Claron Polyseal

Double Acting Rotary Piston Seals
RPS Style

Design

Claron RPS Style Piston Seals are designed for slow rotating and spiralling movements in high pressure / heavy duty applications. Where space allows, the design incorporates grooves in the sealing face to reduce surface contact, increase radial load and retain lubrication.

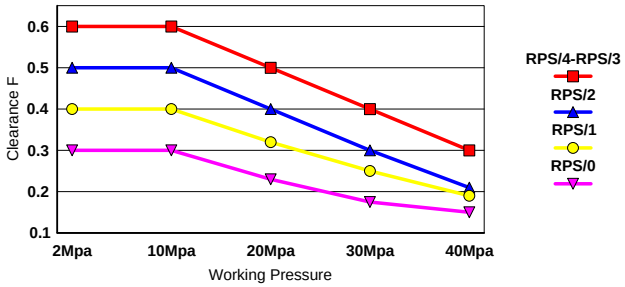
Materials

Standard materials are CF(Carbon Fibre) and CD(Carbon Graphite) with a Nitrile O-Ring energiser but both the sealing element and the energiser are available in a wide range of high performance materials, including VM (modified Virgin P.T.F.E.) and B (Bronze filled P.T.F.E.) to suit a variety of applications. The application parameters should be carefully considered prior to selection of suitable materials from the tables in Appendix 2. Consult Claron for further advice.

Operating Range

Temperature -54°C to +180°C dependant upon media and O-Ring material.
Pressure upto 300bar
Velocity upto 2m/sec
These range parameters are maximum conditional values. Optimum services conditions are affected by sealing media, working surface and extrusion gaps. Refer to Appendix 1 for futher informaion.

Diametrical Clearance F shown in the graph to the right is calculated as the maximum permissable extrusion gap allowing for movement due to side load, for various pressures and temperatures upto 80°C. The use of a suitably selected Claron bearing ring will effectivly reduce the Radial clearance to a value nearer to F/2 thus increasing the pressure capability of the seal. The maximum seal extrusion gap should be calculated allowing for all tolerances, movement and cylinder expansion.
For pressures >300bar, the seal extrusion gap should be reduced by utilising smaller tolerances. e.g H8 for cylinder bore, f8 for piston diameter.



Series Ref	Standard Range	Extended Range	d1 h9 Groove Dia	L1 +0.2 Groove Width	R1 Rad Max	C' Chfr Min	No Grooves In Sleeve	Min Dia for Closed Grooves CF	Min Dia for Closed Grooves CD
RPS/0	8-39.9	8 - 135	D1 - 4.9	2.20	0.3	2.0	0	15	25
RPS/1	40-79.9	14 - 250	D1 - 7.5	3.20	0.5	2.5	1	25	38
RPS/2	80-132.9	22 - 460	D1 - 11.0	4.20	0.8	3.5	1	32	50
RPS/3	133-329.9	40 - 500	D1 - 15.5	6.30	1.2	5.0	2	50	75
RPS/4	330-500	133 - 500	D1 - 21.0	8.10	1.5	6.5	3	133	133

How To Order

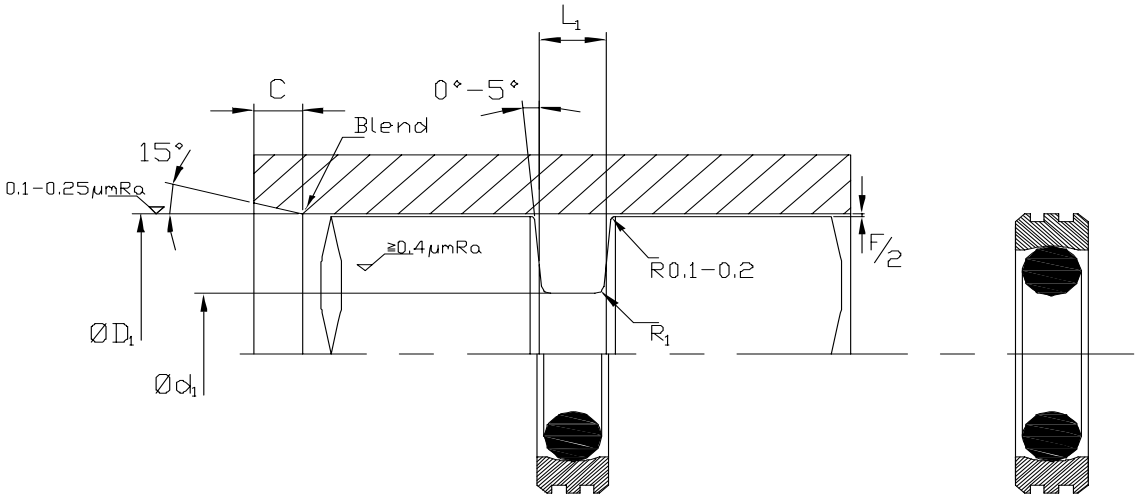
95mm Bore Material Carbon Fibre P.T.F.E./ Nitrile O-Ring RPS/2/0950/CF
Light Duty 95mm Bore RPS/1/0950/CF (3.2 Width Groove)
Heavy Duty 95mm Bore RPS/3/0950/CF (6.3 width Groove)
eg. For sizes in the extended range use the series number applicable

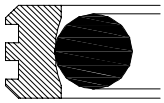
Style	Series	4Digit Size Code	PTFE Material Code
RPS/	2/	0950/	CF
RPS/	1/	0950/	CF
RPS/	3/	0950/	CF

For O-Ring Energiser materials other than Nitrile, use suffix shown in Material Table, Appendix 2
eg. Fluorocarbon Material (FKM) RPS/3/0950/CF/FKM

Housing

For housing dimensions, leading chamfers and tolerances refer to the table above and Appendix 4 for the value of tolerance symbols.





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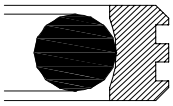

Nominal Dimensions & Machining Tolerances

Series Ref	Size Ref	ØD1 H9	Ød1 h9	L1 +0.2 / -0.0
RPS/0/	**0080**	**8.0**	3.1	2.2
	0100	**10.0**	5.1	2.2
	0120	**12.0**	7.1	2.2
	0140	14.0	9.1	2.2
	0150	15.0	10.1	2.2
	0160	**16.0**	11.1	2.2
	0180	18.0	13.1	2.2
	0200	**20.0**	15.1	2.2
	0220	22.0	17.1	2.2
	0250	**25.0**	20.1	2.2
	0254	25.4	20.5	2.2
	0280	28.0	23.1	2.2
	0300	30.0	25.1	2.2
	0320	**32.0**	27.1	2.2
	0350	35.0	30.1	2.2
RPS/1/	**0400**	**40.0**	**32.5**	**3.2**
	0450	45.0	37.5	3.2
	0500	**50.0**	42.5	3.2
	0508	50.8	43.3	3.2
	0550	55.0	47.5	3.2
	0600	60.0	52.5	3.2
	0630	**63.0**	55.5	3.2
	0650	65.0	57.5	3.2
	0700	70.0	62.5	3.2
	0750	75.0	67.5	3.2
	0762	76.2	68.7	3.2
RPS/2/	**0800**	**80.0**	**69.0**	**4.2**
	0850	85.0	74.0	4.2
	0900	90.0	79.0	4.2
	0950	95.0	84.0	4.2
	1000	**100.0**	**89.0**	**4.2**
	1016	101.6	90.6	4.2
	1050	105.0	94.0	4.2
	1100	110.0	99.0	4.2
	1143	114.3	103.3	4.2
	1150	115.0	104.0	4.2
	1200	120.0	109.0	4.2
	1250	**125.0**	114.0	4.2
	1270	127.0	116.0	4.2
	1300	130.0	119.0	4.2

Series Ref	Size Ref	ØD1 H9	Ød1 h9	L1 +0.2 / -0.0
RPS/3/	1350	135.0	119.5	6.3
	1400	140.0	124.5	6.3
	1450	145.0	129.5	6.3
	1500	150.0	134.5	6.3
	1524	152.4	136.9	6.3
	1600	**160.0**	**144.5**	**6.3**
	1700	170.0	154.5	6.3
	1778	177.8	162.3	6.3
	1800	180.0	164.5	6.3
	1900	190.0	174.5	6.3
	2000	**200.0**	**184.5**	**6.3**
	2032	203.2	187.7	6.3
	2100	210.0	194.5	6.3
	2200	220.0	204.5	6.3
	2300	230.0	214.5	6.3
	2400	240.0	224.5	6.3
	2500	**250.0**	234.5	6.3
	2540	254.0	238.5	6.3
	2600	260.0	244.5	6.3
	2800	280.0	264.5	6.3
	3000	300.0	284.5	6.3
	3048	304.8	289.3	6.3
	3200	**320.0**	304.5	6.3
RPS/4/	3300	330.0	309.0	8.1
	3500	350.0	329.0	8.1
	3600	360.0	339.0	8.1
	3800	380.0	359.0	8.1
	4000	**400.0**	379.0	8.1
	4200	420.0	399.0	8.1
	4500	450.0	429.0	8.1
	4800	480.0	459.0	8.1
	5000	**500.0**	479.0	8.1

All intermediate sizes, including imperial can be supplied within the extended range of sizes listed, see 'How To Order'

The Bore diameters in BOLD conform to the requirements of ISO3320
Housing sizes in BOLD conform to the requirements of ISO7425-1

Fitting

For the seal to function correctly, it is important that care is taken during fitment, For a detailed checklist, refer to Appendix 3.