The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE RECOMMENDED PRACTICE

SAE ARP670 REV. B

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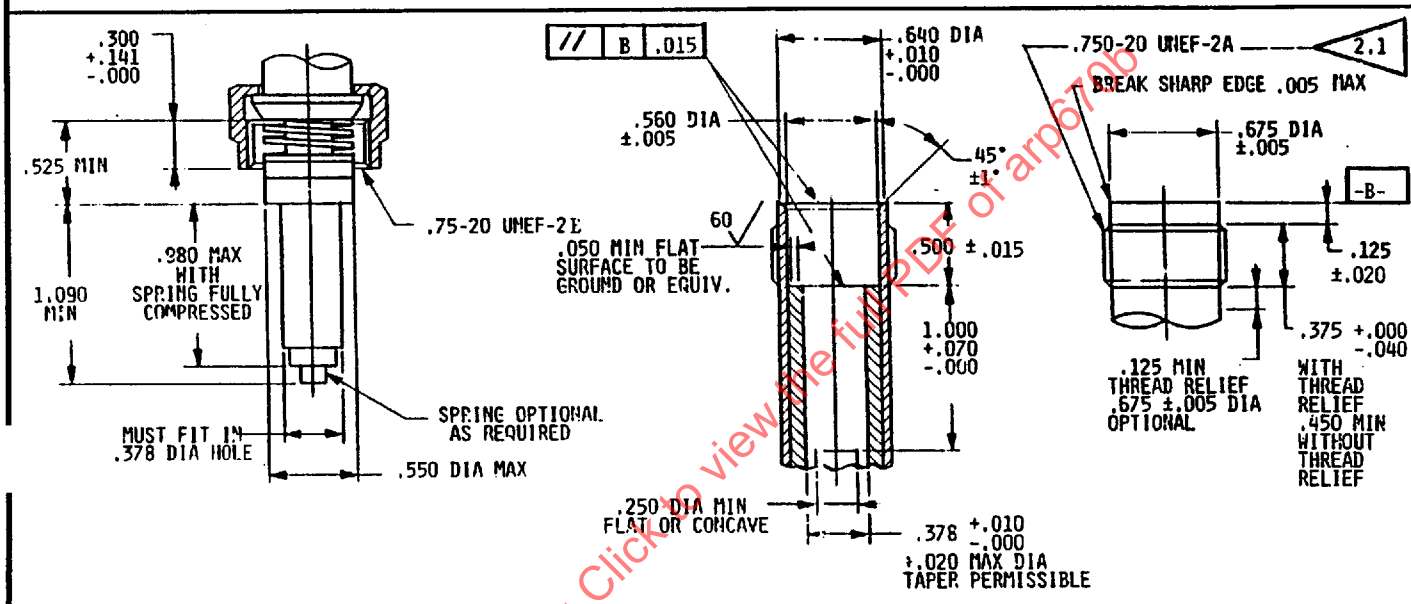
Submitted for recognition as an American National Standard

TERMINALS, AIRCRAFT IGNITION



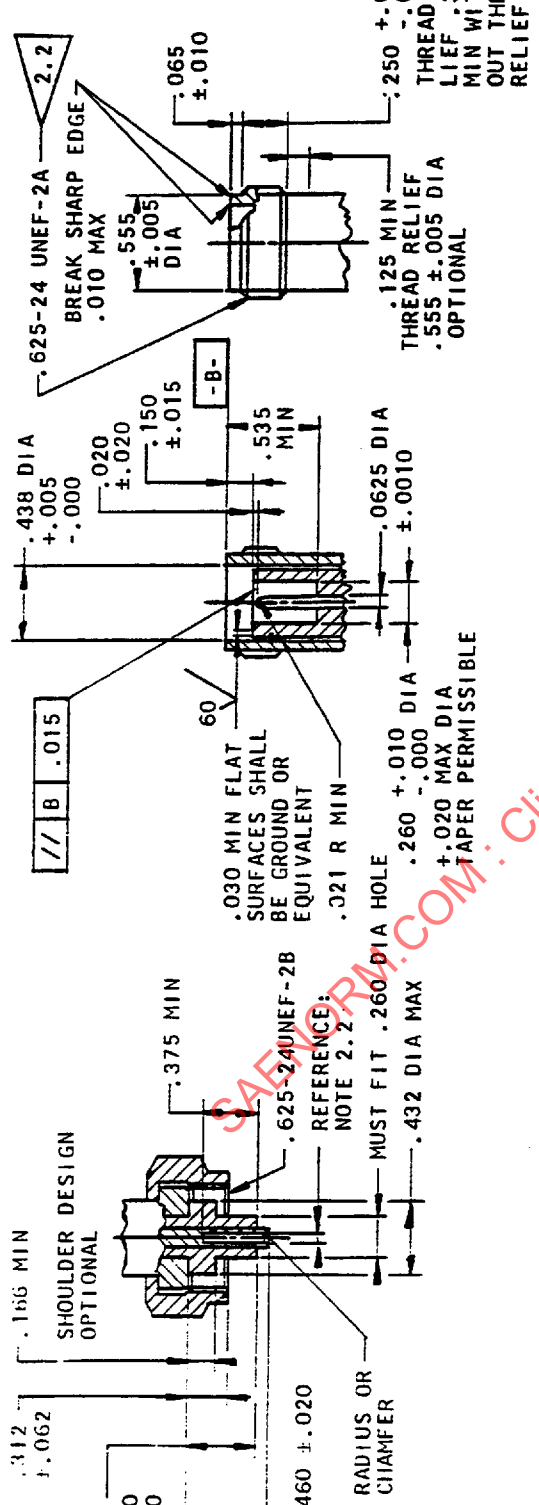
TYPE 1M

1. APPLICATION:
1.1 FOR USE WITH TYPE 1F.
2. REQUIREMENTS:
2.1 SEALING SPRING SHALL NOT EXCEED .550 OUTSIDE DIAMETER IN THE MATED CONDITION.
2.2 THE COUPLING NUT AND FERRULE WHEN ATTACHED TO A STANDARD MATING PART SHALL WITHSTAND A TORQUE OF 250 lb-in APPLIED TO THE COUPLING NUT WITHOUT ANY EVIDENCE OF BINDING OR ANY DEFORMATION OF THE JOINED PARTS. THREADS SHALL BE LUBRICATED WITH MIL-O-6081 OIL FOR THIS TEST.
2.3 FERRULE MEETS REQUIREMENTS OF ARP457.
3. NOT RECOMMENDED FOR CAPACITOR DISCHARGE TYPE IGNITION SYSTEMS.
4. SUPERSEDES ARP298.
5. MATED CONDITION IS DEFINED AS TERMINAL SHELLS HELD IN CONTACT BY COUPLING NUT.

TYPE 1F

1. APPLICATION:
1.1 FOR USE WITH TYPE 1M.
1.2 TYPICALLY, THIS TERMINAL (IN MATED CONDITION) IS INTENDED TO BE USED WITH SHORT DURATION PULSES IN THE ORDER OF 20 kV PEAK AND 5 A PEAK. SEALED TERMINALS OF THIS TYPE ARE RECOMMENDED FOR HIGH ALTITUDE USE.
2. REQUIREMENTS:
2.1 CLASS 3A THREAD IS OPTIONAL. WHEN CLASS 3A THREAD IS SPECIFIED, ACCEPTABILITY SHALL BE BASED ON FUNCTIONAL (VIRTUAL) DIAMETER GAGING PRACTICE (THREAD RING GAGES)

FIGURE 1



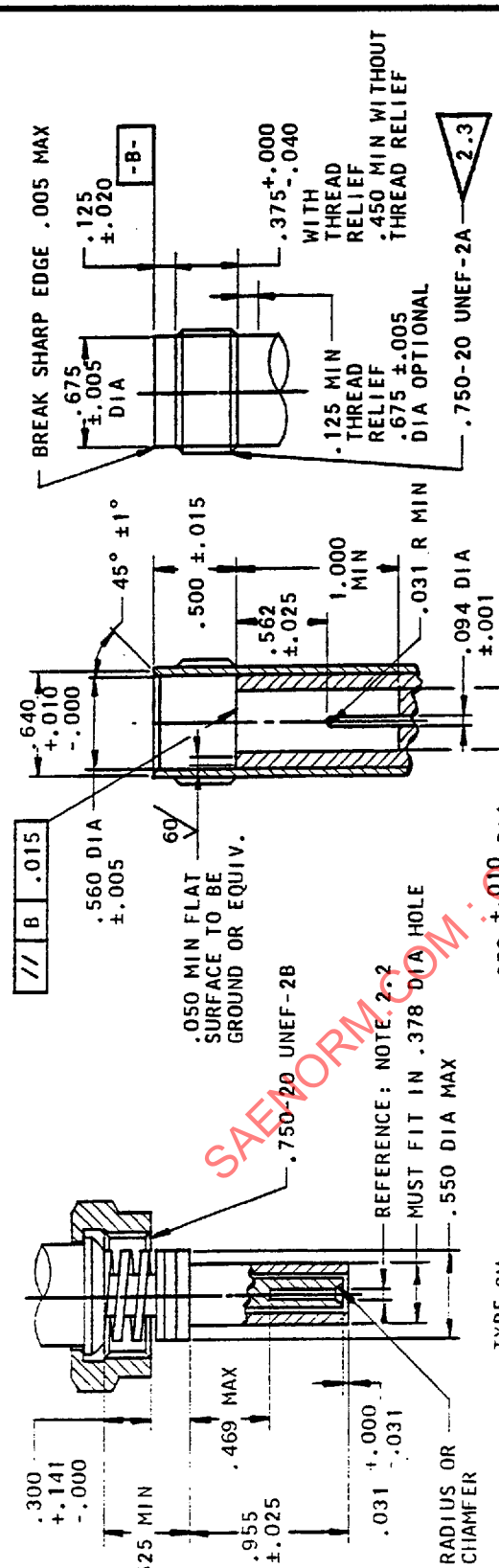
TYPE 2M

1. APPLICATION:
   1.1 FOR USE WITH TYPE 2F.
2. REQUIREMENTS:
   2.1 SOCKET CONTACT SHALL ENGAGE AND DISENGAGE ON A .0615 ± .0002 DIAMETER HARDENED STEEL PIN WITH A FORCE OF NOT LESS THAN 1/8 lb AND NOT MORE THAN 5 lb ON A .0635 ± .0002 DIAMETER PIN AT ROOM TEMPERATURE.
   2.1.1 DEPTH OF ENGAGEMENT FOR TEST PURPOSES SHALL BE .3125 FROM END OF SOCKET.
   2.1.2 TEST PIN MUST HAVE A SURFACE FINISH OF 12 µin ± 4 µin VALUE.
   2.2 SOCKET HOLE MUST ACCOMMODATE A PIN OF .0625 ± .0010 DIAMETER AND EXCLUDE THE ENTRANCE OF A PIN .0685 DIAMETER.
   2.3 THE COUPLING NUT AND FERRULE WHEN ATTACHED TO A STANDARD MATING PART SHALL WITHSTAND A TORQUE OF 150 lb-in APPLIED TO THE COUPLING NUT WITHOUT ANY EVIDENCE OF BINDING OR ANY DEFORMATION OF THE JOINED PARTS. THREADS SHALL BE LUBRICATED WITH MIL-O-6081 OIL FOR THIS TEST.

TYPE 2F

1. APPLICATION:
   1.1 FOR USE WITH TYPE 2M.
   1.2 TYPICALLY, THIS TERMINAL (IN MATED CONDITION) IS INTENDED TO BE USED WITH SHORT DURATION PULSES IN THE ORDER OF 8 kV PEAK, AND 1200 A PEAK. SEALED TERMINALS OF THIS TYPE ARE RECOMMENDED FOR HIGH ALTITUDE USE.
2. REQUIREMENTS:
   2.1 THE .260 +.010 -.000 DIAMETER AND .0625 ± .010 DIAMETER SHALL BE CONCENTRIC WITHIN .020 FIR.
   2.2 CLASS 3A THREAD IS OPTIONAL. WHEN CLASS 3A IS SPECIFIED, ACCEPTABILITY SHALL BE BASED ON FUNCTIONAL (VIRTUAL) DIAMETER GAGING PRACTICE (THREAD RING GAGES).
3. MATED CONDITION IS DEFINED AS TERMINAL SHELLS HELD IN CONTACT BY COUPLING NUT.

FIGURE 2



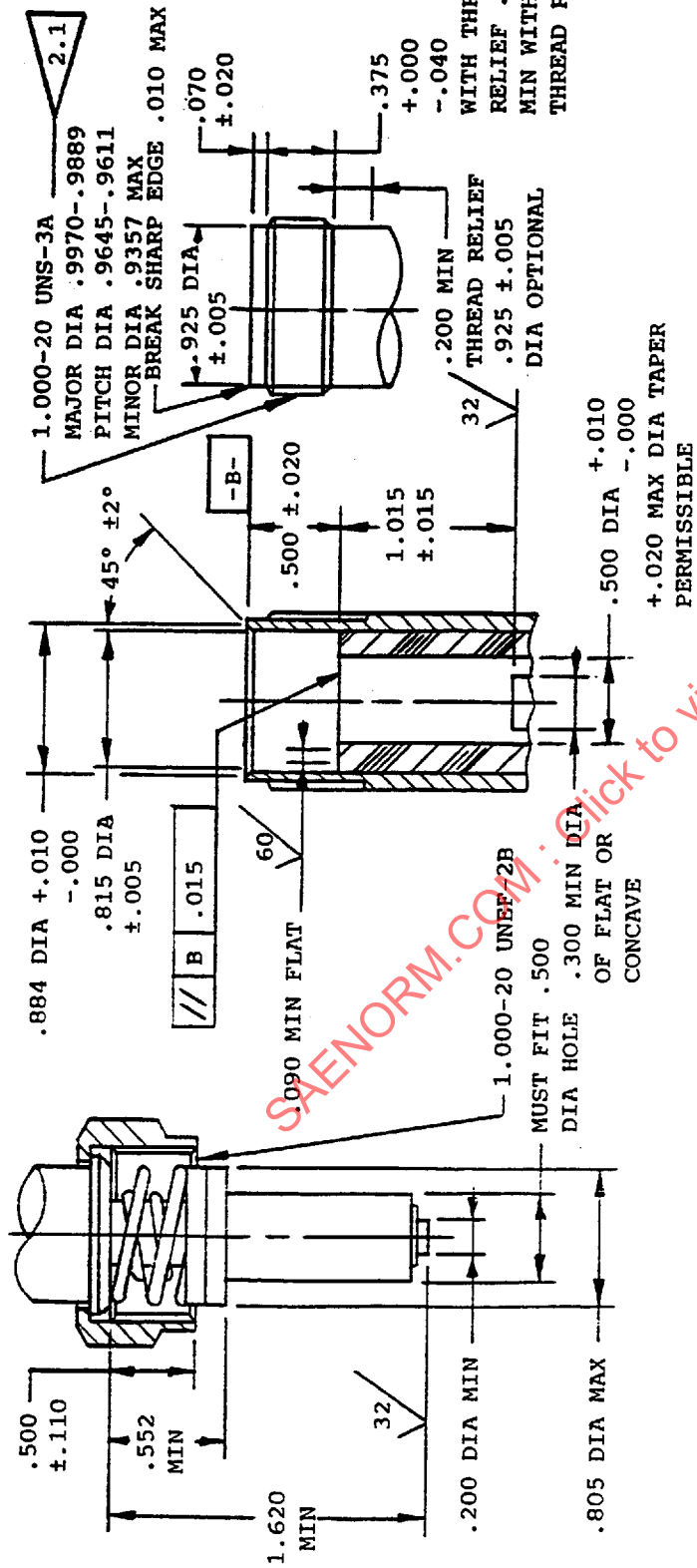
TYPE 3M

1. APPLICATION:
   1.1 FOR USE WITH TYPE 3F.
2. REQUIREMENTS:
   2.1 SOCKET CONTACT SHALL ENGAGE AND DISENGAGE ON A .0930 ±.0002 DIAMETER HARDENED STEEL PIN WITH A FORCE OF NOT LESS THAN 1/4 lb AND NOT MORE THAN 10 lb ON A .0950 ±.0002 DIAMETER PIN AT ROOM TEMPERATURE.
   2.1.1 DEPTH OF ENGAGEMENT FOR TEST PURPOSES SHALL BE .375 FROM END OF SOCKET.
   2.1.2 TEST PIN TO HAVE A SURFACE FINISH OF 12 µin ± 4 µin VALUE.
   2.2 SOCKET HOLE MUST ACCOMMODATE A PIN .094 ± .001 DIAMETER AND EXCLUDE THE ENTRANCE OF A PIN .100 DIAMETER.
   2.3 SEALING SPRING SHALL NOT EXCEED .550 OUTSIDE DIAMETER IN THE MATED CONDITION.
   2.4 THE COUPLING NUT AND FERRULE WHEN ATTACHED TO A STANDARD MATING PART SHALL WITHSTAND A TORQUE OF 250 lb-in APPLIED TO THE COUPLING NUT WITHOUT ANY EVIDENCE OF BINDING OR ANY DEFORMATION OF THE JOINED PARTS. THREADS SHALL BE LUBRICATED WITH MIL-O-6081 OIL FOR THIS TEST.
   2.5 FERRULE MEETS REQUIREMENTS OF ARP457.
3. SUPERSEDES ARP296.
4. MATED CONDITION IS DEFINED AS TERMINAL SHELLS HELD IN CONTACT BY COUPLING NUT.

TYPE 3E

1. APPLICATION:
   1.1 FOR USE WITH TYPE 3M.
   1.2 TYPICALLY THIS TERMINAL (IN MATED CONDITION) IS INTENDED TO BE USED WITH SHORT DURATION PULSES IN ORDER OF 20 kV PEAK AND 2000 A PEAK. SEALED TERMINALS OF THIS TYPE ARE RECOMMENDED FOR HIGH ALTITUDE USE.
2. REQUIREMENTS:
   2.1 THE .378 +.010 -.000 DIAMETER AND .094 ± .001 DIAMETER SHALL BE CONCENTRIC WITHIN .020 FIR.
   2.2 SUPERSEDES ARP297.
   2.3 CLASS 3A THREAD IS OPTIONAL. WHEN CLASS 3A IS SPECIFIED, ACCEPTABILITY SHALL BE BASED ON FUNCTIONAL (VIRTUAL) DIAMETER GAGING PRACTICE (THREAD RING GAGES).

FIGURE 3



TYPE 4M

1. APPLICATION:
1.1 FOR USE WITH TYPE 4F.
2. REQUIREMENTS:
2.1 LARGE SEALING SPRING SHALL NOT EXCEED .805 OUTSIDE DIAMETER IN THE MATED CONDITION.
2.2 THE COUPLING NUT AND FERRULE WHEN ATTACHED TO A STANDARD MATING PART SHALL WITHSTAND A TORQUE OF 275 lb-in APPLIED TO THE COUPLING NUT WITHOUT ANY EVIDENCE OF BINDING OR ANY DEFORMATION OF THE JOINED PARTS. THREADS SHALL BE LUBRICATED WITH MIL-O-6081 OIL FOR THIS TEST.
2.3 CONTACT FORCE SHALL BE 5 lb MINIMUM IN MATED CONDITION.
2.4 FERRULE MEETS REQUIREMENTS OF ARP457.
3. MATED CONDITION IS DEFINED AS TERMINAL SHELLS HELD IN CONTACT BY COUPLING NUT.

TYPE 4F

1. APPLICATION:
1.1 FOR USE WITH TYPE 4M.
1.2 TYPICALLY, THIS TERMINAL (IN MATED CONDITION) IS INTENDED TO BE USED WITH SHORT DURATION PULSES IN THE ORDER OF 26 kV PEAK AND 2500 A PEAK. SEALED TERMINALS OF THIS TYPE ARE RECOMMENDED FOR HIGH ALTITUDE USE.
2. REQUIREMENTS:
2.1 THREAD ACCEPTABILITY SHALL BE BASED ON FUNCTIONAL (VIRTUAL) DIAMETER GAGING PRACTICE (THREAD RING GAGES).

FIGURE 4