Single Acting Piston Seals

CPW

Metric

Design

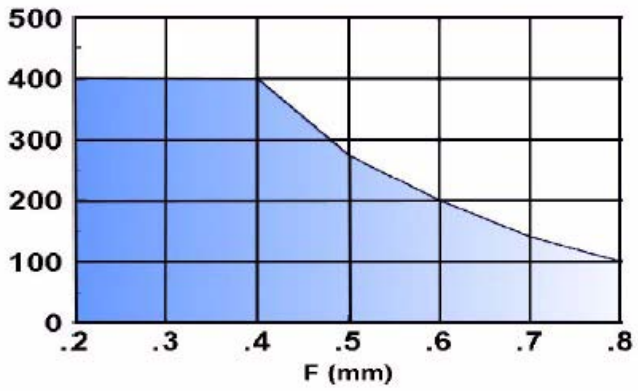
Claron Style CPW is designed for use as a single acting piston seal. The seal is a precision moulded Nitrile Rubber sealing element with a proportional bonded fabric reinforced NBR base and an acetal bearing ring. The acetal bearing ring resists extrusion of the seal to allow greater clearances and higher pressures. It also provides bearing support for the piston so preventing misalignment and metal to metal contact between piston and bore.
Style CPW is designed with initial radial interference to effect low pressure sealing. At higher pressures the seal is energised to increase the sealing force. Rubberised fabric retains the sealing media within its surface thus reducing friction and wear. Style CPW also has radial grooves incorporated into the pressure side of the seal which ensures rapid energisation without excessive end float and resultant wear.

Operating Conditions

Maximum	Pressure
Max Speed	Temp. Range
m/s	-30°C to 100°C
0.50	250 Bar
0.15	400 Bar

These range perameters are Maximum simultaneous conditions. Optimum service conditions are affected by temperature, speed, pressusre, surface finish and extrusion gaps.

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

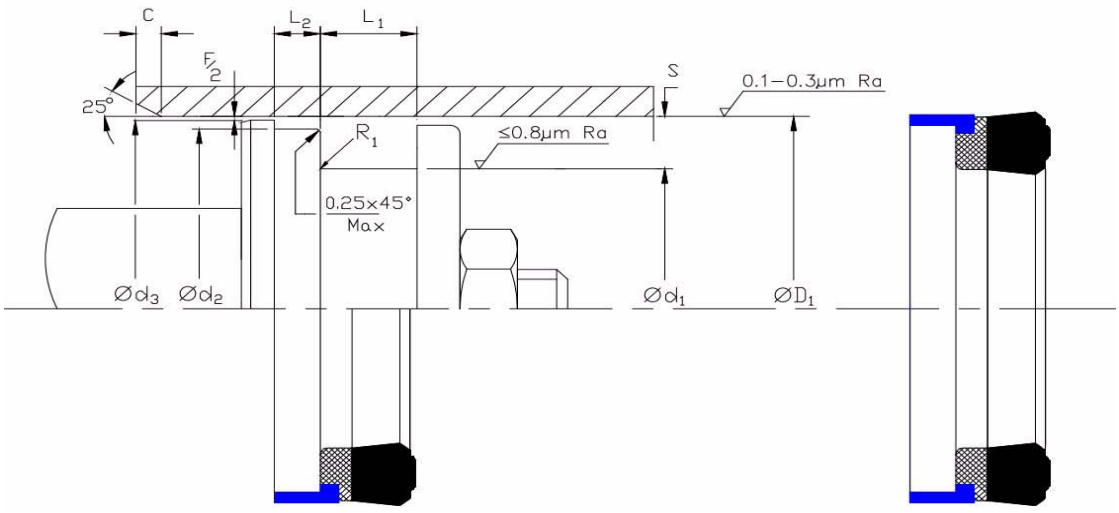
Note: Clearance gap F is the maximum permissable. i.e. gap completely on one side, in the temperature range of -30°C to 100°C The use of a suitably selected Claron bearing ring will effectively reduce the clearance gap F max. to a value closer to F/2 thus increasing the pressure capability of the seal.

Housing

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

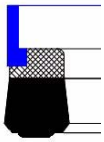
Fitting

Style CPW is designed to be fitted onto a split piston and may be used with Claron Style PSR retainer. 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.



For F/2 vaslues see note and table

For E/2 see bearing housing



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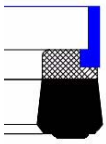

Nominal Dimensions and Machining Tolerances

Claron Part Number	H10 ØD1	js11 Ød1	js10 Ød2	js11 Ød3	+0.38 +0.63 L1	+0.1 -0.0 L2	Nom S	Min C	Max R1	Max R2
CPW 157110	40.00	28.00	35.40	38.90	9.00	6.35	6.00	3.00	0.40	0.20
CPW 196149	50.00	38.00	46.43	48.80	9.40	6.35	6.00	3.00	0.40	0.20
CPW 236157	60.00	40.00	54.15	58.65	14.00	6.35	10.00	5.00	0.40	0.20
CPW 236177	60.00	45.00	55.40	58.65	10.50	6.35	7.50	4.00	0.40	0.20
CPW 236177/1	60.00	45.00	54.15	58.65	10.50	6.35	7.50	4.00	0.40	0.20
CPW275196	70.00	50.00	64.15	68.35	14.00	6.35	10.00	5.00	0.40	0.20
CPW 314236	80.00	60.00	74.15	78.35	14.50	6.35	10.00	5.00	0.40	0.20
CPW 354275	90.00	70.00	84.15	88.35	14.00	6.35	10.00	5.00	0.40	0.20
CPW 393314	100.00	80.00	94.15	98.35	14.00	6.35	10.00	5.00	0.40	0.20
CPW 411334/1	104.50	85.00	98.60	102.50	14.50	6.35	9.75	5.00	0.40	0.20
CPW 433354	110.00	90.00	104.10	108.00	12.50	6.35	10.00	5.00	0.40	0.20
CPW472393	120.00	100.00	113.10	118.00	12.50	6.35	10.00	5.00	0.40	0.20
CPW 551472	140.00	120.00	134.15	138.00	12.00	6.35	10.00	5.00	0.40	0.20