

Hydraulic and Pneumatic Retainers  
(Back-Up Rings), Polytetrafluoroethylene (PTFE) Resin

RATIONALE

This document has been revised to provide some minor technical updates and to include dimensions and tables in metric units

1. SCOPE

This specification and part standard covers polytetrafluoroethylene (PTFE) resin material and the dimensional requirements for retainers (back-up rings) previously covered by MIL-R-8791 and MIL-R-8791/1. The retainers are intended for use in hydraulic and pneumatic system components as anti-extrusion devices in conjunction with packings and O-rings.

1.1 Use

Retainers to the dimensions in this specification are for use in glands to MIL-G-5514 (formerly MIL-P-5514C, D and E Revisions) (Cancelled). They may also be used in glands to AS4716, however, please refer to the Caution and Important Note below.

Caution: Parts standard AS5781 for back-up rings for use in glands to AS4716 has been published. For new design, backup rings to AS8791 should not be used in AS4716 glands.

Important Note: The dimensional requirements of this specification are the same as former Military Specification MIL-R-8791/1\*. As such, no attempt has been made to ensure the lap of the scarf-cut ends is adequately designed to be functionally satisfactory at low temperatures or to cater for cylinder expansion (breathing) due to pressure effects. Users should ensure satisfactory performance by testing at the appropriate low temperature for each application.

\* With the exception of dash sizes 004, 005, 006 where the angle of the scarf-cut has been changed for reasons of manufacturability.

1.1.1 MIL-R-8791 (cancelled) and AS8791 (original issue) were used for the material specification for back-up rings to MIL-R-8791/1 (cancelled) and the following military standards that are inactive for new design: MS27595, MS28773, MS28774, MS28782, MS28783. This specification (AS8791) should be used as the material call-out for the standards listed above.

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## 2. REFERENCES

### 2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

#### 2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), Website Address [www.sae.org](http://www.sae.org).

|         |                                                                                                                                    |
|---------|------------------------------------------------------------------------------------------------------------------------------------|
| AMS3678 | Polytetrafluoroethylene (PTFE) Moldings and Extrusions Unfilled, Pigmented, and Filled Compounds                                   |
| AS4716  | Gland Design, O-ring and Other Elastomeric Seals                                                                                   |
| AS5781  | Retainers (Backup Rings), Hydraulic and Pneumatic, Polytetrafluoroethylene Resin, Single Turn, Scarf-Cut, For Use in AS4716 Glands |

#### 2.1.2 U.S. Government Publications

Available from the Document Automation and Production Service (DAPS), Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Tel: 215-697-6257, Website Address <http://assist.daps.dla.mil/quicksearch/>.

|              |                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------|
| MIL-G-5514   | Gland Design, Packings, Hydraulic, General Requirements for (Inactive for New Design)                      |
| MIL-R-8791   | Retainer, Packing, Hydraulic and Pneumatic, Polytetrafluoroethylene Resin (Single Turn) (Cancelled)        |
| MIL-R-8791/1 | Retainer, Packing, Hydraulic and Pneumatic, Polytetrafluoroethylene, Single Turn (Cancelled)               |
| MS27595      | Retainer, Packing Backup, Continuous Ring, Tetrafluoroethylene (Inactive for New Design)                   |
| MS28773      | Retainer, Packing Backup, Tetrafluoroethylene, Straight Thread Tube Fitting Boss (Inactive for New Design) |
| MS28774      | Retainer, Packing Backup, Single Turn, Tetrafluoroethylene (Inactive for New Design)                       |
| MS28782      | Retainer, Packing Backup, Teflon (Inactive for New Design)                                                 |
| MS28783      | Ring, Gasket, Backup, Teflon (Inactive for New Design)                                                     |

## 3. TECHNICAL REQUIREMENTS

### 3.1 Material

Material for parts to this specification shall be virgin polytetrafluoroethylene (PTFE) conforming to AMS3678 Type 1, Grade B, Virgin Polytetrafluoroethylene (PTFE) Moldings and Extrusions.

### 3.2 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

### 3.3 Dimensional Requirements

The shape and dimensions of PTFE retainers shall conform to Figure 1 and Tables 1A and 1B.

#### 3.3.1 Surfaces and Edges

Surfaces shall be smooth and free from irregularities. Edges shall be clean and sharp.

#### 3.3.2 Scarf-cut

When measuring diameter  $M \pm 0.001$  inches (0.03 mm) over a mandrel (see Tables 1A and 1B) the scarf-cut shall not exceed dimension 'G' and shall exhibit no overlap. These measurements are to be made at stabilized temperature of  $73^{\circ}\text{F} \pm 2^{\circ}\text{F}$  ( $23^{\circ}\text{C} \pm 1^{\circ}\text{C}$ ).

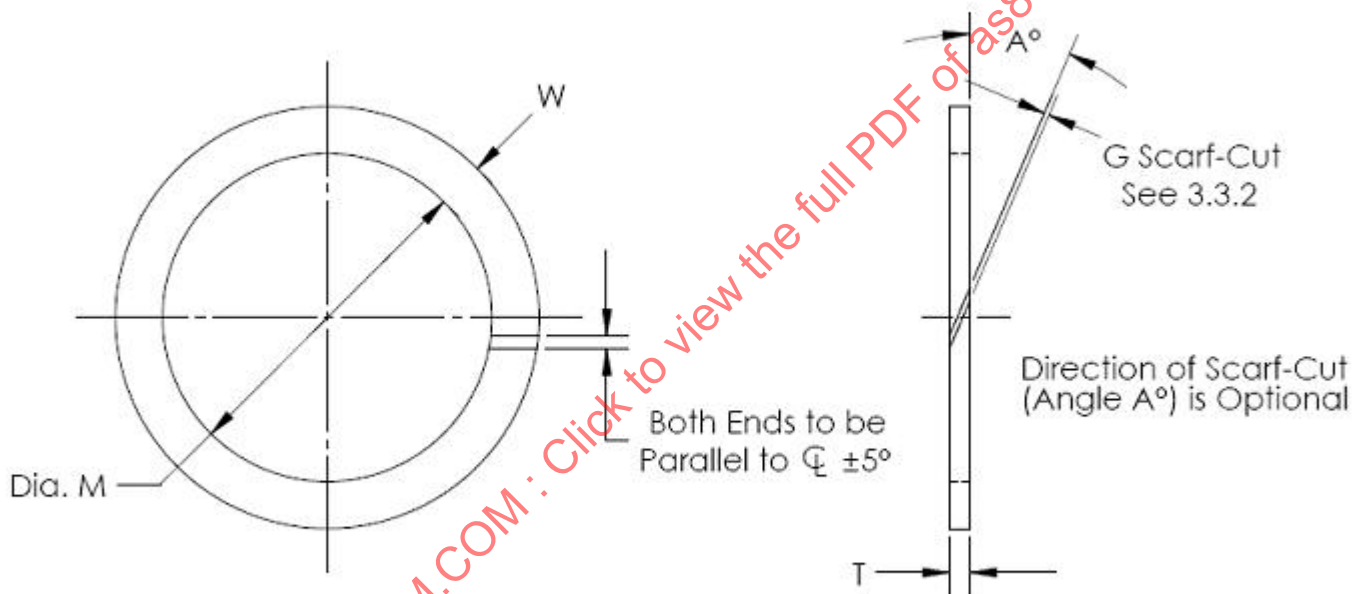


FIGURE 1 - RETAINER, PACKING, HYDRAULIC AND PNEUMATIC, POLYTETRAFLUOROETHYLENE, SINGLE TURN

TABLE 1A - DASH NUMBERS AND DIMENSIONS IN INCHES

| Part No.    | M Dia.<br>Gage<br>$\pm .001$ | T<br>$\pm .002$ | W<br>$\pm .001$ | G<br>Max<br>See 3.3.2 | A Degrees<br>Range |
|-------------|------------------------------|-----------------|-----------------|-----------------------|--------------------|
| M8791/1-004 | .076                         | .050            | .053            | .005                  | 45-42              |
| M8791/1-005 | .108                         | .050            | .053            | .005                  | 36-33              |
| M8791/1-006 | .123                         | .050            | .053            | .005                  | 33-30              |
| M8791/1-007 | .154                         | .050            | .053            | .005                  | 27-24              |
| M8791/1-008 | .185                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-009 | .217                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-010 | .248                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-011 | .310                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-012 | .373                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-013 | .438                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-014 | .501                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-015 | .563                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-016 | .626                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-017 | .688                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-018 | .751                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-019 | .813                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-020 | .881                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-021 | .943                         | .050            | .053            | .005                  | 22-19              |
| M8791/1-022 | 1.006                        | .050            | .053            | .005                  | 22-19              |
| M8791/1-023 | 1.068                        | .050            | .053            | .005                  | 22-19              |
| M8791/1-024 | 1.131                        | .050            | .053            | .005                  | 22-19              |
| M8791/1-025 | 1.193                        | .050            | .053            | .005                  | 22-19              |
| M8791/1-026 | 1.256                        | .050            | .053            | .005                  | 22-19              |
| M8791/1-027 | 1.318                        | .050            | .053            | .005                  | 22-19              |
| M8791/1-028 | 1.381                        | .050            | .053            | .005                  | 22-19              |
| M8791/1-110 | .373                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-111 | .435                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-112 | .498                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-113 | .560                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-114 | .623                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-115 | .685                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-116 | .748                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-117 | .815                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-118 | .878                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-119 | .940                         | .054            | .086            | .006                  | 22-19              |
| M8791/1-120 | 1.003                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-121 | 1.065                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-122 | 1.128                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-123 | 1.190                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-124 | 1.253                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-125 | 1.315                        | .054            | .086            | .006                  | 22-19              |

TABLE 1A - DASH NUMBERS AND DIMENSIONS IN INCHES (CONTINUED)

| Part No.                 | M Dia.<br>Gage<br>$\pm .001$ | T<br>$\pm .002$ | W<br>$\pm .001$ | G<br>Max<br>See 3.3.2 | A Degrees<br>Range |
|--------------------------|------------------------------|-----------------|-----------------|-----------------------|--------------------|
| M8791/1-126              | 1.380                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-127              | 1.442                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-128              | 1.505                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-129              | 1.564                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-130              | 1.627                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-131              | 1.689                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-132              | 1.752                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-133              | 1.814                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-134              | 1.877                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-135              | 1.940                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-136              | 2.002                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-137              | 2.065                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-138              | 2.127                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-139 <sup>1</sup> | 2.190                        | .054            | .086            | .006                  | 22-19              |
| M8791/1-210              | .748                         | .062            | .119            | .006                  | 22-19              |
| M8791/1-211              | .810                         | .062            | .119            | .006                  | 22-19              |
| M8791/1-212              | .873                         | .062            | .119            | .006                  | 22-19              |
| M8791/1-213              | .935                         | .062            | .119            | .006                  | 22-19              |
| M8791/1-214              | .998                         | .062            | .119            | .006                  | 22-19              |
| M8791/1-215              | 1.060                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-216              | 1.123                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-217              | 1.185                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-218              | 1.248                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-219              | 1.310                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-220              | 1.373                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-221              | 1.435                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-222              | 1.498                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-223              | 1.625                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-224              | 1.750                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-225              | 1.875                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-226              | 2.000                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-227              | 2.125                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-228              | 2.250                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-229              | 2.375                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-230 <sup>1</sup> | 2.500                        | .062            | .119            | .006                  | 22-19              |
| M8791/1-325              | 1.498                        | .088            | .183            | .007                  | 22-19              |
| M8791/1-326              | 1.623                        | .088            | .183            | .007                  | 22-19              |
| M8791/1-327              | 1.748                        | .088            | .183            | .007                  | 22-19              |
| M8791/1-328              | 1.873                        | .088            | .183            | .007                  | 22-19              |
| M8791/1-329              | 1.998                        | .088            | .183            | .007                  | 22-19              |
| M8791/1-330              | 2.123                        | .088            | .183            | .007                  | 22-19              |
| M8791/1-331              | 2.248                        | .088            | .183            | .007                  | 22-19              |

TABLE 1A - DASH NUMBERS AND DIMENSIONS IN INCHES (CONTINUED)

| Part No.    | M Dia.<br>Gage<br>± .001 | T<br>+/- .002 | W<br>+/- .001 | G<br>Max<br>See 3.3.2 | A Degrees<br>Range |
|-------------|--------------------------|---------------|---------------|-----------------------|--------------------|
| M8791/1-332 | 2.373                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-333 | 2.498                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-334 | 2.623                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-335 | 2.748                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-336 | 2.873                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-337 | 2.997                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-338 | 3.122                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-339 | 3.247                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-340 | 3.372                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-341 | 3.497                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-342 | 3.622                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-343 | 3.747                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-344 | 3.872                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-345 | 3.997                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-346 | 4.122                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-347 | 4.247                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-348 | 4.372                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-349 | 4.497                    | .088          | .183          | .007                  | 22-19              |
| M8791/1-425 | 4.497                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-426 | 4.622                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-427 | 4.747                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-428 | 4.872                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-429 | 4.997                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-430 | 5.122                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-431 | 5.247                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-432 | 5.372                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-433 | 5.497                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-434 | 5.622                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-435 | 5.747                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-436 | 5.872                    | .120          | .236          | .008                  | 22-19              |
| M8791/1-437 | 5.997                    | .120          | .236          | .008                  | 22-19              |

\*1 For Larger packing retainers (back-up rings) in this series, uncut packing retainers MS27595 are recommended.

TABLE 1B - DASH NUMBERS AND DIMENSIONS IN MILLIMETERS

| Part No.    | M Dia.<br>Gage<br>$\pm 0.03$ | T<br>$\pm 0.05$ | W<br>$\pm 0.03$ | G<br>Max<br>See 3.3.2 | A Degrees<br>Range |
|-------------|------------------------------|-----------------|-----------------|-----------------------|--------------------|
| M8791/1-004 | 1.930                        | 1.270           | 1.346           | 0.127                 | 45-42              |
| M8791/1-005 | 2.743                        | 1.270           | 1.350           | 0.130                 | 36-33              |
| M8791/1-006 | 3.124                        | 1.270           | 1.350           | 0.130                 | 33-30              |
| M8791/1-007 | 3.912                        | 1.270           | 1.350           | 0.130                 | 27-24              |
| M8791/1-008 | 4.699                        | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-009 | 5.512                        | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-010 | 6.299                        | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-011 | 7.874                        | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-012 | 9.474                        | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-013 | 11.125                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-014 | 12.725                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-015 | 14.300                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-016 | 15.900                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-017 | 17.475                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-018 | 19.075                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-019 | 20.650                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-020 | 22.377                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-021 | 23.952                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-022 | 25.552                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-023 | 27.127                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-024 | 28.727                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-025 | 30.302                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-026 | 31.902                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-027 | 33.477                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-028 | 35.077                       | 1.270           | 1.350           | 0.130                 | 22-19              |
| M8791/1-110 | 9.474                        | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-111 | 11.049                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-112 | 12.649                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-113 | 14.224                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-114 | 15.824                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-115 | 17.399                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-116 | 18.999                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-117 | 20.701                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-118 | 22.301                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-119 | 23.876                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-120 | 25.476                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-121 | 27.051                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-122 | 28.651                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-123 | 30.226                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-124 | 31.826                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-125 | 33.401                       | 1.372           | 2.184           | 0.152                 | 22-19              |

TABLE 1B - DASH NUMBERS AND DIMENSIONS IN MILLIMETERS (CONTINUED)

| Part No.                 | M Dia.<br>Gage<br>$\pm 0.03$ | T<br>$\pm 0.05$ | W<br>$\pm 0.03$ | G<br>Max<br>See 3.3.2 | A Degrees<br>Range |
|--------------------------|------------------------------|-----------------|-----------------|-----------------------|--------------------|
| M8791/1-126              | 35.052                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-127              | 36.627                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-128              | 38.227                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-129              | 39.726                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-130              | 41.326                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-131              | 42.901                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-132              | 44.501                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-133              | 46.076                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-134              | 47.676                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-135              | 49.276                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-136              | 50.851                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-137              | 52.451                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-138              | 54.026                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-139 <sup>1</sup> | 55.626                       | 1.372           | 2.184           | 0.152                 | 22-19              |
| M8791/1-210              | 18.999                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-211              | 20.574                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-212              | 22.174                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-213              | 23.749                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-214              | 25.349                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-215              | 26.924                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-216              | 28.524                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-217              | 30.099                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-218              | 31.699                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-219              | 33.274                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-220              | 34.874                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-221              | 36.449                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-222              | 38.049                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-223              | 41.275                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-224              | 44.450                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-225              | 47.625                       | 1.575           | 3.023           | 0.152                 | 22-19              |
| M8791/1-226              | 50.800                       | 1.575           | 3.023           | 0.178                 | 22-19              |
| M8791/1-227              | 53.975                       | 1.575           | 3.023           | 0.178                 | 22-19              |
| M8791/1-228              | 57.150                       | 1.575           | 3.023           | 0.178                 | 22-19              |
| M8791/1-229              | 60.325                       | 1.575           | 3.023           | 0.178                 | 22-19              |
| M8791/1-230 <sup>1</sup> | 63.500                       | 1.575           | 3.023           | 0.178                 | 22-19              |
| M8791/1-325              | 38.049                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-326              | 41.224                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-327              | 44.399                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-328              | 47.574                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-329              | 50.749                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-330              | 53.924                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-331              | 57.099                       | 2.235           | 3.023           | 0.178                 | 22-19              |

TABLE 1B - DASH NUMBERS AND DIMENSIONS IN MILLIMETERS (CONTINUED)

| Part No.                 | M Dia.<br>Gage<br>$\pm 0.03$ | T<br>$\pm 0.05$ | W<br>$\pm 0.03$ | G<br>Max<br>See 3.3.2 | A Degrees<br>Range |
|--------------------------|------------------------------|-----------------|-----------------|-----------------------|--------------------|
| M8791/1-332              | 60.274                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-333              | 63.449                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-334              | 66.624                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-335              | 69.799                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-336              | 72.974                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-337              | 76.124                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-338              | 79.299                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-339              | 82.474                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-340              | 85.649                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-341              | 88.824                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-342              | 91.999                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-343              | 95.174                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-344              | 98.349                       | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-345              | 101.524                      | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-346              | 104.699                      | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-347              | 107.874                      | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-348              | 111.049                      | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-349              | 114.224                      | 2.235           | 3.023           | 0.178                 | 22-19              |
| M8791/1-425              | 114.224                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-426              | 117.399                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-427              | 120.574                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-428              | 123.749                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-429              | 126.924                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-430              | 130.099                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-431              | 133.274                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-432              | 136.449                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-433              | 139.624                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-434              | 142.799                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-435              | 145.974                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-436              | 149.149                      | 3.048           | 5.994           | 0.203                 | 22-19              |
| M8791/1-437 <sup>1</sup> | 152.324                      | 3.048           | 5.994           | 0.203                 | 22-19              |

\*1 For Larger packing retainers (back-up rings) in this series, uncut packing retainers MS27595 are recommended.