

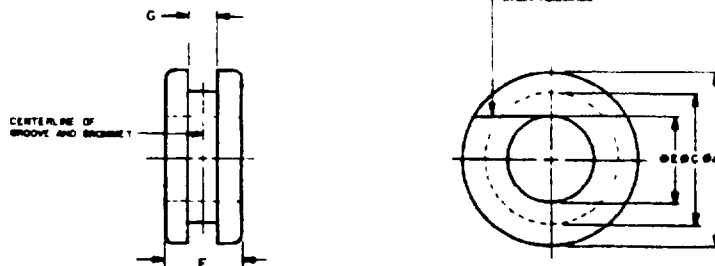
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TABLE 1. DASH NUMBERS AND DIMENSIONS.

| Ø R<br>SOLE | Ø C<br>GROOVE | Ø A<br>OUTSIDE | GROOVE WIDTH G |      |            |      |            |      |            |      |            |      |
|-------------|---------------|----------------|----------------|------|------------|------|------------|------|------------|------|------------|------|
|             |               |                | .062           |      | .094       |      | .125       |      | .188       |      | .250       |      |
|             |               |                | DASH<br>NO     | F    | DASH<br>NO | F    | DASH<br>NO | F    | DASH<br>NO | F    | DASH<br>NO | F    |
| .125        | .188          | .312           | 140            | .188 |            |      |            |      |            |      |            |      |
| .125        | .250          | .344           | 1              | .188 | 142        | .218 |            |      |            |      |            |      |
| .125        | .375          | .500           |                |      | 143        | .312 |            |      |            |      |            |      |
| .125        | .562          | .750           | 2              | .188 |            |      | 31         | .250 | 60         | .312 | 89         | .375 |
| .125        | 1.000         | 1.250          | 3              | .250 |            |      | 32         | .312 | 61         | .375 | 90         | .438 |
| .188        | .312          | .438           | 4              | .188 | 144        | .250 | 33         | .250 | 62         | .312 | 91         | .375 |
| .188        | .562          | .750           | 134            | .188 | 145        | .468 | 137        | .250 | 138        | .312 | 139        | .375 |
| .188        | .625          | .875           | 5              | .188 |            |      | 34         | .250 | 63         | .312 | 92         | .375 |
| .250        | .438          | .562           |                |      | 146        | .219 |            |      |            |      |            |      |
| .250        | .438          | .625           | 6              | .188 |            |      | 35         | .250 | 64         | .312 | 93         | .375 |
| .250        | .750          | 1.000          | 7              | .250 |            |      | 36         | .312 | 65         | .375 | 94         | .438 |
| .250        | 1.000         | 1.250          | 8              | .250 |            |      | 37         | .312 | 66         | .375 | 95         | .438 |
| .312        | .562          | .812           | 9              | .312 |            |      | 38         | .375 | 67         | .438 | 96         | .500 |
| .312        | .750          | 1.000          | 10             | .312 |            |      | 39         | .375 | 68         | .438 | 97         | .500 |
| .312        | .812          | 1.062          | 118            | .312 |            |      | 122        | .375 | 136        | .438 | 130        | .500 |
| .375        | .500          | .641           |                |      | 147        | .250 |            |      |            |      |            |      |
| .375        | .500          | .656           | 141            | .250 |            |      |            |      |            |      |            |      |
| .375        | .625          | .875           | 11             | .312 |            |      | 40         | .375 | 69         | .438 | 98         | .500 |
| .375        | 1.000         | 1.250          | 12             | .250 | 148        | .281 | 41         | .312 | 70         | .375 | 99         | .438 |
| .438        | .688          | .938           | 13             | .312 |            |      | 42         | .375 | 71         | .438 | 100        | .500 |
| .500        | .750          | 1.000          | 149            | .250 | 150        | .281 |            |      |            |      |            |      |
| .500        | .812          | 1.062          | 14             | .312 |            |      | 43         | .375 | 72         | .438 | 101        | .500 |
| .500        | 1.250         | 1.500          | 15             | .250 |            |      | 44         | .312 | 73         | .375 | 102        | .438 |
| .562        | .812          | 1.062          | 16             | .312 |            |      | 45         | .375 | 74         | .438 | 103        | .500 |
| .625        | .875          | 1.125          | 17             | .312 | 151        | .344 | 46         | .375 | 75         | .438 | 104        | .500 |
| .625        | .969          | 1.250          |                |      | 152        | .438 |            |      |            |      |            |      |
| .625        | 1.250         | 1.500          | 18             | .250 |            |      | 47         | .312 | 76         | .375 | 105        | .438 |
| .688        | 1.000         | 1.312          | 19             | .375 | 153        | .406 | 48         | .438 | 77         | .500 | 106        | .562 |
| .750        | 1.062         | 1.375          | 20             | .375 | 154        | .312 | 49         | .438 | 78         | .500 | 107        | .562 |
| .750        | 1.250         | 1.625          | 135            | .250 |            |      | 123        | .312 | 127        | .375 | 131        | .438 |
| .750        | 1.438         | 1.812          | 21             | .375 |            |      | 50         | .438 | 79         | .500 | 108        | .562 |
| .750        | 1.625         | 2.000          | 120            | .375 |            |      | 124        | .438 | 128        | .500 | 132        | .562 |
| .875        | 1.125         | 1.500          |                |      | 155        | .344 |            |      |            |      |            |      |
| .875        | 1.250         | 1.625          | 22             | .438 |            |      | 51         | .500 | 80         | .562 | 109        | .625 |
| .875        | 1.625         | 2.000          | 121            | .438 |            |      | 125        | .500 | 129        | .562 | 133        | .625 |
| 1.000       | 1.375         | 1.750          | 23             | .438 | 156        | .375 | 52         | .500 | 81         | .562 | 110        | .625 |
| 1.000       | 1.875         | 2.250          | 24             | .438 |            |      | 53         | .500 | 82         | .562 | 111        | .625 |
| 1.250       | 2.375         | 2.750          | 25             | .438 |            |      | 54         | .500 | 83         | .562 | 112        | .625 |
| 1.250       | 2.500         | 2.875          | 26             | .438 |            |      | 55         | .500 | 84         | .562 | 113        | .625 |
| 1.500       | 1.750         | 2.125          | 27             | .438 |            |      | 56         | .500 | 85         | .562 | 114        | .625 |
| 1.500       | 2.750         | 3.250          | 28             | .438 |            |      | 57         | .500 | 86         | .562 | 115        | .625 |
| 1.750       | 3.250         | 3.750          | 29             | .500 |            |      | 58         | .562 | 87         | .625 | 116        | .688 |
| 2.000       | 3.500         | 4.000          | 30             | .500 |            |      | 59         | .562 | 88         | .625 | 117        | .688 |

① DENOTES CHANGES

INCH - POUND

|  |                                 |   |                                     |
|--|---------------------------------|---|-------------------------------------|
| PA<br>ARMY - AR<br>Other Cont<br>NAVY - OS<br>AIR FORCE-99 | INTERNATIONAL<br>INTEREST       | TITLE<br>GROMMETS, SYNTHETIC AND SILICONE<br>RUBBER, HOT-OIL AND COOLANT<br>RESISTANT | MILITARY STANDARD<br><b>MS35489</b> |
| PROCUREMENT SPECIFICATION<br>MIL-G-3036                    | SUPERSEDES<br>MS35490 AND AN931 | PAGE<br>1   | OF<br>3                             |

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USER ACTIVITIES  
NAVY - AS, EC, MC, SA, YD

REVIEWER ACTIVITIES  
ARMY - EA, ER, GL, MI  
AIR FORCE - 82  
NSA - NS  
DLA - IS

APPROVED 12 MAR 56  
REVISED 2 OCT 85  
① 17 FEB 89

DD FORM 672-1 (COORDINATED)

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## REQUIREMENTS:

1. **MATERIAL:** RUBBER, SYNTHETIC, COMPOSITION A, IN ACCORDANCE WITH PROCUREMENT DOCUMENT, RUBBER, SILICONE, COMPOSITION B, IN ACCORDANCE WITH PROCUREMENT DOCUMENT.
2. **COLOR:** BLACK (COMPOSITION A). RED OR ORANGE (COMPOSITION B).
3. **PART NUMBER:** THE PART NUMBER SHALL CONSIST OF THE BASIC MS NUMBER FOLLOWED BY A DASH NUMBER FROM TABLE I, PLUS A MATERIAL CODE LETTER "X" FOR SILICONE RUBBER, NO CODE LETTER FOR SYNTHETIC RUBBER.

EXAMPLE: MS35489-14X

— MATERIAL CODE  
 "X" - SILICONE RUBBER  
 NO CODE - SYNTHETIC RUBBER  
 — DASH NUMBER  
 — BASIC MS NUMBER

MS35489-14X INDICATES - GROMMET, SILICONE RUBBER, HOT-OIL AND COOLANT RESISTANT;  
 GROOVE WIDTH .062; HOLE DIAMETER .500; GROOVE DIAMETER .812;  
 OUTSIDE DIAMETER 1.062; THICKNESS .312.

## NOTES

1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
2. **SUPPRESSION:** REPLACEMENT PART NUMBER RELATIONSHIPS SHALL BE IN ACCORDANCE WITH TABLE II. CANCELLED MS35490 GROMMETS MAY BE USED TO REPLACE MS35490 GROMMETS UNTIL EXISTING STOCKS ARE DEPLETED. DO NOT USE MS35490 GROMMETS TO REPLACE MS35489 OR AN931 GROMMETS. AN931 GROMMETS AND SUPERSUCCESSING MS 35489 GROMMETS ARE UNIVERSALLY, FUNCTIONALLY AND DIMENSIONALLY INTERCHANGEABLE.
3. IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.
4. REFERENCED GOVERNMENT (OR NONGOVERNMENT) DOCUMENTS OF THE ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.
5. GROMMETS PREVIOUSLY PROCURED WITH A SPLIT (SUFFIX "S") ARE NO LONGER PROCURED OR STOCKED BY SERVICES. FOR REPLACEMENT USE SOLID GROMMETS, AND SPLIT AT ASSEMBLY.

|  |                                   |   |  |
|--|-----------------------------------|---|--|
| PA<br>ARMY - AR<br>Other Cust<br>NAVY - OS<br>AIR FORCE-99 | INTERNATIONAL<br>INTEREST         | TITLE<br>GROMMETS, SYNTHETIC AND SILICONE<br>RUBBER, HOT-OIL AND COOLANT<br>RESISTANT | <b>MILITARY STANDARD</b><br><b>MS35489</b> |
| PROCUREMENT SPECIFICATION<br>MIL- G-3036                   | SUPersedes<br>MS 35490 AND AN 931 | PAGE 2 OF 3   |  |

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USER ACTIVITIES  
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ARMY - EA, ER, GL, MI  
AIR FORCE - 82  
NSA - NS  
DLA - IS

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**REVIEWER ACTIVITIES**  
ARMY - EA, ER, GL, MI  
AIR FORCE - 82  
NSA - NS  
DLA - IS

**USER ACTIVITIES**  
NAVY - AS, EC, MC, SA, YD

TABLE 11. REPLACEMENT PART NUMBERS.

| PART NUMBER        |                      |                          | PART NUMBER        |                      |                          | PART NUMBER        |                      |                          | PART NUMBER        |                      |                          |
|--------------------|----------------------|--------------------------|--------------------|----------------------|--------------------------|--------------------|----------------------|--------------------------|--------------------|----------------------|--------------------------|
| CANCELLED<br>AN931 | CANCELLED<br>MS35490 | SUPERSEDED BY<br>MS35489 | CANCELLED<br>AN931 | CANCELLED<br>MS35490 | SUPERSEDED BY<br>MS35489 | CANCELLED<br>AN931 | CANCELLED<br>MS35490 | SUPERSEDED BY<br>MS35489 | CANCELLED<br>AN931 | CANCELLED<br>MS35490 | SUPERSEDED BY<br>MS35489 |
| 2-9                | 1                    | 1                        | A2-9               | 25                   | 31                       | B2-9               | 48                   | 60                       | C2-9               | 71                   | 89                       |
| 2-16               | 2                    | 2                        | A2-16              | 26                   | 32                       | B2-16              | 49                   | 61                       | C2-16              | 72                   | 90                       |
| 3-5                | 3                    | 3                        | A3-5               | 27                   | 33                       | B3-5               | 50                   | 62                       | C3-5               | 73                   | 91                       |
| 3-9                | 4                    | 4                        | A3-9               | 28                   | 137                      | B3-9               | 51                   | 138                      | C3-9               | 74                   | 139                      |
| 3-10               | 5                    | 5                        | A3-10              |                      | 34                       | B3-10              |                      | 63                       | C3-10              |                      | 92                       |
| 6-7                | 6                    | 6                        | A6-7               | 29                   | 35                       | B6-7               | 52                   | 64                       | C6-7               | 75                   | 93                       |
| 4-12               | 7                    | 7                        | A4-12              | 30                   | 36                       | B4-12              | 53                   | 65                       | C4-12              | 76                   | 94                       |
| 4-16               | 8                    | 8                        | A4-16              | 31                   | 37                       | B4-16              | 54                   | 66                       | C4-16              | 77                   | 95                       |
| 5-9                | 9                    | 9                        | A5-9               | 32                   | 38                       | B5-9               | 55                   | 67                       | C5-9               | 78                   | 96                       |
| 5-12               | 10                   | 10                       | A5-12              | 33                   | 39                       | B5-12              | 56                   | 68                       | C5-12              | 79                   | 97                       |
| 5-13               | 11                   | 11                       | A5-13              | 34                   | 122                      | B5-13              | 57                   | 136                      | C5-13              | 80                   | 130                      |
| 6-10               | 12                   | 12                       | A6-10              | 35                   | 40                       | B6-10              | 58                   | 69                       | C6-10              | 81                   | 98                       |
| 6-16               | 13                   | 13                       | A6-16              | 36                   | 41                       | B6-16              | 59                   | 70                       | C6-16              | 82                   | 99                       |
| 7-11               | 14                   | 14                       | A7-11              | 37                   | 42                       | B7-11              | 60                   | 71                       | C7-11              |                      | 100                      |
| 8-13               | 15                   | 15                       | A8-13              | 38                   | 43                       | B8-13              | 61                   | 72                       | C8-13              | 83                   | 101                      |
| 9-13               | 16                   | 16                       | A9-13              | 39                   | 44                       | B9-13              | 62                   | 73                       | C9-13              | 84                   | 102                      |
| 10-14              | 17                   | 17                       | A10-14             | 40                   | 45                       | B10-14             | 63                   | 74                       | C10-14             | 85                   | 103                      |
| 10-20              | 18                   | 18                       | A10-20             | 41                   | 46                       | B10-20             | 64                   | 75                       | C10-20             | 86                   | 104                      |
| 11-16              | 19                   | 19                       | A11-16             | 42                   | 47                       | B11-16             | 65                   | 76                       | C11-16             | 87                   | 105                      |
| 12-17              | 20                   | 20                       | A12-17             | 43                   | 48                       | B12-17             | 66                   | 77                       | C12-17             | 88                   | 106                      |
| 12-20              | 21                   | 21                       | A12-20             | 44                   | 49                       | B12-20             | 67                   | 78                       | C12-20             | 89                   | 107                      |
| 12-23              | 22                   | 22                       | A12-23             | 45                   | 123                      | B12-23             |                      | 127                      | C12-23             | 90                   | 131                      |
| 12-26              | 23                   | 23                       | A12-26             | 46                   | 124                      | B12-26             |                      | 128                      | C12-26             | 91                   | 132                      |
| 14-20              | 24                   | 24                       | A14-20             | 47                   | 51                       | B14-20             |                      | 80                       | C14-20             | 92                   | 109                      |
| 16-22              | 25                   | 25                       | A16-22             | 48                   | 125                      | B16-22             |                      | 129                      | C16-22             |                      | 133                      |
| 16-30              | 26                   | 26                       | A16-30             | 49                   | 52                       | B16-30             |                      | 81                       | C16-30             |                      | 110                      |
| 20-38              | 27                   | 27                       | A20-38             | 50                   | 53                       | B20-38             |                      | 82                       | C20-38             |                      | 111                      |
| 20-40              | 28                   | 28                       | A20-40             | 51                   | 54                       | B20-40             |                      | 83                       | C20-40             |                      | 112                      |
| 24-28              | 29                   | 29                       | A24-28             | 52                   | 55                       | B24-28             |                      | 84                       | C24-28             |                      | 113                      |
| 24-44              | 30                   | 30                       | A24-44             | 53                   | 56                       | B24-44             |                      | 85                       | C24-44             |                      | 114                      |
| 28-52              |                      |                          | A28-52             | 54                   | 57                       | B28-52             |                      | 86                       | C28-52             |                      | 115                      |
| 32-56              |                      |                          | A32-56             | 55                   | 58                       | B32-56             |                      | 87                       | C32-56             |                      | 116                      |
|                    |                      |                          |                    | 59                   | 59                       |                    |                      | 88                       |                    |                      | 117                      |

1/ MS35489 BULKED GROMMETS SHOULD BE REPLACED BY AN931-11 WHEN NECESSARY FOR REPLACEMENT OF MS35490 BULKED GROMMETS.

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|   |  |                           |  |  |
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| P A<br><b>ARMY - AR</b><br>Other Cat<br><b>NAVY - OS</b><br><b>AIR FORCE - 99</b> |  | INTERNATIONAL<br>INTEREST | TITLE<br><b>GROMMETS, SYNTHETIC AND SILICONE<br/>         RUBBER, HOT-OIL AND COOLANT<br/>         RESISTANT</b> | <b>MILITARY STANDARD</b><br><b>MS35489</b> |
| PROCUREMENT SPECIFICATION<br><b>MIL- G-3036</b>                                   | SUPERSEDES<br><b>MS 35490 AND AN 931</b> | PAGE 3 OF 3               |  |  |

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