φ HYDRAULIC "O" RING—SAE J515 JUN89 — SAE Standard

Report of Tube, Pipe, Hose, and Lubrication Fittings Committee approved January 1956 and completely revised by the Fluid Conductors and Connectors Technical Committee June 1989.

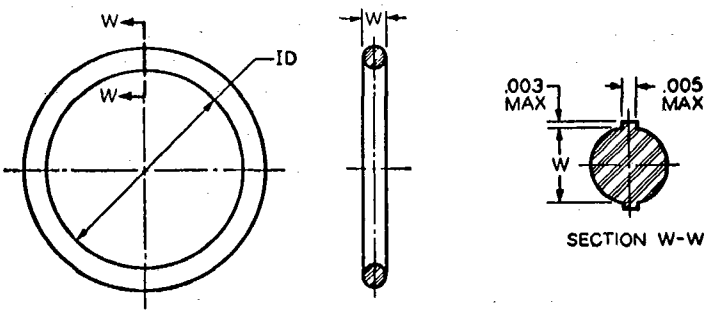

FIG. 1—O-RING SEAL

Type 1—Petroleum Base and Nonflammable Water Base Hydraulic Fluids

General Service:	High pressure applications of pneumatics, water base hydraulic fluids, lubricating oils, hydraulic oils and gasoline.
Temperature Range:	−30 to +250°F
Shore Hardness A:	90 ± 5
Elongation:	100% min
Tensile:	1500 lbf/in² (psi) min
Compound:	Nitrile (Buna N) to ASTM D 2000 or SAE J200 4CH915B14E015E035
Lubrication:	When assembling Type 1 O-rings with O-ring style fittings, the O-ring shall be coated with the fluid used or petrolatum before assembly to ease installation.

Type 2—Nonflammable Phosphate Ester Base Hydraulic Fluids

General Service:	High pressure application of nonflammable hydraulic fluids of the phosphate ester base type
Temperature Range:	−40 to 212°F
Shore Hardness A:	80 ± 5
Elongation:	150% min
Tensile:	1500 lbf/in² (psi) min
Compound:	EPDM to ASTM D 2000 or SAE J200 3BA815A14B13F17
Lubrication:	When assembling Type 2 O-rings with O-ring style fittings, lubricate the O-ring with the fluid used in the system. Do not use a petroleum-based lubricant.

TABLE A—DIMENSIONS FOR O-RINGS FOR USE WITH SAE J1926 PORT (Dimensions in Inches – Fig. 1)

Nominal Tubing O.D.	O-Ring Size Type 1	Type 2	I.D.	W Width
0.125	2-1	2-2	0.239 ± 0.005	0.064 ± 0.003
0.187	3-1	3-2	0.301 ± 0.005	0.064 ± 0.003
0.250	4-1	4-2	0.361 ± 0.005	0.072 ± 0.003
0.312	5-1	5-2	0.414 ± 0.005	0.072 ± 0.003
0.375	6-1	6-2	0.468 ± 0.005	0.078 ± 0.003
0.500	8-1	8-2	0.644 ± 0.005	0.087 ± 0.003
0.625	10-1	10-2	0.755 ± 0.005	0.097 ± 0.003
0.750	12-1	12-2	0.924 ± 0.006	0.116 ± 0.004
0.875	14-1	14-2	1.048 ± 0.006	0.116 ± 0.004
1.000	16-1	16-2	1.171 ± 0.006	0.116 ± 0.004
1.250	20-1	20-2	1.475 ± 0.010	0.118 ± 0.004
1.500	24-1	24-2	1.720 ± 0.010	0.118 ± 0.004
2.000	32-1	32-2	2.337 ± 0.010	0.118 ± 0.004

TABLE B—DIMENSIONS FOR FACE SEAL O-RINGS FOR USE WITH SAE J1453 FITTINGS (Dimensions in inches – Fig. 1)

Nominal Tubing O.D. (in)	SAE Dash Size	"O" Ring Size No. per SAE J120	ID	OD Ref.	W Width (±0.003)
0.250	-4	011	0.301 ± 0.005	0.441	0.070
0.375	-6	012	0.364 ± 0.005	0.504	0.070
0.500	-8	014	0.489 ± 0.005	0.629	0.070
0.625	-10	016	0.614 ± 0.005	0.754	0.070
0.750	-12	018	0.739 ± 0.005	0.879	0.070
1.000	-16	021	0.926 ± 0.006	1.066	0.070
1.250	-20	025	1.176 ± 0.006	1.316	0.070
1.500	-24	029	1.489 ± 0.010	1.629	0.070

For applications requiring resistance to special fluids, suppliers should be contacted for their compound recommendations.

FORMED TUBE ENDS FOR HOSE CONNECTIONS—SAE J962 MAY86 — SAE Standard

Report of Tube, Pipe, Hose and Lubrication Fittings Committee approved June 1966, reaffirmed by the Fluid Conductors and Connectors Technical Committee, May 1986.

GENERAL SPECIFICATIONS

Scope—This SAE Standard covers the dimensional and general specifications applicable to those formed tube end configurations suitable for hose connections made with or without hose clamps (see SAE J536) in relatively low pressure applications.

Dimensions and Tolerances—Dimensions in this standard are based on, and unless designated otherwise, are specified in inches with SI equivalents shown adjacent to respective inch dimensions or designated mm in the text and tables in accordance with SAE J916. Tabulated dimensions shall apply to finished ends, plated or otherwise processed. Dimensions specified apply to metal tubing having a nominal wall thickness of 0.028–0.035 in (0.71–0.89 mm). Forming of tube having a wall thickness outside this range may require adjustment of dimensions. Tolerance on all dimensions not otherwise specified shall be ±0.010 in (±0.25 mm).

Workmanship—Formed tube ends shall be free from burrs, cracks, sharp edges, irregularities in diameters and any other defects affecting serviceability.