEE 30.95 [1] Position 31/14 | | | |
| 100) Pl. SEE 30.96 [1] Position 31/14 | | | |
| 101) Pl. SEE 30.97 [1] Position 31/14 | | | |
| 102) Pl. SEE 30.98 [1] Position 31/14 | | | |
| 103) Pl. SEE 30.99 [1] Position 31/14 | | | |
| 104) Pl. SEE 30.100 [1] Position 31/14 | | | |

| MATERIALS LIST | | SIGNATURES | | DATE | |
|----------------|--------|-------------|--|--------|--------|
| DRWING | BERNIM | 6/3/09 | ENGINEER | BERNIM | 6/3/09 |
| CHECKED | BERNIM | 6/3/09 | APPROVAL | BERNIM | 6/3/09 |
| DESIGNED | BERNIM | 6/3/09 | CUSTOMER | MA | |
| DRAWN | BERNIM | 6/3/09 | PROCESS SPECIFICATIONS | | |
| INSTRUMENTED | BERNIM | 6/3/09 | THE USE OF THIS DRAWING IS LIMITED TO THE SPECIFIC APPLICATIONS AND PERFORMANCE INDICATED THEREON. ANY OTHER USE IS UNAUTHORIZED. ALL DIMENSIONS ARE SUBJECT TO NORMAL DOCUMENTS REFERENCED HEREON UNLESS OTHERWISE SPECIFIED. | | |
| DATE | 6/3/09 | SCALE | AS SHOWN | SIZE | 10K44 |
| REV | 1 | DESCRIPTION | S2-15218 | SHEET | 1 OF 1 |

| CRIMP INFORMATION | |
|-------------------|-------------------------|
| CRIMP INFORMATION | SOLID MACHINED CONTACTS |
| SIZE | S2-15218 |
| SCALE | AS SHOWN |
| REV | 1 |
| DESCRIPTION | S2-15218 |
| SHEET | 1 OF 1 |

| REVOLUTIONS | | DESCRIPTION | DATE | BY | APPR |
|-------------|------|-------------|-----------------------|--------|--------|
| REV | ZONE | ECO | 6/12/08 | B.D.B. | M.R.F. |
| AT | - | - | RELEASE NUMBER 016871 | | |

| 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 |

| 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: Δ 31= GOLD* 141= NICKEL | |
| STAMPED CONTACT PLATING OPTIONS: Δ 22= NICKEL 44= GOLD* 89= SELECTIVE GOLD* | |
| GOLD* PLATING IS AVAILABLE (RECOMMENDED) FOR ONLY (<5V) CIRCUIT APPLICATIONS MATERIALS AND PLATINGS ARE ROHS COMPLIANT | |

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE INCHES(MM).
2. ALL FORCES ARE IN LBS(POUNDS) AND "N" (NEWTONS).
- Δ CONTACT RETENTION TEST PULL RATE SHALL BE 1.0 INCH/2S. 4) PER MINUTE MAXIMUM. WIRE SIZE WILL AFFECT THE TRUE STRENGTH OF THE CRIMP.
- Δ 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 |

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

| | | | |
|--|--|------------------------|--------------|
| QUANTITY | PART NUMBER | DESCRIPTION | ITEM |
| MATERIALS LIST | | | |
| UNLESS OTHERWISE SPECIFIED | SIGNATURES | DATE | |
| 1) All dimensions are in inches. | DATE | 4/5/09 | |
| 2) Pl. SEE 30.00 | ORDERED | ROCK | 6/3/09 |
| 3) Pl. SEE 30.00 | ENGINEER | BERNIE | |
| 4) Pl. SEE 30.00 | APPROVAL | BERNIE | 6/3/09 |
| 5) Fabrication Standards Per: SS-20020 | CUSTOMER | | |
| 6) Material Specifications: NA | APPROVAL | | |
| 7) Process Specifications: NA | CUSTOMER | | |
| 8) Next Ass't: | THE USE OF THIS DRAWING IS LIMITED TO THE SPECIFIC PARTS, MATERIALS, AND PERFORMANCE SPECIFICATIONS AND REQUIREMENTS PRESENT ON THIS DRAWING. ANY DIMENSIONS ARE SUBJECT TO NORMAL DOCUMENTS REFERENCED HEREON UNLESS OTHERWISE NOTED. | SIZE: PCD 101.00mm 106 | SCALE: NONE |
| | | 10K44 | S2-15217 |
| | | | SHEET 1 OF 1 |

SINE Systems Corporation
A Subsidiary of Amphenol Corporation
441724 Moley Drive
Clinton Township, MI 48036

GENERAL DATA, CONTACTS STAMPED AND FORMED / MACHINED