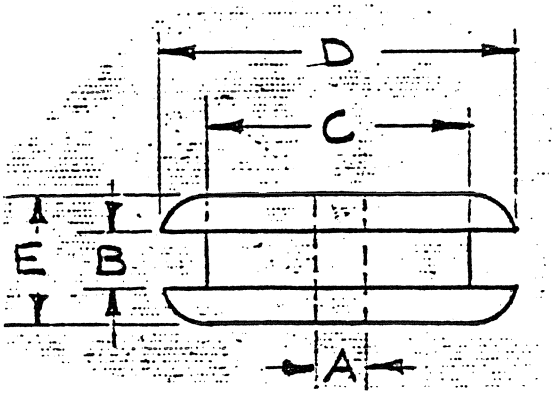
GROMMET, MOLDED
PLAIN BORE ROUNDED




| (REF.) DASH NUMBER | A BORE I.D. | B GROOVE WIDTH | C GROOVE DIAMETER | D O.D. | E THICK. | MFR. NO. (AIR)* | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|
| -001 | 7/64 | 3/64 | 1/2 | 11/16 | 9/32 | 1272 | 23-9180-001 |
| -002 | 1/8 | 1/32 | 3/16 | 1/4 | 3/32 | 1070 | -002 |
| -003 | 1/8 | 1/16 | 7/16 | 5/8 | 3/16 | 562 | -003 |
| -004 | 1/8 | 1/16 | 1 | 1-1/4 | 1/4 | 2297 | -004 |
| -005 | 1/8 | 3/32 | 3/8 | 1/2 | 5/16 | 2425 | -005 |
| -006 | 1/8 | 9/32 | 3/8 | 1/2 | 1/2 | 2424 | -006 |
| -007 | 5/32 | 1/16 | 1/4 | 3/8 | 3/16 | 1259 | -007 |
| -008 | 5/32 | 1/16 | 1-1/8 | 1-3/8 | 3/8 | 6059 | -008 |
| -009 | 5/32 | 3/32 | 1/4 | 7/16 | 3/8 | 374 | -009 |
| -010 | 11/64 | 3/32 | 1/4 | 7/16 | 3/8 | 1958 | -010 |
| -011 | 3/16 | 1/32 | 5/16 | 7/16 | 7/32 | 1390 | -011 |
| -012 | 3/16 | 1/32 | 11/16 | 7/8 | 7/32 | 2045 | -012 |
| -013 | 3/16 | 1/16 | 9/32 | 7/16 | 7/32 | 382 | -013 |
| -014 | 3/16 | 1/16 | 5/16 | 7/16 | 3/16 | 2286 | -014 |
| -015 | 3/16 | 1/16 | 5/16 | 1/2 | 1/4 | 1453 | -015 |
| -016 | 3/16 | 1/16 | 9/16 | 3/4 | 3/16 | 2279 | -016 |
| -017 | 3/16 | 3/32 | 9/32 | 7/16 | 7/32 | 1734 | -017 |
| -018 | 3/16 | 3/32 | 11/32 | 5/8 | 3/8 | 2537 | -018 |
| -019 | 3/16 | 1/8 | 5/16 | 7/16 | 1/4 | 2852 | -019 |
| -020 | 3/16 | 3/16 | 5/16 | 7/16 | 5/16 | 2752 | -020 |
| -021 | 3/16 | 3/16 | 3/8 | 5/8 | 3/8 | 704 | -021 |
| -022 | 3/16 | 1/4 | 5/16 | 7/16 | 3/8 | 2552 | -022 |

GROMMET, MOLDED
PLAIN BORE ROUNDED

| (REF.) DASH NUMBER | A BORE I.D. | B GROOVE WIDTH | C GROOVE DIAMETER | D O.D. | E THICK. | MFR. NO. (AIR) | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|
| -023 | 13/64 | 1/8 | 13/32 | 9/16 | 3/8 | 565 | 23-9180-023 |
| -024 | 7/32 | 1/16 | 5/16 | 7/16 | 3/16 | 1411 | -024 |
| -025 | 15/64 | 3/16 | 3/8 | 5/8 | 3/8 | 1840 | -025 |
| -026 | 1/4 | 1/32+ | 25/64 | 1/2 | 5/32 | 5164 | -026 |
| -027 | 1/4 | 1/16 | 3/8+ | 1/2 | 1/4 | 2902 | -027 |
| -028 | 1/4 | 1/16 | 7/16 | 5/8 | 3/16 | 97 | -028 |
| -029 | 1/4 | 1/16 | 1 | 1-1/4 | 1/4 | 2298 | -029 |
| -030 | 1/4 | 3/32 | 3/8+ | 1/2 | 1/4 | 2901 | -030 |
| -031 | 1/4 | 1/8 | 3/8+ | 1/2 | 1/4 | 2903 | -031 |
| -032 | 1/4 | 1/4 | 7/16 | 5/8 | 3/8 | 2554 | -032 |
| -033 | 1/4 | 1/4 | 15/32 | 5/8 | 1/2 | 696 | -033 |
| -034 | 1/4 | 1/4 | 1 | 1-1/4 | 7/16 | 2555 | -034 |
| -035 | 9/32 | 1/16 | 3/8 | 9/16 | 1/4 | 763 | -035 |
| -036 | 9/32 | 1/4 | 15/32 | 11/16 | 7/16 | 190 | -036 |
| -037 | 5/16 | 1/16 | 7/16 | 9/16 | 3/16 | 263 | -037 |
| -038 | 5/16 | 1/16 | 7/16 | 5/8 | 9/32 | 505 | -038 |
| -039 | 5/16 | 1/16 | 9/16 | 13/16 | 5/16 | 2113 | -039 |
| -040 | 5/16 | 1/16 | 3/4 | 1 | 5/16 | 2280 | -040 |
| -041 | 5/16 | 3/32 | 7/16 | 5/8 | 5/16 | 2538 | -041 |
| -042 | 5/16 | 3/32 | 15/32 | 3/4 | 11/32 | 2214 | -042 |
| -043 | 5/16 | 1/8 | 9/16 | 13/16 | 3/8 | 2856 | -043 |
| -044 | 5/16 | 1/8 | 3/4 | 1 | 3/8 | 2857 | -044 |
| -045 | 5/16 | 3/16 | 9/16 | 13/16 | 3/8 | 705 | -045 |
| -046 | 5/16 | 3/16 | 9/16 | 13/16 | 7/16 | 2756 | -046 |
| -047 | 5/16 | 3/16 | 3/4 | 1 | 7/16 | 2757 | -047 |
| -048 | 5/16 | 1/4 | 9/16 | 13/16 | 1/2 | 2556 | -048 |
| -049 | 5/16 | 1/4 | 3/4 | 1 | 1/2 | 2557 | -049 |
| -050 | 11/32 | 1/16 | 17/32 | 25/32 | 1/4 | 2004 | -050 |
| -051 | 3/8 | 1/16 | 1/2 | 5/8 | 1/4 | 230 | -051 |
| -052 | 3/8 | 1/16 | 1/2 | 11/16 | 9/32 | 1724 | -052 |
| -053 | 3/8 | 1/16 | 5/8 | 7/8 | 5/16 | 2281 | -053 |

# GROMMET, MOLDED
# PLAIN BORE ROUNDED

| (REF.) DASH NUMBER | A BORE I.D. | B GROOVE WIDTH | C GROOVE DIAMETER | D O.D. | E THICK. | MFR. NO. (AIR) | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|
| -054 | 3/8 | 1/16 | 5/8 | 7/8 | 11/32 | 2264 | 23-9180-054 |
| -055 | 3/8 | 1/16 | 1 | 1-1/4 | 1/4 | 2299 | -055 |
| -056 | 3/8 | 3/16 | 9/16 | 13/16 | 3/8 | 896 | -056 |
| -057 | 3/8 | 1/4 | 1/2 | 3/4 | 1/2 | 828 | -057 |
| -058 | 3/8 | 1/4 | 9/16 | 3/4 | 5/8 | 2600 | -058 |
| -059 | 3/8 | 1/4 | 5/8 | 7/8 | 1/2 | 2558 | -059 |
| -060 | 3/8 | 3/8 | 9/16 | 3/4 | 3/4 | 2596 | -060 |
| -061 | 7/16 | 1/16 | 9/16 | 3/4 | 1/4 | 1787 | -061 |
| -062 | 7/16 | 1/16 | 11/16 | 15/16 | 5/16 | 2282 | -062 |
| -063 | 1/2 | 1/8 | 3/4 | 1 | 1/2 | 2898 | -063 |
| -064 | 1/2 | 1/16 | 13/16 | 1-1/16 | 5/16 | 2283 | -064 |
| -065 | 1/2 | 1/16 | 1 | 1-1/4 | 1/4 | 2426 | -065 |
| -066 | 1/2 | 1/16 | 1-1/4 | 1-1/2 | 1/4 | 2284 | -066 |
| -067 | 1/2 | 1/16 | 1-7/16 | 1-3/4 | 3/8 | 2339 | -067 |
| -068 | 1/2 | 3/32 | 3/4 | 7/8 | 11/32 | 452 | -068 |
| -069 | 1/2 | 3/32 | 3/4 | 31/32 | 9/32 | 1862 | -069 |
| -070 | 1/2 | 3/32 | 25/32 | 1 | 11/32 | 2341 | -070 |
| -071 | 1/2 | 1/8 | 3/4 | 1 | 1/2 | 653 | -071 |
| -072 | 1/2 | 1/4 | 13/16 | 1-1/16 | 1/2 | 2561 | -072 |
| -073 | 1/2 | 3/8 | 3/4 | 1 | 5/8 | 807 | -073 |
| -074 | 9/16 | 1/16 | 13/16 | 1-1/16 | 5/16 | 2295 | -074 |
| -075 | 9/16 | 1/16 | 1-3/32 | 1-9/32 | 3/8 | 99 | -075 |
| -076 | 9/16 | 3/16 | 7/8 | 1-1/16 | 7/16 | 2512 | -076 |
| -077 | 9/16 | 1/4 | 13/16 | 1-1/16 | 1/2 | 2563 | -077 |
| -078 | 9/16 | 3/8 | 7/8 | 1-1/16 | 5/8 | 2513 | -078 |
| -079 | 9/16 | 1 | 13/16 | 1-1/8 | 1-1/4 | 2406 | -079 |
| -080 | 19/32 | 3/16 | 29/32 | 1-3/16 | 7/16 | 686 | -080 |
| -081 | 5/8 | 1/16 | 7/8 | 1-1/8 | 5/16 | 2285 | -081 |
| -082 | 5/8 | 1/16 | 1-1/4 | 1-1/2 | 1/4 | 2296 | -082 |
| -083 | 5/8 | 3/32 | 31/32 | 1-1/4 | 7/16 | 2497 | -083 |
| -084 | 5/8 | 1/8 | 7/8 | 1-1/8 | 3/8 | 2864 | -084 |

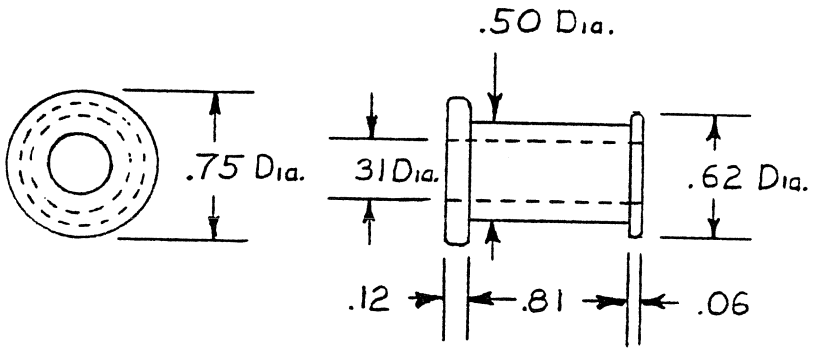
## GROMMET, MOLDED
## PLAIN BORE ROUNDED

| (REF.) DASH NUMBER | A BORE I.D. | B GROOVE WIDTH | C GROOVE DIAMETER | D O.D. | E THICK. | MFR. NO. (AIR) | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|
| -085 | 5/8 | 1/8 | 29/32 | 1-1/8 | 7/16 | 501 | 23-9180-085 |
| -086 | 5/8 | 3/16 | 7/8 | 1-1/8 | 7/16 | 2764 | -086 |
| -087 | 5/8 | 1/4 | 7/8 | 1-1/8 | 1/2 | 2564 | -087 |
| -088 | 5/8 | 5/16 | 29/32 | 1-1/8 | 5/8 | 494 | -088 |
| -089 | 41/64 | 1/16 | 31/32 | 1-3/16 | 5/16 | 1418 | -089 |
| -090 | 41/64 | 7/64 | 57/64 | 1-1/16 | 23/64 | 873 | -090 |
| -091 | 11/16 | 1/16 | 1 | 1-5/16 | 3/8 | 2273 | -091 |
| -092 | 11/16 | 1/8 | 1 | 1-5/16 | 7/16 | 2866 | -092 |
| -093 | 11/16 | 3/16 | 1 | 1-5/16 | 1/2 | 2331 | -093 |
| -094 | 11/16 | 3/16 | 1 | 1-5/16 | 1/2 | 2766 | -094 |
| -095 | 11/16 | 1/4 | 1 | 1-5/16 | 9/16 | 2566 | -095 |
| -096 | 3/4 | 1/16 | 15/16 | 1-1/8 | 1/4 | 2196 | -096 |
| -097 | 3/4 | 1/16 | 1-1/16 | 1-3/8 | 3/8 | 804 | -097 |
| -098 | 3/4 | 1/16 | 1-1/4 | 1-5/8 | 1/4 | 2274 | -098 |
| -099 | 3/4 | 1/16 | 1-7/16 | 1-13/16 | 3/8 | 2275 | -099 |
| -100 | 3/4 | 1/8 | 1-1/16 | 1-3/8 | 7/16 | 2867 | -100 |
| -101 | 3/4 | 1/8 | 1-1/4 | 1-5/8 | 5/16 | 2868 | -101 |
| -102 | 3/4 | 3/16 | 1-1/16 | 1-3/8 | 1/2 | 2767 | -102 |
| -103 | 3/4 | 1/4 | 1-1/16 | 1-3/8 | 9/16 | 2567 | -103 |
| -104 | 3/4 | 1/4 | 1-1/4 | 1-5/8 | 7/16 | 2568 | -104 |
| -105 | 13/16 | 9/16 | 15/16 | 1-1/4 | 7/8 | 5632 | -105 |
| -106 | 7/8 | 1/16 | 1-1/4 | 1-5/8 | 7/16 | 2276 | -106 |
| -107 | 7/8 | 1/16 | 1-5/8 | 2 | 7/16 | 2300 | -107 |
| -108 | 7/8 | 5/64 | 1-3/16 | 1-3/8 | 15/32 | 1626 | -108 |
| -109 | 7/8 | 1/8 | 1-1/4 | 1-5/8 | 1/2 | 2870 | -109 |
| -110 | 7/8 | 9/64 | 1-3/16 | 1-3/8 | 15/32 | 1626A | -110 |
| -111 | 7/8 | 3/16 | 1-1/4 | 1-5/8 | 9/16 | 2770 | -111 |
| -112 | 7/8 | 1/4 | 1-1/4 | 1-5/8 | 5/8 | 2570 | -112 |
| -113 | 1 | 1/16 | 1-3/8 | 1-3/4 | 7/16 | 2277 | -113 |
| -114 | 1 | 1/16 | 1-7/8 | 2-1/4 | 7/16 | 2301 | -114 |
| -115 | 1 | 1/8 | 1-3/8 | 1-3/4 | 1/2 | 2872 | -115 |

# GROMMET, MOLDED
# PLAIN BORE ROUNDED

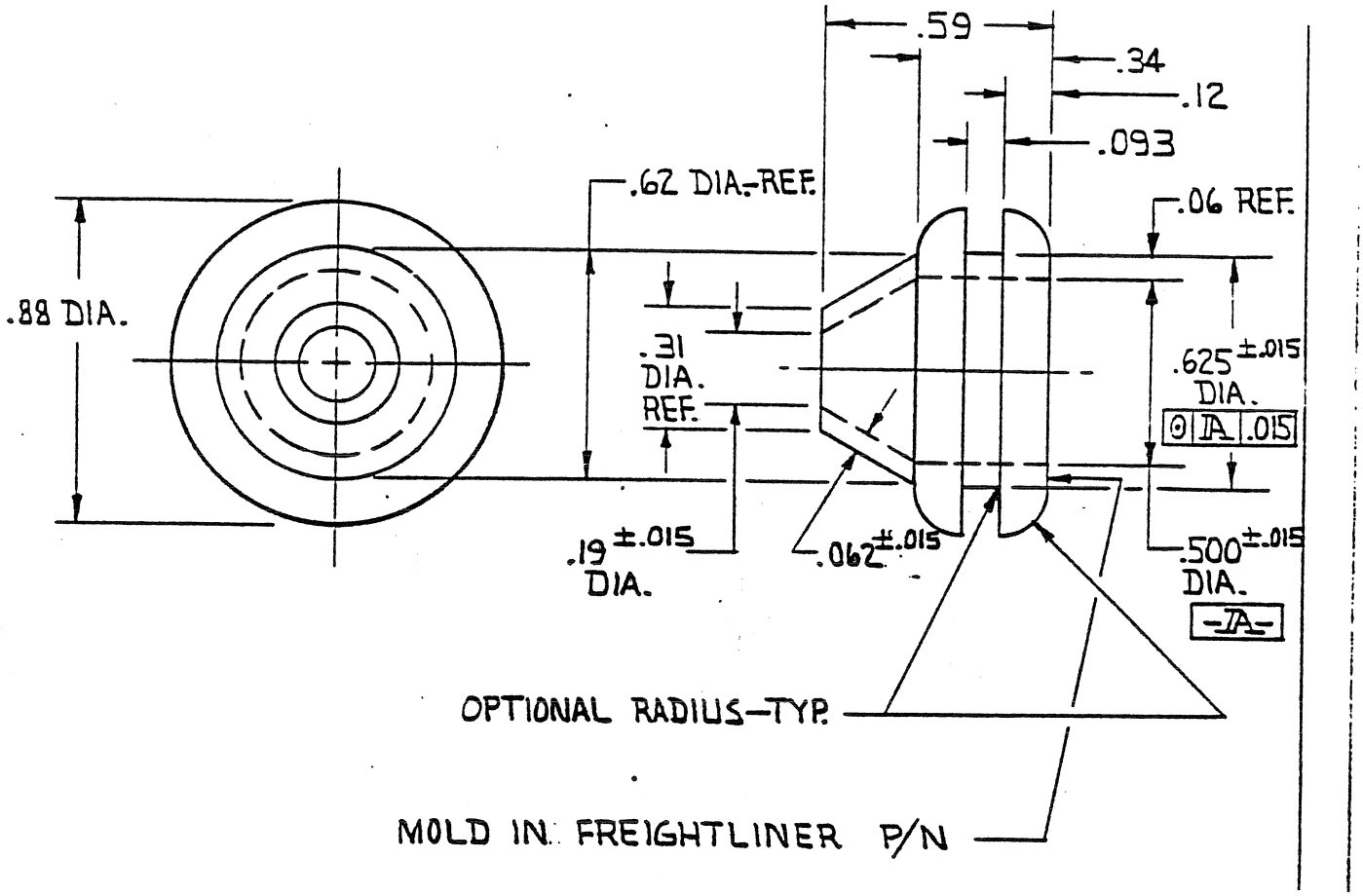
| MFR NO. (MRB) | A BORE I.D. | B GROOVE WIDTH | C GROOVE DIAMETER | D O.D. | E THICK. | MFR. NO. (AIR)* | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|
| - | 1 | 3/16 | 1-3/8 | 1-3/4 | 9/16 | 2772 | 23-9180-116 |
| - | 1 | 1/4 | 1-3/8 | 1-3/4 | 5/8 | 2572 | -117 |
| - | 1 | 1/4 | 1-7/8 | 2-1/4 | 5/8 | 2573 | -118 |
| - | 1-1/8 | 1/16 | 1-1/2 | 1-7/8 | 3/8 | 2092 | -119 |
| - | 1-1/4 | 1/16 | 2-3/8 | 2-3/4 | 7/16 | 2302 | -120 |
| - | 1-1/4 | 1/4 | 2-3/8 | 2-3/4 | 5/8 | 2574 | -121 |
| - | 1-5/16 | 1/16 | 1-5/8 | 2 | 3/8 | 2803 | -122 |
| - | 1-5/16 | 1/8 | 1-5/8 | 2 | ~~7/16~~ | ~~2802~~ | -123 |
| - | 1-1/2 | 1/16 | 1-3/4 | 2-1/8 | 7/16 | 2278 | -124 |
| - | 1-1/2 | 1/4 | 1-3/4 | 2 | 1/2 | 2034 | -125 |
| - | 1-1/2 | 1/4 | 1-3/4 | 2-1/8 | 5/8 | 2575 | -126 |
| - | 2 | 1/16 | 4-5/8 | 5-3/4 | 1/4 | 2681 | -127 |
| - | 2 | 3/32 | 3-5/32 | 3-5/8 | 9/32 | 2704 | -128 |
| - | 2-1/8 | 1/16 | 2-1/2 | 2-7/8 | 7/16 | 2805 | -129 |
| - | 2-1/8 | 1/8 | 2-1/2 | 2-7/8 | 7/16 | 2804 | -130 |
| - | 2-9/16 | 7/8 | 3 | 3-5/16 | 1-3/8 | 1401 | -131 |
| | 3/8 | 1/8 | 1/2 | 5/8 | 13/32 | 545 | -132 |
| | 3/8 | 5/8 | 9/16 | 13/16 | 3/4 | *** | -135 |
| | 1/4 | 1/8 | 7/16 | 5/8 | 1/4 | 2854 | -227 |
| Z-2029 | 1-3/16 | 5/32 | 1-1/2 | 1-3/4 | 13/32 | | -229 |
| Z-709 | 1-1/8 | 1/8 | 1-3/8 | 1-3/4 | 1/2 | | -230 |
| | 1/2 | 3/16 | 7/16 | 5/8 | 5/16 | 2754 | -232 |
| Z-2144 | 1-1/8 | 5/32 | 1-7/16 | 1-13/16 | | | -233 |
| | 1/2 | 1/8 | 13/16 | 1-1/16 | 3/8 | 2861 | -271 |
| | 1/2 | 1/8 | 13/16 | 1-1/16 | 5/16 | ** | -272 |
| | 5/8 | 3/32 | 31/32 | 1-1/4 | 7/16 | 2497 | -501 |
| | | | | | | | |
| | 7/8 | 3/16 | 1-1/4 | 1-9/16 | 3/4 | 2595 | -701 |
| | 1-1/4 | 1/8 | 2-3/8 | 2-3/4 | 1/2 | ~~0~~ | -710 |
| | 1-1/2 | 1/8 | 1-3/4 | 2-1/8 | 1/2 | 2875 | -722 |
| | | | | | | | |

GROMMET, RUBBER




23-11184

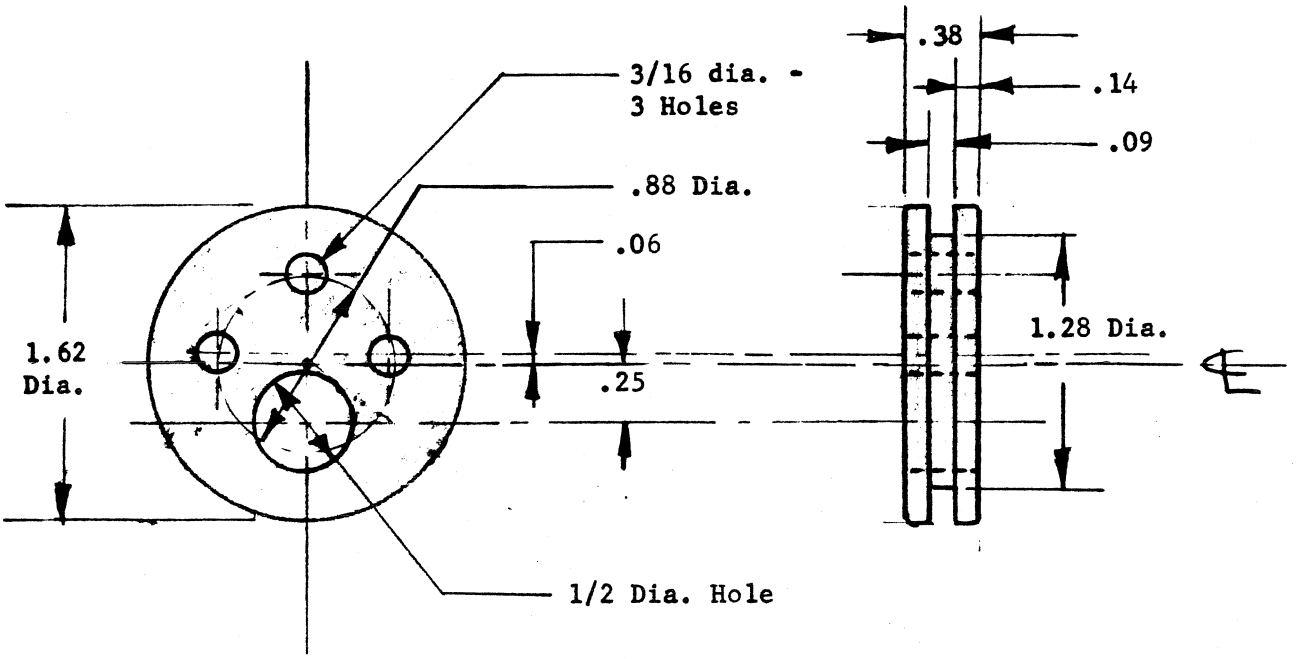
Grommet, Tapered Neck,
Molded




23-11185

23-9013

| PRINT ISSUED | TITLE | PART NO. |
|---|---|---|
| | GROMMET, SPL. GANG, 4 HOLE | 23-9013 |
| LAST CHG. LTR. A | | SHEET OF |




| CHG | BY | DATE | WAS |
|---|---|---|---|
| | | | |

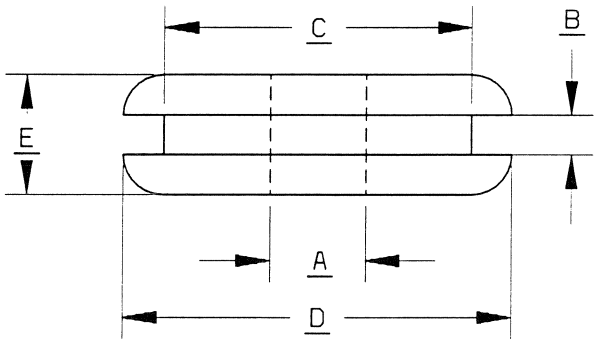
| CHG | BY | DATE | WAS |
|---|---|---|---|
| A | PRJ | 12-20-68 | B Size Drawing |

(1) Rubber

| COMPILED | PRJ | DATE DRAWN | | MATERIAL | NEXT ASSY. NO. |
|---|---|---|---|---|---|
| APPROVED | K.TA | 12-20-68 | | (1) | VEHICLE |

Portland FREIGHTLINER CORPORATION Oregon 97208

| DRAWN | DAJ | TITLE | DRAWING NUMBER | |
|---|---|---|---|---|
| APPRV | DAJ | GROMMET-MOLDED<br>PLAIN BORE, ROUNDED | 23-09180 | |
| DATE | 08/26/97 | | | |
| CATIA ORIGINAL | | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>1 OF 4 | CHG. LTR.<br>AB |




| DIMENSIONS | | | | | VENDOR/PN | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|
| A<br>BORE ID | B<br>GROOVE WITDH | C<br>GROOVE DIA | D<br>OD | E<br>THICKNESS | AIR (1) | |
| 7/64 | 3/64 | 1/2 | 11/16 | 9/32 | 1272 | 23-09180-001 |
| 1/8 | 1/16 | 7/16 | 5/8 | 3/16 | 562 | 23-09180-003 |
| 1/8 | 3/32 | 3/8 | 1/2 | 5/16 | 2425 | 23-09180-005 |
| 3/16 | 3/32 | 11/32 | 5/8 | 3/8 | 2537 | 23-09180-018 |
| 3/16 | 1/8 | 5/16 | 7/16 | 1/4 | 2852 | 23-09180-019 |
| 1/4 | 1/32 | 25/64 | 1/2 | 5/32 | 5164 | 23-09180-026 |
| 1/4 | 1/16 | 7/16 | 5/8 | 3/16 | 97 | 23-09180-028 |
| 1/4 | 1/16 | 1 | 1 1/4 | 1/4 | 2298 | 23-09180-029 |
| 1/4 | 1/8 | 3/8 | 1/2 | 1/4 | 2903 | 23-09180-031 |

ENGINEERING NOTES:

(1) ALL MFR PART NUMBERS REFERENCE ESTCO CORP. PARTS EXCEPT AS NOTED.

(2) REFERENCE MINOR RUBBER CO PART NUMBER

(3) 23-09180-272 & -710 REFERENCE ACCURATE RUBBER PRODUCT PART NUMBERS.

4. MATERIAL: BUNA S RUBBER

(5) STRAIGHT SPLIT.

| CHG | JOB NO | DATE | BY | REVISION |
|---|---|---|---|---|
| AA | P2D210-10 | 08/26/97 | DAJ | REVISED AND REDRAWN IN CATIA. ADDED -094, -724 |
| AB | PA2042-97 | 11/02/99 | LFB | ADDED -273 AND -320, INADVERTENTLY DELETED IN AA. |
| | | | | |
| | | | | |
| | | | | |

| DRAWN | DAJ | TITLE | DRAWING NUMBER | |
|---|---|---|---|---|
| APPRV | DAJ | GROMMET-MOLDED PLAIN BORE, ROUNDED | 23-09180 | |
| DATE | 08/26/97 | FREIGHTLINER CORPORATION PORTLAND, OREGON | SHEET 2 OF 4 | CHG. LTR. AB |
| CATIA ORIGINAL | | | | |

| DIMENSIONS | | | | | VENDOR/PN | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|
| A BORE ID | B GROOVE WITDH | C GROOVE DIA | D OD | E THICKNESS | AIR (1) | |
| 1/4 | 1/8 | 7/16 | 5/8 | 1/4 | 2854 | 23-09180-227 |
| 1/4 | 1/4 | 15/32 | 5/8 | 1/2 | 696 | 23-09180-033 |
| 1/4 | 1/4 | 1 | 1 1/4 | 7/16 | 2555 | 23-09180-034 |
| 5/16 | 1/16 | 9/16 | 13/16 | 5/16 | 2113 | 23-09180-039 |
| 5/16 | 1/16 | 3/4 | 1 | 5/16 | 2280 | 23-09180-040 |
| 5/16 | 3/32 | 7/16 | 5/8 | 5/16 | 2538 | 23-09180-041 |
| 5/16 | 1/8 | 9/16 | 13/16 | 3/8 | 2856 | 23-09180-043 |
| 5/16 | 1/8 | 3/4 | 1 | 3/8 | 2857 | 23-09180-044 |
| 5/16 | 3/16 | 9/16 | 13/16 | 3/8 | 705 | 23-09180-045 |
| 11/32 | 1/16 | 17/32 | 25/32 | 1/4 | 2004 | 23-09180-050 |
| 3/8 | 1/16 | 1/2 | 5/8 | 1/4 | 230 | 23-09180-051 |
| 3/8 | 1/16 | 1/2 | 11/16 | 9/32 | 1724 | 23-09180-052 |
| 3/8 | 1/16 | 5/8 | 7/8 | 5/16 | 2281 | 23-09180-053 |
| 3/8 | 1/16 | 1 | 1 1/4 | 1/4 | 2299 | 23-09180-055 |
| 3/8 | 3/16 | 9/16 | 13/16 | 3/8 | 896 | 23-09180-056 |
| 3/8 | 1/4 | 1/2 | 3/4 | 1/2 | 828 | 23-09180-057 |
| 3/8 | 1/4 | 1 1/4 | 1 1/2 | 1/2 | (5) | 23-09180-058 |
| 7/16 | 1/16 | 11/16 | 15/16 | 5/16 | 2282 | 23-09180-062 |
| 1/2 | 1/16 | 13/16 | 1 1/16 | 5/16 | 2283 | 23-09180-064 |
| 1/2 | 1/16 | 1 1/4 | 1 1/2 | 1/4 | 2284 | 23-09180-066 |
| 1/2 | 1/16 | 1 7/16 | 1 3/4 | 3/8 | 2339 | 23-09180-067 |
| 1/2 | 3/32 | 3/4 | 7/8 | 11/32 | 452 | 23-09180-724 |
| 1/2 | 1/8 | 3/4 | 1 | 1/2 | 2898 | 23-09180-063 |
| 1/2 | 1/8 | 3/4 | 1 | 1/2 | 653 | 23-09180-071 |
| 1/2 | 1/8 | 13/16 | 1 1/16 | 3/8 | 2861 | 23-09180-271 |

| CHG | JOB NO | DATE | BY | REVISION |
|---|---|---|---|---|
| AA | P2D210-10 | 08/26/97 | DAJ | REVISED AND REDRAWN IN CATIA. ADDED -094, -724 |
| AB | PA2042-97 | 11/02/99 | LFB | ADDED -273 AND -320. INADVERTENTLY DELETED IN AA. |
| | | | | |
| | | | | |
| | | | | |

| DRAWN | DAJ | TITLE | DRAWING NUMBER | |
|---|---|---|---|---|
| APPRV | DAJ | GROMMET-MOLDED<br>PLAIN BORE, ROUNDED | 23-09180 | |
| DATE | 08/26/97 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>3 OF 4 | CHG. LTR.<br>AB |
| CATIA ORIGINAL | | | | |

| | DIMENSIONS | | | | | VENDOR/PN | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|
| | A<br>BORE ID | B<br>GROOVE WITDH | C<br>GROOVE DIA | D<br>OD | E<br>THICKNESS | AIR (1) | |
| | 1/2 | 1/8 | 13/16 | 1 1/16 | 5/16 | ARP A8-13 (3) | 23-09180-272 |
| AB | 1/2 | 1/8 | 1 | 1 1/4 | 5/16 | EST 2983 | 23-09180-273 |
| | 1/2 | 3/16 | 13/16 | 1 1/16 | 7/16 | 2761 | 23-09180-232 |
| | 1/2 | 1/4 | 13/16 | 1 1/16 | 1/2 | 2561 | 23-09180-072 |
| | 9/16 | 1/16 | 13/16 | 1 1/16 | 5/16 | 2295 | 23-09180-074 |
| | 9/16 | 1/8 | 13/16 | 1 1/16 | 3/8 | 2863 | 23-09180-575 |
| | 9/16 | 3/16 | 7/8 | 1 1/16 | 7/16 | 2512 | 23-09180-076 |
| | 9/16 | 1/4 | 13/16 | 1 1/16 | 1/2 | 2563 | 23-09180-077 |
| | 9/16 | 3/8 | 7/8 | 1 1/16 | 5/8 | 2513 | 23-09180-078 |
| | 5/8 | 1/16 | 7/8 | 1 1/8 | 5/16 | 2285 | 23-09180-081 |
| | 5/8 | 3/32 | 31/32 | 1 1/4 | 7/16 | 2497 | 23-09180-083 |
| | 5/8 | 1/8 | 7/8 | 1 1/8 | 3/8 | 2864 | 23-09180-084 |
| | 5/8 | 1/8 | 29/32 | 1 1/8 | 7/16 | 501 | 23-09180-085 |
| | 5/8 | 3/16 | 7/8 | 1 1/8 | 7/16 | 2764 | 23-09180-086 |
| | 5/8 | 5/8 | 7/8 | 1 1/16 | 7/8 | 559 | 23-09180-723 |
| | 11/16 | 1/16 | 1 | 1 5/16 | 3/8 | 2273 | 23-09180-091 |
| | 11/16 | 1/8 | 1 | 1 5/16 | 7/16 | 2866 | 23-09180-092 |
| AA | 11/16 | 3/16 | 1 | 1 5/16 | 1/2 | 2766-S (5) | 23-09180-094 |
| | 11/16 | 1/4 | 1 | 1 5/16 | 1/2 | 2566 | 23-09180-095 |
| | 3/4 | 1/16 | 15/16 | 1 1/8 | 1/4 | 2196 | 23-09180-096 |
| | 3/4 | 1/16 | 31/32 | 1 3/16 | 3/8 | 7554 | 23-09180-136 |
| | 3/4 | 1/16 | 1 1/16 | 1 3/8 | 3/8 | 804 | 23-09180-097 |
| | 3/4 | 1/16 | 1 1/4 | 1 5/8 | 1/4 | 2274 | 23-09180-098 |
| | 3/4 | 1/8 | 1 1/16 | 1 3/8 | 7/16 | 2867 | 23-09180-100 |
| | 3/4 | 1/8 | 1 1/4 | 1 5/8 | 5/16 | 2868 | 23-09180-101 |

| CHG | JOB NO | DATE | BY | REVISION |
|---|---|---|---|---|
| AA | P2D210-10 | 08/26/97 | DAJ | REVISED AND REDRAWN IN CATIA. ADDED -094, -724 |
| AB | PA2042-97 | 11/02/99 | LFB | ADDED -273 AND -320. INADVERTENTLY DELETED IN AA. |
| | | | | |
| | | | | |
| | | | | |

| DRAWN | DAJ | TITLE | DRAWING NUMBER | |
|---|---|---|---|---|
| APPRV | DAJ | GROMMET-MOLDED<br>PLAIN BORE, ROUNDED | 23-09180 | |
| DATE | 08/26/97 | | | |
| CATIA ORIGINAL | | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET 4 OF 4 | CHG. LTR. AB |

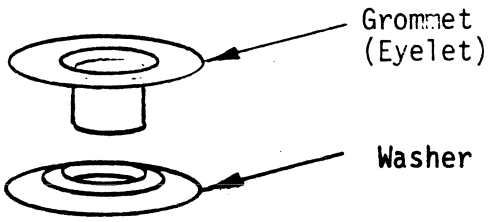
| DIMENSIONS | | | | | VENDOR/PN | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|
| A BORE ID | B GROOVE WITDH | C GROOVE DIA | D OD | E THICKNESS | AIR (1) | |
| 3/4 | 1/8 | 1 5/8 | 2 | 7/16 | Z-3199 (2) | 23-09180-318 |
| 7/8 | 1/16 | 1 1/4 | 1 5/8 | 7/16 | 2276 | 23-09180-106 |
| 7/8 | 1/16 | 1 5/8 | 2 | 7/16 | 2300 | 23-09180-107 |
| 7/8 | 1/8 | 1 1/4 | 1 5/8 | 1/2 | 2870 | 23-09180-109 |
| 7/8 | 1/8 | 1 1/16 | 1 5/8 | 1/2 | | 23-09180-702 |
| 7/8 | 3/16 | 1 1/4 | 1 5/8 | 9/16 | 2770 | 23-09180-111 |
| 7/8 | 3/16 | 1 1/4 | 1 9/16 | 3/4 | 2595 | 23-09180-701 |
| 7/8 | 1/4 | 1 1/4 | 1 5/8 | 5/8 | 2570 | 23-09180-112 |
| 1 | 1/16 | 1 3/8 | 1 3/4 | 7/16 | 2277 | 23-09180-113 |
| 1 | 1/16 | 1 7/8 | 2 1/4 | 7/16 | 2301 | 23-09180-114 |
| 1 | 1/8 | 1 3/8 | 1 3/4 | 1/2 | 2872 | 23-09180-115 |
| 1 | 1/8 | 1 3/8 | 1 3/4 | 1/2 | 2872 (5) | 23-09180-315 |
| 1 | 1/8 | 1 7/8 | 2 1/4 | 1/2 | 2873 | 23-09180-118 |
| 1 | 3/16 | 1 3/8 | 1 3/4 | 9/16 | 2772 | 23-09180-116 |
| 1 | 1/4 | 1 3/8 | 1 3/4 | 5/8 | 2572 | 23-09180-117 |
| 1 | 1/4 | 1 3/8 | 1 3/4 | 5/8 | 2572 (5) | 23-09180-317 |
| 1 | 5/16 | 1 3/8 | 1 3/4 | 5/8 | EST Z830 | 23-09180-320 |
| 1 1/8 | 1/16 | 1 1/2 | 1 7/8 | 3/8 | 2092 | 23-09180-119 |
| 1 1/8 | 5/32 | 1 7/16 | 1 13/16 | | Z-2144 (2) | 23-09180-233 |
| 1 3/16 | 5/32 | 1 1/2 | 1 3/4 | 13/32 | Z-2029 (2) | 23-09180-229 |
| 1 1/4 | 1/8 | 2 3/8 | 2 3/4 | 1/2 | ARP A20-38 (3) | 23-09180-710 |
| 1 5/16 | 1/8 | 1 5/8 | 2 | 7/16 | 2802 | 23-09180-123 |
| 1 1/2 | 1/16 | 1 3/4 | 2 1/8 | 7/16 | 2278 | 23-09180-124 |
| 1 1/2 | 1/8 | 1 3/4 | 2 1/8 | 1/2 | 2875 | 23-09180-151 |

AB

| CHG | JOB NO | DATE | BY | REVISION |
|---|---|---|---|---|
| AA | P2D210-10 | 08/26/97 | DAJ | REVISED AND REDRAWN IN CATIA. ADDED -094, -724 |
| AB | PA2042-97 | 11/02/99 | LFB | ADDED -273 AND -320, INADVERTENTLY DELETED IN AA. |
| | | | | |
| | | | | |
| | | | | |

| ORIGINAL JOB NO. | TITLE | PART NO. |
|---|---|---|
| M0300 | GROMMET, BRASS | A23-9371 |
| LAST CHG LTR D | | SHEET 1 OF 1 |

SKETCH




PART NUMBERS

| Nominal Inside Hole Dia | Nominal Flange O.D. | Finish ② | Mfg. Number STI | FREIGHTLINER PART NUMBERS Grommet & Washer Assy. | Grommet (Only) | Washer (Only) |
|---|---|---|---|---|---|---|
| 5/32 | | | #00 | A23-09371-100 | 23-09371-300 | 23-09371-500 |
| 1/4 | | | #0 | -110 | -310 | -510 |
| 5/16 | | | #1 | -001 | -301 | -501 |
| 3/8 | | | #2 | -002 | -302 | -502 |
| 7/16 | | Plain | #3 | -003 | -303 | -503 |
| 1/2 | | | #4 | -004 | -304 | -504 |
| 5/8 | | | #5 | -005 | -305 | -505 |
| 3/4 | | | #6 | -006 | -306 | -506 |
| 1 | | | #8 | -008 | -308 | -508 |
| 5/32 | | | #00 | A23-09371-200 | 23-09371-400 | 23-09371-600 |
| 1/4 | | | #0 | -210 | -410 | -610 |
| 5/16 | | | #1 | -201 | -401 | -601 |
| 3/8 | | ③ | #2 | -202 | -402 | -602 |
| 7/16 | | | #3 | -203 | -403 | -603 |
| 1/2 | | | #4 | -204 | -404 | -604 |
| 5/8 | | | #5 | -205 | -405 | -605 |
| 3/4 | | | #6 | -206 | -406 | -606 |
| 1 | | | #8 | -208 | -408 | -608 |

ENGINEERING NOTES:

① Material: Brass

② Finish must be specified on requests to manufacturer.

③ Dull black chemical oxide.

| COMPILED | MGP | DATE DRAWN | | MATERIAL | MASTER NUMBER | |
|---|---|---|---|---|---|---|
| APPROVED | BBK | 8-21-84 | | ① | 03140 | 000D1 |

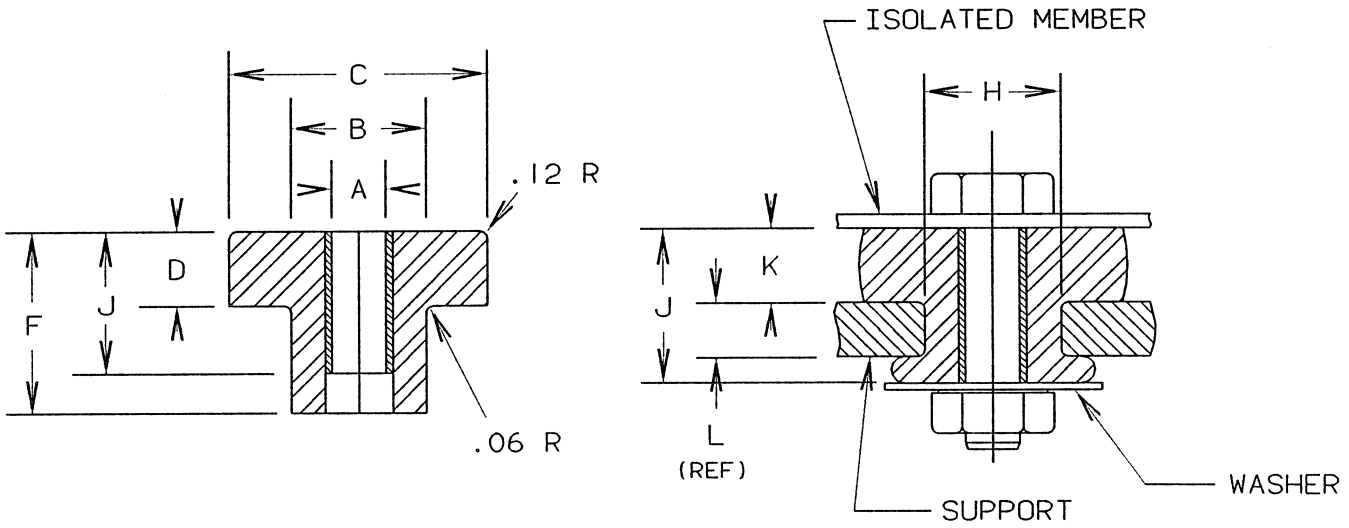
CHANGE INFORMATION

| LTR | JOB NO. | BY | DATE | CHANGE INFORMATION |
|---|---|---|---|---|
| D | M0300 | MGP | 8-21-84 | Redrawn, Add: -300 to -620 |



DD

| DRAWN | FEF | TITLE<br>RUBBER ISOLATOR<br>MOUNT | ITEM NUMBER<br>23-09726 |
|---|---|---|---|
| APPRV | PCK | | |
| DATE | 03/19/91 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>1 OF 1 |




SPECIFICATIONS:

| A | B LOR/HUN | C | D | F LOR/HUN | H | J | K | L | MFR. NO. LOR | MFR. NO. HUN | FREIGHTLINER SPECIFICATION NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .53 | 1.35/1.25 | 2.00 | .52 | 1.22/1.30 | 1.25 | 1.00 | .45 | .25 | J-6256-94 | M40150EPDM | 23-09726-000 |
| .53 | 1.35/1.25 | 2.00 | .52 | 1.25/1.30 | 1.25 | 1.00 | .45 | .25 | J-6256-10 | M40150NR | -001 |
| .52 | 1.12/1.12 | 1.75 | .41 | 1.25/1.41 | 1.12 | 1.00 | .38 | .38 | | M30050NR | -002 |
| .64 | 1.98/1.81 | 3.00 | .81 | 2.22/2.42 | 1.81 | 2.00 | .71 | .93 | J-6210-1 | M60050NR | -003 |
| .52 | 1.35/1.25 | 2.00 | .53 | /1.70 | 1.25 | 1.37 | .48 | .38 | J-6256-134 | | -004 |

ENGINEERING DATA:

LINEAL TOLERANCE ±.03 INCH

DASH NUMBER VARIABLES

| DASH NUMBER | -000* | -004 | -001 | -002 | -003 |
|---|---|---|---|---|---|
| COLOR CODED | BLACK FINISH W/ YEL MARK .500 DIA | BLACK FINISH | BLACK FINISH | BLACK FINISH | BLACK FINISH |
| TUBE SPACER MATERIAL | STEEL: AISI/SAE 1010/1020 OR FC0208-50 | | | | |
| GEN TEMP APPLICATION | HIGH | HIGH | LOW | LOW | LOW |
| ELASTOMER MAT'L SPEC ASTM D2000 | 3BA 520 A14 B13 C12 F19 | 3BA 520 A14 B13 C12 F19 | 5AA 525 A13 B13 B33 EA14 F17 | 5AA 525 A13 B13 B33 EA14 F17 | 5AA 525 A13 B13 B33 EA14 F17 |
| RATED DEFLECTION | .040 | .040 | .040 | .020 | .060 |
| RATED LOAD MIN LBS | 200 | 200 | 200 | 150 | 500 |

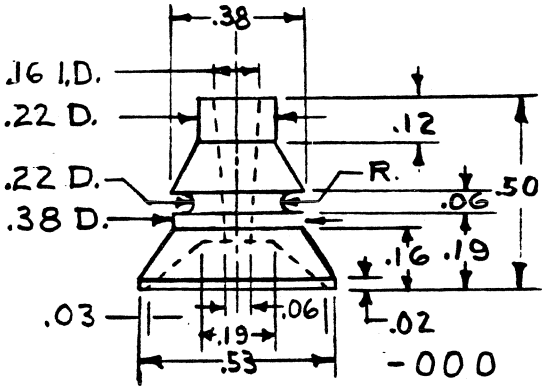
* -000 MAY BE SUBSTITUTED FOR -001, BUT NOT VICE VERSA.

| CHG | JOB/RLSE NO | DATE | BY | REVISION |
|---|---|---|---|---|
| F | P9761C-01 | 03/04/92 | ERK | REVISED AND REDRAWN; REVISED TUBE SPACER MATERIAL |
| G | P7232H-01 | 02/25/93 | ERK | 23-09726-002: RMVD LORD, "A" TO .52 FROM .47/.52 |
| H | P2A170-19 | 12/08/94 | ERK | ADDED -004. |
| J | P2A170-35 | 02/03/95 | ERK | 23-09726-004: RMVD HUN PRODUCT NUMBER |
| | | | | |

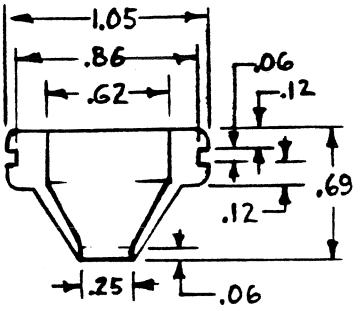
General Use Part

| ORIGINAL JOB NO. | TITLE | PART NO. |
|---|---|---|
| A0837 | GROMMET, SPECIAL SEAL | 23-10998 |
| LAST CHG LTR: A | | SHEET 1 OF |

SKETCH




-000




-010

PART NUMBERS

| | COLOR | MANUFACTURER'S NUMBER | | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|
| | | ARP | AIR | |
| | BLK | 2486 7022 | | 23-10998-000 |
| | BLK | | 5436 | -010 |

ENGINEERING NOTES

1. MATERIAL: Rubber per Manufacturer's Spec. (Gum, Soft)
2. FINISH: As Received

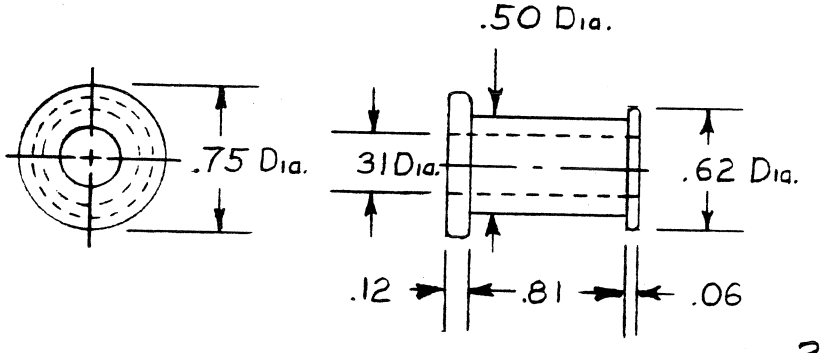
| COMPILED | HJR | DATE DRAWN | | MATERIAL | MASTER NUMBER |
|---|---|---|---|---|---|
| APPROVED | | 8-17-76 | | 1 | 03140 000D1 |

CHANGE INFORMATION

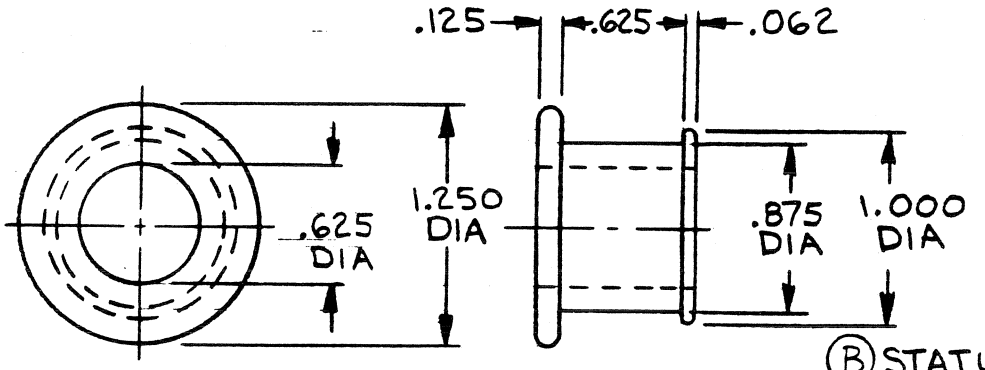
| LTR | JOB NO. | BY | DATE | CHANGE INFORMATION |
|---|---|---|---|---|
| A | 0370D | FHF | 6-25-86 | From RYL TC ARP |

| ORIGINAL JOB NO. | TITLE | PART NO. |
|---|---|---|
| C-1401 | GROMMET, RUBBER | 23-11184 |
| LAST CHG LTR B | | SHEET 1 OF 1 |

SKETCH:




23-11184-000




(B) STATUS OBS

(A) 23-11184-001

## ENGINEERING NOTES:

1. Rubber

2. Radii on flanges optional

(B)

| PART NUMBER | STATUS | REPLACED BY |
|---|---|---|
| 23-11184-001 | OBS | 23-9180-723 |

| LTR | JOB NO. | BY | DATE | CHANGE INFORMATION |
|---|---|---|---|---|
| A | N0143 | FFW | 10-4-83 | ADDED -001 |
| B | 16306 | FEH | 12-12-83 | -001 to OBS STATUS |

| LTR | JOB NO. | BY | DATE | CHANGE INFORMATION |
|---|---|---|---|---|
| | | | | |

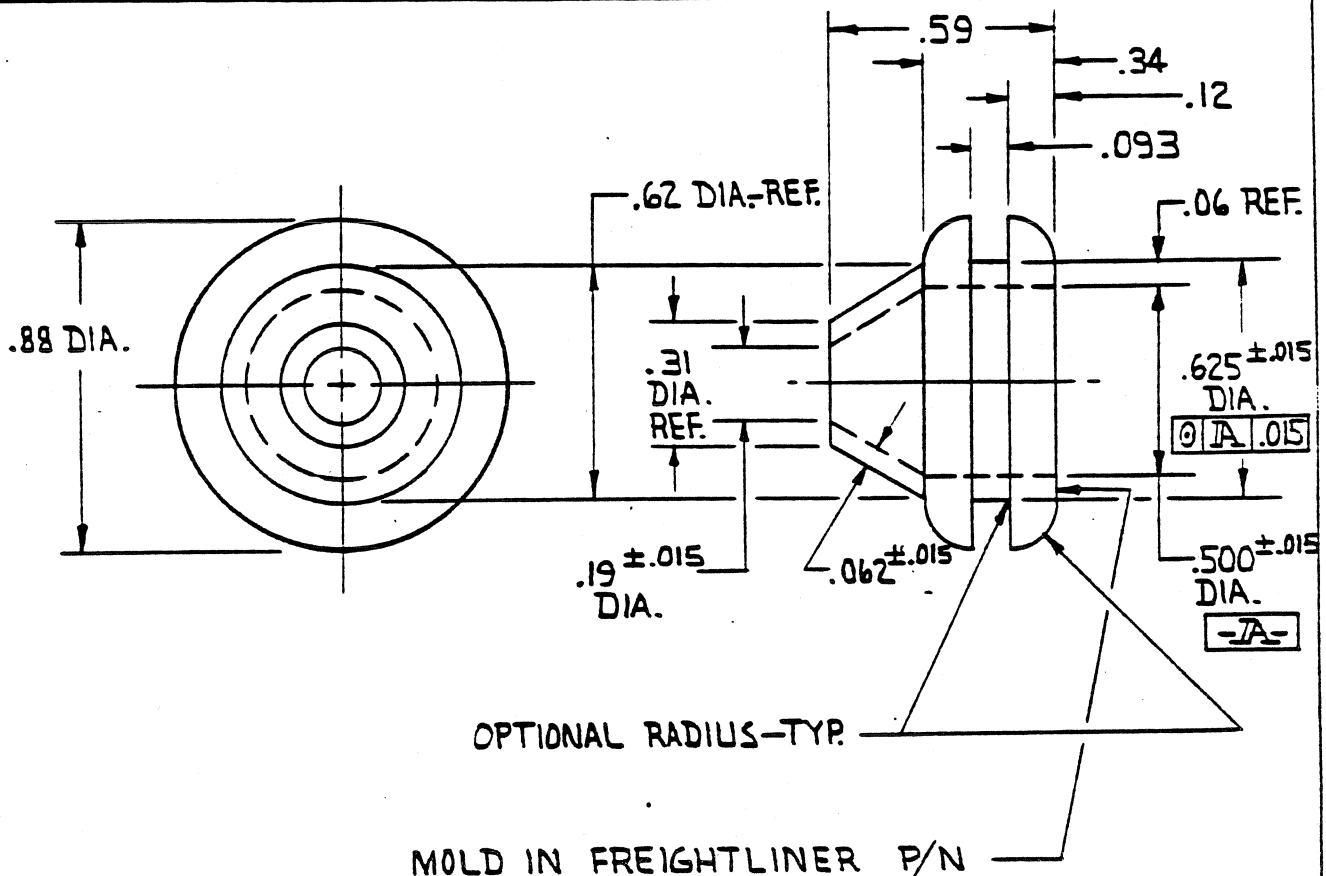
| COMPILED | JSJ | DATE DRAWN | | MATERIAL | |
|---|---|---|---|---|---|
| APPROVED | GEH | 12/14/78 | | (1) | |



FREIGHTLINER CORPORATION Oregon 97208

B M/F A

| ORIGINAL JOB NO. | TITLE | PART NO. |
|---|---|---|
| C0910D | Grommet, Tapered Neck, Molded | 23-11185 |
| LAST CHG LTR: A | | SHEET 1 OF 1 |




| CHANGE INFORMATION | DATE | BY | JOB NO. | LTR |
|---|---|---|---|---|
| | | | | |

| CHANGE INFORMATION | DATE | BY | JOB NO. | LTR |
|---|---|---|---|---|
| Added Alternate Mat'l | 6/28/79 | MP | C0910 | A |

(2) All tolerances ± .03 unless otherwise noted.

(1) Neoprene per ASTM D 2000 - SAE J200 Classification;

*Spec. #2BC420Z

Ref. —
- Neoprene
- Durometer hardness = $40^{+5}_{-}$
- Tensile strength = 2000 PSI
- Flammability resistance (Must pass Federal Motor Vehicle Safety Std. #302).

* As an alternate Neoprene, may use Spec. #2BC518Z.

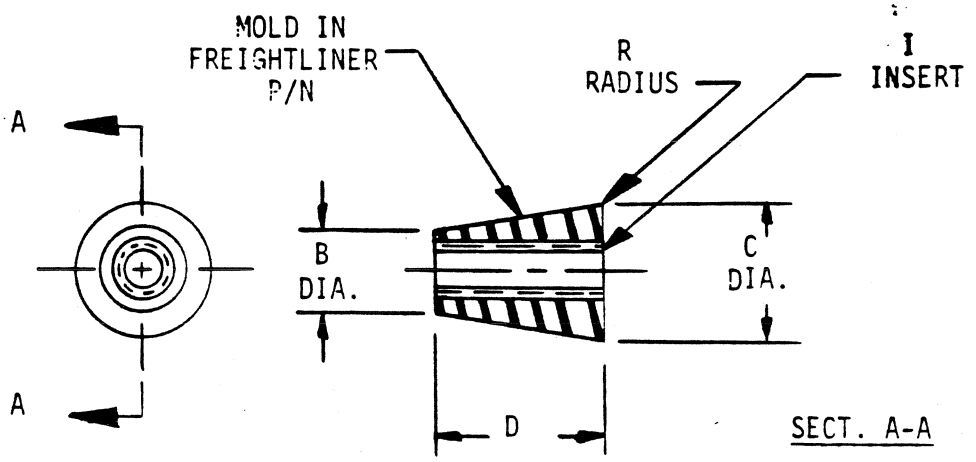
| COMPILED | PD | DATE DRAWN | | Material | |
|---|---|---|---|---|---|
| APPROVED | Ehrard | 3/5/79 | | (1) | Vehicle |



A

| ORIGINAL JOB NO. | TITLE | PART NO. |
|---|---|---|
| C1500 | RUBBER, MOLDED W/INSERT<br>REAR RADIO SUPPORT | 23-11324 |
| LAST CHG LTR | | SHEET 1 OF 1 |

SKETCH:




PART NUMBERS:

| I INSERT (3) | B DIA. | C DIA. | D | R RAD. | MANUFACTURER'S NO. | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|
| 1/4 x 20 UNC | .438 | .750 | 1.00 | .03 | | 23-11324-000 |
| | | | | | | |

ENGINEERING NOTES:

1. All tolerances ± .03 unless otherwise noted.
2. Material: Rubber per SAE J200, Spec. #2AB615A14Z
   (Durometer Hardness: 60 + 5
   Tensile Strength: 1500 psi
   Flammability Resistance: Must pass FMVSS #302)
3 Insert Material: STEEL

| COMPILED | TYoung | DATE DRAWN | | | UNIT OF MEASURE |
|---|---|---|---|---|---|
| APPROVED | | 1/23/81 | | | EA. |

CHANGE INFORMATION | DATE | BY | JOB NO. | LTR

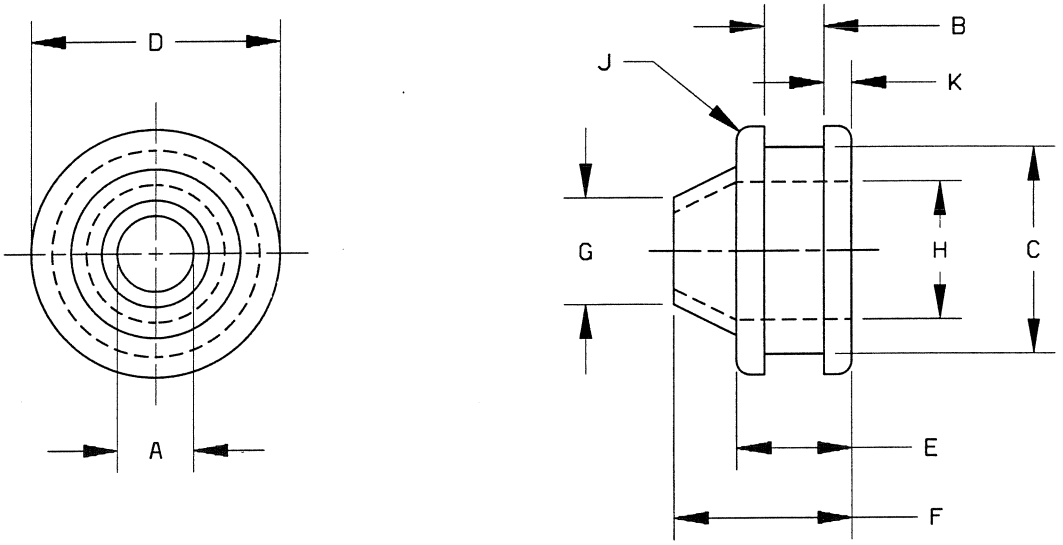
CHANGE INFORMATION | DATE | BY | JOB NO. | LTR



Portland FREIGHTLINER CORPORATION M/F Oregon 97208

DEBBIE

| DRAWN | K S | TITLE | DRAWING NUMBER |
|---|---|---|---|
| APPRV | DAJ | GROMMET-MOLDED, TAPERED BORE, ROUNDED | 23-11464 |
| DATE | 05/13/99 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET 1 OF 1 / CHG. LTR. C |
| CATIA ORIGINAL | | | |



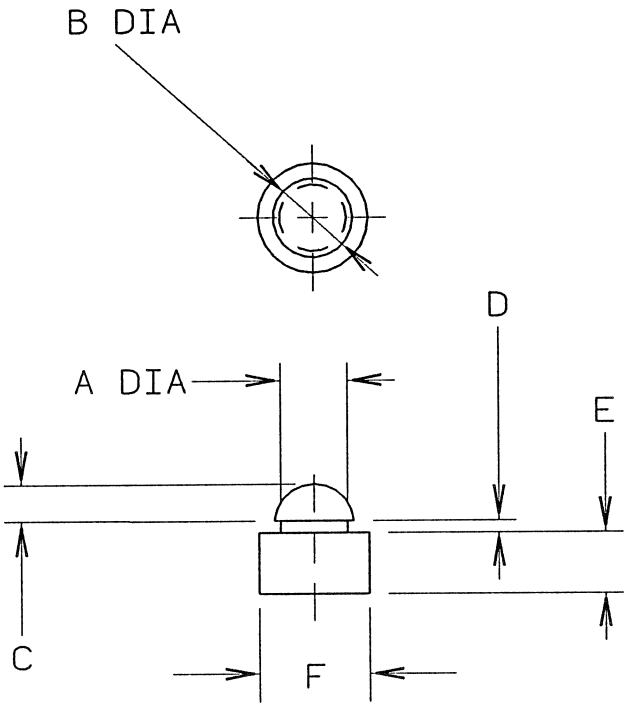

| | A TAPER I.D. | B GROOVE WIDTH | C GROOVE DIA. | D BODY O.D. | E THICK. | F DEPTH | G TAPER THICK. | H BORE I.D. | J RADIUS | K TYP. | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .356 | .125 | 1.25 | 1.50 | .370 | 1.00 | .500 | 1.00 | .061 | .120 | 23-11464-000 |
| A | .433 | .335 | 1.18 | 1.42 | .650 | 1.00 | .609 | .787 | .079 | .157 | 23-11464-001 |

ENGINEERING NOTES:

1. MATERIAL: NEOPRENE PER ASTM D 2000/SAE J200 CLASSIFICATION: 2BC620Z
2. MUST PASS FMVSS 302
3. ALL TOLERANCES ±.03 (0.7) UNLESS OTHERWISE NOTED
4. DIMENSIONS SHOWN ABOVE FOR REFERENCE ONLY.
5. PHYSICAL PROPERTIES:
   DUROMETER HARDNESS: 60±5
   TENSILE STRENGTH: 2000 PSI

| CHG | JOB NO | DATE | BY | REVISION |
|---|---|---|---|---|
| A | P7366G-01 | 10/29/91 | K R | REDRAWN, REVISED DIMS TO THICKER WALL AND 60 DURO |
| B | P08311-04 | 05/13/99 | K S | REVISED AND REDRAWN IN CATIA. ADDED 23-11464-001 |
| C | P08311-21 | 01/14/00 | LFB | REVISED DIM "E", WAS 1.30. |
| | | | | |
| | | | | |

| DRAWN | PCK | TITLE<br>ISOLATOR | ITEM NUMBER<br>23-11484 |
|---|---|---|---|
| APPRV | ANF | | |
| DATE | 12/16/89 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>1 OF 1 |




| A | B | C | D | E | F | SUPPLIER'S # | | MAT'L | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | AIR | EST | | |
| .281 | .375 | .156 | .078 | .125 | .563 | 1138 | | N | 23-11484-000 |
| .314 | .406 | .094 | .063 | .313 | .563 | 740-B | | N | 23-11484-001 |
| .281 | .438 | .172 | .125 | .344 | .625 | 1422 | | N | 23-11484-002 |
| .250 | .344 | .125 | .125 | .125 | .563 | 711 | 2959 | S | |
| D .250 | .344 | .156 | .188 | .125 | .531 | | 5-64PB | S | 23-11484-004 |

ENGINEERING NOTES:

MATERIAL: N = NEOPRENE 60 DUROMETER
S = SBR 60 DUROMETER

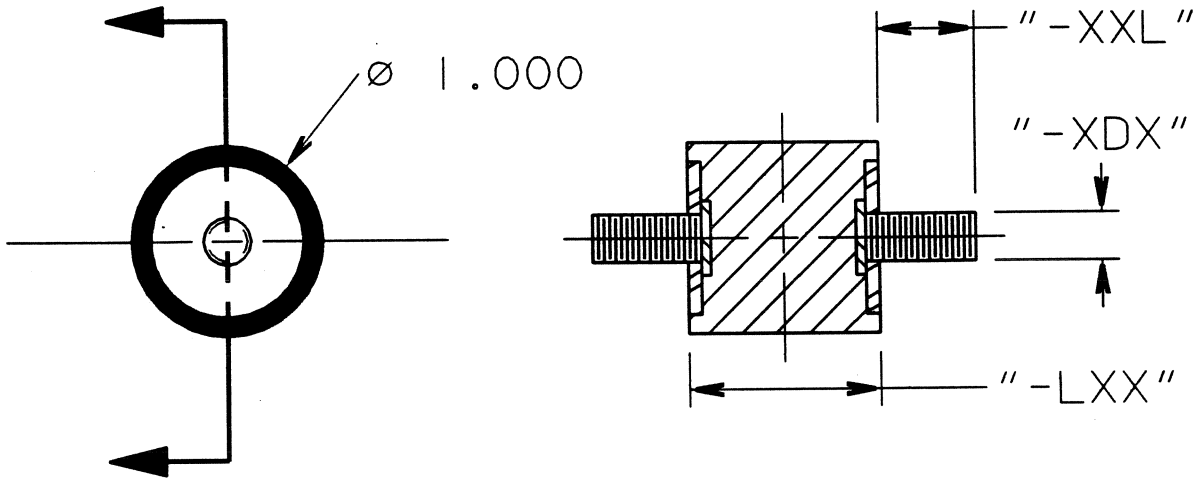
D COLOR: BLACK

ABOVE DIMENSIONS ARE REFERENCE ONLY

| CHG | JOB/RLSE NO | DATE | BY | REVISION |
|---|---|---|---|---|
| A | PX1416-07 | 12/16/89 | PCK | REDRAWN. ADDED 23-11484-001 |
| B | PX1905-05 | 04/01/90 | PCK | ADDED 23-11484-002 |
| C | PX1905-12 | 05/11/90 | PCK | ADDED 23-11484-003 |
| D | P2A412-87 | 08/28/95 | ERK | ADDED 23-11484-004 |
| | | | | |

| DRAWN | SJT | TITLE | ITEM NUMBER |
|---|---|---|---|
| APPRV | RDF | MOUNT, ISOLATION | 23-11551 |
| DATE | 04/10/91 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>1 OF 1 |

UNLESS OTHERWISE NOTED, ALL DIMENSIONS IN INCHES.




| VENDOR PART NUMBER (1) | | LENGTH | STUDS | LOAD LBS. | | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|
| KARMAN | GRIFFITH | | | COMP | SHEAR | |
| K47-W1/2-STUD | 12486 | 0.750 | 1/4-20 X .500 | 40 | 10 | 23-11551-644 |
| K47-W3/4-STUD | 12485 | 0.750 | 1/4-20 X .750 | 40 | 10 | 23-11551-646 |
| K74-W1/2-STUD | 12484 | 1.000 | 1/4-20 X .500 | 35 | 8 | 23-11551-844 |

C

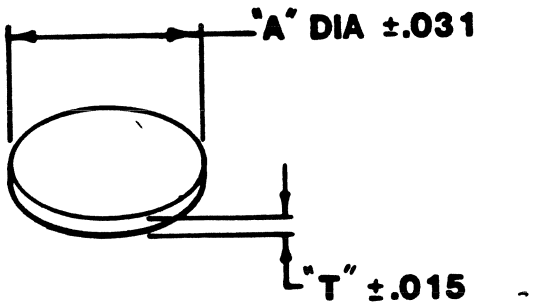
(1) THE RUBBER OF THE ISOLATOR SHALL MEET ALL CRITERIA OF SPEC M2AA517A13F17K11, SAE J200.

FIRST DIGIT OF DASH NUMBER IS MOUNT LENGTH IN EIGHTHS.
SECOND DIGIT IS STUD DIAMETER IN SIXTEENTHS.
THIRD DIGIT IS STUD LENGTH IN EIGHTHS.
E.G. 23-11551-644 IS A 3/4" LONG, WITH 1/2" LONG 1/4-20 STUDS.
BOTH STUDS HAVE COARSE THREADS AND ARE EQUAL IN LENGTH. STUDS MUST BE CONCENTRIC AND PARALLEL WITHIN .062".
DIAMETER OF BONDED FACEPLATE AT LEAST 75% OF MOUNT DIAMETER.

| CHG | JOB/RLSE NO | DATE | BY | REVISION |
|---|---|---|---|---|
| B | P7539F-01 | 04/10/91 | SJT | ADDED KARMAN NUM FOR -844 & MATL SPEC,DEL -854 |
| C | P7030H-01 | 11/04/92 | ERK | ADDED GRIFFITH RUBBER, REMOVED MINOR RUBBER |
| | | | | |
| | | | | |
| | | | | |

| ORIGINAL JOB NO. | TITLE | PART NO. |
|---|---|---|
| K0249 | ISOLATOR, URETHANE | 23-11782 |
| LAST CHG LTR | | SHEET 1 OF 1 |

SKETCH




PART NUMBERS

| A DIA | T THICKNESS | MANUFACTURER'S NUMBER | FREIGHTLINER PART NUMBER |
|---|---|---|---|
| .438 | .125 | BOD/4701-01-20125-1604-1PSA | 23-11782-000 |

ENGINEERING NOTES

1. Material: PORON 4701 Cellular Urethane with pressure sensitive adhesive back
2. Color: Black
3. Pressure sensitive adhesive one side only.

| COMPILED | KRH | DATE DRAWN | | UNIT OF MEASURE | MASTER NO. |
|---|---|---|---|---|---|
| APPROVED | KRH | | | EA | 04045 000D1 |

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

CHANGE INFORMATION | LTR | JOB NO. | BY | DATE

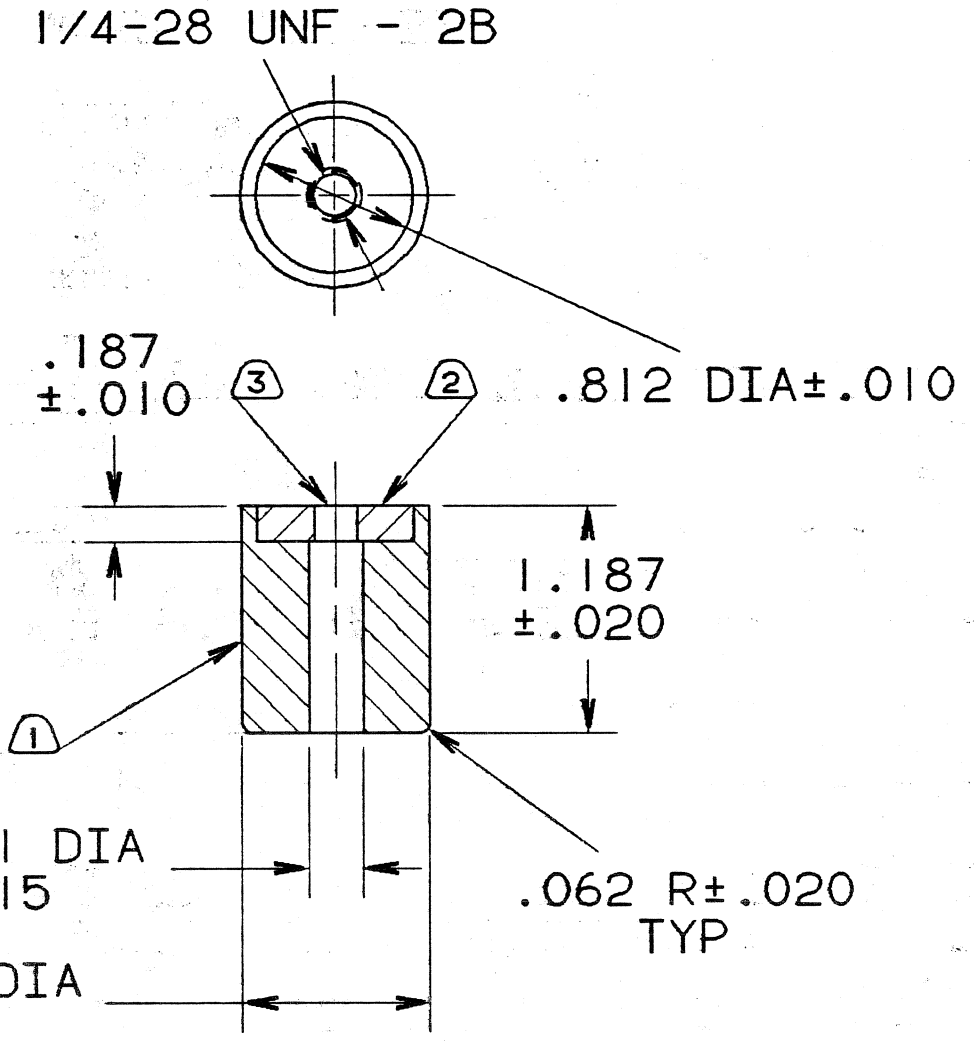
23-11809

| ORIGINAL SAR NO. | TITLE | PART NO. |
|---|---|---|
| 32553 | ISOLATOR RUBBER | 23-11809 |
| LAST CHG LTR: B | | SHEET 1 OF 1 |

| LTR | JOB NO. | BY | DATE | CHANGE INFORMATION |
|---|---|---|---|---|
| | | | | |

| LTR | JOB NO. | BY | DATE | CHANGE INFORMATION |
|---|---|---|---|---|
| A | 32553 | BT | 11-15-85 | REVISED NOTE 2 |
| B | 32553 | BT | 11-27-85 | ADD NOTE 3 & 4; REVISE NOTE 1 |

SKETCH




ENGINEERING NOTES:

(1) MATERIAL SAE J200 : M1 BA 607. (EPDM 60 DUROMETER)

(2) MATERIAL: 48-00833-081.

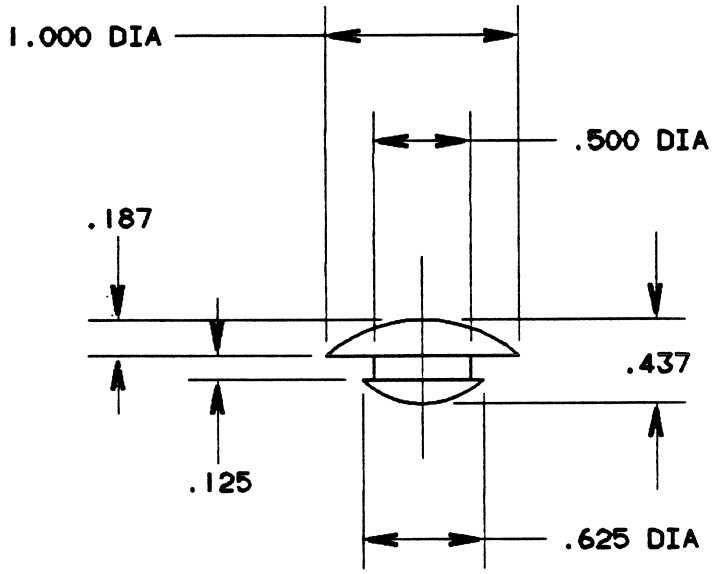
(3) CLEAN UP THREADS AFTER MOLDING.

(4) APPROVED SUPPLIERS:
GRIFFITH RUBBER MILLS

| COMPILED | BT | DATE DRAWN | CADAM ORIGINAL | MATERIAL | MASTER NUMBER | |
|---|---|---|---|---|---|---|
| APPROVED | CGB | 11-05-85 | | (1) (2) | 04045 | 00001 |

| | | | |
|---|---|---|---|
| DRAWN | RDH | TITLE | DRAWING NUMBER |
| APPRV | DHM | BUMPER, MOLDED | 23-11863 |
| DATE | 07-22-87 | | |
| CADAM ORIGINAL | | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET 1 OF 1 / CHG. LTR. A |
| UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES | | | UNIT OF MEASURE: IN |

SKETCH:




PART NUMBERS:

| | MANUFACTURERS NUMBER<br>AIR | FREIGHTLINER PART NUMBER |
|---|---|---|
| | 693-26012 | 23-11863-000 |

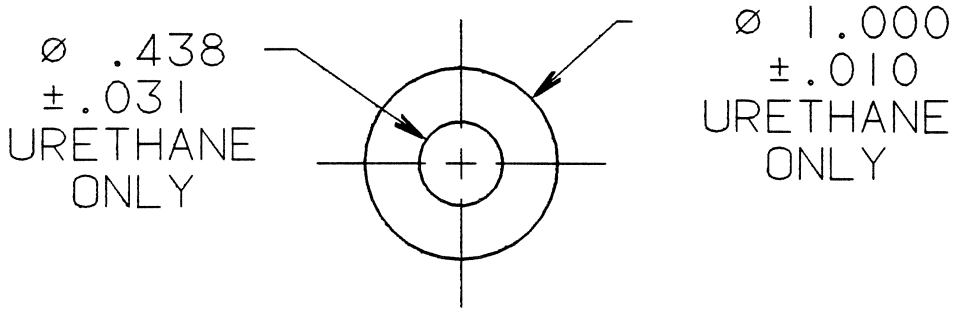
ENGINEERING NOTES:

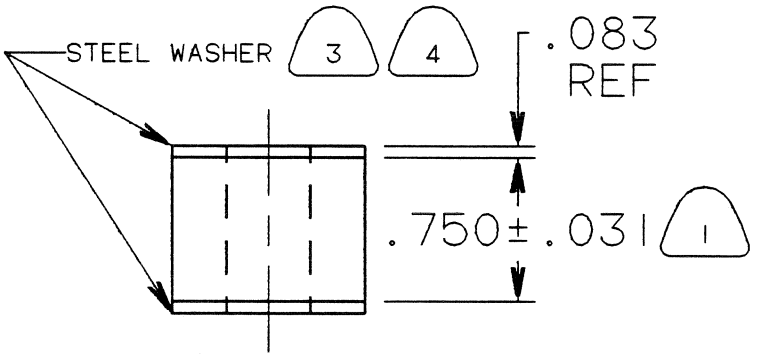
1. MATERIAL: STYRENE - BUTADIENE(SBR) 60 DUROMETER +5/-10.
2. APPROVED VENDORS: ESTCO ENTERPRISES, INC.

| CHG | JOB NO | DATE | BY | REVISION |
|---|---|---|---|---|
| - | PM0249 | 07-22-87 | RDH | ORIGINAL RELEASE |
| A | PM0249 | 10-12-87 | TTR | REVISED MATERIAL & MANUFACTURER'S NUMBER. |
| | | | | |
| | | | | |
| | | | | |

| DRAWN | BT | TITLE | DRAWING NUMBER |
|---|---|---|---|
| APPRV | RDF | ISOLATOR, BONDED URETHANE | 23-12104 |
| DATE | 02/05/92 | | |
| CADAM ORIGINAL | | FREIGHTLINER CORPORATION PORTLAND, OREGON | SHEET 1 OF 1 / CHG. LTR. - |

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES



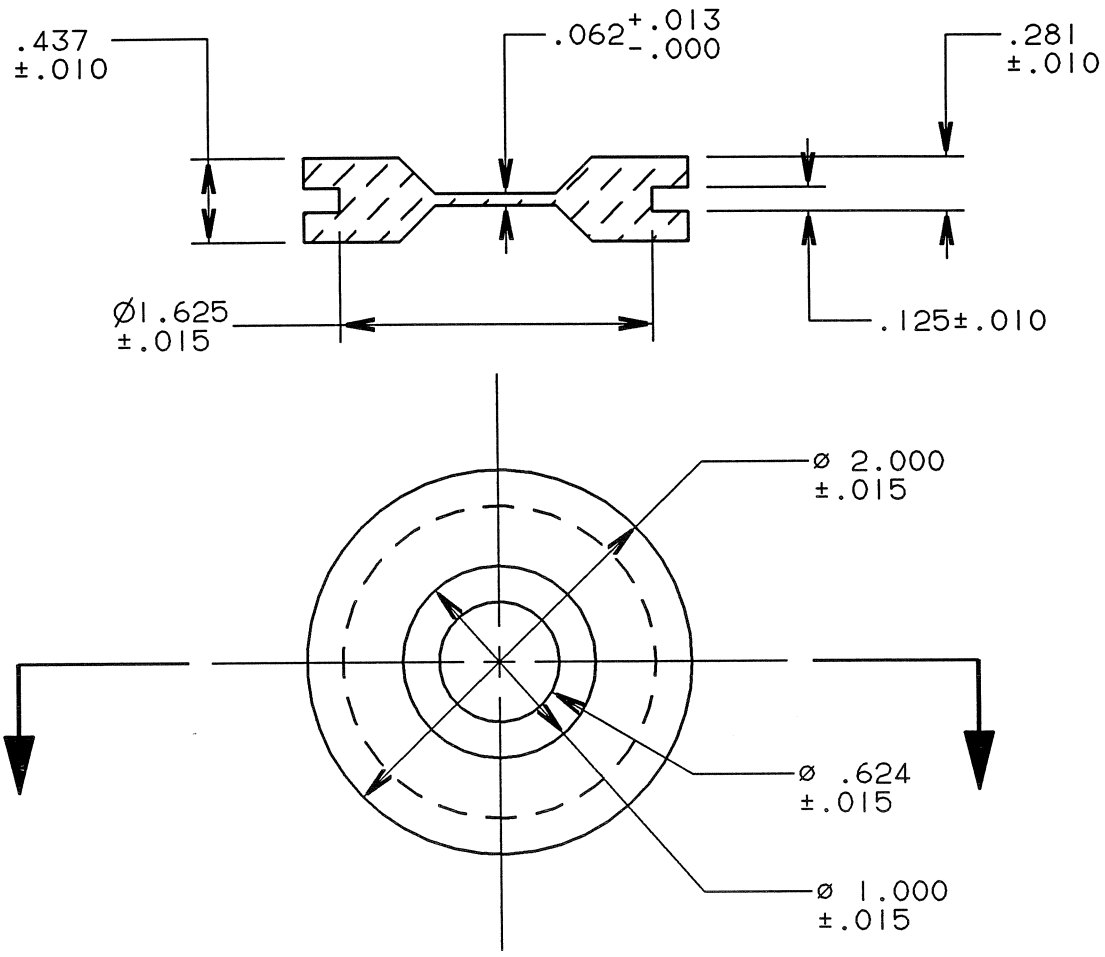

-000

SPECIFICATIONS:

1. ISOLATOR MATERIAL: ADIPRENE L-167 POLYURETHANE.
   DUROMETER : 95 SHORE A.
2. STEEL WASHERS TO BE BONDED TO URETHANE ISOLATOR
   PEEL STRENGTH: 225 PSI MIN
3. STEEL WASHERS: TYPE A, 3/8 NOMINAL PER ANSI B18.22.
   ZINC PLATED PER FREIGHTLINER SPEC 49-00005-403
4. WASHERS TO BE CONCENTRIC WITH ID OF URETHANE ±.015
5. SUGGESTED VENDOR: GRIFFITH POLYMERS

| CHG | JOB NO | DATE | BY | REVISION |
|---|---|---|---|---|
| - | PH0335-11 | 02/05/92 | RDF | ORIGINAL RELEASE |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| DRAWN | EMH | TITLE<br>GROMMET - BLIND<br>RUBBER, 80D | ITEM NUMBER<br>23-12151 |
|---|---|---|---|
| APPRV | A F | | |
| DATE | 05/20/93 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>1 OF 1 |

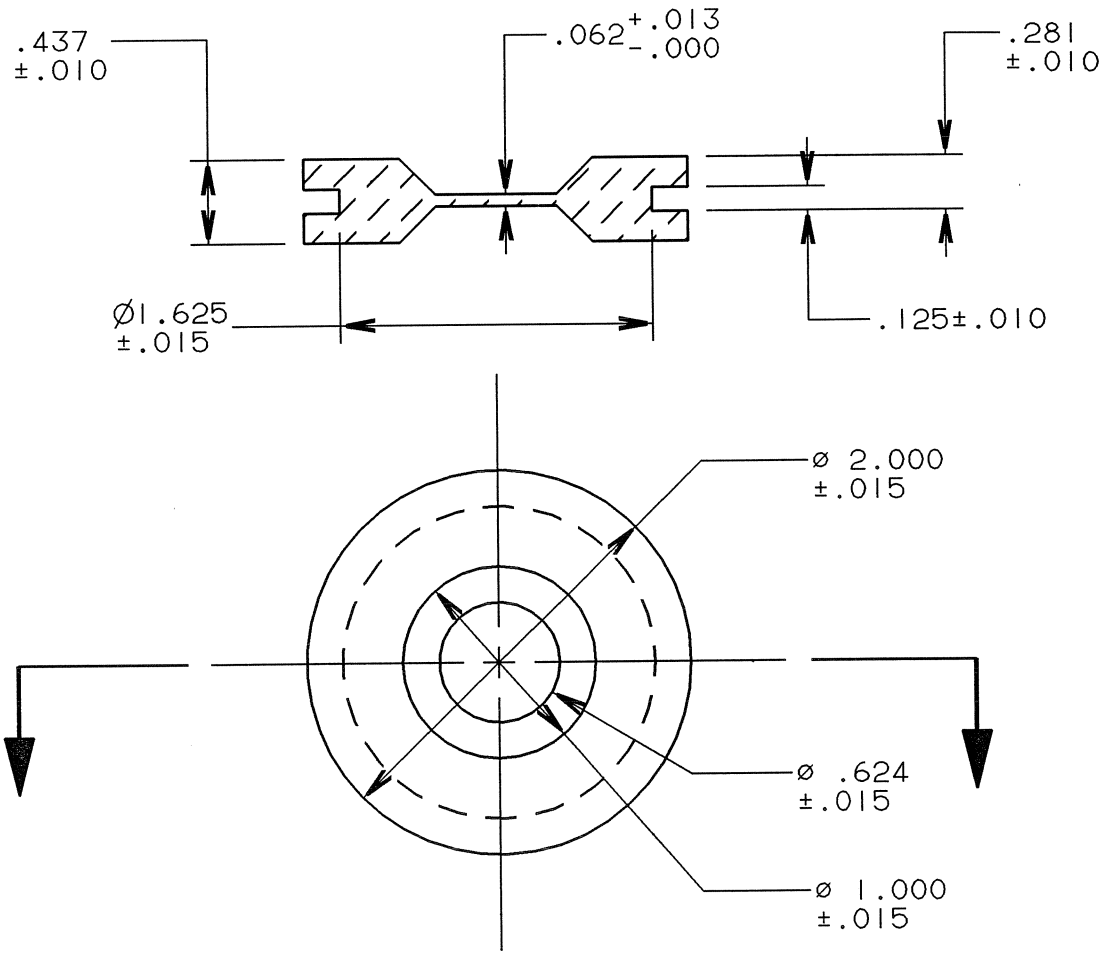



| SOURCE | FREIGHTLINER PART NUMBER |
|---|---|
| ESTCO | 23-12151-001 |

1. MATERIAL: ASTM D2000, M4BA811, A14, B13, C12, F17.
2. COLOR: BLACK

| CHG | JOB/RLSE NO | DATE | BY | REVISION |
|---|---|---|---|---|
| - | PL0393-11 | 05/20/93 | ERK | INITIAL RELEASE |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| DRAWN | EMH | TITLE | ITEM NUMBER |
|---|---|---|---|
| APPRV | A F | GROMMET - BLIND<br>RUBBER, 55D | 23-12151 |
| DATE | 05/20/93 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>1 OF 1 |



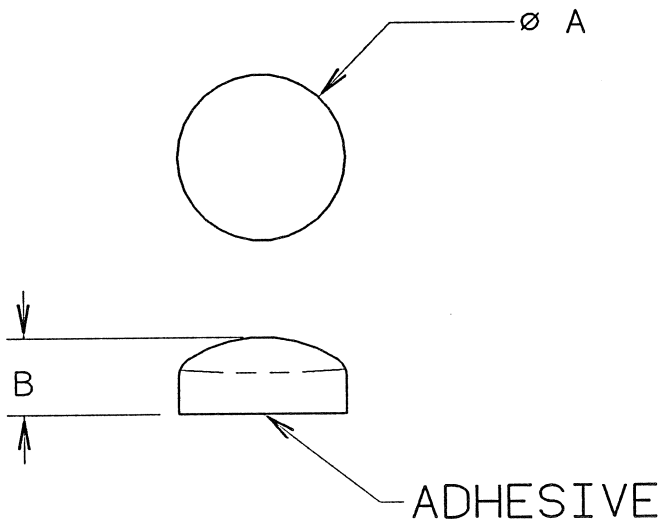

| SOURCE | FREIGHTLINER PART NUMBER |
|---|---|
| ESTCO | 23-12151-001 |

A

1. MATERIAL: ASTM D2000, M4BA511, A14, B13, C12, F17.
2. COLOR: BLACK

| CHG | JOB/RLSE NO | DATE | BY | REVISION |
|---|---|---|---|---|
| - | PL0393-11 | 05/20/93 | ERK | INITIAL RELEASE |
| A | PL0393-15 | 06/21/93 | ERK | DUROMETER CHANGED FROM 80 TO 55. |
| | | | | |
| | | | | |
| | | | | |

| DRAWN | ERK | TITLE<br>BUMPER<br>URETHANE | ITEM NUMBER<br>23-12266 |
|---|---|---|---|
| APPRV | CAJ | | |
| DATE | 07/28/95 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>1 OF 1 |



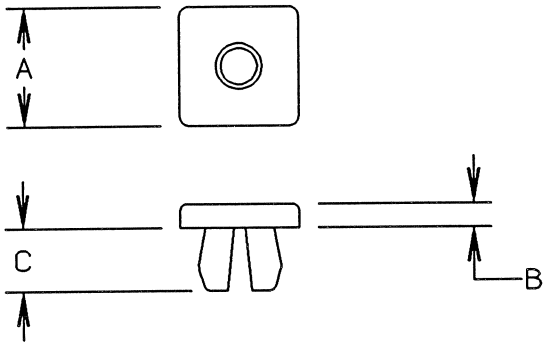

| DIAMETER (A) | DIM B | COLOR | VENDOR PART NUMBER | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|
| .437 | .200 | BLACK | AFJ 08-86607 | 23-12266-001 |
| .500 | .250 | GREY | AFJ 08-82950 | 23-12264-000 |

ENGINEERING NOTES:

1. MATERIAL: URETHANE
2. DIMENSIONS: ABOVE DIMENSIONS FOR REFERENCE ONLY.

| CHG | JOB/RLSE NO | DATE | BY | REVISION |
|---|---|---|---|---|
| - | P2A223-56 | 07/28/95 | ERK | INITIAL RELEASE |
| A | P2A411-43 | 08/23/95 | DAJ | ADDED 23-12264-000. MOVE COLOR FROM NOTE TO TABLE. |
| | | | | |
| | | | | |
| | | | | |

| DRAWN | ERK | TITLE<br>GROMMET<br>SQUARE, PLASTIC | ITEM NUMBER<br>23-12271 |
|---|---|---|---|
| APPRV | ERK | | |
| DATE | 08/10/95 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>1 OF 1 |




| SQ. HOLE SIZE | PANEL THICK. | SCREW SIZE | SQ HEAD SIZE (A) | HEAD HEIGHT (B) | PRONG LENGTH (C) | MFR NUMBER<br>ARDEN | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|
| .370-.375 | .062-.120 | 1/4 | .610-.640 | .080 | .281 | 60SGN01180 | 23-12271-001 |

B
A

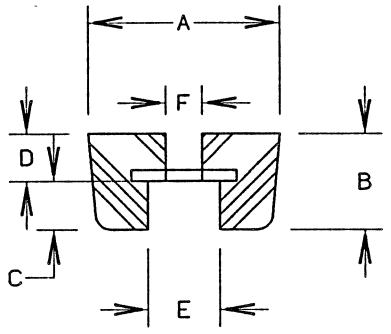
GENERAL INFORMATION:

1. MATERIAL: NYLON
2. COLOR: BLACK

A

| CHG | JOB/RLSE NO | DATE | BY | REVISION |
|---|---|---|---|---|
| - | P5418P-02 | 08/10/95 | ERK | INITIAL RELEASE |
| A | PA2042-59 | 09/25/95 | ERK | REVISED MFR NUMBER, ADDED NOTE #2 |
| B | PA2042-64 | 01/19/96 | ERK | REVISED -001 DIMENSIONS |
| | | | | |
| | | | | |

| DRAWN | ERK | TITLE<br>BUMPER<br>RUBBER, RECESSED | ITEM NUMBER<br>23-12286 |
|---|---|---|---|
| APPRV | PGV | | |
| DATE | 10/24/95 | FREIGHTLINER CORPORATION<br>PORTLAND, OREGON | SHEET<br>1 OF 1 |




| A | B | C | D | E | F | SUPPLIER<br>EST | FREIGHTLINER PART NUMBER |
|---|---|---|---|---|---|---|---|
| 25.4 | 12.7 | 6.4 | 6.4 | 9.5 | 4.8 | 2197 | 23-12286-001 |

1. MATERIAL: SBR 60 DUROMETER
2. WITH STEEL WASHER INSERT

| CHG | JOB/RLSE NO | DATE | BY | REVISION |
|---|---|---|---|---|
| - | P2A330-48 | 10/24/95 | ERK | INITIAL RELEASE |
| | | | | |
| | | | | |
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| | | | | |