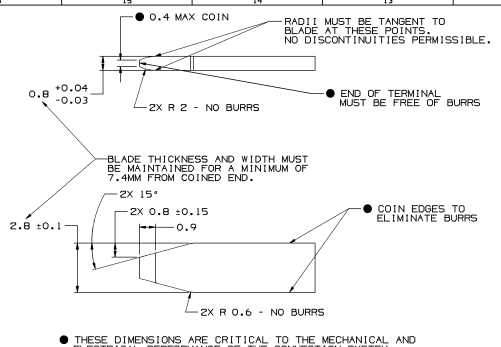



● THESE DIMENSIONS ARE CRITICAL TO THE MECHANICAL AND ELECTRICAL PERFORMANCE OF THE CONNECTION SYSTEM.

## MATERIAL SPECIFICATIONS

RECOMMENDED

BASE METAL - CDA-210, EXTRA SPRING TEMPER

- TIN PLATING (WHERE APPLICABLE TO 125°C MAX CONTINUOUS USAGE): 0.0050±0.0025 MM (200±100 µ'IN) ELECTROPLATED TIN.
- USAGE OF PLATING TYPES OTHER THAN RECOMMENDED MUST BE APPROVED BY DELPHI PACKARD ELECTRIC SYSTEMS ENGINEERING.

MINIMUMS

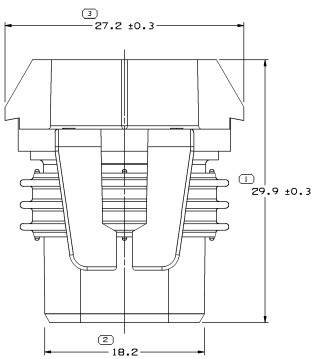
ELECTRICAL CONDUCTIVITY - ≥28% IACS AT 20 °C. USE OF A MATERIAL WITH CONDUCTIVITY <28% IACS MUST BE APPROVED BY PACKARD ELECTRIC MATERIALS ENGINEERING.

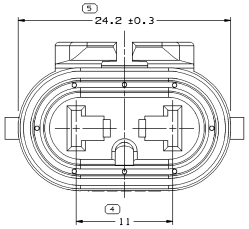
TENSILE STRENGTH - 420 - 475 MPa

UNDERPLATING FOR TIN PLATING - FOR BASE MATERIALS CONTAINING 10% OR MORE ZINC, AN UNDERPLATE OF COPPER 0.0025 MM (100 µ'IN) MINIMUM THICK IS REQUIRED.

PROCESSING LUBRICANT - ANY PROCESSING LUBRICANT REMAINING ON TERMINALS MUST NOT VARNISH OR DEGRADE THE ELECTRICAL PERFORMANCE OF THE CONNECTION UP TO A MAXIMUM TEMPERATURE OF 150°C. PROCESSING LUBRICANTS MUST BE APPROVED BY DELPHI PACKARD ELECTRIC SYSTEMS ENGINEERING.

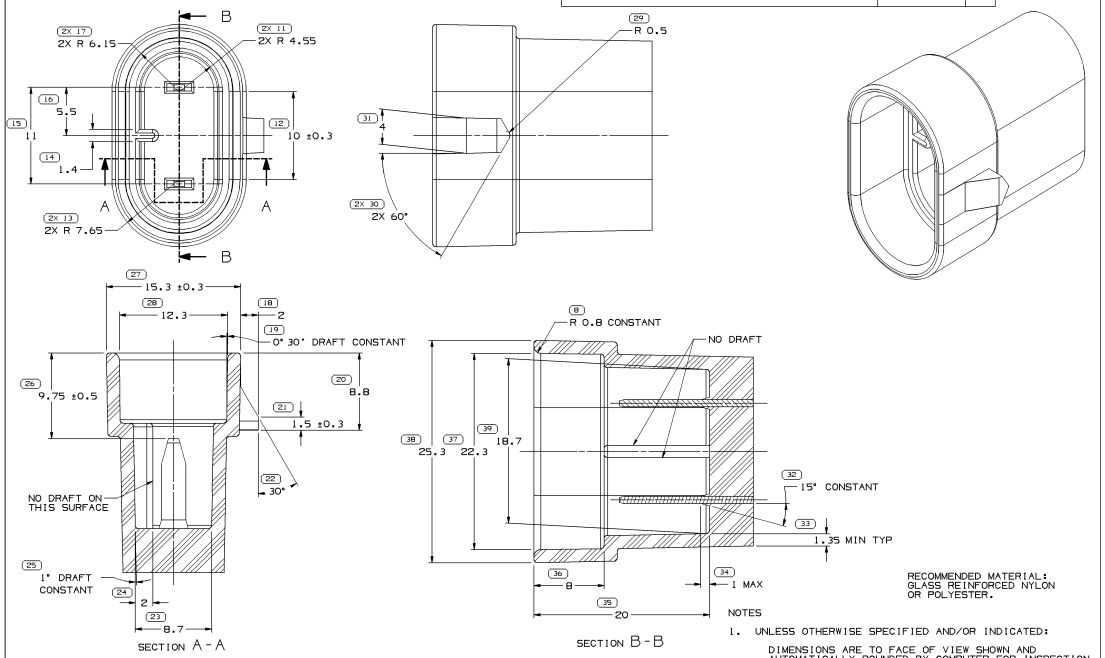
## MATING BLADE INFORMATION




| SYMBOL DEFINITION | | | MISSING SYMBOLS |
|---|---|---|---|
| A DIMENSION WITHOUT AN INSPECTION REPORT SYMBOL (□) DOES NOT REQUIRE INSPECTION. IT MAY BE CONTROLLED ON THE INDIVIDUAL COMPONENT DRAWING. | TOTAL NO OF INSPECTIONS REQUIRED | 43 | NO MISSING SYMBOL NUMBER |
| | LAST NO. USED | 39 | |

| DWG STATUS | | | | | ZONE | REVISION HISTORY | AUTH | DR | APVD/APVD |
|---|---|---|---|---|---|---|---|---|---|
| DATE | STG | REV | N/P | CHG | | | | | 1 2 |
| 01MY06 | R | F1 | - | - | - | CLEARED REV COL, REDRAWN TO PD AND UPDATED MATING BLADE INFO | 279456 | EFS | JVM WTM |
| 08FE10 | R | F2 | - | - | - | ADDED TOYOTA SERVICE PART ORDERS NOTE | 409959 | HCG | HCG DJS |




MATING CONNECTOR INFORMATION

INSPECTION SYMBOLS SHOWN IN THESE VIEWS ARE FOR REFERENCE ONLY

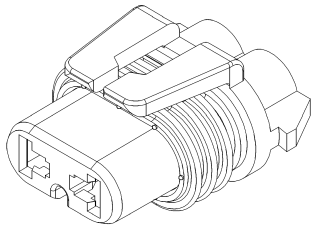
RECOMMENDED MATERIAL: GLASS REINFORCED NYLON OR POLYESTER.

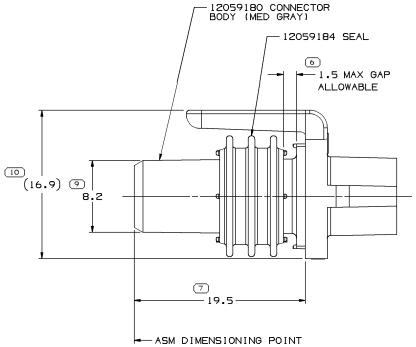
NOTES

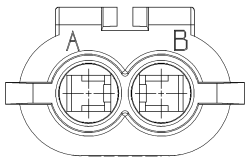
1. UNLESS OTHERWISE SPECIFIED AND/OR INDICATED:

   DIMENSIONS ARE TO FACE OF VIEW SHOWN AND AUTOMATICALLY ROUNDED BY COMPUTER FOR INSPECTION (SEE MATH MODEL FOR PRECISE DIMENSIONS). FOR ALL OTHER DIMENSIONS NOT SHOWN BUT REQUIRED FOR TOOL BUILD, SEE MATH MODEL FOR PRECISE TOOL PATH DATA. ALL RADII 0.4
   DRAFT IS 1° MAX ON ALL OUTSIDE SURFACES. LOCKING FEATURES ARE IDENTICAL.

2. SEALING SURFACES MUST BE FREE OF DEFECTS AND PARTING LINES.






NOTES

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   DIMENSIONS ARE TO FACE OF VIEW SHOWN AND AUTOMATICALLY ROUNDED BY COMPUTER FOR INSPECTION (SEE MATH MODEL FOR PRECISE DIMENSIONS). FOR ALL OTHER DIMENSIONS NOT SHOWN BUT REQUIRED FOR TOOL BUILD, SEE MATH MODEL FOR PRECISE TOOL PATH DATA.

2. WHEN PARTS ARE SHIPPED, THEY MUST BE PACKED IN PLASTIC BAGS OR SHIPPING CONTAINERS MUST BE LINED WITH PLASTIC LINERS. BAGS OR LINERS MUST BE SEALED TO AVOID ENTRY OF FOREIGN MATTER.

3. SEALING CODE 3 - DESIGN WILL PASS SALT FOG AND IMMERSION TEST AFTER CONDITIONING AS SPECIFIED IN ESA-644 (WEATHER-PACK), ESA-710 (METRI-PACK), ESA-650 (UNDER-HOOD MICRO-PACK), C-4006 (WORLD CONNECTOR), ETC. - WHEN MATED TO MATING PART OR EQUIVALENT

4. THIS PART IS NOT CONTROLLED FOR AUTOMATIC FEEDING.

5. THIS PRODUCT IS NOT CATEGORIZED AS AN APPEARANCE ITEM. MINOR IMPERFECTIONS INCLUDING, BUT NOT LIMITED TO, FLOW MARKS, COLOR BLEMISHES, GATE VESTIGE, AND SOFT FLASH THAT DO NOT AFFECT THE FIT, FORM, OR FUNCTION OF THE PART ARE PERMISSIBLE PER DPNP-4.7-CS-01.

6. FOR TOYOTA SERVICE PART ORDERS OF PART 90080-98038 CONNECTOR 12059181 AND TPA 12059185 MUST BE ASSEMBLED TOGETHER PRIOR TO SHIPMENT.

7. FOR APPLICATION DATA SEE THE APPLICATION DRAWING.

| DWG TYPE | PART DRAWING |
|---|---|
| STYLE | |
| VOLUME (CM³) | DISTR CODE |

UNLESS OTHERWISE SPECIFIED
THIS DOCUMENT IS IN ACCORDANCE WITH ASME Y14.5M-1994 AS GOVERNED BY THE GM GLOBAL DIMENSIONING AND TOLERANCING HANDBOOK-3181. SEPARATE PATTERNS OF FEATURES MAY BE RANGED SEPARATELY REGARDLESS OF DATUM REFERENCES.

ALL DIMENSIONS ARE IN MILLIMETERS

REFERENCE

(N/A) PROCESS SENSITIVE DIMENSION

DIMENSIONS ENCLOSED IN ( ) INDICATE REFERENCE DIMENSIONS AND NO TOLERANCE LIMITS ARE ESTABLISHED

| DIMENSIONAL RANGE (MM) | | | | | | | | CHART 01 |
|---|---|---|---|---|---|---|---|---|
| FROM | > 0 | > 6 | > 30 | > 70 | >100 | >150 | >200 | >250 | >300 |
| TO | 6 | 30 | 70 | 100 | 150 | 200 | 250 | 300 | 400 |
| TOLERANCE UNLESS OTHERWISE SPECIFIED | | | | | | | | | |
| | ±0.15 | ±0.2 | ±0.3 | ±0.4 | ±0.5 | ±0.6 | ±0.8 | ±1 | ±1.2 |
| ANGULAR TOLERANCE ±0° | | | | | | | | | |

THIRD ANGLE PROJECTION

DO NOT SCALE USE MATH DATA

NX

DELPHI

DELPHI PACKARD ELECTRICAL/ELECTRONIC ARCHITECTURE
WARREN, OH

| DR | DATE |
|---|---|
| APVD1 YERR L. BOZIS | 21MY85 |
| APVD2 A. SWARTZ | 11JN85 |
| APVD3 P. REEDY | 14JN85 |
| APVD4 | |
| APVD5 | |

SUBSTANCES OF CONCERN AND RECYCLED CONTENT PER DELPHI (1994100)

MATERIAL
SEE DRAWING

DRAWING NAME
ASM CONN 2 F M/P 280 SLD

DRAWING NUMBER
12059181

| SIZE | SCALE | TYPNAC NO | SHEET NO | STG | REV | N/P |
|---|---|---|---|---|---|---|
| A0 | 5:1 | 1 OF 1 | 1 OF 1 | R | F2 | - |