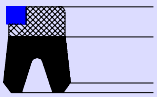
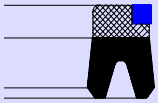


Single Acting Piston Seal

GPE

Metric



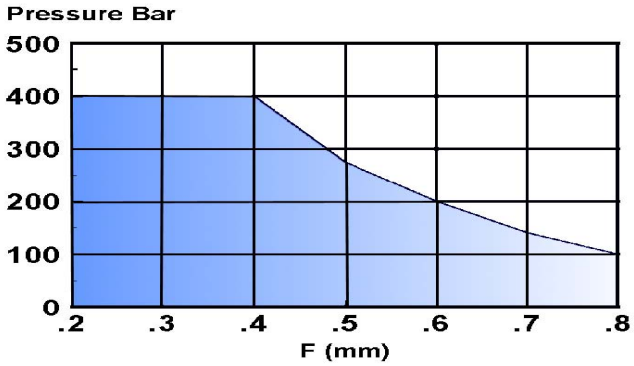
Design

Claron Style GPE is designed for use as a single acting piston seal. The seal is a precision moulded Nitrile rubber sealing element with a proportional bonded reinforced fabric base, and an acetal back up ring to resist extrusion. The acetal anti-extrusion ring allows larger clearances and higher pressures. Style GPE is designed to provide effective low pressure sealing through distortion of the lips rather than "squeeze". This gives an improved response to pressure variations and reduces low pressure stiction to ensure a smoother return stroke. The seal is designed with initial radial interferance to effect low pressure sealing. The rubberised fabric header has the advantage of retaining fluid within its surface thus reducing both friction and wear. Style GPE is an effective seal over a wide range of applications.

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, pressure, surface finish and extrusion gaps.
Refer to Appendix 1 for further information.



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

Maximum Diametral Clearance F

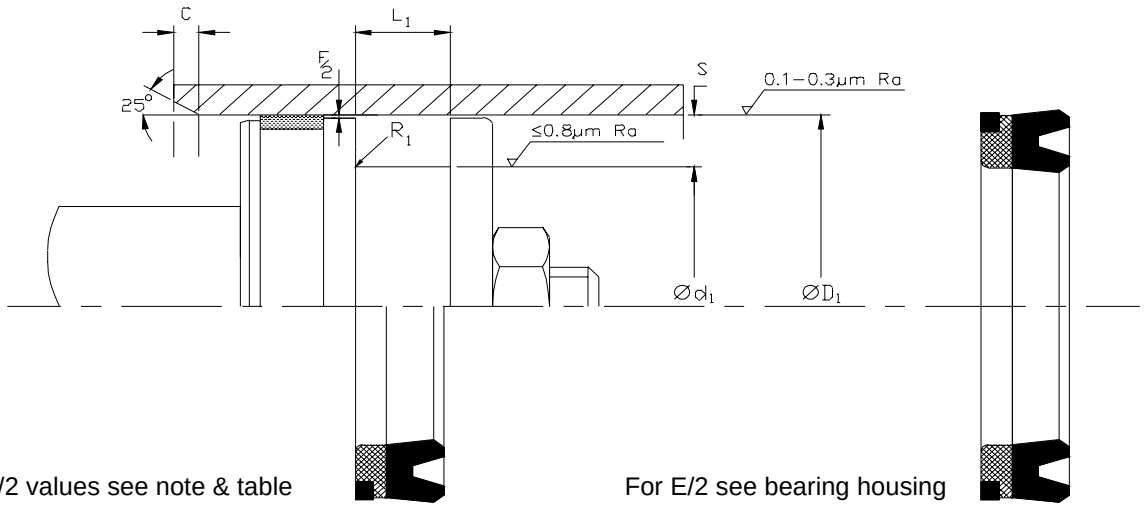
Note: Clearance gap F is the maximum permissable. i.e. gap completely on one side, in the temperature range of -30°C to 100°C The use of a suitably selected Claron bearing ring will effectively reduce the clearance gap F max. to a value closer to F/2 thus increasing the pressure capability of the seal.

Housing

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

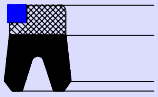
Fitting

Style GPE 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 values see note & table

For E/2 see bearing housing



ClaronPolyseal®

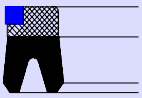
Single Acting Piston Seal

GPE

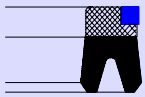
Metric

Nominal Dimensions & Machining Tolerances

Claron Part Number	H 10 $ØD_1$	js11 $Ød_1$	+0.63 +0.38 L_1	Nominal Sec. S	Min Chamf. C	Max R_1
GPE 125086	32.00	22.00	9.00	5.00	2.50	0.40
GPE 177118/2	45.00	30.00	10.00	7.50	4.00	0.60
GPE 196137	50.00	35.00	11.00	7.50	4.00	0.60
GPE 196157/1	50.00	40.00	10.00	5.00	2.50	0.40
GPE 216157/1	55.00	40.00	10.50	7.50	4.00	0.60
GPE 248188/1	63.00	48.00	9.50	7.50	4.00	0.60
GPE 248196	63.00	50.00	10.00	6.50	4.00	0.60
GPE 275196	70.00	50.00	14.00	10.00	5.00	0.80
GPE 314236	80.00	60.00	14.00	10.00	5.00	0.80
GPE 393314	100.00	80.00	14.00	10.00	5.00	0.80
GPE 413334/3	105.00	85.00	18.00	10.00	5.00	0.80
GPE 433354	110.00	90.00	12.50	10.00	5.00	0.80



Single Acting Piston Seal GPE Imperial



Nominal Dimensions & Machining Tolerances

Claron Part Number	H 10 $ØD_1$	js11 $Ød_1$	+0.025 +0.015 L_1	Nominal Sec S	Min Chamf. C	Max R_1
GPE 112062	1.125	0.625	0.468	0.250	0.125	0.015
GPE 141087	1.417	0.875	0.468	0.271	0.125	0.015
GPE 150100	1.500	1.000	0.375	0.250	0.125	0.015
GPE 162100	1.625	1.000	0.437	0.312	0.156	0.025
GPE 175125	1.750	1.250	0.375	0.250	0.125	0.015
GPE 178116	1.786	1.161	0.468	0.312	0.156	0.025
GPE 187125/2	1.875	1.250	0.500	0.312	0.156	0.025
GPE 200137/1	2.000	1.375	0.375	0.312	0.156	0.025
GPE 212150	2.125	1.500	0.468	0.312	0.156	0.025
GPE 225162	2.250	1.625	0.437	0.312	0.156	0.025
GPE 237175	2.375	1.750	0.437	0.312	0.155	0.025
GPE 250187/1	2.500	1.875	0.375	0.312	0.156	0.025
GPE 262200	2.625	2.000	0.437	0.312	0.156	0.025
GPE 275200	2.750	2.000	0.437	0.375	0.187	0.031
GPE 275200/2	2.750	2.000	0.562	0.375	0.187	0.031
GPE 275212	2.750	2.125	0.468	0.312	0.156	0.025
GPE 300225/1	3.000	2.250	0.500	0.375	0.187	0.031
GPE 325250/1	3.250	2.500	0.562	0.375	0.187	0.031
GPE 325262	3.250	2.625	0.562	0.312	0.156	0.025
GPE 350275	3.500	2.750	0.562	0.375	0.187	0.031
GPE 350300/1	3.500	3.000	0.500	0.250	0.125	0.015
GPE 362287	3.625	2.875	0.562	0.375	0.187	0.031
GPE 362300/1	3.625	3.000	0.437	0.312	0.156	0.025
GPE 400325/1	4.000	3.250	0.562	0.375	0.187	0.031
GPE 425350/1	4.250	3.500	0.562	0.375	0.187	0.031
GPE 450375	4.500	3.750	0.562	0.375	0.187	0.032
GPE 500400	5.000	4.000	0.750	0.500	0.250	0.046
GPE 600500	6.000	5.000	0.750	0.500	0.250	0.046
GPE 700600	7.000	6.000	0.750	0.500	0.250	0.046