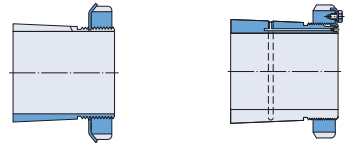




Bearing accessories

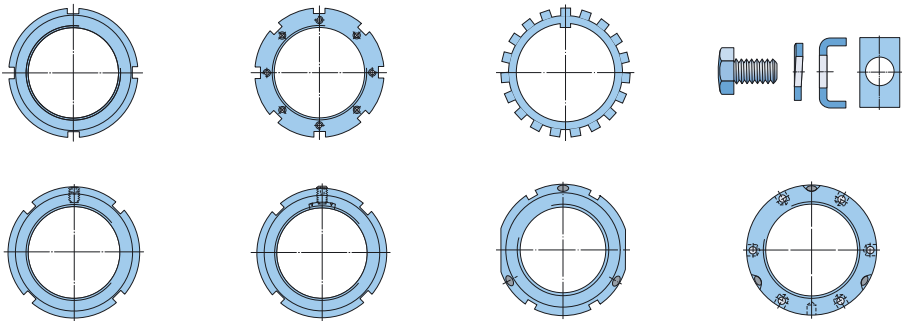
Adapter sleeves..... 975



Withdrawal sleeves 995



Lock nuts 1007





Adapter sleeves

Designs	976
Basic design	976
Designs for oil injection	977
Designs for CARB toroidal roller bearings	978
Design for sealed bearings	978
Product data – general	979
Dimensions	979
Tolerances	979
Thread	979
Shaft tolerances	979
Product tables	980
Adapter sleeves for metric shafts	980
Adapter sleeves for inch shafts	988

Designs

Adapter sleeves are the most commonly used components for locating bearings with a tapered bore onto a cylindrical seating as they can be used on smooth or stepped shafts (→ **fig. 1**). They are easy to mount and require no additional location on the shaft.

When adapter sleeves are used on smooth shafts, the bearing can be located at any position on the shaft. When used on stepped shafts, together with a stepped ring, bearings can be accurately positioned axially and bearing dismounting is also facilitated.

Basic design

SKF adapter sleeves are supplied complete with lock nut and locking device (→ **fig. 2**). Smaller sizes use a lock nut with a locking washer (**a**), larger sizes use a nut with locking clip (**b**). The sleeves are slotted and have an external taper of 1:12. Up to size 40, the sleeves are phosphated. Larger sizes are untreated and protected by a solventless rust inhibitor.

SKF supplies adapter sleeves for metric and inch shafts. This catalogue contains metric adapter sleeves that fit both metric and inch shafting. For other inch adapter sleeves, please refer to the SKF catalogue "Bearing accessories" or to the "SKF Interactive Engineering Catalogue" online at www.skf.com.

Fig. 1

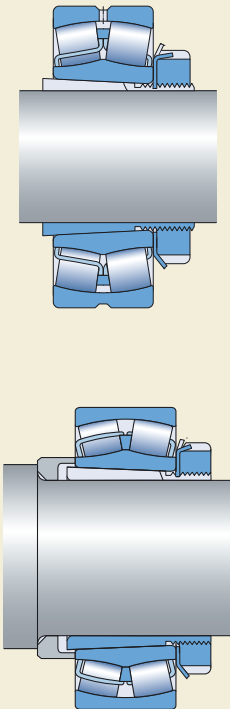
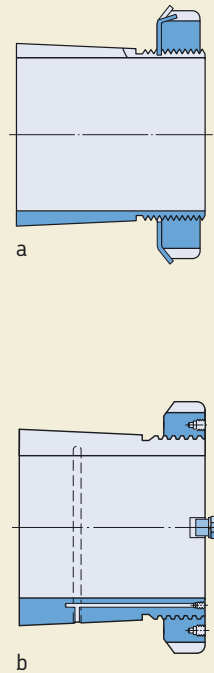


Fig. 2



Designs for oil injection

To enable the oil injection method to be used to ease mounting and dismounting, SKF adapter sleeves having a bore diameter of 140 mm up to 200 mm can be supplied to special order already prepared for oil injection (→ **fig. 3**). This feature is standard for sleeves having a bore diameter of 200 mm and above. These adapter sleeves (**a**) have an oil duct at the threaded side and an oil distributor groove on the outside surface. If oil is injected through this duct and groove, an oil film is formed between the mating surfaces of the bearing and sleeve and the force required to mount the bearing is reduced considerably. Details of the thread for attaching the oil supply lead to the duct as well as of appropriate hydraulic nuts can be found in the product tables.

In addition to these standard sleeves which are designated OH .. H and shown in the product tables, SKF produces sleeves to three other designs which differ in the number and arrangement of the oil ducts and distributor grooves, as described below.

OH design (b)

The oil supply duct is at the side opposite to the threaded section and there is a distributor groove in the outside surface.

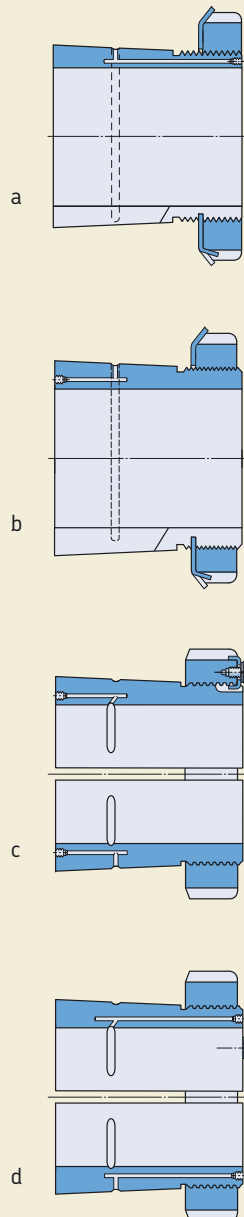
OH .. B design (c)

The oil supply duct (or ducts) is at the side opposite to the threaded section and there are distributor grooves in the bore as well as the outside surface. Sleeves up to and including size 40 have one supply duct, larger sleeves have two.

OH .. HB design (d)

These sleeves have an oil supply duct (or ducts) at the threaded side of the sleeve and distributor grooves in the bore as well as the outside surface. Sleeves up to and including size 40 have one supply duct, larger sleeves have two.

The equipment required for the oil injection method is also supplied by SKF. The use of hydraulic nuts can considerably facilitate mounting and dismounting (→ section "Maintenance and lubrication products", starting on **page 1069**).



Designs for CARB toroidal roller bearings

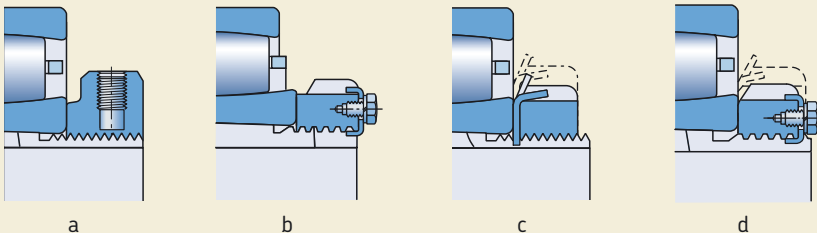
Where appropriate, modified adapter sleeves of the E, L and TL designs (→ **fig. 4**) are available for CARB bearings, to prevent the locking device from chafing the cage:

- With E-design sleeves, the standard KM lock nut and MB locking washer are replaced by a KMFE lock nut (**a**), and the standard HM 30 lock nut is replaced by an HME lock nut with a recessed outside diameter (**b**).
- L-design sleeves (**c**) differ from the standard design in that the standard KM lock nut and MB locking washer have been replaced by a KML lock nut and MBL locking washer; these have a lower sectional height.
- With the TL-design sleeve (**d**), the standard HM .. T lock nut and MB locking washer have been replaced by the corresponding HM 30 lock nut and MS 30 locking clip; these have a lower sectional height.

Design for sealed bearings

When using sealed bearings on adapter sleeves, make sure that the lock nut or locking washer will not damage the seal. Sleeves in the E, C, L or TL designs are suitable for sealed bearings. The locking washer used with the H 3 .. C series adapter sleeve has a protrusion on the side directed towards the bearing (→ **fig. 5**).

Fig. 4



Product data – general

Dimensions

The dimensions of SKF adapter sleeves are in accordance with ISO 2982-1:1995; except the bore diameter of sleeves for inch shafts.

Tolerances

The bore diameter of SKF adapter sleeves is to tolerance JS9, the width to h15.

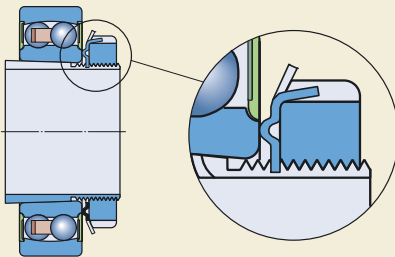
Thread

SKF adapter sleeves up to size 40 have metric threads with 6g tolerances, according to ISO 965-3:1998. Larger adapter sleeves have metric trapezoidal threads with 7e tolerances, according to ISO 2903:1993.

Shaft tolerances

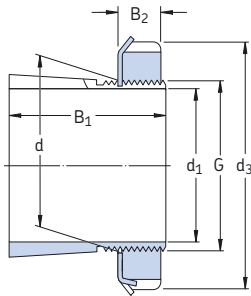
As the name implies, adapter sleeves adapt themselves to the shaft diameter, so that wider diameter tolerances can be permitted than for the seating of a bearing with a cylindrical bore. However, the form tolerances must be kept within narrow limits as the accuracy of form directly affects the running accuracy of the bearing. Generally, shafts should be to an h9 tolerance but the cylindricity should be to IT5/2 according to ISO 1101:2004.

Fig. 5

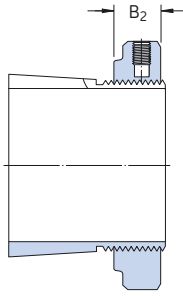


Adapter sleeves for metric shafts

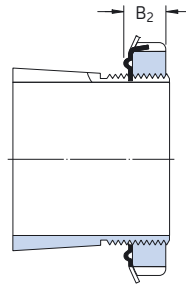
d_1 17 – 75 mm



H



H..E



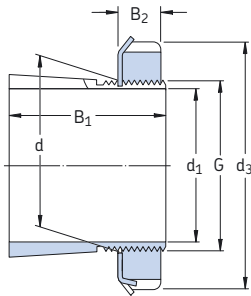
H..C

Dimensions						Mass	Designations	Appertaining lock nut	locking device	Appropriate hydraulic nut
d_1	d	d_3	B_1	B_2	G		Adapter sleeve with nut and locking device			
mm						kg	–			
17	20	32	24	7	M 20×1	0,036	H 204	KM 4	MB 4	–
	20	32	28	7	M 20×1	0,040	H 304	KM 4	MB 4	–
	20	32	28	9,5	M 20×1	0,047	H 304 E	KMFE 4	–	–
20	25	38	26	8	M 25×1,5	0,064	H 205	KM 5	MB 5	–
	25	38	29	8	M 25×1,5	0,071	H 305	KM 5	MB 5	–
	25	38	29	9	M 25×1,5	0,071	H 305 C	KM 5	MB 5 C	–
	25	38	29	10,5	M 25×1,5	0,076	H 305 E	KMFE 5	–	–
	25	38	35	8	M 25×1,5	0,085	H 2305	KM 5	MB 5	–
25	30	45	27	8	M 30×1,5	0,086	H 206	KM 6	MB 6	–
	30	45	31	8	M 30×1,5	0,095	H 306	KM 6	MB 6	–
	30	45	31	9	M 30×1,5	0,095	H 306 C	KM 6	MB 6 C	–
	30	45	31	10,5	M 30×1,5	0,11	H 306 E	KMFE 6	–	–
	30	45	38	8	M 30×1,5	0,11	H 2306	KM 6	MB 6	–
30	35	52	29	9	M 35×1,5	0,12	H 207	KM 7	MB 7	–
	35	52	35	9	M 35×1,5	0,14	H 307	KM 7	MB 7	–
	35	52	35	10	M 35×1,5	0,14	H 307 C	KM 7	MB 7 C	–
	35	52	35	11,5	M 35×1,5	0,15	H 307 E	KMFE 7	–	–
	35	52	43	9	M 35×1,5	0,16	H 2307	KM 7	MB 7	–
35	40	58	31	10	M 40×1,5	0,16	H 208	KM 8	MB 8	–
	40	58	36	10	M 40×1,5	0,17	H 308	KM 8	MB 8	–
	40	58	36	11	M 40×1,5	0,17	H 308 C	KM 8	MB 8 C	–
	40	58	36	13	M 40×1,5	0,19	H 308 E	KMFE 8	–	–
	40	58	46	10	M 40×1,5	0,22	H 2308	KM 8	MB 8	–
40	45	65	33	11	M 45×1,5	0,21	H 209	KM 9	MB 9	–
	45	65	39	11	M 45×1,5	0,23	H 309	KM 9	MB 9	–
	45	65	39	12	M 45×1,5	0,23	H 309 C	KM 9	MB 9 C	–
	45	65	39	13	M 45×1,5	0,24	H 309 E	KMFE 9	–	–
	45	65	50	11	M 45×1,5	0,27	H 2309	KM 9	MB 9	–
45	50	70	35	12	M 50×1,5	0,24	H 210	KM 10	MB 10	HMV 10 E
	50	70	42	12	M 50×1,5	0,27	H 310	KM 10	MB 10	HMV 10 E
	50	70	42	13	M 50×1,5	0,27	H 310 C	KM 10	MB 10 C	HMV 10 E
	50	70	42	14	M 50×1,5	0,30	H 310 E	KMFE 10	–	HMV 10 E
	50	70	55	12	M 50×1,5	0,34	H 2310	KM 10	MB 10	HMV 10 E

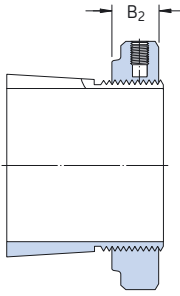
Dimensions						Mass	Designations	Appertaining lock nut	locking device	Appropriate hydraulic nut
d ₁	d	d ₃	B ₁	B ₂	G		Adapter sleeve with nut and locking device			
mm						kg	–			
50	55	75	37	12,5	M 55×2	0,28	H 211	KM 11	MB 11	HMV 11 E
	55	75	45	12,5	M 55×2	0,32	H 311	KM 11	MB 11	HMV 11 E
	55	75	45	13	M 55×2	0,32	H 311 C	KM 11	MB 11 C	HMV 11 E
	55	75	45	14	M 55×2	0,34	H 311 E	KMFE 11	–	HMV 11 E
	55	75	59	12,5	M 55×2	0,39	H 2311	KM 11	MB 11	HMV 11 E
55	60	80	38	12,5	M 60×2	0,31	H 212	KM 12	MB 12	HMV 12 E
	60	80	47	12,5	M 60×2	0,36	H 312	KM 12	MB 12	HMV 12 E
	60	80	47	14	M 60×2	0,40	H 312 E	KMFE 12	–	HMV 12 E
	60	80	62	12,5	M 60×2	0,45	H 2312	KM 12	MB 12	HMV 12 E
60	65	85	40	13,5	M 65×2	0,36	H 213	KM 13	MB 13	HMV 13 E
	65	85	50	13,5	M 65×2	0,42	H 313	KM 13	MB 13	HMV 13 E
	65	85	50	14,5	M 65×2	0,42	H 313 C	KM 13	MB 13 C	HMV 13 E
	65	85	50	15	M 65×2	0,43	H 313 E	KMFE 13	–	HMV 13 E
	65	85	65	13,5	M 65×2	0,52	H 2313	KM 13	MB 13	HMV 13 E
	70	92	52	13,5	M 70×2	0,67	H 314	KM 14	MB 14	HMV 14 E
70	92	52	15	M 70×2	0,67	H 314 E	KMFE 14	–	HMV 14 E	
70	92	68	13,5	M 70×2	0,88	H 2314	KM 14	MB 14	HMV 14 E	
65	75	98	43	14,5	M 75×2	0,66	H 215	KM 15	MB 15	HMV 15 E
	75	98	55	14,5	M 75×2	0,78	H 315	KM 15	MB 15	HMV 15 E
	75	98	55	16	M 75×2	0,80	H 315 E	KMFE 15	–	HMV 15 E
	75	98	73	14,5	M 75×2	1,10	H 2315	KM 15	MB 15	HMV 15 E
70	80	105	46	17	M 80×2	0,81	H 216	KM 16	MB 16	HMV 16 E
	80	105	59	17	M 80×2	0,95	H 316	KM 16	MB 16	HMV 16 E
	80	105	59	18	M 80×2	1,01	H 316 E	KMFE 16	–	HMV 16 E
	80	105	78	17	M 80×2	1,20	H 2316	KM 16	MB 16	HMV 16 E
75	85	110	50	18	M 85×2	0,94	H 217	KM 17	MB 17	HMV 17 E
	85	110	63	18	M 85×2	1,10	H 317	KM 17	MB 17	HMV 17 E
	85	110	63	19	M 85×2	1,17	H 317 E	KMFE 17	–	HMV 17 E
	85	110	82	18	M 85×2	1,35	H 2317	KM 17	MB 17	HMV 17 E

Adapter sleeves for metric shafts

d_1 80 – 180 mm



H, H.. L



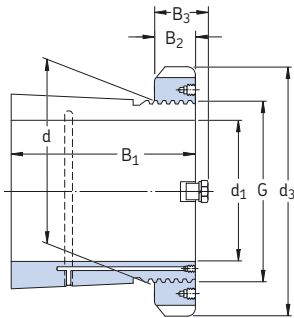
H.. E

Dimensions						Mass	Designations Adapter sleeve with nut and locking device	Appertaining lock nut	locking device	Appropriate hydraulic nut
d_1	d	d_3	B_1	B_2	G					
mm						kg	–			
80	90	120	52	18	M 90×2	1,10	H 218	KM 18	MB 18	HMV 18 E
	90	120	65	18	M 90×2	1,30	H 318	KM 18	MB 18	HMV 18 E
	90	120	65	19	M 90×2	1,43	H 318 E	KMFE 18	–	HMV 18 E
	90	120	86	18	M 90×2	1,60	H 2318	KM 18	MB 18	HMV 18 E
85	95	125	55	19	M 95×2	1,25	H 219	KM 19	MB 19	HMV 19 E
	95	125	68	19	M 95×2	1,40	H 319	KM 19	MB 19	HMV 19 E
	95	125	68	20	M 95×2	1,41	H 319 E	KMFE 19	–	HMV 19 E
	95	125	90	19	M 95×2	1,80	H 2319	KM 19	MB 19	HMV 19 E
90	100	130	58	20	M 100×2	1,40	H 220	KM 20	MB 20	HMV 20 E
	100	130	71	20	M 100×2	1,60	H 320	KM 20	MB 20	HMV 20 E
	100	130	71	21	M 100×2	1,72	H 320 E	KMFE 20	–	HMV 20 E
	100	130	76	20	M 100×2	1,80	H 3120	KM 20	MB 20	HMV 20 E
	100	130	97	20	M 100×2	2,00	H 2320	KM 20	MB 20	HMV 20 E
100	110	145	63	21	M 110×2	1,80	H 222	KM 22	MB 22	HMV 22 E
	110	145	77	21	M 110×2	2,04	H 322	KM 22	MB 22	HMV 22 E
	110	145	77	21,5	M 110×2	2,11	H 322 E	KMFE 22	–	HMV 22 E
	110	145	81	21	M 110×2	2,10	H 3122	KM 22	MB 22	HMV 22 E
	110	145	105	21	M 110×2	2,75	H 2322	KM 22	MB 22	HMV 22 E
110	120	145	72	22	M 120×2	1,80	H 3024	KML 24	MBL 24	HMV 24 E
	120	155	72	26	M 120×2	1,87	H 3024 E	KMFE 24	–	HMV 24 E
	120	155	88	22	M 120×2	2,50	H 3124	KM 24	MB 24	HMV 24 E
	120	145	88	22	M 120×2	2,50	H 3124 L	KML 24	MBL 24	HMV 24 E
	120	155	112	22	M 120×2	3,00	H 2324	KM 24	MB 24	HMV 24 E
	120	145	112	22	M 120×2	3,12	H 2324 L	KML 24	MBL 24	HMV 24 E
115	130	155	80	23	M 130×2	2,80	H 3026	KML 26	MBL 26	HMV 26 E
	130	165	92	23	M 130×2	3,45	H 3126	KM 26	MB 26	HMV 26 E
	130	155	92	23	M 130×2	3,65	H 3126 L	KML 26	MBL 26	HMV 26 E
	130	165	121	23	M 130×2	4,45	H 2326	KM 26	MB 26	HMV 26 E
125	140	165	82	24	M 140×2	3,05	H 3028	KML 28	MBL 28	HMV 28 E
	140	180	97	24	M 140×2	4,10	H 3128	KM 28	MB 28	HMV 28 E
	140	165	97	24	M 140×2	3,62	H 3128 L	KML 28	MBL 28	HMV 28 E
	140	180	131	24	M 140×2	5,40	H 2328	KM 28	MB 28	HMV 28 E

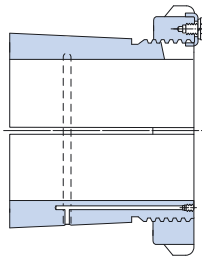
Dimensions						Mass	Designations	Appertaining lock nut	locking device	Appropriate hydraulic nut
d ₁	d	d ₃	B ₁	B ₂	G		Adapter sleeve with nut and locking device			
mm						kg	–			
135	150	180	87	26	M150×2	3,75	H 3030	KML 30	MBL 30	HMV 30 E
	150	195	111	26	M150×2	5,25	H 3130	KM 30	MB 30	HMV 30 E
	150	180	111	26	M150×2	4,70	H 3130 L	KML 30	MBL 30	HMV 30 E
	150	195	139	26	M150×2	6,40	H 2330	KM 30	MB 30	HMV 30 E
140	160	190	93	27,5	M160×3	5,10	H 3032	KML 32	MBL 32	HMV 32 E
	160	210	119	27,5	M160×3	7,25	H 3132	KM 32	MB 32	HMV 32 E
	160	190	119	27,5	M160×3	6,40	H 3132 L	KML 32	MBL 32	HMV 32 E
	160	210	147	27,5	M160×3	8,80	H 2332	KM 32	MB 32	HMV 32 E
	160	190	147	27,5	M160×3	7,95	H 2332 L	KML 32	MBL 32	HMV 32 E
150	170	200	101	28,5	M170×3	5,80	H 3034	KML 34	MBL 34	HMV 34 E
	170	220	122	28,5	M170×3	8,10	H 3134	KM 34	MB 34	HMV 34 E
	170	200	122	28,5	M170×3	7,15	H 3134 L	KML 34	MBL 34	HMV 34 E
	170	220	154	28,5	M170×3	9,90	H 2334	KM 34	MB 34	HMV 34 E
160	180	210	87	29,5	M180×3	5,70	H 3936	KML 36	MBL 36	HMV 36 E
	180	210	109	29,5	M180×3	6,70	H 3036	KML 36	MBL 36	HMV 36 E
	180	230	131	29,5	M180×3	9,15	H 3136	KM 36	MB 36	HMV 36 E
	180	210	131	29,5	M180×3	8,15	H 3136 L	KML 36	MBL 36	HMV 36 E
	180	230	161	30	M180×3	11,0	H 2336	KM 36	MB 36	HMV 36 E
170	190	220	89	30,5	M190×3	6,20	H 3938	KML 38	MBL 38	HMV 38 E
	190	220	112	30,5	M190×3	7,25	H 3038	KML 38	MBL 38	HMV 38 E
	190	240	141	30,5	M190×3	10,5	H 3138	KM 38	MB 38	HMV 38 E
	190	240	169	30,5	M190×3	12,0	H 2338	KM 38	MB 38	HMV 38 E
180	200	240	98	31,5	M200×3	7,90	H 3940	KML 40	MBL 40	HMV 40 E
	200	240	120	31,5	M200×3	8,90	H 3040	KML 40	MBL 40	HMV 40 E
	200	250	150	31,5	M200×3	12,0	H 3140	KM 40	MB 40	HMV 40 E
	200	250	176	31,5	M200×3	13,5	H 2340	KM 40	MB 40	HMV 40 E

Adapter sleeves for metric shafts

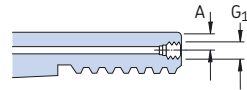
d₁ 200 – 450 mm



OH .. H, OH .. HTL



OH .. HE



Dimensions										Mass	Designations Adapter sleeve with nut and locking device	Appertaining lock nut	locking device	Appropriate hydraulic nut
d ₁	d	d ₃	B ₁	B ₂	B ₃	G	G ₁	A						
mm										kg	-			
200	220	260	96	30	41	Tr 220x4	M 6	4,2	7,95	OH 3944 H	HM 3044	MS 3044	HMV 44 E	
	220	260	126	30	41	Tr 220x4	M 6	4,2	9,90	OH 3044 H	HM 3044	MS 3044	HMV 44 E	
	220	280	161	35	-	Tr 220x4	M 6	4,2	15,0	OH 3144 H	HM 44 T	MB 44	HMV 44 E	
	220	260	161	30	41	Tr 220x4	M 6	4,2	14,3	OH 3144 HTL	HM 3044	MS 3044	HMV 44 E	
	220	280	186	35	-	Tr 220x4	M 6	4,2	17,0	OH 2344 H	HM 44 T	MB 44	HMV 44 E	
220	240	290	101	34	46	Tr 240x4	M 6	4,2	11,0	OH 3948 H	HM 3048	MS 3052-48	HMV 48 E	
	240	290	133	34	46	Tr 240x4	M 6	4,2	12,0	OH 3048 H	HM 3048	MS 3052-48	HMV 48 E	
	240	300	172	37	-	Tr 240x4	M 6	4,2	16,5	OH 3148 H	HM 48 T	MB 48	HMV 48 E	
	240	290	172	34	46	Tr 240x4	M 6	4,2	15,1	OH 3148 HTL	HM 3048	MS 3052-48	HMV 48 E	
	240	300	199	37	-	Tr 240x4	M 6	4,2	19,0	OH 2348 H	HM 48 T	MB 48	HMV 48 E	
240	260	310	116	34	46	Tr 260x4	M 6	4,2	11,7	OH 3952 H	HM 3052	MS 3052-48	HMV 52 E	
	260	310	145	34	46	Tr 260x4	M 6	4,2	13,5	OH 3052 H	HM 3052	MS 3052-48	HMV 52 E	
	260	330	190	39	-	Tr 260x4	M 6	4,2	21,0	OH 3152 H	HM 52 T	MB 52	HMV 52 E	
	260	310	190	34	46	Tr 260x4	M 6	4,2	17,7	OH 3152 HTL	HM 3052	MS 3052-48	HMV 52 E	
	260	330	211	39	-	Tr 260x4	M 6	4,2	23,0	OH 2352 H	HM 52 T	MB 52	HMV 52 E	
260	280	330	121	38	50	Tr 280x4	M 6	4,2	15,3	OH 3956 H	HM 3056	MS 3056	HMV 56 E	
	280	330	152	38	50	Tr 280x4	M 6	4,2	16,0	OH 3056 H	HM 3056	MS 3056	HMV 56 E	
	280	350	195	41	-	Tr 280x4	M 6	4,2	23,0	OH 3156 H	HM 56 T	MB 56	HMV 56 E	
	280	330	195	38	50	Tr 280x4	M 6	4,2	19,3	OH 3156 HTL	HM 3056	MS 3056	HMV 56 E	
	280	350	224	41	-	Tr 280x4	M 6	4,2	27,0	OH 2356 H	HM 56 T	MB 56	HMV 56 E	
280	300	360	140	42	54	Tr 300x4	M 6	4,2	20,0	OH 3960 H	HM 3060	MS 3060	HMV 60 E	
	300	360	168	42	54	Tr 300x4	M 6	4,2	20,5	OH 3060 H	HM 3060	MS 3060	HMV 60 E	
	300	380	208	40	53	Tr 300x4	M 6	4,2	29,0	OH 3160 H	HM 3160	MS 3160	HMV 60 E	
	300	380	240	40	53	Tr 300x4	M 6	4,2	32,0	OH 3260 H	HM 3160	MS 3160	HMV 60 E	
300	320	380	140	42	55	Tr 320x5	M 6	4	21,5	OH 3964 H	HM 3064	MS 3068-64	HMV 64 E	
	320	380	171	42	55	Tr 320x5	M 6	4	22,0	OH 3064 H	HM 3064	MS 3068-64	HMV 64 E	
	320	400	226	42	56	Tr 320x5	M 6	4	32,0	OH 3164 H	HM 3164	MS 3164	HMV 64 E	
	320	400	258	42	56	Tr 320x5	M 6	4	35,0	OH 3264 H	HM 3164	MS 3164	HMV 64 E	
320	340	400	144	45	58	Tr 340x5	M 6	4	24,5	OH 3968 H	HM 3068	MS 3068-64	HMV 68 E	
	340	400	187	45	58	Tr 340x5	M 6	4	27,0	OH 3068 H	HM 3068	MS 3068-64	HMV 68 E	
	340	440	254	55	72	Tr 340x5	M 6	4	50,0	OH 3168 H	HM 3168	MS 3172-68	HMV 68 E	
	340	440	288	55	72	Tr 340x5	M 6	4	51,5	OH 3268 H	HM 3168	MS 3172-68	HMV 68 E	

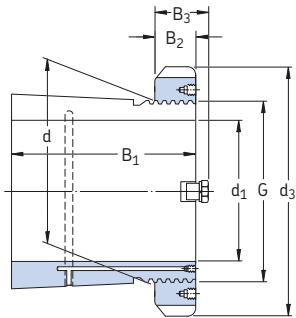
For OH .. HE sleeves not listed in the table, please contact SKF

Dimensions									Mass	Designations	Appertaining lock nut	locking device	Appropriate hydraulic nut
d ₁	d	d ₃	B ₁	B ₂	B ₃	G	G ₁	A		Adapter sleeve with nut and locking device			
mm									kg	–			
340	360	420	144	45	58	Tr 360x5	M 6	4	25,2	OH 3972 H	HM 3072	MS 3072	HMV 72 E
	360	420	144	45	58	Tr 360x5	M 6	4	25,2	OH 3972 HE	HME 3072	MS 3072	HMV 72 E
	360	420	188	45	58	Tr 360x5	M 6	4	29,0	OH 3072 H	HM 3072	MS 3072	HMV 72 E
	360	460	259	58	75	Tr 360x5	M 6	4	56,0	OH 3172 H	HM 3172	MS 3172-68	HMV 72 E
	360	460	299	58	75	Tr 360x5	M 6	4	60,5	OH 3272 H	HM 3172	MS 3172-68	HMV 72 E
360	380	450	164	48	62	Tr 380x5	M 6	4	31,5	OH 3976 H	HM 3076	MS 3080-76	HMV 76 E
	380	450	193	48	62	Tr 380x5	M 6	4	35,5	OH 3076 H	HM 3076	MS 3080-76	HMV 76 E
	380	490	264	60	77	Tr 380x5	M 6	4	61,5	OH 3176 H	HM 3176	MS 3176	HMV 76 E
	380	490	310	60	77	Tr 380x5	M 6	4	69,5	OH 3276 H	HM 3176	MS 3176	HMV 76 E
380	400	470	168	52	66	Tr 400x5	M 6	4	35,0	OH 3980 H	HM 3080	MS 3080-76	HMV 80 E
	400	470	210	52	66	Tr 400x5	M 6	4	40,0	OH 3080 H	HM 3080	MS 3080-76	HMV 80 E
	400	520	272	62	82	Tr 400x5	M 6	4	73,0	OH 3180 H	HM 3180	MS 3184-80	HMV 80 E
	400	520	328	62	82	Tr 400x5	M 6	4	87,0	OH 3280 H	HM 3180	MS 3184-80	HMV 80 E
400	420	490	168	52	66	Tr 420x5	M 6	4	36,0	OH 3984 H	HM 3084	MS 3084	HMV 84 E
	420	490	168	52	66	Tr 420x5	M 6	4	36,0	OH 3984 HE	HME 3084	MS 3084	HMV 84 E
	420	490	212	52	66	Tr 420x5	M 6	4	47,0	OH 3084 H	HM 3084	MS 3084	HMV 84 E
	420	540	304	70	90	Tr 420x5	M 6	4	80,0	OH 3184 H	HM 3184	MS 3184-80	HMV 84 E
	420	540	352	70	90	Tr 420x5	M 6	4	96,0	OH 3284 H	HM 3184	MS 3184-80	HMV 84 E
410	440	520	189	60	77	Tr 440x5	M 8	6,5	58,0	OH 3988 H	HM 3088	MS 3092-88	HMV 88 E
	440	520	228	60	77	Tr 440x5	M 8	6,5	65,0	OH 3088 H	HM 3088	MS 3092-88	HMV 88 E
	440	560	307	70	90	Tr 440x5	M 8	6,5	95,0	OH 3188 H	HM 3188	MS 3192-88	HMV 88 E
	440	560	361	70	90	Tr 440x5	M 8	6,5	117	OH 3288 H	HM 3188	MS 3192-88	HMV 88 E
430	460	540	189	60	77	Tr 460x5	M 8	6,5	60,0	OH 3992 H	HM 3092	MS 3092-88	HMV 92 E
	460	540	234	60	77	Tr 460x5	M 8	6,5	71,0	OH 3092 H	HM 3092	MS 3092-88	HMV 92 E
	460	580	326	75	95	Tr 460x5	M 8	6,5	119	OH 3192 H	HM 3192	MS 3192-88	HMV 92 E
	460	580	382	75	95	Tr 460x5	M 8	6,5	134	OH 3292 H	HM 3192	MS 3192-88	HMV 92 E
450	480	560	200	60	77	Tr 480x5	M 8	6,5	66,0	OH 3996 H	HM 3096	MS 30/500-96	HMV 96 E
	480	560	200	60	77	Tr 480x5	M 8	6,5	66,0	OH 3996 HE	HME 3096	MS 30/500-96	HMV 96 E
	480	560	237	60	77	Tr 480x5	M 8	6,5	75,0	OH 3096 H	HM 3096	MS 30/500-96	HMV 96 E
	480	620	335	75	95	Tr 480x5	M 8	6,5	135	OH 3196 H	HM 3196	MS 3196	HMV 96 E
	480	620	397	75	95	Tr 480x5	M 8	6,5	153	OH 3296 H	HM 3196	MS 3196	HMV 96 E

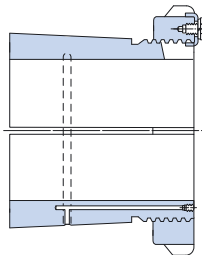
For OH .. HE sleeves not listed in the table, please contact SKF

Adapter sleeves for metric shafts

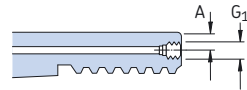
d₁ 470 – 1 000 mm



OH .. H



OH .. HE



Dimensions									Mass	Designations	Appertaining	locking	Appropriate
d ₁	d	d ₃	B ₁	B ₂	B ₃	G	G ₁	A	Adapter sleeve with nut and locking device	lock nut	device	hydraulic nut	
mm									kg	–			
470	500	580	208	68	85	Tr 500×5	M 8	6,5	74,3	OH 39/500 H	HM 30/500	MS 30/500-96	HMV 100 E
	500	580	208	68	85	Tr 500×5	M 8	6,5	74,3	OH 39/500 HE	HME 30/500	MS 30/500-96	HMV 100 E
	500	580	247	68	85	Tr 500×5	M 8	6,5	82,0	OH 30/500 H	HM 30/500	MS 30/500-96	HMV 100 E
	500	630	356	80	100	Tr 500×5	M 8	6,5	145	OH 31/500 H	HM 31/500	MS 31/500	HMV 100 E
	500	630	428	80	100	Tr 500×5	M 8	6	170	OH 32/500 H	HM 31/500	MS 31/500	HMV 100 E
500	530	630	216	68	90	Tr 530×6	M 8	6	87,9	OH 39/530 H	HM 30/530	MS 30/600-530	HMV 106 E
	530	630	216	68	90	Tr 530×6	M 8	6	87,9	OH 39/530 HE	HME 30/530	MS 30/600-530	HMV 106 E
	530	630	265	68	90	Tr 530×6	M 8	6	105	OH 30/530 H	HM 30/530	MS 30/600-530	HMV 106 E
	530	670	364	80	105	Tr 530×6	M 8	6	161	OH 31/530 H	HM 31/530	MS 31/530	HMV 106 E
	530	670	447	80	105	Tr 530×6	M 8	6	192	OH 32/530 H	HM 31/530	MS 31/530	HMV 106 E
530	560	650	227	75	97	Tr 560×6	M 8	6	95,0	OH 39/560 H	HM 30/560	MS 30/560	HMV 112 E
	560	650	227	75	97	Tr 560×6	M 8	6	95,0	OH 39/560 HE	HME 30/560	MS 30/560	HMV 112 E
	560	650	282	75	97	Tr 560×6	M 8	6	112	OH 30/560 H	HM 30/560	MS 30/560	HMV 112 E
	560	710	377	85	110	Tr 560×6	M 8	6	185	OH 31/560 H	HM 31/560	MS 31/600-560	HMV 112 E
	560	710	462	85	110	Tr 560×6	M 8	6	219	OH 32/560 H	HM 31/560	MS 31/600-560	HMV 112 E
560	600	700	239	75	97	Tr 600×6	G 1/8	8	127	OH 39/600 H	HM 30/600	MS 30/600-530	HMV 120 E
	600	700	239	75	97	Tr 600×6	G 1/8	8	127	OH 39/600 HE	HME 30/600	MS 30/600-530	HMV 120 E
	600	700	289	75	97	Tr 600×6	G 1/8	8	147	OH 30/600 H	HM 30/600	MS 30/600-530	HMV 120 E
	600	750	399	85	110	Tr 600×6	G 1/8	8	234	OH 31/600 H	HM 31/600	MS 31/600-560	HMV 120 E
	600	750	487	85	110	Tr 600×6	G 1/8	8	278	OH 32/600 H	HM 31/600	MS 31/600-560	HMV 120 E
600	630	730	254	75	97	Tr 630×6	M 8	6	124	OH 39/630 H	HM 30/630	MS 30/630	HMV 126 E
	630	730	254	75	97	Tr 630×6	M 8	6	124	OH 39/630 HE	HME 30/630	MS 30/630	HMV 126 E
	630	730	301	75	97	Tr 630×6	M 8	6	138	OH 30/630 H	HM 30/630	MS 30/630	HMV 126 E
	630	800	424	95	120	Tr 630×6	M 8	6	254	OH 31/630 H	HM 31/630	MS 31/630	HMV 126 E
630	670	780	264	80	102	Tr 670×6	G 1/8	8	162	OH 39/670 H	HM 30/670	MS 30/670	HMV 134 E
	670	780	324	80	102	Tr 670×6	G 1/8	8	190	OH 30/670 H	HM 30/670	MS 30/670	HMV 134 E
	670	850	456	106	131	Tr 670×6	G 1/8	8	340	OH 31/670 H	HM 31/670	MS 31/670	HMV 134 E
	670	850	558	106	131	Tr 670×6	G 1/8	8	401	OH 32/670 H	HM 31/670	MS 31/670	HMV 134 E
670	710	830	286	90	112	Tr 710×7	G 1/8	8	183	OH 39/710 H	HM 30/710	MS 30/710	HMV 142 E
	710	830	286	90	112	Tr 710×7	G 1/8	8	183	OH 39/710 HE	HME 30/710	MS 30/710	HMV 142 E
	710	830	342	90	112	Tr 710×7	G 1/8	8	228	OH 30/710 H	HM 30/710	MS 30/710	HMV 142 E
	710	900	467	106	135	Tr 710×7	G 1/8	8	392	OH 31/710 H	HM 31/710	MS 31/710	HMV 142 E
	710	900	572	106	135	Tr 710×7	G 1/8	8	459	OH 32/710 H	HM 31/710	MS 31/710	HMV 142 E

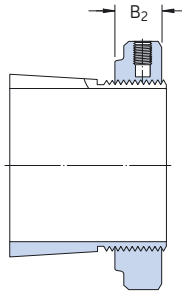
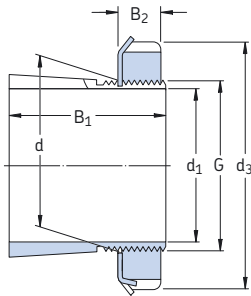
For OH .. HE sleeves not listed in the table, please contact SKF

Dimensions									Mass	Designations	Appertaining		Appropriate
d ₁	d	d ₃	B ₁	B ₂	B ₃	G	G ₁	A		Adapter sleeve with nut and locking device	lock nut	locking device	hydraulic nut
mm									kg	–			
710	750	870	291	90	112	Tr 750×7	G 1/8	8	211	OH 39/750 H	HM 30/750	MS 30/800-750	HMV 150 E
	750	870	291	90	112	Tr 750×7	G 1/8	8	211	OH 39/750 HE	HME 30/750	MS 30/800-750	HMV 150 E
	750	870	356	90	112	Tr 750×7	G 1/8	8	246	OH 30/750 H	HM 30/750	MS 30/800-750	HMV 150 E
	750	950	493	112	141	Tr 750×7	G 1/8	8	451	OH 31/750 H	HM 31/750	MS 31/800-750	HMV 150 E
	750	950	603	112	141	Tr 750×7	G 1/8	8	526	OH 32/750 H	HM 31/750	MS 31/800-750	HMV 150 E
750	800	920	303	90	112	Tr 800×7	G 1/8	10	259	OH 39/800 H	HM 30/800	MS 30/800-750	HMV 160 E
	800	920	303	90	112	Tr 800×7	G 1/8	10	259	OH 39/800 HE	HME 30/800	MS 30/800-750	HMV 160 E
	800	920	366	90	112	Tr 800×7	G 1/8	10	302	OH 30/800 H	HM 30/800	MS 30/800-750	HMV 160 E
	800	1000	505	112	141	Tr 800×7	G 1/8	10	535	OH 31/800 H	HM 31/800	MS 31/800-750	HMV 160 E
800	850	980	308	90	115	Tr 850×7	G 1/8	10	288	OH 39/850 H	HM 30/850	MS 30/900-850	HMV 170 E
	850	980	308	90	115	Tr 850×7	G 1/8	10	288	OH 39/850 HE	HME 30/850	MS 30/900-850	HMV 170 E
	850	980	380	90	115	Tr 850×7	G 1/8	10	341	OH 30/850 H	HM 30/850	MS 30/900-850	HMV 170 E
	850	1060	536	118	147	Tr 850×7	G 1/8	10	616	OH 31/850 H	HM 31/850	MS 31/850	HMV 170 E
850	900	1030	326	100	125	Tr 900×7	G 1/8	10	330	OH 39/900 H	HM 30/900	MS 30/900-850	HMV 180 E
	900	1030	326	100	125	Tr 900×7	G 1/8	10	330	OH 39/900 HE	HME 30/900	MS 30/900-850	HMV 180 E
	900	1030	400	100	125	Tr 900×7	G 1/8	10	387	OH 30/900 H	HM 30/900	MS 30/900-850	HMV 180 E
	900	1120	557	125	154	Tr 900×7	G 1/8	10	677	OH 31/900 H	HM 31/900	MS 31/850	HMV 180 E
900	950	1080	344	100	125	Tr 950×8	G 1/8	10	363	OH 39/950 H	HM 30/950	MS 30/950	HMV 190 E
	950	1080	420	100	125	Tr 950×8	G 1/8	10	424	OH 30/950 H	HM 30/950	MS 30/950	HMV 190 E
	950	1170	583	125	154	Tr 950×8	G 1/8	10	738	OH 31/950 H	HM 31/950	MS 31/950	HMV 190 E
950	1000	1140	358	100	125	Tr 1000×8	G 1/8	10	407	OH 39/1000 H	HM 30/1000	MS 30/1000	HMV 200 E
	1000	1140	430	100	125	Tr 1000×8	G 1/8	10	470	OH 30/1000 H	HM 30/1000	MS 30/1000	HMV 200 E
	1000	1240	609	100	154	Tr 1000×8	G 1/8	10	842	OH 31/1000 H	HM 31/1000	MS 31/1000	HMV 200 E
1000	1060	1200	372	100	125	Tr 1060×8	G 1/8	12	490	OH 39/1060 H	HM 30/1060	MS 30/1000	HMV 212 E
	1060	1200	447	100	125	Tr 1060×8	G 1/8	12	571	OH 30/1060 H	HM 30/1060	MS 30/1000	HMV 212 E
	1060	1300	622	125	154	Tr 1060×8	G 1/8	12	984	OH 31/1060 H	HM 31/1060	MS 31/1000	HMV 212 E

For OH .. HE sleeves not listed in the table, please contact SKF

Adapter sleeves for inch shafts

$d_1 \frac{3}{4} - 2 \frac{3}{16}$ in



HA, HE, HS

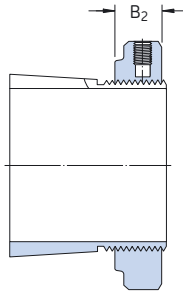
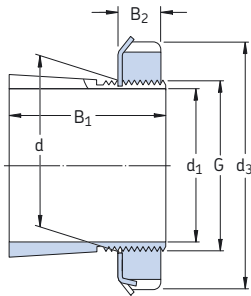
HA .. E, HE .. E, HS .. E

Dimensions							Mass	Designations Adapter sleeve with nut and locking device	Appertaining	
d_1	d	d_3	B_1	B_2	G	lock nut			locking device	
in	mm					kg	-			
$\frac{3}{4}$	19,050	25	38	26	8	M 25×1,5	0,070	HE 205	KM 5	MB 5
		25	38	29	8	M 25×1,5	0,080	HE 305	KM 5	MB 5
		25	38	29	10,5	M 25×1,5	0,088	HE 305 E	KMFE 5	-
		25	38	35	8	M 25×1,5	0,090	HE 2305	KM 5	MB 5
$\frac{7}{8}$	22,225	30	45	27	8	M 30×1,5	0,11	HS 206	KM 6	MB 6
		30	45	31	8	M 30×1,5	0,12	HS 306	KM 6	MB 6
$\frac{15}{16}$	23,813	30	45	27	8	M 30×1,5	0,10	HA 206	KM 6	MB 6
		30	45	31	8	M 30×1,5	0,12	HA 306	KM 6	MB 6
		30	45	31	10,5	M 30×1,5	0,13	HA 306 E	KMFE 6	-
		30	45	38	8	M 30×1,5	0,13	HA 2306	KM 6	MB 6
1	25,400	30	45	27	8	M 30×1,5	0,080	HE 206	KM 6	MB 6
		30	45	31	8	M 30×1,5	0,10	HE 306	KM 6	MB 6
		30	45	31	10,5	M 30×1,5	0,11	HE 306 E	KMFE 6	-
		30	45	38	8	M 30×1,5	0,11	HE 2306	KM 6	MB 6
$1 \frac{1}{8}$	28,575	35	52	29	9	M 35×1,5	0,14	HS 207	KM 7	MB 7
		35	52	35	9	M 35×1,5	0,16	HS 307	KM 7	MB 7
		35	52	35	11,5	M 35×1,5	0,17	HS 307 E	KMFE 7	-
$1 \frac{3}{16}$	30,163	35	52	29	9	M 35×1,5	0,12	HA 207	KM 7	MB 7
		35	52	35	9	M 35×1,5	0,14	HA 307	KM 7	MB 7
		35	52	35	11,5	M 35×1,5	0,15	HA 307 E	KMFE 7	-
		35	52	43	9	M 35×1,5	0,16	HA 2307	KM 7	MB 7
$1 \frac{1}{4}$	31,750	40	58	31	10	M 40×1,5	0,19	HE 208	KM 8	MB 8
		40	58	36	10	M 40×1,5	0,22	HS 308	KM 8	MB 8
		40	58	36	13	M 40×1,5	0,19	HE 308 E	KMFE 8	-
		40	58	46	10	M 40×1,5	0,28	HE 2308	KM 8	MB 8
$1 \frac{3}{8}$	34,925	40	58	31	10	M 40×1,5	0,16	HS 208	KM 8	MB 8
		40	58	36	10	M 40×1,5	0,17	HS 308	KM 8	MB 8
$1 \frac{7}{16}$	36,512	45	65	33	11	M 45×1,5	0,26	HA 209	KM 9	MB 9
		45	65	39	11	M 45×1,5	0,29	HA 309	KM 9	MB 9
		45	65	39	13	M 45×1,5	0,31	HA 309 E	KMFE 9	-
		45	65	50	11	M 45×1,5	0,35	HA 2309	KM 9	MB 9

Dimensions							Mass	Designations Adapter sleeve with nut and locking device	Appertaining lock nut	locking device	Appropriate hydraulic nut
d ₁	d	d ₃	B ₁	B ₂	G						
in	mm						kg	–			
1 1/2	38,100	45	65	33	11	M 45×1,5	0,20	HE 209	KM 9	MB 9	–
		45	65	39	11	M 45×1,5	0,24	HE 309	KM 9	MB 9	–
		45	65	39	13	M 45×1,5	0,26	HE 309 E	KMFE 9	–	–
		45	65	50	11	M 45×1,5	0,31	HE 2309	KM 9	MB 9	–
1 5/8	41,275	50	70	35	12	M 50×1,5	0,31	HS 210	KM 10	MB 10	HMV 10 E
		50	70	42	12	M 50×1,5	0,36	HS 310	KM 10	MB 10	HMV 10 E
		50	70	55	12	M 50×1,5	0,40	HS 2310	KM 10	MB 10	HMV 10 E
1 11/16	42,863	50	70	35	12	M 50×1,5	0,28	HA 210	KM 10	MB 10	HMV 10 E
		50	70	42	12	M 50×1,5	0,32	HA 310	KM 10	MB 10	HMV 10 E
		50	70	42	14	M 50×1,5	0,32	HA 310 E	KMFE 10	–	HMV 10 E
		50	70	55	12	M 50×1,5	0,40	HA 2310	KM 10	MB 10	HMV 10 E
1 3/4	44,450	50	70	35	12	M 50×1,5	0,26	HE 210	KM 10	MB 10	HMV 10 E
		50	70	42	12	M 50×1,5	0,29	HE 310	KM 10	MB 10	HMV 10 E
		50	70	42	14	M 50×1,5	0,29	HE 310 E	KMFE 10	–	HMV 10 E
		50	70	55	12	M 50×1,5	0,36	HE 2310	KM 10	MB 10	HMV 10 E
1 7/8	47,625	55	75	37	12,5	M 55×2	0,33	HS 211	KM 11	MB 11	HMV 11 E
		55	75	45	12,5	M 55×2	0,38	HS 311	KM 11	MB 11	HMV 11 E
1 15/16	49,213	55	75	37	12,5	M 55×2	0,30	HA 211	KM 11	MB 11	HMV 11 E
		55	75	45	12,5	M 55×2	0,34	HA 311	KM 11	MB 11	HMV 11 E
		55	75	45	14	M 55×2	0,35	HA 311 E	KMFE 11	–	HMV 11 E
		55	75	59	12,5	M 55×2	0,42	HA 2311	KM 11	MB 11	HMV 11 E
2	50,800	55	75	37	12,5	W 55×1/19	0,26	HE 211 B	HM 11	MB 11	–
		55	75	45	12,5	W 55×1/19	0,29	HE 311 B	HM 11	MB 11	–
		55	75	45	14	W 55×1/19	0,30	HE 311 BE	KMFE 11 B	–	–
		55	75	59	12,5	W 55×1/19	0,36	HE 2311 B	HM 11	MB 11	–
2 1/8	53,975	60	80	38	12,5	M 60×2	0,35	HS 212	KM 12	MB 12	HMV 12 E
		60	80	47	12,5	M 60×2	0,40	HS 312	KM 12	MB 12	HMV 12 E
		60	80	47	14	M 60×2	0,41	HS 312 E	KMFE 12	–	HMV 12 E
		60	80	62	12,5	M 60×2	0,49	HS 2312	KM 12	MB 12	HMV 12 E
2 3/16	55,563	65	85	40	13,5	M 65×2	0,49	HA 213	KM 13	MB 13	HMV 13 E
		65	85	50	13,5	M 65×2	0,58	HA 313	KM 13	MB 13	HMV 13 E
		65	85	50	15	M 65×2	0,59	HA 313 E	KMFE 13	–	HMV 13 E
		65	85	65	13,5	M 65×2	0,75	HA 2313	KM 13	MB 13	HMV 13 E

Adapter sleeves for inch shafts

d_1 2 1/4 – 4 3/16 in



HA, HE, HS

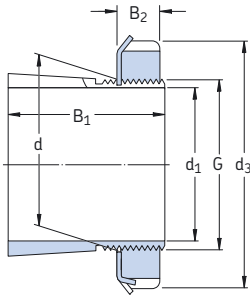
HA..E, HE..E

Dimensions						Mass	Designations	Appertaining	locking	Appropriate	
d_1	d	d_3	B_1	B_2	G		Adapter sleeve with nut and locking device	nut	device	hydraulic nut	
in	mm					kg	–				
2 1/4	57,150	65	85	40	13,5	M 65x2	0,44	HE 213	KM 13	MB 13	HMV 13 E
		65	85	50	13,5	M 65x2	0,52	HE 313	KM 13	MB 13	HMV 13 E
		65	85	50	15	M 65x2	0,53	HE 313 E	KMFE 13	–	HMV 13 E
		65	85	65	13,5	M 65x2	0,65	HE 2313	KM 13	MB 13	HMV 13 E
2 3/8	60,325	65	85	40	13,5	M 65x2	0,44	HS 213	KM 13	MB 13	HMV 13 E
		65	85	50	13,5	M 65x2	0,71	HS 313	KM 13	MB 13	HMV 13 E
		65	85	65	13,5	M 65x2	0,80	HS 2313	KM 13	MB 13	HMV 13 E
2 7/16	61,913	75	98	43	14,5	M 75x2	0,75	HA 215	KM 15	MB 15	HMV 15 E
		75	98	55	14,5	M 75x2	0,91	HA 315	KM 15	MB 15	HMV 15 E
		75	98	55	16	M 75x2	0,93	HA 315 E	KMFE 15	–	HMV 15 E
		75	98	73	14,5	M 75x2	1,15	HA 2315	KM 15	MB 15	HMV 15 E
2 1/2	63,500	75	98	43	14,5	M 75x2	0,70	HE 215	KM 15	MB 15	HMV 15 E
		75	98	55	14,5	M 75x2	0,85	HE 315	KM 15	MB 15	HMV 15 E
		75	98	55	16	M 75x2	0,87	HE 315 E	KMFE 15	–	HMV 15 E
		75	98	73	14,5	M 75x2	1,09	HE 2315	KM 15	MB 15	HMV 15 E
2 5/8	66,675	75	98	43	14,5	M 75x2	0,70	HS 215	KM 15	MB 15	HMV 15 E
		75	98	55	14,5	M 75x2	0,71	HS 315	KM 15	MB 15	HMV 15 E
		75	98	73	14,5	M 75x2	0,90	HS 2315	KM 15	MB 15	HMV 15 E
2 11/16	68,263	80	105	46	17	M 80x2	0,87	HA 216	KM 16	MB 16	HMV 16 E
		80	105	59	17	M 80x2	1,05	HA 316	KM 16	MB 16	HMV 16 E
		80	105	59	18	M 80x2	1,06	HA 316 E	KMFE 16	–	HMV 16 E
		80	105	78	17	M 80x2	1,30	HA 2316	KM 16	MB 16	HMV 16 E
2 3/4	69,850	80	105	46	17	M 80x2	0,81	HE 216	KM 16	MB 16	HMV 16 E
		80	105	59	17	M 80x2	0,97	HE 316	KM 16	MB 16	HMV 16 E
		80	105	59	18	M 80x2	0,98	HE 316 E	KMFE 16	–	HMV 16 E
		80	105	78	17	M 80x2	1,20	HE 2316	KM 16	MB 16	HMV 16 E
2 15/16	74,613	85	110	50	18	M 85x2	0,94	HA 217	KM 17	MB 17	HMV 17 E
		85	110	63	18	M 85x2	1,10	HA 317	KM 17	MB 17	HMV 17 E
		85	110	63	19	M 85x2	1,19	HA 317 E	KMFE 17	–	HMV 17 E
		85	110	82	18	M 85x2	1,40	HA 2317	KM 17	MB 17	HMV 17 E
3	76,200	85	110	50	18	M 85x2	0,87	HE 217	KM 17	MB 17	HMV 17 E
		85	110	63	18	M 85x2	1,00	HE 317	KM 17	MB 17	HMV 17 E
		85	110	63	19	M 85x2	0,99	HE 317 E	KMFE 17	–	HMV 17 E
		85	110	82	18	M 85x2	1,30	HE 2317	KM 17	MB 17	HMV 17 E

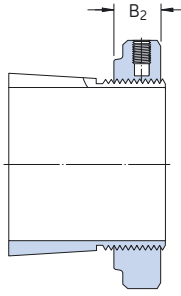
Dimensions							Mass	Designations	Appertaining	locking	Appropriate
d ₁	d	d ₃	B ₁	B ₂	G		Adapter sleeve with nut and locking device	lock nut	locking device	hydraulic nut	
in	mm					kg	–				
3 3/16	80,963	90	120	52	18	M 90×2	1,05	HA 218	KM 18	MB 18	HMV 18 E
		90	120	65	18	M 90×2	1,25	HA 318	KM 18	MB 18	HMV 18 E
		90	120	65	19	M 90×2	1,26	HA 318 E	KMFE 18	–	HMV 18 E
		90	120	86	18	M 90×2	1,50	HA 2318	KM 18	MB 18	HMV 18 E
3 1/4	82,550	90	120	52	18	M 90×2	0,97	HE 218	KM 18	MB 18	HMV 18 E
		90	120	65	18	M 90×2	1,10	HE 318	KM 18	MB 18	HMV 18 E
		90	120	65	19	M 90×2	1,11	HE 318 E	KMFE 18	–	HMV 18 E
		90	120	86	18	M 90×2	1,40	HE 2318	KM 18	MB 18	HMV 18 E
	95	125	55	19	M 95×2	1,35	HE 219	KM 19	MB 19	HMV 19 E	
	95	125	68	19	M 95×2	1,60	HE 319	KM 19	MB 19	HMV 19 E	
	95	125	68	20	M 95×2	1,61	HE 319 E	KMFE 19	–	HMV 19 E	
	95	125	90	19	M 95×2	2,00	HE 2319	KM 19	MB 19	HMV 19 E	
3 7/16	87,313	100	130	58	20	M 100×2	1,55	HA 220	KM 20	MB 20	HMV 20 E
		100	130	71	20	M 100×2	1,80	HA 320	KM 20	MB 20	HMV 20 E
		100	130	71	21	M 100×2	1,75	HA 320 E	KMFE 20	–	HMV 20 E
		100	130	97	20	M 100×2	2,35	HA 2320	KM 20	MB 20	HMV 20 E
3 1/2	88,900	100	130	58	20	M 100×2	1,45	HE 220	KM 20	MB 20	HMV 20 E
		100	130	71	20	M 100×2	1,75	HE 320	KM 20	MB 20	HMV 20 E
		100	130	71	21	M 100×2	1,70	HE 320 E	KMFE 20	–	HMV 20 E
		100	130	76	20	M 100×2	1,80	HE 3120	KM 20	MB 20	HMV 20 E
		100	130	97	20	M 100×2	2,20	HE 2320	KM 20	MB 20	HMV 20 E
4	101,600	110	145	63	21	M 110×2	1,65	HE 222	KM 22	MB 22	HMV 22 E
		110	145	77	21	M 110×2	1,90	HE 322	KM 22	MB 22	HMV 22 E
		110	145	77	21,5	M 110×2	1,85	HE 322 E	KMFE 22	–	HMV 22 E
		110	145	81	21	M 110×2	2,25	HE 3122	KM 22	MB 22	HMV 22 E
		110	145	105	21	M 110×2	2,40	HE 2322	KM 22	MB 22	HMV 22 E
4 3/16	106,363	120	145	72	22	M 120×2	2,25	HA 3024	KML 24	MBL 24	HMV 24 E
		120	155	72	26	M 120×2	2,32	HA 3024 E	KMFE 24	–	HMV 24 E
		120	155	88	22	M 120×2	2,90	HA 3124	KM 24	MB 24	HMV 24 E
		120	145	88	22	M 120×2	2,60	HA 3124 L	KML 24	MBL 24	HMV 24 E
		120	155	112	22	M 120×2	3,60	HA 2324	KM 24	MB 24	HMV 24 E
		120	145	112	22	M 120×2	3,30	HA 2324 L	KML 24	MBL 24	HMV 24 E

Adapter sleeves for inch shafts

d_1 4 1/4 – 7 3/16 in



HA, HA.. L, HE, HE.. L



HA.. E, HE.. E

Dimensions						Mass	Designations Adapter sleeve with nut and locking device	Appertaining lock nut	locking device	Appropriate hydraulic nut	
d_1	d	d_3	B_1	B_2	G						
in	mm					kg	–				
4 1/4	107,950	120	145	72	22	M 120x2	2,00	HE 3024	KML 24	MBL 24	HMV 24 E
		120	155	72	26	M 120x2	2,70	HE 3024 E	KMFE 24	–	HMV 24 E
		120	155	88	22	M 120x2	2,80	HE 3124	KM 24	MB 24	HMV 24 E
		120	155	112	22	M 120x2	3,35	HE 2324	KM 24	MB 24	HMV 24 E
		120	145	112	22	M 120x2	3,05	HE 2324 L	KML 24	MBL 24	HMV 24 E
4 7/16	112,713	130	155	80	23	M 130x2	3,05	HA 3026	KML 26	MBL 26	HMV 26 E
		130	165	92	23	M 130x2	3,75	HA 3126	KM 26	MB 26	HMV 26 E
		130	155	92	23	M 130x2	3,55	HA 3126 L	KML 26	MBL 26	HMV 26 E
		130	165	92	28	M 130x2	3,77	HA 3126 E	KMFE 26	–	HMV 26 E
		130	165	121	23	M 130x2	4,74	HA 2326	KM 26	MB 26	HMV 26 E
4 1/2	114,300	130	155	80	23	M 130x2	2,90	HE 3026	KML 26	MBL 26	HMV 26 E
		130	165	92	23	M 130x2	3,60	HE 3126	KM 26	MB 26	HMV 26 E
		130	155	92	23	M 130x2	3,40	HE 3126 L	KML 26	MBL 26	HMV 26 E
		130	165	121	23	M 130x2	4,55	HE 2326	KM 26	MB 26	HMV 26 E
4 15/16	125,413	140	165	82	24	M 140x2	3,00	HA 3028	KML 28	MBL 28	HMV 28 E
		140	180	97	24	M 140x2	4,10	HA 3128	KM 28	MB 28	HMV 28 E
		140	165	97	24	M 140x2	4,60	HA 3128 L	KML 28	MBL 28	HMV 28 E
		140	180	131	24	M 140x2	5,30	HA 2328	KM 28	MB 28	HMV 28 E
5	127,000	140	165	82	24	M 140x2	2,80	HE 3028	KML 28	MBL 28	HMV 28 E
		140	180	97	24	M 140x2	3,80	HE 3128	KM 28	MB 28	HMV 28 E
		140	165	97	24	M 140x2	3,30	HE 3128 L	KML 28	MBL 28	HMV 28 E
		140	180	131	24	M 140x2	5,00	HE 2328	KM 28	MB 28	HMV 28 E
5 3/16	131,763	150	180	87	26	M 150x2	4,20	HA 3030	KML 30	MBL 30	HMV 30 E
		150	195	111	26	M 150x2	5,80	HA 3130	KM 30	MB 30	HMV 30 E
		150	180	111	26	M 150x2	5,30	HA 3130 L	KML 30	MBL 30	HMV 30 E
		150	195	139	26	M 150x2	7,10	HA 2330	KM 30	MB 30	HMV 30 E
5 1/4	133,350	150	180	87	26	M 150x2	4,00	HE 3030	KML 30	MBL 30	HMV 30 E
		150	195	111	26	M 150x2	5,50	HE 3130	KM 30	MB 30	HMV 30 E
		150	180	111	26	M 150x2	5,00	HE 3130 L	KML 30	MBL 30	HMV 30 E
		150	195	139	26	M 150x2	6,80	HE 2330	KM 30	MB 30	HMV 30 E
5 7/16	138,113	160	190	93	27,5	M 160x3	5,40	HA 3032	KML 32	MBL 32	HMV 32 E
		160	210	119	27,5	M 160x3	7,55	HA 3132	KM 32	MB 32	HMV 32 E
		160	210	147	27,5	M 160x3	9,40	HA 2332	KM 32	MB 32	HMV 32 E
		160	190	147	27,5	M 160x3	8,55	HA 2332 L	KML 32	MBL 32	HMV 32 E

Dimensions							Mass	Designations Adapter sleeve with nut and locking device	Appertaining lock nut	locking device	Appropriate hydraulic nut
d ₁	d	d ₃	B ₁	B ₂	G						
in	mm						kg	–			
5 1/2	139,700	160	190	93	27,5	M 160×3	5,10	HE 3032	KML 32	MBL 32	HMV 32 E
		160	210	119	27,5	M 160×3	7,30	HE 3132	KM 32	MB 32	HMV 32 E
		160	190	119	27,5	M 160×3	6,45	HE 3132 L	KML 32	MBL 32	HMV 32 E
		160	210	147	27,5	M 160×3	8,80	HE 2332	KM 32	MB 32	HMV 32 E
		160	190	147	27,5	M 160×3	7,95	HE 2332 L	KML 32	MBL 32	HMV 32 E
5 15/16	150,813	170	200	101	28,5	M 170×3	5,70	HA 3034	KML 34	MBL 34	HMV 34 E
		170	220	122	28,5	M 170×3	7,80	HA 3134	KM 34	MB 34	HMV 34 E
		170	200	122	28,5	M 170×3	6,80	HA 3134 L	KML 34	MBL 34	HMV 34 E
		170	220	154	28,5	M 170×3	9,60	HA 2334	KM 34	MB 34	HMV 34 E
6	152,400	170	200	101	28,5	M 170×3	5,40	HE 3034	KML 34	MBL 34	HMV 34 E
		170	220	122	28,5	M 170×3	7,55	HE 3134	KM 34	MB 34	HMV 34 E
		170	200	122	28,5	M 170×3	6,60	HE 3134 L	KML 34	MBL 34	HMV 34 E
		170	220	154	28,5	M 170×3	9,20	HE 2334	KM 34	MB 34	HMV 34 E
6 7/16	163,513	180	210	109	29,5	M 180×3	6,00	HA 3036	KML 36	MBL 36	HMV 36 E
		180	230	131	29,5	M 180×3	8,15	HA 3136	KM 36	MB 36	HMV 36 E
		180	210	131	29,5	M 180×3	7,20	HA 3136 L	KML 36	MBL 36	HMV 36 E
		180	230	161	29,5	M 180×3	9,90	HA 2336	KM 36	MB 36	HMV 36 E
6 1/2	165,100	180	210	109	29,5	M 180×3	5,55	HE 3036	KML 36	MBL 36	HMV 36 E
		180	230	131	29,5	M 180×3	7,80	HE 3136	KM 36	MB 36	HMV 36 E
		180	210	131	29,5	M 180×3	6,85	HE 3136 L	KML 36	MBL 36	HMV 36 E
		180	230	161	29,5	M 180×3	9,35	HE 2336	KM 36	MB 36	HMV 36 E
6 3/4	171,450	190	220	112	30,5	M 190×3	7,20	HE 3038	KML 38	MBL 38	HMV 38 E
		190	240	141	30,5	M 190×3	10,2	HE 3138	KM 38	MB 38	HMV 38 E
		190	240	169	30,5	M 190×3	11,7	HE 2338	KM 38	MB 38	HMV 38 E
6 15/16	176,213	190	220	112	30,5	M 190×3	5,80	HA 3038	KML 38	MBL 38	HMV 38 E
		190	240	141	30,5	M 190×3	8,50	HA 3138	KM 38	MB 38	HMV 38 E
		190	240	169	30,5	M 190×3	10,0	HA 2338	KM 38	MB 38	HMV 38 E
7	177,800	200	240	120	31,5	M 200×3	9,35	HE 3040	KML 40	MBL 40	HMV 40 E
		200	250	150	31,5	M 200×3	12,3	HE 3140	KM 40	MB 40	HMV 40 E
		200	250	176	31,5	M 200×3	14,2	HE 2340	KM 40	MB 40	HMV 40 E
7 3/16	182,563	200	240	120	31,5	M 200×3	8,25	HA 3040	KML 40	MBL 40	HMV 40 E
		200	250	150	31,5	M 200×3	11,2	HA 3140	KM 40	MB 40	HMV 40 E
		200	250	176	31,5	M 200×3	12,6	HA 2340	KM 40	MB 40	HMV 40 E



Withdrawal sleeves

Designs	996
Basic design	996
Design for oil injection	996
Product data – general	997
Dimensions	997
Tolerances	997
Thread	997
Shaft tolerances	997
Product table	998

Designs

Withdrawal sleeves can be used to mount bearings with a tapered bore on cylindrical seatings of stepped shafts (→ **fig. 1**). The sleeve is pressed into the bore of the bearing that abuts a shaft shoulder or similar fixed component. The sleeve is located on the shaft by a nut or an end plate. Lock nuts or end plates are not supplied with the withdrawal sleeves. KM or HM lock nuts (→ **page 1010**) and respective locking washers are suitable but must be ordered separately.

To secure the bearing to the shaft, press the withdrawal sleeve into the bearing bore. To do this, particularly where larger bearings are concerned, considerable force is required to overcome the friction between the mating surfaces of the bearing and sleeve and of the sleeve and shaft. Mounting and dismounting of bearings on withdrawal sleeves can be facilitated considerably by using a hydraulic nut (→ **fig. 2**).

Basic design

SKF withdrawal sleeves (→ **fig. 3**) up to size 40 are phosphated, the larger ones are coated with a solventless rust inhibitor. They are slotted and have an external taper of 1:12 except for those in the A(O)H 240 and A(O)H 241 series which have an external taper of 1:30 and are intended for use with wide bearings in the 40 and 41 Dimension Series.

The nuts required for dismantling the withdrawal sleeve are not supplied with the sleeve and must be ordered separately. Appropriate sizes are listed in the product table. Appropriate hydraulic nuts for dismantling are listed there as well.

Design for oil injection

To enable the oil injection method to be used for mounting and dismantling, SKF withdrawal sleeves with bore diameters of 200 mm and above are produced as standard with oil supply ducts and distributor grooves (→ **fig. 4**). These AOH sleeves have two oil supply ducts at the threaded side as well as oil distributor grooves in the circumferential and axial directions, both in the outside surface and the sleeve bore. If oil is injected through these ducts and grooves, an oil film is formed between the mating surfaces of the bearing and sleeve and between the shaft and sleeve, and the force required to mount the bearing is considerably reduced. Details of the thread for attaching the oil supply lead to the ducts as well as of appropriate hydraulic nuts can be found in the product table.

The equipment required for the oil injection method is also supplied by SKF (→ section "Maintenance and lubrication products", starting on **page 1069**).

Fig. 1

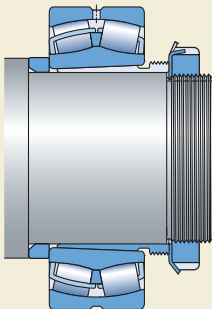
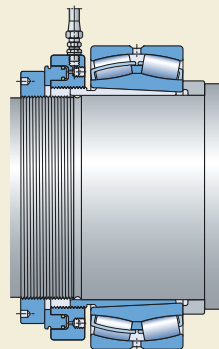


Fig. 2



Product data – general

Dimensions

The dimensions of SKF withdrawal sleeves are in accordance with ISO 2982-1:1995.

Tolerances

The bore diameter of SKF withdrawal sleeves is to tolerance JS9, the width to h13.

Thread

SKF withdrawal sleeves up to size 38 have metric threads with 6g tolerances according to ISO 965-3:1998. Larger withdrawal sleeves have metric trapezoidal threads with 7e tolerance according to ISO 2903:1993.

If standard nuts are not used, the threads of nuts for withdrawal sleeves up to size 38 should correspond to tolerance 5H according to ISO 965-3:1998. The threads of nuts for larger withdrawal sleeves should correspond to tolerance 7H according to ISO 2903:1993.

Shaft tolerances

As withdrawal sleeves adapt themselves to the shaft diameter, wider diameter tolerances can be permitted than for the seating of a bearing with a cylindrical bore. However, the form tolerances must be kept within narrow limits as the accuracy of form directly affects the running accuracy of the bearing. Generally, shafts should be machined to an h9 tolerance but the cylindricity should be to IT5/2 according to ISO 1101:2004.

Fig. 3

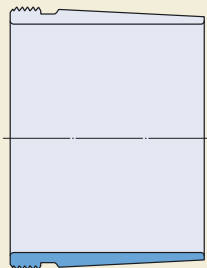
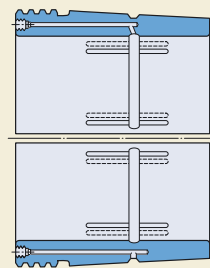
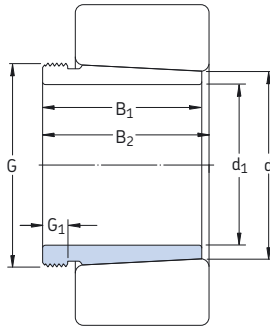


Fig. 4



Withdrawal sleeves

d_1 35 – 145 mm



Dimensions						Mass	Designations	Appropriate nut for dismounting hydraulic nut	
d_1	d	B_1	$B_2^{1)}$	G	G_1		Withdrawal sleeve		
mm						kg	–		
35	40	29	32	M 45×1,5	6	0,09	AH 308	KM 9	–
	40	40	43	M 45×1,5	7	0,13	AH 2308	KM 9	–
40	45	31	34	M 50×1,5	6	0,12	AH 309	KM 10	HMV 10 E
	45	44	47	M 50×1,5	7	0,16	AH 2309	KM 10	HMV 10 E
45	50	35	38	M 55×2	7	0,13	AHX 310	KM 11	HMV 11 E
	50	50	53	M 55×2	9	0,19	AHX 2310	KM 11	HMV 11 E
50	55	37	40	M 60×2	7	0,16	AHX 311	KM 12	HMV 12 E
	55	54	57	M 60×2	10	0,26	AHX 2311	KM 12	HMV 12 E
55	60	40	43	M 65×2	8	0,19	AHX 312	KM 13	HMV 13 E
	60	58	61	M 65×2	11	0,30	AHX 2312	KM 13	HMV 13 E
60	65	42	45	M 70×2	8	0,22	AH 313 G	KM 14	HMV 14 E
	65	61	64	M 70×2	12	0,36	AH 2313 G	KM 14	HMV 14 E
65	70	43	47	M 75×2	8	0,24	AH 314 G	KM 15	HMV 15 E
	70	64	68	M 75×2	12	0,42	AHX 2314 G	KM 15	HMV 15 E
70	75	45	49	M 80×2	8	0,29	AH 315 G	KM 16	HMV 16 E
	75	68	72	M 80×2	12	0,48	AHX 2315 G	KM 16	HMV 16 E
75	80	48	52	M 90×2	8	0,37	AH 316	KM 18	HMV 18 E
	80	71	75	M 90×2	12	0,57	AHX 2316	KM 18	HMV 18 E
80	85	52	56	M 95×2	9	0,43	AHX 317	KM 19	HMV 19 E
	85	74	78	M 95×2	13	0,65	AHX 2317	KM 19	HMV 19 E
85	90	53	57	M 100×2	9	0,46	AHX 318	KM 20	HMV 20 E
	90	63	67	M 100×2	10	0,57	AHX 3218	KM 20	HMV 20 E
	90	79	83	M 100×2	14	0,76	AHX 2318	KM 20	HMV 20 E
90	95	57	61	M 105×2	10	0,54	AHX 319	KM 21	HMV 21 E
	95	85	89	M 105×2	16	0,90	AHX 2319	KM 21	HMV 21 E
95	100	59	63	M 110×2	10	0,58	AHX 320	KM 22	HMV 22 E
	100	64	68	M 110×2	11	0,66	AHX 3120	KM 22	HMV 22 E
	100	73	77	M 110×2	11	0,76	AHX 3220	KM 22	HMV 22 E
	100	90	94	M 110×2	16	1,00	AHX 2320	KM 22	HMV 22 E

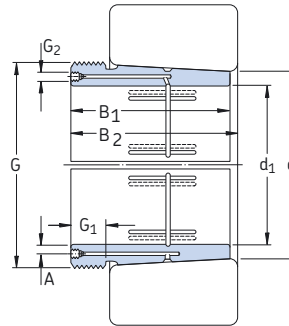
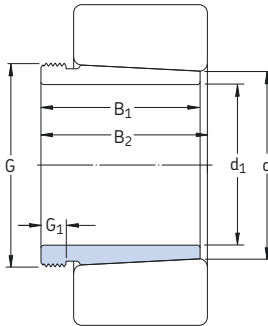
¹⁾ Width before the sleeve is driven into the bearing bore

Dimensions						Mass	Designations	Appropriate nut for dismounting	hydraulic nut
d ₁	d	B ₁	B ₂ ¹⁾	G	G ₁		Withdrawal sleeve		
mm						kg	–		
105	110	63	67	M 120×2	12	0,77	AHX 322	KM 24	HMV 24 E
	110	68	72	M 120×2	11	0,76	AHX 3122	KM 24	HMV 24 E
	110	82	86	M 120×2	11	1,00	AHX 3222 G	KM 24	HMV 24 E
	110	98	102	M 120×2	16	1,30	AHX 2322 G	KM 24	HMV 24 E
	110	82	91	M 115×2	13	0,71	AH 24122	KM 23	HMV 23 E
115	120	60	64	M 130×2	13	0,73	AHX 3024	KM 26	HMV 26 E
	120	75	79	M 130×2	12	0,94	AHX 3124	KM 26	HMV 26 E
	120	90	94	M 130×2	13	1,30	AHX 3224 G	KM 26	HMV 26 E
	120	105	109	M 130×2	17	1,55	AHX 2324 G	KM 26	HMV 26 E
	120	73	82	M 125×2	13	0,70	AH 24024	KM 25	HMV 25 E
	120	93	102	M 130×2	13	1,00	AH 24124	KM 26	HMV 26 E
125	130	67	71	M 140×2	14	0,91	AHX 3026	KM 28	HMV 28 E
	130	78	82	M 140×2	12	1,10	AHX 3126	KM 28	HMV 28 E
	130	98	102	M 140×2	15	1,50	AHX 3226 G	KM 28	HMV 28 E
	130	115	119	M 140×2	19	1,85	AHX 2326 G	KM 28	HMV 28 E
	130	83	93	M 135×2	14	0,90	AH 24026	KM 27	HMV 27 E
	130	94	104	M 140×2	14	1,15	AH 24126	KM 28	HMV 28 E
135	140	68	73	M 150×2	14	1,00	AHX 3028	KM 30	HMV 30 E
	140	83	88	M 150×2	14	1,30	AHX 3128	KM 30	HMV 30 E
	140	104	109	M 150×2	15	1,75	AHX 3228 G	KM 30	HMV 30 E
	140	125	130	M 150×2	20	2,25	AHX 2328 G	KM 30	HMV 30 E
	140	83	93	M 145×2	14	0,95	AH 24028	KM 29	HMV 29 E
	140	99	109	M 150×2	14	1,30	AH 24128	KM 30	HMV 30 E
145	150	72	77	M 160×3	15	1,15	AHX 3030	KM 32	HMV 32 E
	150	96	101	M 160×3	15	1,70	AHX 3130 G	KM 32	HMV 32 E
	150	114	119	M 160×3	17	2,10	AHX 3230 G	KM 32	HMV 32 E
	150	135	140	M 160×3	24	2,75	AHX 2330 G	KM 32	HMV 32 E
	150	90	101	M 155×3	15	1,05	AH 24030	KM 31	HMV 31 E
	150	115	126	M 160×3	15	1,55	AH 24130	KM 32	HMV 32 E

¹⁾Width before the sleeve is driven into the bearing bore

Withdrawal sleeves

d_1 150 – 280 mm



Dimensions						Mass	Designations Withdrawal sleeve	Appropriate nut for dismounting	
d_1	d	B_1	$B_2^{1)}$	G	G_1			hydraulic	nut
mm						kg	–		
150	160	77	82	M 170×3	16	2,00	AH 3032	KM 34	HMV 34 E
	160	103	108	M 170×3	16	3,00	AH 3132 G	KM 34	HMV 34 E
	160	124	130	M 170×3	20	3,70	AH 3232 G	KM 34	HMV 34 E
	160	140	146	M 170×3	24	4,35	AH 2332 G	KM 34	HMV 34 E
	160	95	106	M 170×3	15	2,30	AH 24032	KM 34	HMV 34 E
	160	124	135	M 170×3	15	3,00	AH 24132	KM 34	HMV 34 E
160	170	85	90	M 180×3	17	2,45	AH 3034	KM 36	HMV 36 E
	170	104	109	M 180×3	16	3,20	AH 3134 G	KM 36	HMV 36 E
	170	134	140	M 180×3	24	4,35	AH 3234 G	KM 36	HMV 36 E
	170	146	152	M 180×3	24	4,85	AH 2334 G	KM 36	HMV 36 E
	170	106	117	M 180×3	16	2,70	AH 24034	KM 36	HMV 36 E
	170	125	136	M 180×3	16	3,25	AH 24134	KM 36	HMV 36 E
170	180	92	98	M 190×3	17	2,80	AH 3036	KM 38	HMV 38 E
	180	105	110	M 190×3	17	3,40	AH 2236 G	KM 38	HMV 38 E
	180	116	122	M 190×3	19	3,90	AH 3136 G	KM 38	HMV 38 E
	180	140	146	M 190×3	24	4,85	AH 3236 G	KM 38	HMV 38 E
	180	154	160	M 190×3	26	5,50	AH 2336 G	KM 38	HMV 38 E
	180	116	127	M 190×3	16	3,20	AH 24036	KM 38	HMV 38 E
180	180	134	145	M 190×3	16	3,75	AH 24136	KM 38	HMV 38 E
	190	96	102	M 200×3	18	3,30	AH 3038 G	KM 40	HMV 40 E
	190	112	117	M 200×3	18	3,90	AH 2238 G	KM 40	HMV 40 E
	190	125	131	M 200×3	20	4,50	AH 3138 G	KM 40	HMV 40 E
	190	145	152	M 200×3	25	5,40	AH 3238 G	KM 40	HMV 40 E
	190	160	167	M 200×3	26	6,10	AH 2338 G	KM 40	HMV 40 E
190	190	118	131	M 200×3	18	3,55	AH 24038	KM 40	HMV 40 E
	190	146	159	M 200×3	18	4,45	AH 24138	KM 40	HMV 40 E
	200	102	108	Tr 210×4	19	3,70	AH 3040 G	HM 42 T	HMV 42 E
	200	134	140	Tr 220×4	21	5,65	AH 3140	HM 3044	HMV 44 E
	200	153	160	Tr 220×4	25	6,60	AH 3240	HM 3044	HMV 44 E
	200	170	177	Tr 220×4	30	7,60	AH 2340	HM 3044	HMV 44 E
200	200	127	140	Tr 210×4	18	4,00	AH 24040	HM 42 T	HMV 42 E
	200	158	171	Tr 210×4	18	5,05	AH 24140	HM 42 T	HMV 42 E

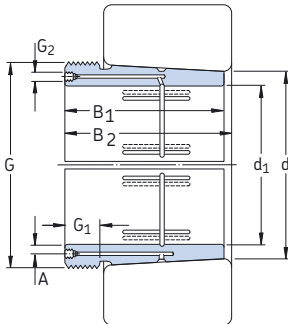
¹⁾ Width before the sleeve is driven into the bearing bore

Dimensions									Mass	Designations Withdrawal sleeve	Appropriate nut for dismounting	hydraulic nut
d ₁	d	B ₁	B ₂ ¹⁾	G	G ₁	G ₂	A					
mm									kg	–		
200	220	111	117	Tr 230×4	20	G 1/8	6,5	7,30	A0H 3044 G	HM 46 T	HMV 46 E	
	220	145	151	Tr 240×4	23	G 1/4	9	9,30	A0H 3144	HM 3048	HMV 48 E	
	220	181	189	Tr 240×4	30	G 1/4	9	13,5	A0H 2344	HM 3048	HMV 48 E	
	220	138	152	Tr 230×4	20	G 1/8	6,5	7,45	A0H 24044	HM 46 T	HMV 46 E	
	220	170	184	Tr 230×4	20	G 1/8	6,5	10,0	A0H 24144	HM 46 T	HMV 46 E	
	220	154	161	Tr 260×4	25	G 1/4	9	7,95	A0H 3048	HM 3052	HMV 52 E	
220	240	116	123	Tr 260×4	21	G 1/4	9	12,0	A0H 3148	HM 3052	HMV 52 E	
	240	189	197	Tr 260×4	30	G 1/4	9	14,0	A0H 2348	HM 3052	HMV 52 E	
	240	138	153	Tr 250×4	20	G 1/8	6,5	8,05	A0H 24048	HM 50 T	HMV 50 E	
	240	180	195	Tr 260×4	20	G 1/4	9	11,5	A0H 24148	HM 3052	HMV 52 E	
	260	128	135	Tr 280×4	23	G 1/4	9	9,60	A0H 3052	HM 3056	HMV 56 E	
	260	155	161	Tr 280×4	23	G 1/4	9	13,5	A0H 2252 G	HM 3056	HMV 56 E	
240	260	172	179	Tr 280×4	26	G 1/4	9	15,5	A0H 3152 G	HM 3056	HMV 56 E	
	260	205	213	Tr 280×4	30	G 1/4	9	19,0	A0H 2352 G	HM 3056	HMV 56 E	
	260	162	178	Tr 280×4	22	G 1/8	6,5	12,5	A0H 24052 G	HM 3056	HMV 56 E	
	260	202	218	Tr 280×4	22	G 1/4	9	14,0	A0H 24152	HM 3056	HMV 56 E	
	280	131	139	Tr 300×4	24	G 1/4	9	11,0	A0H 3056	HM 3060	HMV 60 E	
	280	155	163	Tr 300×4	24	G 1/4	9	15,0	A0H 2256 G	HM 3160	HMV 60 E	
260	280	175	183	Tr 300×4	28	G 1/4	9	17,0	A0H 3156 G	HM 3160	HMV 60 E	
	280	212	220	Tr 300×4	30	G 1/4	9	21,5	A0H 2356 G	HM 3160	HMV 60 E	
	280	162	179	Tr 300×4	22	G 1/8	6,5	13,5	A0H 24056 G	HM 3160	HMV 60 E	
	280	202	219	Tr 300×4	22	G 1/4	9	15,0	A0H 24156	HM 3160	HMV 60 E	
	300	145	153	Tr 320×5	26	G 1/4	9	13,0	A0H 3060	HM 3064	HMV 64 E	
	300	170	178	Tr 320×5	26	G 1/4	9	18,0	A0H 2260 G	HM 3164	HMV 64 E	
280	300	192	200	Tr 320×5	30	G 1/4	9	20,5	A0H 3160 G	HM 3164	HMV 64 E	
	300	228	236	Tr 320×5	34	G 1/4	9	23,5	A0H 2360 G	HM 3164	HMV 64 E	
	300	184	202	Tr 320×5	24	G 1/8	6,5	17,0	A0H 24060 G	HM 3164	HMV 64 E	
	300	224	242	Tr 320×5	24	G 1/4	9	18,5	A0H 24160	HM 3164	HMV 64 E	

¹⁾Width before the sleeve is driven into the bearing bore

Withdrawal sleeves

d₁ 300 – 500 mm



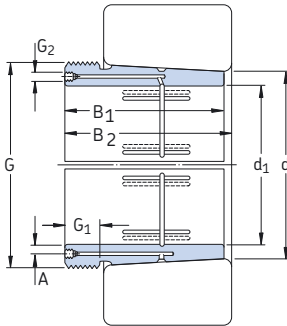
Dimensions								Mass	Designations Withdrawal sleeve	Appropriate nut for dismounting	hydraulic nut	
d ₁	d	B ₁	B ₂ ¹⁾	G	G ₁	G ₂	A					
mm								kg	–			
300	320	149	157	Tr 340×5	27	G 1/4	9	16,5	A0H 3064 G	HM 3068	HMV 68 E	
	320	180	190	Tr 340×5	27	G 1/4	9	20,0	A0H 2264 G	HM 3168	HMV 68 E	
	320	209	217	Tr 340×5	31	G 1/4	9	24,5	A0H 3164 G	HM 3168	HMV 68 E	
	320	246	254	Tr 340×5	36	G 1/4	9	27,5	A0H 3264 G	HM 3168	HMV 68 E	
	320	184	202	Tr 340×5	24	G 1/8	6,5	18,0	A0H 24064 G	HM 3168	HMV 68 E	
	320	242	260	Tr 340×5	24	G 1/4	9	20,5	A0H 24164	HM 3168	HMV 68 E	
	320	340	162	171	Tr 360×5	28	G 1/4	9	19,0	A0H 3068 G	HM 3072	HMV 72 E
		340	225	234	Tr 360×5	33	G 1/4	9	28,5	A0H 3168 G	HM 3172	HMV 72 E
		340	264	273	Tr 360×5	38	G 1/4	9	32,0	A0H 3268 G	HM 3172	HMV 72 E
		340	206	225	Tr 360×5	26	G 1/4	9	18,0	A0H 24068	HM 3172	HMV 72 E
340		269	288	Tr 360×5	26	G 1/4	9	25,5	A0H 24168	HM 3172	HMV 72 E	
340		360	167	176	Tr 380×5	30	G 1/4	9	21,0	A0H 3072 G	HM 3076	HMV 76 E
	360	229	238	Tr 380×5	35	G 1/4	9	30,5	A0H 3172 G	HM 3176	HMV 76 E	
	360	274	283	Tr 380×5	40	G 1/4	9	35,5	A0H 3272 G	HM 3176	HMV 76 E	
	360	206	226	Tr 380×5	26	G 1/4	9	20,0	A0H 24072	HM 3176	HMV 76 E	
	360	269	289	Tr 380×5	26	G 1/4	9	26,0	A0H 24172	HM 3176	HMV 76 E	
	360	380	170	180	Tr 400×5	31	G 1/4	9	22,5	A0H 3076 G	HM 3080	HMV 80 E
		380	232	242	Tr 400×5	36	G 1/4	9	33,0	A0H 3176 G	HM 3180	HMV 80 E
		380	284	294	Tr 400×5	42	G 1/4	9	42,0	A0H 3276 G	HM 3180	HMV 80 E
380		208	228	Tr 400×5	28	G 1/4	9	23,5	A0H 24076	HM 3180	HMV 80 E	
380		271	291	Tr 400×5	28	G 1/4	9	31,0	A0H 24176	HM 3180	HMV 80 E	
380		400	183	193	Tr 420×5	33	G 1/4	9	26,0	A0H 3080 G	HM 3084	HMV 84 E
	400	240	250	Tr 420×5	38	G 1/4	9	36,0	A0H 3180 G	HM 3184	HMV 84 E	
	400	302	312	Tr 420×5	44	G 1/4	9	48,0	A0H 3280 G	HM 3184	HMV 84 E	
	400	228	248	Tr 420×5	28	G 1/4	9	27,0	A0H 24080	HM 3184	HMV 84 E	
	400	278	298	Tr 420×5	28	G 1/4	9	35,0	A0H 24180	HM 3184	HMV 84 E	

¹⁾Width before the sleeve is driven into the bearing bore

Dimensions									Mass	Designations Withdrawal sleeve	Appropriate nut for dismounting	hydraulic nut
d ₁	d	B ₁	B ₂ ¹⁾	G	G ₁	G ₂	A					
mm									kg	–		
400	420	186	196	Tr 440×5	34	G 1/4	9	28,0	A0H 3084 G	HM 3088	HMV 88 E	
	420	266	276	Tr 440×5	40	G 1/4	9	43,0	A0H 3184 G	HM 3188	HMV 88 E	
	420	321	331	Tr 440×5	46	G 1/4	9	54,5	A0H 3284 G	HM 3188	HMV 88 E	
	420	230	252	Tr 440×5	30	G 1/4	9	29,0	A0H 24084	HM 3188	HMV 88 E	
	420	310	332	Tr 440×5	30	G 1/4	9	39,0	A0H 24184	HM 3188	HMV 88 E	
	420	440	194	205	Tr 460×5	35	G 1/4	9	31,0	A0HX 3088 G	HM 3092	HMV 92 E
440		270	281	Tr 460×5	42	G 1/4	9	46,0	A0HX 3188 G	HM 3192	HMV 92 E	
440		330	341	Tr 460×5	48	G 1/4	9	64,5	A0HX 3288 G	HM 3192	HMV 92 E	
440		242	264	Tr 460×5	30	G 1/4	9	32,0	A0H 24088	HM 3192	HMV 92 E	
440		310	332	Tr 460×5	30	G 1/4	9	45,5	A0H 24188	HM 3192	HMV 92 E	
440		460	202	213	Tr 480×5	37	G 1/4	9	34,0	A0HX 3092 G	HM 3096	HMV 96 E
	460	285	296	Tr 480×5	43	G 1/4	9	51,5	A0HX 3192 G	HM 3196	HMV 96 E	
	460	349	360	Tr 480×5	50	G 1/4	9	80,0	A0HX 3292 G	HM 3196	HMV 96 E	
	460	250	273	Tr 480×5	32	G 1/4	9	34,5	A0H 24092	HM 3196	HMV 96 E	
	460	332	355	Tr 480×5	32	G 1/4	9	50,0	A0H 24192	HM 3196	HMV 96 E	
	460	480	205	217	Tr 500×5	38	G 1/4	9	34,0	A0HX 3096 G	HM 30/500	HMV 100 E
480		295	307	Tr 500×5	45	G 1/4	9	63,0	A0HX 3196 G	HM 31/500	HMV 100 E	
480		364	376	Tr 500×5	52	G 1/4	9	81,0	A0HX 3296 G	HM 31/500	HMV 100 E	
480		250	273	Tr 500×5	32	G 1/4	9	36,5	A0H 24096	HM 31/500	HMV 100 E	
480		340	363	Tr 500×5	32	G 1/4	9	51,5	A0H 24196	HM 31/500	HMV 100 E	
480		500	209	221	Tr 530×6	40	G 1/4	9	41,0	A0HX 30/500 G	HM 30/530	HMV 106 E
	500	313	325	Tr 530×6	47	G 1/4	9	66,5	A0HX 31/500 G	HM 31/530	HMV 106 E	
	500	393	405	Tr 530×6	54	G 1/4	9	89,5	A0HX 32/500 G	HM 31/530	HMV 106 E	
	500	253	276	Tr 530×6	35	G 1/4	9	43,0	A0H 240/500	HM 31/530	HMV 106 E	
	500	360	383	Tr 530×6	35	G 1/4	9	63,0	A0H 241/500	HM 31/530	HMV 106 E	
	500	530	230	242	Tr 560×6	45	G 1/4	10	63,5	A0H 30/530	HM 30/560	HMV 112 E
530		325	337	Tr 560×6	53	G 1/4	10	93,5	A0H 31/530	HM 31/560	HMV 112 E	
530		412	424	Tr 560×6	57	G 1/4	10	142	A0H 32/530 G	HM 31/560	HMV 112 E	
530		285	309	Tr 560×6	35	G 1/4	9	64,5	A0H 240/530 G	HM 31/560	HMV 112 E	
530		370	394	Tr 560×6	35	G 1/4	9	92,0	A0H 241/530 G	HM 31/560	HMV 112 E	

¹⁾Width before the sleeve is driven into the bearing bore

Withdrawal sleeves d₁ 530 – 1 000 mm



Dimensions								Mass	Designations	Appropriate nut for dismounting	hydraulic nut
d ₁	d	B ₁	B ₂ ¹⁾	G	G ₁	G ₂	A	kg	Withdrawal sleeve		
mm									–		
530	560	240	252	Tr 600×6	45	G 1/4	11	73,5	AOHX 30/560	HM 30/600	HMV 120 E
	560	335	347	Tr 600×6	55	G 1/4	11	107	AOHX 31/560	HM 31/600	HMV 120 E
	560	422	434	Tr 600×6	57	G 1/4	11	143	AOHX 32/560	HM 31/600	HMV 120 E
	560	296	320	Tr 600×6	38	G 1/4	9	71,0	AOH 240/560 G	HM 31/600	HMV 120 E
	560	393	417	Tr 600×6	38	G 1/4	9	107	AOH 241/560 G	HM 31/600	HMV 120 E
570	600	245	259	Tr 630×6	45	G 1/4	11	77,0	AOHX 30/600	HM 30/630	HMV 126 E
	600	355	369	Tr 630×6	55	G 1/4	11	120	AOHX 31/600	HM 31/630	HMV 126 E
	600	445	459	Tr 630×6	57	G 1/4	11	159	AOHX 32/600 G	HM 31/630	HMV 126 E
	600	310	336	Tr 630×6	38	G 1/4	9	108	AOHX 240/600	HM 31/630	HMV 126 E
	600	413	439	Tr 630×6	38	G 1/4	9	120	AOHX 241/600	HM 31/630	HMV 126 E
600	630	258	272	Tr 670×6	46	G 1/4	11	88,5	AOH 30/630	HM 30/670	HMV 134 E
	630	375	389	Tr 670×6	60	G 1/4	11	139	AOH 31/630	HM 31/670	HMV 134 E
	630	475	489	Tr 670×6	63	G 1/4	11	188	AOH 32/630 G	HM 31/670	HMV 134 E
	630	330	356	Tr 670×6	40	G 1/4	9	101	AOH 240/630 G	HM 31/670	HMV 134 E
	630	440	466	Tr 670×6	40	G 1/4	9	139	AOH 241/630 G	HM 31/670	HMV 134 E
630	670	280	294	Tr 710×7	50	G 1/4	12	125	AOH 30/670	HM 30/710	HMV 142 E
	670	395	409	Tr 710×7	59	G 1/4	12	189	AOHX 31/670	HM 31/710	HMV 142 E
	670	500	514	Tr 710×7	62	G 1/4	12	252	AOH 32/670 G	HM 31/710	HMV 142 E
	670	348	374	Tr 710×7	40	G 1/4	12	140	AOH 240/670 G	HM 31/710	HMV 142 E
	670	452	478	Tr 710×7	40	G 1/4	12	180	AOH 241/670	HM 31/710	HMV 142 E
670	710	286	302	Tr 750×7	50	G 1/4	15	138	AOHX 30/710	HM 30/750	HMV 150 E
	710	405	421	Tr 750×7	60	G 1/4	15	207	AOHX 31/710	HM 31/750	HMV 150 E
	710	515	531	Tr 750×7	65	G 1/4	15	278	AOH 32/710 G	HM 31/750	HMV 150 E
	710	360	386	Tr 750×7	45	G 1/4	12	155	AOH 240/710 G	HM 31/750	HMV 150 E
	710	483	509	Tr 750×7	45	G 1/4	12	205	AOH 241/710	HM 31/750	HMV 150 E
710	750	300	316	Tr 800×7	50	G 1/4	15	145	AOH 30/750	HM 30/800	HMV 160 E
	750	425	441	Tr 800×7	60	G 1/4	15	238	AOH 31/750	HM 31/800	HMV 160 E
	750	540	556	Tr 800×7	65	G 1/4	15	320	AOH 32/750	HM 31/800	HMV 160 E
	750	380	408	Tr 800×7	45	G 1/4	12	178	AOH 240/750 G	HM 31/800	HMV 160 E
	750	520	548	Tr 800×7	45	G 1/4	12	240	AOH 241/750 G	HM 31/800	HMV 160 E

¹⁾Width before the sleeve is driven into the bearing bore

Dimensions									Mass	Designations Withdrawal sleeve	Appropriate nut for dismounting	hydraulic nut
d ₁	d	B ₁	B ₂ ¹⁾	G	G ₁	G ₂	A					
mm									kg	–		
750	800	308	326	Tr 850×7	50	G 1/4	15	204	AOH 30/800	HM 30/850	HMV 170 E	
	800	438	456	Tr 850×7	63	G 1/4	15	305	AOH 31/800	HM 31/850	HMV 170 E	
	800	550	568	Tr 850×7	67	G 1/4	15	401	AOH 32/800	HM 31/850	HMV 170 E	
	800	395	423	Tr 850×7	50	G 1/4	15	237	AOH 240/800 G	HM 31/850	HMV 170 E	
	800	525	553	Tr 850×7	50	G 1/4	15	318	AOH 241/800 G	HM 31/850	HMV 170 E	
	800	850	325	343	Tr 900×7	53	G 1/4	15	230	AOH 30/850	HM 30/900	HMV 180 E
850		462	480	Tr 900×7	62	G 1/4	15	345	AOH 31/850	HM 31/900	HMV 180 E	
850		585	603	Tr 900×7	70	G 1/4	15	461	AOH 32/850	HM 31/900	HMV 180 E	
850		415	445	Tr 900×7	50	G 1/4	15	265	AOH 240/850 G	HM 31/900	HMV 180 E	
850		560	600	Tr 900×7	60	G 1/4	15	368	AOH 241/850	HM 31/900	HMV 180 E	
850		900	335	355	Tr 950×8	55	G 1/4	15	250	AOH 30/900	HM 30/950	HMV 190 E
	900	475	495	Tr 950×8	63	G 1/4	15	379	AOH 31/900	HM 31/950	HMV 190 E	
	900	585	605	Tr 950×8	70	G 1/4	15	489	AOH 32/900	HM 31/950	HMV 190 E	
	900	430	475	Tr 950×8	55	G 1/4	15	296	AOH 240/900	HM 31/950	HMV 190 E	
	900	575	620	Tr 950×8	60	G 1/4	15	402	AOH 241/900	HM 31/950	HMV 190 E	
	900	950	355	375	Tr 1000×8	55	G 1/4	15	285	AOH 30/950	HM 30/1000	HMV 200 E
950		500	520	Tr 1000×8	62	G 1/4	15	426	AOH 31/950	HM 31/1000	HMV 200 E	
950		600	620	Tr 1000×8	70	G 1/4	15	533	AOH 32/950	HM 31/1000	HMV 200 E	
950		467	512	Tr 1000×8	55	G 1/4	15	340	AOH 240/950	HM 31/1000	HMV 200 E	
950		605	650	Tr 1000×8	60	G 1/4	15	449	AOH 241/950	HM 31/1000	HMV 200 E	
950		1 000	365	387	Tr 1060×8	57	G 1/4	15	318	AOH 30/1000	HM 30/1060	HMV 212 E
	1 000	525	547	Tr 1060×8	63	G 1/4	15	485	AOH 31/1000	HM 31/1060	HMV 212 E	
	1 000	630	652	Tr 1060×8	70	G 1/4	15	608	AOH 32/1000	HM 31/1060	HMV 212 E	
	1 000	469	519	Tr 1060×8	57	G 1/4	15	369	AOH 240/1000	HM 31/1060	HMV 212 E	
	1 000	645	695	Tr 1060×8	65	G 1/4	15	519	AOH 241/1000	HM 31/1060	HMV 212 E	
	1 000	1 060	385	407	Tr 1120×8	60	G 1/4	15	406	AOH 30/1060	HM 30/1120	HMV 224 E
1 060		540	562	Tr 1120×8	65	G 1/4	15	599	AOH 31/1060	HM 30/1120	HMV 224 E	
1 060		498	548	Tr 1120×8	60	G 1/4	15	479	AOH 240/1060	HM 30/1120	HMV 224 E	
1 060		665	715	Tr 1120×8	65	G 1/4	15	652	AOH 241/1060	HM 30/1120	HMV 224 E	

¹⁾Width before the sleeve is driven into the bearing bore



Lock nuts

Lock nuts with locking washer or clip	1010
Lock nuts with integral locking device	1020
Lock nuts with locking screw	1022
Precision lock nuts with locking pins	1024
Product tables	1012
KM(L) lock nuts with locking washer	1012
HM(E) lock nuts with locking clip	1014
MB(L) locking washers	1016
MS locking clips	1018
KMK lock nuts with integral locking device.....	1021
KMFE lock nuts with locking screw.....	1023
KMT precision lock nuts with locking pins.....	1026
KMTA precision lock nuts with locking pins.....	1028

Lock nuts

SKF supplies lock nuts in a wide range of sizes; they are also referred to as shaft or withdrawal nuts, depending on their use. They are used to locate bearings and other components onto a shaft as well as to facilitate mounting bearings on tapered journals and dismounting bearings from withdrawal sleeves. SKF lock nuts offer five different ways of locking on the shaft, as described below.

Locking washer

Locking washers are simple, stable and reliable fastening elements. The washer engages a keyway in the shaft and locks the nut in position if one of the tabs is bent over into one of the slots around the circumference of the nut. Locking washers are used with lock nuts in the KM and KML series (→ **fig. 1**).

Locking clip

Locking clips are attached to the nut using a bolt to engage a slot in the nut and a keyway in the shaft. This locking device is used with lock nuts in the HM 30 and 31 series (→ **fig. 2**).

Locking screw

A small part of the nut thread is pressed into the shaft thread by a locking screw to prevent the nut from turning. Neither additional locking washer nor a keyway in the shaft is required. Lock nuts with locking screw (→ **fig. 3**) are designated KMFE.

Fig. 1

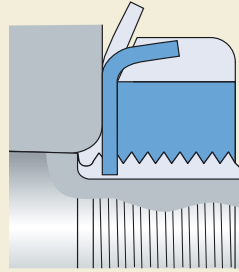


Fig. 2

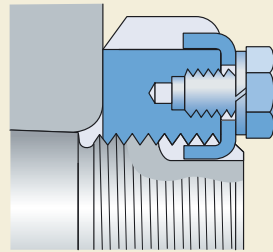
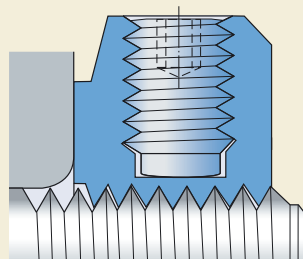


Fig. 3



Locking device

A steel insert, an integral part of the nut thread, can be pressed against the shaft thread by a grub screw to prevent the nut from turning. Neither additional locking washer nor keyway in the shaft is required. Lock nuts with this kind of locking device (→ **fig. 4**) are designated KMK.

Locking pins

Three locking pins are equally spaced around the circumference of the nut. The pins are arranged at the same angle as the thread flanks and can be pressed into the shaft thread by grub screws. The pins not only lock the nut but also accurately locate it at right angles to the shaft. No keyway in the shaft is required. Locking pins are used with the precision lock nuts in the KMT and KMTA series (→ **fig. 5**).

Fig. 4

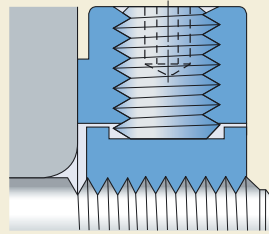
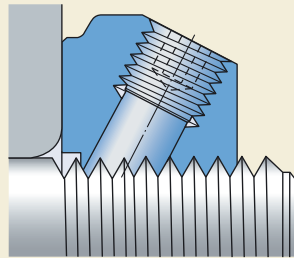


Fig. 5



Lock nuts with locking washer or clip

SKF lock nuts with a locking washer or clip have four or eight equally spaced slots respectively, around the outside diameter (→ **fig. 6**) to take a hook or impact spanner. The designations of the appropriate spanners are provided in the product tables.

The nut and the locking device must be ordered separately. The appropriate locking washer or clip is shown in the product tables.

Besides metric lock nuts shown in this catalogue, inch lock nuts with an American National Form NS Class 3 or an ACME Class 3G General Purpose thread can be supplied too. Details are contained in the SKF catalogue "Bearing accessories" or in the "SKF Interactive Engineering Catalogue" online at www.skf.com.

KM(L) lock nuts with locking washer

Lock nuts in the KM and KML series are available for metric ISO threads up to and including 200 mm and are locked with an MB(L) washer (→ **fig. 7**) or with the stronger MB ..A design.

HM(E) lock nuts with locking clip

Lock nuts in the HM(E) 30 and HM 31 series with metric trapezoidal threads are locked by an MS locking clip consisting of the clip, a hexagon headed bolt to EN ISO 4017:2000 and a spring locking washer to DIN 128 (→ **fig. 8**).

Fig. 6

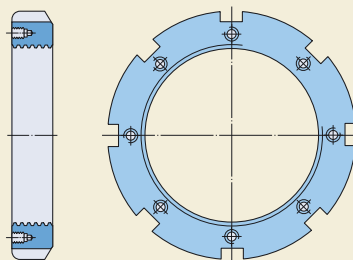
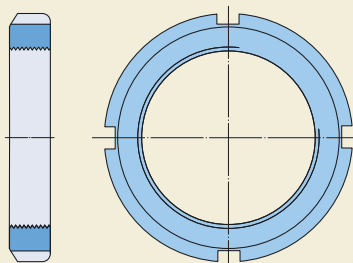
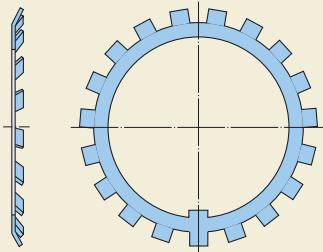


Fig. 7



Dimensions

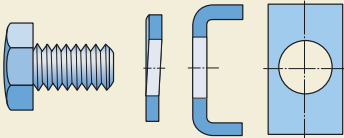
The dimensions and the thread of the nuts are in accordance with ISO 2982-2:2001. The dimensions of the locking washers and locking clips also follow this standard.

Tolerances

The metric ISO thread of KM and KML lock nuts is machined to tolerance 5H according to ISO 965-3:1998, and the metric trapezoidal thread of HM lock nuts to tolerance 7H, ISO 2903:1993.

The maximum axial runout of the locating face with reference to the thread is between 0,04 and 0,06 mm depending on the size of the lock nut.

Fig. 8



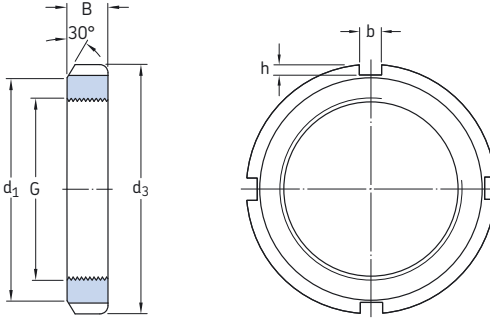
Materials

SKF lock nuts up to and including size HM 3160 and HM 3064 respectively are made of spheroidal graphite cast iron. The larger nuts are made of steel. SKF lock nuts are protected by a solventless rust inhibitor. The locking washers and locking clips are made of deep drawn steel strip.

Mating shaft threads

SKF recommends that the mating thread on the shaft be made to 6g according to ISO 965-3:1998 for the smaller nuts and to tolerance 7e according to ISO 2903:1993 for those with a trapezoidal thread.

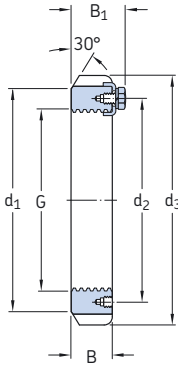
KM(L) lock nuts with locking washer
M 10×0,75 – M 200×3



Dimensions		Axial load carrying capacity static	Mass	Designations						
G	d ₁			d ₃	B	b	h	Lock nut	Appropriate locking washer	spanner
mm		kN	kg	–						
M 10×0,75	13,5	18	4	3	2	9,8	0,004	KM 0	MB 0	–
M 12×1	17	22	4	3	2	11,8	0,006	KM 1	MB 1	HN 1
M 15×1	21	25	5	4	2	14,6	0,009	KM 2	MB 2	HN 2
M 17×1	24	28	5	4	2	19,6	0,012	KM 3	MB 3	HN 3
M 20×1	26	32	6	4	2	24	0,025	KM 4	MB 4	HN 4
M 25×1,5	32	38	7	5	2	31,5	0,028	KM 5	MB 5	HN 5
M 30×1,5	38	45	7	5	2	36,5	0,039	KM 6	MB 6	HN 6
M 35×1,5	44	52	8	5	2	50	0,059	KM 7	MB 7	HN 7
M 40×1,5	50	58	9	6	2,5	62	0,078	KM 8	MB 8	HN 8
M 45×1,5	56	65	10	6	2,5	78	0,11	KM 9	MB 9	HN 9
M 50×1,5	61	70	11	6	2,5	91,5	0,14	KM 10	MB 10	HN 10
M 55×2	67	75	11	7	3	91,5	0,15	KM 11	MB 11	HN 11
M 60×2	73	80	11	7	3	95	0,16	KM 12	MB 12	HN 12
M 65×2	79	85	12	7	3	108	0,19	KM 13	MB 13	HN 13
M 70×2	85	92	12	8	3,5	118	0,23	KM 14	MB 14	HN 14
M 75×2	90	98	13	8	3,5	134	0,27	KM 15	MB 15	HN 15
M 80×2	95	105	15	8	3,5	173	0,36	KM 16	MB 16	HN 16
M 85×2	102	110	16	8	3,5	190	0,41	KM 17	MB 17	HN 17
M 90×2	108	120	16	10	4	216	0,51	KM 18	MB 18	HN 18
M 95×2	113	125	17	10	4	236	0,55	KM 19	MB 19	HN 19
M 100×2	120	130	18	10	4	255	0,64	KM 20	MB 20	HN 20

Dimensions						Axial load carrying capacity static	Mass	Designations Lock nut	Appropriate locking washer	spanner
G	d ₁	d ₃	B	b	h					
mm						kN	kg	–		
M 105×2	126	140	18	12	5	290	0,79	KM 21	MB 21	HN 21
M 110×2	133	145	19	12	5	310	0,87	KM 22	MB 22	HN 22
M 115×2	137	150	19	12	5	315	0,91	KM 23	MB 23	TMFN 23-30
M 120×2	135 138	145 155	20 20	12 12	5 5	265 340	0,69 0,97	KML 24 KM 24	MBL 24 MB 24	TMFN 23-30 TMFN 23-30
M 125×2	148	160	21	12	5	360	1,09	KM 25	MB 25	TMFN 23-30
M 130×2	145 149	155 165	21 21	12 12	5 5	285 365	0,80 1,09	KML 26 KM 26	MBL 26 MB 26	TMFN 23-30 TMFN 23-30
M 135×2	160	175	22	14	6	430	1,39	KM 27	MB 27	TMFN 23-30
M 140×2	155 160	165 180	22 22	12 14	5 6	305 430	0,92 1,40	KML 28 KM 28	MBL 28 MB 28	TMFN 23-30 TMFN 23-30
M 145×2	171	190	24	14	6	520	1,80	KM 29	MB 29	TMFN 23-30
M 150×2	170 171	180 195	24 24	14 14	5 6	390 530	1,25 1,88	KML 30 KM 30	MBL 30 MB 30	TMFN 23-30 TMFN 23-30
M 155×3	182	200	25	16	7	540	2,09	KM 31	MB 31	TMFN 30-40
M 160×3	180 182	190 210	25 25	14 16	5 7	405 585	1,39 2,29	KML 32 KM 32	MBL 32 MB 32	TMFN 23-30 TMFN 30-40
M 165×3	193	210	26	16	7	570	2,31	KM 33	MB 33	TMFN 30-40
M 170×3	190 193	200 220	26 26	16 16	5 7	430 620	1,56 2,34	KML 34 KM 34	MBL 34 MB 34	TMFN 30-40 TMFN 30-40
M 180×3	200 203	210 230	27 27	16 18	5 8	450 670	1,78 2,78	KML 36 KM 36	MBL 36 MB 36	TMFN 30-40 TMFN 30-40
M 190×3	210 214	220 240	28 28	16 18	5 8	475 695	1,84 3,05	KML 38 KM 38	MBL 38 MB 38	TMFN 30-40 TMFN 30-40
M 200×3	222 226	240 250	29 29	18 18	8 8	625 735	2,61 3,37	KML 40 KM 40	MBL 40 MB 40	TMFN 30-40 TMFN 30-40

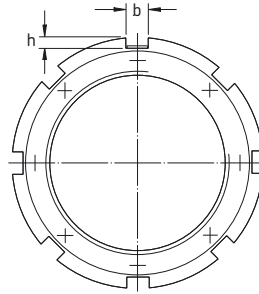
HM(E) lock nuts with locking clip
Tr 220×4 – Tr 950×8



HM



HME



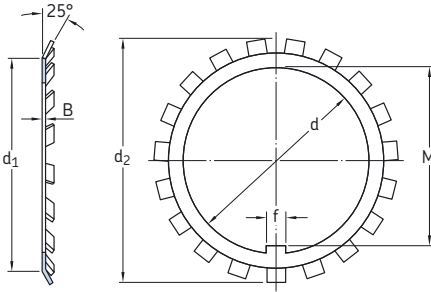
Dimensions		Mass		Designations		Appropriate locking clip		spanner				
G	d ₁	d ₂	d ₃	B	B ₁	B ₂	b	h				
mm									kg	–		
Tr 220×4	242	229	260	30	41	–	20	9	2,75	HM 3044	MS 3044	TMFN 40-52
Tr 240×4	270	253	290	34	46	–	20	10	4,50	HM 3048	MS 3052-48	TMFN 40-52
	270	253	290	34	46	5	20	10	4,50	HME 3048	MS 3052-48	TMFN 40-52
Tr 260×4	290	273	310	34	46	–	20	10	4,80	HM 3052	MS 3052-48	TMFN 40-52
Tr 280×4	310	293	330	38	50	–	24	10	5,75	HM 3056	MS 3056	TMFN 52-64
Tr 300×4	336	316	360	42	54	–	24	12	8,35	HM 3060	MS 3060	TMFN 52-64
	340	326	380	40	53	–	24	12	11,5	HM 3160	MS 3160	TMFN 52-64
Tr 320×5	356	336	380	42	55	–	24	12	9,00	HM 3064	MS 3068-64	TMFN 52-64
	360	346	400	42	56	–	24	12	13,0	HM 3164	MS 3164	TMFN 52-64
Tr 340×5	376	356	400	45	58	–	24	12	11,0	HM 3068	MS 3068-64	TMFN 52-64
	400	373	440	55	72	–	28	15	24,0	HM 3168	MS 3172-68	TMFN 64-80
Tr 360×5	394	375	420	45	58	–	28	13	11,5	HM 3072	MS 3072	TMFN 64-80
	420	393	460	58	75	–	28	15	26,5	HM 3172	MS 3172-68	TMFN 64-80
Tr 380×5	422	399	450	48	62	–	28	14	15,0	HM 3076	MS 3080-76	TMFN 64-80
	440	415	490	60	77	–	32	18	32,0	HM 3176	MS 3176	TMFN 64-80
Tr 400×5	442	419	470	52	66	–	28	14	17,0	HM 3080	MS 3080-76	TMFN 64-80
	460	440	520	62	82	–	32	18	38,0	HM 3180	MS 3184-80	TMFN 64-80
Tr 420×5	462	439	490	52	66	–	32	14	18,5	HM 3084	MS 3084	TMFN 64-80
	462	439	490	52	66	5	32	14	18,5	HME 3084	MS 3084	TMFN 64-80
	490	460	540	70	90	–	32	18	45,0	HM 3184	MS 3184-80	TMFN 80-500
Tr 440×5	490	463	520	60	77	–	32	15	26,0	HM 3088	MS 3092-88	TMFN 64-80
	510	478	560	70	90	–	36	20	46,5	HM 3188	MS 3192-88	TMFN 80-500
Tr 460×5	510	483	540	60	77	–	32	15	27,0	HM 3092	MS 3092-88	TMFN 80-500
	540	498	580	75	95	–	36	20	50,5	HM 3192	MS 3192-88	TMFN 80-500
Tr 480×5	530	503	560	60	77	–	36	15	28,0	HM 3096	MS 30/500-96	TMFN 80-500
	560	528	620	75	95	–	36	20	62,0	HM 3196	MS 3196	TMFN 80-500

For HME lock nuts not listed in the table, please contact SKF

Dimensions									Mass	Designations Lock nut without locking clip	Appropriate locking clip	spanner
G	d ₁	d ₂	d ₃	B	B ₁	B ₂	b	h				
mm									kg	–		
Tr 500×5	550	523	580	68	85	–	36	15	33,5	HM 30/500	MS 30/500-96	TMFN 80-500
	550	523	580	68	85	8	36	15	33,5	HME 30/500	MS 30/500-96	TMFN 80-500
	580	540	630	80	100	–	40	23	63,5	HM 31/500	MS 31/500	TMFN 80-500
Tr 530×6	590	558	630	68	90	–	40	20	42,5	HM 30/530	MS 30/600-530	TMFN 500-600
	610	575	670	80	105	–	40	23	71,5	HM 31/530	MS 31/530	TMFN 500-600
Tr 560×6	610	583	650	75	97	–	40	20	44,5	HM 30/560	MS 30/560	TMFN 500-600
	610	583	650	75	97	12	40	20	44,5	HME 30/560	MS 30/560	TMFN 500-600
	650	608	710	85	110	–	45	25	86,5	HM 31/560	MS 31/600-560	TMFN 500-600
Tr 600×6	660	628	700	75	97	–	40	20	52,5	HM 30/600	MS 30/600-530	TMFN 500-600
	660	628	700	75	97	12	40	20	52,5	HME 30/600	MS 30/600-530	TMFN 500-600
	690	648	750	85	110	–	45	25	91,5	HM 31/600	MS 31/600-560	TMFN 500-600
Tr 630×6	690	658	730	75	97	–	45	20	55,0	HM 30/630	MS 30/630	TMFN 500-600
	730	685	800	95	120	–	50	28	125	HM 31/630	MS 31/630	TMFN 600-750
Tr 670×6	740	703	780	80	102	–	45	20	68,5	HM 30/670	MS 30/670	TMFN 600-750
	775	730	850	106	131	–	50	28	155	HM 31/670	MS 31/670	TMFN 600-750
Tr 710×7	780	742	830	90	112	–	50	25	91,5	HM 30/710	MS 30/710	TMFN 600-750
	780	742	830	90	112	12	50	25	91,5	HME 30/710	MS 30/710	TMFN 600-750
	825	772	900	106	133	–	55	30	162	HM 31/710	MS 31/710	TMFN 600-750
Tr 750×7	820	782	870	90	112	–	55	25	94,0	HM 30/750	MS 30/800-750	TMFN 600-750
	820	782	870	90	112	12	55	25	94,0	HME 30/750	MS 30/800-750	TMFN 600-750
	875	813	950	112	139	–	60	34	190	HM 31/750	MS 31/800-750	TMFN 600-750
Tr 800×7	870	832	920	90	112	–	55	25	99,5	HM 30/800	MS 30/800-750	TMFN 600-750
	925	863	1000	112	139	–	60	34	202	HM 31/800	MS 31/800-750	–
Tr 850×7	925	887	980	90	115	–	60	25	115	HM 30/850	MS 30/900-850	–
	925	887	980	90	115	12	60	25	110	HME 30/850	MS 30/900-850	–
	975	914	1060	118	145	–	70	38	234	HM 31/850	MS 31/850	–
Tr 900×7	975	937	1030	100	125	–	60	25	131	HM 30/900	MS 30/900-850	–
	1030	969	1120	125	154	–	70	38	280	HM 31/900	MS 31/900	–
Tr 950×8	1 025	985	1 080	100	125	–	60	25	139	HM 30/950	MS 30/950	–

For HME lock nuts not listed in the table, please contact SKF

MB(L) locking washers
d 10 – 200 mm

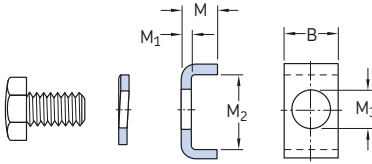


Dimensions						Mass	Designation
d	d ₁	d ₂	B	f	M		
mm						kg	–
10	13,5	21	1	3	8,5	0,001	MB 0
12	17	25	1	3	10,5	0,002	MB 1
	17	25	1,2	3	10,5	0,002	MB 1 A
15	21	28	1	4	13,5	0,003	MB 2
	21	28	1,2	4	13,5	0,003	MB 2 A
17	24	32	1	4	15,5	0,003	MB 3
	24	32	1,2	4	15,5	0,003	MB 3 A
20	26	36	1	4	18,5	0,004	MB 4
	26	36	1,2	4	18,5	0,005	MB 4 A
25	32	42	1,25	5	23	0,006	MB 5
	32	42	1,8	5	23	0,009	MB 5 A
30	38	49	1,25	5	27,5	0,008	MB 6
	38	49	1,8	5	27,5	0,011	MB 6 A
35	44	57	1,25	6	32,5	0,011	MB 7
	44	57	1,8	6	32,5	0,016	MB 7 A
40	50	62	1,25	6	37,5	0,013	MB 8
	50	62	1,8	6	37,5	0,018	MB 8 A
45	56	69	1,25	6	42,5	0,015	MB 9
	56	69	1,8	6	42,5	0,021	MB 9 A
50	61	74	1,25	6	47,5	0,016	MB 10
	61	74	2,3	6	47,5	0,023	MB 10 A
55	67	81	1,5	8	52,5	0,022	MB 11
	67	81	2,5	8	52,5	0,037	MB 11 A
60	73	86	1,5	8	57,5	0,024	MB 12
	73	86	2,5	8	57,5	0,040	MB 12 A
65	79	92	1,5	8	62,5	0,030	MB 13
	79	92	2,5	8	62,5	0,050	MB 13 A

Dimensions						Mass	Designation
d	d ₁	d ₂	B	f	M		
mm						kg	–
70	85	98	1,5	8	66,5	0,032	MB 14
	85	98	2,5	8	66,5	0,053	MB 14 A
75	90	104	1,5	8	71,5	0,035	MB 15
	90	104	2,5	8	71,5	0,058	MB 15 A
80	95	112	1,75	10	76,5	0,046	MB 16
	95	112	2,5	10	76,5	0,066	MB 16 A
85	102	119	1,75	10	81,5	0,053	MB 17
	102	119	2,5	10	81,5	0,076	MB 17 A
90	108	126	1,75	10	86,5	0,061	MB 18
	108	126	2,5	10	86,5	0,087	MB 18 A
95	113	133	1,75	10	91,5	0,066	MB 19
	113	133	2,5	10	91,5	0,094	MB 19 A
100	120	142	1,75	12	96,5	0,077	MB 20
	120	142	2,5	12	96,5	0,11	MB 20 A
105	126	145	1,75	12	100,5	0,083	MB 21
110	133	154	1,75	12	105,5	0,091	MB 22
115	137	159	2	12	110,5	0,11	MB 23
120	135	152	2	14	115	0,07	MBL 24
	138	164	2	14	115	0,11	MB 24
125	148	170	2	14	120	0,12	MB 25
130	145	161	2	14	125	0,08	MBL 26
	149	175	2	14	125	0,12	MB 26
135	160	185	2	14	130	0,14	MB 27
140	155	172	2	16	135	0,09	MBL 28
	160	192	2	16	135	0,14	MB 28

Dimensions						Mass	Designation
d	d ₁	d ₂	B	f	M		
mm						kg	–
145	172	202	2	16	140	0,17	MB 29
150	170	189	2	16	145	0,10	MBL 30
	171	205	2	16	145	0,18	MB 30
155	182	212	2,5	16	147,5	0,20	MB 31
160	180	199	2,5	18	154	0,14	MBL 32
	182	217	2,5	18	154	0,22	MB 32
165	193	222	2,5	18	157,5	0,24	MB 33
170	190	211	2,5	18	164	0,15	MBL 34
	193	232	2,5	18	164	0,24	MB 34
180	200	222	2,5	20	174	0,16	MBL 36
	203	242	2,5	20	174	0,26	MB 36
190	210	232	2,5	20	184	0,17	MBL 38
	214	252	2,5	20	184	0,26	MB 38
200	222	245	2,5	20	194	0,22	MBL 40
	226	262	2,5	20	194	0,28	MB 40

MS locking clips
B 20 – 70 mm



Dimensions					Mass	Designations	Appertaining	spring
B	M	M ₁	M ₂	M ₃		Locking clip	hexagon headed bolt	washer to DIN 128
mm					kg	–		
20	12	4	13,5	7	0,022	MS 3044	M 6×12	A 6
	12	4	17,5	9	0,024	MS 3052-48	M 8×16	A 8
24	12	4	17,5	9	0,030	MS 3056	M 8×16	A 8
	12	4	20,5	9	0,033	MS 3060	M 8×16	A 8
	15	5	21	9	0,046	MS 3068-64	M 8×16	A 8
28	15	5	20	9	0,051	MS 3072	M 8×16	A 8
	15	5	24	12	0,055	MS 3080-76	M 10×20	A 10
32	15	5	24	12	0,063	MS 3084	M 10×20	A 10
	15	5	28	14	0,067	MS 3092-88	M 12×25	A 12
36	15	5	28	14	0,076	MS 30/500-96	M 12×25	A 12
40	21	7	29	18	0,15	MS 30/560	M 16×30	A 16
	21	7	34	18	0,14	MS 30/600-530	M 16×30	A 16
45	21	7	34	18	0,17	MS 30/630	M 16×30	A 16
	21	7	39	18	0,19	MS 30/670	M 16×30	A 16
50	21	7	39	18	0,21	MS 30/710	M 16×30	A 16
55	21	7	39	18	0,23	MS 30/800-750	M 16×30	A 16
60	21	7	44	22	0,26	MS 30/900-850	M 20×40	A 20
	21	7	46	22	0,26	MS 30/950	M 20×40	A 20
	21	7	51	22	0,28	MS 30/1000	M 20×40	A 20
24	12	4	30,5	12	0,040	MS 3160	M 10×20	A 10
	15	5	31	12	0,055	MS 3164	M 10×20	A 10
28	15	5	38	14	0,069	MS 3172-68	M 12×25	A 12
32	15	5	40	14	0,083	MS 3176	M 12×25	A 12
	15	5	45	18	0,089	MS 3184-80	M 16×30	A 16
36	15	5	43	18	0,097	MS 3192-88	M 16×30	A 16
	15	5	53	18	0,11	MS 3196	M 16×30	A 16
40	15	5	45	18	0,11	MS 31/500	M 16×30	A 16
	21	7	51	22	0,19	MS 31/530	M 20×40	A 20

Dimensions					Mass	Designations	Appertaining	
B	M	M ₁	M ₂	M ₃		Locking clip	hexagon headed bolt	spring washer to DIN 128
mm					kg	–		
45	21	7	54	22	0,22	MS 31/600-560	M 20×40	A 20
50	21	7	61	22	0,27	MS 31/630	M 20×40	A 20
	21	7	66	22	0,28	MS 31/670	M 20×40	A 20
55	21	7	69	26	0,32	MS 31/710	M 24×50	A 24
60	21	7	70	26	0,35	MS 31/800-750	M 24×50	A 24
70	21	7	71	26	0,41	MS 31/850	M 24×50	A 24
	21	7	76	26	0,41	MS 31/900	M 24×50	A 24
	21	7	78	26	0,42	MS 31/950	M 24×50	A 24
	21	7	88	26	0,50	MS 31/1000	M 24×50	A 24

Lock nuts with integral locking device

These lock nuts of the KMK design (→ fig. 9) have an integral locking device, which takes the form of a pressure plate, the surface of which has a threaded profile. The pressure plate is pressed against the shaft thread by a grub screw, thus locking the nut in position.

Mounting and dismantling are simple and the axial location effective and reliable. Neither additional locking washer nor keyway in the shaft is required. The KMK nuts can be re-used.

The KMK nuts have slots in the outside diameter so that they can be tightened using a hook spanner. A hexagonal wrench is needed to tighten the grub screw. Appropriate sizes of spanner and key are provided in the product table. Tighten the grub screw, until the recommended tightening torque quoted in the product table is obtained.

Dimensions

The dimensions and the thread of the KMK nuts are in accordance with ISO 2982-2:2001, except for the width. The grub screw corresponds to ISO 4026:1993, material class 45H.

Tolerances

The metric ISO thread is machined to tolerance 5H according to ISO 965-3:1998.

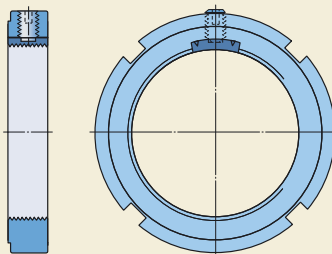
Material

SKF lock nuts in the KMK series are made of steel and are phosphated and protected by a solventless rust inhibitor.

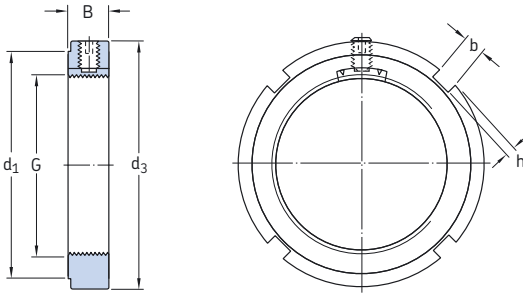
Mating shaft threads

SKF recommends that the mating thread on the shaft to be made to 6g according to ISO 965-3:1998.

Fig. 9



KMK lock nuts with integral locking device
M10×0,75 – M100×2



Dimensions			Axial load carrying capacity static	Loosening torque	Mass	Designations Lock nut	Appropriate spanner	Grub screw				
G	d ₁	d ₃						B	b	h	Size	Recomm. tightening torque
mm			kN	Nm	kg	–	–	Nm				
M 10×0,75	16	20	9	3	2	9,8	6	0,016	KMK 0	–	M 5	4
M 12×1	18	22	9	3	2	11,8	9	0,018	KMK 1	HN 1	M 5	4
M 15×1	21	25	9	4	2	14,6	12	0,021	KMK 2	HN 2	M 5	4
M 17×1	24	28	9	4	2	19,6	13	0,027	KMK 3	HN 3	M 5	4
M 20×1	28	32	9	4	2	24	16	0,030	KMK 4	HN 4	M 5	4
M 25×1,5	34	38	9	5	2	31,5	29	0,030	KMK 5	HN 5	M 5	4
M 30×1,5	41	45	9	5	2	36,5	35	0,060	KMK 6	HN 6	M 5	4
M 35×1,5	48	52	9	5	2	50	40	0,070	KMK 7	HN 7	M 5	4
M 40×1,5	53	58	11	6	2,5	62	67	0,11	KMK 8	HN 8	M 6	8
M 45×1,5	60	65	11	6	2,5	78	76	0,14	KMK 9	HN 9	M 6	8
M 50×1,5	65	70	13	6	2,5	91,5	84	0,18	KMK 10	HN 10	M 6	8
M 55×2	69	75	13	7	3	91,5	172	0,19	KMK 11	HN 11	M 8	18
M 60×2	74	80	13	7	3	95	188	0,20	KMK 12	HN 12	M 8	18
M 65×2	79	85	14	7	3	108	203	0,24	KMK 13	HN 13	M 8	18
M 70×2	85	92	14	8	3,5	118	219	0,28	KMK 14	HN 14	M 8	18
M 75×2	91	98	14	8	3,5	134	235	0,33	KMK 15	HN 15	M 8	18
M 80×2	98	105	18	8	3,5	173	378	0,45	KMK 16	HN 16	M 10	18
M 85×2	103	110	18	8	3,5	190	401	0,52	KMK 17	HN 17	M 10	35
M 90×2	112	120	18	10	4	216	425	0,65	KMK 18	HN 18	M 10	35
M 95×2	117	125	20	10	4	236	448	0,76	KMK 19	HN 19	M 10	35
M 100×2	122	130	20	10	4	255	472	0,80	KMK 20	HN 20	M 10	35

Lock nuts with locking screw

Lock nuts with locking screw (→ **fig. 10**) are designated KMFE. The locking screw presses a small part of the nut thread onto the shaft thread and prevents the nut from turning.

Mounting and dismounting are simple and the axial location effective and reliable. Neither additional locking washers nor keyway in the shaft are required. The KMFE nuts can be re-used.

The KMFE nuts have slots in the outside diameter so that they can be tightened using a hook or impact spanner. A hexagonal wrench is needed to tighten the grub screw. Appropriate sizes of the spanner are provided in the product table. Tighten the grub screw, until the recommended tightening torque quoted in the product table is obtained.

Dimensions

The dimensions and the thread of KMFE nuts are in accordance with ISO 2982-2:1995, except for the width. The grub screw correspond to ISO 4026:1993, material class 45H.

Tolerances

The metric ISO thread is machined to tolerance 5H according to ISO 965-3:1998.

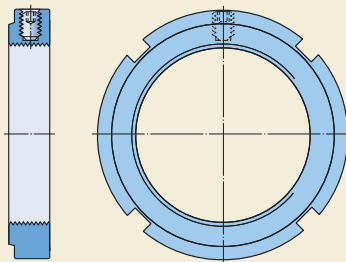
Material

SKF lock nuts in the KMFE series are made of steel and are protected by a solventless rust inhibitor.

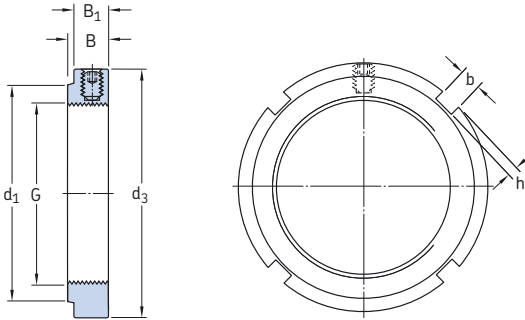
Mating shaft threads

SKF recommends that the mating thread on the shaft be made to 6g according to ISO 965-3:1998.

Fig. 10



KMFE lock nuts with locking screw
M 20×1 – M 130×2



Dimensions								Axial load carrying capacity static	Loosening torque	Mass	Designations Lock nut	Appropriate spanner	Grub screw	
G	d ₁	d ₃	B	B ₁	b	h	Size						Recomm. tightening torque	
mm								kN	Nm	kg	–	–	Nm	
M 20×1	26	32	9,5	8,5	4	2	24	28	0,031	KMFE 4	HN 4	M 5	4	
M 25×1,5	31	38	10,5	8,5	5	2	31,5	35	0,042	KMFE 5	HN 5	M 5	4	
M 30×1,5	36	45	10,5	8,5	5	2	36,5	42	0,058	KMFE 6	HN 6	M 5	4	
M 35×1,5	42,5	52	11,5	8,5	5	2	50	49	0,080	KMFE 7	HN 7	M 5	4	
M 40×1,5	47	58	13	10	6	2,5	62	80	0,11	KMFE 8	HN 8	M 6	8	
M 45×1,5	53	65	13	10	6	2,5	78	94	0,14	KMFE 9	HN 9	M 6	8	
M 50×1,5	57,5	70	14	11	6	2,5	91,5	100	0,16	KMFE 10	HN 10	M 6	8	
M 55×2	64	75	14	11	7	3	91,5	110	0,18	KMFE 11	HN 11	M 6	8	
M 60×2	69	80	14	11	7	3	95	120	0,19	KMFE 12	HN 12	M 6	8	
M 65×2	76	85	15	12	7	3	108	130	0,23	KMFE 13	HN 13	M 6	8	
M 70×2	79	92	15	12	8	3,5	118	140	0,26	KMFE 14	HN 14	M 6	8	
M 75×2	85	98	16	13	8	3,5	134	150	0,32	KMFE 15	HN 15	M 6	8	
M 80×2	91,5	105	18	15	8	3,5	173	300	0,42	KMFE 16	HN 16	M 8	18	
M 85×2	98	110	19	15	8	3,5	190	315	0,46	KMFE 17	HN 17	M 8	18	
M 90×2	102	120	19	15	10	4	216	335	0,58	KMFE 18	HN 18	M 8	18	
M 95×2	110	125	20	16	10	4	236	355	0,66	KMFE 19	HN 19	M 8	18	
M 100×2	112	130	21	17	10	4	255	370	0,71	KMFE 20	HN 20	M 8	18	
M 105×2	112	140	21	17	12	5	290	390	0,85	KMFE 21	HN 21	M 8	18	
M 110×2	122	145	21,5	17,5	12	5	310	410	0,93	KMFE 22	HN 22	M 8	18	
M 115×2	126	150	25	20	12	5	315	645	1,11	KMFE 23	TMFN 23-30	M 10	35	
M 120×2	130	155	26	20	12	5	340	675	1,16	KMFE 24	TMFN 23-30	M 10	35	
M 125×2	136	160	27	21	12	5	360	700	1,26	KMFE 25	TMFN 23-30	M 10	35	
M 130×2	141	165	28	21	12	5	365	730	1,33	KMFE 26	TMFN 23-30	M 10	35	

Precision lock nuts with locking pins

SKF precision lock nuts were originally developed for use with precision bearings and their dimensions were chosen accordingly.

Precision lock nuts have three locking pins equally spaced around the circumference. These pins are pressed against the shaft by grub screws and prevent the nut from turning. The locking pins and grub screws are arranged at the same angle to the shaft as that of the thread flanks. The ends of the pins are machined with the nut thread and as a result also have a threaded profile. As the locking pins are not deformed, the nuts retain their high precision irrespective of the frequency with which they are mounted and dismantled. Additional locking washers or keyways in the shaft are not needed.

SKF precision lock nuts are available in two designs:

- KMT lock nuts (→ **fig. 11**) are designed as slotted nuts and the smaller sizes up to and including size 15 are also produced with two diametrically opposed flats to take spanners. They are intended for applications where high precision, simple assembly and reliable locking are required.

- KMTA lock nuts (→ **fig. 12**) have a different external shape from that of KMT nuts and in part a different thread pitch. They have a cylindrical outside surface and are primarily intended for applications where space is limited. As the outside surface is cylindrical the nut can also be used to form part of a gap-type seal. Holes around the circumference and in one side face facilitate mounting.

Precision lock nuts are adjustable. The three equally spaced locking pins enable the nut to be accurately positioned at right angles to the shaft or they can be used to adjust for inaccuracies or deviations of other components which are to be located on the shaft.

Dimensions

The KMT and KMTA nuts have a metric ISO thread according to ISO 965-3:1998.

Tolerances

The metric ISO thread is machined to tolerance 5H according to ISO 965-3:1998. The maximum runout between the thread and the locating face is 0,005 mm for nuts up to and including size 26.

Fig. 11

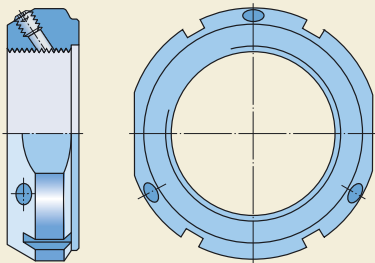
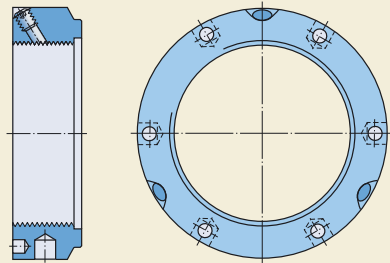


Fig. 12



Material

SKF lock nuts in the KMT and KMTA series are made of high-strength steel and are phosphated and protected by a solventless rust inhibitor.

Mating shaft threads

SKF recommends that the mating thread on the shaft be made to 6g according to ISO 965-3:1998.

Mounting

KMT lock nuts have slots around the circumference with two diametrically opposed flats on all nuts up to and including size 15. Various types of spanners can be used depending on the nut size, including hook and impact spanners. Appropriate sizes of spanners are provided in the product table.

KMTA lock nuts can be tightened using a pin wrench with a stud to engage one of the holes in the circumference. Alternatively a pin-type face spanner or a tommy bar can be used. Appropriate spanners according to DIN 1810:1979 are provided in the product table.

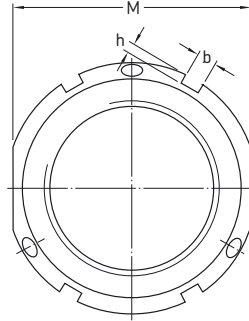
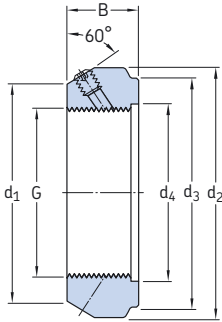
To lock the KMT and KMTA nuts, the grub screws should first be gently tightened until the thread of the locking pin engages the shaft thread. The grub screws should then be firmly tightened until the recommended tightening torque quoted in the product tables is obtained.

If it is necessary to correct for any misalignment between the abutment surfaces of the nut and adjacent component, the grub screw at the position of greatest deviation should first be loosened and the other two screws should be tightened to an equal degree. The loosened screw should then be retightened. If this correction for the misalignment is found to be inadequate, the procedure should be repeated until the desired accuracy has been achieved. This can be checked using a dial gauge.

Dismounting

When dismounting KMT and KMTA lock nuts the locking pins may still firmly engage the shaft thread even after the grub screws have been loosened. Light blows with a rubber hammer to the nut in the vicinity of the grub screws will serve to loosen the pins. The nuts can then be unscrewed easily from the shaft thread.

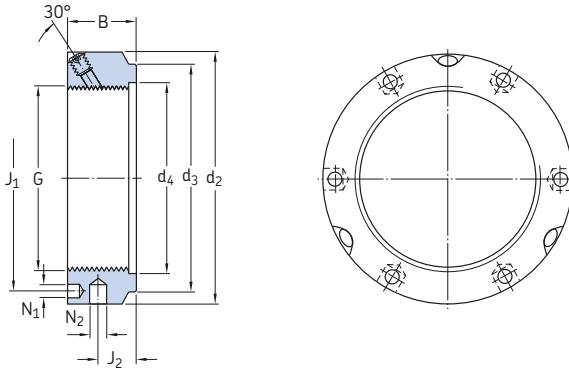
KMT precision lock nuts with locking pins
M 10×0,75 – M 200×3



Dimensions										Axial load carrying capacity static	Loosening torque	Mass	Designations		Grub screws	
G	d ₁	d ₂	d ₃	d ₄	B	b	h	M	Lock nut				Appropriate spanner	Size	Recomm. tightening torque	
mm									kN	Nm	kg	–	–	Nm		
M 10×0,75	21	28	23	11	14	4	2	24	35	15	0,045	KMT 0	HN 2/3	M 5	4,5	
M 12×1	23	30	25	13	14	4	2	27	40	18	0,050	KMT 1	HN 3	M 5	4,5	
M 15×1	26	33	28	16	16	4	2	30	60	20	0,075	KMT 2	HN 4	M 5	4,5	
M 17×1	29	37	33	18	18	5	2	34	80	25	0,10	KMT 3	HN 4	M 6	8	
M 20×1	32	40	35	21	18	5	2	36	90	35	0,11	KMT 4	HN 5	M 6	8	
M 25×1,5	36	44	39	26	20	5	2	41	130	45	0,13	KMT 5	HN 5	M 6	8	
M 30×1,5	41	49	44	32	20	5	2	46	160	55	0,16	KMT 6	HN 6	M 6	8	
M 35×1,5	46	54	49	38	22	5	2	50	190	65	0,19	KMT 7	HN 7	M 6	8	
M 40×1,5	54	65	59	42	22	6	2,5	60	210	80	0,30	KMT 8	HN 8/9	M 8	18	
M 45×1,5	60	70	64	48	22	6	2,5	65	240	95	0,33	KMT 9	HN 9/10	M 8	18	
M 50×1,5	64	75	68	52	25	7	3	70	300	115	0,40	KMT 10	HN 10/11	M 8	18	
M 55×2	74	85	78	58	25	7	3	80	340	225	0,54	KMT 11	HN 12/13	M 8	18	
M 60×2	78	90	82	62	26	8	3,5	85	380	245	0,61	KMT 12	HN 13	M 8	18	
M 65×2	83	95	87	68	28	8	3,5	90	460	265	0,71	KMT 13	HN 14	M 8	18	
M 70×2	88	100	92	72	28	8	3,5	95	490	285	0,75	KMT 14	HN 15	M 8	18	
M 75×2	93	105	97	77	28	8	3,5	100	520	305	0,80	KMT 15	HN 15/16	M 8	18	
M 80×2	98	110	100	83	32	8	3,5	–	620	325	0,90	KMT 16	HN 16/17	M 8	18	
M 85×2	107	120	110	88	32	10	4	–	650	660	1,15	KMT 17	HN 17/18	M 10	35	
M 90×2	112	125	115	93	32	10	4	–	680	720	1,20	KMT 18	HN 18/19	M 10	35	
M 95×2	117	130	120	98	32	10	4	–	710	780	1,25	KMT 19	HN 19/20	M 10	35	
M 100×2	122	135	125	103	32	10	4	–	740	840	1,30	KMT 20	HN 20	M 10	35	

Dimensions									Axial load carrying capacity static	Loos- ening torque	Mass	Designations		Grub screws	
G	d ₁	d ₂	d ₃	d ₄	B	b	h	Lock nut				Appropriate spanner	Size	Recomm. tightening torque	
mm									kN	Nm	kg	–	–	Nm	
M 110×2	132	145	134	112	32	10	4	800	960	1,45	KMT 22	HN 22	M 10	35	
M 120×2	142	155	144	122	32	10	4	860	1 080	1,60	KMT 24	TMFN 23-30	M 10	35	
M 130×2	152	165	154	132	32	12	5	920	1 200	1,70	KMT 26	TMFN 23-30	M 10	35	
M 140×2	162	175	164	142	32	14	6	980	1 320	1,80	KMT 28	TMFN 23-30	M 10	35	
M 150×2	172	185	174	152	32	14	6	1 040	1 440	1,95	KMT 30	TMFN 23-30	M 10	35	
M 160×3	182	195	184	162	32	14	6	1 100	1 600	2,10	KMT 32	TMFN 30-40	M 10	35	
M 170×3	192	205	192	172	32	14	6	1 160	1 750	2,20	KMT 34	TMFN 30-40	M 10	35	
M 180×3	202	215	204	182	32	16	7	1 220	1 900	2,30	KMT 36	TMFN 30-40	M 10	35	
M 190×3	212	225	214	192	32	16	7	1 280	2 050	2,40	KMT 38	TMFN 30-40	M 10	35	
M 200×3	222	235	224	202	32	18	8	1 340	2 300	2,50	KMT 40	TMFN 30-40	M 10	35	

KMTA precision lock nuts with locking pins
M 25×1,5 – M 200×3



Dimensions										Axial load carrying capacity static	Loosening torque	Mass	Designations		Grub screws	
G	d ₂	d ₃	d ₄	B	J ₁	J ₂	N ₁	N ₂	Lock nut				Appropriate spanner	Size	Recomm. tightening torque	
mm										kN	Nm	kg	-		-	Nm
M 25×1,5	42	35	26	20	32,5	11	4,3	4	130	45	0,13	KMTA 5	B 40-42	M 6	8	
M 30×1,5	48	40	32	20	40,5	11	4,3	5	160	55	0,16	KMTA 6	B 45-50	M 6	8	
M 35×1,5	53	47	38	20	45,5	11	4,3	5	190	65	0,19	KMTA 7	B 52-55	M 6	8	
M 40×1,5	58	52	42	22	50,5	12	4,3	5	210	80	0,23	KMTA 8	B 58-62	M 6	8	
M 45×1,5	68	58	48	22	58	12	4,3	6	240	95	0,33	KMTA 9	B 68-75	M 6	8	
M 50×1,5	70	63	52	24	61,5	13	4,3	6	300	115	0,34	KMTA 10	B 68-75	M 6	8	
M 55×1,5	75	70	58	24	66,5	13	4,3	6	340	135	0,37	KMTA 11	B 68-75	M 6	8	
M 60×1,5	84	75	62	24	74,5	13	5,3	6	380	150	0,49	KMTA 12	B 80-90	M 8	18	
M 65×1,5	88	80	68	25	78,5	13	5,3	6	460	170	0,52	KMTA 13	B 80-90	M 8	18	
M 70×1,5	95	86	72	26	85	14	5,3	8	490	285	0,62	KMTA 14	B 95-100	M 8	18	
M 75×1,5	100	91	77	26	88	13	6,4	8	520	305	0,66	KMTA 15	B 95-100	M 8	18	
M 80×2	110	97	83	30	95	16	6,4	8	620	325	1,00	KMTA 16	B 110-115	M 8	18	
M 85×2	115	102	88	32	100	17	6,4	8	650	660	1,15	KMTA 17	B 110-115	M 10	35	
M 90×2	120	110	93	32	108	17	6,4	8	680	720	1,20	KMTA 18	B 120-130	M 10	35	
M 95×2	125	114	98	32	113	17	6,4	8	710	780	1,25	KMTA 19	B 120-130	M 10	35	
M 100×2	130	120	103	32	118	17	6,4	8	740	840	1,30	KMTA 20	B 120-130	M 10	35	
M 110×2	140	132	112	32	128	17	6,4	8	800	960	1,45	KMTA 22	B 135-145	M 10	35	
M 120×2	155	142	122	32	140	17	6,4	8	860	1 080	1,85	KMTA 24	B 155-165	M 10	35	
M 130×3	165	156	132	32	153	17	6,4	8	920	1 200	2,00	KMTA 26	B 155-165	M 10	35	
M 140×3	180	166	142	32	165	17	6,4	10	980	1 320	2,45	KMTA 28	B 180-195	M 10	35	
M 150×3	190	180	152	32	175	17	6,4	10	1 040	1 440	2,60	KMTA 30	B 180-195	M 10	35	

Dimensions										Axial load carrying capacity static	Loos- ening torque	Mass	Designations		Grub screws	
G	d ₂	d ₃	d ₄	B	J ₁	J ₂	N ₁	N ₂	Lock nut				Appropriate spanner	Size	Recomm. tightening torque	
mm									kN	Nm	kg	–	–	Nm		
M 160×3	205	190	162	32	185	17	8,4	10	1 100	1 600	3,15	KMTA 32	B 205-220	M 10	35	
M 170×3	215	205	172	32	195	17	8,4	10	1 160	1 750	3,30	KMTA 34	B 205-220	M 10	35	
M 180×3	230	215	182	32	210	17	8,4	10	1 220	1 900	3,90	KMTA 36	B 230-245	M 10	35	
M 190×3	240	225	192	32	224	17	8,4	10	1 280	2 050	4,10	KMTA 38	B 230-245	M 10	35	
M 200×3	245	237	202	32	229	17	8,4	10	1 340	2 200	3,85	KMTA 40	B 230-245	M 10	35	