

USER SYMBOLS:

REVIEWER SYMBOLS:

"Review/Use" information is current as of the date of this document.  
For future coordination of changes to this document, drafts circulation  
should be based on the information in the current "NOTICE".

This military standard is approved for use by all Departments  
B. Agencies of the Department of Defense. Selection for all new  
engineering and design applications and for existing use shall  
be made from this document.

		FED. SUP CLASS 6140	
<b>REQUIREMENTS</b> <ol style="list-style-type: none"> <li>1. THE PLUG SHALL CONFORM TO THE REQUIRED DIMENSIONS IN ALL ATTITUDES.</li> <li>2. <u>MAXIMUM WEIGHT</u>. THE WEIGHT OF EACH PLUG SHALL NOT EXCEED 0.125 POUNDS.</li> <li>3. THE PLUG SHALL HAVE A THREAD AS SHOWN AND BE IN ACCORDANCE WITH MIL-S-7742. THE PLUG SHALL INCLUDE A HOLE ON EACH END OF THE AXIS AS INDICATED. A GRAVITY CONTROLLED VALVE SHALL PREVENT ELECTROLYTE SPILLAGE WHEN BATTERY IS TILTED.</li> <li>4. <u>OPERATION</u>. WHEN THE AXIS OF THE PLUG IS WITHIN 30 DEGREES OF ITS NORMAL VERTICAL ATTITUDE IN ANY DIRECTION, THE VALVE SHALL BE OPEN. WHEN THE AXIS OF THE PLUG IS MORE THAN 45 DEGREES FROM ITS NORMAL VERTICAL ATTITUDE IN ANY DIRECTION, DOWN TO THE INVERTED VERTICAL ATTITUDE, THE VALVE SHALL BE CLOSED.</li> </ol>			
<p>(C) ENTIRE STANDARD REVISED AND REDRAWN</p>			
<b>P.A.</b> NAVY - AS Other Cust	<b>TITLE</b> PLUG VENTING, GRAVITY-CONTROLLED, ELECTROLYTE ACCESS HOLE, CELL, AIRCRAFT LEAD ACID STORAGE BATTERY	<b>MILITARY STANDARD</b>  <b>MS 25185</b>	
<b>USAF - 99</b> ARMY - EL	<b>PROCUREMENT SPECIFICATION</b> MIL-B-83769	<b>SUPERSEDES</b>	<b>SHEET</b> 1 <b>OF</b> 2

DD FORM 672-1 (Coordinated)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE PROJECT NO. 6140-0490

PLATE NO 23064

APPROVED 20 NOV 56 REVISED (C) 1 November 1973

FED. SUP CLASS  
6140

USER SYMBOLS:

REVIEWER SYMBOLS:

"Review/user information is current as of the date of this document. For future coordination of changes to this document, draft circulation should be based on the information in the current DD0155."

This military standard is approved for use by all Departments & Agencies of the Department of Defense. No action for all new engineering and design applications and for repetitive use shall be made from this document.

5. TESTS FOR OPENING AND CLOSING. WHEN THE PLUG IS TESTED FOR OPENING AND CLOSING, IT SHALL BE INSTALLED ON THE TOP OF A BOX HAVING AN INTERNAL VOLUME OF  $54 \pm 1$  CUBIC INCHES. THE BOX SHALL BE APPROXIMATELY CUBIC, OR A RIGHT CIRCULAR CYLINDER WITH THE HEIGHT APPROXIMATELY EQUAL TO THE DIAMETER. A PRESSURE GAUGE SHALL ALSO BE INSTALLED ON THE BOX. THE BOX SHALL BE CONNECTED THROUGH A VALVE TO A SOURCE OF COMPRESSED AIR WHICH, WHEN THE VALVE IS OPEN, SHALL MAINTAIN A PRESSURE OF  $9.5 \pm 0.5$  POUNDS PER SQUARE INCH IN THE BOX WHETHER THE VALVE IN THE PLUG IS CLOSED OR OPEN. THE BOX SHALL BE AIRTIGHT EXCEPT FOR THE OPENINGS FOR THE PLUG, PRESSURE GAUGE AND VALVE. THE PRESSURE GAUGE AND VALVE SHALL HAVE THE SMALLEST POSSIBLE INTERNAL VOLUME. THE PLUG SHALL BE STARTED GENTLY, MOVED SMOOTHLY AND STOPPED GENTLY AT THE NEW SETTING WITHOUT OVERSHOOTING, SO AS TO MINIMIZE SHOCK AND VIBRATION OF THE PLUG.

6. THE PLUGS SHALL CONFORM TO THE REQUIREMENTS OF MIL-B-83769 FOR LEAD-ACID STORAGE BATTERIES EXCEPT AS MODIFIED BY THE FOLLOWING:

3.5.20 TESTS FOR OPENING AND CLOSING.

3.5.20.1 TESTS FOR OPENING. WHEN THE PLUG IS ROTATED TO THE SPECIFIED ANGLE AND THE AIR SUPPLY VALVE IS CLOSED, THE PRESSURE SHALL DECAY AT LEAST 95 PERCENT IN  $10 \pm 0.5$  SECONDS.

3.5.20.2 TESTS FOR CLOSING. WHEN THE PLUG IS ROTATED TO THE SPECIFIED ANGLE AND THE AIR SUPPLY IS OPENED, THE PRESSURE SHALL NOT DECAY MORE THAN 5 PERCENT IN  $2.5 \pm 0.1$  MINUTES.

3.5.21 IMMERSION IN ACID. THERE SHALL NOT BE ANY DAMAGE DONE TO THE PLUG BY THIS TEST

4.6.20 TESTS FOR OPENING AND CLOSING. THE TESTS SHALL BE CONDUCTED AS FOLLOWS AND IN THE ORDER SHOWN:

a. OPENING AT  $27^{\circ} \pm 5^{\circ}\text{C}$  ( $80^{\circ} \pm 9^{\circ}\text{F}$ ) - THE PLUG SHALL BE SET IN THE INVERTED VERTICAL ATTITUDE WITH THE AIR SUPPLY VALVE OPEN. THE PLUG SHALL BE ROTATED TO AN ANGLE OF  $49^{\circ}$  DEGREES AND THE SUPPLY VALVE SHALL THEN BE CLOSED. THE PLUG SHALL MEET THE REQUIREMENTS OF 3.5.20.1.

b. CLOSING AT  $27^{\circ} \pm 5^{\circ}\text{C}$  ( $80^{\circ} \pm 9^{\circ}\text{F}$ ) - THE PLUG SHALL BE SET IN ITS NORMAL VERTICAL ATTITUDE WITH THE AIR SUPPLY VALVE OPEN. THE PLUG SHALL BE ROTATED TO AN ANGLE OF  $49^{\circ}$  DEGREES AND THE SUPPLY VALVE SHALL THEN BE CLOSED. THE PLUG SHALL MEET THE REQUIREMENTS OF 3.5.20.2.

c. OPENING AT  $-40^{\circ} \pm 2.8^{\circ}\text{C}$  ( $-40^{\circ} \pm 5^{\circ}\text{F}$ ) - THE PLUG SHALL BE PLACED IN A TEMPERATURE CHAMBER AT THE SPECIFIED TEMPERATURE FOR  $2.0 \pm 0.1$  HOURS. WHILE REMAINING IN THE CHAMBER AT THE SPECIFIED TEMPERATURE, THE PLUG SHALL BE SET IN THE INVERTED VERTICAL ATTITUDE WITH THE AIR SUPPLY VALVE OPEN. THE PLUG SHALL BE ROTATED TO AN ANGLE OF  $31^{\circ}$  DEGREES AND THE SUPPLY VALVE SHALL THEN BE CLOSED. THE PLUG SHALL MEET THE REQUIREMENTS OF 3.5.20.1.

d. CLOSING AT  $-40^{\circ} \pm 2.8^{\circ}\text{C}$  ( $-40^{\circ} \pm 5^{\circ}\text{F}$ ) - THE PLUG SHALL BE PLACED IN A TEMPERATURE CHAMBER AT THE SPECIFIED TEMPERATURE FOR  $2.0 \pm 0.1$  HOURS. WHILE REMAINING IN THE CHAMBER AT THE SPECIFIED TEMPERATURE, THE PLUG SHALL BE SET IN ITS NORMAL VERTICAL ATTITUDE WITH THE AIR SUPPLY VALVE OPEN. THE PLUG SHALL BE ROTATED TO AN ANGLE OF  $49^{\circ}$  DEGREES AND THE SUPPLY VALVE SHALL THEN BE CLOSED. THE PLUG SHALL MEET THE REQUIREMENTS OF 3.5.20.2.

e. OPENING AT  $60^{\circ} \pm 2.8^{\circ}\text{C}$  ( $140^{\circ} \pm 5^{\circ}\text{F}$ ) - THE PLUG SHALL BE PLACED IN A TEMPERATURE CHAMBER AT THE SPECIFIED TEMPERATURE FOR  $2.0 \pm 0.1$  HOURS. WHILE REMAINING IN THE CHAMBER AT THE SPECIFIED TEMPERATURE, THE PLUG SHALL BE SET IN THE INVERTED VERTICAL ATTITUDE WITH THE AIR SUPPLY VALVE OPEN. THE PLUG SHALL BE ROTATED TO AN ANGLE OF  $31^{\circ}$  DEGREES AND THE SUPPLY VALVE SHALL THEN BE CLOSED. THE PLUG SHALL MEET THE REQUIREMENTS OF 3.5.20.1.

f. CLOSING AT  $60^{\circ} \pm 2.8^{\circ}\text{C}$  ( $140^{\circ} \pm 5^{\circ}\text{F}$ ) - THE PLUG SHALL BE PLACED IN A TEMPERATURE CHAMBER AT THE SPECIFIED TEMPERATURE FOR  $2.0 \pm 0.1$  HOURS. WHILE REMAINING IN THE CHAMBER AT THE SPECIFIED TEMPERATURE, THE PLUG SHALL BE SET IN ITS NORMAL VERTICAL ATTITUDE WITH THE AIR SUPPLY VALVE OPEN. THE PLUG SHALL BE ROTATED TO AN ANGLE OF  $49^{\circ}$  DEGREES AND THE SUPPLY VALVE SHALL THEN BE CLOSED. THE PLUG SHALL MEET THE REQUIREMENTS OF 3.5.20.2.

4.6.21 IMMERSION IN ACID. THE PLUG SHALL BE IMMersed IN SULFURIC ACID ( $\text{H}_2\text{SO}_4$ ) OF SPECIFIC GRAVITY  $1.300 \pm 0.001$  AT  $90^{\circ} \pm 1.8^{\circ}\text{C}$  ( $200^{\circ} \pm 5^{\circ}\text{F}$ ) FOR 240 HOURS. THE PLUG SHALL THEN BE DRAINED AND WIPED DRY, BUT NOT FLUSHED OR WASHED. THE PLUG SHALL THEN BE EXAMINED FOR COMPLIANCE TO THE REQUIREMENTS OF 3.5.21.

NOTES:

1. DIMENSIONS. THE DIMENSIONS OF EACH PLUG ARE IN INCHES AND SHALL BE AS SHOWN ABOVE WHERE ONLY MAXIMUM OR MINIMUM DIMENSIONS ARE SHOWN. THE PLUG NEED NOT HAVE THE SHAPE SHOWN, BUT THE PLUG INCLUDING ALL PROTRUSIONS SHALL BE CONTAINED WITHIN THE OUTLINE SHOWN. VERTICAL DIMENSIONS ARE MEASURED FROM THE SEATING PLANE, AND NEED BE COMPLIED WITH ONLY WHEN THE PLUG IS INSTALLED.
2. ANGLES. ALL ANGLES ARE MEASURED FROM THE NORMAL VERTICAL ATTITUDE OF THE PLUG AND SHALL BE WITHIN  $\pm 1$  DEGREE OF THE SPECIFIED VALUE.

P.A.  
NAVY - AS  
Other Cust  
USAF - 93  
ARMY - EL

PROCUREMENT SPECIFICATION  
MIL-B-83769

TITLE

PLUG, VENTING, GRAVITY-CONTROLLED, ELECTROLYTE ACCESS HOLE, CELL, AIRCRAFT LEAD-ACID STORAGE BATTERY

SUPERSEDES

MILITARY STANDARD

MS 25185

SHEET 2 OF 2

DD FORM 672-1 (Coordinated)  
1 MAR 72

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

PLATE NO. 230

APPROVED 20 NOV 56 REVISED (C) FOR CHANGES SEE SHEETS 1 AND 2