

# Maximizing bearing performance

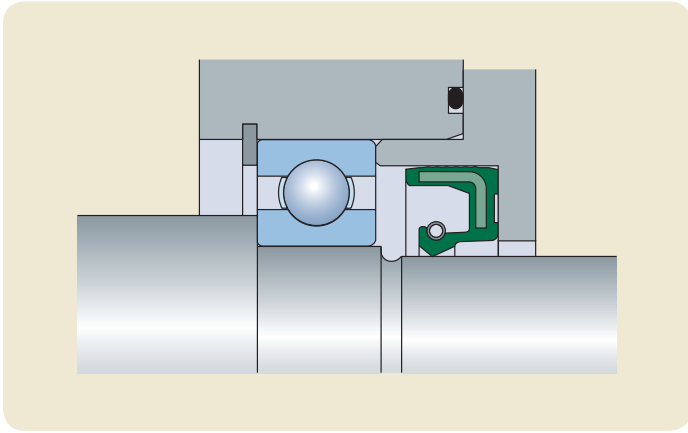


## Radial shaft seals HMS5 and HMSA10

- Longer service life
- Improved sealing performance
- Excellent oil compatibility



Installation example



# Radial shaft seals

## HMS5 and HMSA10

### Main features

The new metric line of rubber outside diameter radial shaft seals, type HMS5 and HMSA10, is designed in accordance with ISO 6194 and DIN 3760 for use in a wide range of applications within all industrial areas, e.g. gearboxes. The available size range of HMS5 and HMSA10 includes a full coverage of the ISO 6194 and DIN 3760 dimensions up to 250 mm shaft sizes. Main features are:

- New optimized seal material compound.
- Spring loaded and trimmed sealing lip.
- Balanced sealing lip and flex section.
- Beaded outside diameter.
- Secondary (dust) lip of type HMSA10.

### Design

The rubber outside diameter provides optimized sealing ability in the housing, also at considerable surface roughness or a split housing.

The spring loaded sealing lip contributes to a quick response to handle dynamic runout and to maintain the sealing ability also at excessive wear. The lip is trimmed to achieve a sharp sealing edge.

Sealing lip and flex section are balanced to achieve good followability to withstand high dynamic runout and shaft-to-bore misalignment.

A beaded outside diameter provides an improved sealing ability and a secure retention in the bore. It also prevents spring back at assembly.

The secondary sealing lip is designed with zero lip/shaft interference in order not to create additional friction resulting in heat generation and energy loss.

### Material

#### Metal insert:

Mild steel

#### Spring:

Spring steel

#### Sealing lips and outside diameter:

Acrylonitrile-butadiene rubber, hardness 75° Shore A, material code SKF NBR 3243.

The compound has the designation suffix RG.

The new nitrile rubber compound SKF 3243 is the result of long experience and the latest findings from the SKF seal material developments. Main advantages are:

- Good resistance to ageing.
- Very good compatibility to synthetic oils.
- Very good pumping ability.
- Good wear resistance.

The pumping ability is defined by the time it takes for the seal to return a certain amount of oil from the airside to the oil side. The

shorter the time the more effective is the seal. The microstructure of the SKF NBR 3243 compound is resulting in that the seal will instantly pump back the oil.

**Table 1** and **diagram 1** show the differences between the formerly used standard material and the new compound for HMS5 RG and HMSA10 RG when it comes to secure proper sealing and a long service life.

The complete range of HMS5 and HMSA10 is also available on request in a fluoro rubber compound with the garter spring in stainless steel. This compound has the designation suffix V and is used in applications with temperatures beyond the limits of nitrile rubber.

### Applications and operating conditions

Series HMS5 (→ **fig. 1**) and HMSA10 (→ **fig. 2**) are designed for optimum use in applications lubricated with oil or grease in temperatures from -40 to +100 °C (-40 to 212 °F), short-term up to 120 °C (248 °F). The series is also appropriate for sealing lubricants within a wide range of viscosities.

#### Surface speed:

up to 14 m/s (2 755 ft/min)

#### Operating pressure:

max 0,03 MPa (5 psi)

These values are the maximum value for each service condition and should not occur together. Consideration must be taken to how the service conditions affect each other.

### Machining directions

#### Recommendations according to ISO standard

#### Shaft

##### Tolerance:

h11

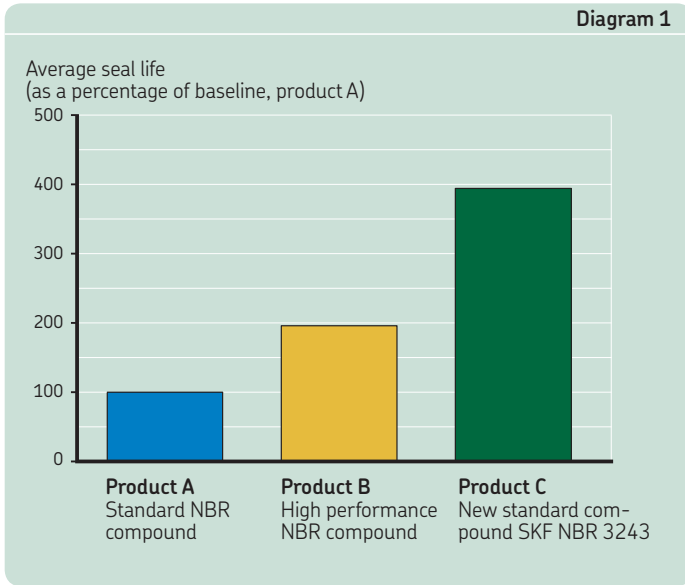
##### Surface roughness:

R<sub>a</sub> 0,2 to 0,63 μm

R<sub>z</sub> 0,8 to 2,5 μm

##### Surface finishing:

non-oriented, preferably by plunge grinding



**Endurance test**

**Table 1**

Speed rotating	linear	Pumping time	
		Standard NBR	NBR SKF 3243
r/min	m/s	s	
1 000	3,0	–	117
1 500	4,6	280	69
2 000	6,1	186	50
2 500	7,6	130	40
3 000	9,1	102	31
3 500	10,6	82	25
4 000	12,1	68	21
4 500	13,7	57	18

Shaft diameter 60 mm, engine oil SAE 30

**Pumping performance**

**Housing bore**

**Tolerance:**

H8

**Surface roughness:**

R<sub>a</sub> 3,2 µm

R<sub>z</sub> 12,5 µm

**Recommendations according to DIN standard**

**Shaft**

**Tolerance:**

h11

**Surface roughness:**

R<sub>a</sub> 0,2 to 0,8 µm

R<sub>z</sub> 1 to 5 µm

**Hardness:**

min. 45 HRC

**Surface finishing:**

non-oriented, preferably by plunge grinding

**Housing bore**

**Tolerance:**

H8

**Surface roughness:**

R<sub>a</sub> 1,6 to 6,3 µm

R<sub>z</sub> 10 to 20 µm

## Installation

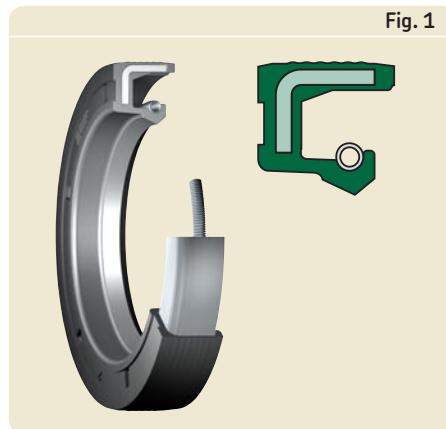
Careful fitting according to ISO 6194 or DIN 3760 is a prerequisite for proper functioning of the seal.

For further details about mounting of SKF radial shaft seals, please see our catalogue "Industrial shaft seals" (5300) or visit the SKF Interactive Engineering Catalogue at skf.com.

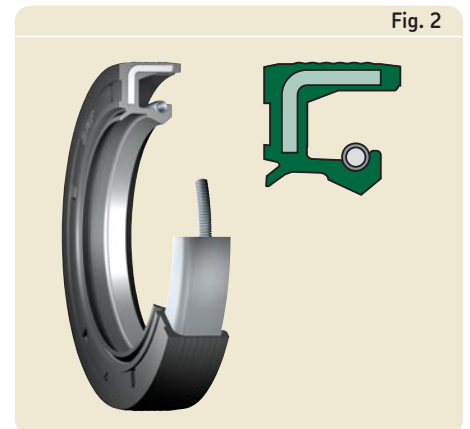
We recommend to use seals of type HMSA10 with a secondary lip in applications with increased demand on protection of the primary lip.

For more information, please contact your local SKF sales representative.

**HMS5 RG**

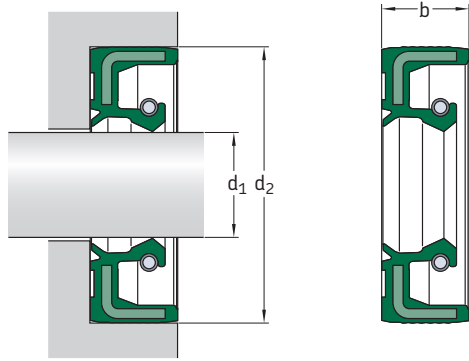


**HMSA10 RG**



# Radial shaft seals HMS5 and HMSA10

d<sub>1</sub> 6 – 27 mm



Dimensions				Designation	ISO/DIN	Dimensions			
shaft	bore	seal width				shaft	bore	seal width	
d <sub>1</sub>	d <sub>2</sub>	b			d <sub>1</sub>	d <sub>2</sub>	b		
mm				-	-	mm			
6	16	5	CR 6×16×5*		12	30	7	CR 12×30×7*	•
	16	7	CR 6×16×7*	•		32	7	CR 12×32×7*	
	22	7	CR 6×22×7*	•		13	26	7	CR 13×26×7*
7	16	7	CR 7×16×7**		14		24	7	CR 14×24×7*
	22	7	CR 7×22×7*	•	25	5	CR 14×25×5*		
8	18	5	CR 8×18×5*		28	7	CR 14×28×7*		
	18	7	CR 8×18×7*		30	7	CR 14×30×7*	•	
	22	7	CR 8×22×7*	•	15	24	7	CR 15×24×7**	
24	7	CR 8×24×7*	•	25		5	CR 15×25×5*		
9	22	7	CR 9×22×7*	•	25	6	CR 15×25×6*		
10	19	7	CR 10×19×7**		26	7	CR 15×26×7*	•	
	20	6	CR 10×20×6*		30	7	CR 15×30×7*	•	
	20	7	CR 10×20×7*		32	7	CR 15×32×7*		
	22	7	CR 10×22×7*	•	35	7	CR 15×35×7*	•	
	24	7	CR 10×24×7*		40	10	CR 15×40×10*		
	25	7	CR 10×25×7*	•	16	28	7	CR 16×28×7*	
26	7	CR 10×26×7*	•	30		7	CR 16×30×7*	•	
12	19	5	CR 12×19×5**			32	7	CR 16×32×7*	
	22	5	CR 12×22×5*		35	7	CR 16×35×7*	•	
	22	6	CR 12×22×6*						
	22	7	CR 12×22×7*	•					
	24	7	CR 12×24×7*	•					
25	7	CR 12×25×7*	•						
28	7	CR 12×28×7*							

\* To be followed by the design and material codes, indicating one of the four variants available for each dimension:

HMS5 RG without secondary lip, nitrile rubber

HMS5 V without secondary lip, fluoro rubber

HMSA10 RG with secondary lip, nitrile rubber

HMSA10 V with secondary lip, fluoro rubber

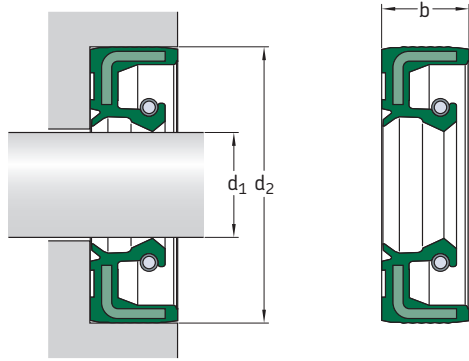
Example: CR 6×16×5 HMSA10 RG

\*\* Design execution differs from the basic design and is indicated by a number, e.g. RG1

Dimensions			Designation	ISO/DIN	Dimensions			Designation	ISO/DIN	
shaft	bore	seal width			shaft	bore	seal width			
d <sub>1</sub>	d <sub>2</sub>	b			d <sub>1</sub>	d <sub>2</sub>	b			
mm			–	–	mm			–	–	
17	28	7	CR 17×28×7*		22	42	10	CR 22×42×10*		
	29	5	CR 17×29×5*			47	7	CR 22×47×7*	•	
	30	7	CR 17×30×7*			23	40	10	CR 23×40×10*	
	32	7	CR 17×32×7*				24	35	7	CR 24×35×7*
	35	7	CR 17×35×7*			37		7	CR 24×37×7*	
	40	7	CR 17×40×7*			40		7	CR 24×40×7*	
40	10	CR 17×40×10*		42	8	CR 24×42×8*				
18	28	7	CR 18×28×7*		47	7	CR 24×47×7*			
	30	6	CR 18×30×6*		25	35	6	CR 25×35×6*		
	30	7	CR 18×30×7*	•		35	7	CR 25×35×7*	•	
	32	7	CR 18×32×7*			37	5	CR 25×37×5*		
	35	7	CR 18×35×7*	•		37	6	CR 25×37×6*		
	40	7	CR 18×40×7*			37	7	CR 25×37×7*		
				38		7	CR 25×38×7*			
19	30	7	CR 19×30×7*		40	5	CR 25×40×5*			
	30	8	CR 19×30×8*		40	7	CR 25×40×7*	•		
	32	7	CR 19×32×7*		40	8	CR 25×40×8*			
20	30	5	CR 20×30×5*		40	10	CR 25×40×10*			
	30	7	CR 20×30×7*	•	42	6	CR 25×42×6*			
	32	7	CR 20×32×7*		42	7	CR 25×42×7*			
	34	7	CR 20×34×7*		42	10	CR 25×42×10*			
	35	6	CR 20×35×6*		45	7	CR 25×45×7*			
	35	7	CR 20×35×7*	•	45	8	CR 25×45×8*			
	35	8	CR 20×35×8*		45	10	CR 25×45×10*			
	35	10	CR 20×35×10*		46	7	CR 25×46×7*			
	36	7	CR 20×36×7*		47	7	CR 25×47×7*	•		
	38	7	CR 20×38×7*		47	10	CR 25×47×10*			
	40	7	CR 20×40×7*	•	50	10	CR 25×50×10*			
	40	10	CR 20×40×10*		52	7	CR 25×52×7*	•		
	42	7	CR 20×42×7*		52	8	CR 25×52×8*			
	42	10	CR 20×42×10*		52	10	CR 25×52×10*			
	47	7	CR 20×47×7*		62	7	CR 25×62×7*			
	47	10	CR 20×47×10*		62	8	CR 25×62×8*			
				62	10	CR 25×62×10*				
21	52	7	CR 20×52×7*		26	37	7	CR 26×37×7*		
	52	10	CR 20×52×10*			38	5	CR 26×38×5*		
22	35	7	CR 21×35×7*		38	7	CR 26×38×7*			
	32	7	CR 22×32×7*		42	7	CR 26×42×7*			
22	35	7	CR 22×35×7*	•	47	7	CR 26×47×7*			
	36	7	CR 22×36×7*		27	37	7	CR 27×37×7*		
	38	8	CR 22×38×8*			42	10	CR 27×42×10*		
	40	7	CR 22×40×7*	•		43	7	CR 27×43×7*		
	40	10	CR 22×40×10*			47	10	CR 27×47×10*		

# Radial shaft seals HMS5 and HMSA10

d<sub>1</sub> 28 – 43 mm



Dimensions				Designation	ISO/DIN	Dimensions					
shaft	bore	seal width				shaft	bore	seal width			
d <sub>1</sub>	d <sub>2</sub>	b			d <sub>1</sub>	d <sub>2</sub>	b				
mm			–	–	mm			–			
28	38	7	CR 28×38×7*		•	52	7	CR 30×52×7*	•		
	38	8	CR 28×38×8*			52	8	CR 30×52×8*			
	40	7	CR 28×40×7*	•		52	10	CR 30×52×10*			
	40	8	CR 28×40×8*			55	7	CR 30×55×7*			
	42	7	CR 28×42×7*			55	10	CR 30×55×10*			
	42	8	CR 28×42×8*			62	7	CR 30×62×7*			
	44	6	CR 28×44×6*			62	10	CR 30×62×10*			
	45	8	CR 28×45×8*			72	10	CR 30×72×10*			
	47	7	CR 28×47×7*	•		32	42	7		CR 32×42×7*	
	47	10	CR 28×47×10*				43	7		CR 32×43×7*	
	52	7	CR 28×52×7*	•		44	7	CR 32×44×7*			
	52	10	CR 28×52×10*			45	7	CR 32×45×7*		•	
	30	40	7	CR 30×40×7*		•	45	8		CR 32×45×8*	•
		42	6	CR 30×42×6*			47	6		CR 32×47×6*	
42		7	CR 30×42×7*	•	47	7	CR 32×47×7*	•			
42		8	CR 30×42×8*		47	8	CR 32×47×8*	•			
44		7	CR 30×44×7*		47	10	CR 32×47×10*				
45		7	CR 30×45×7*		48	8	CR 32×48×8*				
45		8	CR 30×45×8*		50	8	CR 32×50×8*				
46		7	CR 30×46×7*		50	10	CR 32×50×10*				
47		6	CR 30×47×6*		52	7	CR 32×52×7*	•			
47		7	CR 30×47×7*	•	52	8	CR 32×52×8*	•			
47		8	CR 30×47×8*		55	10	CR 32×55×10*				
47		10	CR 30×47×10*		62	10	CR 32×62×10*				
48		8	CR 30×48×8*		72	7	CR 32×72×7*				
50		7	CR 30×50×7*		33	45	7	CR 33×45×7*			
50		8	CR 30×50×8*			50	6	CR 33×50×6*			
50		10	CR 30×50×10*								

\* To be followed by the design and material codes, indicating one of the four variants available for each dimension:

HMS5 RG without secondary lip, nitrile rubber

HMS5 V without secondary lip, fluoro rubber

HMSA10 RG with secondary lip, nitrile rubber

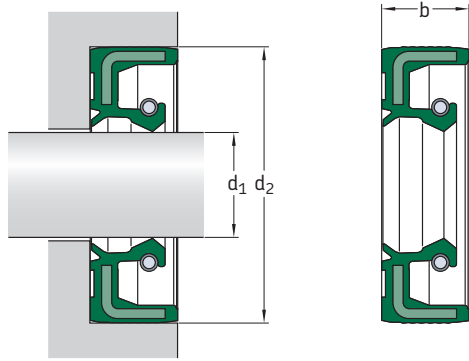
HMSA10 V with secondary lip, fluoro rubber

Example: CR 6×16×5 HMSA10 RG

Dimensions			Designation	ISO/DIN	Dimensions			Designation	ISO/DIN
shaft	bore	seal width			shaft	bore	seal width		
d <sub>1</sub>	d <sub>2</sub>	b			d <sub>1</sub>	d <sub>2</sub>	b		
mm			–	–	mm			–	
34	44	8	CR 34×44×8*		38	60	10	CR 38×60×10*	
	48	8	CR 34×48×8*			62	7	CR 38×62×7*	•
	52	8	CR 34×52×8*			62	8	CR 38×62×8*	•
	62	10	CR 34×62×10*			62	10	CR 38×62×10*	
35	45	7	CR 35×45×7*		72	10	CR 38×72×10*		
	47	6	CR 35×47×6*		38,5	58	7	CR 38.5×58×7*	
	47	7	CR 35×47×7*	•		40	50	8	CR 40×50×8*
	47	8	CR 35×47×8*	•	52		6	CR 40×52×6*	
	48	8	CR 35×48×8*		52	7	CR 40×52×7*	•	
	49	6	CR 35×49×6*		52	8	CR 40×52×8*	•	
	50	7	CR 35×50×7*	•	55	7	CR 40×55×7*	•	
	50	8	CR 35×50×8*	•	55	8	CR 40×55×8*	•	
	50	10	CR 35×50×10*		56	8	CR 40×56×8*		
	52	7	CR 35×52×7*	•	58	7	CR 40×58×7*		
	52	8	CR 35×52×8*	•	58	8	CR 40×58×8*		
	52	10	CR 35×52×10*		58	10	CR 40×58×10*		
	55	7	CR 35×55×7*	•	60	10	CR 40×60×10*		
	55	8	CR 35×55×8*	•	62	6	CR 40×62×6*		
	55	10	CR 35×55×10*		62	7	CR 40×62×7*	•	
	56	10	CR 35×56×10*		62	8	CR 40×62×8*	•	
	58	10	CR 35×58×10*		62	10	CR 40×62×10*		
	60	10	CR 35×60×10*		65	10	CR 40×65×10*		
	62	7	CR 35×62×7*		65	12	CR 40×65×12*		
	62	8	CR 35×62×8*		68	8	CR 40×68×8*		
62	10	CR 35×62×10*		68	10	CR 40×68×10*			
72	10	CR 35×72×10*		72	7	CR 40×72×7*			
72	12	CR 35×72×12*		72	10	CR 40×72×10*			
80	12	CR 35×80×12*		80	10	CR 40×80×10*			
36	47	7	CR 36×47×7*		80	12	CR 40×80×12*		
	50	7	CR 36×50×7*		41	56	7	CR 41×56×7*	
	52	7	CR 36×52×7*			42	55	7	CR 42×55×7*
	58	10	CR 36×58×10*		55		8	CR 42×55×8*	•
	62	7	CR 36×62×7*		56		7	CR 42×56×7*	
37	50	6	CR 37×50×6*		60	7	CR 42×60×7*		
	52	7	CR 37×52×7*		62	7	CR 42×62×7*		
	52	8	CR 37×52×8*		62	8	CR 42×62×8*		
38	50	7	CR 38×50×7*		62	10	CR 42×62×10*	•	
	52	7	CR 38×52×7*		65	10	CR 42×65×10*		
	52	8	CR 38×52×8*		65	12	CR 42×65×12*		
	54	10	CR 38×54×10*		66	10	CR 42×66×10*		
	55	7	CR 38×55×7*	•	67	10	CR 42×67×10*		
	55	8	CR 38×55×8*	•	72	8	CR 42×72×8*		
	55	10	CR 38×55×10*		72	10	CR 42×72×10*		
	58	8	CR 38×58×8*	•	43	62	8	CR 43×62×8*	
	58	10	CR 38×58×10*						

# Radial shaft seals HMS5 and HMSA10

d<sub>1</sub> 44 – 85 mm



Dimensions				Designation	ISO/DIN	Dimensions			
shaft	bore	seal width				shaft	bore	seal width	
d <sub>1</sub>	d <sub>2</sub>	b			d <sub>1</sub>	d <sub>2</sub>	b		
mm			–	–	mm			–	
44	60	10	CR 44×60×10*		48	62	8	CR 48×62×8*	•
	62	10	CR 44×62×10*			65	10	CR 48×65×10*	
	65	10	CR 44×65×10*			68	10	CR 48×68×10*	
45	55	7	CR 45×55×7*		70	10	CR 48×70×10*		
	58	7	CR 45×58×7*		72	7	CR 48×72×7*		
	60	7	CR 45×60×7*		72	8	CR 48×72×8*		
	60	8	CR 45×60×8*	•	72	10	CR 48×72×10*		
	60	10	CR 45×60×10*		50	62	7	CR 50×62×7*	
	62	7	CR 45×62×7*		64	6	CR 50×64×6*		
	62	8	CR 45×62×8*	•	65	8	CR 50×65×8*	•	
	62	10	CR 45×62×10*		65	10	CR 50×65×10*		
	65	8	CR 45×65×8*	•	68	7	CR 50×68×7*		
	65	10	CR 45×65×10*		68	8	CR 50×68×8*	•	
	68	7	CR 45×68×7*		68	10	CR 50×68×10*		
	68	10	CR 45×68×10*		70	10	CR 50×70×10*		
	68	12	CR 45×68×12*						
	72	8	CR 45×72×8*		72	8	CR 50×72×8*	•	
	72	10	CR 45×72×10*		72	10	CR 50×72×10*		
				72	12	CR 50×72×12*			
	75	8	CR 45×75×8*		75	10	CR 50×75×10*		
	75	10	CR 45×75×10*						
	80	10	CR 45×80×10*		80	8	CR 50×80×8*		
					80	10	CR 50×80×10*		
	85	10	CR 45×85×10*		85	10	CR 50×85×10*		
46	59	12	CR 46×59×12*		90	10	CR 50×90×10*		
	65	10	CR 46×65×10*						
47	65	10	CR 47×65×10*		52	63	8	CR 52×63×8*	
	70	10	CR 47×70×10*		65	8	CR 52×65×8*		

\* To be followed by the design and material codes, indicating one of the four variants available for each dimension:

HMS5 RG without secondary lip, nitrile rubber

HMS5 V without secondary lip, fluoro rubber

HMSA10 RG with secondary lip, nitrile rubber

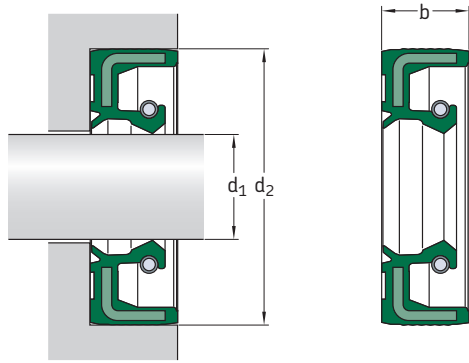
HMSA10 V with secondary lip, fluoro rubber

Example: CR 6×16×5 HMSA10 RG

Dimensions			Designation	ISO/DIN	Dimensions			Designation	ISO/DIN
shaft	bore	seal width			shaft	bore	seal width		
d <sub>1</sub>	d <sub>2</sub>	b			d <sub>1</sub>	d <sub>2</sub>	b		
mm			–	–	mm			–	–
52	68	8	CR 52×68×8*		65	80	8	CR 65×80×8*	
	72	8	CR 52×72×8*			85	10	CR 65×85×10*	•
	72	10	CR 52×72×10*			85	12	CR 65×85×12*	
	80	10	CR 52×80×10*			88	12	CR 65×88×12*	
	85	10	CR 52×85×10*			90	10	CR 65×90×10*	•
55	68	8	CR 55×68×8*		95	10	CR 65×95×10*		
	70	8	CR 55×70×8*	•	100	10	CR 65×100×10*		
	70	10	CR 55×70×10*		68	90	10	CR 68×90×10*	
	72	8	CR 55×72×8*	•		70	85	8	CR 70×85×8*
	72	10	CR 55×72×10*		90		10	CR 70×90×10*	•
	75	10	CR 55×75×10*		90	12	CR 70×90×12*		
	78	10	CR 55×78×10*		92	12	CR 70×92×12*		
	78	12	CR 55×78×12*		95	10	CR 70×95×10*	•	
	80	8	CR 55×80×8*	•	100	10	CR 70×100×10*		
	80	10	CR 55×80×10*		110	10	CR 70×110×10*		
85	8	CR 55×85×8*		110	12	CR 70×110×12*			
90	10	CR 55×90×10*		72	90	10	CR 72×90×10*		
100	12	CR 55×100×12*			95	10	CR 72×95×10*		
					100	10	CR 72×100×10*		
56	72	8	CR 56×72×8*		75	90	10	CR 75×90×10*	
57	67	7	CR 57×67×7*			95	10	CR 75×95×10*	•
58	72	8	CR 58×72×8*		95	12	CR 75×95×12*		
	80	8	CR 58×80×8*		100	10	CR 75×100×10*	•	
	80	10	CR 58×80×10*		100	12	CR 75×100×12*		
60	80	12	CR 58×80×12*		105	10	CR 75×105×10*		
	72	8	CR 60×72×8*		110	12	CR 75×110×12*		
	75	8	CR 60×75×8*	•	120	12	CR 75×120×12*		
	80	8	CR 60×80×8*	•	78	100	10	CR 78×100×10*	
	80	10	CR 60×80×10*			80	95	10	CR 80×95×10*
	82	12	CR 60×82×12*		100		10	CR 80×100×10*	•
	85	8	CR 60×85×8*	•	100	12	CR 80×100×12*		
	85	10	CR 60×85×10*		105	10	CR 80×105×10*		
	90	8	CR 60×90×8*		110	10	CR 80×110×10*	•	
	90	10	CR 60×90×10*		110	12	CR 80×110×12*		
95	10	CR 60×95×10*		85	100	10	CR 85×100×10*		
110	8	CR 60×110×8*			105	12	CR 85×105×12*		
					110	12	CR 85×110×12*	•	
62	80	10	CR 62×80×10*		115	12	CR 85×115×12*		
	85	10	CR 62×85×10*		120	12	CR 85×120×12*	•	
	90	10	CR 62×90×10*		63	85	10	CR 63×85×10*	
90	10	CR 63×90×10*		90		10	CR 63×90×10*		
63	85	10	CR 63×85×10*		64	80	8	CR 64×80×8*	
	90	10	CR 63×90×10*						
64	80	8	CR 64×80×8*						

# Radial shaft seals HMS5 and HMSA10

d<sub>1</sub> 90 – 250 mm



Dimensions				Designation	ISO/DIN	Dimensions						
shaft	bore	seal width				shaft	bore	seal width				
d <sub>1</sub>	d <sub>2</sub>	b			d <sub>1</sub>	d <sub>2</sub>	b					
mm				-	-	mm						
90	110	10	CR 90×110×10*		130	160	12	CR 130×160×12*	•			
	110	12	CR 90×110×12*	•		160	15	CR 130×160×15*				
	115	12	CR 90×115×12*			135	170	12		CR 135×170×12*	•	
	120	12	CR 90×120×12*	•	140	160	12	CR 140×160×12*				
95	115	12	CR 95×115×12*			170	12	CR 140×170×12*	•			
	120	12	CR 95×120×12*	•		170	15	CR 140×170×15*				
	125	12	CR 95×125×12*	•	180	12	CR 140×180×12*					
100	120	10	CR 100×120×10*		145	175	15	CR 145×175×15*	•			
	120	12	CR 100×120×12*	•		148	170	15		CR 148×170×15*		
	125	12	CR 100×125×12*	•			150	180		12	CR 150×180×12*	
	130	12	CR 100×130×12*	•				180		15	CR 150×180×15*	
	140	12	CR 100×140×12*					155		180	15	CR 155×180×15*
	150	12	CR 100×150×12*							160	185	15
105	130	12	CR 105×130×12*	•	190				15		CR 160×190×15*	•
	140	12	CR 105×140×12*		165	190			15		CR 165×190×15*	
	110	130	12	CR 110×130×12*		•	170		200		15	CR 170×200×15*
140		12	CR 110×140×12*	•		180	210		15		CR 180×210×15*	•
150		12	CR 110×150×12*		190		220	15	CR 190×220×15*		•	
115	140	12	CR 115×140×12*	•			225	15	CR 190×225×15*			
	120	140	12	CR 120×140×12*			200	230	15	CR 200×230×15*	•	
		150	12	CR 120×150×12*	•	210		240	15	CR 210×240×15*	•	
160		12	CR 120×160×12*		220	250		15	CR 220×250×15*	•		
125	150	12	CR 125×150×12*	•		230	260	15	CR 230×260×15*	•		

\* To be followed by the design and material codes, indicating one of the four variants available for each dimension:

HMS5 RG without secondary lip, nitrile rubber

HMS5 V without secondary lip, fluoro rubber

HMSA10 RG with secondary lip, nitrile rubber

HMSA10 V with secondary lip, fluoro rubber

Example: CR 6×16×5 HMSA10 RG

Dimensions			Designation	ISO/DIN
shaft	bore	seal width		
$d_1$	$d_2$	$b$		
mm			–	–
<b>240</b>	270	15	<b>CR 240×270×15*</b>	•
<b>250</b>	280	15	<b>CR 250×280×15*</b>	•
<b>250</b>	285	15	<b>CR 250×285×15*</b>	



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