



RSV Stepseal® V is based on the dynamic, unidirectional Stepseal® sealing concept. During the extending stroke of the rod, focusing of contact force on the unique Stepseal® sealing edge creates high local sealing pressure and limits the micro fluid film formation under the seal.

When the rod is retracted, the design of the full Stepseal® sealing face supports hydrodynamic **back-pumping** of the fluid film, and so ensures leak-free sealing efficiency with low friction and long service life.

In **long-stroke cylinders**, and equipment operating with low speed during retraction, it has been found that hydrodynamic back-pumping may become insufficient to prevent build-up of pressure in the seal system behind the primary seal. Pressure build-up in the seal system leads to leakage, increased friction and wear, and may ultimately require replacement of the seals.

First invented by Trelleborg Sealing Solutions, the build-in check valve function eliminates pressure build-up and so render buffer volumes and drain lines obsolete.

Operating conditions

Pressure	
RSV-M12N	≤ 50 MPa
RSV-T46N	≤ 50 MPa
Temperature	-30°C to 100°C
Speed	≤ 15 m/s

Materials

Energising element ①	NBR 70 ShA
Dynamic sealing element ②	
RSV-M12N	Turcon® M12
RSV-T46N	Turcon® T46

Assembly

Advantages

- Low friction
- No stick-slip
- Long service life
- Small housing and simple groove design
- Check valve function
- Stabilised position in the groove
- Hydrodynamic back-pumping

Please contact us for applications approaching maximum values.

d	D	L	O-ring NBR 70 Sh A	Reference
45	55,7	4,2	50,39 x 3,53	RSV200450-M12N
50	60,7	4,2	53,57 x 3,53	RSV200500-T46N
	65,1	6,3	56,52 x 5,34	RSV300500-T46N
60	75,1	6,3	66,04 x 5,34	RSV300600-M12N
70	85,1	6,3	75,57 x 5,34	RSV300700-M12N
80	95,1	6,3	85,09 x 5,34	RSV300800-M12N
90	105,1	6,3	94,62 x 5,34	RSV300900-M12N
100	115,1	6,3	107,32 x 5,34	RSV301000-M12N
	130,5	8,1	116,84 x 5,34	RSV401100-M12N
140	155,1	6,3	145,42 x 5,34	RSV301400-M12N
	180,5	8,1	170,82 x 7,00	RSV401600-M12N
180	195,1	6,3	183,52 x 5,34	RSV301800-M12N
	220,5	8,1	208,90 x 7,00	RSV402000-M12N
250	270,5	8,1	266,07 x 7,00	RSV402500-M12N
	400	424	8,1	417,96 x 7,00

Serie	d (mm)			L (mm)	D (mm)	r (mm)	e (mm)*			O-ring C/S ①
	Standard serie	Light serie	Heavy serie				10 MPa	20 MPa	40 MPa	
RSV2	12 → 37,9	38 → 199,9		4,2	d + 10,7	1	≤ 0,5	≤ 0,3	≤ 0,2	3,53
RSV3	38 → 199,9	200 → 255,9	19,9 → 37,9	6,3	d + 15,1	1,3	≤ 0,7	≤ 0,4	≤ 0,25	5,33
RSV4	200 → 255,9	256 → 649,9	38 → 199,9	8,1	d + 20,5	1,8	≤ 0,8	≤ 0,6	≤ 0,35	7
RSV8	256 → 649,9	650 → 999,9	200 → 255,9	8,1	d + 24	1,8	≤ 0,9	≤ 0,7	≤ 0,4	7
RSV5	650 → 999,9		256 → 649,9	9,5	d + 27,3	2,5	≤ 1	≤ 0,8	≤ 0,5	8,4
RSV5X		1000 → 1200		9,5	d + 27,3	2,5	≤ 1	≤ 0,8	≤ 0,5	8,4
RSV6**			650 → 999,9	13,8	d + 38	3	≤ 1,2	≤ 0,9	≤ 0,6	12
RSV6X**	≥ 1000			13,8	d + 38	3	≤ 1,2	≤ 0,9	≤ 0,6	12

* At pressures ≥ 40 MPa use diameter tolerance H8/f7 (bore/rod) in the area behind seal (metal guiding).

** All O-rings with 12 mm cross section are delivered as a special profile ring