

Submitted for recognition as an American National Standard

**Disposable Hydraulic Filter Elements—21 MPa Collapse Pressure,
Filtration Ratio = 75 at 10 μ m, 75 to 175 L/Min**

Foreword—The following document numbering convention was established to accommodate currently used military part numbers:

In the part number, "J2321/3" is used rather than "J2321-3" to more clearly indicate that the part number is defined in SAE J2321-3 and not in the SAE J2321 General Specification.

1. Scope—This specification sheet establishes requirements for high collapse pressure configuration filter elements of several configurations with a minimum filtration ratio of 75 for particles larger than 10 μ m when designed and tested in accordance with SAE J2321 and this specification sheet.

1.1 Part or Identifying Number—Filter elements can be identified and ordered using part identifying numbers as follows:

J2321/3–C10–F

J2321/3

Specification Sheet Number (SAE J2321-3) see the Foreword

–C10

Dash Number for Filter Element Configuration and Rating (see 1.1.1 and 1.1.2)

–F

O-ring Material (C size only)

EXAMPLE—J2321/3–C10–F is for a configuration C element with filtration ratio >75 for particles larger than 10 μ m(c) with a fluorocarbon O-ring.

1.1.1 FILTER ELEMENT SIZE AND CONFIGURATION—The following sizes and corresponding configurations are covered:

A = Figure 1 Configuration

C = Figure 2 Configuration

D = Figure 3 Configuration

1.1.2 FILTRATION RATIO—(Currently only the following rating is covered.)

10 = Minimum Filtration Ratio of 75 for particles greater than 10 μ m(c)

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- 1.1.3 **SEAL MATERIAL**—The O-ring to be supplied with the C Size element shall be of the size specified in 3.13 and with material as designated as follows:

No designation = Supplied without O-ring

F = Fluorocarbon rubber per SAE AS3209-132

N = Nitrile rubber per AMS-P-83461/1-132

X = Seal material as designated by purchaser

2. References

- 2.1 **Applicable Publications**—The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of the applicable publication, or its replacement shall apply.

- 2.1.1 **SAE PUBLICATIONS**—Available from Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096. Telephone: (724) 776-4970, Web address: <http://www.sae.org>.

SAE J2321—Ship Systems and Equipment—General Specification for Filter Elements—Hydraulic and Lube Oil Service

SAE AMS-P-83461/1—Packing, Preformed, Petroleum Hydraulic Fluid Resistant, Improved Performance at 275 Deg F (135 Deg C) Sizes and Tolerances

SAE AS3209—Packing, Preformed – AMS 7276, 'O' Ring

- 2.1.2 **ISO PUBLICATIONS**—Available from American National Standards Institute, 11 West 42nd Street, New York, NY 10028-0001. Web address: <http://www.ansi.org>.

ISO 12103-1—Road vehicles—Test dust for filter evaluation—Part 1: Arizona test dust

3. Requirements

- 3.1 **Design, Materials, and Testing**—Design, materials, and testing shall be in accordance with the general specification, SAE J2321, and the requirements of this specification sheet.

- 3.2 **Configuration and Dimensions**—The element configuration and dimensions shall be in accordance with the applicable Figure.

- 3.3 **Rated Flow**—Rated flow with a petroleum base fluid with a viscosity of 68 mm²/s (68 cSt) as indicated for each configuration element.

A = 175 L/min

C = 150 L/min

D = 75 L/min

- 3.4 **Dirt Holding Capacity**—The apparent dirt holding capacity when tested with ISO 12103-1 A3 Medium Test Dust shall be as indicated as follows, at rated flow to a differential pressure not exceeding 200 kPa (29 lb/in²) when tested with a fluid with a viscosity not less than 15 mm²/s (15 cSt).

A = 24 g

C = 18 g

D = 15 g

- 3.5 **Filtration Ratio**—The minimum filtration ratio for the multi-pass test shall not be less than 75 for particles 10 µm and larger with an ingress rate of 3 mg/L.

- 3.6 Terminal Pressure Drop for Determining Filtration Ratio**—The element shall be tested at rated flow with 15 mm²/s fluid at differential pressures to 1600 kPa (232 lb/in²).
- 3.7 Clean Element Pressure Drop**—The pressure differential across a clean element with rated flow of 68 mm²/s (68 cSt) fluid shall not exceed 200 kPa (29 lb/in²).
- 3.8 Collapse Pressure**—The element shall withstand a minimum collapse pressure of 21 MPa (3045 lb/in²).
- 3.9 Reverse Flow Pressure**—The element shall withstand a minimum differential pressure of 140 kPa (20 lb/in²) in the reverse flow direction.
- 3.10 Flow Fatigue Cycles**—The element shall be subjected to 45 000 flow fatigue cycles at a differential pressure of 700 kPa (100 lb/in²) followed by 5000 cycles at a differential pressure of 2.0 MPa (290 lb/in²).
- 3.11 Media Migration/Vibration Testing**—When subjected to media migration/vibration testing, media migration and built-in contamination shall not exceed 5.0 mg.
- 3.12 Magnetic permeability**—Unless specifically waived by the procuring activity, the relative magnetic permeability shall be less than 2.0.
- 4. General Notes**—This section contains information of a general or explanatory nature that may be helpful but is not a requirement of the specification.
- 4.1** These elements are intended to replace elements previously procured to MIL-F-24402/4 as indicated in Table 1. The MIL-F-24402/4 elements had a higher collapse pressure of 27.6 MPa (4000 lb/in²) with similar efficiency requirements.

TABLE 1—PART NUMBER—CROSS REFERENCE

MIL-F-24402/4 Part Number	J2321/3 Part Number
M24402/4 Size A	J2321/3–A10
M24402/4 Size C	J2321/3–C10
M24402/4 Size D	J2321/3–D10

TABLE 2—DIMENSIONS FOR J2321/3–A10 ELEMENT (FIGURE 1)

Dimension	Millimeters Minimum	Millimeters Maximum	Inches Minimum	Inches Maximum
Dia A	31.0	32.5	1.22	1.28
B	18.3	19.8	0.72	0.78
C	274.6	277.9	10.81	10.94
D	15.1	16.7	0.59	0.66
E	36.6 D x 11.9 Min Depth	39.6 D	1.44 D x 0.47 deep	1.56 D
Dia F	44.40	44.50	1.748 D	1.752
Dia G	—	65.5	—	2.58
Dia H	76.2 D	77.07	3.00	3.06
J	3 x 15 degrees Min Chamfer	—	1/8 x 15 degrees Min Chamfer	—

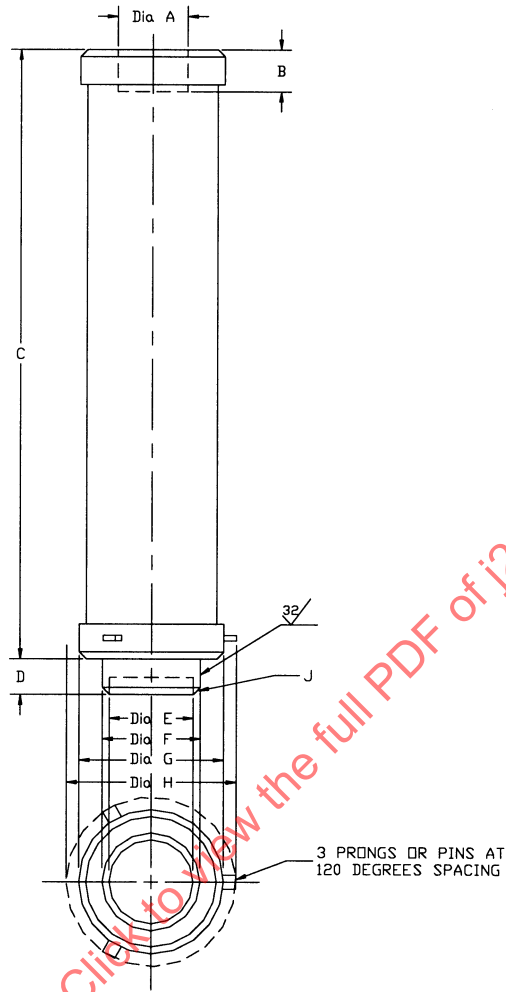


FIGURE 1—J2321/3-A10 FILTER ELEMENT

TABLE 3—DIMENSIONS FOR J2321/3-C10 ELEMENT (FIGURE 2)

Dimension	Millimeters Minimum	Millimeters Maximum	Inches Minimum	Inches Maximum
Dia A	50.8	52.4	2.000	2.062
Dia B	44.45	44.50	1.750	1.752
C	19.1	—	0.75	—
D	2.41	2.67	0.095	0.105
E	15.9	—	0.625	—
F	236.9	238.1	9.328	9.375
G	10.3	—	0.406	—
Dia H	55.30	55.55	2.177	2.187
Dia J	—	63.5	—	2.5
O-Ring Gland				
Width	3.58	3.84	0.141	0.151
Diameter	48.84	48.90	1.923	1.925
Surface Finish	1.6 μ m	1.6 μ m	63 μ in	63 μ in

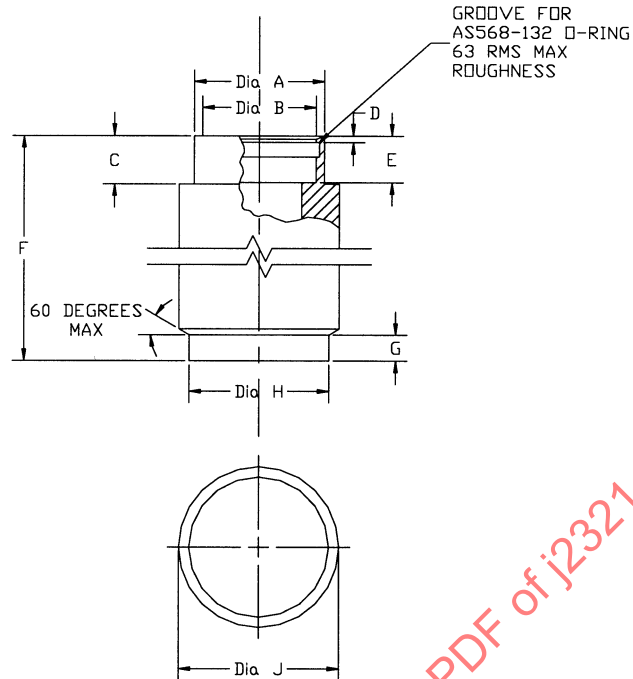


FIGURE 2—J2321/3-C10 FILTER ELEMENT

TABLE 4—DIMENSIONS FOR SAE J2321/3-D10 ELEMENT (FIGURE 3)

Dimension	Millimeters Minimum	Millimeters Maximum	Inches Minimum	Inches Maximum
Dia A	50.04	50.29	1.970	1.980
B	25.27 Min Dia for first 23.8 from end	—	0.995 Min Dia for first .937 from end	—
Dia C	—	46.86	—	1.845
Dia D	34.82	34.87	1.371	1.373
E	1.40	1.47	0.055	0.058
Dia F	29.34	—	1.155	—
Radius G	0.75	—	0.030	—
H	0.75 x 45 degrees Min Cham	—	.030 x 45 degrees Min Cham	—
J	19.3	—	0.760	—
Radius K	—	0.76	—	.030
L	8.38	8.64	0.330	0.340
M	276.5	278.1	10.885	10.949
N	—	48.0	—	1.89
P	—	45.2 Max for first 22.2 from end	—	1.780 Max for first 0.875 from end
R	0.75	1.02 Max	0.030	0.040
Radius S	0.25	0.38	0.010	0.015
Radius T	—	0.13	—	0.005
U	0.30 TIR	0.30 TIR	0.012 TIR	0.012 TIR
V	3.94	4.19	0.155	0.165
Finish	0.8 μ m	0.8 μ m	32 μ in	32 μ in
Finish	1.6 μ m	1.6 μ m	63 μ in	63 μ in