



X1 Anti-Extrusion Rings for Aircraft

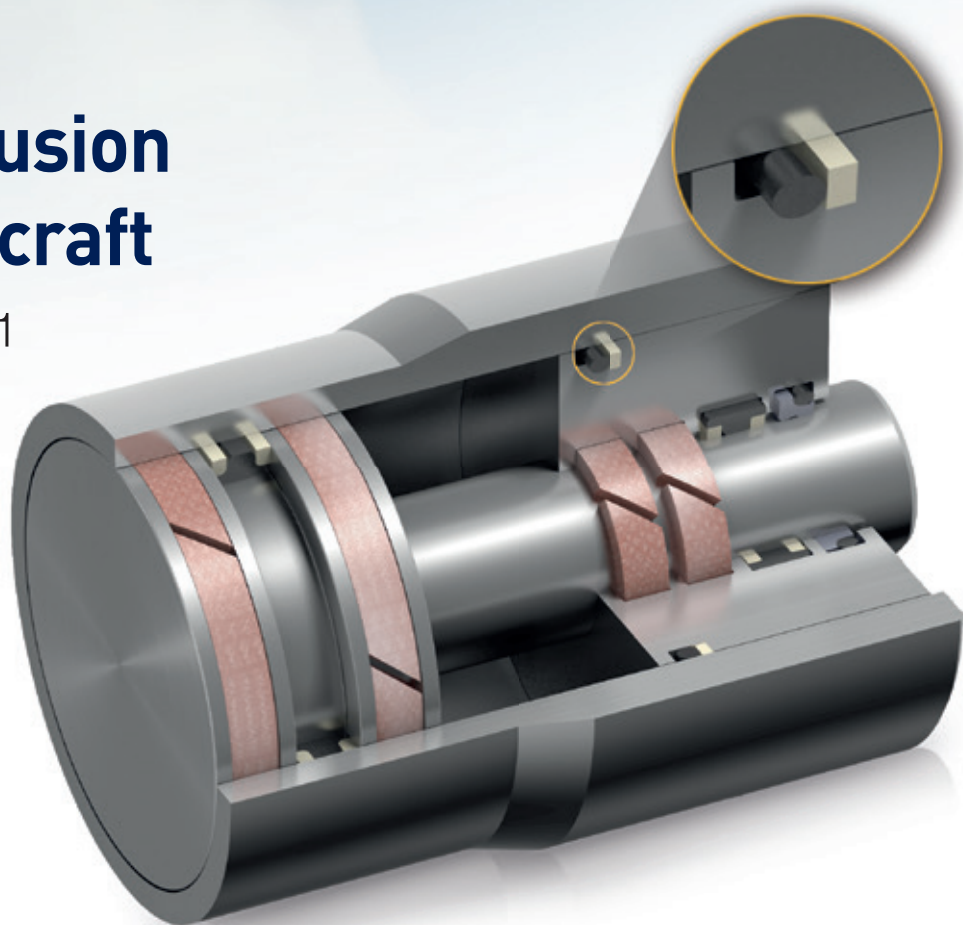
according to AS8791



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Anti-extrusion rings (back-up rings) are used in combination with O-rings for static and dynamic applications to prevent gap extrusion. Thus they support the sealing element. They are manufactured from extrusion-resistant materials such as Polon® (PTFE) and have a rectangular cross-section.



The sizes of X1 anti-extrusion rings conform to AS8791 which specifies the dimensional and material engineering requirements for PTFE back-up rings used in aerospace applications.

Slotted back-up rings can be easily installed in closed or undercut housings whereas closed rings (recommended use for maximum pressure loads) are intended preferably for installation in open grooves.

Anti-extrusion rings should be used whenever at least one of

the operating conditions listed below apply and the utilization of O-ring seals is intended:

- Pressure above 70 bar / 1015 PSI.
- Diametral clearance exceeding 0.25 mm at $p > 10$ bar / 145 PSI.
- High stroke frequency.
- High temperatures.
- Contaminated medium.
- Strong pressure pulsation or alternating pressures.

Product Features

- Insensitive to pressure peaks.
- High extrusion resistance.

- Excellent media resistance in case of suitable compound selection.
- Any desired nominal diameter available due to manufacturing technology.
- Installation into closed and undercut housings is possible.

Materials

The standard material is Polon 001 (virgin PTFE). For extreme operating conditions, modified PTFE compounds and other polymers are available.

Installation

In the case of a single-acting O-ring, the installation of only one anti-extrusion ring on the non-pressurized side is sufficient (Figure 1). If pressurization exists on both sides two back-up rings must be used (Figure 2).

The grooves should be cut as simple rectangular cross-sections (parallel sidewalls). If this is not possible for manufacturing reasons an angle deviation of 5° is permissible.

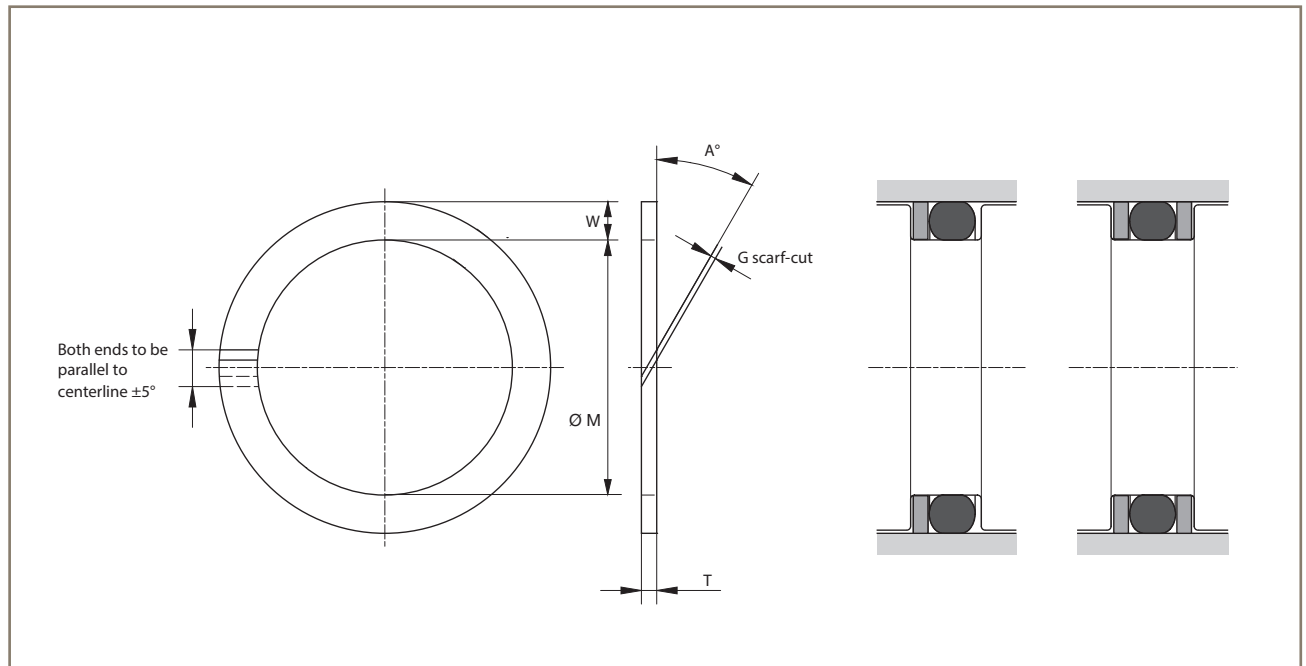


Figure 1: Single-acting O-ring with 1 back-up ring



Figure 2: Double-acting O-ring with 2 back-up rings

X1 Anti-Extrusion Rings (Polon®)



Ø M Gage ± .001 [Inch]	T ± .002 [Inch]	W ± .001 [Inch]	G Max [Inch]	A° Range	Dimension Ø I x Ø A x T [mm]	Parker no.	AS 8791 Reference
.076	.050	.053	.005	45-42	1.93 x 4.63 x 1.27	X10127PS001	M8791/1-004
.108	.050	.053	.005	36-33	2.74 x 5.44 x 1.27	X10227PS001	M8791/1-005
.123	.050	.053	.005	33-30	3.12 x 5.82 x 1.27	X10327PS001	M8791/1-006
.154	.050	.053	.005	27-24	3.91 x 6.61 x 1.27	X10027PS001	M8791/1-007
.185	.050	.053	.005	22-19	4.7 x 7.4 x 1.27	X10427PS001	M8791/1-008
.217	.050	.053	.005	22-19	5.51 x 8.21 x 1.27	X10527PS001	M8791/1-009
.248	.050	.053	.005	22-19	6.3 x 9 x 1.27	X10627PS001	M8791/1-010
.310	.050	.053	.005	22-19	7.87 x 10.57 x 1.27	X10727PS001	M8791/1-011
.373	.050	.053	.005	22-19	9.47 x 12.17 x 1.27	X10927PS001	M8791/1-012
.438	.050	.053	.005	22-19	11.13 x 13.83 x 1.27	X11127PS001	M8791/1-013
.501	.050	.053	.005	22-19	12.73 x 15.43 x 1.27	X11227PS001	M8791/1-014
.563	.050	.053	.005	22-19	14.3 x 17 x 1.27	X11427PS001	M8791/1-015
.626	.050	.053	.005	22-19	15.9 x 18.6 x 1.27	X11527PS001	M8791/1-016
.688	.050	.053	.005	22-19	17.48 x 20.18 x 1.27	X11727PS001	M8791/1-017
.751	.050	.053	.005	22-19	19.08 x 21.78 x 1.27	X11927PS001	M8791/1-018
.813	.050	.053	.005	22-19	20.65 x 23.35 x 1.27	X12027PS001	M8791/1-019
.881	.050	.053	.005	22-19	22.38 x 25.08 x 1.27	X12227PS001	M8791/1-020
.943	.050	.053	.005	22-19	23.95 x 26.65 x 1.27	X12327PS001	M8791/1-021

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1.006	.050	.053	.005	22-19	25.55 x 28.25 x 1.27	X12527PS001	M8791/1-022
1.068	.050	.053	.005	22-19	27.13 x 29.83 x 1.27	X12727PS001	M8791/1-023
1.131	.050	.053	.005	22-19	28.73 x 31.43 x 1.27	X12827PS001	M8791/1-024
1.193	.050	.053	.005	22-19	30.3 x 33 x 1.27	X13027PS001	M8791/1-025
1.256	.050	.053	.005	22-19	31.9 x 34.6 x 1.27	X13127PS001	M8791/1-026
1.318	.050	.053	.005	22-19	33.48 x 36.18 x 1.27	X13327PS001	M8791/1-027
1.381	.050	.053	.005	22-19	35.08 x 37.78 x 1.27	X13527PS001	M8791/1-028
.373	.054	.086	.006	22-19	9.47 x 13.84 x 1.37	X10937PS001	M8791/1-110
.435	.054	.086	.006	22-19	11.05 x 15.42 x 1.37	X11137PS001	M8791/1-111
.498	.054	.086	.006	22-19	12.65 x 17.02 x 1.37	X11237PS001	M8791/1-112
.560	.054	.086	.006	22-19	14.22 x 18.6 x 1.37	X11437PS001	M8791/1-113
.623	.054	.086	.006	22-19	15.82 x 20.19 x 1.37	X11537PS001	M8791/1-114
.685	.054	.086	.006	22-19	17.4 x 21.77 x 1.37	X11737PS001	M8791/1-115
.748	.054	.086	.006	22-19	19 x 23.37 x 1.37	X11937PS001	M8791/1-116
.815	.054	.086	.006	22-19	20.7 x 25.07 x 1.37	X12037PS001	M8791/1-117
.878	.054	.086	.006	22-19	22.3 x 26.67 x 1.37	X12237PS001	M8791/1-118
.940	.054	.086	.006	22-19	23.88 x 28.24 x 1.37	X12337PS001	M8791/1-119
1.003	.054	.086	.006	22-19	25.48 x 29.84 x 1.37	X12537PS001	M8791/1-120
1.065	.054	.086	.006	22-19	27.05x 31.42 x 1.37	X12737PS001	M8791/1-121
1.128	.054	.086	.006	22-19	28.65 x 33.02 x 1.37	X12837PS001	M8791/1-122
1.190	.054	.086	.006	22-19	30.23 x 34.59 x 1.37	X13037PS001	M8791/1-123
1.253	.054	.086	.006	22-19	31.83 x 36.19 x 1.37	X13137PS001	M8791/1-124
1.315	.054	.086	.006	22-19	33.40 x 37.77 x 1.37	X13337PS001	M8791/1-125
1.380	.054	.086	.006	22-19	35.05 x 39.42 x 1.37	X13537PS001	M8791/1-126
1.442	.054	.086	.006	22-19	36.63 x 41 x 1.37	X13637PS001	M8791/1-127
1.505	.054	.086	.006	22-19	38.23 x 42.6 x 1.37	X13837PS001	M8791/1-128
1.564	.054	.086	.006	22-19	39.73 x 44.09 x 1.37	X13937PS001	M8791/1-129
1.627	.054	.086	.006	22-19	41.33 x 45.69 x 1.37	X14137PS001	M8791/1-130
1.689	.054	.086	.006	22-19	42.9 x 47.27 x 1.37	X14237PS001	M8791/1-131
1.752	.054	.086	.006	22-19	44.5 x 48.87 x 1.37	X14437PS001	M8791/1-132
1.814	.054	.086	.006	22-19	46.08 x 50.44 x 1.37	X14637PS001	M8791/1-133
1.877	.054	.086	.006	22-19	47.68 x 52.04 x 1.37	X14737PS001	M8791/1-134

X1 Anti-Extrusion Rings (Polon®)

Ø M Gage ± .001 [Inch]	T ± .002 [Inch]	W ± .001 [Inch]	G Max [Inch]	A° Range	Dimension Ø I x Ø A x T [mm]	Parker no.	AS 8791 Reference
1.940	.054	.086	.006	22-19	49.28 x 53.64 x 1.37	X14937PS001	M8791/1-135
2.002	.054	.086	.006	22-19	50.85 x 55.22 x 1.37	X15037PS001	M8791/1-136
2.065	.054	.086	.006	22-19	52.45 x 56.82 x 1.37	X15237PS001	M8791/1-137
2.127	.054	.086	.006	22-19	54.03 x 58.39 x 1.37	X15437PS001	M8791/1-138
2.190	.054	.086	.006	22-19	55.63 x 59.99 x 1.37	X15737PS001	M8791/1-139
.748	.062	.119	.006	22-19	19 x 25.05 x 1.58	X11958PS001	M8791/1-210
.810	.062	.119	.006	22-19	20.57 x 26.62 x 1.58	X12058PS001	M8791/1-211
.873	.062	.119	.006	22-19	22.17 x 28.22 x 1.58	X12258PS001	M8791/1-212
.935	.062	.119	.006	22-19	23.75 x 29.8 x 1.58	X12358PS001	M8791/1-213
.998	.062	.119	.006	22-19	25.35 x 31.4 x 1.58	X12558PS001	M8791/1-214
1.060	.062	.119	.006	22-19	26.92 x 32.97 x 1.58	X12658PS001	M8791/1-215
1.123	.062	.119	.006	22-19	28.52 x 34.57 x 1.58	X12858PS001	M8791/1-216
1.185	.062	.119	.006	22-19	30.1 x 36.15 x 1.58	X13058PS001	M8791/1-217
1.248	.062	.119	.006	22-19	31.7 x 37.75 x 1.58	X13158PS001	M8791/1-218
1.310	.062	.119	.006	22-19	33.27 x 39.32 x 1.58	X13358PS001	M8791/1-219
1.373	.062	.119	.006	22-19	34.87 x 40.92 x 1.58	X13458PS001	M8791/1-220
1.435	.062	.119	.006	22-19	36.45 x 42.5 x 1.58	X13658PS001	M8791/1-221
1.498	.062	.119	.006	22-19	38.05 x 44.1 x 1.58	X13858PS001	M8791/1-222
1.625	.062	.119	.006	22-19	41.28 x 47.32 x 1.58	X14158PS001	M8791/1-223
1.750	.062	.119	.006	22-19	44.45 x 50.5 x 1.58	X14458PS001	M8791/1-224
1.875	.062	.119	.006	22-19	47.63 x 53.67 x 1.58	X14758PS001	M8791/1-225
2.000	.062	.119	.006	22-19	50.8 x 56.85 x 1.58	X15058PS001	M8791/1-226
2.125	.062	.119	.006	22-19	53.98 x 60.02 x 1.58	X15358PS001	M8791/1-227
2.250	.062	.119	.006	22-19	57.15 x 63.2 x 1.58	X15758PS001	M8791/1-228
2.375	.062	.119	.006	22-19	60.33 x 66.37 x 1.58	X16058PS001	M8791/1-229
2.500	.062	.119	.006	22-19	63.5 x 69.55 x 1.58	X16358PS001	M8791/1-230
1.498	.088	.183	.007	22-19	38.05 x 44.1 x 2.24	X13824PS001	M8791/1-325
1.623	.088	.183	.007	22-19	41.22 x 47.27 x 2.24	X14124PS001	M8791/1-326
1.748	.088	.183	.007	22-19	44.4 x 50.45 x 2.24	X14424PS001	M8791/1-327
1.873	.088	.183	.007	22-19	47.57 x 53.62 x 2.24	X14724PS001	M8791/1-328
1.998	.088	.183	.007	22-19	50.75 x 56.8 x 2.24	X15024PS001	M8791/1-329
2.123	.088	.183	.007	22-19	53.92 x 59.97 x 2.24	X15324PS001	M8791/1-330

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Ø M Gage ± .001 [Inch]	T ± .002 [Inch]	W ± .001 [Inch]	G Max [Inch]	A° Range	Dimension Ø I x Ø A x T [mm]	Parker no.	AS 8791 Reference
2.248	.088	.183	.007	22-19	57.1 x 63.15 x 2.24	X15724PS001	M8791/1-331
2.373	.088	.183	.007	22-19	60.27 x 66.32 x 2.24	X16024PS001	M8791/1-332
2.498	.088	.183	.007	22-19	63.45 x 69.5 x 2.24	X16324PS001	M8791/1-333
2.623	.088	.183	.007	22-19	66.62 x 72.67 x 2.24	X16624PS001	M8791/1-334
2.748	.088	.183	.007	22-19	69.8 x 75.85 x 2.24	X16924PS001	M8791/1-335
2.873	.088	.183	.007	22-19	72.97 x 79.02 x 2.24	X17224PS001	M8791/1-336
2.997	.088	.183	.007	22-19	76.12 x 82.17 x 2.24	X17624PS001	M8791/1-337
3.122	.088	.183	.007	22-19	79.3 x 85.35 x 2.24	X17924PS001	M8791/1-338
3.247	.088	.183	.007	22-19	82.47 x 88.52 x 2.24	X18224PS001	M8791/1-339
3.372	.088	.183	.007	22-19	85.65 x 91.7 x 2.24	X18524PS001	M8791/1-340
3.497	.088	.183	.007	22-19	88.82 x 94.87 x 2.24	X18824PS001	M8791/1-341
3.622	.088	.183	.007	22-19	92 x 98.05 x 2.24	X19224PS001	M8791/1-342
3.747	.088	.183	.007	22-19	95.17 x 101.22 x 2.24	X19524PS001	M8791/1-343
3.872	.088	.183	.007	22-19	98.35 x 104.4 x 2.24	X19824PS001	M8791/1-344
3.997	.088	.183	.007	22-19	101.52 x 107.57 x 2.24	X1A124PS001	M8791/1-345
4.122	.088	.183	.007	22-19	104.7 x 110.75 x 2.24	X1A424PS001	M8791/1-346
4.247	.088	.183	.007	22-19	107.87 x 113.92 x 2.24	X1A724PS001	M8791/1-347
4.372	.088	.183	.007	22-19	111.05 x 117.1 x 2.24	X1B124PS001	M8791/1-348
4.497	.088	.183	.007	22-19	114.22 x 120.27 x 2.24	X1B424PS001	M8791/1-349
4.497	.120	.236	.008	22-19	114.22 x 126.21 x 3.05	X1B405PS001	M8791/1-425
4.622	.120	.236	.008	22-19	117.4 x 129.39 x 3.05	X1B705PS001	M8791/1-426
4.747	.120	.236	.008	22-19	120.57 x 132.56 x 3.05	X1C005PS001	M8791/1-427
4.872	.120	.236	.008	22-19	123.75 x 135.74 x 3.05	X1C305PS001	M8791/1-428
4.997	.120	.236	.008	22-19	126.92 x 138.91 x 3.05	X1C605PS001	M8791/1-429
5.122	.120	.236	.008	22-19	130.1 x 142.09 x 3.05	X1D005PS001	M8791/1-430
5.247	.120	.236	.008	22-19	133.27 x 145.26 x 3.05	X1D305PS001	M8791/1-431
5.372	.120	.236	.008	22-19	136.45 x 148.44 x 3.05	X1D605PS001	M8791/1-432
5.497	.120	.236	.008	22-19	139.62 x 151.61 x 3.05	X1D905PS001	M8791/1-433
5.622	.120	.236	.008	22-19	142.8 x 154.79 x 3.05	X1E205PS001	M8791/1-434
5.747	.120	.236	.008	22-19	145.97 x 157.96 x 3.05	X1E505PS001	M8791/1-435
5.872	.120	.236	.008	22-19	149.15 x 161.14 x 3.05	X1E905PS001	M8791/1-436
5.997	.120	.236	.008	22-19	152.32 x 164.31 x 3.05	X1F205PS001	M8791/1-437

Further sizes on request.

**WARNING:**

These products can expose you to chemicals including carbon black (airborne and extracts), antimony trioxide, titanium dioxide, silica (crystalline), di(2-ethylhexyl)phthalate, ethylene thiourea, acrylonitrile, 1,3-butadiene, epichlorohydrin, toluenediisocyanate, tetrafluoroethylene, ethylbenzene, formaldehyde, furfuryl alcohol, glass fibers, methyl isobutyl ketone, nickel (metallic and compounds), lead and lead compounds which are known to the State of California to cause cancer; and 1,3-butadiene, epichlorohydrin, di(2-ethylhexyl)phthalate, di-isodecyl phthalate, ethylene thiourea, methyl isobutyl ketone, methanol, toluene, lead and lead compounds which are known to the State of California to cause birth defects and other reproductive harm. For more information go to www.P65Warnings.ca.gov.



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