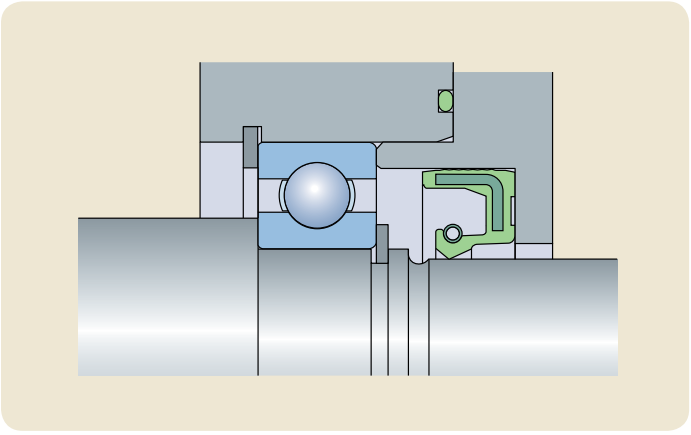
Maximizing performance

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

SKF metric line of rubber outside diameter radial shaft seals, HMS5 and HMSA10, is designed in accordance with ISO 6194-1 and DIN 3760 for use in a wide range of industrial applications (→ **figs. 1** and **2**). The available size range of HMS5 and HMSA10 includes a full coverage of the ISO 6194-1 and DIN 3760 dimensions for shaft diameters up to 250 mm *(9.842 in.)* as well as an extensive range of dimensions commonly used in the market. Main features include:

- optimized sealing lip material
- spring-loaded sealing lip
- optimally balanced sealing lip and flex section
- beaded outside diameter
- auxiliary lip (HMSA10 seals only)

Design

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

The beads on the outside diameter provide improved sealing ability and reliable retention in the bore. They also prevent spring-back at installation.

The spring-loaded sealing lip contributes to a quick response in handling dynamic runout and maintaining the sealing ability, also when sealing lip wear is excessive.

Sealing lip and flex section are optimally balanced to withstand considerable dynamic runout and shaft-to-bore misalignment.

The auxiliary lip on HMSA10 seals is non-contacting, which means that the seals normally can be used at the same speeds as the single-lip HMS5 seals.

Material

Metal insert:
mild steel
Spring:
spring steel
Sealing lip and outside diameter:
acrylonitrile-butadiene (nitrile rubber), hardness 75° Shore A.

The optimized nitrile rubber compound used for the HMS5 and HMSA10 seals has the designation suffix RG. It is the result of developments in seal material research at SKF. Advantages of this material include:

- good resistance to ageing
- excellent compatibility with synthetic oils
- very good pumping ability
- good wear resistance

Pumping ability is defined as the time it takes for the seal to return a certain amount of oil from the air side to the oil side. The microstructure of the SKF developed nitrile rubber compound RG promotes rapid pumping of the oil (→ **table 1**).

In **diagram 1,** results from endurance tests show the extended service life of seals made of the optimized nitrile compound.

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

Applications and operating conditions

HMS5 and HMSA10 seals are designed for oil or grease lubricated applications with temperatures ranging from –40 to +100 °C *(–40 to 210 °F)*, short-term up to 120 °C *(250 °F)*. The seals are also appropriate for sealing lubricants within a wide range of viscosities.

Circumferential speed:
up to 14 m/s *(2 755 ft/min)*
Operating pressure:
max 0,05 MPa *(7 psi)*

These values are the maximum value for eachservice condition and should not occur together. Consideration should be given as to how the operating conditions affect each other. For information on seals under pressure, please see our catalogue *Industrial shaft seals*.

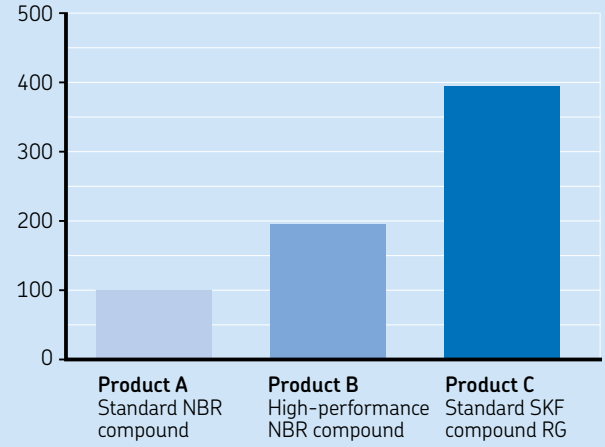
Machining directions

Recommendations according to ISO 6194-1 standard

Shaft

Tolerance:
h11
Surface roughness:
R_a 0,2 to 0,5 µm
R_z 1,2 to 3 µm
Hardness:
minimum 45 HRC
Surface texture:
non-oriented, preferably by plunge grinding

Diagram 1



Endurance test

Table 1

Speed Rotating	Circumferential	Pumping time Standard NBR	SKF compound RG
r/min	m/s	s	s
1 000	3,1	–	117
1 500	4,7	280	69
2 000	6,3	186	50
2 500	7,9	130	40
3 000	9,4	102	31
3 500	11,0	82	25
4 000	12,6	68	21
4 500	14,1	57	18

Shaft diameter 60 mm, engine oil SAE 30

Pumping performance

Housing bore
Tolerance:
H8
Surface roughness:
R_a 1,6 to 3,2 µm
R_z 6,3 to 12,5 µm

Recommendations according to DIN 3760 standard

Shaft
Tolerance:
h11
Surface roughness:
R_a 0,2 to 0,8 µm
R_z 1 to 5 µm
Hardness:
minimum 45 HRC
Surface texture:
non-oriented, preferably by plunge grinding

Housing bore
Tolerance:
H8
Surface roughness:
R_a 1,6 to 6,3 µm
R_z 10 to 20 µm

Installation

Careful installation according to ISO 6194-3 or DIN 3760 is a prerequisite for proper functioning of the seal.

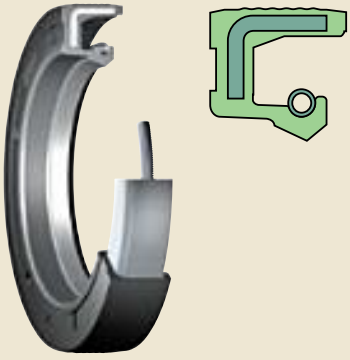
For further details regarding installation of SKF radial shaft seals, please see our catalogue *Industrial shaft seals* or visit us online at skf.com/seals.

SKF recommends the use of HMSA10 seals with an auxiliary lip in applications with increased demand on protection of the primary lip.

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

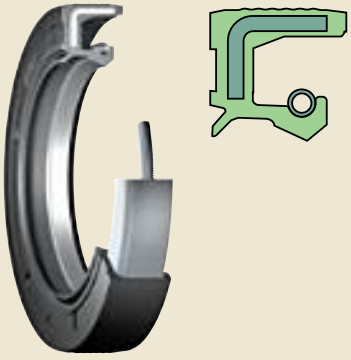
HMS5

Fig. 1



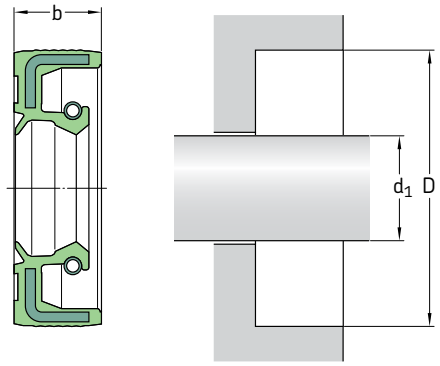
HMSA10

Fig. 2



Radial shaft seals – HMS5 and HMSA10

d_1 **6 – 25** mm



Dimensions			Designation[1]	ISO/DIN
Shaft	Bore	Nominal seal width		
d_1	D	b		
mm			–	–
6	16	5	**6×16×5**	
	16	7	**6×16×7**	•
	22	7	**6×22×7**	•
7	16	7	**7×16×7**[2]	
	22	7	**7×22×7**	•
8	18	5	**8×18×5**	
	18	7	**8×18×7**	
	22	7	**8×22×7**	•
	24	7	**8×24×7**	•
9	22	7	**9×22×7**	•
10	19	7	**10×19×7**[2]	
	20	6	**10×20×6**	
	20	7	**10×20×7**	
	22	7	**10×22×7**	•
	24	7	**10×24×7**	
	25	7	**10×25×7**	•
	26	7	**10×26×7**	•
	30	7	**10×30×7**	
12	19	5	**12×19×5**[2]	
	22	5	**12×22×5**	
	22	6	**12×22×6**	
	22	7	**12×22×7**	•
	24	7	**12×24×7**	•
	25	7	**12×25×7**	•

Dimensions			Designation[1]	ISO/DIN
Shaft	Bore	Nominal seal width		
d_1	D	b		
mm			–	–
12 cont.	28	7	**12×28×7**	
	30	7	**12×30×7**	•
	32	7	**12×32×7**	
	37	7	**12×37×7**	
13	26	7	**13×26×7**	
14	24	7	**14×24×7**	•
	25	5	**14×25×5**	
	28	7	**14×28×7**	
	30	7	**14×30×7**	•
15	24	7	**15×24×7**[2]	
	25	5	**15×25×5**	
	25	6	**15×25×6**	
	26	7	**15×26×7**	•
	30	7	**15×30×7**	•
	32	7	**15×32×7**	
	35	7	**15×35×7**	•
	40	7	**15×40×7**	
	40	10	**15×40×10**	
16	24	7	**16×24×7**[2]	
	28	7	**16×28×7**	
	30	7	**16×30×7**	•
	32	7	**16×32×7**	
	35	7	**16×35×7**	•

[1] To be followed by the design and material codes, indicating one of the four variants available for each dimension:
HMS5 RG without auxiliary lip, nitrile rubber
HMS5 V without auxiliary lip, fluoro rubber
HMSA10 RG with auxiliary lip, nitrile rubber
HMSA10 V with auxiliary lip, fluoro rubber
Example: **6×16×5 HMSA10 RG**

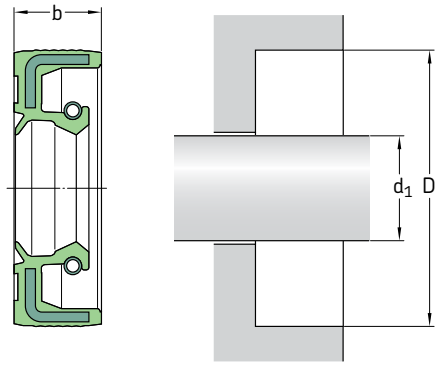
[2] Design execution differs from the basic design and is indicated by a number, e.g. RG1

Dimensions			Designation[1]	ISO/DIN
Shaft d_1	Bore D	Nominal seal width b		
mm			–	–
17	28	7	**17×28×7**	
	29	5	**17×29×5**	
	30	7	**17×30×7**	
	32	7	**17×32×7**	
	35	7	**17×35×7**	
	37	7	**17×37×7**	
	40	7	**17×40×7**	
	40	10	**17×40×10**	
	47	7	**17×47×7**	
	47	10	**17×47×10**	
18	28	7	**18×28×7**	
	30	6	**18×30×6**	
	30	7	**18×30×7**	•
	32	7	**18×32×7**	
	35	7	**18×35×7**	•
	40	7	**18×40×7**	
19	30	7	**19×30×7**	
	30	8	**19×30×8**	
	32	7	**19×32×7**	
	42	6	**19×42×6**	
20	30	5	**20×30×5**	
	30	7	**20×30×7**	•
	32	6	**20×32×6**	
	32	7	**20×32×7**	
	34	7	**20×34×7**	
	35	6	**20×35×6**	
	35	7	**20×35×7**	•
	35	8	**20×35×8**	
	35	10	**20×35×10**	
	36	7	**20×36×7**	
	38	7	**20×38×7**	
	40	7	**20×40×7**	•
	40	10	**20×40×10**	
	42	7	**20×42×7**	
	42	10	**20×42×10**	
	45	7	**20×45×7**	
	47	7	**20×47×7**	
	47	10	**20×47×10**	
	52	7	**20×52×7**	
	52	10	**20×52×10**	
21	35	7	**21×35×7**	
	40	7	**21×40×7**	

Dimensions			Designation[1]	ISO/DIN
Shaft d_1	Bore D	Nominal seal width b		
mm			–	–
22	32	7	**22×32×7**	
	35	7	**22×35×7**	•
	36	7	**22×36×7**	
	38	8	**22×38×8**	
	40	7	**22×40×7**	•
	40	10	**22×40×10**	
	42	10	**22×42×10**	
	45	7	**22×45×7**	
	47	7	**22×47×7**	•
23	40	10	**23×40×10**	
24	35	7	**24×35×7**	
	37	7	**24×37×7**	
	40	7	**24×40×7**	
	42	8	**24×42×8**	
	47	7	**24×47×7**	
	50	10	**24×50×10**	
25	35	6	**25×35×6**	
	35	7	**25×35×7**	•
	37	5	**25×37×5**	
	37	6	**25×37×6**	
	37	7	**25×37×7**	
	38	7	**25×38×7**	
	40	5	**25×40×5**	
	40	7	**25×40×7**	•
	40	8	**25×40×8**	
	40	10	**25×40×10**	
	42	6	**25×42×6**	
	42	7	**25×42×7**	
	42	10	**25×42×10**	
	45	7	**25×45×7**	
	45	8	**25×45×8**	
	45	10	**25×45×10**	
	46	7	**25×46×7**	
	47	7	**25×47×7**	•
	47	10	**25×47×10**	
	50	10	**25×50×10**	
	52	7	**25×52×7**	•
	52	8	**25×52×8**	
	52	10	**25×52×10**	
	62	7	**25×62×7**	
	62	8	**25×62×8**	
	62	10	**25×62×10**	
	72	7	**25×72×7**	

Radial shaft seals – HMS5 and HMSA10

d_1 **26 – 40** mm



Dimensions			Designation[1]	ISO/DIN
Shaft	Bore	Nominal seal width		
d_1	D	b		
mm			–	–
26	37	7	**26×37×7**	
	38	5	**26×38×5**	
	38	7	**26×38×7**	
	42	7	**26×42×7**	
	47	7	**26×47×7**	
27	37	7	**27×37×7**	
	42	10	**27×42×10**	
	43	7	**27×43×7**	
	47	7	**27×47×7**	
	47	10	**27×47×10**	
28	38	7	**28×38×7**	
	38	8	**28×38×8**	
	40	7	**28×40×7**	•
	40	8	**28×40×8**	
	42	7	**28×42×7**	
	42	8	**28×42×8**	
	44	6	**28×44×6**	
	45	8	**28×45×8**	
	47	7	**28×47×7**	•
	47	10	**28×47×10**	
	52	7	**28×52×7**	•
	52	10	**28×52×10**	
30	40	7	**30×40×7**	•
	42	6	**30×42×6**	
	42	7	**30×42×7**	•
	42	8	**30×42×8**	

Dimensions			Designation[1]	ISO/DIN
Shaft	Bore	Nominal seal width		
d_1	D	b		
mm			–	–
30 cont.	44	7	**30×44×7**	
	45	7	**30×45×7**	
	45	8	**30×45×8**	
	46	7	**30×46×7**	
	47	6	**30×47×6**	
	47	7	**30×47×7**	•
	47	8	**30×47×8**	
	47	10	**30×47×10**	
	48	8	**30×48×8**	
	50	7	**30×50×7**	
	50	8	**30×50×8**	
	50	10	**30×50×10**	
	52	7	**30×52×7**	•
	52	8	**30×52×8**	
	52	10	**30×52×10**	
	55	7	**30×55×7**	
	55	10	**30×55×10**	
	62	7	**30×62×7**	
	62	10	**30×62×10**	
	72	10	**30×72×10**	
32	42	7	**32×42×7**	
	43	7	**32×43×7**	
	44	7	**32×44×7**	
	45	7	**32×45×7**	•
	45	8	**32×45×8**	•
	47	6	**32×47×6**	
	47	7	**32×47×7**	•
	47	8	**32×47×8**	•
	47	10	**32×47×10**	

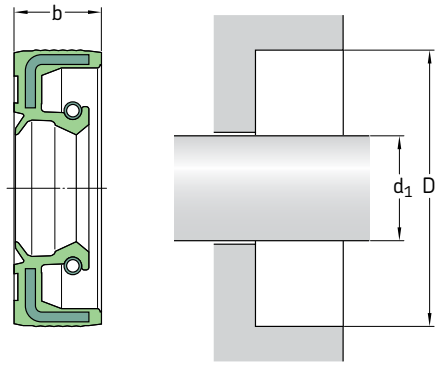
[1] To be followed by the design and material codes, indicating one of the four variants available for each dimension:
HMS5 RG without auxiliary lip, nitrile rubber
HMS5 V without auxiliary lip, fluoro rubber
HMSA10 RG with auxiliary lip, nitrile rubber
HMSA10 V with auxiliary lip, fluoro rubber
Example: **28×38×7 HMSA10 RG**

Dimensions			Designation[1]	ISO/DIN
Shaft d_1	Bore D	Nominal seal width b		
mm			–	–
32 cont.	48	8	**32×48×8**	
	50	8	**32×50×8**	
	50	10	**32×50×10**	
	52	7	**32×52×7**	•
	52	8	**32×52×8**	•
	55	10	**32×55×10**	
	62	10	**32×62×10**	
	72	7	**32×72×7**	
33	45	7	**33×45×7**	
	50	6	**33×50×6**	
34	44	8	**34×44×8**	
	48	8	**34×48×8**	
	52	8	**34×52×8**	
	62	10	**34×62×10**	
35	45	7	**35×45×7**	
	47	6	**35×47×6**	
	47	7	**35×47×7**	•
	47	8	**35×47×8**	•
	48	8	**35×48×8**	
	49	6	**35×49×6**	
	50	7	**35×50×7**	•
	50	8	**35×50×8**	•
	50	10	**35×50×10**	
	52	7	**35×52×7**	•
	52	8	**35×52×8**	•
	52	10	**35×52×10**	
	55	7	**35×55×7**	•
	55	8	**35×55×8**	•
	55	10	**35×55×10**	
	56	10	**35×56×10**	
	58	10	**35×58×10**	
	60	10	**35×60×10**	
	62	7	**35×62×7**	
	62	8	**35×62×8**	
	62	10	**35×62×10**	
	72	7	**35×72×7**	
	72	10	**35×72×10**	
	72	12	**35×72×12**	
	80	12	**35×80×12**	
36	47	7	**36×47×7**	
	50	7	**36×50×7**	
	52	7	**36×52×7**	

Dimensions			Designation[1]	ISO/DIN
Shaft d_1	Bore D	Nominal seal width b		
mm			–	–
36 cont.	58	10	**36×58×10**	
	62	7	**36×62×7**	
37	50	6	**37×50×6**	
38	50	7	**38×50×7**	
	52	7	**38×52×7**	
	52	8	**38×52×8**	
	54	10	**38×54×10**	
	55	7	**38×55×7**	•
	55	8	**38×55×8**	•
	55	10	**38×55×10**	
	58	8	**38×58×8**	•
	58	10	**38×58×10**	
	60	10	**38×60×10**	
	62	7	**38×62×7**	•
	62	8	**38×62×8**	•
	62	10	**38×62×10**	
	72	10	**38×72×10**	
	80	8	**38×80×8**	
38,5	58	7	**38.5×58×7**	
40	50	8	**40×50×8**	
	52	6	**40×52×6**	
	52	7	**40×52×7**	•
	52	8	**40×52×8**	•
	55	7	**40×55×7**	•
	55	8	**40×55×8**	•
	56	8	**40×56×8**	
	58	7	**40×58×7**	
	58	8	**40×58×8**	
	58	10	**40×58×10**	
	59	8	**40×59×8**	
	60	8	**40×60×8**	
	60	10	**40×60×10**	
	62	6	**40×62×6**	
	62	7	**40×62×7**	•
	62	8	**40×62×8**	•
	62	10	**40×62×10**	
	65	10	**40×65×10**	
	65	12	**40×65×12**	
	68	8	**40×68×8**	
	68	10	**40×68×10**	
	70	8	**40×70×8**	
	72	7	**40×72×7**	
	72	10	**40×72×10**	
	80	8	**40×80×8**	
	80	10	**40×80×10**	
	80	12	**40×80×12**	

Radial shaft seals – HMS5 and HMSA10

d_1 **40 – 65** mm



Dimensions			Designation[1]	ISO/DIN
Shaft	Bore	Nominal seal width		
d_1	D	b		
mm			–	–
40	90	10	**40×90×10**	
cont.	90	12	**40×90×12**	
41	56	7	**41×56×7**	
42	53	7	**42×53×7**	
	55	7	**42×55×7**	
	55	8	**42×55×8**	•
	56	7	**42×56×7**	
	60	7	**42×60×7**	
	62	7	**42×62×7**	
	62	8	**42×62×8**	•
	62	10	**42×62×10**	
	65	10	**42×65×10**	
	65	12	**42×65×12**	
	66	10	**42×66×10**	
	67	10	**42×67×10**	
	72	8	**42×72×8**	
	72	10	**42×72×10**	
43	62	8	**43×62×8**	
44	60	10	**44×60×10**	
	62	10	**44×62×10**	
	65	10	**44×65×10**	
45	55	7	**45×55×7**	
	58	7	**45×58×7**	
	60	7	**45×60×7**	
	60	8	**45×60×8**	•
	60	10	**45×60×10**	

Dimensions			Designation[1]	ISO/DIN
Shaft	Bore	Nominal seal width		
d_1	D	b		
mm			–	–
45	62	7	**45×62×7**	
cont.	62	8	**45×62×8**	•
	62	10	**45×62×10**	
	65	8	**45×65×8**	•
	65	10	**45×65×10**	
	68	7	**45×68×7**	
	68	10	**45×68×10**	
	68	12	**45×68×12**	
	72	8	**45×72×8**	
	72	10	**45×72×10**	
	75	8	**45×75×8**	
	75	10	**45×75×10**	
	80	10	**45×80×10**	
	85	10	**45×85×10**	
	100	10	**45×100×10**	
46	59	12	**46×59×12**	
	65	10	**46×65×10**	
47	65	10	**47×65×10**	
	70	10	**47×70×10**	
	90	10	**47×90×10**	
48	62	8	**48×62×8**	•
	65	10	**48×65×10**	
	68	10	**48×68×10**	
	70	10	**48×70×10**	

[1] To be followed by the design and material codes, indicating one of the four variants available for each dimension:
HMS5 RG without auxiliary lip, nitrile rubber
HMS5 V without auxiliary lip, fluoro rubber
HMSA10 RG with auxiliary lip, nitrile rubber
HMSA10 V with auxiliary lip, fluoro rubber
Example: **44×60×10 HMSA10 RG**

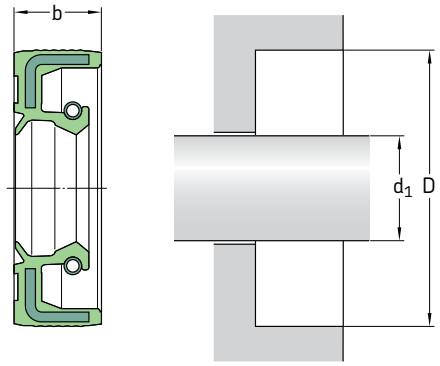
[2] Design execution differs from the basic design and is indicated by a number, e.g. RG1.

Dimensions			Designation[1]	ISO/DIN
Shaft	Bore	Nominal seal width		
d_1	D	b		
mm			–	–
48	72	7	**48×72×7**	
cont.	72	8	**48×72×8**	
	72	10	**48×72×10**	
50	62	7	**50×62×7**	
	64	6	**50×64×6**	
	65	8	**50×65×8**	•
	65	10	**50×65×10**	
	68	7	**50×68×7**	
	68	8	**50×68×8**	•
	68	10	**50×68×10**	
	70	10	**50×70×10**	
	72	8	**50×72×8**	•
	72	10	**50×72×10**	
	72	12	**50×72×12**	
	75	10	**50×75×10**	
	80	8	**50×80×8**	
	80	10	**50×80×10**	
	85	10	**50×85×10**	
	90	10	**50×90×10**	
	100	10	**50×100×10**	
52	63	8	**52×63×8**	
	65	8	**52×65×8**	
	68	8	**52×68×8**	
	72	8	**52×72×8**	
	72	10	**52×72×10**	
	80	10	**52×80×10**	
	85	10	**52×85×10**	
	100	10	**52×100×10**	
55	68	8	**55×68×8**	
	70	8	**55×70×8**	•
	70	10	**55×70×10**	
	72	8	**55×72×8**	•
	72	10	**55×72×10**	
	75	8	**55×75×8**	
	75	10	**55×75×10**	
	78	10	**55×78×10**	
	78	12	**55×78×12**	
	80	8	**55×80×8**	•
	80	10	**55×80×10**	
	85	8	**55×85×8**	
	85	10	**55×85×10**	
	90	8	**55×90×8**	
	90	10	**55×90×10**	

Dimensions			Designation[1]	ISO/DIN
Shaft	Bore	Nominal seal width		
d_1	D	b		
mm			–	–
55	100	10	**55×100×10**	
cont.	100	12	**55×100×12**	
56	72	8	**56×72×8**	
57	67	7	**57×67×7**	
58	72	8	**58×72×8**	
	80	8	**58×80×8**	
	80	10	**58×80×10**	
	80	12	**58×80×12**	
60	72	8	**60×72×8**	
	75	8	**60×75×8**	•
	80	7	**60×80×7**	
	80	8	**60×80×8**	•
	80	10	**60×80×10**	
	82	12	**60×82×12**	
	85	8	**60×85×8**	•
	85	10	**60×85×10**	
	90	8	**60×90×8**	
	90	10	**60×90×10**	
	95	10	**60×95×10**	
	100	10	**60×100×10**	
	110	8	**60×110×8**	
	110	10	**60×110×10**	
62	80	10	**62×80×10**	
	85	10	**62×85×10**	
	90	10	**62×90×10**	
63	85	10	**63×85×10**	
	90	10	**63×90×10**	
64	80	8	**64×80×8**	
65	80	8	**65×80×8**	
	85	8	**65×85×8**	
	85	10	**65×85×10**	•
	85	12	**65×85×12**	
	88	12	**65×88×12**	
	90	10	**65×90×10**	•
	95	10	**65×95×10**	
	97	7	**65×97×7**	
	100	10	**65×100×10**	
	110	10	**65×110×10**	
	120	12	**65×120×12**	
	140	12	**65×140×12**	

Radial shaft seals – HMS5 and HMSA10

d_1 **68 – 250** mm



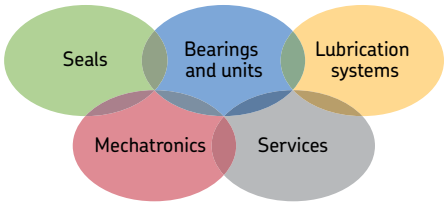
Dimensions			Designation[1]	ISO/DIN
Shaft	Bore	Nominal seal width		
d_1	D	b		
mm			–	–
68	90	10	**68×90×10**	
70	85	8	**70×85×8**	
	90	7	**70×90×7**[2]	
	90	10	**70×90×10**	•
	90	12	**70×90×12**	
	92	12	**70×92×12**	
	95	10	**70×95×10**	•
	100	10	**70×100×10**	
	110	10	**70×110×10**	
	110	12	**70×110×12**	
72	90	10	**72×90×10**	
	95	10	**72×95×10**	
	95	12	**72×95×12**	
	100	10	**72×100×10**	
	140	12	**72×140×12**	
75	90	10	**75×90×10**	
	95	10	**75×95×10**	•
	95	12	**75×95×12**	
	100	10	**75×100×10**	•
	100	12	**75×100×12**	
	105	10	**75×105×10**	
	110	12	**75×110×12**	
	120	12	**75×120×12**	
	130	12	**75×130×12**	
78	100	10	**78×100×10**	
80	95	10	**80×95×10**	
	100	10	**80×100×10**	•
	100	12	**80×100×12**	
	105	10	**80×105×10**	
	110	10	**80×110×10**	•
	110	12	**80×110×12**	
	115	12	**80×115×12**	
	125	12	**80×125×12**	
	170	13	**80×170×13**	
82	120	12	**82×120×12**	
	160	15	**82×160×15**	
85	100	9	**85×100×9**	
	100	10	**85×100×10**	
	105	12	**85×105×12**	
	110	12	**85×110×12**	•
	115	12	**85×115×12**	
	120	12	**85×120×12**	•
	130	12	**85×130×12**	
	140	12	**85×140×12**	
	150	12	**85×150×12**	
90	110	10	**90×110×10**	
	110	12	**90×110×12**	•

[1] To be followed by the design and material codes, indicating one of the four variants available for each dimension:
HMS5 RG without auxiliary lip, nitrile rubber
HMS5 V without auxiliary lip, fluoro rubber
HMSA10 RG with auxiliary lip, nitrile rubber
HMSA10 V with auxiliary lip, fluoro rubber
Example: **90×110×10 HMSA10 RG**

[2] Design execution differs from the basic design and is indicated by a number, e.g. RG1.

Dimensions			Designation[1]	ISO/DIN
Shaft d_1	Bore D	Nominal seal width b		
mm			–	–
90 cont.	115	12	**90×115×12**	
	120	12	**90×120×12**	•
95	110	12	**95×110×12**	
	115	12	**95×115×12**	
	120	12	**95×120×12**	•
	125	12	**95×125×12**	•
	140	12	**95×140×12**	
	145	12	**95×145×12**	
	170	13	**95×170×13**	
100	120	10	**100×120×10**	
	120	12	**100×120×12**	•
	125	12	**100×125×12**	•
	130	12	**100×130×12**	•
	140	12	**100×140×12**	
	145	12	**100×145×12**	
	150	12	**100×150×12**	
105	130	12	**105×130×12**	•
	135	12	**105×135×12**	
	140	12	**105×140×12**	
108	140	15	**108×140×15**	
	170	15	**108×170×15**	
110	130	12	**110×130×12**	•
	130	13	**110×130×13**	
	140	12	**110×140×12**	•
	150	12	**110×150×12**	
115	140	12	**115×140×12**	•
	145	12	**115×145×12**	
	150	12	**115×150×12**	
118	150	12	**118×150×12**	
120	140	12	**120×140×12**	
	140	13	**120×140×13**	
	150	12	**120×150×12**	•
	160	12	**120×160×12**	
	180	15	**120×180×15**	
125	150	12	**125×150×12**	•
	160	15	**125×160×15**	
	200	15	**125×200×15**	

Dimensions			Designation[1]	ISO/DIN
Shaft d_1	Bore D	Nominal seal width b		
mm			–	–
130	160	12	**130×160×12**	•
	160	15	**130×160×15**	
	170	12	**130×170×12**	
	180	12	**130×180×12**	
	190	12	**130×190×12**	
135	170	12	**135×170×12**	•
140	160	12	**140×160×12**	
	170	12	**140×170×12**	•
	170	15	**140×170×15**	
	180	12	**140×180×12**	
145	175	15	**145×175×15**	•
	180	12	**145×180×12**	
148	170	15	**148×170×15**	
150	170	12	**150×170×12**	
	180	12	**150×180×12**	
	180	15	**150×180×15**	•
	200	12	**150×200×12**	
155	180	15	**155×180×15**	
160	185	15	**160×185×15**	
	190	15	**160×190×15**	•
165	190	15	**165×190×15**	
170	200	15	**170×200×15**	•
175	200	15	**175×200×15**	
180	200	15	**180×200×15**	
	210	15	**180×210×15**	
185	210	13	**185×210×13**	
190	220	12	**190×220×12**[2]	
	220	15	**190×220×15**	•
	225	15	**190×225×15**	
200	230	15	**200×230×15**	•
210	240	15	**210×240×15**	•
220	250	15	**220×250×15**	•
230	260	15	**230×260×15**	•
240	270	15	**240×270×15**	•
250	280	15	**250×280×15**	•
	285	15	**250×285×15**	



The Power of Knowledge Engineering

Drawing on five areas of competence and application-specific expertise amassed over more than 100 years, SKF brings innovative solutions to OEMs and production facilities in every major industry worldwide. These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanics and electronics into intelligent systems), and a wide range of services, from 3-D computer modelling to advanced condition monitoring and reliability and asset management systems. A global presence provides SKF customers uniform quality standards and worldwide product availability.

PUB SE/P2 06234/5 EN · June 2013

Printed in Sweden on environmentally friendly paper.