INCH-POUND
A-A-52432B
August 24, 2011
SUPERSEDES
A-A-52432A
October 12, 1995
ATPD-2349
June 30, 2005

COMMERCIAL ITEM DESCRIPTION

MIRROR ASSEMBLY, REARVIEW: AUTOMOTIVE EXTERIOR MOUNTING

The General Services Administration has authorized the use of this commercial item description (CID) for all federal agencies.

1. SCOPE. This CID covers exterior-mounted, automotive rearview mirror assemblies.

2. CLASSIFICATION. Rearview mirror assemblies shall be of the following types:

Type I	-	Stud, ball and socket mount.
Type II	-	Top and bottom stud mount.
Type III	-	Top and bottom stud mount, combination (plane & convex).
Type IV	-	Top and bottom stud mount, combination (plane & convex), universal
Type V	-	Stud, ball, and socket mount, spot mirror

3. SALIENT CHARACTERISTICS

3.1 Materials. Materials shall be as specified herein and in the applicable standards and specifications. The use of recovered material made in compliance with regulatory requirements is acceptable providing that all requirements of this CID are met (see 3.1).

3.1.1 Mirror glass. Mirror glass shall conform to type I, float glass, quality double strength, thickness (0.115 inch minimum - 0.134 inch maximum) per ASTM C1036.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to DAMI_STANDARDIZATION@conus.army.mil or U.S. Army RDECOM, Tank Automotive Research, Development and Engineering Center, ATTN: RDTA-EN/STND/TRANS MS #268, 6501 E. 11 Mile Road, Warren, MI 48397-5000. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.daps.dla.mil.

AMSC N/A FSC 2540

3.1.2 Mirror coating. The reflecting surface of the mirror coating shall be a silvered coating, uniform in color, and free from stains, scratches, blisters, and misses.

3.1.3 Chromium. Vacuum metalized or sputtered chromium may be used in place of base silvering operation.

3.1.4 Mirror case. Mirror case shall be made of low-carbon steel, 0.024 inch temper 2 to 5.

3.1.5 Mirror mounts. Mirror mounts shall be made from carbon steel (G10200 to G10350) and zinc plated per ASTM B633. Ozone depleting substances, such as 1,1,1 Trichloroethane, shall not be used. Approved, alternative methods or solvents shall be used in place of ozone depleting substances.

3.2 Design and construction. This CID is not intended to limit construction to features other than as shown in figures 1 through 7, by dimension, notation, or reference documents.

3.3 Specular reflectivity. With an angle of incidence of 45 degrees, total reflective light in the visible range shall exceed 50 percent when tested in accordance with SAE J964.

3.4 Range of convexities. Convex mirror shall have an average radius of curvature not less than 20 inches and not more than 60 inches when measured with a spherometer.

3.5 Vibration. The mirror assembly shall show no evidence of damage when subjected to being vibrated for 1 hour in each of its three axes. Vibration shall be in a periodic cycle from 10 to 55 and back to 10 cycles per second through an amplitude of 0.03 inch (total excursion 0.06 inch).

3.6 Temperature stability. When subjected to specified temperatures, mirrors shall not show any evidence of discoloration, silvering deterioration, or reduction in reflectivity. A disassembled mirror shall be placed in a cold chamber and the temperature reduced to -65 degrees Fahrenheit (°F) ± 5°F for 2 hours. The mirror shall then be removed from the cold chamber and returned to room temperature. It shall then be placed in an oven with ambient temperature of 200°F for 2 hours. Possible reduction in reflectivity shall be measured visually comparing the reflected shade of a sheet of white paper with actual shade of the paper.

3.7 Abrasion resistance. When subjected to abrasion and cleaning as specified, the reflectivity of the mirror shall not be reduced by more than 2 percent. The reflecting surface shall be cleaned with a soft, unbleached cloth and dusted on the nap side with dry soil passed through a 200-mesh sieve. The reflecting surface shall be rubbed with the cloth for 30 seconds using a rotary motion. The foregoing cleaning cycle shall be repeated 30 times. Mirror shall be examined for any visible damage due to the above abrading and shall then be tested as specified in 2.8.

3.8 Corrosion resistance. When subjected to corrosive solution as specified, mirror shall evidence no discoloration, silvering deterioration, or any visually apparent reduction in

reflectivity. A disassembled mirror shall be subjected to the corrosion test specified in ASTM B117. Salt solution shall be 20 percent by weight. Length of exposure shall be 50 hours ± 1 hour. At completion of test and prior to mirror being inspected, residue shall be removed by cleaning with a soft, unbleached cloth. Ozone depleting substances, such as 1,1,1 Trichloroethane, shall not be used. Approved, alternative methods or solvents shall be used in place of ozone depleting substances.

3.9 Coating adhesion. When subjected to loading adhesion testing as specified, there shall be no separation of reflective coating from the mirror. A strip of pressure-sensitive tape, 1 inch wide shall be securely applied to the coated side and over the edges of mirror glass in an ambient air temperature of 68°F ± 2°F. The tape shall be stripped off in one slow, steady motion.

3.10 Finish treatment. Cleaning, pretreating, priming and painting of the mirror case shall conform to an appropriate CARC paint system selected from Army Drawing 12369000 for external application. Unless otherwise specified (see 6.2), color of paint final top coat shall be green 383, chip number 34094 of FED-STD-595.

3.11 Identification and marking. Identification and marking shall be permanent and legible and shall include the manufacturer's identification code (CAGE), and the part identification number (PIN) (see 6.4). Marking shall be at the lower edge of mirror's reflective surface in letters not less than 0.19 inch nor more than 0.25 inch high.

4. REGULATORY REQUIREMENTS

4.1 Recovered material. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of Federal Acquisition Regulation (FAR).

5. PRODUCT CONFORMANCE PROVISIONS

5.1 Product conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer’s own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order (see 7.2).

7. NOTES

7.1 Addresses for obtaining copies of referenced documents.

7.1.1 Government publications. Copies of MIL-DTL-45913/1 “Nut, Self Locking, Hexagon, Non-Metallic Locking Feature, 250 Deg F, UNC/UNF-2B” and MS27183 “Washer, Flat (Round,

Steel, Cadmium Plated) General Purpose" are available from https://assist.daps.dla.mil/quicksearch/ or Document Automation and Production Service, Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094. Copies of Army Drawing 12369000 "Chemical Agent Resistant Coating (CARC) Paint System Index" and ATPD 2349 "Mirror Assemblies, Rearview, Ground Vehicles, Exterior Mounting, Various Styles and Sizes, with Hardware, Without Bracketry" are available from DAMI_STANDARDIZATION@conus.army.mil or U.S. Army RDECOM, Tank Automotive Research, Development and Engineering Center, ATTN: RDTA-EN/STND/TRANS MS #268, 6501 E. 11 Mile Road, Warren, MI 48397-5000.

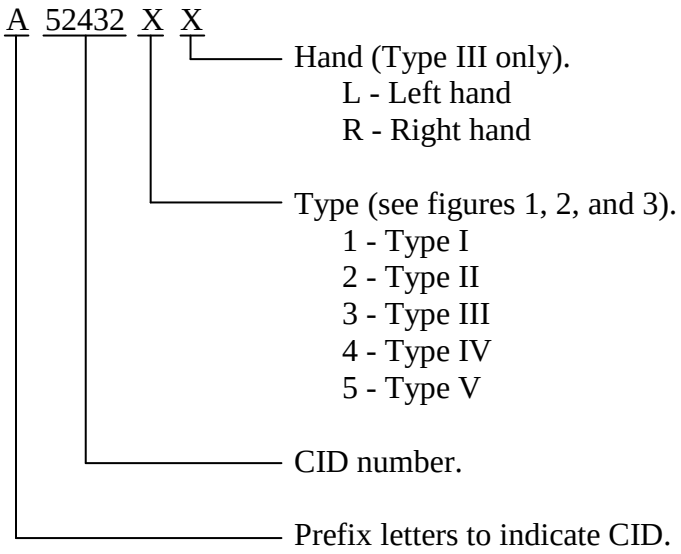
7.1.2 Non-Government publications. Copies of ASTM B117 "Standard Test Method of Salt Spray (Fog) Testing," ASTM B633 "Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel," and IEEE/ASTM SI10 Use of the International System of Units (SI): The Modern Metric System," are available from www.astm.org or ASTM International, 1916 Race Street, Philadelphia, PA 19103. Copies of NASM21044 "Nut, Self-Locking, Hexagon, Regular Height, 250 Deg F, 125 KSI FTU and 60 KSI FTU" are available from www.aia-aerospace.org or Aerospace Industries Association of America, 1250 Eye Street, N.W., Suite 1200, Washington, DC 20005-3924. Copies of SAE J964 "Test Procedure for Determining Reflectivity of Rear View Mirrors" are available from www.sae.org or SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

7.2 Ordering data. Acquisition documents must specify the following:

a. Title, number, and date of this commercial item description.
b. If required, the specific issue of individual documents referenced.
c. Type and PIN number of mirror assembly to be furnished (see 7.4 and figures 1 through 5).
d. Color of mirror case paint final top coat if other than specified.
e. Selection of applicable level and packaging requirements (see 6).

7.3 Cross-reference data. Mirrors conforming to this CID are interchangeable/substitutable with mirrors conforming to MIL-M-46728C, MS53015H and ATPD-2349.

7.4 Part or identification number (PIN). The PINs to be used for mirrors acquired to this CID are as follows:

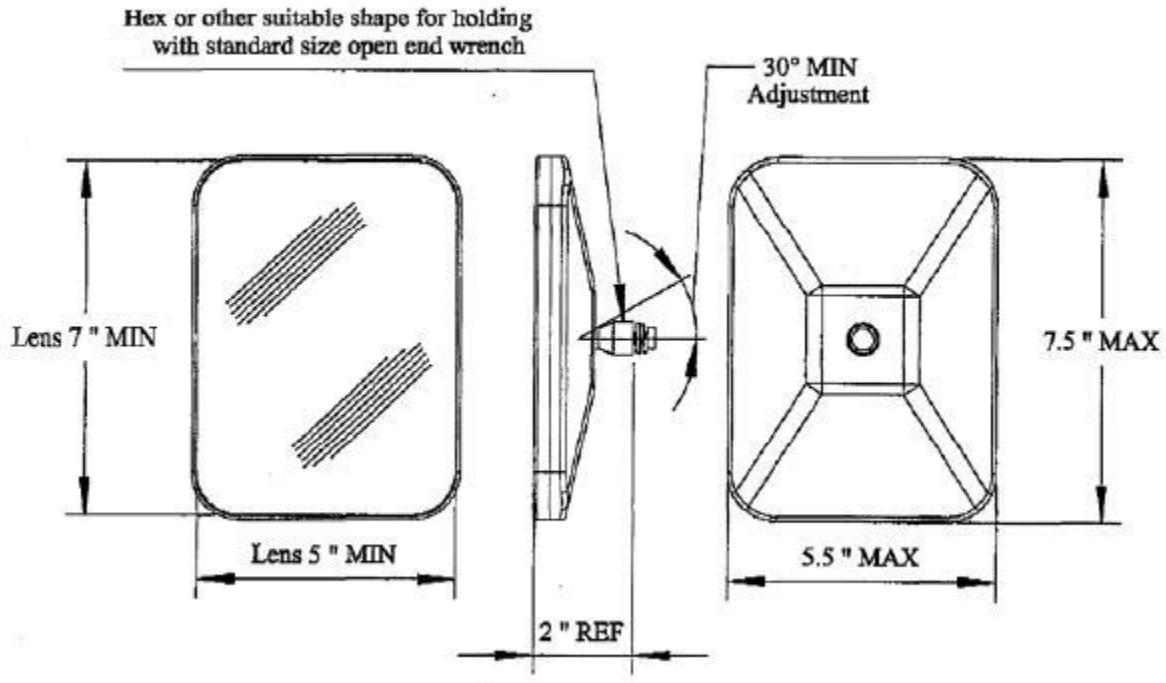


7.5 Metric product. Products that are to metric dimensions will be considered on the following basis:

a. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, provided they fall within specified tolerances using conversion tables contained in the latest revision of IEEE/ASTM SI10, and all other requirements of this CID are met.
b. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch-pound units, a request should be made to the contracting officer to determine if the product is acceptable.
c. The contracting officer has the option of accepting or rejecting the product.

7.6 Key words.

Convex
Plane
Tactical vehicle

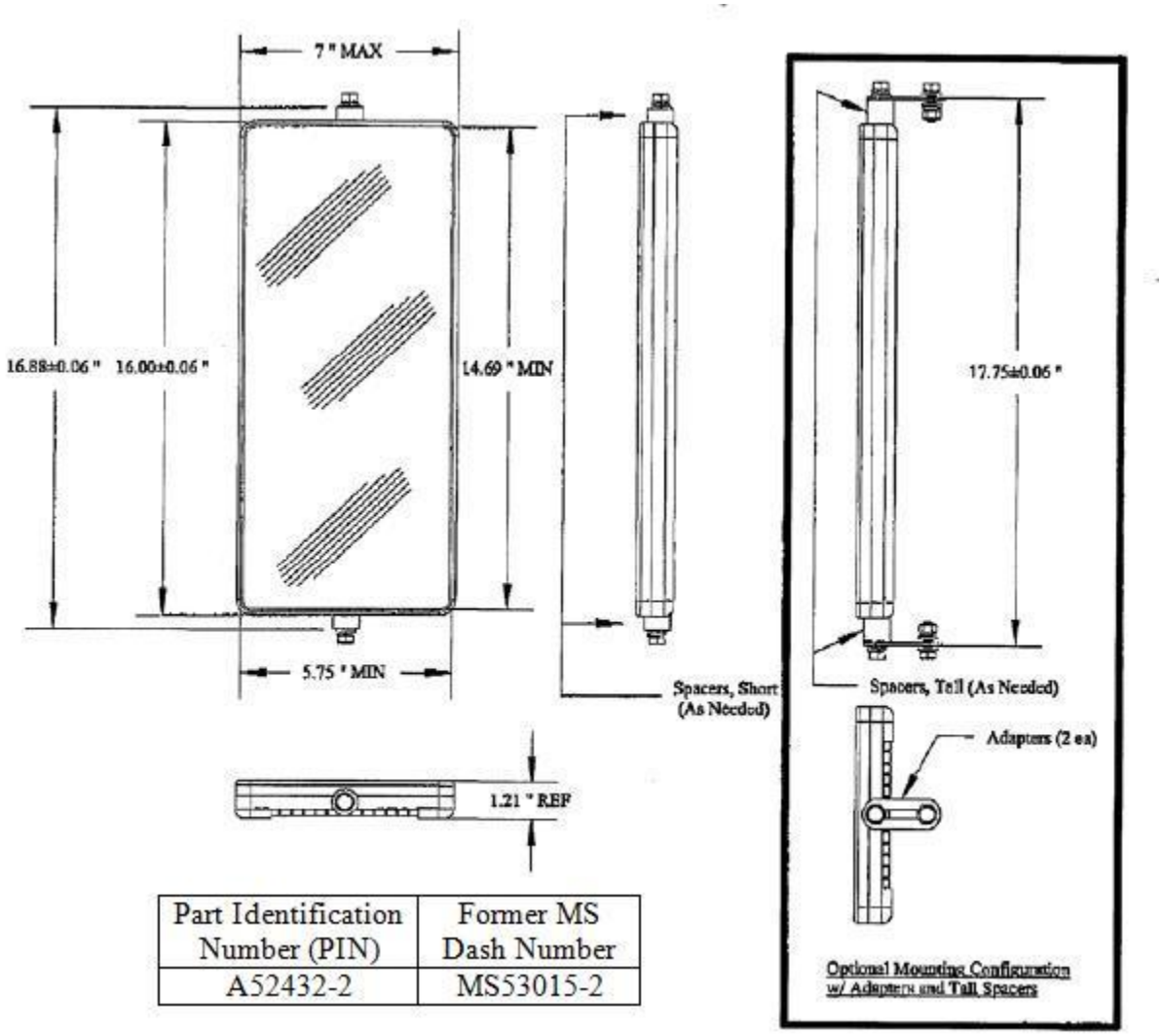


Part Identification Number (PIN)	Former MS Dash Number
A52432-1	MS53015-1

NOTES:

1. Ball and socket assembly shall be in the center of the mirror for maximum stability.
2. Ball and socket assembly may be stud or bolt type configuration.
3. Ball and socket assembly shall be permanently tensioned to hold the mirror in its required position yet still allow for tool free adjustment.
4. Mirror fastener requirements shall be as specified in table I.

FIGURE 1. Mirror assembly, rearview (type I).

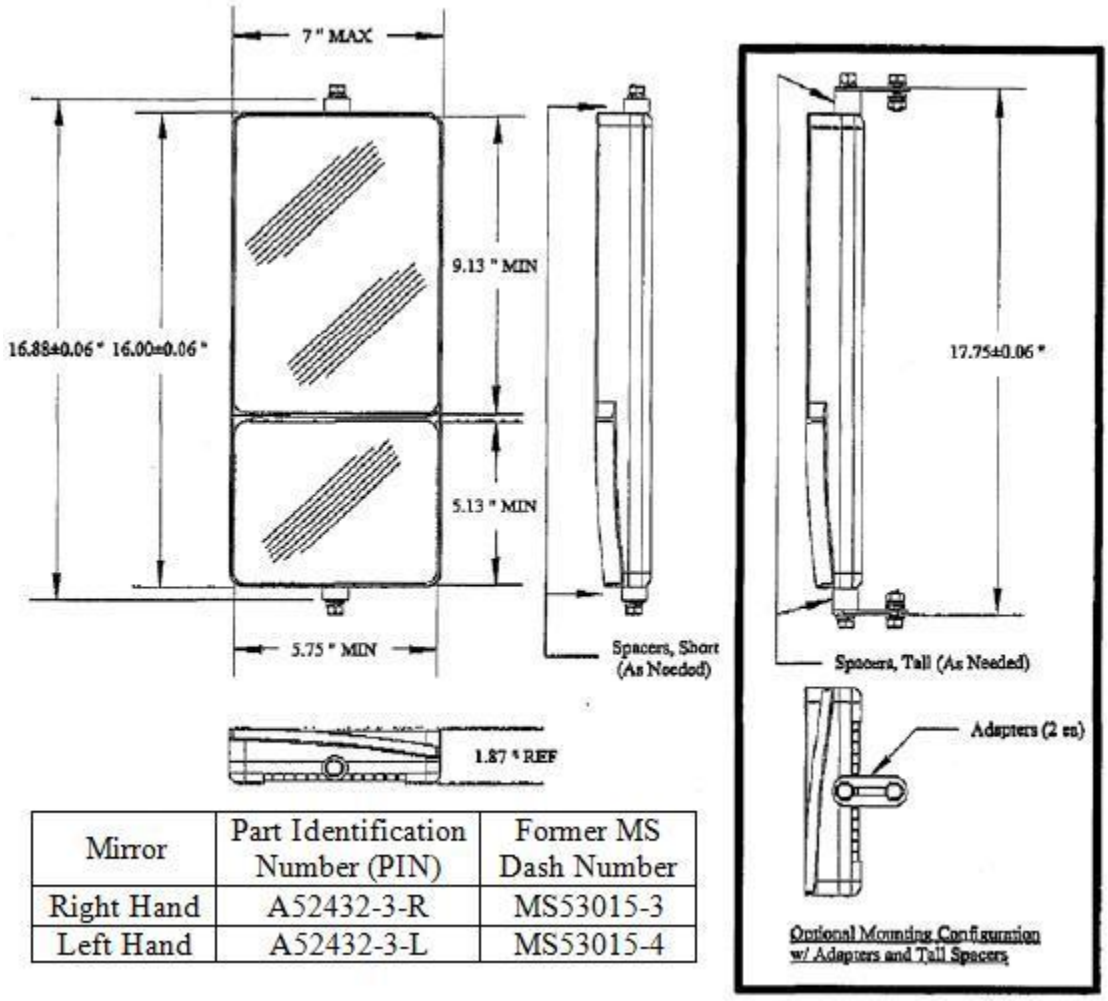


Part Identification Number (PIN)	Former MS Dash Number
A52432-2	MS53015-2

NOTE:

1. Mounting method shall be external bolt configuration only.
2. The upper and lower mounting holes, with threaded metallic inserts, shall be located on and with the axis of the vertical center line.
3. The threaded length of the threaded metallic insert shall be no less than .25” nor greater than .50”. In addition, the mounting hole depth shall be not less than 2.00”.
4. Orientation of the mirror lens shall be 0° ± 0.5° on the vertical axis, in accordance to the alignment of the mounting points, and 0° ± 0.5° on the horizontal axis, in accordance to the surface of the mirror back.
5. Mirror assembly fastener and spacer requirements shall be as specified in table II.
6. Mirror assembly shall include two (2) adapters as specified in figure 7.

FIGURE 2. Mirror assembly, rearview (type II).

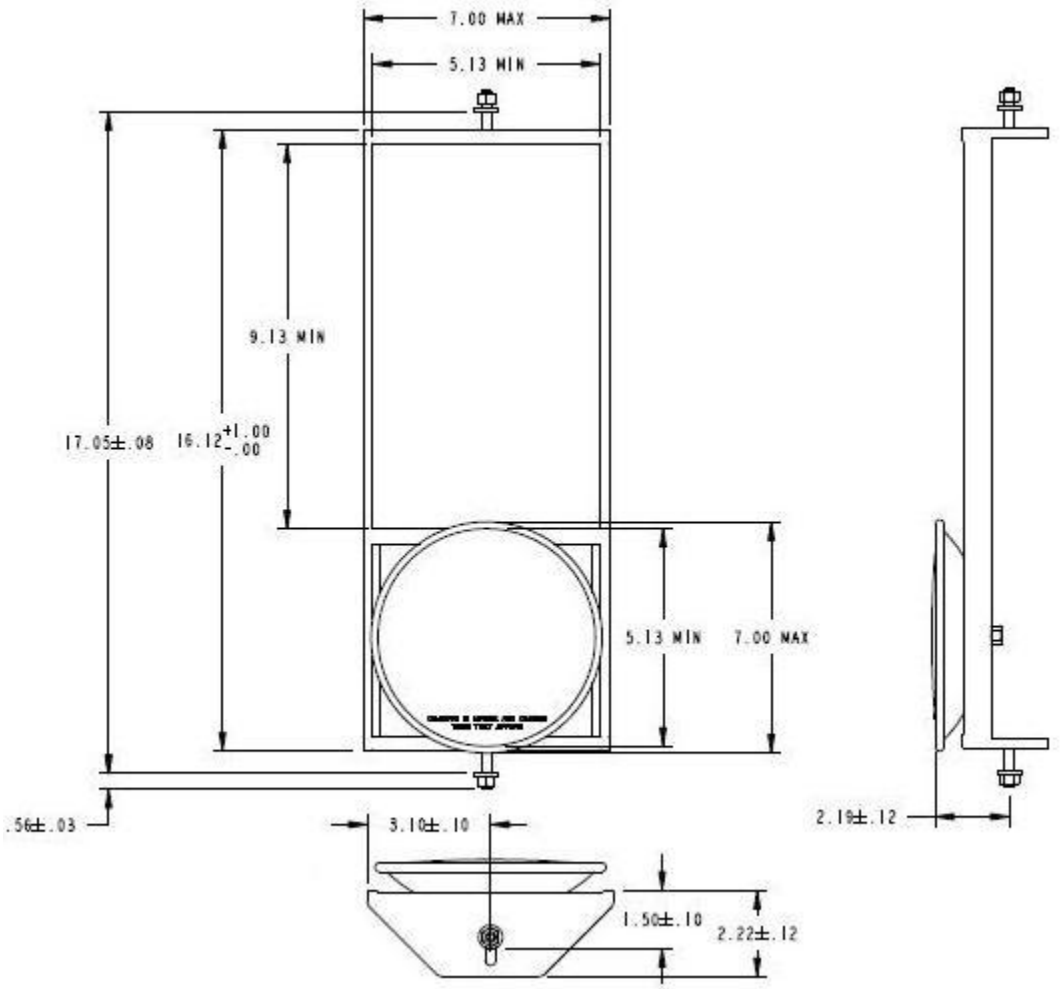


Mirror	Part Identification Number (PIN)	Former MS Dash Number
Right Hand	A52432-3-R	MS53015-3
Left Hand	A52432-3-L	MS53015-4

NOTES:

1. Right hand mirror is shown. Left hand mirror is identical except of opposite hand with respect to vertical axis.
2. The upper and lower mounting holes with threaded metallic inserts, the threaded length of the threaded metallic inserts, the mounting hole depth, and the orientation of the flat/planar lens shall be as specified in figure 2.
3. The orientation of the convex lens shall be 3.5° ± 0.5° downward on the horizontal axis and 5° ± 0.5° right on the vertical axis (for right hand lens) or 5° ± 0.5° left on the vertical axis (for left hand lens) in accordance to the surface of the flat/planar lens.
4. "Objects in Mirror are Closer Than They Appear" shall be permanently and indelibly market at the lower edge of the convex mirror's reflective surface in letters not less than 0.19" nor more than .25" high.
5. Mirror assembly fastener and spacer requirements shall be as specified in table II.
6. Mirror assembly shall include two (2) adapters as specified in figure 7.

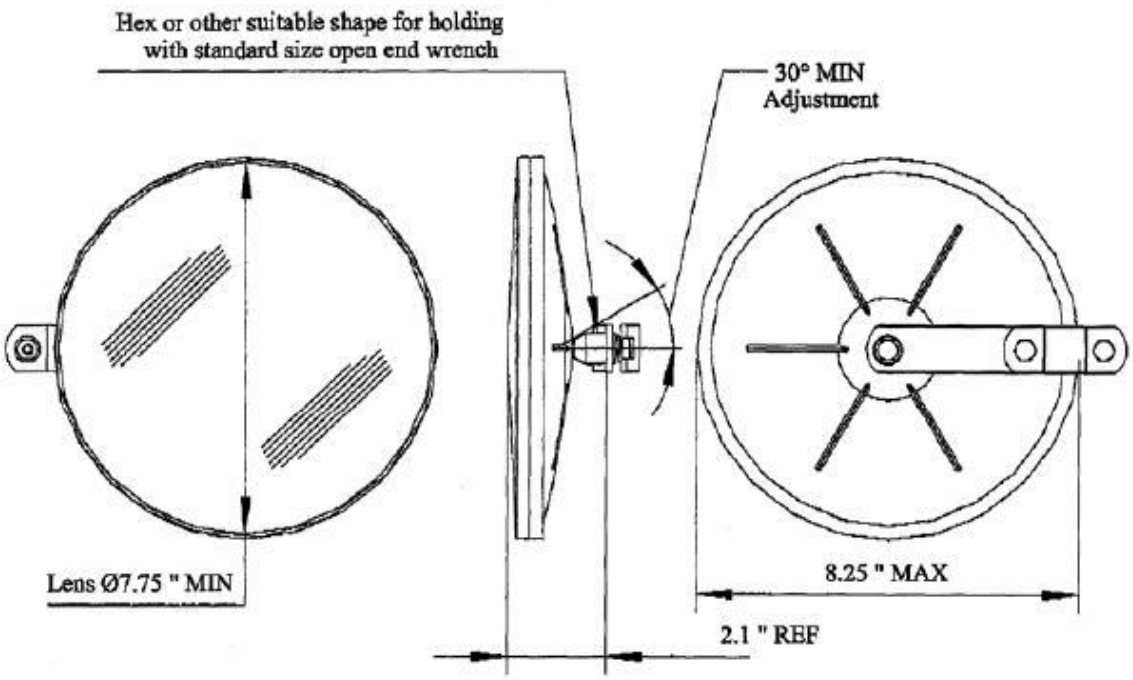
FIGURE 3. Combination mirror assembly (type III).



NOTES:

1. The upper and lower mounting holes with threaded metallic inserts, the threaded length of the threaded metallic inserts, the mounting hole depth, and the orientation of the flat/planar lens shall be as specified in figure 2.
2. The orientation of the convex lens shall be 3.5° ± 0.5° downward on the horizontal axis and 0° ± 0.5° right on the vertical axis in accordance to the surface of the flat/planar lens.
3. "Objects in Mirror are Closer Than They Appear" shall be permanently and indelibly market at the lower edge of the convex mirror's reflective surface in letters not less than 0.19" nor more than .25" high.
4. Mirror assembly fastener and spacer requirements shall be as specified in table II.
5. Mirror assembly shall include two (2) adapters as specified in figure 7.

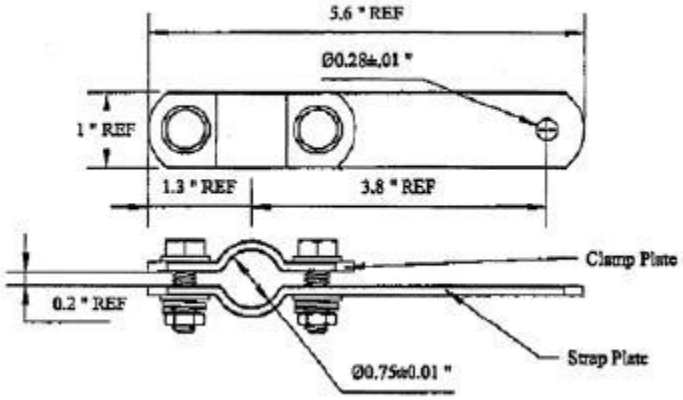
FIGURE 4. Universal combination mirror assembly (type IV).



NOTES:

1. Ball and socket assembly shall be located in the center of the mirror back for maximum stability.
2. Ball and socket assembly may be stud or bolt type.
3. Ball and socket assembly shall be permanently tensioned to hold the mirror in its required position yet still allow for tool free adjustment.
4. Basic mirror assembly fastener requirements shall be as specified in table I.
5. Basic mirror assembly shall include one (1) adapter assembly as specified in figure 6.

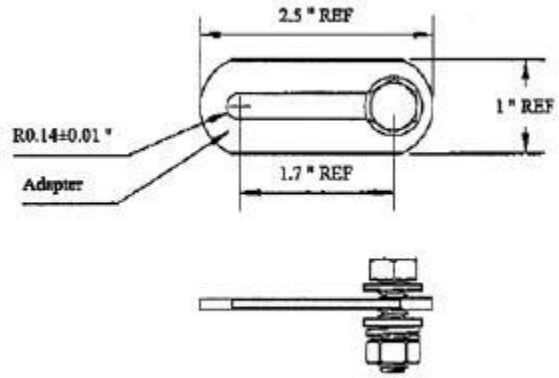
FIGURE 5. Spot mirror (Type V).



NOTES:

1. Adapter material shall be equal to or better than 11 gauge, corrosion resistant steel.
2. Adapter shall be relieved of all sharp edges.
3. Adapter fastener requirements are as specified in table III.
4. Adapter shall be painter or coated as specified in 3.10.

FIGURE 6. Adapter assembly, Type V mirror.



NOTES:

1. Adapter material shall be equal to or better than 11 gauge, corrosion resistant steel.
2. Adapter shall be relieved of all sharp edges.
3. Adapter fastener requirements are as specified in table II.
4. Adapter shall be painter or coated as specified in 3.10.

FIGURE 7. Adapter assembly, Type II, III, and IV mirrors.

Table I. Fasteners for Types I and V (figures 1 and 5).

Mounting Fasteners for Fixed Stud (1/4-28x3/4) Ball Configuration		
Item Description	QTY	Part Number
Nut, 1/4-28 UNF, Steel, Zinc Plated	1	
Washer, 1/4, Helical Spring Lock, Steel, Zinc Plated	1	
Washer, 1/4, SAE Narrow, Steel, Zinc Plated	1	
Mounting Fasteners for Bolt Style Ball Configuration		
Item Description	QTY	Part Number
Hex Cap Screw, 1/4-28x3/4 UNF, Steel, Grade 5, Zinc Plated	1	
Washer, 1/4, Helical Spring Lock, Steel, Zinc Plated	1	
Washer, 1/4, SAE Narrow, Steel, Zinc Plated	1	

Table II. Fasteners for Types II, III, and IV (figures 2, 3, and 4).

Item Description	QTY	Part Number
Hex Cap Screw, 1/4-28x1-3/4 UNF, Full Thread, Steel, Grade 5, Zinc Plated	2	
Hex Cap Screw, 1/4-28x1-1/4 UNF, Steel, Grade 5, Zinc Plated	2	
Hex Cap Screw, 1/4-28x1 UNF, Steel, Grade 5, Zinc Plated	2	
Nut, 1/4-28 UNF, Steel, Zinc Plated	2	
Washer, 1/4, Helical Spring Lock, Steel, Zinc Plated	4	
Washer, 1/4, SAE Narrow, Steel, Zinc Plated	6	
Spacer, 0.28 in ID x 0.85 in OD x0.44 in, Nylon, Black (use as needed)	4	
Spacer, 0.28 in ID x 0.85 in OD x0.75 in, Nylon, Black (use as needed)	2	
Adapter, Dimensions and Material as specified in figure 7	2	

Table III. Components of Type I adapter (figure 6).

Item Description	QTY	Part Number
Hex Cap Screw, 1/4-28x1 UNF, Steel, Grade 5, Zinc Plated	2	
Washer, 1/4, SAE Narrow, Steel, Zinc Plated	4	
Washer, 1/4, Helical Spring Lock, Steel, Zinc Plated	2	
Nut, 1/4-28 UNF, Steel, Zinc Plated	2	
Adapter, Strap Plate as specified in figure 6	1	
Adapter, Clamp Plate as specified in figure 6	1	

MILITARY INTERESTS:

Custodians:
Army - AT
Navy - YD
Air Force - 99

Review Activities:
Army – CR4, MI
Navy - MC
DLA - CC

CIVIL AGENCY COORDINATING ACTIVITY:
GSA - FAS

Preparing Activity:
Army - AT

(Project 2540-2011-004)

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