



851

Design

The Claron style 851 is a heavy duty single acting seal for hydraulic or pneumatic piston applications. Designed as a high pressure - low friction seal for use singly, in tandem sealing arrangements or back to back for double acting applications without pressure lock.

Materials

Standard materials are Bronze filled P.T.F.E with a Nitrile O-Ring Energiser but both the outer sealing element and the energiser are available in a wide range of high performance materials to suit a variety of applications. The application parameters should be carefully considered prior to selecting suitable materials from the tables. Consult Claron for further advice.

Operating Range

Temp. -54°C to 200°C (Dependent upon O-Ring Material used See Appendix 2)

Pressure upto 800 bar

Velocity upto 15m/s

These range parameters are maximum conditional values

Optimum service conditions are affected by temperature, speed pressure, surface finish and extrusion gaps..

Refer to Appendix 1 section for further information.

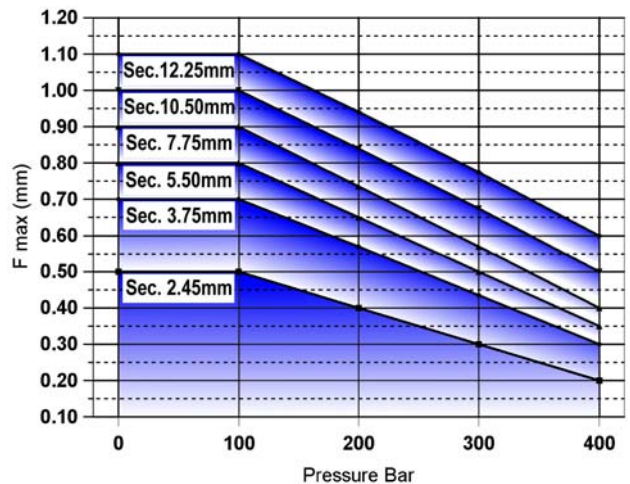
Operating Conditions

Maximum Working Pressure for "Standard" seal applications using specified tolerances.

Temp. range
-30°C to 80°C
400bar

Temp. range
80°C to 120°C
350 bar

Diametrical Clearance F shown in the graph to the right is calculated as the maximum permissible 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 effectively 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 > 400 bar, the seal extrusion gap should be reduced by utilising smaller tolerances. e.g H8 for Cylinder bore, f8 for piston diameter.



Range Of Installation Dimensions

The full range of diameters applicable to the "Standard", "Light" and "Heavy" Duty Sections shown in the table below

Housing		Applicable Bore dia.		
Section	Width	Standard Duty	Light Duty (/1)	Heavy Duty (/2)
2.50	2.2	10 to 16.9	17 to 26.9	
3.75	3.2	17 to 26.9	27 to 59.9	
5.50	4.2	27 to 59.9	60 to 199.9	17 to 26.9
7.75	6.3	60 to 199.9	200 to 255.9	27 to 59.9
10.50	8.1	200 to 255.9	256 to 280	60 to 199.9
12.25	8.1	256 to 580		200 to 255.9



How To Order

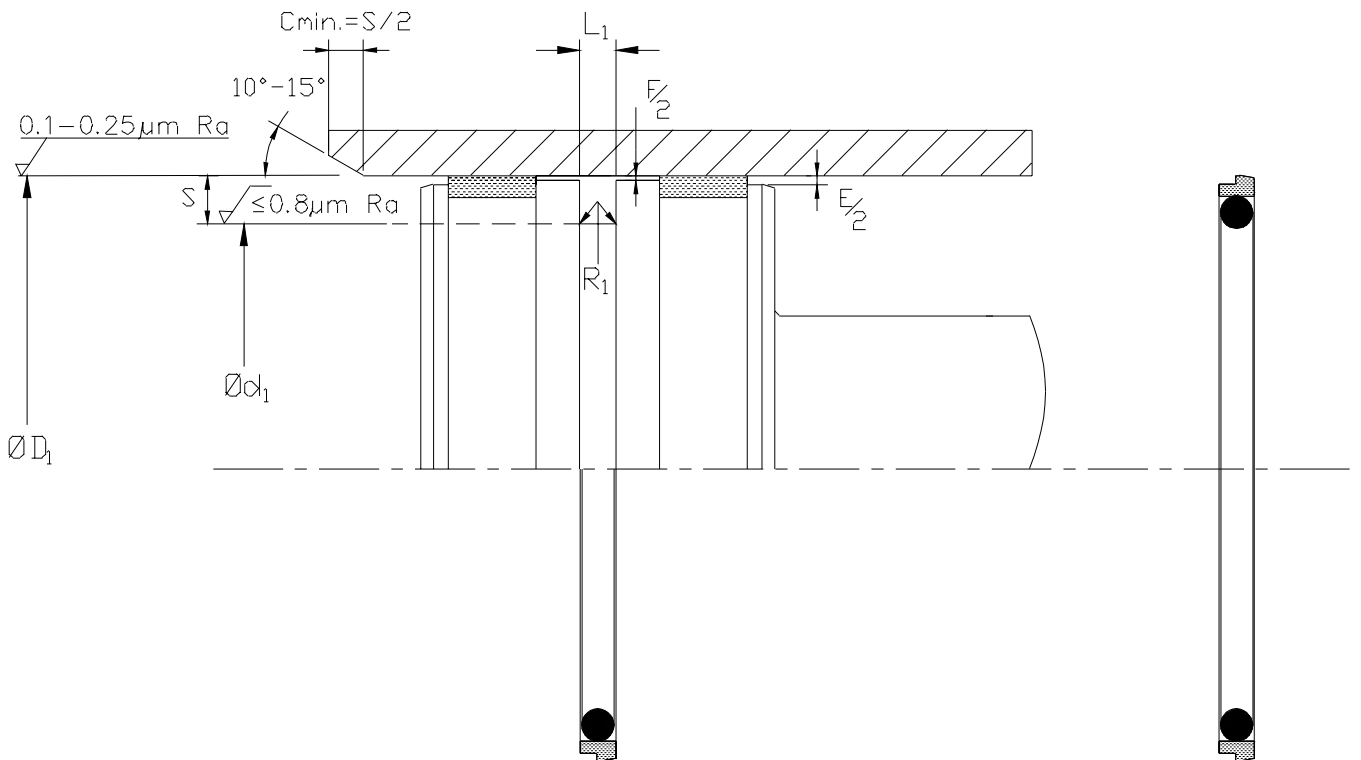
When ordering, prefix the size reference with the style required and use the suffix shown in the material application tables Appendix 2.

- e.g. 851 Standard section in Bronze filled material for 70mm diameter **851-0700/B**
- 851 Light duty section in Glass filled material for 70 mm diameter **851-0700/1G**
- 851 Heavy duty section in Carbon filled material for 70 mm diameter **851-0700/2C**

For O-Ring energiser materials other than Nitrile, use suffix shown in material table. Appendix 2
 e.g. Fluorocarbon material (FKM), **851-0700/B/FKM**

Housing

For surface finish and lead in chamfers refer to the illustration below. For Housing dimensions and tolerances refer to the table of recommended sizes and Appendix 4 for value of tolerance symbols



For F/2 values see note & table

For E/2 refer to Guide Tape page

Fitting

For the seal to function correctly it is important that care is taken during fitting.
 For details refer to Appendix 3



Nominal Dimensions & Machining Tolerances

Nominal Dimensions & Machining Tolerances

Claron	D ₁ H9	d ₁ h9	L ₁ +0.2 -0.0	S Nom Sec	R ₁ Max	F/2 Max
851-0100/B	10.00	5.00	2.20	2.50	0.30	0.20
851-0120/B	12.00	7.00	2.20	2.50	0.30	0.20
851-0140/B	14.00	9.00	2.20	2.50	0.30	0.20
851-0150/B	15.00	10.00	2.20	2.50	0.30	0.20
851-0160/B	16.00	11.00	2.20	2.50	0.30	0.20
851-0180/B	18.00	10.50	3.20	3.75	0.50	0.30
851-0200/B	20.00	12.50	3.20	3.75	0.50	0.30
851-0200/1B	20.00	15.00	2.20	2.50	0.30	0.20
851-0220/B	22.00	14.50	3.20	3.75	0.50	0.30
851-0250/B	25.00	17.50	3.20	3.75	0.50	0.30
851-0250/2B	25.00	14.00	4.20	5.50	0.80	0.35
851-0280/B	28.00	17.00	4.20	5.50	0.80	0.35
851-0300/B	30.00	19.00	4.20	5.50	0.80	0.35
851-0320/B	32.00	21.00	4.20	5.50	0.80	0.35
851-0320/1B	32.00	24.50	3.20	3.75	0.50	0.30
851-0350/B	35.00	24.00	4.20	5.50	0.80	0.35
851-0360/B	36.00	25.00	4.20	5.50	0.80	0.35
851-0381/B	38.10	27.10	4.20	5.50	0.80	0.35
851-0400/B	40.00	29.00	4.20	5.50	0.80	0.35
851-0400/1B	40.00	32.50	3.20	3.75	0.50	0.30
851-0420/B	42.00	31.00	4.20	5.50	0.80	0.35
851-0450/B	45.00	34.00	4.20	5.50	0.80	0.35
851-0480/B	48.00	37.00	4.20	5.50	0.80	0.35
851-0500/B	50.00	39.00	4.20	5.50	0.80	0.35
851-0500/2B	50.00	34.50	6.30	7.75	1.20	0.40
851-0520/B	52.00	41.00	4.20	5.50	0.80	0.35
851-0550/B	55.00	44.00	4.20	5.50	0.80	0.35
851-0600/B	60.00	44.50	6.30	7.75	1.20	0.40
851-0630/B	63.00	47.50	6.30	7.75	1.20	0.40
851-0630/1B	63.00	52.00	4.20	5.50	0.80	0.35
851-0650/B	65.00	49.50	6.30	7.75	1.20	0.40
851-0700/B	70.00	54.50	6.30	7.75	1.20	0.40
851-0700/1B	70.00	59.00	4.20	5.50	0.80	0.35
851-0750/B	75.00	59.50	6.30	7.75	1.20	0.40
851-0800/B	80.00	64.50	6.30	7.75	1.20	0.40
851-0800/1B	80.00	69.00	4.20	5.50	0.80	0.35
851-0850/B	85.00	69.50	6.30	7.75	1.20	0.40
851-0850/2B	85.00	64.00	8.10	10.50	1.50	0.50
851-0900/B	90.00	74.50	6.30	7.75	1.20	0.40
851-0900/2B	90.00	69.00	8.10	10.50	1.50	0.50
851-0950/B	95.00	79.50	6.30	7.75	1.20	0.40
851-0950/2B	95.00	74.00	8.10	10.50	1.50	0.50
851-1000/B	100.00	84.50	6.30	7.75	1.20	0.40
851-1000/1B	100.00	89.00	4.20	5.50	0.80	0.35
851-1000/2B	100.00	89.00	8.10	10.50	1.50	0.50
851-1050/B	105.00	89.50	6.30	7.75	1.20	0.40
851-1050/2B	105.00	84.00	8.10	10.50	1.50	0.50
851-1100/B	110.00	94.50	6.30	7.75	1.20	0.40
851-1100/2B	110.00	89.00	8.10	10.50	1.50	0.50
851-1150/B	115.00	99.50	6.30	7.75	1.20	0.40
851-1150/2B	115.00	94.00	8.10	10.50	1.50	0.50
851-1200/B	120.00	104.50	6.30	7.75	1.20	0.40
851-1200/2B	120.00	99.00	8.10	10.50	1.50	0.50
851-1250/B	125.00	109.50	6.30	7.75	1.20	0.40
851-1250/2B	125.00	104.00	8.10	10.50	1.50	0.50

Claron	D ₁ H9	d ₁ h9	L ₁ +0.2 -0.0	S Nom Sec	R ₁ Max	F/2 Max
851-1300/B	130.00	114.50	6.30	7.75	1.20	0.40
851-1300/2B	130.00	109.00	8.10	10.50	1.50	0.50
851-1350/B	135.00	119.50	6.30	7.75	1.20	0.40
851-1350/2B	135.00	114.00	8.10	10.50	1.50	0.50
851-1400/B	140.00	124.50	6.30	7.75	1.20	0.40
851-1400/2B	140.00	129.00	8.10	10.50	1.50	0.50
851-1500/B	150.00	134.50	6.30	7.75	1.20	0.40
851-1500/2B	150.00	139.00	8.10	10.50	1.50	0.50
851-1600/B	160.00	144.50	6.30	7.75	1.20	0.40
851-1600/2B	160.00	139.00	8.10	10.50	1.50	0.50
851-1700/B	170.00	154.50	6.30	7.75	1.20	0.40
851-1700/2B	170.00	149.00	8.10	10.50	1.50	0.50
851-1800/B	180.00	164.50	6.30	7.75	1.20	0.40
851-1800/2B	180.00	159.00	8.10	10.50	1.50	0.50
851-1900/B	190.00	174.50	6.30	7.75	1.20	0.40
851-1900/2B	190.00	169.00	8.10	10.50	1.50	0.50
851-2000/B	200.00	179.00	8.10	10.50	1.50	0.50
851-2000/1B	200.00	184.50	6.30	7.75	1.20	0.40
851-2100/B	210.00	189.00	8.10	10.50	1.50	0.50
851-2200/B	220.00	199.00	8.10	10.50	1.50	0.50
851-2300/B	230.00	209.00	8.10	10.50	1.50	0.50
851-2400/B	240.00	219.00	8.10	10.50	1.50	0.50
851-2500/B	250.00	229.00	8.10	10.50	1.50	0.50
851-2500/2B	250.00	225.50	8.10	12.25	1.50	0.60
851-2600/B	260.00	235.50	8.10	12.25	1.50	0.60
851-2800/B	280.00	255.50	8.10	12.25	1.50	0.60
851-3000/B	300.00	275.50	8.10	12.25	1.50	0.60
851-3200/B	320.00	295.50	8.10	12.25	1.50	0.60
851-3200/1B	320.00	299.00	8.10	10.50	1.50	0.50
851-3500/B	350.00	325.50	8.10	12.25	1.50	0.60
851-3600/B	360.00	335.50	8.10	12.25	1.50	0.60
851-3800/B	380.00	355.50	8.10	12.25	1.50	0.60
851-4000/B	400.00	375.50	8.10	12.25	1.50	0.60
851-4200/B	420.00	395.50	8.10	12.25	1.50	0.60
851-4500/B	450.00	425.50	8.10	12.25	1.50	0.60
851-4800/B	480.00	455.50	8.10	12.25	1.50	0.60
851-5000/B	500.00	475.50	8.10	12.25	1.50	0.60

Dimensions in bold type conform to ISO 7425-1 :1988

Intermediate sizes upto 580mm are available, incl. Imperial