

O-RING HOCHTEMPERATUR

HIGH TEMPERATURE O-RING SEAL

E 21311 O-Ring Hochtemperatur für Wasser oder Öl bis 180°C in 42 zusätzlichen Größen und neu in Farbe rot – zur optischen Unterscheidung zu den Standard-O-Ringen

E 21311 High temperature O-ring seal for water or oil up to 180°C now available in 42 additional sizes and in red – for visual differentiation from standard O-ring seals



- » O-Ring (Standard) in 8 zusätzlichen Größen
- » Standard O-ring seal in 8 additional sizes

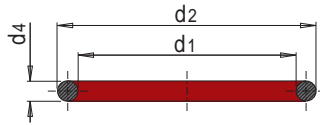


E 21311



O-Ring Hochtemperatur

High temperature O-ring seal



Mat.: FKM plus, 75 Shore A

rot beschichtet
with red coating

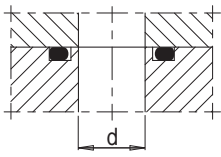
t max = 180°C (peak 200°C) Wasser/water
180°C (peak 200°C) Öl/oil

d2	d1	d4	Nr. /No.
6	3	1.5	E 21311/ 3 x1.5
7	4	1.5	E 21311/ 4 x1.5
8	5	1.5	E 21311/ 5 x1.5
9	5	2	E 21311/ 5 x2
9	6	1.5	E 21311/ 6 x1.5
10	6	2	E 21311/ 6 x2
10	7	1.5	E 21311/ 7 x1.5
11	7	2	E 21311/ 7 x2
10.5	7.5	1.5	E 21311/ 7.5x1.5
11	8	1.5	E 21311/ 8 x1.5
12	8	2	E 21311/ 8 x2
13	8	2.5	E 21311/ 8 x2.5
12	9	1.5	E 21311/ 9 x1.5
13	9	2	E 21311/ 9 x2
12.5	9.5	1.5	E 21311/ 9.5x1.5
12.8	9.8	1.5	E 21311/ 9.8x1.5
13	10	1.5	E 21311/ 10 x1.5
14	10	2	E 21311/ 10 x2
14.8	10	2.4	E 21311/ 10 x2.4
15	10	2.5	E 21311/ 10 x2.5
16	10	3	E 21311/ 10 x3
15	11	2	E 21311/ 11 x2
16.6	11.8	2.4	E 21311/ 11.8x2.4
15	12	1.5	E 21311/ 12 x1.5
16	12	2	E 21311/ 12 x2
17	12	2.5	E 21311/ 12 x2.5
18	12	3	E 21311/ 12 x3
17	13	2	E 21311/ 13 x2
18.7	13.9	2.4	E 21311/ 13.9x2.4
18	14	2	E 21311/ 14 x2
19	14	2.5	E 21311/ 14 x2.5
20	14	3	E 21311/ 14 x3
20	16	2	E 21311/ 16 x2
21	16	2.5	E 21311/ 16 x2.5
22	18	2	E 21311/ 18 x2
23	18	2.5	E 21311/ 18 x2.5
24	20	2	E 21311/ 20 x2
25	20	2.5	E 21311/ 20 x2.5
25	21	2	E 21311/ 21 x2
26	22	2	E 21311/ 22 x2
28	24	2	E 21311/ 24 x2
30	26	2	E 21311/ 26 x2
32	28	2	E 21311/ 28 x2
33	29	2	E 21311/ 29 x2
34	30	2	E 21311/ 30 x2
36	32	2	E 21311/ 32 x2
40	36	2	E 21311/ 36 x2

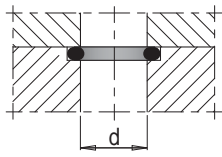


Einbau Installation

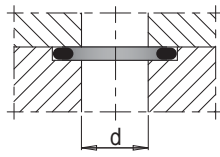
axial



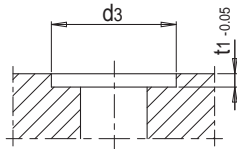
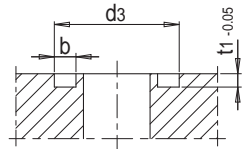
Ringnut
optimal, lange Lebensdauer
Ring groove
optimal solution, long life



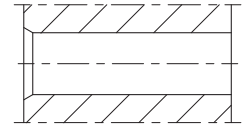
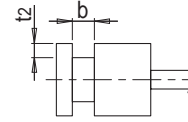
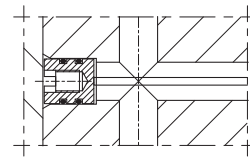
$d_1 = d$
platzsparend
 $d_1 = d$
space-saving



$d_1 > d$
mehr Sicherheit
 $d_1 > d$
more safety

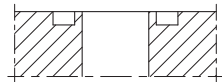
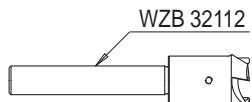
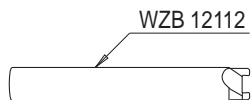


radial



Tipp: d_3 kann bis zu max. 3% kleiner als d_2 sein, damit der O-Ring in der Platte fixiert ist und hält.
Tip: d_3 can be max. 3% smaller as d_2 so that the O-ring is securely fixed in the plate.

d4	b	t1	t2
1.5	1.9	1.2	1.3
1.6	2.2	1.25	1.4
1.8	2.6	1.4	1.5
2.0	2.6	1.6	1.7
2.4	3.1	1.9	2.1
2.5	3.2	2.0	2.2
2.6	3.6	2.1	2.2
3.0	3.9	2.4	2.6
4.0	5.2	3.2	3.5



Werkstoff Datenblatt



Material:	FKM plus
Artikel:	E 21311 O-Ring Hochtemperatur
Härte:	75 Shore A
Farbe:	schwarz, rot beschichtet
Chem. Beständigkeit:	hervorragend
Besonderheit:	hohe Beständigkeit gegen Heißwasser und Dampf

Eigenschaften:

Der **Hochleistungswerkstoff FKM plus** wurde speziell für Anwendung mit **Heißwasser** entwickelt. Die üblichen FKM Werkstoffe werden bei Wasser-Temperaturen von über ca. 100°C schnell verhärtet und verlieren ihre Elastizität und somit die Dichtwirkung.

FKM plus zeichnet sich durch seine hohe Beständigkeit gegen Heißwasser und Dampf aus, und sorgt so für einen sicheren Betrieb in der Produktion. Optimal geeignet für den Einsatz in Temperierkreisläufen bei Spritzguss, Druckguss und ähnlichen Anwendungen.

FKM ist generell sehr beständig gegen eine Vielzahl von Medien und Chemikalien.

Merkmale:

- » hohe Beständigkeit gegen Heißwasser und Dampf bis 180°C (peak 200°C)
- » hohe Beständigkeit gegen Öle und Fette
- » langlebiges Hochleistungselastomer
- » speziell geeignet für Temperieranwendungen

Empfohlene max. Einsatztemperaturen:

Wasser:	180°C (peak 200°C)
Öl:	180°C (peak 200°C)
Luft:	200°C

Mechanische und physische Eigenschaften:

Dichte:	ASTM D 1817	1,9 - 1,94 g/cm ³
Zugfestigkeit:	DIN 53504	min. 8 Mpa
Härte:	IRHD	70 - 80

Eigenschaften in Wasser / Dampf (168h/200° ASTM D 471)

Δ Härte:	+/-5
Δ Zugfestigkeit:	+/-15%
Δ Volumen:	max. +5%

Eigenschaften in Öl (94h/180°C ISO 1817)

Δ Härte:	+/-5
Δ Zugfestigkeit:	+/-20%
Δ Volumen:	max. +10%

Eigenschaften in Luft (94h/200°C DIN 53508)

Δ Härte:	+5
Δ Zugfestigkeit:	+/-20%

Material datasheet



Material:	FKM plus
Item:	E 21311 High temperature O-ring seal
Hardness:	75 Shore A
Color:	black with red coating
Chemical resistance:	excellent
Special feature:	high resistance to hot water and steam

Characteristics:

The **high-performance material FKM plus** was specially developed for use with **hot water**. The usual FKM materials are quickly hardened at water temperatures above about 100 ° C and lose their elasticity and thus the sealing effect.

FKM plus is characterized by its high resistance to hot water and steam, thus ensuring safe operation in production. Optimally suited for use in temperature control circuits in injection molding, die casting and similar applications.

FKM is generally very resistant to a variety of media and chemicals.

Features:

- » high resistance to hot water and steam up to 180 ° C (peak 200 ° C)
- » high resistance to oils and greases
- » durable high performance elastomer
- » especially suitable for temperature control applications

Recommended max. operating temperature:

Water:	180°C (peak 200°C)
Oil:	180°C (peak 200°C)
Air:	200°C

Mechanical and physical properties:

Density:	ASTM D 1817	1,9 - 1,94 g/cm ³
Tensile strength:	DIN 53504	min. 8 Mpa
Hardness:	IRHD	70 - 80

Characteristics in water / steam (168h/200° ASTM D 471)

Δ Hardness:	+/-5
Δ Tensile strength:	+/-15%
Δ Volume:	max. +5%

Characteristics in oil (94h/180°C ISO 1817)

Δ Hardness:	+/-5
Δ Tensile strength:	+/-20%
Δ Volumen:	max. +10%

Characteristics in air (94h 200°C DIN 53508)

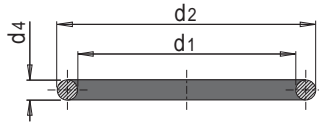
Δ Hardness:	+5
Δ Tensile strength:	+/-20%

E 2130



O-Ring

O-ring seal



Mat.: FKM (Viton), 80 Shore A

t max = 100°C Wasser/water
180°C Öl/oil

d2	d1	d4	Nr. /No.
6	3	1.5	E 2130/ 3 x1.5
6.8	3.8	1.5	E 2130/ 3.8x1.5
7	4	1.5	E 2130/ 4 x1.5
7.8	4.8	1.5	E 2130/ 4.8x1.5
8	5	1.5	E 2130/ 5 x1.5
9	5	2.0	E 2130/ 5 x2
8.8	5.8	1.5	E 2130/ 5.8x1.5
9	6	1.5	E 2130/ 6 x1.5
10	6	2.0	E 2130/ 6 x2
9.5	6.5	1.5	E 2130/ 6.5x1.5
10.5	6.5	2.0	E 2130/ 6.5x2
10	7	1.5	E 2130/ 7 x1.5
11	7	2.0	E 2130/ 7 x2
10.3	7.1	1.6	E 2130/ 7.1x1.6
10.5	7.5	1.5	E 2130/ 7.5x1.5
11.5	7.5	2.0	E 2130/ 7.5x2
11	8	1.5	E 2130/ 8 x1.5
12	8	2.0	E 2130/ 8 x2
13	8	2.5	E 2130/ 8 x2.5
11.5	8.5	1.5	E 2130/ 8.5x1.5
12.5	8.5	2.0	E 2130/ 8.5x2
12	9	1.5	E 2130/ 9 x1.5
13	9	2.0	E 2130/ 9 x2
15	9	3.0	E 2130/ 9 x3
12.5	9.5	1.5	E 2130/ 9.5x1.5
13.5	9.5	2.0	E 2130/ 9.5x2
12.8	9.8	1.5	E 2130/ 9.8x1.5
13	10	1.5	E 2130/ 10 x1.5
14	10	2.0	E 2130/ 10 x2
14.8	10	2.4	E 2130/ 10 x2.4
15	10	2.5	E 2130/ 10 x2.5
16	10	3.0	E 2130/ 10 x3
13.5	10.5	1.5	E 2130/ 10.5x1.5
14.5	10.5	2.0	E 2130/ 10.5x2
14	11	1.5	E 2130/ 11 x1.5
15	11	2.0	E 2130/ 11 x2
14.5	11.5	1.5	E 2130/ 11.5x1.5
15.5	11.5	2.0	E 2130/ 11.5x2
16.4	11.6	2.4	E 2130/ 11.6x2.4
16.6	11.8	2.4	E 2130/ 11.8x2.4
15	12	1.5	E 2130/ 12 x1.5
16	12	2.0	E 2130/ 12 x2
17	12	2.5	E 2130/ 12 x2.5
18	12	3.0	E 2130/ 12 x3
16	12.4	1.8	E 2130/ 12.4x1.8
15.5	12.5	1.5	E 2130/ 12.5x1.5
16.5	12.5	2.0	E 2130/ 12.5x2
16	13	1.5	E 2130/ 13 x1.5
17	13	2.0	E 2130/ 13 x2
18.7	13.9	2.4	E 2130/ 13.9x2.4
18	14	2.0	E 2130/ 14 x2
19	14	2.5	E 2130/ 14 x2.5
20	14	3.0	E 2130/ 14 x3
18.6	15	1.8	E 2130/ 15 x1.8
20.1	15.3	2.4	E 2130/ 15.3x2.4
19.5	15.5	2.0	E 2130/ 15.5x2
20	16	2.0	E 2130/ 16 x2
21	16	2.5	E 2130/ 16 x2.5
21.5	16.5	2.5	E 2130/ 16.5x2.5
21	17	2.0	E 2130/ 17 x2
22	17	2.5	E 2130/ 17 x2.5

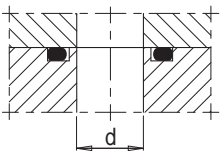
d2	d1	d4	Nr. /No.
22.1	17.3	2.4	E 2130/ 17.3x2.4
22.3	17.5	2.4	E 2130/ 17.5x2.4
23.5	17.5	3.0	E 2130/ 17.5x3
22	18	2.0	E 2130/ 18 x2
23	18	2.5	E 2130/ 18 x2.5
24	18	3.0	E 2130/ 18 x3
23	19	2.0	E 2130/ 19 x2
24	19	2.5	E 2130/ 19 x2.5
24.1	19.3	2.4	E 2130/ 19.3x2.4
24	20	2.0	E 2130/ 20 x2
25	20	2.5	E 2130/ 20 x2.5
26	20	3.0	E 2130/ 20 x3
25.5	20.3	2.6	E 2130/ 20.3x2.6
25	21	2.0	E 2130/ 21 x2
26.1	21.3	2.4	E 2130/ 21.3x2.4
25.6	22	1.8	E 2130/ 22 x1.8
26	22	2.0	E 2130/ 22 x2
27	22	2.5	E 2130/ 22 x2.5
28	22	3.0	E 2130/ 22 x3
28.1	23.3	2.4	E 2130/ 23.3x2.4
27.5	23.5	2.0	E 2130/ 23.5x2
28	24	2.0	E 2130/ 24 x2
29	24	2.5	E 2130/ 24 x2.5
30.1	25.3	2.4	E 2130/ 25.3x2.4
30	26	2.0	E 2130/ 26 x2
31	26	2.5	E 2130/ 26 x2.5
33	27	3.0	E 2130/ 27 x3
32.1	27.3	2.4	E 2130/ 27.3x2.4
32	28	2.0	E 2130/ 28 x2
33	28	2.5	E 2130/ 28 x2.5
34	28	3.0	E 2130/ 28 x3
33	29	2.0	E 2130/ 29 x2
34	30	2.0	E 2130/ 30 x2
35	30	2.5	E 2130/ 30 x2.5
36.2	30.2	3.0	E 2130/ 30.2x3
36	31	2.5	E 2130/ 31 x2.5
36	32	2.0	E 2130/ 32 x2
37	32	2.5	E 2130/ 32 x2.5
38.2	32.2	3.0	E 2130/ 32.2x3
39	34	2.5	E 2130/ 34 x2.5
40.2	34.2	3.0	E 2130/ 34.2x3
39	35	2.0	E 2130/ 35 x2
40	35	2.5	E 2130/ 35 x2.5
40	36	2.0	E 2130/ 36 x2
41	36	2.5	E 2130/ 36 x2.5
42	36	3.0	E 2130/ 36 x3
41	37	2.0	E 2130/ 37 x2
43	38	2.5	E 2130/ 38 x2.5
44	39	2.5	E 2130/ 39 x2.5
45	39	3.0	E 2130/ 39 x3
45	40	2.5	E 2130/ 40 x2.5
47	42	2.5	E 2130/ 42 x2.5
47	43	2.0	E 2130/ 43 x2
49	44	2.5	E 2130/ 44 x2.5
50	44	3.0	E 2130/ 44 x3
50	46	2.0	E 2130/ 46 x2
51	46	2.5	E 2130/ 46 x2.5
53	48	2.5	E 2130/ 48 x2.5
54	49	2.5	E 2130/ 49 x2.5
55	49	3.0	E 2130/ 49 x3
55	50	2.5	E 2130/ 50 x2.5

d2	d1	d4	Nr./No.
58	52	3.0	E 2130/ 52 x3
60	54	3.0	E 2130/ 54 x3
62	56	3.0	E 2130/ 56 x3
64	58	3.0	E 2130/ 58 x3
65	59	3.0	E 2130/ 59 x3
66	60	3.0	E 2130/ 60 x3
68	62	3.0	E 2130/ 62 x3
69	63	3.0	E 2130/ 63 x3
72	66	3.0	E 2130/ 66 x3
76	70	3.0	E 2130/ 70 x3
79	73	3.0	E 2130/ 73 x3
86	80	3.0	E 2130/ 80 x3
89	83	3.0	E 2130/ 83 x3
90	84	3.0	E 2130/ 84 x3
92	86	3.0	E 2130/ 86 x3
96	90	3.0	E 2130/ 90 x3
99	93	3.0	E 2130/ 93 x3
106	100	3.0	E 2130/100 x3
109	103	3.0	E 2130/103 x3

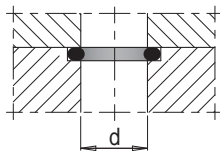
d2	d1	d4	Nr./No.
118	110	4.0	E 2130/110 x4
118	112	3.0	E 2130/112 x3
128	120	4.0	E 2130/120 x4
128	122	3.0	E 2130/122 x3
138	130	4.0	E 2130/130 x4
138	132	3.0	E 2130/132 x3
148	140	4.0	E 2130/140 x4
150	142	4.0	E 2130/142 x4
158	150	4.0	E 2130/150 x4
168	160	4.0	E 2130/160 x4
178	170	4.0	E 2130/170 x4
188	180	4.0	E 2130/180 x4
198	190	4.0	E 2130/190 x4
208	200	4.0	E 2130/200 x4
228	220	4.0	E 2130/220 x4
248	240	4.0	E 2130/240 x4
268	260	4.0	E 2130/260 x4
288	280	4.0	E 2130/280 x4
308	300	4.0	E 2130/300 x4

Einbau Installation

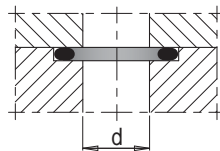
axial



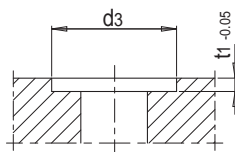
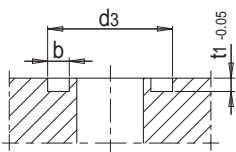
Ringnut
optimal, lange Lebensdauer
Ring groove
optimal solution, long life



$d_1 = d$
platzsparend
 $d_1 = d$
space-saving

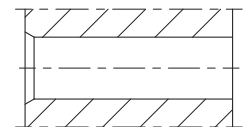
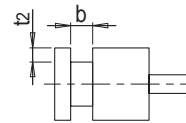
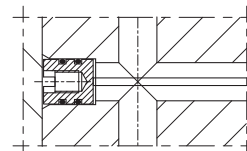


$d_1 > d$
mehr Sicherheit
 $d_1 > d$
more safety

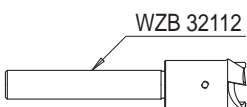
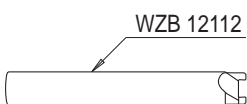


Tipp: d_3 kann bis zu max. 3% kleiner als d_2 sein, damit der O-Ring in der Platte fixiert ist und hält.
Tip: d_3 can be max. 3% smaller as d_2 so that the O-ring is securely fixed in the plate.

radial



d4	b	t1	t2
1.5	1.9	1.2	1.3
1.6	2.2	1.25	1.4
1.8	2.6	1.4	1.5
2.0	2.6	1.6	1.7
2.4	3.1	1.9	2.1
2.5	3.2	2.0	2.2
2.6	3.6	2.1	2.2
3.0	3.9	2.4	2.6
4.0	5.2	3.2	3.5



Werkstoff-Datenblatt

Material datasheet



Material:	FKM (Viton®)
Artikel / Item:	E 2130 O-Ring
Härte / Hardness:	80 Shore A
Farbe / Color:	schwarz / black
Chem. Beständigkeit / Chem. resistance:	hervorragend / excellent

Eigenschaften / Characteristics:

Hochwertiger standard FKM O-Ring (Viton®) mit 80 Shore A Härte. Optimale Dichtungslösung für viele Anwendungen. FKM ist generell sehr beständig gegen eine Vielzahl von Medien und Chemikalien.

High quality standard FKM O-ring (Viton®) with hardness 80 Shore A. Optimum sealing solution for many applications. FKM generally is very resistant to a variety of media and chemicals.

Empfohlene max. Einsatztemperaturen / Recommended max. operating temperature:

Wasser / Water:	100°C *)
Öl / Oil:	180°C
Luft / Air:	200°C

*) Bei Anwendung mit Wasser bei Temperaturen über 100°C empfehlen wir unseren Werkstoff FKM plus (Artikel E 21311)

*) When used with water at temperatures above 100 ° C we recommend our material FKM plus (Item E 21311)

Mechanische und physische Eigenschaften / Mechanical and physical properties:

Dichte / density:	ASTM D 1817	1,95 g/cm ³
Zugfestigkeit / Tensile strength:	DIN 53504	min. 8 Mpa
Bruchdehnung / Ultimate elongation:	DIN 53504	min. 165%
Härte / Hardness:	IRHD	75 - 85