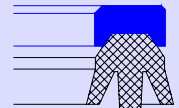
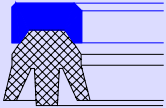


# Double Acting Piston Seal Metric SFD



## Design

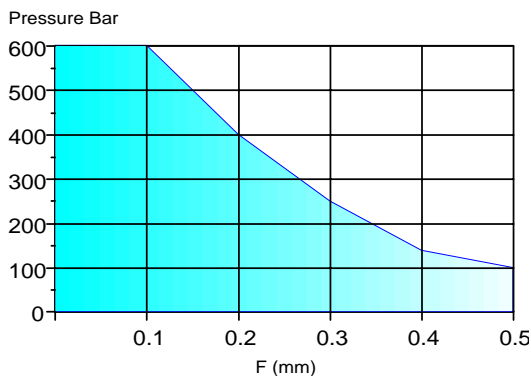
Claron Style SFD is a single acting piston seal which may also be arranged back to back in pairs to form a double acting piston assembly. The sealing element is manufactured from fabric reinforced Nitrile Rubber with either an Acetal or fabric reinforced Header ring. The seal assembly forms a highly robust unit resistant to shock loads and high pressures typically found in mobile plant equipment.

## Operating Conditions

Maximum Pressure	
Max Speed	Temp. Range
m/s	-30°C to 100°C
<b>0.80</b>	400 Bar
<b>0.15</b>	600 Bar

These range parameters are Maximum simultaneous conditions. Optimum service conditions are affected by temperature, speed, pressure, surface finish and extrusion gaps. Refer to appendix 1 for further information.

### Maximum Diametral Clearance F



Continuous operating temperature for various fluids

NBR Rubber		
DIN	Hydraulic Fluid Description	°C
H	Mineral oil without additives	100
H-L	Mineral Fluid with anti corrosion and anti ageing additives	100
H-LP	Mineral oil as HL plus additives reducing wear, raising load	100
H-LPD	Mineral oil as H-LP but with detergents and dispersants	100
H-V	Mineral oil as H-LP plus improved viscosity temp.	100
HFA E	Emulsions of mineral oil in water. Water content 80-95%	55
HFA S	Synthetic oil in water. Water content 80-95%	55
HFB	Emulsions of water in mineral oil. Water content 40%	60
HFC	Aqueous polymer solutions. Water content 35%	60
HFD R	Phosphoric acid ester based	NS
HFD S	Chlorinated hydrocarbon based	NS
HFD T	Mixtures of HFD R and HFD S	NS
HEPG	Polyglycol based	NS
HETG	Vegetable Oil based	60
HEES	Fully synthetic ester based	NS

**Note:** Clearance gap F is the maximum permissible. i.e. gap completely on one side, in the temperature range of -30°C to 100°C. The use of a suitably selected Claron bearing ring will effectively reduce the clearance gap F max. to a value closer to F/2 thus increasing the pressure capability of the seal.

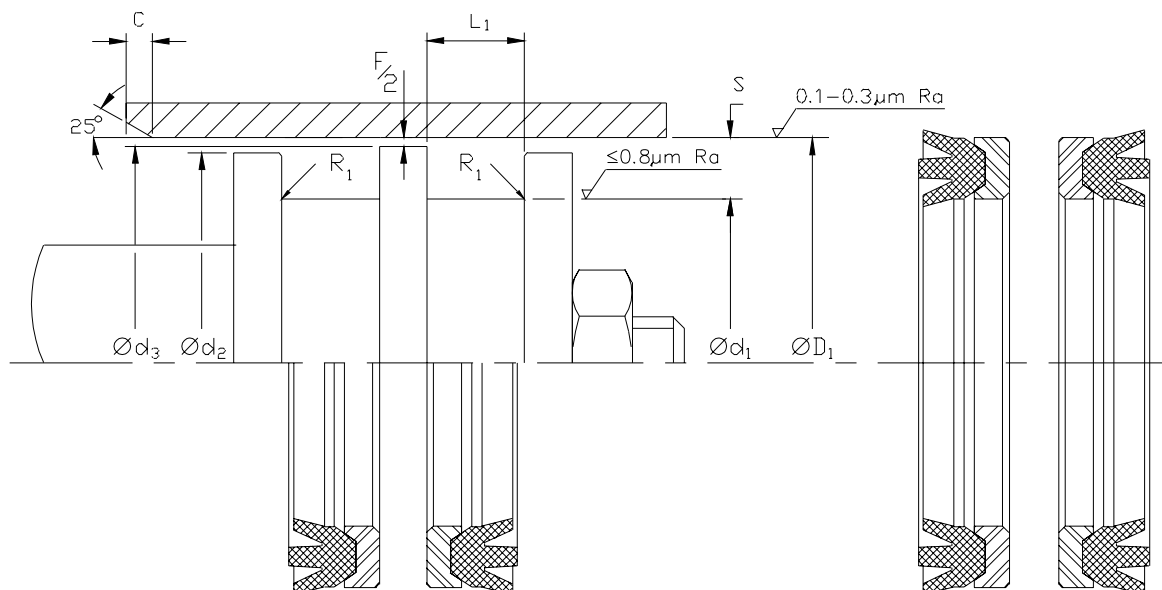
## Housing

For surface finish and recommended lead in chamfers refer to the illustration below. For housing dimensions and machining tolerances refer to the catalogue page of selected seal. Refer to Appendix 4 for value of tolerance symbols.

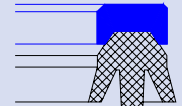
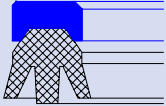
## Fitting

Style SFD is designed to fit back to back on a split piston. For the seal to function correctly, it is important that care be taken in fitting the seal within its housing.

For a detailed checklist, refer to Appendix 3.



SFD



Nominal Dimensions & Machining Tolerances

Claron Part Number	H9 ØD <sub>1</sub>	h11 Ød <sub>1</sub>	+0.0 -0.3 Ød <sub>2</sub>	e8 Ød <sub>3</sub>	+0.3 -0.0 L <sub>1</sub>	Nominal S	Minimum C	Maximum R <sub>1</sub>
SFD 157098	40.00	25.00	39.00	40.00	9.50	7.50	4.00	0.80
<b>SFD 196137</b>	<b>50.00</b>	<b>35.00</b>	<b>49.00</b>	<b>50.00</b>	<b>9.50</b>	<b>7.50</b>	<b>4.00</b>	<b>0.80</b>
<b>SFD 248188</b>	<b>63.00</b>	<b>48.00</b>	<b>62.00</b>	<b>63.00</b>	<b>9.50</b>	<b>7.50</b>	<b>4.00</b>	<b>0.80</b>
SFD 275196	70.00	50.00	68.50	70.00	12.50	10.00	5.00	0.80
<b>SFD 314236</b>	<b>80.00</b>	<b>60.00</b>	<b>78.50</b>	<b>80.00</b>	<b>12.50</b>	<b>10.00</b>	<b>5.00</b>	<b>0.80</b>
<b>SFD 314236-FH</b>	<b>80.00</b>	<b>60.00</b>	<b>78.50</b>	<b>80.00</b>	<b>12.50</b>	<b>10.00</b>	<b>5.00</b>	<b>0.80</b>
<b>SFD 354275</b>	<b>90.00</b>	<b>70.00</b>	<b>88.50</b>	<b>90.00</b>	<b>12.50</b>	<b>10.00</b>	<b>5.00</b>	<b>0.80</b>
<b>SFD 393314</b>	<b>100.00</b>	<b>80.00</b>	<b>98.50</b>	<b>100.00</b>	<b>12.50</b>	<b>10.00</b>	<b>5.00</b>	<b>0.80</b>
<b>SFD 393314-FH</b>	<b>100.00</b>	<b>80.00</b>	<b>98.50</b>	<b>100.00</b>	<b>12.50</b>	<b>10.00</b>	<b>5.00</b>	<b>0.80</b>
SFD 413334	105.00	85.00	103.50	105.00	12.50	10.00	5.00	0.80
SFD 413334/1FH	105.00	85.00	103.50	105.00	13.50	10.00	5.00	0.80
SFD 433354-FH	110.00	90.00	108.50	110.00	12.50	10.00	5.00	0.80
SFD 452354	115.00	90.00	113.50	115.00	15.50	12.50	6.50	1.20
SFD 452354-FH	115.00	90.00	113.50	115.00	15.50	12.50	6.50	1.20
SFD 492393	125.00	100.00	123.50	125.00	15.50	12.50	6.50	1.20
SFD 492393-FH	125.00	100.00	123.50	125.00	15.50	12.50	6.50	1.20
SFD 511413	130.00	105.00	128.50	130.00	17.00	12.50	6.50	1.20
SFD 551472	140.00	120.00	138.50	140.00	15.00	10.00	5.00	0.80
SFD 551472-FH	140.00	120.00	138.50	140.00	15.00	10.00	5.00	0.80

Items in **BOLD** are to suit ISO 5597 housings.  
 Suffix FH denotes Fabric reinforced header.