

Design

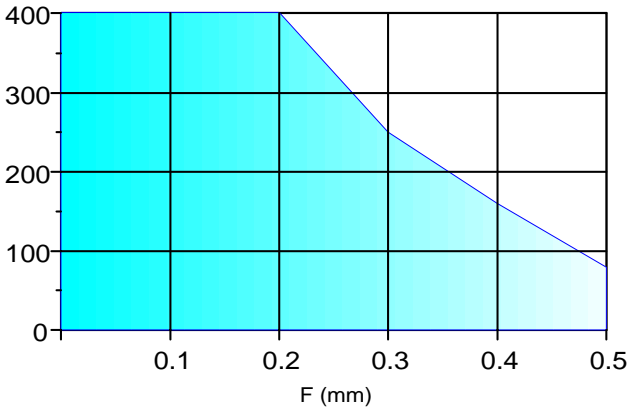
Claron Style PV and PVM is a single acting rod or piston seal for medium to heavy duty applications. The assembly consists of a male and female header and a series of 'V' rings. The number of 'V' rings may be varied to alter the assembled height. The material is generally fabric reinforced NBR rubber, although style PVM incorporates an 'NBR only' 'V'-ring to assist low pressure sealing. This is now a non preferred design, but it still has a place in application where difficult conditions prevail such as pressure surges and misalignment.

Operating Conditions

Maximum Pressure	
Max Speed	Temp. Range
m/s	-30°C to 100°C
0.50	400 Bar
0.15	700 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.

Pressure Bar



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 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

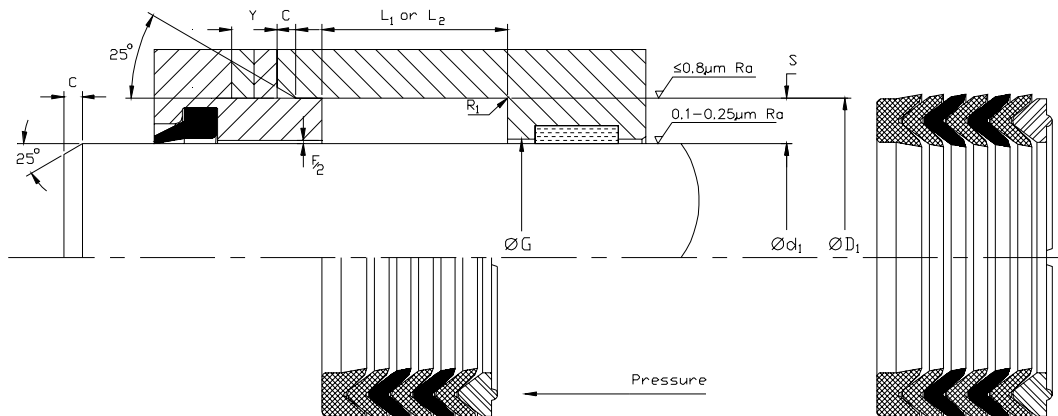
For surface finish and recommended lead in chamfers refer to the illustration below. For housing dimensions and machining tolerances refer to the catalogue page of selected seal. Refer to Appendix 4 for value of tolerance symbols.

Fitting

Style PV and PVM are designed to be fitted to a split gland or piston. For the seal to function correctly, it is important that care be taken in fitting the seal within its housing.

For installations with spacers use dimensions Y and L2 without spacers use L1

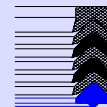
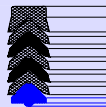
For a detailed checklist, refer to Appendix 3.





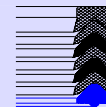
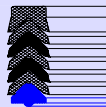
Nominal Dimensions & Machining Tolerances

Claron Part Number	H9	f8	H9	+0.20	L ₂	Y	Nominal	Min.	Max.	No. of fabric V rings	No. of Rubber V rings
	ØD ₁	Ød ₁	ØG	-0.00			L ₁	S	C		
PVM 102062 - A	26	16	18.5	19.5	2.0	5.0	2.5	0.3	3	2	
PVM 110070 - A	28	18	18.5	19.5	2.0	5.0	2.5	0.3	3	2	
PVM 118078 - A	30	20	18.5	19.5	2.0	5.0	2.5	0.3	3	2	
PVM 125078 - A	32	20	22.5	23.7	2.5	6.0	3.0	0.4	3	2	
PVM 145098 - A	37	25	22.5	23.7	2.0	6.0	3.0	0.4	3	2	
PVM 145098 - B	37	25	22.5	23.7	2.0	6.0	3.0	0.4	5	0	
PVM 157098 - A	40	25	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 157110 - A	40	28	22.5	23.7	2.0	6.0	3.0	0.4	3	2	
PVM 157118 - A	40	30	18.5	19.5	2.0	5.0	2.5	0.3	3	2	
PVM 165118 - A	42	30	22.5	23.7	2.5	5.0	3.0	0.4	3	2	
PVM 185125 - A	47	32	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 185125 - B	47	32	22.5	23.7	2.5	7.5	4.0	0.4	5	0	
PVM 185137 - A	47	35	22.5	23.7	2.0	6.0	3.0	0.4	3	2	
PVM 185137 - B	47	35	22.5	23.7	2.0	6.0	3.0	0.4	5	0	
PVM 196137 - A	50	35	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 216157 - B	55	40	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 236177 - A	60	45	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 255196 - B	65	50	22.5	23.7	2.5	7.5	4.0	0.4	5	0	
PVM 255177 - A	65	45	27.5	28.2	3.5	10.0	5.0	0.6	3	2	
PVM 255196 - A	65	50	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 275216 - A	70	55	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 295236 - A	75	60	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 314236 - B	80	60	37.0	38.2	3.5	10.0	5.0	0.6	3	2	
PVM 314255 - A	80	65	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 326248 - A	83	63	37.0	38.2	3.5	10.0	5.0	0.6	3	3	
PVM 334275 - A	85	70	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 334275 - B	85	70	16.5	17.5	2.5	7.5	4.0	0.4	2	1	
PVM 354275 - C	90	70	40.0	41.2	3.5	10.0	5.0	0.6	3	2	
PVM 354295 - A	90	75	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 374314 - A	95	80	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 393314 - D	100	80	40.0	41.2	3.5	10.0	5.0	0.6	3	2	
PVM 393334 - A	100	85	22.5	22.2	3.5	7.5	4.0	0.4	3	2	
PVM 433354 - D	110	90	21.0	23.7	2.5	10.0	5.0	0.6	1	0	
PVM 413354 - A	105	90	22.5	23.7	2.5	7.5	4.0	0.4	3	2	
PVM 433354 - E	110	90	40.0	41.2	3.5	10.0	5.0	0.6	3	2	
PVM 433354 - C	110	90	40.0	41.2	3.5	10.0	5.0	0.6	4	1	
PVM 472393 - A	120	100	40.0	41.2	3.5	10.0	5.0	0.6	4	1	
PVM 472393 - C	120	100	40.0	41.2	3.5	10.0	5.0	0.6	4	1	



Nominal Dimensions & Machining Tolerances

Claron Part Number	H9	f9	H9	+0.20 -0.00	Nominal	Min.	Max.	No. of fabric V rings	No. of Rubber V rings	Effective depth of single Fabric V
	ØD ₁	Ød ₁	ØG	L ₁	S	C	R ₁			
PV 094055-A	24.0	14.0		16.0	4.0	2.0	0.4	3	-	2.50
PV 171108-A	43.5	27.5		18.25	8.0	4.0	0.4	1	-	4.73
PV 196137-B	50.0	35.0		22.0	7.5	4.0	0.4	4	-	3.00
PV 196157-A	50.0	40.0		19.05	5.0	2.5	0.4	2	-	4.50
PV 196157-B	50.0	40.0		23.0	5.0	2.5	0.4	3	-	4.50
PV 216157-A	55.0	40.0		22.5	7.5	4.0	0.4	3	-	4.70
PV 216157-C	55.0	40.0		27.8	7.5	4.0	0.4	3	1	4.70
PV 216157-D	55.0	40.0		10.5	7.5	4.0	0.4	1	-	4.70
PV 236157-A	60.0	40.0		30.0	10.0	5.0	0.4	3	-	4.00
PV 240177-A	61.0	45.0		31.0	8.0	4.0	0.4	3	-	4.44
PV 240177-B	61.0	45.0		31.0	8.0	4.0	0.4	2	1	4.44
PV 255177-A	65.0	45.0		27.5	10.0	5.0	0.4	3	2	3.80
PV 255177-B	65.0	45.0		27.0	10.0	5.0	0.4	-	5	3.50
PV 263196-A	67.0	50.0		27.1	8.5	4.0	0.4	2	1	4.70
PV 275196-A	70.0	50.0		30.0	10.0	5.0	0.4	2	-	6.70
PV 275196-B	70.0	50.0		35.0	10.0	5.0	0.4	3	-	6.70
PV 295216-A	75.0	55.0		26.0	10.0	5.0	0.4	3	-	5.20
PV 311236-A	79.0	60.0		31.5	9.5	5.0	0.4	2	1	7.00
PV 314236-A	80.0	60.0		26.0	10.0	5.0	0.4	3	-	5.10
PV 314236-B	80.0	60.0		37.0	10.0	5.0	0.4	3	2	5.10
PV 314236-C	80.0	60.0		31.0	10.0	5.0	0.4	4	-	5.10
PV 314236-D	80.0	60.0		37.0	10.0	5.0	0.4	4	-	5.10
PV 334255-A	85.0	65.0		30.0	10.0	5.0	0.4	3	-	4.00
PV 350275-B	89.0	70.0		23.0	9.5	5.0	0.4	2	1	5.10
PV 354275-A	90.0	70.0		40.0	10.0	5.0	0.4	4	-	7.30
PV 354275-B	90.0	70.0		32.5	10.0	5.0	0.4	3	2	3.50
PV 354275-D	90.0	70.0		30.0	10.0	5.0	0.4	3	-	5.00
PV 374295-A	95.0	75.0		30.0	10.0	5.0	0.4	3	-	4.00
PV 374314-B	95.0	80.0		26.5	7.5	4.0	0.4	3	2	2.80
PV 393314-A	100.0	80.0		31.5	10.0	5.0	0.4	2	1	5.25
PV 393314-B	100.0	80.0		41.5	10.0	5.0	0.4	3	2	5.25
PV 393314-C	100.0	80.0		21.0	10.0	5.0	0.4	1	-	5.25
PV 397342-A	101.0	87.0		30.0	7.0	4.0	0.4	3	2	4.00
PV 433354-A	110.0	90.0		30.0	10.0	5.0	0.4	3	-	5.00
PV 433354-B	110.0	90.0		31.7	10.0	5.0	0.4	3	-	5.00
PV 433354-D	110.0	90.0		21.0	10.0	5.0	0.4	1	-	5.00
PV 492393-A	125.0	100.0		27.5	12.5	6.5	1.2	3	-	3.50
PV 507452-A	129.0	115.0		30.0	7.0	4.0	0.4	3	2	4.00
PV 551472-A	140.0	120.0		30.0	10.0	5.0	0.4	3	-	4.50
PV 551472-B	140.0	120.0		35.0	10.0	5.0	0.4	4	-	4.50
PV 551492-A	140.0	125.0		24.0	7.5	4.0	0.4	3	-	3.75
PV1083964-A	275.0	245.0		58.0	15.0	7.5	0.8	5	-	7.50



Nominal Dimensions & Machining Tolerances

Claron Part Number	H9	f9	H9	+0.010 -0.000	Nominal	Min.	Max.	No. of fabric V rings	No. of Rubber V rings	Effective depth of single Fabric V
	ØD ₁	Ød ₁	ØG	L ₁	S	C	R ₁			
PV 090050-A	0.906	0.500		0.531	0.203	0.093	0.010	3	-	0.110
PV 095062-A	0.950	0.625		0.531	0.167	0.093	0.010	3	-	0.110
PV 110075-A	1.100	0.750		0.531	0.175	0.093	0.010	2	-	0.110
PV 110075-B	1.100	0.750		0.640	0.175	0.093	0.010	3	-	0.110
PV 125087-A	1.250	0.875		0.657	0.187	0.093	0.010	3	-	0.100
PV 131081-A	1.312	0.812		0.625	0.250	0.125	0.015	2	-	0.130
PV 137075-A	1.375	0.750		1.020	0.312	0.156	0.015	3	-	0.185
PV 137100-A	1.375	1.000		0.750	0.187	0.093	0.010	4	-	0.110
PV 141091-A	1.410	0.910		0.625	0.250	0.125	0.015	2	-	0.140
PV 150087-A	1.500	0.875		1.125	0.312	0.156	0.015	4	-	0.186
PV 150100-A	1.500	1.000		0.750	0.250	0.125	0.015	2	-	0.175
PV 150100-B	1.500	1.000		0.875	0.250	0.125	0.015	3	-	0.175
PV 156106-A	1.562	1.062		0.695	0.250	0.125	0.015	3	-	0.156
PV 156106-B	1.562	1.062		0.815	0.250	0.125	0.015	4	-	0.156
PV 162100-A	1.625	1.000		1.000	0.312	0.156	0.015	3	-	0.186
PV 162112-A	1.625	1.125		0.750	0.250	0.125	0.015	3	-	0.140
PV 175125-A	1.750	1.250		0.750	0.250	0.125	0.015	3	-	0.150
PV 175125-B	1.750	1.250		1.000	0.250	0.125	0.015	5	-	0.150
PV 177115-A	1.775	1.153		0.875	0.316	0.156	0.015	2	-	0.210
PV 178128-A	1.781	1.281		0.625	0.250	0.125	0.015	2	-	0.140
PV 188137-A	1.889	1.375		1.000	0.257	0.125	0.015	3	2	0.120
PV 200138-A	2.000	1.380		1.000	0.310	0.156	0.015	4	-	0.165
PV 200138-B	2.000	1.380		1.165	0.310	0.156	0.015	5	-	0.165
PV 200150-A	2.000	1.500		0.750	0.250	0.125	0.015	3	-	0.150
PV 200150-B	2.000	1.500		0.900	0.250	0.125	0.015	4	-	0.150
PV 212150-A	2.125	1.500		0.900	0.312	0.156	0.015	2	-	0.165
PV 212150-B	2.125	1.500		1.000	0.312	0.156	0.015	3	-	0.165
PV 212150-C	2.125	1.500		1.078	0.312	0.156	0.015	2	1	0.165
PV 212150-D	2.125	1.500		1.040	0.312	0.156	0.015	3	-	0.165
PV 212150-F	2.125	1.500		1.000	0.312	0.156	0.015	2	1	0.165
PV 225125-A	2.250	1.250		1.840	0.500	0.250	0.032	4	-	0.295
PV 225175-A	2.250	1.750		0.735	0.250	0.125	0.015	2	1	0.129
PV 225175-B	2.250	1.750		0.640	0.250	0.125	0.015	1	1	0.129
PV 225175-C	2.250	1.750		0.750	0.250	0.125	0.015	2	1	0.129
PV 225175-D	2.250	1.750		0.790	0.250	0.125	0.015	3	-	0.129
PV 225175-E	2.250	1.750		0.900	0.250	0.125	0.015	3	1	0.129
PV 225175-G	2.250	1.750		0.900	0.250	0.125	0.015	4	-	0.129
PV 226175-A	2.264	1.750		0.681	0.257	0.125	0.015	2	1	0.125
PV 237175-A	2.375	1.750		0.970	0.312	0.156	0.015	2	-	0.190
PV 237175-B	2.375	1.750		0.990	0.312	0.156	0.015	3	-	0.190
PV 237175-C	2.375	1.750		1.093	0.312	0.156	0.015	3	-	0.190
PV 237175-D	2.375	1.750		1.187	0.312	0.156	0.015	4	-	0.190
PV 237175-E	2.375	1.750		1.093	0.312	0.156	0.015	2	1	0.190
PV 237200-A	2.375	2.000		0.718	0.187	0.093	0.010	3	-	0.100
PV 250175-A	2.500	1.750		1.000	0.375	0.187	0.032	3	-	0.195
PV 250175-B	2.500	1.750		1.186	0.375	0.187	0.032	3	1	0.195



Nominal Dimensions & Machining Tolerances

Claron Part Number	H9	f9	H9	+0.010	Nominal	Min.	Max.	No. of fabric V rings	No. of Rubber V rings	Effective depth of single Fabric V
	ØD ₁	Ød ₁	ØG	-0.000	S	C	R ₁			
PV 250200-A	2.500	2.000	0.650	0.250	0.125	0.015	2	-	0.150	
PV 250200-B	2.500	2.000	0.750	0.250	0.125	0.015	2	-	0.165	
PV 250200/C	2.500	2.000	0.875	0.250	0.125	0.015	4	-	0.150	
PV 250200-D	2.500	2.000	0.910	0.250	0.125	0.015	3	-	0.165	
PV 250200-E	2.500	2.000	0.812	0.250	0.125	0.015	3	-	0.165	
PV 262200-A	2.625	2.000	0.937	0.312	0.156	0.015	3	-	0.192	
PV 262200-B	2.625	2.000	1.000	0.312	0.156	0.015	3	-	0.192	
PV 262200-C	2.625	2.000	1.058	0.312	0.156	0.015	3	1	0.192	
PV 262200-D	2.625	2.000	1.125	0.312	0.156	0.015	4	-	0.192	
PV 275200-A	2.750	2.000	0.978	0.375	0.187	0.032	2	1	0.240	
PV 275200-B	2.750	2.000	1.027	0.375	0.187	0.032	2	-	0.240	
PV 275212-A	2.750	2.125	1.000	0.312	0.156	0.015	3	-	0.186	
PV 275225-A	2.750	2.250	0.750	0.250	0.125	0.015	3	-	0.120	
PV 275225-B	2.750	2.250	0.860	0.250	0.125	0.015	4	-	0.120	
PV 276220-A	2.764	2.200	0.681	0.282	0.125	0.015	2	-	0.120	
PV 287225-A	2.875	2.250	1.058	0.312	0.150	0.015	3	1	0.192	
PV 300200-A	3.000	2.000	1.000	0.500	0.250	0.032	1	-	0.295	
PV 300200-B	3.000	2.000	1.500	0.500	0.250	0.032	3	-	0.295	
PV 300225-A	3.000	2.250	1.020	0.375	0.187	0.032	2	-	0.230	
PV 300225-B	3.000	2.250	1.060	0.375	0.187	0.032	3	-	0.195	
PV 300225-C	3.000	2.250	1.281	0.375	0.187	0.032	4	-	0.230	
PV 300225-D	3.000	2.250	1.225	0.375	0.187	0.032	4	-	0.195	
PV 300225-F	3.000	2.250	1.250	0.375	0.187	0.032	3	-	0.195	
PV 300250-A	3.000	2.500	0.718	0.250	0.125	0.015	3	-	0.130	
PV 300250-B	3.000	2.500	0.810	0.250	0.125	0.015	3	-	0.130	
PV 303227-A	3.030	2.273	1.220	0.380	0.187	0.032	4	-	0.195	
PV 303227-B	3.030	2.273	1.220	0.380	0.187	0.032	2	2	0.195	
PV 312249-A	3.125	2.490	1.058	0.317	0.156	0.015	3	1	0.170	
PV 325250-A	3.250	2.500	0.978	0.375	0.187	0.032	2	1	0.195	
PV 325250-B	3.250	2.500	1.066	0.375	0.187	0.032	3	-	0.214	
PV 325250-C	3.250	2.500	1.250	0.375	0.187	0.032	4	-	0.214	
PV 337262-A	3.375	2.625	1.975	0.375	0.187	0.032	6	-	0.220	
PV 337262-B	3.375	2.625	1.312	0.375	0.187	0.032	3	-	0.220	
PV 350275-A	3.500	2.750	1.000	0.375	0.187	0.032	2	1	0.170	
PV 350275-C	3.500	2.750	1.250	0.375	0.187	0.032	3	-	0.250	
PV 350275-D	3.500	2.750	1.280	0.375	0.187	0.032	3	-	0.200	
PV 353278-A	3.531	2.781	1.200	0.375	0.187	0.032	2	2	0.225	
PV 362300-A	3.625	3.000	0.875	0.312	0.156	0.015	2	-	0.180	
PV 375300-A	3.750	3.000	1.060	0.375	0.187	0.032	2	1	0.195	
PV 375300-B	3.750	3.000	1.320	0.375	0.187	0.032	3	2	0.195	
PV 375300-C	3.750	3.000	1.250	0.375	0.187	0.032	3	1	0.195	
PV 375300-D	3.750	3.000	0.970	0.375	0.187	0.032	3	-	0.195	
PV 376319-A	3.767	3.196	0.889	0.285	0.156	0.015	3	2	0.125	
PV 400325-A	4.000	3.250	1.141	0.375	0.187	0.032	3	-	0.195	
PV 400325-B	4.000	3.250	1.230	0.375	0.187	0.032	2	1	0.195	
PV 400337-A	4.000	3.375	0.937	0.312	0.156	0.015	2	-	0.186	
PV 400350-A	4.000	3.500	0.762	0.250	0.125	0.015	3	-	0.145	
PV 400350-B	4.000	3.500	0.937	0.250	0.125	0.015	4	-	0.145	
PV 403328-A	4.031	3.281	1.156	0.375	0.187	0.032	2	2	0.196	
PV 418368-A	4.187	3.687	0.889	0.250	0.125	0.015	3	2	0.120	



Nominal Dimensions & Machining Tolerances

Claron Part Number	H9	f9	H9	+0.010 -0.000	Nominal	Min.	Max.	No. of fabric V rings	No. of Rubber V rings	Effective depth of single Fabric V
	ØD ₁	Ød ₁	ØG	L ₁	S	C	R ₁			
PV 425350-A	4.250	3.500		1.030	0.375	0.187	0.032	3	-	0.205
PV 425350-B	4.250	3.500		1.210	0.375	0.187	0.032	3	1	0.205
PV 425350-C	4.250	3.500		0.875	0.375	0.187	0.032	2	-	0.205
PV 425350-D	4.250	3.500		0.920	0.375	0.187	0.032	2	-	0.205
PV 426350-A	4.269	3.500		1.406	0.384	0.187	0.032	3	2	0.200
PV 450350-A	4.500	3.500		1.389	0.500	0.250	0.032	3	-	0.250
PV 450375-A	4.500	3.750		1.020	0.375	0.187	0.032	3	-	0.195
PV 450387-A	4.500	3.875		0.937	0.312	0.156	0.015	2	-	0.186
PV 450400-A	4.500	4.000		1.032	0.250	0.125	0.015	3	-	0.255
PV 450400-B	4.500	4.000		1.289	0.250	0.125	0.015	4	-	0.255
PV 500350-A	5.000	3.500		1.625	0.750	0.250	0.032	3	-	0.295
PV 500400-A	5.000	4.000		1.496	0.500	0.250	0.032	3	1	0.250
PV 500400-B	5.000	4.000		1.312	0.500	0.250	0.032	3	-	0.250
PV 502425-A	5.029	4.250		1.406	0.389	0.187	0.032	3	2	0.196
PV 550450-A	5.500	4.500		1.496	0.500	0.250	0.032	3	1	0.250
PV 550475-A	5.500	4.750		1.125	0.375	0.187	0.032	3	-	0.230
PV 600500-A	6.000	5.000		1.265	0.500	0.250	0.032	3	-	0.225
PV 700600-A	7.000	6.000		1.375	0.500	0.250	0.032	3	-	0.225
PV 800700-A	8.000	7.000		1.281	0.500	0.250	0.032	3	-	0.234