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REV.  
A

MA2104

FEDERAL SUPPLY CLASS  
4720

## RATIONALE

MA2104A HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

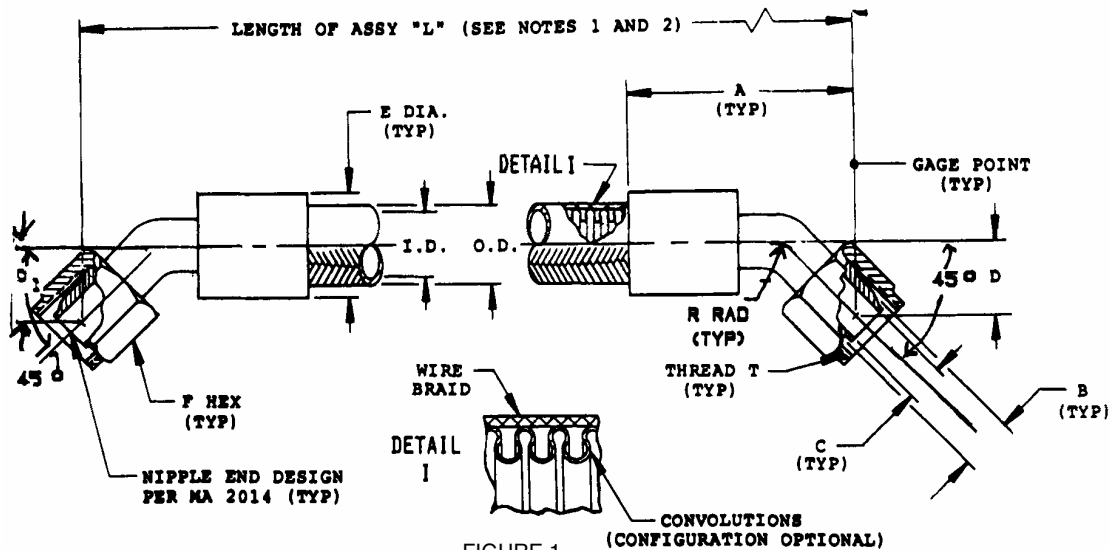


FIGURE 1

TABLE 1

| HOSE<br>ASSY<br>PART<br>NUMBER | HOSE<br>ASSY<br>SIZE<br>(DN) <sup>1</sup> | THREAD T<br>PER<br>MA1370<br>4H 5H | A<br>MAX<br>MM | B<br>GAGE<br>DIA<br>BASIC | C DIA<br>MIN<br>THRU<br>MM | D         |           | E DIA<br>MAX<br>ENVELOPE<br>MM | F<br>HEX<br>(REF)<br>MM | R<br>RAD<br>(REF)<br>MM |
|--------------------------------|-------------------------------------------|------------------------------------|----------------|---------------------------|----------------------------|-----------|-----------|--------------------------------|-------------------------|-------------------------|
|                                |                                           |                                    |                |                           |                            | MIN<br>MM | MAX<br>MM |                                |                         |                         |
| MA2104E                        | 06                                        | MJ12X1.25                          | 41.2           | 7.5                       | 3.35                       | 12.5      | 15.5      | 22.9                           | 14                      | 6.4                     |
| MA2104G                        | 08                                        | MJ14X1.5                           | 47.8           | 9.5                       | 6.50                       | 13.7      | 18.5      | 30.5                           | 17                      | 9.5                     |
| MA2104H                        | 12                                        | MJ18X1.5                           | 53.9           | 13.5                      | 8.76                       | 17.0      | 23.4      | 33.0                           | 22                      | 12.7                    |
| MA2104J                        | 16                                        | MJ22X1.5                           | 60.5           | 17.5                      | 10.92                      | 21.1      | 27.4      | 38.1                           | 27                      | 15.9                    |
| MA2104K                        | 20                                        | MJ27X1.5                           | 68.3           | 21.5                      | 14.4                       | 21.8      | 28.2      | 44.2                           | 32                      | 19.0                    |
| MA2104M                        | 25                                        | MJ33X1.5                           | 81.0           | 26.5                      | 19.3                       | 22.9      | 29.2      | 58.4                           | 41                      | 25.4                    |
| MA2104N                        | 32                                        | MJ42X2                             | 93.7           | 33.7                      | 23.4                       | 23.9      | 33.5      | 72.4                           | 46                      | 31.8                    |

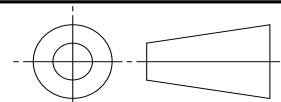
<sup>1</sup> DN = NOMINAL TUBE OUTSIDE DIAMETER

TABLE 2

| HOSE<br>SIZE<br>(DN)<br>NOM | HOSE            |                 | 21 °C (70 °F)                    |                              |                              | BALL<br>DIA MM<br>(SEE<br>NOTE 5) | CORRECTION<br>FACTOR MM<br>(SEE<br>NOTE 2) |
|-----------------------------|-----------------|-----------------|----------------------------------|------------------------------|------------------------------|-----------------------------------|--------------------------------------------|
|                             | ID<br>MIN<br>MM | OD<br>MAX<br>MM | OPERATING<br>PRESSURE<br>MAX KPA | PROOF<br>PRESSURE<br>MIN KPA | BURST<br>PRESSURE<br>MIN KPA |                                   |                                            |
| 06                          | 5.5             | 11.0            | 13 750                           | 20 650                       | 55 150                       | 3                                 | 2.8                                        |
| 08                          | 7.0             | 13.5            | 12 000                           | 18 000                       | 48 000                       | 6                                 | 2.8                                        |
| 12                          | 11.0            | 20.5            | 9 600                            | 14 500                       | 38 600                       | 8                                 | 2.8                                        |
| 16                          | 14.0            | 24.0            | 8 300                            | 13 400                       | 33 000                       | 10                                | 2.8                                        |
| 20                          | 17.5            | 29.0            | 7 200                            | 10 700                       | 29 000                       | 14                                | 2.8                                        |
| 25                          | 23.0            | 36.0            | 5 500                            | 8 300                        | 22 000                       | 18                                | 2.8                                        |
| 32                          | 30.0            | 44.0            | 3 800                            | 5 700                        | 15 200                       | 22                                | 2.8                                        |

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THIRD ANGLE PROJECTION



CUSTODIAN: G-3/G-3D (SEE NOTE 7)

PROCUREMENT SPECIFICATION: MA2100



## AEROSPACE STANDARD

HOSE ASSEMBLY, METAL, MEDIUM PRESSURE,  
FLARELESS, WELDED, 45° TO 45°  
FITTING ENDS, METRIC

MA2104  
SHEET 1 OF 3

REV.  
A

Documents

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TABLE 3

| HOSE ASSEMBLY LENGTH | AVAILABLE LENGTH INCREMENT | LENGTH TOLERANCE |
|----------------------|----------------------------|------------------|
| UNDER 457 MM         | (NOT LESS THAN) 3 MM       | ±3 MM            |
| 457 TO 914 MM        | (NOT LESS THAN) 7 MM       | ±7 MM            |
| 914 TO 1270 MM       | (NOT LESS THAN) 13 MM      | ±13 MM           |
| OVER 1270 MM         | (NOT LESS THAN) 26 MM      | ±1%              |

CONSTRUCTION AND PERFORMANCE: THESE HOSE ASSEMBLIES SHALL MEET THE CONSTRUCTION AND PERFORMANCE REQUIREMENTS OF MA2100 (ISO/DIS7314).

OPERATING CHARACTERISTICS: SEE PROCUREMENT SPECIFICATION.

MATERIALS AND FINISH: 321 OR OTHER CORROSION RESISTANT STEEL, PASSIVATED, IN ACCORDANCE WITH THE PROCUREMENT SPECIFICATION.

IDENTIFICATION: SEE MA2100, 3.7

PROCUREMENT SPECIFICATION: MA2100 (ISO/DIS7314)

NOTES:

1. LENGTH "L" IS MEASURED FROM GAGE POINT TO GAGE POINT. SEE TABLE 3 FOR AVAILABLE LENGTH INCREMENTS. IN THE EXAMPLE OF PART NUMBER BELOW, LENGTH "L" IS DEFINED BY A FOUR DIGIT DASH NUMBER DESCRIBING THE HOSE ASSEMBLY LENGTH IN MM.
2. TO CONVERT "GAGE POINT TO GAGE POINT" TO "END TO END" MEASUREMENT, ADD TO "L" THE APPROPRIATE TABLE 2 CORRECTION FACTOR FOR EACH END FITTING.
3. THE HOSE ASSEMBLIES ARE INTENDED FOR USE IN LOW AND MEDIUM PRESSURE PNEUMATIC SYSTEMS UP TO 425 °C WITH SHORT DURATION EXCURSIONS TO 650 °C. MAXIMUM RATED OPERATING PRESSURE IS DEPENDENT ON AMBIENT OPERATING TEMPERATURE AND CAN BE DETERMINED FROM MA2100, TABLE 2.
4. DIMENSIONS IN MM. DIMENSIONING AND TOLERANCING ARE PER ANSI Y14.5M AND UNIT SYMBOLS ARE PER ANSI Y10.19, SAE J916 AND ANSI Z210.1.
5. A TRUE CIRCULAR CROSS SECTION IS NOT REQUIRED THROUGH THE END FITTING. HOWEVER, A BALL OF THE SIZE DIAMETER LISTED IN TABLE 2 SHALL PASS THROUGH THE END FITTING AFTER THE END FITTING IS ATTACHED TO THE HOSE ASSEMBLY.
6. DO NOT USE UNASSIGNED SIZE CODES.
7. CHANGES TO THIS STANDARD DRAWING SHALL BE COORDINATED WITH SAE COMMITTEE E-25, GENERAL STANDARDS FOR AEROSPACE AND PROPULSION SYSTEMS.
8. THE FITTING ORIENTATION DASH NUMBER IS A THREE DIGIT NUMBER DEFINING THE RELATIVE POSITION OF THE END FITTINGS IN 1 DEG INCREMENTS (EXAMPLE: 090=90 DEG). FITTING ORIENTATION SHALL BE MEASURED COUNTER CLOCKWISE FROM THE NEAREST END FITTING, WHICH SHALL BE IN THE RELATIVE 000 POSITION (SEE FIGURE 2). WHEN END FITTINGS ARE POINTED IN THE SAME DIRECTION, THIS DASH NUMBER SHALL BE 000.
9. EXAMPLE OF PART NUMBER:

**MA2104 E 0360 - 270**

\_\_\_\_\_ = 270 DEG ANGULAR ORIENTATION (SEE NOTE 8 AND FIG. 2)

\_\_\_\_\_ = 360 mm LENGTH (SEE NOTE 2)

\_\_\_\_\_ = DN06 NOMINAL DIAMETER SIZE (SEE TABLE 1)

\_\_\_\_\_ = BASIC PART NUMBER FOR A METAL, WELDED, MEDIUM PRESSURE HOSE ASSEMBLY WITH 45 DEG ELBOW TO 45 DEG ELBOW FITTINGS

|                                                                                     |                                                                                                 |  |                               |                  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--|-------------------------------|------------------|
|  | <b>AEROSPACE STANDARD</b>                                                                       |  | <b>MA2104</b><br>SHEET 2 OF 2 | <b>REV.</b><br>A |
|                                                                                     | HOSE ASSEMBLY, METAL, MEDIUM PRESSURE,<br>FLARELESS, WELDED, 45° TO 45°<br>FITTING ENDS, METRIC |  |                               |                  |