

Design

Claron Composite Seals **Style CS6** are designed as high pressure, low friction **Single-acting** Rod seals for use in heavy duty hydraulic and pneumatic cylinders.

Claron Composite Seals **Style 741** and **Style 751** are designed as high pressure, low friction **Double-acting** Rod seals using the same housing designs as **Style CS6**. (These styles must be used in conjunction with single acting wiper seals, as Style 931). The inclusion of radial grooves on the P.T.F.E. element, from 20mm diameter onwards allows rapid response to bi-directional pressure changes.

Claron Composite Seals **Style 741** is specifically designed for minimum leakage and slow rotary applications. Housing sizes and tolerances are identical to **Style CS6**

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 shown in Appendix 2. Consult Claron for further advice.

Operating Range

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

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 for further information.

Operating Conditions

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

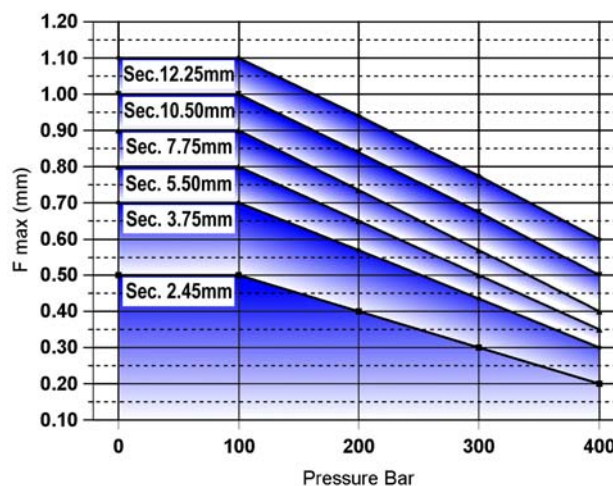
Temp. range
-30°C to 80°C
400bar

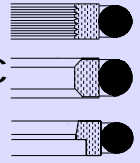
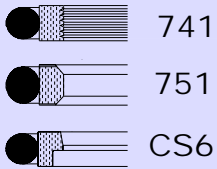
Temp. range
80°C to 120°C
350 bar

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 and movement due to side load. For pressures > 400 bar, the seal extrusion gap should be reduced by utilising smaller tolerances. e.g H8 for Housing bore and f8 for Rod diameter.





Range Of Installation Dimensions

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

Housing		Rod dia.		
Section	Width	Standard	Light (/1)	Heavy (/2)
2.5	2.2	3 to 7.9	8 to 18.9	
3.75	3.2	8 to 18.9	19 to 37.9	
5.5	4.2	19 to 37.9	38 to 199.9	8 to 18.9
7.75	6.3	38 to 199.9	200 to 255.9	19 to 37.9
10.5	8.1	200 to 255.9	256 to 550	38 to 199.9
12.25	8.1	256 to 550		200 to 255.9

**Split grooves should be utilised for Rod Diameters < 19mm
For closed grooves 19 to 38mm use Light Duty Section only**

How To Order

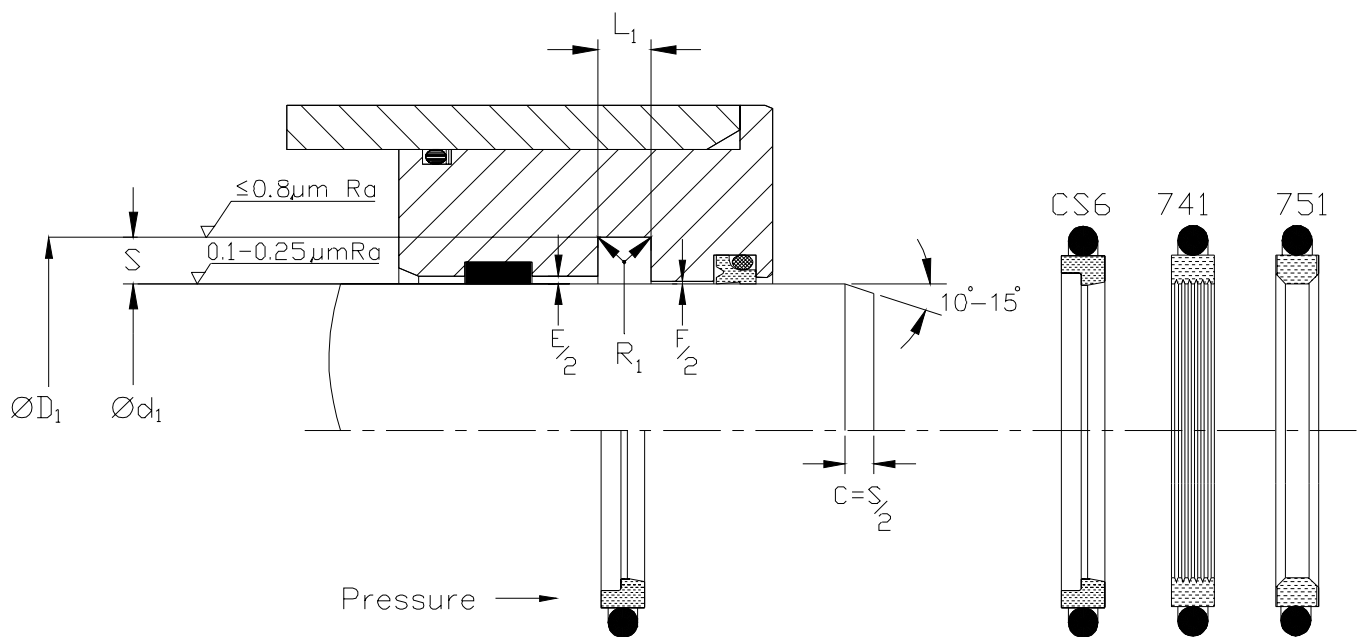
When ordering, prefix the size reference with the style required and use the suffix shown in the material application tables.

- e.g. CS6 Standard section in Bronze filled material for 70mm Rod **CS60700/B**
- CS6 Light duty section in Glass filled material for 70 mm Rod **CS60700/1G**
- 741 Heavy duty section in Carbon filled material for 70 mm Rod **741-0700/2C**

For O-Ring energiser materials other than Nitrile, use suffix shown in material table.
e.g. Fluorocarbon material (FKM), **CS60700/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.

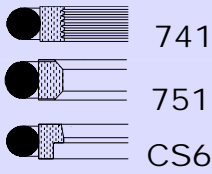


For F/2 values see note and tables

For E/2 values refer to P.T.F.E. Guide Tape

Fitting

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

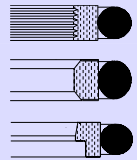


ClaronPolyseal®

Single & Double Acting Rod Seals

Metric

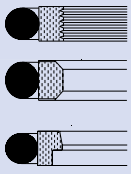
741 751 CS6



Nominal Dimensions & Machining Tolerances

Claron Part Number	d ₁ f8	D ₁ H9	L ₁ +0.2 -0.0	S SECT	R ₁ MAX	F/2 MAX
CS60030/B	3.00	8.00	2.20	2.50	0.30	0.20
CS60040/B	4.00	9.00	2.20	2.50	0.30	0.20
CS60050/B	5.00	10.00	2.20	2.50	0.30	0.20
CS60060/B	6.00	11.00	2.20	2.50	0.30	0.20
CS60063/B	6.30	11.30	2.20	2.50	0.30	0.20
CS60080/1B	8.00	13.00	2.20	2.50	0.30	0.20
CS60080/B	8.00	15.50	3.20	3.75	0.50	0.30
CS60100/1B	10.00	15.00	2.20	2.50	0.30	0.20
CS60100/B	10.00	17.50	3.20	3.75	0.50	0.30
CS60120/1B	12.00	17.00	2.20	2.50	0.30	0.20
CS60120/B	12.00	19.50	3.20	3.75	0.50	0.30
CS60140/1B	14.00	19.00	2.20	2.50	0.30	0.20
CS60140/B	14.00	21.50	3.20	3.75	0.50	0.30
CS60150/B	15.00	22.50	3.20	3.75	0.50	0.30
CS60160/B	16.00	23.50	3.20	3.75	0.50	0.30
CS60180/B	18.00	25.50	3.20	3.75	0.50	0.30
CS60200/1B	20.00	27.50	3.20	3.75	0.50	0.30
CS60200/B	20.00	31.00	4.20	5.50	0.80	0.35
CS60220/1B	22.00	29.50	3.20	3.75	0.50	0.30
CS60220/B	22.00	33.00	4.20	5.50	0.80	0.35
CS60250/1B	25.00	32.50	3.20	3.75	0.50	0.30
CS60250/B	25.00	36.00	4.20	5.50	0.80	0.35
CS60280/B	28.00	39.00	4.20	5.50	0.80	0.35
CS60300/B	30.00	41.00	4.20	5.50	0.80	0.35
CS60320/B	32.00	43.00	4.20	5.50	0.80	0.35
CS60350/B	35.00	46.00	4.20	5.50	0.80	0.35
CS60360/B	36.00	47.00	4.20	5.50	0.80	0.35
CS60400/1B	40.00	51.00	4.20	5.50	0.80	0.35
CS60400/B	40.00	55.50	6.30	7.75	1.20	0.40
CS60420/1B	42.00	53.00	4.20	5.50	0.80	0.35
CS60420/B	42.00	57.50	6.30	7.75	1.20	0.40
CS60450/1B	45.00	56.00	4.20	5.50	0.80	0.35
CS60450/B	45.00	60.50	6.30	7.75	1.20	0.40
CS60480/1B	48.00	59.00	4.20	5.50	0.80	0.35
CS60480/B	48.00	63.50	6.30	7.75	1.20	0.40
CS60500/1B	50.00	61.00	4.20	5.50	0.80	0.35
CS60500/B	50.00	65.50	6.30	7.75	1.20	0.40
CS60520/1B	52.00	63.00	4.20	5.50	0.80	0.35
CS60520/B	52.00	67.50	6.30	7.75	1.20	0.40
CS60550/1B	55.00	66.00	4.20	5.50	0.80	0.35
CS60550/B	55.00	70.50	6.30	7.75	1.20	0.40
CS60560/1B	56.00	67.00	4.20	5.50	0.80	0.35
CS60560/B	56.00	71.50	6.30	7.75	1.20	0.40

Items in **BOLD** are to suit ISO7425-2 Housings



741

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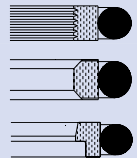
CS6

ClaronPolyseal®

Single & Double Acting Rod Seals

Metric

741 751 CS6



Nominal Dimensions & Machining Tolerances

Claron Part Number	d ₁ f8	D ₁ H9	L ₁ +0.2 -0.0	S SECT	R ₁ MAX	F/2 MAX
CS60600/1B	60.00	71.00	4.20	5.50	0.80	0.35
CS60600/B	60.00	75.50	6.30	7.75	1.20	0.40
CS60630/1B	63.00	74.00	4.20	5.50	0.80	0.35
CS60630/B	63.00	78.50	6.30	7.75	1.20	0.40
CS60650/B	65.00	80.50	6.30	7.75	1.20	0.40
CS60700/B	70.00	85.50	6.30	7.75	1.20	0.40
CS60750/B	75.00	90.50	6.30	7.75	1.20	0.40
CS60762/B	76.20	91.70	6.30	7.75	1.20	0.40
CS60800/B	80.00	95.50	6.30	7.75	1.20	0.40
CS60850/B	85.00	100.50	6.30	7.75	1.20	0.40
CS60900/B	90.00	105.50	6.30	7.75	1.20	0.40
CS60950/B	95.00	110.50	6.30	7.75	1.20	0.40
CS61000/B	100.00	115.50	6.30	7.75	1.20	0.40
	f8	H8	+0.2-0	SECT	MAX	MAX
CS61050/B	105.00	120.50	6.30	7.75	1.20	0.40
CS61100/B	110.00	125.50	6.30	7.75	1.20	0.40
CS61150/B	115.00	130.50	6.30	7.75	1.20	0.40
CS61200/B	120.00	135.50	6.30	7.75	1.20	0.40
CS61250/B	125.00	140.50	6.30	7.75	1.20	0.40
CS61300/B	130.00	145.50	6.30	7.75	1.20	0.40
CS61350/B	135.00	150.50	6.30	7.75	1.20	0.40
CS61400/B	140.00	155.50	6.30	7.75	1.20	0.40
CS61500/B	150.00	165.50	6.30	7.75	1.20	0.40
CS61600/B	160.00	175.00	6.30	7.75	1.20	0.40
CS61600/2B	160.00	181.00	8.10	10.50	1.50	0.50
CS61700/B	170.00	185.50	6.30	7.75	1.50	0.50
CS61800/B	180.00	195.50	6.30	7.75	1.20	0.40
CS61800/2B	180.00	201.00	8.10	10.50	1.20	0.40
CS61900/B	190.00	205.50	6.30	7.75	1.20	0.40
CS62000/B	200.00	221.00	8.10	10.50	1.50	0.50
CS62100/B	210.00	231.00	8.10	10.50	1.50	0.50
CS62200/B	220.00	241.00	8.10	10.50	1.50	0.50
CS62300/B	230.00	251.00	8.10	10.50	1.50	0.50
CS62400/B	240.00	261.00	8.10	10.50	1.50	0.50
CS62500/B	250.00	271.00	8.10	10.50	1.50	0.50
CS62800/B	280.00	304.50	8.10	12.25	1.50	0.60
CS63000/B	300.00	324.50	8.10	12.25	1.50	0.60
CS63200/B	320.00	344.50	8.10	12.25	1.50	0.60
CS63500/B	350.00	374.50	8.10	12.25	1.50	0.60
CS63600/B	360.00	384.50	8.10	12.25	1.50	0.60
CS64000/B	400.00	424.50	8.10	12.25	1.50	0.60
CS64200/B	420.00	444.50	8.10	12.25	1.50	0.60
CS64500/B	450.00	474.50	8.10	12.25	1.50	0.60
CS64800/B	480.00	504.50	8.10	12.25	1.50	0.60
CS65000/B	500.00	524.50	8.10	12.25	1.50	0.60

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