

Polypac® Veepac CH



Single-acting

Set of Chevron Rings

With Support and Pressure
Energizing Ring

Without and with Anti-extrusion Ring

Material:

Fabric Reinforced Rubber -
POM or PTFE





■ Veepac CH



■ Description

Veepac seals are sets of fabric reinforced chevron rings. They are composed by a support ring, "V" shaped sealing rings and a pressure energizing ring.

The support ring or base ring guides and sustains the other "V" shaped rings for best performance. Special versions provide incorporated anti-extrusion rings, either on the inner or outer side, for rod or piston applications (see type CH/NEI or CH/NEO). In standard versions, the support ring is manufactured in cotton fabric reinforced rubber, for a good anti-extrusion resistance.

The intermediate "V" shaped rings (vee-rings) are the real sealing elements of Veepac seals. Their particular shape confers the capacity of increasing sealing effectiveness under high pressure. In standard versions, they are made in cotton fabric reinforced NBR and pure NBR.

The energizer ring ensures uniform loading of pressure on the other rings. This element is manufactured in acetal resin, or cotton fabric reinforced nitrile for diameters over 300 mm (standard material).

DESIGN

The Veepac seals are available in different compositions. The standard version consists in a support ring, two fabric reinforced vee-rings, one rubber vee-ring and the energizing ring.

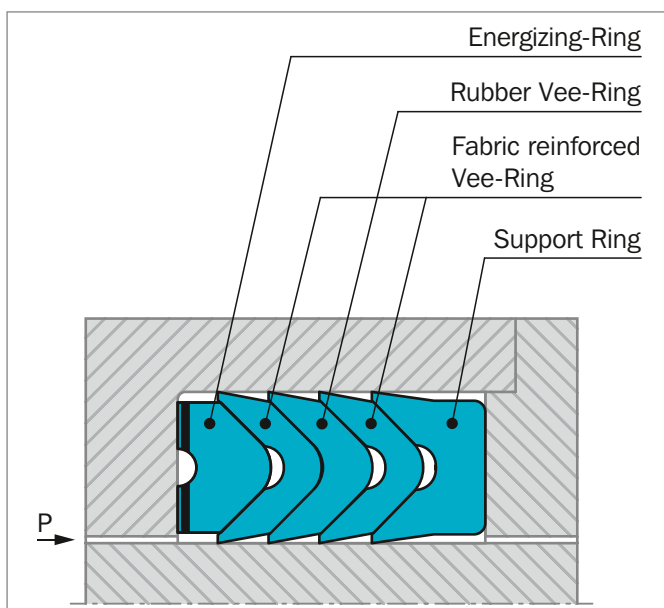


Figure 39: Veepac standard design

When the rubber vee-ring isn't available (indicated in Table 29 with the symbol \wedge) the Veepac are assembled with three fabric reinforced vee-ring as shown in figure below.

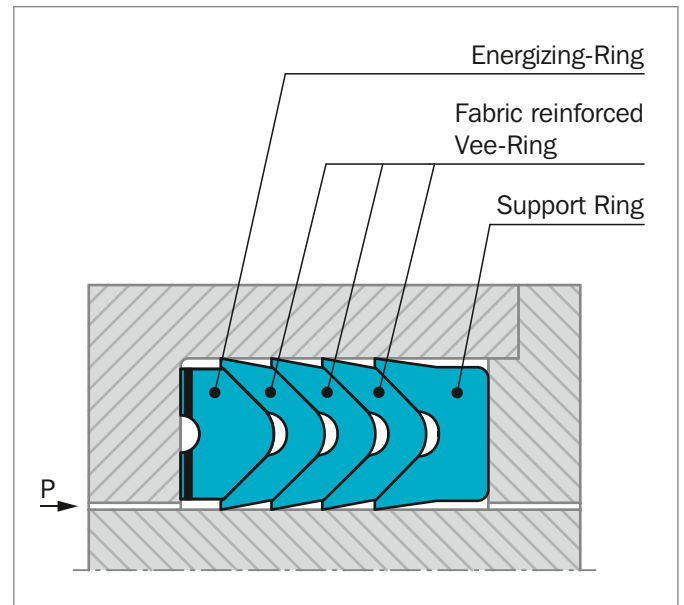


Figure 40: Veepac design with 3 fabric reinforced vee-ring

Where extrusion gaps are greater than those specified or for higher pressure conditions, special designs incorporating anti-extrusion rings can be made, to suit rods (suffix NEI) and at the Polypac ref.

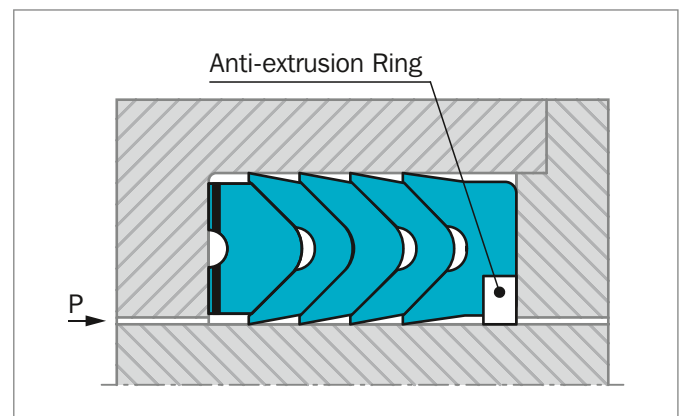


Figure 41: Veepac design with anti-extrusion ring



ADVANTAGES

- Exceptional wear resistance
- Pre-load adjustment capability
- Excellent behavior in harsh conditions
- Rod-seal replacement without complete cylinder dismantling possible
- Long service life

APPLICATION EXAMPLES

Veepac seals are recommended for single- or double-acting (back-to-back installation) hydraulic cylinders in the following applications:

- Ship hydraulics
- Excavators
- Steel mills
- Presses

OPERATING CONDITIONS

Pressure:	Up to 40 MPa
Velocity:	Up to 0.5 m/s
Temperature:	-30 °C to +200 °C
Media:	Hydraulic fluids Mineral Oil based hydraulic fluids, Water/oil and Water/Glycol emulsions
Groove Type:	Open

IMPORTANT NOTE

The above data are maximum values and cannot be used at the same time, e.g. the maximum operating speed depends on material type, pressure, temperature and gap value. Temperature range also depends on media.

GAP DIMENSIONS

To prevent extrusion the diameter not facing the pressure must be max. 0.3 mm smaller (than the piston seal) and 0.3 mm larger (than the rod seal). Using Veepac with Back-up Ring enables double values.

MATERIALS

Components of the Veepac seals are made in different combinations of materials, according to the specific application (see table below).

Table 28: Material Selection

Material Set Code	Temperature	Sealing Material	Energizer Ring Material	
N000C	-30 to +130 °C	Cotton reinforced NBR	POM-GL-BK	up to 300 mm I.D.
			Cotton reinforced NBR	over 300 mm I.D.
V000A	-20 to +150 °C	Aramid Fiber reinforced FKM	POM-GL-BK	up to 300 mm I.D.
			Aramid Fiber reinforced FKM	over 300 mm I.D.
VOPOA	-20 to +200 °C	Aramid Fiber reinforced FKM	Filled PTFE	up to 300 mm I.D.
			Aramid Fiber reinforced FKM	over 300 mm I.D.

Highlighted material is standard



Installation Recommendation

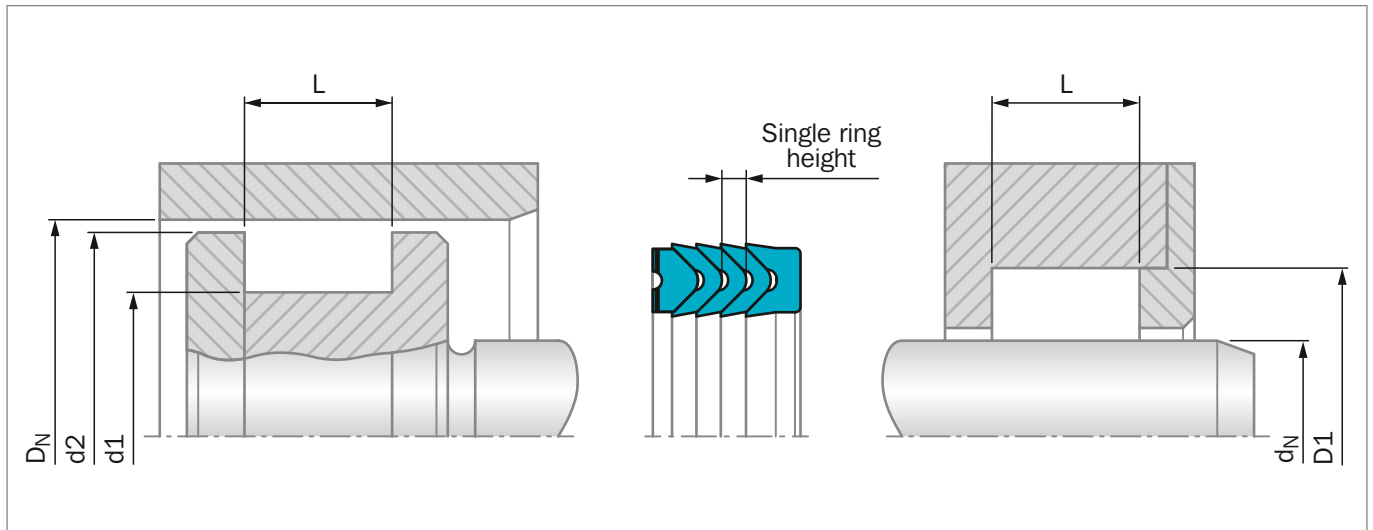


Figure 42: Installation Drawing

ORDERING EXAMPLE

For a **rod or piston** application of standard Veepac sealing element composed by: Support ring, 3 vee-rings and an energizer ring:

Rod/Groove Dia.:	$d_N/d_1 = 80.0$ mm
Groove Dia./Bore:	$D_1/D_N = 100.0$ mm
TSS Part No.:	RCH100800
Material Set-Code:	N000C
Polypac Part. No.:	CH 393314

TSS Article No. **RCH1 0 0800 - N000C**

TSS Series No. _____
 Type (Standard) _____
 Rod Diameter x 10 _____
 Quality Index _____
 Material Set-Code _____

Table 29: Installation Dimensions / TSS Part No.

Rod/Groove Diameter	Groove Dia./Bore	Groove Width	Diameter	Single Ring Height	Special Version	TSS Part No.	Polypac Ref. No.*
d_N h9/F8	D1 H11	L -0.25	d_2 +/-0.1				
d_1 h11	D_N H9/f8						
10.00	20.00	11.00	19.00	1.70		RCH000100	CH 078039/B
12.00	25.00	14.32	24.00	2.56		RCH000120	CH 098047/B
12.70	25.40	19.05	24.40	3.17		RCH000127	CH 100050
14.00	27.00	14.32	26.00	2.56	#	RCH000140	CH 106055/B
16.00	29.00	14.32	28.00	2.56		RCH000160	CH 114062/B
18.00	31.00	14.32	30.00	2.56		RCH000180	CH 122070/B
18.25	28.57	16.05	27.60	2.56		RCH000183	CH 112071
20.00	30.00	21.50	29.00	3.81		RCH000200	CH 118078
20.00	31.50	17.50	30.50	2.97		RCH100200	CH 124078
20.00	32.00	18.15	31.00	3.15	# ^	RCH200200	CH 125078
20.00	33.00	14.32	32.00	2.56		RCH300200	CH 129078/B
20.00	36.00	24.00	35.00	4.04		RCH400200	CH 141078



Rod/Groove Diameter	Groove Dia./Bore	Groove Width	Diameter	Single Ring Height	Special Version	TSS Part No.	Polypac Ref. No.*
d_N h9/F8	D1 H11	L -0.25	$d2$ +/-0.1				
$d1$ h11	D_N H9/f8						
22.00	32.00	18.13	31.00	2.75		RCH000220	CH 125086
22.00	38.00	26.00	37.00	4.21		RCH100220	CH 149086
22.00	40.00	22.50	39.00	3.70	^	RCH200220	CH 157086
25.00	35.00	17.30	34.00	2.82		RCH000250	CH 137098
25.00	40.00	19.84	39.00	3.50		RCH100250	CH 157098
25.00	42.00	25.40	41.00	4.29		RCH200250	CH 165098
25.00	45.00	25.40	44.00	4.50	# ^	RCH300250	CH 177098
25.40	38.10	19.45	37.10	3.48		RCH000254	CH 150100
26.00	45.00	29.37	44.00	5.16		RCH000260	CH 177102
28.00	40.00	17.00	39.00	2.80		RCH000280	CH 157110
28.00	44.00	17.62	43.00	3.17	#	RCH100280	CH 173110/B
28.00	44.00	24.00	43.00	4.15	#	RCH200280	CH 173110/1
28.57	41.27	19.84	40.30	3.50		RCH000286	CH 162112
30.00	40.00	21.80	39.00	3.76		RCH000300	CH 157118
30.00	42.00	20.00	41.00	3.50		RCH100300	CH 165118
30.00	50.00	29.37	49.00	5.08		RCH300300	CH 196118
31.75	44.45	16.25	43.40	3.19		RCH000318	CH 175125/1
31.75	44.45	19.05	43.40	3.50		RCH100318	CH 175125
31.75	47.62	29.05	46.60	4.34	^	RCH200318	CH 187125
32.00	42.00	17.30	41.00	2.82		RCH000320	CH 165125
32.00	48.00	17.63	47.00	3.17	# ^	RCH100320	CH 188125/B
34.92	47.62	20.64	46.60	3.43		RCH000349	CH 187137
34.92	50.80	24.21	49.80	4.14	#	RCH100349	CH 200137
35.00	45.00	21.78	44.00	3.81		RCH000350	CH 177137
35.00	50.00	22.50	49.00	3.57		RCH100350	CH 196137
36.00	52.00	17.60	51.00	3.17		RCH100360	CH 204141/B
38.00	55.00	28.00	54.00	5.05		RCH000380	CH 216149
38.10	50.80	19.45	49.00	3.51		RCH000381	CH 200150
38.10	53.97	25.27	53.00	4.60		RCH100381	CH 212150
38.10	53.97	27.78	53.00	4.60		RCH200381	CH 212150/1
39.00	55.00	25.40	54.00	4.65	^	RCH000390	CH 216153
40.00	50.00	17.30	49.00	2.82		RCH000400	CH 196157
40.00	55.00	22.62	54.00	3.84		RCH100400	CH 216157
40.00	55.00	26.19	54.00	3.84		RCH200400	CH 216157/1
40.00	56.00	17.63	55.00	3.17		RCH300400	CH 220157/B
40.00	60.00	30.00	59.00	5.16	#	RCH400400	CH 236157
40.00	65.00	35.72	64.00	6.15		RCH500400	CH 255157
44.45	57.15	21.83	56.20	3.38		RCH000445	CH 225175
44.45	60.32	27.80	59.30	4.07	#	RCH100445	CH 237175
45.00	55.00	17.50	54.00	2.80		RCH000450	CH 216177
45.00	60.00	22.22	59.00	3.89		RCH100450	CH 236177
45.00	65.00	28.00	64.00	5.34		RCH200450	CH 255177



Rod/Groove Diameter	Groove Dia./Bore	Groove Width	Diameter	Single Ring Height	Special Version	TSS Part No.	Polypac Ref. No.*
d_N h9/F8	D1 H11	L -0.25	$d2$ +/-0.1				
$d1$ h11	D_N H9/f8						
48.00	60.00	25.00	59.00	4.07		RCH000480	CH 236188
50.00	70.00	21.94	69.00	3.95		RCH200500	CH 275196/B
50.00	70.00	30.00	69.00	5.16		RCH300500	CH 275196
50.80	63.50	19.84	62.50	3.35		RCH000508	CH 250200
50.80	66.67	23.00	65.70	4.27		RCH100508	CH 262200
50.80	66.67	25.27	65.70	4.27		RCH200508	CH 262200/1
50.80	69.85	33.50	68.80	5.08	#	RCH300508	CH 275200
50.80	70.80	38.50	69.80	6.75	# ^	RCH400508	CH 278200
51.00	69.00	28.00	68.00	5.03		RCH000510	CH 271200
53.97	63.50	16.70	62.50	2.59	#	RCH000540	CH 250212
53.97	66.67	19.45	65.70	3.35	# ^	RCH100540	CH 262212
53.97	69.85	28.00	68.80	4.07		RCH200540	CH 275212
55.00	67.00	25.00	66.00	4.07		RCH000550	CH 263216
55.00	70.00	26.50	69.00	4.02		RCH100550	CH 275216
55.00	75.00	30.00	74.00	6.48		RCH200550	CH 295216
55.00	75.00	38.50	74.00	6.48		RCH400550	CH 295216/1
55.00	80.00	33.73	79.00	5.16	#	RCH500550	CH 314216
56.00	76.00	21.95	75.00	3.94		RCH000560	CH 299220/B
56.00	76.00	33.40	75.00	5.38		RCH100560	CH 299220
57.15	69.85	19.05	68.80	3.25		RCH000572	CH 275225
57.15	73.02	27.78	72.00	4.27	#	RCH100572	CH 287225
57.15	76.20	32.54	75.20	5.16		RCH200572	CH 300225
60.00	76.00	29.00	75.00	4.34		RCH100600	CH 299236
60.00	77.00	27.00	76.00	4.59		RCH200600	CH 303236
60.00	80.00	32.15	79.00	5.66		RCH300600	CH 314236
63.00	83.00	21.94	82.00	3.95		RCH000630	CH 326248/B
63.00	85.00	32.00	84.00	5.67		RCH100630	CH 334248
63.50	80.00	28.00	79.00	5.03		RCH200635	CH 314250
63.50	82.50	26.59	81.50	4.76		RCH300635	CH 325250
63.50	82.50	31.62	81.50	4.76		RCH400635	CH 325250/1
64.00	80.00	25.80	79.00	4.65		RCH000640	CH 314251
65.00	77.00	21.00	76.00	4.04		RCH000650	CH 303255
65.00	80.00	26.00	79.00	4.00	#	RCH100650	CH 314255
65.00	85.00	29.00	84.00	5.21		RCH200650	CH 334255
65.00	90.00	30.00	89.00	5.00		RCH300650	CH 354255
66.30	85.00	24.13	84.00	4.60	#	RCH000663	CH 334261
68.00	88.00	30.00	87.00	5.21	#	RCH000680	CH 346267
69.85	88.90	25.40	87.90	4.83		RCH100699	CH 350275
69.85	88.90	35.50	87.90	4.83		RCH200699	CH 350275/1
70.00	85.00	28.00	84.00	4.32		RCH100700	CH 334275
70.00	90.00	21.95	89.00	3.95		RCH200700	CH 354275/B
70.00	90.00	30.00	89.00	5.08		RCH300700	CH 354275



Rod/Groove Diameter	Groove Dia./Bore	Groove Width	Diameter	Single Ring Height	Special Version	TSS Part No.	Polypac Ref. No.*	
d_N h9/F8	D1 H11	L -0.25	$d2$ +/-0.1					
$d1$ h11	D_N H9/f8							
72.00	90.00	30.16	89.00	4.86		^	RCH000720	CH 354283
73.02	88.90	26.58	87.90	4.34			RCH000730	CH 350287
75.00	90.00	22.50	89.00	4.04			RCH000750	CH 354295
75.00	95.00	30.00	94.00	5.21			RCH100750	CH 374295
75.00	100.00	30.00	99.00	5.80		^	RCH300750	CH 393295
75.00	100.00	37.50	99.00	6.32	#	^	RCH400750	CH 393295/1
76.20	88.90	16.27	87.50	2.78			RCH000762	CH 350300
76.20	95.25	25.52	94.20	5.16	#		RCH100762	CH 375300/1
76.20	95.25	28.97	94.20	5.16			RCH200762	CH 375300
80.00	95.00	17.50	94.00	3.05			RCH000800	CH 374314
80.00	100.00	30.00	99.00	4.83			RCH100800	CH 393314
80.00	105.00	27.41	104.00	4.98		^	RCH200800	CH 413314/B
82.55	101.60	28.97	100.60	4.88			RCH100826	CH 400325
85.00	100.00	17.30	99.00	2.50			RCH000850	CH 393334
85.00	105.00	30.00	104.00	5.35			RCH100850	CH 413334
85.72	104.77	29.37	103.80	4.88			RCH100857	CH 412337
88.90	101.60	17.00	100.60	3.40			RCH000889	CH 400350
88.90	107.95	33.33	106.90	4.90		^	RCH200889	CH 425350/1
89.00	105.00	25.80	104.00	4.65			RCH000890	CH 413350
90.00	105.00	31.75	104.00	5.71			RCH000900	CH 413354
90.00	110.00	25.00	109.00	4.88			RCH100900	CH 433354/1
90.00	110.00	26.88	109.00	4.88			RCH200900	CH 433354
90.00	115.00	27.41	114.00	4.98		^	RCH300900	CH 452354/B
92.07	111.13	29.37	110.10	5.16	#	^	RCH000921	CH 437362
95.00	110.00	24.00	109.00	4.11			RCH200950	CH 433374
95.25	111.13	24.30	110.10	4.09	#	^	RCH300953	CH 452375
98.42	123.82	36.96	122.80	6.55			RCH000984	CH 437387
100.00	114.30	20.64	113.30	3.57			RCH001000	CH 450393
100.00	115.00	25.30	114.00	3.96			RCH101000	CH 452393
100.00	120.00	28.00	119.00	5.16			RCH201000	CH 472393
100.00	120.00	31.00	119.00	5.16	#		RCH301000	CH 472393/1
100.00	125.00	27.40	124.00	4.98		^	RCH401000	CH 492393/B
100.00	125.00	36.90	124.00	6.60		^	RCH501000	CH 492393
101.60	127.00	32.15	126.00	5.82	#		RCH001016	CH 500400
104.00	130.00	37.00	129.00	6.73			RCH001040	CH 511409
105.00	120.00	25.00	119.00	4.00			RCH001050	CH 472413
105.00	125.00	29.76	124.00	5.00		^	RCH201050	CH 492413
105.00	135.00	34.50	134.00	5.80		^	RCH301050	CH 531413
106.00	135.00	33.00	134.00	5.65	#	^	RCH001060	CH 531417
110.00	132.00	36.50	131.00	6.96			RCH201100	CH 519433
111.12	136.52	38.89	135.50	6.53	#	^	RCH001111	CH 537437
114.00	130.00	25.80	129.00	4.80			RCH001140	CH 511448



Rod/Groove Diameter	Groove Dia./Bore	Groove Width	Diameter	Single Ring Height	Special Version	TSS Part No.	Polypac Ref. No.*
d_N h9/F8	D1 H11	L -0.25	$d2$ +/-0.1				
$d1$ h11	D_N H9/f8						
114.30	127.00	18.41	126.00	3.43		RCH001143	CH 500450
114.30	133.35	28.18	132.30	5.26	^	RCH101143	CH 525450
114.30	139.70	31.75	138.70	5.56	# ^	RCH201143	CH 550450
115.00	140.00	37.12	139.00	6.00	^	RCH101150	CH 551452
117.47	142.87	36.10	141.90	6.15	# ^	RCH001175	CH 562462
120.00	140.00	30.00	139.00	5.36		RCH001200	CH 551472
125.00	145.00	29.62	144.00	5.18		RCH001250	CH 570492
125.00	150.00	27.40	149.00	4.98		RCH101250	CH 590492/B
125.00	155.00	34.50	154.00	5.80	# ^	RCH201250	CH 610492
127.00	152.40	38.63	151.40	6.48		RCH001270	CH 600500
130.00	150.00	29.76	149.00	4.96		RCH001300	CH 590511
130.00	155.00	40.00	154.00	7.25	# ^	RCH101300	CH 610511
130.00	160.00	41.50	159.00	5.50	#	RCH201300	CH 629511
130.00	160.00	43.50	159.00	5.50	#	RCH301300	CH 629511/1
135.00	155.00	30.55	154.00	5.11		RCH001350	CH 610531
139.70	165.10	37.30	164.10	5.56	# ^	RCH001397	CH 6950550
140.00	160.00	28.50	159.00	5.16		RCH001400	CH 629551
140.00	165.00	41.95	164.00	6.56	#	RCH101400	CH 649551
140.00	170.00	32.97	169.00	5.99	^	RCH201400	CH 669551/B
145.00	170.00	38.10	169.00	6.45	^	RCH001450	CH 669570
146.05	171.45	38.89	170.40	6.53	^	RCH001461	CH 675575
150.00	170.00	30.56	169.00	5.16		RCH001500	CH 669590
150.00	180.00	40.00	179.00	6.28	^	RCH101500	CH 708590
152.40	177.80	33.34	176.80	5.77	^	RCH001524	CH 700600
154.00	175.00	29.44	174.00	5.31	^	RCH001540	CH 688606
157.00	182.00	30.25	181.00	5.72	^	RCH001570	CH 716618
160.00	180.00	30.00	179.00	5.00	#	RCH001600	CH 708629
160.00	190.00	32.97	189.00	5.99	^	RCH101600	CH 748629/B
161.92	180.97	28.57	180.00	5.00	# ^	RCH001619	CH 712637
170.00	195.00	37.50	194.00	6.55	^	RCH001700	CH 767669
170.00	200.00	50.00	199.00	8.00	# ^	RCH101700	CH 787669
171.45	187.32	24.20	186.30	4.09	# ^	RCH001715	CH 737675
175.00	200.00	42.00	199.00	7.54		RCH001750	CH 787688
177.80	196.85	31.00	195.80	5.16	^	RCH001778	CH 775700
177.80	203.20	32.54	202.20	5.95	^	RCH101778	CH 800700
180.00	210.00	32.97	209.00	5.99		RCH001800	CH 826708/B
180.97	203.20	31.75	202.20	5.95		RCH000810	CH 800712
187.32	200.00	21.74	199.00	3.86	^	RCH001873	CH 787737
190.50	222.25	50.00	221.20	7.57	^	RCH001905	CH 875750
200.00	220.00	30.00	219.00	5.00		RCH002000	CH 866787
200.00	230.00	32.97	229.00	5.99	^	RCH102000	CH 905787/B
205.00	225.00	19.48	224.00	3.17	^	RCH002050	CH 885807



Rod/Groove Diameter	Groove Dia./Bore	Groove Width	Diameter	Single Ring Height	Special Version	TSS Part No.	Polypac Ref. No.*
d _N h9/F8	D1 H11	L -0.25	d2 +/-0.1				
d1 h11	D _N H9/f8						
210.00	240.00	34.50	239.00	5.80		RCH002100	CH 944826
210.00	240.00	42.10	239.00	7.55	^	RCH102100	CH 944826/1
220.00	250.00	52.00	249.00	8.25	^	RCH002200	CH 984866
224.00	254.00	32.97	253.00	5.99	^	RCH002240	CH 1000881/B
228.60	254.00	38.10	253.00	6.30	^	RCH002286	CH 1000900
228.60	260.35	48.42	259.30	8.46		RCH102286	CH 1025900
240.00	270.00	45.00	269.00	8.03	^	RCH002400	CH 1062944
250.00	270.00	32.00	269.00	5.00		RCH002500	CH 1062984
254.00	279.40	38.10	268.40	5.95	^	RCH102540	CH 11001000
268.29	298.45	45.24	297.40	7.97	^	RCH002683	CH 11751056
269.88	307.98	53.97	307.00	8.44	^	RCH002699	CH 12121062
280.00	315.00	38.45	314.00	6.98	^	RCH002800	CH 12401102/B
288.93	307.98	28.57	307.00	5.21	^	RCH002889	CH 12121137
290.00	320.00	50.80	319.00	7.29	^	RCH002900	CH 12591141
300.00	320.00	32.00	319.00	5.00		RCH003000	CH 12591181
304.80	330.20	38.10	329.20	6.55	^	RCH003048	CH 13001200
310.00	330.00	30.00	329.00	5.50	^	RCH003100	CH 12991220
315.00	350.00	38.45	349.00	6.98	^	RCH003150	CH 13771240/B
320.00	365.00	55.00	364.00	8.50	^	RCH003200	CH 14371259
340.00	380.00	60.00	379.00	10.41	^	RCH003400	CH 14961338
350.00	390.00	60.00	389.00	10.54	# ^	RCH003500	CH 15351377
355.60	381.00	38.10	380.00	5.95		RCH003556	CH 15001400
368.30	406.40	57.15	405.40	10.00	^	RCH003683	CH 16001450
369.00	400.00	45.00	399.00	7.68	^	RCH003690	CH 15741452
400.00	440.00	54.00	439.00	8.38	^	RCH004000	CH 17321574
416.00	450.00	50.00	449.00	8.67	^	RCH004160	CH 17711637
420.00	460.00	51.60	459.00	8.40		RCH004200	CH 18111653
505.00	545.00	60.00	544.00	10.40	^	RCH005050	CH 21451988
700.00	750.00	73.00	749.00	6.35	#	RCH007000	CH 29532756

* As the Polypac Ref. No. does not refer to the material, please always state the full number if available for identification.
 "#" and "^" see Table 30.

Table 30: Explanation to "Special Version"

Not available with rubber Vee-ring		^
Available upon request	#	



■ Installation Recommendation, Type Polypac CH/NEI (with Back-up Ring)

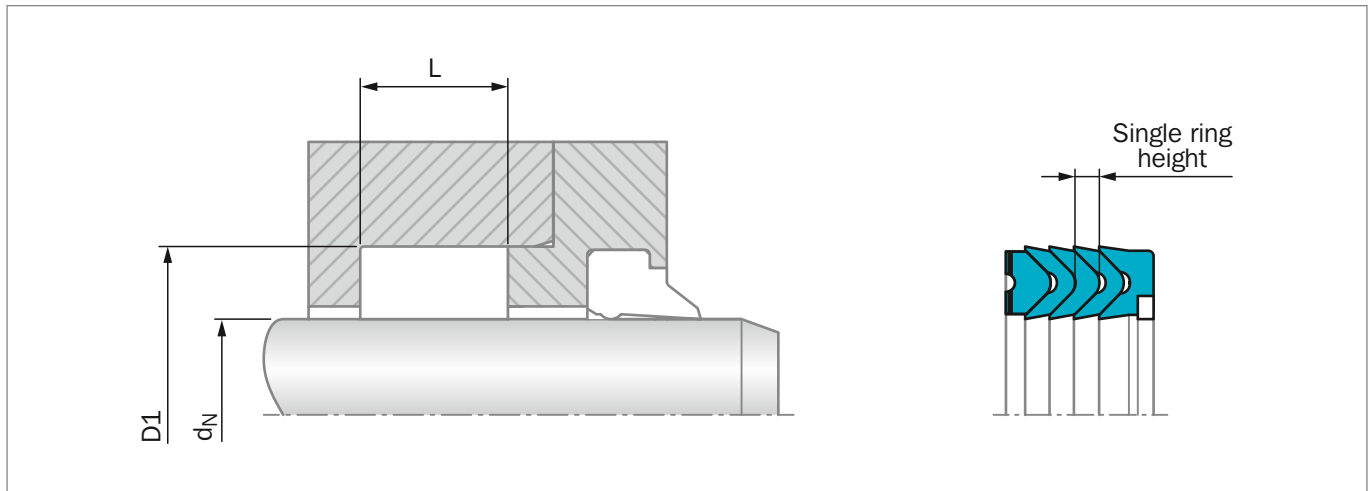


Figure 43: Installation Drawing

ORDERING EXAMPLE

For a **rod** application of Veepac sealing element composed by: Support ring **with anti-extrusion ring**, 3 vee-rings and an energizer ring:

Rod Diameter: $d_N = 80.0$ mm

Groove Diameter: $D1 = 100.0$ mm

TSS Part No.: RCH1E0800

Material Set-Code: N000C

Polypac Part. No.: CH 393314/NEI

TSS Article No. **RCH1 E 0800 - N000C**

TSS Series No. _____

Type (Standard) _____

Rod Diameter x 10 _____

Quality Index _____

Material Set-Code _____

Table 31: Installation Dimensions / TSS Part No.

Rod Diameter	Groove Diameter	Groove Width	Single Ring Height	Special Version	TSS Part No.	Polypac Ref. No.*
d_N h9/F8	$D1$ H11	$L -0.25$				
d_1 h11	D_N H9/f8					
10.00	20.00	11.00	1.70		RCH0E0100	CH 078039/B/NEI
28.00	44.00	17.62	3.17	#	RCH1E0280	CH 173110/B/NEI
28.00	44.00	24.00	4.15	#	RCH2E0280	CH 173110/1/NEI
30.00	45.00	22.20	3.80	#	RCH2E0300	CH 177118/NEI
30.00	50.00	29.37	5.08		RCH3E0300	CH 196118/NEI
32.00	48.00	17.63	3.17	# ^	RCH1E0320	CH 188125/B/NEI
36.00	51.00	24.00	4.14	#	RCH0E0360	CH 200141/NEI
40.00	55.00	22.62	3.84		RCH1E0400	CH 216157/NEI
40.00	55.00	26.19	3.84		RCH2E0400	CH 216157/1/NEI
45.00	60.00	22.22	3.89		RCH1E0450	CH 236177/NEI
48.00	62.00	22.22	3.73		RCH1E0480	CH 244188/NEI
50.00	65.00	24.60	4.34		RCH0E0500	CH 255196/NEI



Rod Diameter	Groove Diameter	Groove Width	Single Ring Height	Special Version	TSS Part No.	Polypac Ref. No.*
d_N h9/F8	D1 H11	L -0.25				
d_1 h11	D_N H9/f8					
50.00	65.00	26.00	4.34		RCH1E0500	CH 255196/1/NEI
50.00	70.00	30.00	5.16		RCH3E0500	CH 275196/NEI
53.97	73.02	31.75	5.16		RCH3E0540	CH 287212/NEI
55.00	70.00	26.50	4.02		RCH1E0550	CH 275216/NEI
55.00	75.00	31.00	6.48	#	RCH3E0550	CH 295216/2/NEI
55.00	75.00	38.50	6.48		RCH4E0550	CH 295216/1/NEI
56.00	76.00	33.40	5.38		RCH1E0560	CH 299220/NEI
60.00	75.00	19.00	3.00		RCH0E0600	CH 295236/NEI
60.00	76.00	29.00	4.34		RCH1E0600	CH 299236/NEI
60.00	80.00	32.15	5.66		RCH3E0600	CH 314236/NEI
63.00	85.00	32.00	5.67		RCH1E0630	CH 334248/NEI
63.50	82.50	26.59	4.76		RCH3E0635	CH 325250/NEI
63.50	82.50	31.62	4.76		RCH4E0635	CH 325250/1/NEI
65.00	80.00	26.00	4.00	#	RCH1E0650	CH 314255/NEI
65.00	85.00	29.00	5.21		RCH2E0650	CH 334255/NEI
69.85	85.72	23.81	4.09		RCH0E0699	CH 337275/NEI
70.00	83.00	25.00	4.25	#	RCH0E0700	CH 326275/NEI
75.00	90.00	22.50	4.04		RCH0E0750	CH 354295/NEI
75.00	95.00	31.50	5.21		RCH2E0750	CH 374295/1/NEI
80.00	100.00	30.00	4.83		RCH1E0800	CH 393314/NEI
85.00	105.00	30.00	5.35		RCH1E0850	CH 413334/NEI
85.72	104.77	29.37	4.88		RCH1E0857	CH 412337/NEI
90.00	110.00	26.88	4.88		RCH2E0900	CH 433354/NEI
95.00	110.00	24.00	4.11		RCH0E0950	CH 433374/NEI
95.00	120.00	41.00	7.50	# ^	RCH1E0950	CH 472374/NEI
100.00	120.00	28.00	5.16		RCH2E1000	CH 472393/NEI
106.00	135.00	33.00	5.65	# ^	RCH0E1060	CH 531417/NEI
110.00	130.00	27.00	5.00	#	RCH0E1100	CH 511433/1/NEI
110.00	130.00	30.00	5.00	#	RCH1E1100	CH 511433/NEI
110.00	132.00	36.50	6.96		RCH2E1100	CH 519433/NEI
110.00	135.00	41.50	7.00	# ^	RCH3E1100	CH 531433/NEI
115.00	130.00	25.49	4.35	#	RCH0E1150	CH 511452/NEI
120.00	140.00	30.00	5.36		RCH0E1200	CH 551472/NEI
120.00	145.00	39.50	7.25	# ^	RCH1E1200	CH 570472/NEI

* As the Polypac Ref. No. does not refer to the material, please always state the full number if available for identification. "#" and "^" see Table 32.

Table 32: Explanation to "Special Version"

Not available with rubber V-ring		^
Available upon request	#	

Polypac® Veepac CH/G5



Single-acting

Set of Chevron Rings

With Support and Pressure
Energizing Ring

Material:

Fabric Reinforced Rubber,
POM or PTFE





■ Veepac CH/G5 Set



■ Description

Veepac is a set of fabric reinforced Chevron rings comprising of a support ring (1), sealing rings (2) and a pressure energizing ring (3). In the packing set, the energizing axial force is transferred between the individual packing rings so that each ring is pressed into positive contact with the rod surface. In addition to the standard materials, special material grades are available for a large variety of working conditions. The Figure 44 shows the Veepac design.

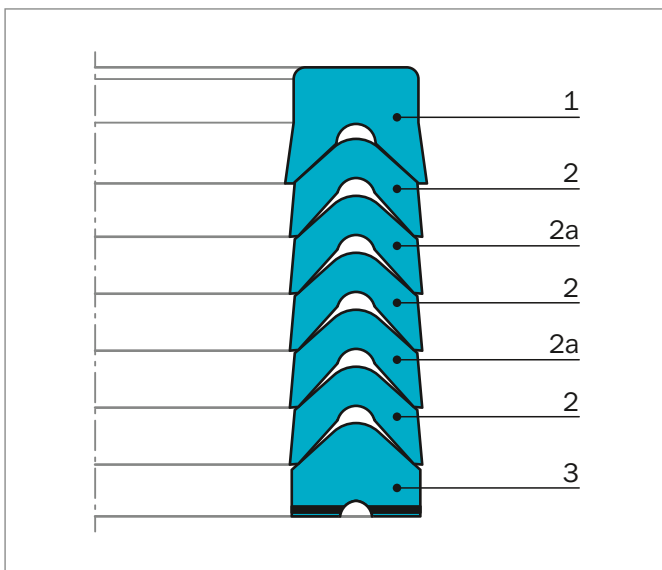


Figure 44: Veepac design

- 1) "U" or base rings in standard versions manufactured in reinforced fabric comprising of layers of cotton impregnated with nitrile rubber, compounded to resist extrusion. This component supports the vee-rings for effective performance.
- 2) Vee-rings are made of reinforced cotton fabric and nitrile elastomer in standard versions, to give good resilience, sealing efficiency and extrusion resistance. Due to their specific design, Vee Rings are sensitive to fluid pressure variations, enabling them to deflect throughout their radial section, increase the seal loading and effectiveness in proportion to the pressures applied.
- 2a) Vee-rings are made of pure elastomer for high sealing efficiency.
- 3) Energizer or spreader rings are manufactured in acetal resin or PTFE. The function of this component is to ensure a uniform pressure distribution.

ADVANTAGES

- Very robust seal
- Non sensitive
- Adjustable
- Easy replacement in the field with split rings
- Extensive range of sizes
- Requires non super mating surfaces

APPLICATION EXAMPLES

- Mining equipment (with approvals)
- Excavators-steel mills
- Water hydraulic
- Presses
- Ship hydraulics
- Stabilizer cylinders on cranes
- Continuous casting equipment

OPERATING CONDITIONS

Pressure:	Up to 40 MPa
Velocity:	Up to 0.5 m/s
Temperature:	-30 °C to +200 °C depending on material
Media:	Mineral oil, water glycol, water emulsions

IMPORTANT NOTE

The above data are maximum values and cannot be used at the same time, e.g. the maximum operating speed depends on material type, pressure, temperature and gap value. Temperature range also depends on media.



MATERIALS

The following material combination can be supplied:

Table 33: Common material choices

	Standard	Non standard	Non standard
Materials	NOONC	VOPVA	VOOVA
Vee-rings and Back-up Ring	Cotton Fabric NBR	Aramid Fabric FKM	Aramid Fabric FKM
Spreader*	POM	PTFE	POM
Elastomeric Vee-rings	NBR	FKM	FKM
Temperature Range °C	-30 +130	-20 +200	-20 +150

* The material for the spreader is dependent from the diameter.

DESIGN INSTRUCTIONS

Lead in chamfers

In order to avoid damage to the Veepac during installation, lead-in chamfers of min. 5 x 20° must be provided on the rods.

Table 34: Lead in chamfers

Rod Diameter	Lead in Chamfer
0 - 100	5 x 20°
101 - 200	7 x 20°
201 - 400	10 x 20°

Surface roughness

Table 35: Surface parameters

Parameter	Mating Surface µm	Groove Surface µm
R _{max}	1.00 - 4.00	< 16.0
R _z DIN	0.63 - 2.50	< 10.0
R _a	0.10 - 0.40	< 1.6

The material contact area R_{mr} should be approximately 50 to 70%, determined at a cut depth c = 0.25 x R_z, relative to a reference line of C_{ref}. 5%.

CLEARANCE

The gap behind the seal should not be larger than 0.30 mm in diameter.



■ Installation Recommendation

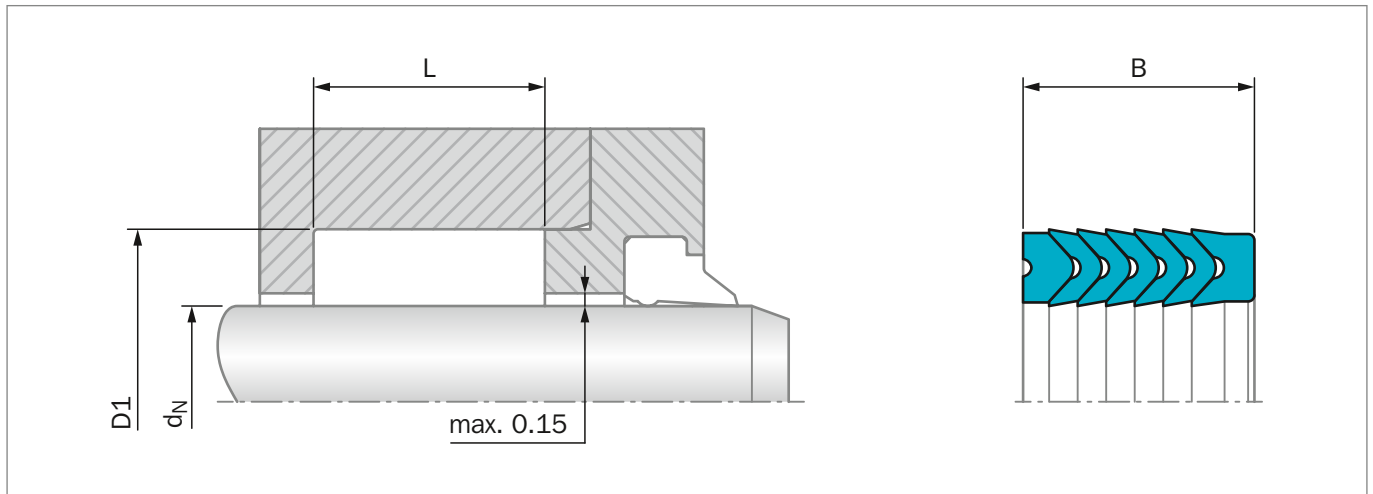


Figure 45: Installation Drawing

ORDERING EXAMPLE

Veepac Type RCH_G

Rod Diameter:	$d_N = 70.0$ mm
Groove Diameter:	$D1 = 85.0$ mm
Groove Width:	$L = 22.5$ mm
TSS Part No.:	RCH0G0700 -
Material:	NO0NC (standard)

TSS Article No. RCH 0 G 0700 - NO0NC

TSS Series No. ——— RCH
 Design Code ——— 0
 Execution Mark ——— G
 Rod Diameter x 10 ——— 0700
 Quality Index (Standard) ———
 Material Code (Standard) ——— NO0NC
 Polypac Ref. No.: CH 334275/G5

**Table 36: Installation Dimensions / TSS Part No.**

Rod Diameter	Groove Diameter	Groove Width	Seal Width	TSS Part No.	Description
d_N f8/h9	D1 H11	L +0.2	B		
25.0	37.0	22.5	22.5	RCH0G0250	CH 145098/G5
25.0	40.0	22.5	22.5	RCH1G0250	CH 157098/G5
28.0	40.0	22.5	22.5	RCH0G0280	CH 157110/G5
30.0	45.0	22.5	22.5	RCH0G0300	CH 177118/G5
36.0	48.0	22.5	22.5	RCH0G0360	CH 188141/G5
40.0	55.0	22.5	22.5	RCH0G0400	CH 216157/G5
45.0	60.0	22.5	22.5	RCH0G0450	CH 236177/G5
45.0	65.0	27.5	27.5	RCH1G0450	CH 255177/G5
50.0	65.0	22.5	22.5	RCH0G0500	CH 255196/G5
56.0	71.0	22.5	22.5	RCH0G0560	CH 279220/G5
60.0	80.0	37.0	37.0	RCH0G0600	CH 314236/G5
65.0	85.0	40.0	40.0	RCH0G0650	CH 334255/G5
70.0	85.0	22.5	22.5	RCH0G0700	CH 334275/G5
70.0	90.0	40.0	40.0	RCH1G0700	CH 354275/G5
75.0	90.0	22.5	22.5	RCH0G0750	CH 354295/G5
80.0	95.0	22.5	22.5	RCH0G0800	CH 374314/G5
80.0	100.0	40.0	40.0	RCH1G0800	CH 393314/G5
85.0	100.0	22.5	22.5	RCH0G0850	CH 393334/G5
90.0	105.0	22.5	22.5	RCH0G0900	CH 413354/G5
90.0	110.0	40.0	40.0	RCH1G0900	CH 433354/G5
100.0	115.0	30.0	30.0	RCH0G1000	CH 452393/G5
100.0	120.0	40.0	40.0	RCH1G1000	CH 472393/G5
110.0	125.0	30.0	30.0	RCH0G1100	CH 492433/G5
110.0	130.0	40.0	40.0	RCH1G1100	CH 511433/G5
120.0	145.0	50.0	50.0	RCH0G1200	CH 570472/G5
125.0	140.0	34.0	34.0	RCH0G1250	CH 551492/G5
125.0	150.0	46.0	46.0	RCH1G1250	CH 590492/G5
140.0	155.0	34.0	34.0	RCH0G1400	CH 610551/G5
140.0	165.0	46.0	46.0	RCH1G1400	CH 649551/G5
160.0	180.0	40.0	40.0	RCH0G1600	CH 708629/G5
160.0	190.0	60.0	60.0	RCH1G1600	CH 748629/G5

CH Production numbers of the available dimensions in standard materials. For specific materials, please indicate existing Polypac designations.