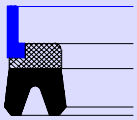
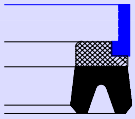




Design

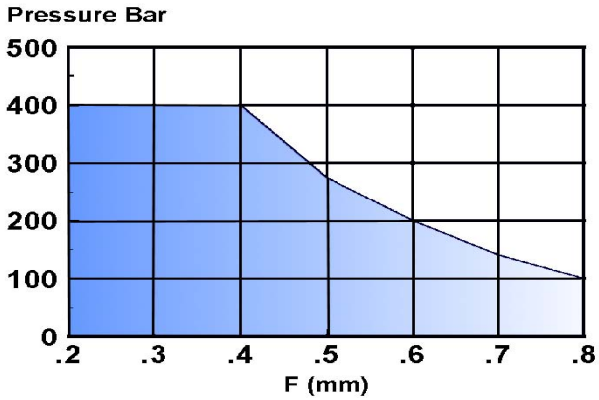
Claron Style GPW is designed for use as a single acting piston seal The seal is a precision moulded Nitrile rubber sealing element with a proportional bonded reinforced NBR header and an acetal bearing ring to resist extrusion. The acetal bearing ring resists extrusion of the seal to allow greater clearances and higher pressures, and provides bearing support for the piston preventing misalignment and metal to metal contact between piston and bore.Style GPW 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. Style GPW has proven to be effective 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.

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

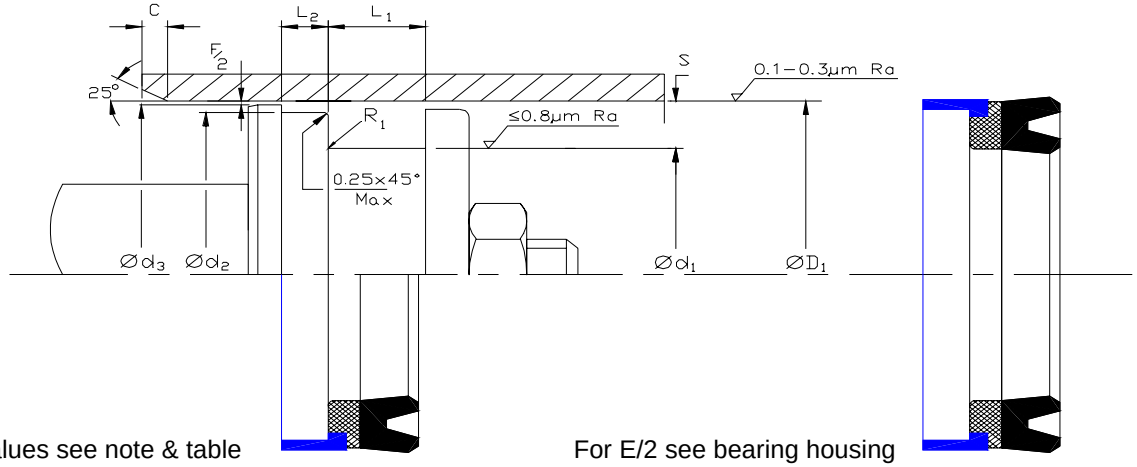
Note: Clearance gap F is the maximum permissable. i.e. gap completely on one side, in the temperature range of -30°C to 100°C The use of a suitably selected Claron bearing ring will effectively reduce the clearance gap F max. to a value closer to F/2 thus increasing the pressure capability of the seal.

Housing

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

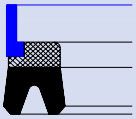
Fitting

Style GPW 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

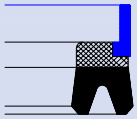
For E/2 see bearing housing



Single Acting Piston Seal

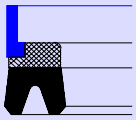
GPW

Metric



Nominal Dimensions & Machining Tolerances

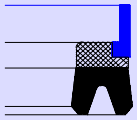
Claron Part Number	H 10 $ØD_1$	js 11 $Ød_1$	js 10 $Ød_2$	js 11 $Ød_3$	+0.63 +0.38 L_1	+0.1 -0.0 L_2	Nominal S	Min C	Max R_1	Max R_2
GPW157098	40.00	25.00	35.40	38.80	11.00	6.35	7.50	4.00	0.60	0.20
GPW 196137	50.00	35.00	43.96	48.10	11.00	6.35	7.50	4.00	0.60	0.20
GPW 196157/1	50.00	40.00	46.43	48.80	10.00	6.35	5.00	2.50	0.40	0.20
GPW 216157/1	55.00	40.00	50.37	53.65	10.50	6.35	7.50	4.00	0.60	0.20
GPW 248188/1	63.00	48.00	58.40	61.65	9.50	6.35	7.50	4.00	0.60	0.20
GPW 248196	63.00	50.00	58.40	61.65	10.00	6.35	6.50	4.00	0.60	0.20
GPW 255188	65.00	48.00	60.40	63.65	12.00	6.35	8.50	4.00	0.60	0.20
GPW 255196	65.00	50.00	60.40	63.65	10.00	6.35	7.50	4.00	0.60	0.20
GPW 275196	70.00	50.00	64.15	68.35	14.00	6.35	10.00	5.00	0.80	0.20
GPW 314236	80.00	60.00	74.15	78.35	14.00	6.35	10.00	5.00	0.80	0.20
GPW354275	90.00	70.00	84.15	88.35	14.00	6.35	10.00	5.00	0.80	0.20
GPW 393314	100.00	80.00	94.15	98.35	14.00	6.35	10.00	5.00	0.80	0.20
GPW 433354	110.00	90.00	104.10	108.00	12.50	6.35	10.00	5.00	0.80	0.20
GPW 551472	140.00	120.00	134.15	138.00	12.50	6.35	10.00	5.00	0.80	0.20



Single Acting Piston Seal

GPW

Imperial



Nominal Dimensions & Machining Tolerances

Claron Part Number	H 10 $ØD_1$	js 11 $Ød_1$	js 10 $Ød_2$	js 11 $Ød_3$	+0.025 +0.015 L_1	+0.004 -0.000 L_2	Nominal S	Min C	Max R_1	Max R_2
GPW 112062	1.125	0.625	0.986	1.085	0.468	0.250	0.250	0.125	0.015	0.008
GPW 141087	1.417	0.875	1.277	1.375	0.468	0.250	0.271	0.125	0.015	0.008
GPW 150100	1.500	1.000	1.360	1.450	0.375	0.250	0.250	0.125	0.015	0.008
GPW 162100	1.625	1.000	1.445	1.575	0.437	0.250	0.312	0.156	0.025	0.008
GPW 175125	1.750	1.250	1.604	1.698	0.375	0.250	0.250	0.125	0.015	0.008
GPW 178116	1.786	1.161	1.606	1.735	0.468	0.250	0.312	0.156	0.025	0.008
GPW 187125/2	1.875	1.250	1.674	1.825	0.500	0.250	0.312	0.156	0.025	0.008
GPW 200137/1	2.000	1.375	1.820	1.950	0.375	0.250	0.312	0.156	0.025	0.008
GPW 212150	2.125	1.500	1.944	2.075	0.468	0.250	0.312	0.156	0.025	0.008
GPW 225162	2.250	1.625	2.070	2.200	0.437	0.250	0.312	0.156	0.025	0.008
GPW 237175	2.375	1.750	2.194	2.325	0.437	0.250	0.312	0.156	0.025	0.008
GPW 262200	2.625	2.000	2.443	2.571	0.437	0.250	0.312	0.156	0.025	0.008
GPW 275200	2.750	2.000	2.522	2.695	0.437	0.250	0.375	0.187	0.031	0.008
GPW 275200/2	2.750	2.000	2.522	2.695	0.562	0.250	0.375	0.187	0.031	0.008
GPW 275212	2.750	2.125	2.569	2.695	0.468	0.250	0.312	0.156	0.025	0.008
GPW 300225/1	3.000	2.250	2.772	2.935	0.500	0.250	0.375	0.187	0.031	0.008
GPW 325262	3.250	2.625	3.069	3.195	0.562	0.250	0.312	0.156	0.025	0.008
GPW 350275	3.500	2.750	3.271	3.435	0.562	0.250	0.375	0.187	0.031	0.008
GPW 362287	3.625	2.875	3.395	3.560	0.562	0.250	0.375	0.187	0.031	0.008
GPW 400325/1	4.000	3.250	3.770	3.935	0.562	0.250	0.375	0.187	0.031	0.008
GPW 425350/1	4.250	3.500	4.019	4.185	0.562	0.250	0.375	0.187	0.031	0.008
GPW 450375	4.500	3.750	4.229	4.422	0.562	0.250	0.375	0.187	0.031	0.008
GPW 500400	5.000	4.000	4.733	4.920	0.750	0.250	0.500	0.218	0.046	0.015
GPW 600500	6.000	5.000	5.726	5.920	0.750	0.250	0.500	0.218	0.046	0.015
GPW 700600	7.000	6.000	6.724	6.920	0.750	0.250	0.500	0.218	0.046	0.015