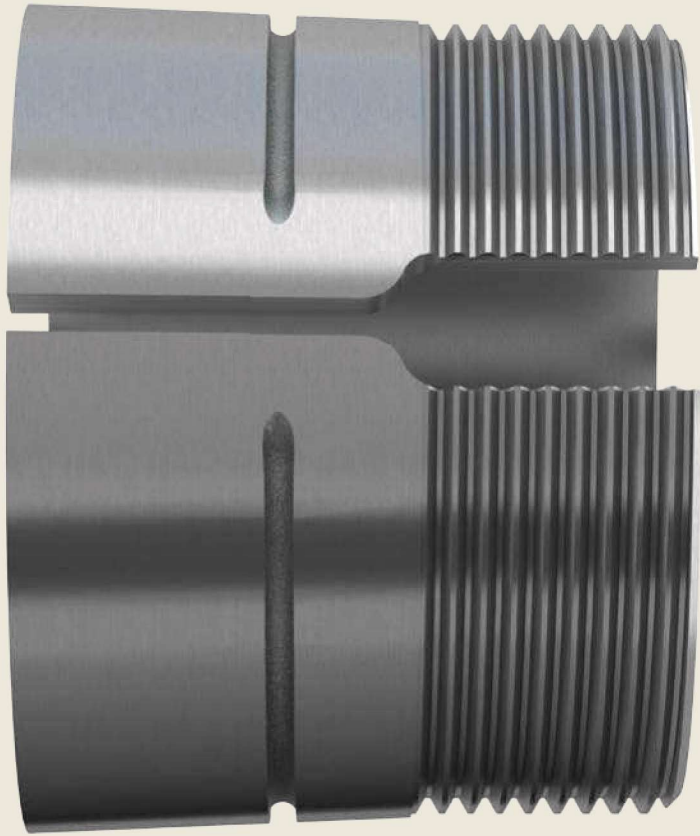




23

Adapter sleeves



23 Adapter sleeves

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23 Adapter sleeves

More information

SKF maintenance
products

→ skf.com/mapro

SKF bearing maintenance
handbook ISBN 978-91-978966-4-1

Adapter sleeves are the most commonly used components for locating bearings with a tapered bore onto a cylindrical seat as they can be used on (fig. 1):

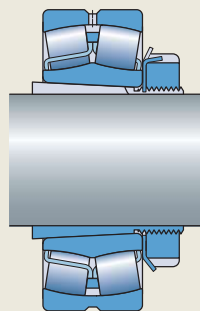
- plain shafts
- stepped shafts

They are easy to install and require no additional location on the shaft:

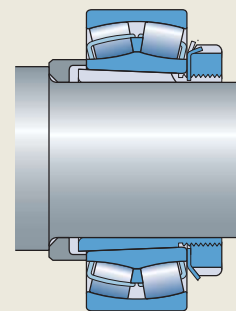
- When used on plain shafts, the bearing can be located at any position on the shaft.
- When used on stepped shafts together with an L-shaped spacer ring, the bearing can be accurately positioned axially, thereby facilitating bearing mounting and dismounting.

Fig. 1

Adapter sleeve assemblies



On a plain shaft



On a stepped shaft

Designs and variants

SKF supplies:

- metric adapter sleeves
 - with a metric bore
 - with an inch bore

These sleeves are not listed in this catalogue, but can be found online at skf.com/go/17000-23-3.

- inch adapter sleeves

Inch sleeves are coated with a solventless rust inhibitor.

Adapter sleeves listed in the [product tables, page 1072](#), constitute the standard SKF assortment and are only part of the complete assortment. For larger sizes (bore diameter $\geq 1\,060$ mm) and variants not listed, contact SKF.

The sleeves are slit and are supplied complete with a lock nut and locking device ([fig. 2](#)):

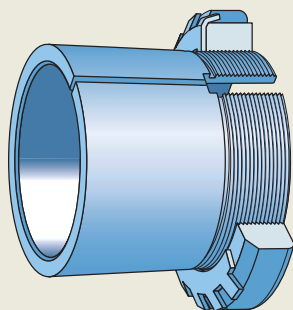
- Smaller sizes have a nut and a lock washer.
- Larger sizes have a nut and a locking clip or locking plate.

Metric sleeves:

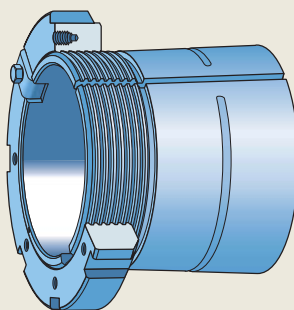
- with a bore diameter ≤ 180 mm (size ≤ 40) are phosphated
- with a bore diameter > 180 mm are coated with a solventless rust inhibitor

Fig. 2

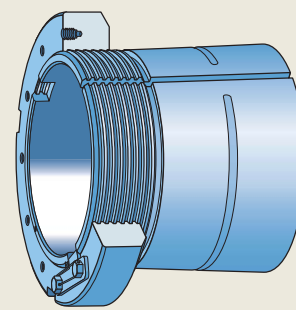
Basic designs



Sleeve with a nut and washer



Sleeve with a nut and clip



Sleeve with a nut and plate

Sleeves for oil injection

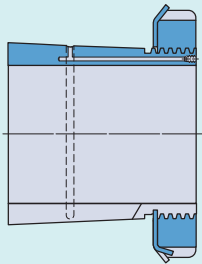
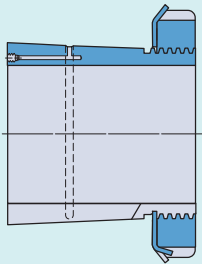
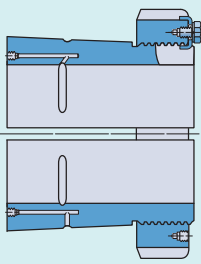
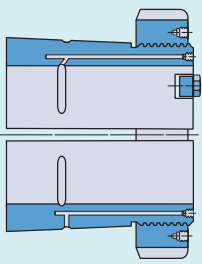
- enable use of the oil injection method to mount and dismount bearings
- are equipped with the necessary oil supply ducts and distribution grooves
 - as standard for metric sleeves with a bore diameter ≥ 200 mm (size ≥ 44)
 - on request for metric sleeves with a bore diameter ≥ 140 mm to < 200 mm
 - on request for inch sleeves with a bore diameter ≥ 4 5/16 inches (size ≥ 26)
- include OH (metric) series, and OSNW and OSNP (inch) series

Thread details for the oil supply ducts and the appropriate hydraulic nut designations are listed in the [product tables, page 1072](#). For information about oil injection equipment, refer to the catalogue *SKF Maintenance and Lubrication Products* or online at skf.com/mapro.

SKF manufactures sleeves for oil injection in four variants ([table 1](#)). Those with a designation suffix H are the SKF standard.

Table 1

Adapter sleeves for oil injection

				
Designation suffix	OH .. H OSNW .. H OSNP .. H	OH .. OSNW .. OSNP ..	OH .. B OSNW .. B OSNP .. B	OH .. HB OSNW .. HB OSNP .. HB
Designation suffix	H	None	B	HB
No. of oil supply ducts¹⁾ for:				
• all sleeves with a bore diameter < 200 mm	1	1	1	1
• metric sleeves with a bore diameter ≥ 200 mm	1	1	2	2
• inch sleeves with a bore diameter ≥ 4 5/16 inches (made to order)	1	1	2	2
Position of oil supply duct(s)	At the threaded end of the sleeve	At the end opposite the threaded section	At the end opposite the threaded section	At the threaded end of the sleeve
Position of distribution groove(s)	In the outside surface	In the outside surface	In the bore and in the outside surface	In the bore and in the outside surface

¹⁾ When sleeves have two supply ducts, each duct feeds one of the distribution grooves. An arrow on the sleeve side face, next to the duct inlet, indicates which groove the duct feeds.

Sleeves for CARB toroidal roller bearings

- are specially designed to prevent the locking device from interfering with the cage

SKF manufactures sleeves for CARB toroidal roller bearings in three variants (fig. 3):

- **Sleeves with the designation suffix E**
 - are supplied with a KMFE lock nut in place of the standard KM lock nut and MB lock washer
 - are supplied with an HME lock nut in place of the standard HM 30 or HM 31 lock nut
- **Sleeves with the designation suffix L**
 - are supplied with a KML lock nut and MBL lock washer, both with low cross-sectional height, in place of the standard KM lock nut and MB lock washer
- **Sleeves with the designation suffix TL**
 - are supplied with an HM 30 lock nut and MS 30 locking clip, both with low cross-sectional height, in place of the standard HM .. T lock nut and MB lock washer

When using CARB bearings, check that there is sufficient space on both sides of the bearing to accommodate axial displacement.

Sleeves for sealed bearings

- are specially designed to prevent the locking device from interfering with the seals of sealed spherical roller bearings and sealed self-aligning ball bearings
- have the designation suffixes E, EL, EH, L, and TL (fig. 3 and fig. 4)

Adapter sleeve assemblies with the designation suffix EL or EH are supplied with one of the following, respectively:

- a KMFE .. L lock nut, which has a lower abutment diameter than the standard KMFE lock nut
- a KMFE .. H lock nut, which has a higher abutment diameter than the standard KMFE lock nut

Fig. 4

Adapter sleeve assemblies for sealed bearings (with a KMFE lock nut)

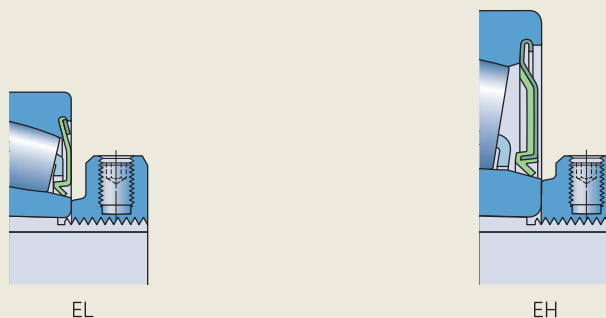
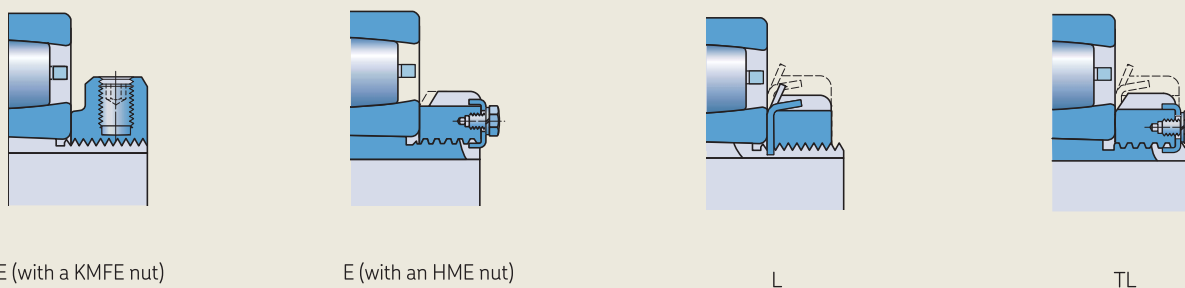


Fig. 3

Adapter sleeve assemblies for CARB toroidal roller bearings



Product data

	Metric series	Inch series
Dimension standards	ISO 2982-1, except for the bore diameter of sleeves for inch shafts	ANSI/ABMA Std. 8.2
Tolerances	Bore diameter: JS9 Width: h15	
External taper	1:12 as standard 1:30 as standard in the 40 and 41 dimension series	
Thread	Bore diameter < 200 mm (size ≤ 40): metric thread in accordance with ISO 965-3, matching the included SKF lock nut Bore diameter ≥ 200 mm (size ≥ 44): metric trapezoidal thread in accordance with ISO 2903, matching the included SKF lock nut	Bore diameter ≤ 12 in. (size ≤ 64): Unified Special Form ANSI/ASME B1.1 Bore diameter ≥ 12 7/16 in. (size ≥ 68): ACME thread class 3G
Shaft tolerances	h9Ⓢ Total radial run-out: IT5/2 – ISO 1101 Adapter sleeves adjust to the shaft diameter so that wider diameter tolerances can be permitted compared to the seat of a bearing with a cylindrical bore. However, the geometrical tolerances must be kept within narrow limits as they directly affect the shaft positioning and vibration.	

Designation system

--	--	--

Product type

H	Adapter sleeve, dimensions in accordance with ISO standard, basic design
HA	Adapter sleeve, dimensions in accordance with ISO standard, except the bore, in 1/16 in.
HE	Adapter sleeve, dimensions in accordance with ISO standard, except the bore, in 1/4 in.
HS	Adapter sleeve, dimensions in accordance with ISO standard, except the bore, in 1/8 in.
OH	Adapter sleeve, dimensions in accordance with ISO standard, prepared for oil injection
OSNP	Adapter sleeve, dimensions in accordance with ANSI standard, prepared for oil injection, with a locking plate
OSNW	Adapter sleeve, dimensions in accordance with ANSI standard, prepared for oil injection, with a lock washer
SNP	Adapter sleeve, dimensions in accordance with ANSI standard, with a locking plate
SNW	Adapter sleeve, dimensions in accordance with ANSI standard, with a lock washer
KH	Unthreaded sleeve, basic design
KOH	Unthreaded sleeve, prepared for oil injection

Size identification

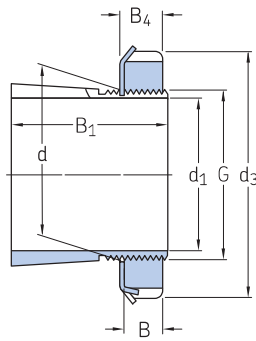
Listed in the [product tables, page 1072](#)

Suffixes

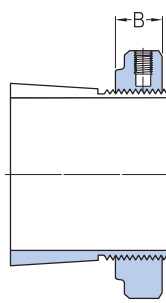
B	For adapter sleeves for oil injection: One or two oil supply ducts at the end opposite the threaded section
	For adapter sleeves for inch shafts: Whitworth thread
D	Sleeve split in two halves
E	Adapter sleeve without key slot, with a KMFE lock nut or standard adapter sleeve with an HME lock nut
EH	Adapter sleeve without key slot, with a KMFE .. H lock nut
EL	Adapter sleeve without key slot, with a KMFE .. L lock nut
G	Thread diameter changed according to revised ISO standard
H	One oil supply duct at the threaded end
HB	One or two oil supply ducts at the threaded end
L	Adapter sleeve with a lock nut with lower cross-sectional height
TL	Same as L, but with key slot positions for a locking clip

23.1 Adapter sleeves for metric shafts

d₁ 17 – 180 mm



H



H..E

Principal dimensions											Mass	Designations	Included products	locking device	Associated hydraulic nut
d ₁	d	d ₃	B ₁	B	B ₄	B ₅	G	G ₂	G ₃	A		Adapter sleeve assembly	lock nut		
mm											kg	–			
17	20	32	24	6	7	–	M 20x1	–	–	–	0,036	► H 204	KM 4	MB 4	–
	20	32	28	6	7	–	M 20x1	–	–	–	0,04	► H 304	KM 4	MB 4	–
	20	38	28	10,5	–	–	M 20x1	–	–	–	0,047	► H 304 E	KMFE 4	–	–
20	25	38	26	7	8	–	M 25x1,5	–	–	–	0,064	► H 205	KM 5	MB 5	–
	25	38	29	7	8	–	M 25x1,5	–	–	–	0,071	► H 305	KM 5	MB 5	–
	25	38	29	10,5	–	–	M 25x1,5	–	–	–	0,076	► H 305 E	KMFE 5	–	–
25	30	45	27	7	8	–	M 30x1,5	–	–	–	0,086	► H 206	KM 6	MB 6	–
	30	45	31	7	8	–	M 30x1,5	–	–	–	0,095	► H 306	KM 6	MB 6	–
	30	45	31	10,5	–	–	M 30x1,5	–	–	–	0,11	► H 306 E	KMFE 6	–	–
30	35	52	29	8	9	–	M 35x1,5	–	–	–	0,12	► H 207	KM 7	MB 7	–
	35	52	35	8	9	–	M 35x1,5	–	–	–	0,14	► H 307	KM 7	MB 7	–
	35	52	35	11,5	–	–	M 35x1,5	–	–	–	0,15	► H 307 E	KMFE 7	–	–
35	40	58	31	9	10	–	M 40x1,5	–	–	–	0,16	► H 208	KM 8	MB 8	–
	40	58	36	9	10	–	M 40x1,5	–	–	–	0,17	► H 308	KM 8	MB 8	–
	40	58	36	13	–	–	M 40x1,5	–	–	–	0,19	► H 308 E	KMFE 8	–	–
40	45	65	33	10	11	–	M 45x1,5	–	–	–	0,21	► H 209	KM 9	MB 9	–
	45	65	39	10	11	–	M 45x1,5	–	–	–	0,23	► H 309	KM 9	MB 9	–
	45	65	39	13	–	–	M 45x1,5	–	–	–	0,24	► H 309 E	KMFE 9	–	–
45	50	70	35	11	12	–	M 50x1,5	–	–	–	0,24	► H 210	KM 10	MB 10	HMV 10E
	50	70	42	11	12	–	M 50x1,5	–	–	–	0,27	► H 310	KM 10	MB 10	HMV 10 E
	50	70	42	14	–	–	M 50x1,5	–	–	–	0,3	► H 310 E	KMFE 10	–	HMV 10 E
50	55	75	37	11	12,5	–	M 55x2	–	–	–	0,28	► H 211	KM 11	MB 11	HMV 11E
	55	75	45	11	12,5	–	M 55x2	–	–	–	0,32	► H 311	KM 11	MB 11	HMV 11 E
	55	75	45	14	–	–	M 55x2	–	–	–	0,34	► H 311 E	KMFE 11	–	HMV 11 E
55	60	80	38	11	13	–	M 60x2	–	–	–	0,31	► H 212	KM 12	MB 12	HMV 12E
	60	80	47	11	13	–	M 60x2	–	–	–	0,36	► H 312	KM 12	MB 12	HMV 12 E
	60	80	47	14	–	–	M 60x2	–	–	–	0,4	► H 312 E	KMFE 12	–	HMV 12 E
60	65	85	40	12	13,5	–	M 65x2	–	–	–	0,36	► H 213	KM 13	MB 13	HMV 13E
	65	85	50	12	13,5	–	M 65x2	–	–	–	0,42	► H 313	KM 13	MB 13	HMV 13 E
	65	85	50	15	–	–	M 65x2	–	–	–	0,43	► H 313 E	KMFE 13	–	HMV 13 E
65	65	85	65	15	–	–	M 65x2	–	–	–	0,53	► H 2313 E	KMFE 13	–	HMV 13 E
	70	92	52	12	13,5	–	M 70x2	–	–	–	0,67	► H 314	KM 14	MB 14	HMV 14 E
	70	92	52	15	–	–	M 70x2	–	–	–	0,67	► H 314 E	KMFE 14	–	HMV 14 E
65	75	98	43	13	14,5	–	M 75x2	–	–	–	0,66	► H 215	KM 15	MB 15	HMV 15E
	75	98	55	13	14,5	–	M 75x2	–	–	–	0,78	► H 315	KM 15	MB 15	HMV 15 E
	75	98	55	16	–	–	M 75x2	–	–	–	0,82	► H 315 E	KMFE 15	–	HMV 15 E

► Popular item

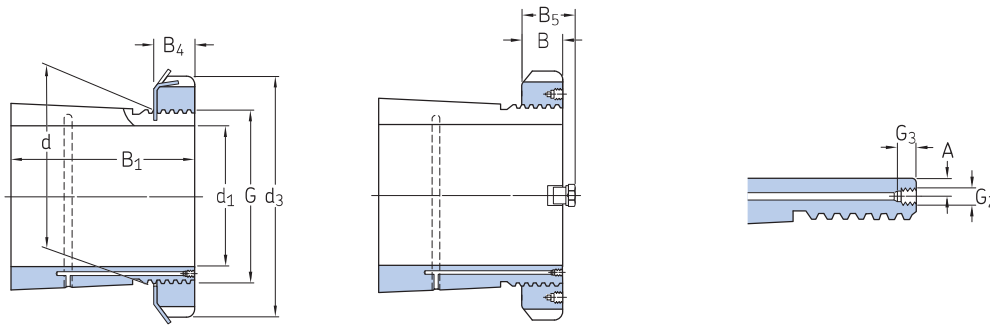
Principal dimensions											Mass	Designations	Included products		Associated hydraulic nut
d ₁	d	d ₃	B ₁	B	B ₄	B ₅	G	G ₂	G ₃	A		Adapter sleeve assembly	lock nut	locking device	
mm											kg	–			
70	80	105	46	15	17	–	M 80x2	–	–	–	0,81	► H 216	KM 16	MB 16	HMV 16E
	80	105	59	15	17	–	M 80x2	–	–	–	0,95	► H 316	KM 16	MB 16	HMV 16 E
	80	105	59	18	–	–	M 80x2	–	–	–	1	► H 316 E	KMFE 16	–	HMV 16 E
75	85	110	50	16	18	–	M 85x2	–	–	–	0,94	► H 217	KM 17	MB 17	HMV 17E
	85	110	63	16	18	–	M 85x2	–	–	–	1,1	► H 317	KM 17	MB 17	HMV 17 E
	85	110	63	19	–	–	M 85x2	–	–	–	1,15	► H 317 E	KMFE 17	–	HMV 17 E
80	90	120	52	16	18	–	M 90x2	–	–	–	1,1	► H 218	KM 18	MB 18	HMV 18E
	90	120	65	16	18	–	M 90x2	–	–	–	1,3	► H 318	KM 18	MB 18	HMV 18 E
	90	120	65	19	–	–	M 90x2	–	–	–	1,45	► H 318 E	KMFE 18	–	HMV 18 E
85	95	125	55	17	19	–	M 95x2	–	–	–	1,25	► H 219	KM 19	MB 19	HMV 19E
	95	125	68	17	19	–	M 95x2	–	–	–	1,4	► H 319	KM 19	MB 19	HMV 19 E
	95	125	68	20	–	–	M 95x2	–	–	–	1,45	► H 319 E	KMFE 19	–	HMV 19 E
90	100	130	58	18	20	–	M 100x2	–	–	–	1,4	► H 220	KM 20	MB 20	HMV 20E
	100	130	71	18	20	–	M 100x2	–	–	–	1,6	► H 320	KM 20	MB 20	HMV 20 E
	100	130	71	21	–	–	M 100x2	–	–	–	1,7	► H 320 E	KMFE 20	–	HMV 20 E
	100	130	76	18	20	–	M 100x2	–	–	–	1,8	► H 3120	KM 20	MB 20	HMV 20 E
	100	130	76	21	–	–	M 100x2	–	–	–	1,8	► H 3120 E	KMFE 20	–	HMV 20 E
	100	130	97	21	–	–	M 100x2	–	–	–	2	► H 3230 E	KMFE 20	–	HMV 20 E
100	110	145	63	19	21	–	M 110x2	–	–	–	1,8	► H 222	KM 22	MB 22	HMV 22E
	110	145	77	19	21	–	M 110x2	–	–	–	2,05	► H 322	KM 22	MB 22	HMV 22 E
	110	145	77	21,5	–	–	M 110x2	–	–	–	2,1	► H 322 E	KMFE 22	–	HMV 22 E
	110	145	81	19	21	–	M 110x2	–	–	–	2,1	► H 3122	KM 22	MB 22	HMV 22 E
	110	145	81	21,5	–	–	M 110x2	–	–	–	2,15	► H 3122 E	KMFE 22	–	HMV 22 E
	110	145	105	21,5	–	–	M 110x2	–	–	–	2,75	► H 2322 E	KMFE 22	–	HMV 22 E
110	120	155	72	26	–	–	M 120x2	–	–	–	1,85	► H 3024 E	KMFE 24	–	HMV 24 E
	120	155	88	20	22	–	M 120x2	–	–	–	2,5	► H 3124	KM 24	MB 24	HMV 24 E
	120	155	112	26	–	–	M 120x2	–	–	–	3,1	► H 2324 E	KMFE 24	–	HMV 24 E
115	130	165	80	28	–	–	M 130x2	–	–	–	2,9	► H 3026 E	KMFE 26	–	HMV 26 E
	130	165	92	21	23	–	M 130x2	–	–	–	3,45	► H 3126	KM 26	MB 26	HMV 26 E
125	140	180	82	28	–	–	M 140x2	–	–	–	3,05	► H 3028 E	KMFE 28	–	HMV 28 E
	140	180	97	22	24	–	M 140x2	–	–	–	4,1	► H 3128	KM 28	MB 28	HMV 28 E
135	150	195	87	30	–	–	M 150x2	–	–	–	3,75	► H 3030 E	KMFE 30	–	HMV 30 E
	150	195	111	24	26	–	M 150x2	–	–	–	5,25	► H 3130	KM 30	MB 30	HMV 30 E
	150	195	111	30	–	–	M 150x2	–	–	–	4,7	► H 3130 E	KMFE 30	–	HMV 30 E
140	160	210	93	32	–	–	M 160x3	–	–	–	5,1	► H 3032 E	KMFE 32	–	HMV 32 E
	160	210	119	25	28	–	M 160x3	–	–	–	7,25	► H 3132	KM 32	MB 32	HMV 32 E
	160	210	119	32	–	–	M 160x3	–	–	–	7,35	► H 3132 E	KMFE 32	–	HMV 32 E
150	170	220	101	33	–	–	M 170x3	–	–	–	5,9	► H 3034 E	KMFE 34	–	HMV 34 E
	170	220	122	26	29	–	M 170x3	–	–	–	8,1	► H 3134	KM 34	MB 34	HMV 34 E
	170	220	122	33	–	–	M 170x3	–	–	–	8,1	► H 3134 E	KMFE 34	–	HMV 34 E
160	180	230	109	34	–	–	M 180x3	–	–	–	6,7	► H 3036 E	KMFE 36	–	HMV 36 E
	180	230	131	27	29,5	–	M 180x3	–	–	–	9,15	► H 3136	KM 36	MB 36	HMV 36 E
170	190	240	141	28	30,5	–	M 190x3	–	–	–	10,5	► H 3138	KM 38	MB 38	HMV 38 E
180	200	250	150	29	31,5	–	M 200x3	–	–	–	12	► H 3140	KM 40	MB 40	HMV 40 E

► Popular item



23.1 Adapter sleeves for metric shafts

d_1 200 – 500 mm



Principal dimensions											Mass	Designations			
d_1	d	d_3	B_1	B	B_4	B_5	G	G_2	G_3	A		Adapter sleeve assembly	Included products lock nut	locking device	Associated hydraulic nut
mm											kg	–			
200	220	260	126	30	–	41	Tr 220x4	M 6	9	6,5	9,9	► OH 3044 H	HM 3044	MS 3044	HMV 44E
	220	280	161	32	35	–	Tr 220x4	M 6	9	4,2	15	► OH 3144 H	HM 44 T	MB 44	HMV 44E
220	240	290	133	34	–	46	Tr 240x4	M 6	9	4,2	12	► OH 3048 H	HM 3048	MS 3052-48	HMV 48E
	240	300	172	34	37	–	Tr 240x4	M 6	9	4,2	16,5	► OH 3148 H	HM 48 T	MB 48	HMV 48E
240	260	310	145	34	–	46	Tr 260x4	M 6	9	4,2	13,5	► OH 3052 H	HM 3052	MS 3052-48	HMV 52E
	260	330	190	36	39	–	Tr 260x4	M 6	9	4,2	21	► OH 3152 H	HM 52 T	MB 52	HMV 52E
260	280	330	152	38	–	50	Tr 280x4	M 6	9	6,5	16	► OH 3056 H	HM 3056	MS 3056	HMV 56E
	280	350	195	38	41	–	Tr 280x4	M 6	9	4,2	23	► OH 3156 H	HM 56 T	MB 56	HMV 56E
280	300	360	168	42	–	54	Tr 300x4	M 6	9	6,5	20,5	► OH 3060 H	HM 3060	MS 3060	HMV 60E
	300	380	208	40	–	53	Tr 300x4	M 6	9	4,2	29	► OH 3160 H	HM 3160	MS 3160	HMV 60E
	300	380	240	40	–	53	Tr 300x4	M 6	9	4,2	32	► OH 3260 H	HM 3160	MS 3160	HMV 60E
300	320	380	171	42	–	55	Tr 320x5	M 6	9	6,5	22	► OH 3064 H	HM 3064	MS 3068-64	HMV 64E
	320	400	226	42	–	56	Tr 320x5	M 6	9	4	32	► OH 3164 H	HM 3164	MS 3164	HMV 64E
	320	400	258	42	–	56	Tr 320x5	M 6	9	4	35	OH 3264 H	HM 3164	MS 3164	HMV 64E
320	340	400	187	45	–	58	Tr 340x5	M 6	9	6,5	27	► OH 3068 H	HM 3068	MS 3068-64	HMV 68E
	340	440	254	55	–	72	Tr 340x5	M 6	9	4	50	► OH 3168 H	HM 3168	MS 3172-68	HMV 68E
	340	440	288	55	–	72	Tr 340x5	M 6	9	4	51,5	► OH 3268 H	HM 3168	MS 3172-68	HMV 68E
340	360	420	188	45	–	58	Tr 360x5	M 6	9	6,5	29	► OH 3072 H	HM 3072	MS 3072	HMV 72E
	360	460	259	58	–	75	Tr 360x5	M 6	9	4	56	► OH 3172 H	HM 3172	MS 3172-68	HMV 72E
	360	460	299	58	–	75	Tr 360x5	M 6	9	4	60,5	OH 3272 H	HM 3172	MS 3172-68	HMV 72E
360	380	450	193	48	–	62	Tr 380x5	M 6	9	6,5	35,5	► OH 3076 H	HM 3076	MS 3080-76	HMV 76E
	380	490	264	60	–	77	Tr 380x5	M 6	9	4	61,5	► OH 3176 H	HM 3176	MS 3176	HMV 76E
	380	490	310	60	–	77	Tr 380x5	M 6	9	4	69,5	OH 3276 H	HM 3176	MS 3176	HMV 76E
380	400	470	210	52	–	66	Tr 400x5	M 6	9	6,5	40	OH 3080 H	HM 3080	MS 3080-76	HMV 80E
	400	520	272	62	–	82	Tr 400x5	M 6	9	4	73	► OH 3180 H	HM 3180	MS 3184-80	HMV 80E
	400	520	328	62	–	82	Tr 400x5	M 6	9	4	87	OH 3280 H	HM 3180	MS 3184-80	HMV 80E
400	420	490	212	52	–	66	Tr 420x5	M 6	9	6,5	47	OH 3084 H	HM 3084	MS 3084	HMV 84E
	420	540	304	70	–	90	Tr 420x5	M 6	9	4	80	► OH 3184 H	HM 3184	MS 3184-80	HMV 84E
	420	540	352	70	–	90	Tr 420x5	M 6	9	4	96	OH 3284 H	HM 3184	MS 3184-80	HMV 84E
410	440	520	228	60	–	77	Tr 440x5	M 8	12	6,5	65	OH 3088 H	HM 3088	MS 3092-88	HMV 88E
	440	560	307	70	–	90	Tr 440x5	M 8	12	6,5	95	OH 3188 H	HM 3188	MS 3192-88	HMV 88E
	440	560	361	70	–	90	Tr 440x5	M 8	12	6,5	117	OH 3288 H	HM 3188	MS 3192-88	HMV 88E
430	460	540	234	60	–	77	Tr 460x5	M 8	12	6,5	71	OH 3092 H	HM 3092	MS 3092-88	HMV 92E
	460	580	326	75	–	95	Tr 460x5	M 8	12	6,5	119	► OH 3192 H	HM 3192	MS 3192-88	HMV 92E

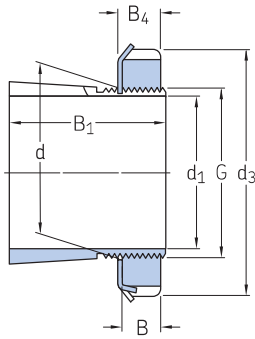
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Principal dimensions											Mass	Designations				
d ₁	d	d ₃	B ₁	B	B ₄	B ₅	G		G ₂	G ₃	A	Adapter sleeve assembly	Included products lock nut	locking device	Associated hydraulic nut	
mm											kg	–				
450	480	560	237	60	–	77	Tr 480x5		M 8	12	6,5	75	OH 3096 H	HM 3096	MS 30/500-96	HMV 96E
	480	620	335	75	–	95	Tr 480x5		M 8	12	6,5	135	OH 3196 H	HM 3196	MS 3196	HMV 96E
500	530	630	265	68	–	90	Tr 530x6		M 8	12	6,5	105	OH 30/530 H	HM 30/530	MS 30/600-530	HMV 106E



23.2 Adapter sleeves with inch dimensions

d_1 3/4 – 3 1/4 in.
19,05 – 82,55 mm



Principal dimensions							Thread		Mass	Designations				
d ₁	d	d ₃ max.	B ₁	B	B ₄	B ₅	G	Threads per inch		Adapter sleeve assembly	Included products lock nut	products locking device	Associated hydraulic nut	
in./mm	mm	in.					in.	–	kg	–				
3/4 19,05	25	1,568	1,259	0,416	0,456	–	0,969	32	0,11	► SNW 5x3/4	N 05	W 05	–	
15/16 23,813	30	1,755	1,343	0,416	0,456	–	1,173	18	0,14	► SNW 6x15/16	N 06	W 06	–	
1 25,4	30	1,755	1,343	0,416	0,456	–	1,173	18	0,13	► SNW 6x1	N 06	W 06	–	
1 1/8 28,575	35	2,068	1,449	0,448	0,488	–	1,376	18	0,16	► SNW 7x1.1/8	N 07	W 07	–	
1 3/16 30,163	35	2,068	1,449	0,448	0,488	–	1,376	18	0,16	► SNW 7x1.3/16	N 07	W 07	–	
1 1/4 31,75	35	2,068	1,449	0,448	0,488	–	1,376	18	0,16	SNW 7x1.1/4	N 07	W 07	–	
	40	2,255	1,494	0,448	0,496	–	0,496	18	0,19	► SNW 8x1.1/4	N 08	W 08	–	
1 5/16 33,338	40	2,255	1,494	0,448	0,496	–	1,563	18	0,19	SNW 8x1.5/16	N 08	W 08	–	
	45	2,536	1,574	0,448	0,496	–	1,767	18	0,28	► SNW 9x1.5/16	N 09	W 09	–	
1 3/8 34,925	40	2,255	1,494	0,448	0,496	–	1,563	18	0,19	► SNW 8x1.3/8	N 08	W 08	–	
	45	2,536	1,574	0,448	0,496	–	1,767	18	0,28	► SNW 9x1.3/8	N 09	W 09	–	
	45	2,536	2,123	0,448	0,496	–	1,767	18	0,32	SNW 109x1.3/8	N 09	W 09	–	
	1 7/16 36,513	45	2,536	1,574	0,448	0,496	–	1,767	18	0,28	► SNW 9x1.7/16	N 09	W 09	–
		45	2,536	1,574	0,448	0,496	–	1,767	18	0,32	► SNW 109x1.7/16	N 09	W 09	–
1 1/2 38,1	45	2,536	1,574	0,448	0,496	–	1,767	18	0,28	SNW 9x1.1/2	N 09	W 09	–	
	45	2,536	2,123	0,448	0,496	–	1,767	18	0,32	► SNW 109x1.1/2	N 09	W 09	–	
	50	2,536	1,755	0,448	0,558	–	1,967	18	0,33	SNW 10x1.1/2	N 09	W 10	HMVC 10E	
1 5/8 41,275	50	2,693	1,755	0,51	0,558	–	1,967	18	0,33	► SNW 10x1.5/8	N 10	W 10	HMVC 10E	
	55	2,693	2,384	0,51	0,558	–	1,967	18	0,39	SNW 110x1.5/8	N 10	W 10	HMVC 10E	
1 11/16 42,863	50	2,693	1,755	0,51	0,558	–	1,967	18	0,33	► SNW 10x1.11/16	N 10	W 10	HMVC 10E	
	50	2,693	2,384	0,51	0,558	–	1,967	18	0,39	► SNW 110x1.11/16	N 10	W 10	HMVC 10E	
1 3/4 44,45	50	2,693	1,755	0,51	0,558	–	1,967	18	0,33	SNW 10x1.3/4	N 10	W 10	HMVC 10E	
	55	2,693	2,384	0,51	0,558	–	1,967	18	0,39	► SNW 110x1.3/4	N 10	W 10	HMVC 10E	
	55	2,974	1,835	0,51	0,563	–	2,157	18	0,36	► SNW 11x1.3/4	N 11	W 11	HMVC 11E	
1 13/16 46,038	55	2,974	1,835	0,51	0,563	–	2,157	18	0,36	► SNW 11x1.13/16	N 11	W 11	HMVC 11E	

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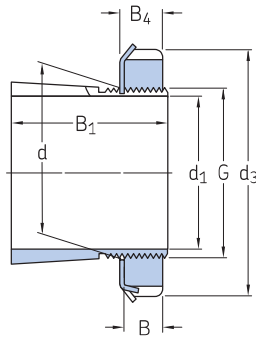
Principal dimensions							Thread		Mass	Designations	Included products		Associated
d ₁	d	d ₃ max.	B ₁	B	B ₄	B ₅	G	Threads per inch		Adapter sleeve assembly	lock nut	locking device	hydraulic nut
in./mm	mm	in.					in.	–	kg	–			
1 7/8 47,625	55 55	2,974 2,974	1,835 2,506	0,51 0,51	0,563 0,563	– –	2,157 2,157	18 18	0,36 0,43	► SNW 11x1.7/8 SNW 111x1.7/8	N 11 N 11	W 11 W 11	HMVC 11E HMVC 11E
1 15/16 49,213	55 55	2,974 2,974	1,835 2,506	0,51 0,51	0,563 0,563	– –	2,157 2,157	18 18	0,36 0,43	► SNW 11x1.15/16 ► SNW 111x1.15/16	N 11 N 11	W 11 W 11	HMVC 11E HMVC 11E
2 50,8	55 55 65	2,974 2,974 3,38	1,835 2,506 2,09	0,51 0,51 0,573	0,563 0,563 0,573	– – –	2,157 2,157 2,548	18 18 18	0,36 0,43 0,64	► SNW 11x2 SNW 111x2 ► SNW 13x2	N 11 N 11 N 13	W 11 W 11 W 13	HMVC 11E HMVC 11E HMVC 13E
2 1/16 52,388	60	3,161	2,649	0,541	0,594	–	2,36	18	0,73	► SNW 112x2.1/16	N 12	W 12	HMVC 12E
2 1/8 53,975	65 65	3,38 3,38	2,09 2,09	0,573 0,573	0,626 0,626	– –	2,548 2,548	18 18	0,64 0,79	SNW 13x2.1/8 SNW 113x2.1/8	N 13 N 13	W 13 W 13	HMVC 13E HMVC 13E
2 3/16 55,563	65 65	3,38 3,38	2,09 2,761	0,573 0,573	0,626 0,626	– –	2,548 2,548	18 18	0,64 0,79	► SNW 13x2.3/16 ► SNW 113x2.3/16	N 13 N 13	W 13 W 13	HMVC 13E HMVC 13E
2 1/4 57,15	65 65	3,38 3,38	2,09 2,761	0,573 0,573	0,626 0,626	– –	2,548 2,548	18 18	0,64 0,79	► SNW 13x2.1/4 ► SNW 113x2.1/4	N 13 N 13	W 13 W 13	HMVC 13E HMVC 13E
2 5/16 58,738	65	3,38	2,09	0,573	0,626	–	2,548	18	0,64	► SNW 13x2.5/16	N 13	W 13	HMVC 13E
2 3/8 60,325	75 75	3,88 3,88	2,286 3,074	0,604 0,604	0,666 0,666	– –	2,933 2,933	12 12	1 1,35	► SNW 15x2.3/8 SNW 115x2.3/8	AN 15 AN 15	W 15 W 15	HMVC 15E HMVC 15E
2 7/16 61,913	75 75	3,88 3,88	2,286 3,074	0,604 0,604	0,666 0,666	– –	2,933 2,933	12 12	1 1,35	► SNW 15x2.7/16 ► SNW 115x2.7/16	AN 15 AN 15	W 15 W 15	HMVC 15E HMVC 15E
2 1/2 63,5	75 75	3,88 3,88	2,286 3,074	0,604 0,604	0,666 0,666	– –	2,933 2,933	12 12	1 1,35	SNW 15x2.1/2 SNW 115x2.1/2	AN 15 AN 15	W 15 W 15	HMVC 15E HMVC 15E
2 5/8 66,675	80 80	4,161 4,161	2,366 3,194	0,604 0,604	0,666 0,666	– –	3,137 3,137	12 12	1,1 1,45	SNW 16x2.5/8 SNW 116x2.5/8	AN 16 AN 16	W 16 W 16	HMVC 16E HMVC 16E
2 11/16 68,263	80 80	4,161 4,161	2,366 3,194	0,604 0,604	0,666 0,666	– –	3,137 3,137	12 12	1,1 1,45	► SNW 16x2.11/16 ► SNW 116x2.11/16	AN 16 AN 16	W 16 W 16	HMVC 16E HMVC 16E
2 3/4 69,85	80 80	4,161 4,161	2,366 3,194	0,604 0,604	0,666 0,666	– –	3,137 3,137	12 12	1,1 1,45	► SNW 16x2.3/4 SNW 116x2.3/4	AN 16 AN 16	W 16 W 16	HMVC 16E HMVC 16E
2 13/16 71,438	85 85	4,411 4,411	2,476 3,302	0,635 0,635	0,697 0,697	– –	3,34 3,34	12 12	1,3 1,55	SNW 17x2.13/16 SNW 117x2.13/16	AN 17 AN 17	W 17 W 17	HMVC 17E HMVC 17E
2 7/8 73,025	85 85	4,411 4,411	2,476 3,302	0,635 0,635	0,697 0,697	– –	3,34 3,34	12 12	1,3 1,55	SNW 17x2.7/8 SNW 117x2.7/8	AN 17 AN 17	W 17 W 17	HMVC 17E HMVC 17E
2 15/16 74,613	85 85	4,411 4,411	2,476 3,302	0,635 0,635	0,697 0,697	– –	3,34 3,34	12 12	1,3 1,55	► SNW 17x2.15/16 ► SNW 117x2.15/16	AN 17 AN 17	W 17 W 17	HMVC 17E HMVC 17E
3 76,2	85 85	4,411 4,411	2,476 3,302	0,635 0,635	0,697 0,697	– –	3,34 3,34	12 12	1,3 1,55	► SNW 17x3 ► SNW 117x3	AN 17 AN 17	W 17 W 17	HMVC 17E HMVC 17E
3 1/16 77,788	90 90	4,661 4,661	2,636 3,543	0,698 0,698	0,782 0,782	– –	3,527 3,527	12 12	1,4 1,8	► SNW 18x3.1/16 SNW 118x3.1/16	AN 18 AN 18	W 18 W 18	HMVC 18E HMVC 18E
3 1/8 79,375	90 90	4,661 4,661	2,636 3,543	0,698 0,698	0,782 0,782	– –	3,527 3,527	12 12	1,4 1,8	SNW 18x3.1/8 SNW 118x3.1/8	AN 18 AN 18	W 18 W 18	HMVC 18E HMVC 18E
3 3/16 80,963	90 90	4,661 4,661	2,636 3,543	0,698 0,698	0,782 0,782	– –	3,527 3,527	12 12	1,4 1,8	SNW 18x3.3/16 ► SNW 118x3.3/16	AN 18 AN 18	W 18 W 18	HMVC 18E HMVC 18E
3 1/4 82,55	90 90	4,661 4,661	2,636 3,543	0,698 0,698	0,782 0,782	– –	3,527 3,527	12 12	1,4 1,8	SNW 18x3.1/4 SNW 118x3.1/4	AN 18 AN 18	W 18 W 18	HMVC 18E HMVC 18E

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23.2 Adapter sleeves with inch dimensions

d_1 3 5/16 – 5 1/4 in.
84,138 – 133,35 mm



Principal dimensions							Thread	Mass	Designations	Included products lock nut	locking device	Associated hydraulic nut	
d ₁	d	d ₃ max.	B ₁	B	B ₄	B ₅	G	Threads per inch	Adapter sleeve assembly				
in./mm	mm	in.					in.	–	kg	–			
3 5/16 84,138	95	4,943	2,75	0,729	0,813	–	3,73	12	1,85	► SNW 19x3.5/16	AN 19	W 19	HMVC 19E
	95	4,943	3,692	0,729	0,813	–	3,73	12	1,85	► SNW 119x3.5/16	AN 19	W 19	HMVC 19E
	100	5,193	2,859	0,76	0,844	–	3,918	12	2	SNW 20x3.5/16	AN 20	W 20	HMVC 20E
	100	3,918	3,961	0,76	0,844	–	3,918	12	2,85	SNW 120x3.5/16	AN 20	W 20	HMVC 20E
3 3/8 85,725	100	5,193	2,859	0,76	0,844	–	3,918	12	2	SNW 20x3.3/8	AN 20	W 20	HMVC 20E
	100	5,193	3,961	0,76	0,844	–	3,918	12	2,85	SNW 120x3.3/8	AN 20	W 20	HMVC 20E
3 7/16 87,313	100	5,193	2,859	0,76	0,844	–	3,918	12	2	► SNW 20x3.7/16	AN 20	W 20	HMVC 20E
	100	5,193	3,961	0,76	0,844	–	3,918	12	2,85	► SNW 120x3.7/16	AN 20	W 20	HMVC 20E
3 1/2 88,9	100	5,193	2,859	0,76	0,844	–	3,918	12	2	► SNW 20x3.1/2	AN 20	W 20	HMVC 20E
	100	5,193	3,961	0,76	0,844	–	3,918	12	2,85	► SNW 120x3.1/2	AN 20	W 20	HMVC 20E
3 11/16 93,663	105	5,443	2,977	0,76	0,844	–	4,122	12	2,05	► SNW 21x3.11/16	AN 21	W 21	HMVC 21E
	105	5,443	4,157	0,76	0,844	–	4,122	12	2,25	► SNW 121x3.11/16	AN 21	W 21	HMVC 21E
	110	5,724	3,196	0,791	0,906	–	4,325	12	2,25	SNW 22x3.11/16	AN 22	W 22	HMVC 22E
	110	5,724	4,338	0,791	3,693	–	4,325	6	3	SNW 122x3.11/16	AN 22	W 22	HMVC 22E
3 3/4 95,25	110	5,724	4,338	0,791	0,906	–	4,325	12	2,95	SNW 122x3.3/4	AN 22	W 22	HMVC 22E
	110	5,724	4,338	0,791	0,906	–	4,325	12	2,25	SNW 22x3.13/16	AN 22	W 22	HMVC 22E
3 13/16 96,838	110	5,724	3,196	0,791	0,906	–	4,325	12	2,25	SNW 22x3.13/16	AN 22	W 22	HMVC 22E
	110	5,724	4,338	0,791	0,906	–	4,325	12	2,95	SNW 122x3.13/16	AN 22	W 22	HMVC 22E
3 7/8 98,425	110	5,724	3,196	0,791	0,906	–	4,325	12	2,25	SNW 22x3.7/8	AN 22	W 22	HMVC 22E
	4,338	5,724	4,338	0,791	0,906	–	4,325	12	2,95	SNW 122x3.7/8	AN 22	W 22	HMVC 22E
3 15/16 100,013	110	5,724	3,196	0,791	0,906	–	4,325	12	2,25	► SNW 22x3.15/16	AN 22	W 22	HMVC 22E
	110	5,724	4,338	0,791	0,906	–	4,325	12	2,95	► SNW 122x3.15/16	AN 22	W 22	HMVC 22E
4 101,6	110	5,724	3,196	0,791	0,906	–	4,325	12	2,25	► SNW 22x4	AN 22	W 22	HMVC 22E
	110	5,724	4,338	0,791	0,906	–	4,325	12	2,95	SNW 122x4	AN 22	W 22	HMVC 22E
	120	6,13	2,937	0,823	0,938	–	4,716	12	2,8	SNW 3024x4	AN 24	W 24	HMVC 24E
	120	6,13	3,456	0,823	0,938	–	4,716	12	3	SNW 24x4	AN 24	W 24	HMVC 24E
4 1/16 103,188	120	6,13	4,638	0,823	0,938	–	4,716	12	3,55	SNW 124x4	AN 24	W 24	HMVC 24E
	120	5,693	2,937	0,823	0,938	–	4,716	12	2,8	SNW 3024x4.1/16	N 024	W 024	HMVC 24E
	120	6,13	3,456	0,823	0,938	–	4,716	12	3	SNW 24x4.1/16	AN 24	W 24	HMVC 24E
	120	6,13	4,638	0,823	0,938	–	4,716	12	3,55	SNW 124x4.1/16	AN 24	W 24	HMVC 24E
4 1/8 104,775	120	5,693	2,937	0,823	0,938	–	4,716	12	2,8	SNW 3024x4.1/8	N 024	W 024	HMVC 24E
	120	6,13	3,456	0,823	0,938	–	4,716	12	3	SNW 24x4.1/8	AN 24	W 24	HMVC 24E
	120	6,13	4,638	0,823	0,938	–	4,716	12	3,55	SNW 124x4.1/8	AN 24	W 24	HMVC 24E

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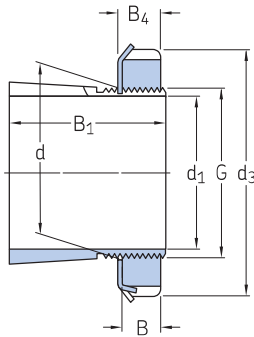
Principal dimensions							Thread	Mass	Designations		Included products	Associated	
d ₁	d	d ₃ max.	B ₁	B	B ₄	B ₅	G	Threads per inch	Adapter sleeve assembly	lock nut	locking device	hydraulic nut	
in./mm	mm	in.					in.	–	kg	–			
4 3/16 106,363	120	5,693	2,937	0,823	0,938	–	4,716	12	2,8	► SNW 3024x4.3/16	N 024	W 024	HMVC 24E
	120	5,693	3,456	0,823	0,938	–	4,716	12	2,65	SNW 3124x4.3/16	N 024	W 024	HMVC 24E
	120	6,13	3,456	0,823	0,938	–	4,716	12	3	► SNW 24x4.3/16	AN 24	W 24	HMVC 24E
	120	6,13	4,638	0,823	0,938	–	4,716	12	3,55	► SNW 124x4.3/16	AN 24	W 24	HMVC 24E
4 1/4 107,95	120	5,693	2,937	0,823	0,938	–	4,716	12	2,8	SNW 3024x4.1/4	N 024	W 024	HMVC 24E
	120	5,693	3,456	0,823	0,938	–	4,716	12	2,65	► SNW 3124x4.1/4	N 024	W 024	HMVC 24E
	120	6,13	3,456	0,823	0,938	–	4,716	12	3	► SNW 24x4.1/4	AN 24	W 24	HMVC 24E
	120	6,13	4,638	0,823	0,938	–	4,716	12	3,55	SNW 124x4.1/4	AN 24	W 24	HMVC 24E
4 5/16 109,538	130	6,13	3,227	0,885	1	–	5,106	12	3,4	SNW 3026x4.5/16	N 026	W 026	HMVC 26E
	130	6,755	3,752	0,885	1	–	5,106	12	4,4	SNW 26x4.5/16	AN 26	W 26	HMVC 26E
	130	6,755	4,972	0,885	1	–	5,106	12	5,65	SNW 126x4.5/16	AN 26	W 26	HMVC 26E
4 3/8 111,125	130	6,13	3,227	0,885	1	–	5,106	12	3,4	SNW 3026x4.3/8	N 026	W 026	HMVC 26E
	130	6,755	3,752	0,885	1	–	5,106	12	4,4	SNW 26x4.3/8	AN 26	W 26	HMVC 26E
	130	6,755	4,972	0,885	1	–	5,106	12	5,65	SNW 126x4.3/8	AN 26	W 26	HMVC 26E
4 7/16 112,713	130	6,13	3,227	0,885	1	–	5,106	12	3,4	► SNW 3026x4.7/16	N 026	W 026	HMVC 26E
	130	6,13	3,752	0,885	1	–	5,106	12	3,8	► SNW 3126x4.7/16	N 026	W 026	HMVC 26E
	130	6,755	3,752	0,885	1	–	5,106	12	4,4	► SNW 26x4.7/16	AN 26	W 26	HMVC 26E
	130	6,755	4,972	0,885	1	–	5,106	12	5,65	► SNW 126x4.7/16	AN 26	W 26	HMVC 26E
	140	7,099	5,313	0,948	1	–	5,497	12	5,9	SNW 128x4.7/16	AN 28	W 28	HMVC 28E
4 1/2 114,3	130	6,13	3,227	0,885	1	–	5,106	12	3,4	► SNW 3026x4.1/2	N 026	W 026	HMVC 26E
	130	6,13	3,752	0,885	1	–	5,106	12	3,8	► SNW 3126x4.1/2	N 026	W 026	HMVC 26E
	130	6,755	3,752	0,885	1	–	5,106	12	4,4	► SNW 26x4.1/2	AN 26	W 26	HMVC 26E
	130	6,755	4,972	0,885	1	–	5,106	12	5,65	SNW 126x4.1/2	AN 26	W 26	HMVC 26E
4 13/16 122,238	140	6,505	3,33	0,948	1,063	–	5,497	12	3,8	SNW 3028x4.13/16	N 028	W 028	HMVC 28E
	140	7,099	3,971	0,948	1,063	–	5,497	12	4,75	SNW 28x4.13/16	AN 28	W 28	HMVC 28E
	140	7,099	5,313	0,948	1,063	–	5,497	12	5,9	SNW 128x4.13/16	AN 28	W 28	HMVC 28E
4 7/8 123,825	140	6,505	3,33	0,948	1,063	–	5,497	12	3,8	SNW 3028x4.7/8	N 028	W 028	HMVC 28E
	140	7,099	3,971	0,948	1,063	–	5,497	12	4,75	SNW 28x4.7/8	AN 28	W 28	HMVC 28E
	140	7,099	5,313	0,948	0,906	–	5,497	12	5,9	SNW 128x4.7/8	AN 28	W 28	HMVC 28E
4 15/16 125,413	140	6,505	3,33	0,948	1,063	–	5,888	12	3,8	► SNW 3028x4.15/16	N 028	W 028	HMVC 28E
	140	6,505	3,971	0,948	1,063	–	5,497	12	4	► SNW 3128x4.15/16	N 028	W 028	HMVC 28E
	140	7,099	3,971	0,948	1,063	–	5,497	12	4,75	► SNW 28x4.15/16	AN 28	W 28	HMVC 28E
	140	7,099	5,313	0,948	1,063	–	5,497	12	5,9	► SNW 128x4.15/16	AN 28	W 28	HMVC 28E
5 127	140	6,505	3,33	0,948	1,063	–	5,497	12	3,8	► SNW 3028x5	N 028	W 028	HMVC 28E
	140	6,505	3,971	0,948	1,063	–	5,497	12	4	► SNW 3128x5	N 028	W 028	HMVC 28E
	140	7,099	3,971	0,948	1,063	–	5,497	12	4,75	► SNW 28x5	AN 28	W 28	HMVC 28E
	140	7,099	5,313	0,948	0,906	–	5,497	12	5,9	SNW 128x5	AN 28	W 28	HMVC 28E
5 1/8 130,175	150	7,13	3,482	0,979	1,094	–	5,888	12	4,45	SNW 3030x5.1/8	N 030	W 030	HMVC 30E
	150	7,693	4,231	0,979	1,125	–	5,888	12	7,25	SNW 30x5.1/8	AN 30	W 30	HMVC 30E
	150	7,693	5,611	0,979	1,125	–	5,888	12	8,15	SNW 130x5.1/8	AN 30	W 30	HMVC 30E
5 3/16 131,763	150	7,13	3,482	0,979	1,094	–	5,888	12	4,45	► SNW 3030x5.3/16	N 030	W 030	HMVC 30E
	150	7,13	4,231	0,979	1,094	–	5,888	12	6,2	► SNW 3130x5.3/16	N 030	W 030	HMVC 30E
	150	7,693	4,231	0,979	1,125	–	5,888	12	7,25	► SNW 30x5.3/16	AN 30	W 30	HMVC 30E
	150	7,693	5,611	0,979	1,125	–	5,888	12	8,15	► SNW 130x5.3/16	AN 30	W 30	HMVC 30E
5 1/4 133,35	150	7,13	3,482	0,979	1,094	–	5,888	12	4,45	SNW 3030x5.1/4	N 030	W 030	HMVC 30E
	150	7,693	4,231	0,979	1,125	–	5,888	12	7,25	► SNW 30x5.1/4	AN 30	W 30	HMVC 30E
	150	7,693	5,611	0,979	1,125	–	5,888	12	8,15	SNW 130x5.1/4	AN 30	W 30	HMVC 30E

► Popular item



23.2 Adapter sleeves with inch dimensions

d_1 5 5/16 – 7 13/16 in.
134,938 – 198,438 mm



Principal dimensions							Thread	Threads per inch	Mass	Designations	Included products lock nut	locking device	Associated hydraulic nut
d ₁	d	d ₃ max.	B ₁	B	B ₄	B ₅	G			Adapter sleeve assembly			
in./mm	mm	in.					in.	—	kg	—			
5 5/16 134,938	150	7,693	4,231	0,979	1,125	—	5,888	12	7,25	▶ SNW 30x5.5/16	AN 30	W 30	HMVC 30E
	150	7,693	5,611	0,979	1,125	—	6,284	12	8,15	SNW 130x5.5/16	AN 30	W 30	HMVC 30E
	180	9,068	6,446	1,104	1,104	—	7,066	8	10	SNW 136x5.5/16	AN 36	W 36	HMVC 36E
5 3/8 136,525	150	7,693	4,231	0,979	1,125	—	5,888	12	7,25	SNW 30x5.3/8	AN 30	W 30	HMVC 30E
	150	7,693	5,611	0,979	1,125	—	6,284	12	8,15	SNW 130x5.3/8	AN 30	W 30	HMVC 30E
	160	7,505	3,701	1,041	1,156	—	6,284	8	5,45	SNW 3032x5.3/8	N 032	W 032	HMVC 32E
	160	8,068	4,568	1,041	1,187	—	6,284	8	7,05	SNW 32x5.3/8	AN 32	W 32	HMVC 32E
	160	8,068	5,91	1,041	1,187	—	6,284	8	8,15	SNW 132x5.3/8	AN 32	W 32	HMVC 32E
	180	9,068	6,446	1,104	1,104	—	7,066	8	10	SNW 136x5.3/8	AN 36	W 36	HMVC 36E
	160	8,068	5,91	1,041	1,187	—	6,284	8	8,15	▶ SNW 132x5.7/16	AN 32	W 32	HMVC 32E
5 7/16 138,113	160	7,505	3,701	1,041	1,156	—	6,284	8	5,45	▶ SNW 3032x5.7/16	N 032	W 032	HMVC 32E
	160	7,505	4,568	1,041	1,156	—	6,284	8	6,1	▶ SNW 3132x5.7/16	N 032	W 032	HMVC 32E
	160	8,068	4,568	1,041	1,187	—	6,284	8	7,05	▶ SNW 32x5.7/16	AN 32	W 32	HMVC 32E
	160	8,068	5,91	1,041	1,187	—	6,284	8	8,15	▶ SNW 132x5.7/16	AN 32	W 32	HMVC 32E
5 1/2 139,7	160	7,505	3,701	1,041	1,156	—	6,284	8	5,45	SNW 3032x5.1/2	N 032	W 032	HMVC 32E
	160	8,068	8,068	1,041	1,187	—	6,284	8	7,05	SNW 32x5.1/2	AN 32	W 32	HMVC 32E
	160	8,068	5,91	1,041	1,187	—	6,284	8	8,15	SNW 132x5.1/2	AN 32	W 32	HMVC 32E
5 3/4 146,05	160	8,068	4,568	1,041	1,187	—	6,284	8	7,05	▶ SNW 32x5.3/4	AN 32	W 32	HMVC 32E
5 13/16 147,638	170	7,88	4,009	1,073	1,188	—	6,659	8	6,1	SNW 3034x5.13/16	N 034	W 034	HMVC 34E
	170	8,661	4,837	1,073	1,219	—	6,659	8	8,85	SNW 34x5.13/16	AN 34	W 34	HMVC 34E
	170	8,661	6,178	1,073	1,219	—	6,659	8	9,55	SNW 134x5.13/16	AN 34	W 34	HMVC 34E
5 7/8 149,225	170	7,88	4,009	1,073	1,188	—	6,659	8	6,1	SNW 3034x5.7/8	N 034	W 034	HMVC 34E
	170	8,661	4,837	1,073	1,219	—	6,659	8	8,85	SNW 34x5.7/8	AN 34	W 34	HMVC 34E
	170	8,661	6,178	1,073	1,219	—	6,659	8	9,55	SNW 134x5.7/8	AN 34	W 34	HMVC 34E
5 15/16 150,813	170	7,88	4,009	1,073	1,188	—	6,659	8	6,1	▶ SNW 3034x5.15/16	N 034	W 034	HMVC 34E
	170	7,88	4,837	1,073	1,188	—	6,659	8	7,3	▶ SNW 3134x5.15/16	N 034	W 034	HMVC 34E
	170	8,661	4,837	1,073	1,219	—	6,659	8	8,85	▶ SNW 34x5.15/16	AN 34	W 34	HMVC 34E
	170	8,661	6,178	1,073	1,219	—	6,659	8	9,55	▶ SNW 134x5.15/16	AN 34	W 34	HMVC 34E
6 152,4	170	7,88	4,009	1,073	1,188	—	6,659	8	6,1	▶ SNW 3034x6	N 034	W 034	HMVC 34E
	170	7,88	4,837	1,073	1,188	—	6,659	8	7,3	▶ SNW 3134x6	N 034	W 034	HMVC 34E
	170	8,661	8,661	1,073	1,219	—	6,659	8	8,85	▶ SNW 34x6	AN 34	W 34	HMVC 34E
	170	8,661	6,178	1,073	1,219	—	6,659	8	9,55	▶ SNW 134x6	AN 34	W 34	HMVC 34E
6 5/16 160,338	180	8,255	4,327	1,104	1,219	—	7,066	8	6,8	SNW 3036x6.5/16	N 036	W 036	HMVC 36E
	180	9,068	5,028	1,104	1,25	—	7,066	8	9,3	SNW 36x6.5/16	AN 36	W 36	HMVC 36E
	180	9,068	6,446	1,104	6,3175	—	7,066	8	8,5	SNW 136x6.5/16	AN 36	W 36	HMVC 36E

▶ Popular item

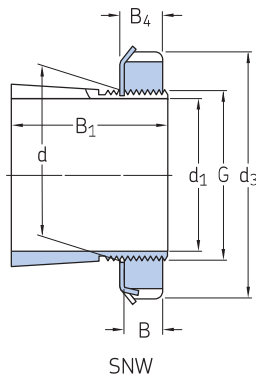
Principal dimensions							Thread	Mass	Designations				
d ₁	d	d ₃ max.	B ₁	B	B ₄	B ₅	G	Threads per inch	Adapter sleeve assembly	Included products	locking device	Associated hydraulic nut	
in./mm	mm	in.					in.	–	kg	–			
6 3/8 161,925	180	8,255	4,327	1,104	1,219	–	7,066	8	6,8	SNW 3036x6.3/8	N 036	W 036	HMVC 36E
	180	9,068	5,028	1,104	1,25	–	7,066	8	9,3	SNW 36x6.3/8	AN 36	W 36	HMVC 36E
	180	9,068	6,446	1,104	1,104	–	7,066	8	10	SNW 136x6.3/8	AN 36	W 36	HMVC 36E
6 7/16 163,513	180	8,255	4,327	1,104	1,219	–	7,066	8	6,8	▶ SNW 3036x6.7/16	N 036	W 036	HMVC 36E
	180	8,255	5,028	1,104	1,219	–	7,066	8	7,75	▶ SNW 3136x6.7/16	N 036	W 036	HMVC 36E
	180	9,068	5,028	1,104	1,25	–	7,066	8	9,3	▶ SNW 36x6.7/16	AN 36	W 36	HMVC 36E
	180	9,068	6,446	1,104	1,25	–	7,066	8	10	▶ SNW 136x6.7/16	AN 36	W 36	HMVC 36E
6 1/2 165,1	180	8,255	4,327	1,104	1,219	–	7,066	8	6,8	SNW 3036x6.1/2	N 036	W 036	HMVC 36E
	180	8,255	5,028	1,104	1,219	–	7,066	8	7,75	SNW 3136x6.1/2	N 036	W 036	HMVC 36E
	180	9,068	5,028	1,104	1,25	–	7,066	8	9,3	▶ SNW 36x6.1/2	AN 36	W 36	HMVC 36E
	180	9,068	6,446	1,104	1,104	–	7,066	8	10	SNW 136x6.1/2	AN 36	W 36	HMVC 36E
6 13/16 173,038	190	8,693	4,402	1,135	1,25	–	7,472	8	7,5	SNW 3038x6.13/16	N 038	W 038	HMVC 38E
	190	9,474	5,251	1,135	1,281	–	7,472	8	10,5	SNW 38x6.13/16	AN 38	W 38	HMVC 38E
	190	9,474	6,748	1,135	1,281	–	7,472	8	12,5	SNW 138x6.13/16	AN 38	W 38	HMVC 38E
6 7/8 174,625	190	8,693	4,402	1,135	1,25	–	7,472	8	7,5	SNW 3038x6.7/8	N 038	W 038	HMVC 38E
	190	9,474	5,251	1,135	1,281	–	7,472	8	10,5	SNW 38x6.7/8	AN 38	W 38	HMVC 38E
	190	9,474	6,748	1,135	1,281	–	7,472	8	12,5	SNW 138x6.7/8	AN 38	W 38	HMVC 38E
6 15/16 176,213	180	9,068	6,446	1,104	1,104	–	7,066	8	10	SNW 136x6.15/16	AN 36	W 36	HMVC 36E
	190	8,693	4,402	1,135	1,25	–	7,472	8	7,5	▶ SNW 3038x6.15/16	N 038	W 038	HMVC 38E
	190	8,693	5,251	1,135	1,25	–	7,472	8	8,95	▶ SNW 3138x6.15/16	N 038	W 038	HMVC 38E
	190	9,474	5,251	1,135	1,281	–	7,472	8	10,5	▶ SNW 38x6.15/16	AN 38	W 38	HMVC 38E
	190	9,474	6,748	1,135	1,281	–	7,472	8	12,5	▶ SNW 138x6.15/16	AN 38	W 38	HMVC 38E
	190	9,474	6,748	1,135	1,281	–	7,472	8	12,5	▶ SNW 138x7	AN 38	W 38	HMVC 38E
7 177,8	190	8,693	4,402	1,135	1,25	–	7,472	8	7,5	▶ SNW 3038x7	N 038	W 038	HMVC 38E
	190	8,693	5,251	1,135	1,25	–	7,472	8	8,95	▶ SNW 3138x7	N 038	W 038	HMVC 38E
	190	9,474	5,251	1,135	1,281	–	7,472	8	10,5	▶ SNW 38x7	AN 38	W 38	HMVC 38E
	190	9,474	6,748	1,135	1,281	–	7,472	8	12,5	▶ SNW 138x7	AN 38	W 38	HMVC 38E
7 1/8 180,975	200	9,849	7,085	1,198	1,344	–	7,847	8	16	SNW 140x7.1/8	AN 40	W 40	HMVC 40E
	200	9,443	4,74	1,198	1,313	–	7,847	8	8,85	SNW 3040x7.1/8	N 040	W 040	HMVC 40E
	200	9,849	5,474	1,198	1,344	–	7,847	8	14	SNW 40x7.1/8	AN 40	W 40	HMVC 40E
7 3/16 182,563	200	9,443	4,74	1,198	1,313	–	7,847	8	8,85	▶ SNW 3040x7.3/16	N 040	W 040	HMVC 40E
	200	9,443	5,474	1,198	1,313	–	7,847	8	13	▶ SNW 3140x7.3/16	N 040	W 040	HMVC 40E
	200	9,849	5,474	1,198	1,344	–	7,847	8	14	▶ SNW 40x7.3/16	AN 40	W 40	HMVC 40E
	200 220	9,849 11,005	7,085 7,227	1,198 1,26	1,344 1,406	– –	7,847 8,628	8 8	16 21	▶ SNW 140x7.3/16 SNW 144x7.3/16	AN 40 N 44	W 40 W 44	HMVC 40E HMVC 44E
7 1/4 184,15	200	9,849	7,085	1,198	1,344	–	7,847	8	16	SNW 140x7.1/4	AN 40	W 40	HMVC 40E
	200	9,443	4,74	1,198	1,313	–	7,847	8	8,85	SNW 3040x7.1/4	N 040	W 040	HMVC 40E
	200	9,849	5,474	1,198	1,344	–	7,847	8	14	SNW 40x7.1/4	AN 40	W 40	HMVC 40E
7 7/16 188,913	200	9,443	4,74	1,198	1,313	–	7,847	8	8,85	SNW 3040x7.7/16	N 040	W 040	HMVC 40E
7 1/2 190,5	220	11,005	5,891	1,26	1,406	–	8,628	8	14,5	SNW 44x7.1/2	N 44	W 44	HMVC 44E
	220	11,005	7,227	1,26	1,406	–	8,628	8	21	SNW 144x7.1/2	N 44	W 44	HMVC 44E
7 13/16 198,438	200	9,849	7,085	1,198	1,344	–	7,847	8	16	SNW 140x7.13/16	AN 40	W 40	HMVC 40E
	220	10,255	5,12	1,26	1,375	–	8,628	8	11	SNW 3044x7.13/16	N 044	W 044	HMVC 44E
	220	11,005	5,891	1,26	1,406	–	8,628	8	14,5	SNW 44x7.13/16	N 44	W 44	HMVC 44E
	220	11,005	7,227	1,26	1,406	–	8,628	8	21	SNW 144x7.13/16	N 44	W 44	HMVC 44E

▶ Popular item

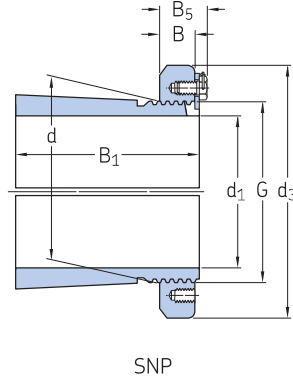


23.2 Adapter sleeves with inch dimensions

d_1 7 7/8 – 16 1/2 in.
200,025 – 419,1 mm



SNW



SNP

Principal dimensions							Thread	Mass	Designations	Included products	locking device	Associated hydraulic nut
d_1	d	d_3 max.	B_1	B	B_4	B_5	G	Threads per inch	Adapter sleeve assembly			
in./mm	mm	in.					in.	–	kg	–		
7 7/8 200,025	200	9,849	7,085	1,198	1,344	–	7,847	8	16	SNW 140x7.7/8	AN 40	HMVC 40E
	220	10,255	5,12	1,26	1,375	–	8,628	8	11	SNW 3044x7.7/8	N 044	HMVC 44E
	220	11,005	5,891	1,26	1,406	–	8,628	8	14,5	SNW 44x7.7/8	N 44	HMVC 44E
	220	11,005	7,227	1,26	1,406	–	8,628	8	21	SNW 144x7.7/8	N 44	HMVC 44E
7 15/16 201,613	220	10,255	5,12	1,26	1,375	–	8,628	8	11	▶ SNW 3044x7.15/16	N 044	HMVC 44E
	220	10,255	5,891	1,26	1,375	–	8,628	8	13	▶ SNW 3144x7.15/16	N 044	HMVC 44E
	220	11,005	5,891	1,26	1,406	–	8,628	8	14,5	▶ SNW 44x7.15/16	N 44	HMVC 44E
	220	11,005	7,277	1,26	1,406	–	8,628	8	21	▶ SNW 144x7.15/16	N 44	HMVC 44E
8 203,2	200	9,849	7,085	1,198	1,344	–	7,847	8	16	SNW 140x8	AN 40	HMVC 40E
	220	10,255	5,12	1,26	1,375	–	8,628	8	11	▶ SNW 3044x8	N 044	HMVC 44E
	220	10,255	5,891	1,26	1,375	–	8,628	8	13	▶ SNW 3144x8	N 044	HMVC 44E
	220	11,005	5,891	1,26	1,406	–	8,628	8	14,5	▶ SNW 44x8	N 44	HMVC 44E
8 7/16 214,313	220	11,005	7,227	1,26	1,406	–	8,628	8	21	SNW 144x8	N 44	HMVC 44E
	240	11,443	5,422	1,354	–	1,698	9,442	6	14,5	SNP 3048x8.7/16	N 048	HMVC 48E
	240	11,443	5,422	1,354	–	1,698	9,442	6	14,5	SNP 3048x8.1/2	N 048	HMVC 48E
	240	11,443	5,422	1,354	–	1,698	9,442	6	14,5	▶ SNP 3048x8.15/16	N 048	HMVC 48E
8 15/16 227,013	240	11,443	6,628	1,354	–	1,698	9,442	6	17	▶ SNP 3148x8.15/16	N 048	HMVC 48E
	240	11,443	8,099	1,354	–	1,698	9,442	6	22	▶ SNP 148x8.15/16	N 048	HMVC 48E
	240	11,443	5,422	1,354	–	1,698	9,442	6	14,5	SNP 3048x9	N 048	HMVC 48E
	240	12,193	8,764	1,416	–	1,76	10,192	6	17	▶ SNP 3152x9	N 052	HMVC 52E
9 228,6	260	12,193	8,764	1,416	–	1,76	10,192	6	25	SNP 152x9	N 052	HMVC 52E
	260	12,193	6,009	1,416	–	1,76	10,192	6	18,5	▶ SNP 3052x9.7/16	N 052	HMVC 52E
	260	12,193	8,764	1,416	–	1,76	10,192	6	20	▶ SNP 3152x9.7/16	N 052	HMVC 52E
	260	12,193	8,764	1,416	–	1,76	10,192	6	25	▶ SNP 152x9.7/16	N 052	HMVC 52E
9 1/2 241,3	260	12,193	6,009	1,416	–	1,76	10,192	6	18,5	▶ SNP 3052x9.1/2	N 052	HMVC 52E
	260	12,193	8,764	1,416	–	1,76	10,192	6	20	▶ SNP 3152x9.1/2	N 052	HMVC 52E

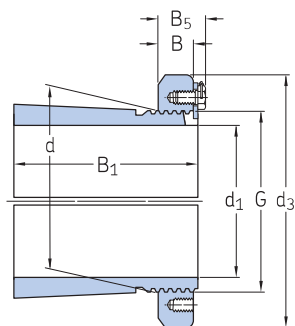
Principal dimensions							Thread		Mass	Designations	Included products		Associated
d ₁	d	d ₃ max.	B ₁	B	B ₄	B ₅	G	Threads per inch		Adapter sleeve assembly	lock nut	locking device	hydraulic nut
in./mm	mm	in.					in.	–	kg	–			
9 15/16 252,413	280 280	13,005 13,005	6,181 7,756	1,51 1,51	– –	1,854 1,854	11,004 11,004	6 6	20,5 21	▶ SNP 3056x9.15/16 ▶ SNP 3156x9.15/16	N 056 N 056	PL 56 PL 56	HMVC 56E HMVC 56E
10 254	280 280	13,005 13,005	6,181 7,756	1,51 1,51	– –	1,854 1,854	11,004 11,004	6 6	20,5 21	▶ SNP 3056x10 ▶ SNP 3156x10	N 056 N 056	PL 56 PL 56	HMVC 56E HMVC 56E
10 7/16 265,113	280 280 280	13,005 13,005 13,005	6,181 7,756 8,937	1,51 1,51 1,51	– – –	1,854 1,854 1,854	11,004 11,004 11,004	6 6 6	20,5 21 27	▶ SNP 3056x10.7/16 ▶ SNP 3156x10.7/16 ▶ SNP 3256x10.7/16	N 056 N 056 N 056	PL 56 PL 56 PL 56	HMVC 56E HMVC 56E HMVC 56E
10 1/2 266,7	280 280	13,005 13,005	6,181 7,756	1,51 1,51	– –	1,854 1,854	11,004 11,004	6 6	20,5 21	▶ SNP 3056x10.1/2 ▶ SNP 3156x10.1/2	N 056 N 056	PL 56 PL 56	HMVC 56E HMVC 56E
10 15/16 277,813	300 300 300	14,193 14,193 14,193	6,717 8,37 9,63	1,573 1,573 1,573	– – –	1,948 1,948 1,948	11,785 11,785 11,785	6 6 6	31 27 31	▶ SNP 3060x10.15/16 ▶ SNP 3160x10.15/16 ▶ SNP 3260x10.15/16	N 060 N 060 N 060	PL 60 PL 60 PL 60	HMVC 60E HMVC 60E HMVC 60E
11 279,4	300 300	14,193 14,193	6,717 9,63	1,573 1,573	– –	1,948 1,948	11,785 11,785	6 6	31 31	▶ SNP 3060x11 ▶ SNP 3260x11	N 060 N 060	PL 60 PL 60	HMVC 60E HMVC 60E
11 7/16 290,513	320	15,005	6,936	1,666	–	2,041	12,562	6	29,5	SNP 3064x11.7/16	N 064	PL 64	HMVC 64E
11 1/2 292,1	320	15,005	6,936	1,666	–	2,041	12,562	6	29,5	▶ SNP 3064x11.1/2	N 064	PL 64	HMVC 64E
11 15/16 303,213	320 320 320	15,005 15,005 15,005	6,936 9,101 10,361	1,666 1,666 1,666	– – –	2,041 2,041 2,041	12,562 12,562 12,562	6 6 6	29,5 33,5 44,5	▶ SNP 3064x11.15/16 ▶ SNP 3164x11.15/16 ▶ SNP 3264x11.15/16	N 064 N 064 N 064	PL 64 PL 64 PL 64	HMVC 64E HMVC 64E HMVC 64E
12 304,8	320 320 320	15,005 15,005 15,005	6,936 9,101 10,361	1,666 1,666 1,666	– – –	2,041 2,041 2,041	12,562 12,562 12,562	6 6 6	29,5 33,5 44,5	▶ SNP 3064x12 ▶ SNP 3164x12 ▶ SNP 3264x12	N 064 N 064 N 064	PL 64 PL 64 PL 64	HMVC 64E HMVC 64E HMVC 64E
12 7/16 315,913	340 340 340	15,755 15,755 15,755	7,533 9,777 11,116	1,791 1,791 1,791	– – –	2,166 2,166 2,166	13,303 13,303 13,303	5 5 5	35,5 42,5 47,5	▶ SNP 3068x12.7/16 ▶ SNP 3168x12.7/16 ▶ SNP 3268x12.7/16	N 068 N 068 N 068	PL 68 PL 68 PL 68	HMVC 68E HMVC 68E HMVC 68E
13 7/16 341,313	360 360 360	16,505 16,505 16,505	7,569 9,852 11,427	1,791 1,791 1,791	– – –	2,166 2,166 2,166	14,17 14,17 14,17	5 5 5	39 54,5 61,5	▶ SNP 3072x13.7/16 ▶ SNP 3172x13.7/16 ▶ SNP 3272x13.7/16	N 072 N 072 N 072	PL 72 PL 72 PL 72	HMVC 72E HMVC 72E HMVC 72E
13 15/16 354,013	360 360 380	16,505 17,755 17,755	7,569 11,867 7,733	1,791 1,916 1,916	– – –	2,166 2,353 2,353	14,17 14,921 14,921	5 5 5	39 66 43	SNP 3072x13.15/16 ▶ SNP 3276x13.15/16 ▶ SNP 3076x13.15/16	N 072 N 076 N 076	PL 72 PL 76 PL 76	HMVC 72E HMVC 76E HMVC 76E
	380	17,755	10,056	1,916	–	2,353	14,921	5	57	▶ SNP 3176x13.15/16	N 076	PL 76	HMVC 76E
14 355,6	360 380 380	17,755 17,755 17,755	11,867 7,733 10,056	1,916 1,916 1,916	– – –	2,353 2,353 2,353	14,921 14,921 14,921	5 5 5	66 43 57	▶ SNP 3276x14 ▶ SNP 3076x14 ▶ SNP 3176x14	N 076 N 076 N 076	PL 76 PL 76 PL 76	HMVC 76E HMVC 76E HMVC 76E
14 15/16 379,413	400	18,505	10,449	2,073	–	2,5	15,709	5	63,5	SNP 3180x14.15/16	N 080	PL 80	HMVC 80E
15 381	400 400 400	18,505 18,505 18,505	8,401 10,449 12,654	2,073 2,073 2,073	– – –	2,5 2,5 2,5	15,709 15,709 15,709	5 5 5	45,5 63,5 75	▶ SNP 3080x15 ▶ SNP 3180x15 ▶ SNP 3280x15	N 080 N 080 N 080	PL 80 PL 80 PL 80	HMVC 80E HMVC 80E HMVC 80E
15 3/4 400,05	420 420 420	19,318 19,318 19,318	8,488 11,402 13,292	2,073 2,073 2,073	– – –	2,5 2,5 2,5	16,496 16,496 16,496	5 5 5	47,5 66 75	▶ SNP 3084x15.3/4 ▶ SNP 3184x15.3/4 ▶ SNP 3284x15.3/4	N 084 N 084 N 084	PL 84 PL 84 PL 84	HMVC 84E HMVC 84E HMVC 84E
16 1/2 419,1	440 440 440	20,505 20,505 20,505	9,1 11,817 13,943	2,385 2,385 2,385	– – –	2,906 2,906 2,906	17,283 17,283 17,283	5 5 5	59,5 68,5 86,5	▶ SNP 3088x16.1/2 ▶ SNP 3188x16.1/2 ▶ SNP 3288x16.1/2	N 088 N 088 N 088	PL 88 PL 88 PL 88	HMVC 88E HMVC 88E HMVC 88E

▶ Popular item

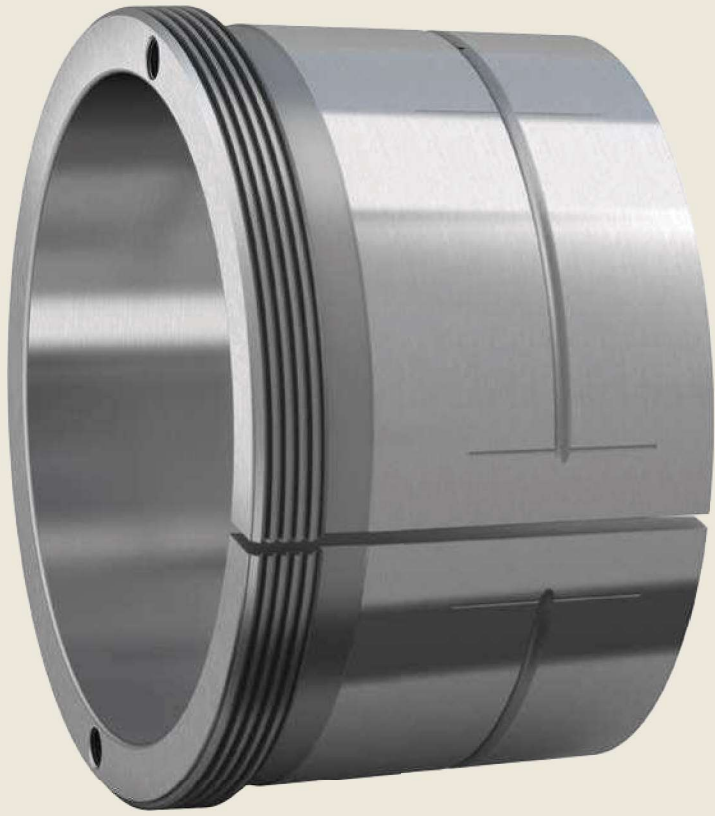


23.2 Adapter sleeves with inch dimensions

d_1 17 – 19 1/2 in.
431,8 – 495,3 mm

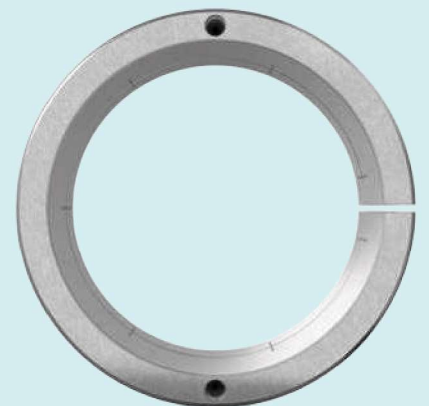


Principal dimensions							Thread	Mass	Designations	Included products	Associated hydraulic nut		
d_1	d	d_3 max.	B_1	B	B_4	B_5	G	Threads per inch	Adapter sleeve assembly			lock nut	locking device
in./mm	mm	in.					in.	–	kg	–			
17 431,8	460	21,255	9,336	2,385	–	2,906	18,071	5	71,5	▶ SNP 3092x17	N 092	PL 92	HMVC 92E
	460	21,255	12,368	2,385	–	2,906	18,071	5	95	▶ SNP 3192x17	N 092	PL 92	HMVC 92E
18 457,2	480	22,068	12,714	2,385	–	2,937	18,858	5	75	▶ SNP 3096x18	N 096	PL 96	HMVC 96E
	480	22,068	12,714	2,385	–	2,937	18,858	5	91,5	▶ SNP 3196x18	N 096	PL 96	HMVC 96E
18 1/2 469,9	500	22,818	9,838	2,703	–	3,25	19,646	5	91	▶ SNP 30/500x18.1/2	N 500	PL 500	HMVC 100E
19 1/2 495,3	530	24,818	10,579	2,703	–	3,25	20,827	4	120	▶ SNP 30/530x19.1/2	N 530	PL 530	HMVC 106E



24

Withdrawal
sleeves



24 Withdrawal sleeves

Withdrawal sleeves are slit tapered sleeves (**fig. 1**), which can be used to mount bearings with a tapered bore onto a cylindrical seat of stepped shafts (**fig. 2**). The sleeves are pressed into the bore of the bearing inner ring, which abuts a shaft shoulder or similar fixed component. They are located on the shaft by a nut or an end plate.

The standard assortment of SKF withdrawal sleeves is available online at skf.com/go/17000-24-1 and comprises:

- basic design sleeves (**fig. 1**)
- sleeves for oil injection (**fig. 3**)
- sleeves for shaft diameters up to 1 000 mm

Withdrawal sleeves are not listed in this catalogue. Comprehensive information about SKF withdrawal sleeves is available online at skf.com/go/17000-24.

Fig. 1

Withdrawal sleeve, basic design

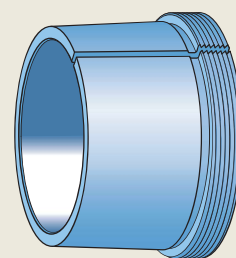


Fig. 2

Withdrawal sleeve on a stepped shaft

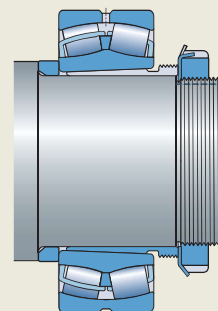
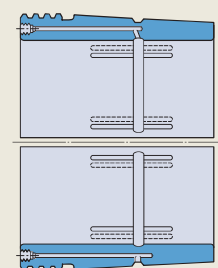
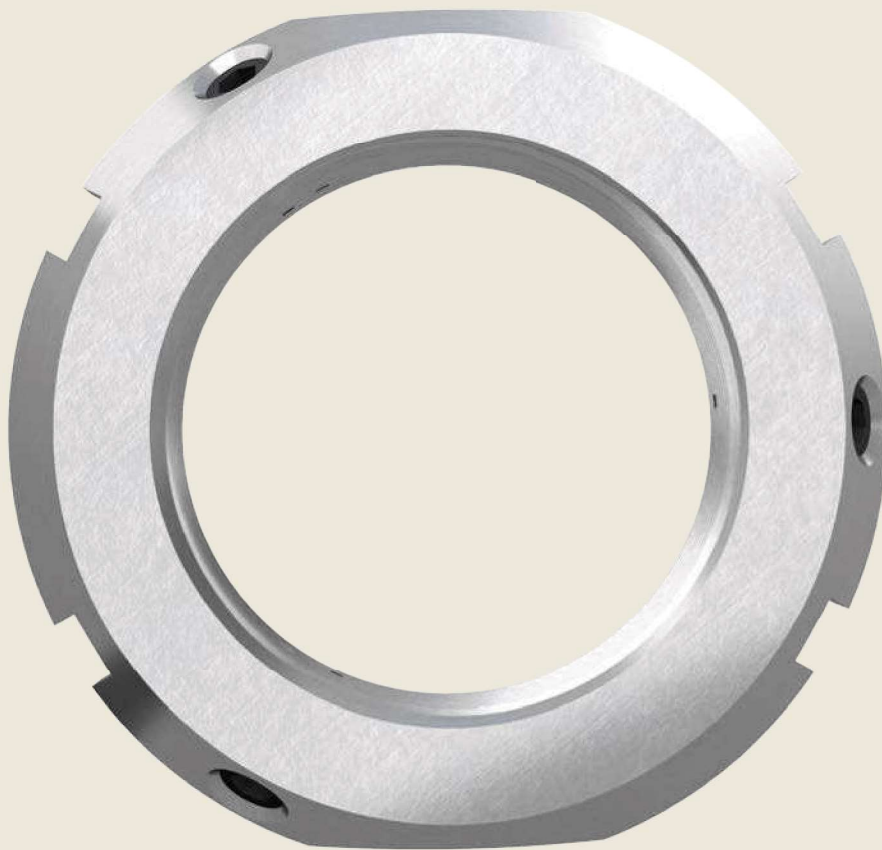


Fig. 3

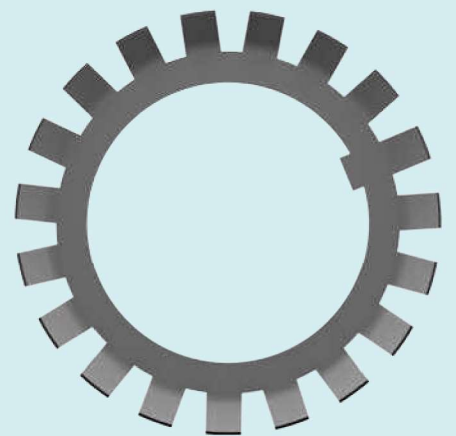
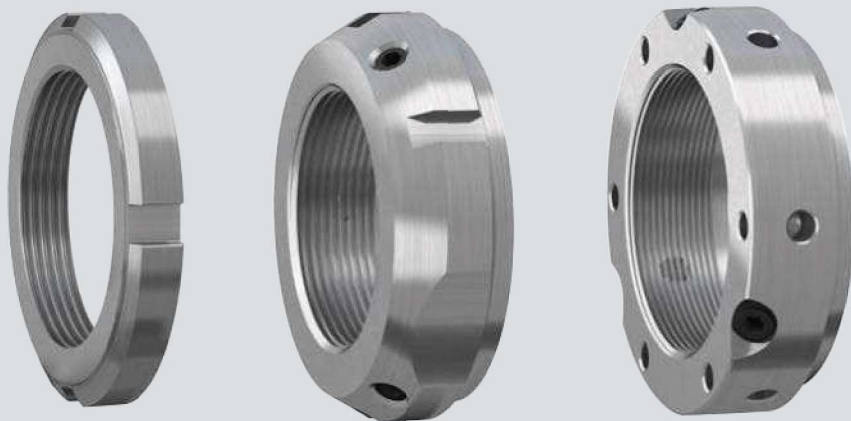
Withdrawal sleeve for oil injection





25

Lock nuts



25 Lock nuts

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25 Lock nuts

Lock nuts are used to locate bearings onto a shaft. Additionally, they can be used to mount bearings with a tapered bore onto tapered shaft seats and adapter sleeves, and to dismount bearings from withdrawal sleeves. Lock nuts are also frequently used to secure gears, belt pulleys and other machine components.

Lock nuts have to be secured to prevent unintentional loosening by:

- a locking device that engages a keyway in the shaft or key slot in the adapter sleeve, or
- a locking mechanism integrated in the nut

When choosing or replacing a lock nut, there are a number of factors that should be taken into consideration. They include, but are not limited to:

- Space – axial and radial
- Shaft rotation – one or both directions
- Axial loads
- Dynamic behaviour of the application
- Cost and downtime of machining keyways in shafts vs. other locking methods
- Ease and frequency of assembly and disassembly
- Precision

Designs and variants

SKF lock nuts provide a variety of ways to secure the nut onto a shaft. The lock nuts listed here constitute the basic SKF assortment. Lock nuts with other locking methods can be supplied on request. For additional information, contact SKF.

The following tables provide an overview over the basic SKF assortment:

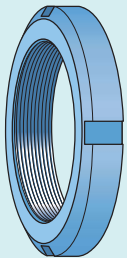
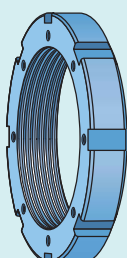
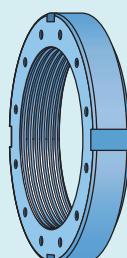
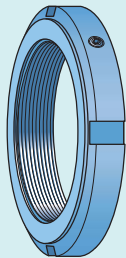
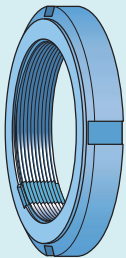
- [table 1](#) for SKF industrial lock nuts
- [table 2, page 1092](#) for SKF precision lock nuts

Lock nuts with integral locking reduce the cost of the shaft as no keyway is required. Installation is quicker and easier because no separate locking device is necessary. However, the loosening torque of these lock nuts requires more attention. For information on loosening torque, refer to *Product data*, [page 1098](#).



Table 1

SKF industrial lock nuts

				
KM, KML, HM .. T, AN and N Lock nuts with a lock washer	HM and HME Lock nuts with a locking clip	N Lock nuts with a locking plate	KMFE Lock nuts with an integral locking screw	KMK Lock nuts with an integral locking device
KM and KML: thread 10 to 200 mm (sizes 0 to 40) HM .. T: thread 210 to 280 mm (sizes 42 to 56) AN and N: thread 0.391 to 8.628 in. (sizes: N 00 to N 14, AN 15 to AN 40 and N 022 to N 044) These lock nuts are not listed in this catalogue, but can be found online at skf.com/go/17000-25-8 .	thread 220 to 1 120 mm (sizes 44 to /1120) HME design lock nuts are not listed in this catalogue, but can be found online at skf.com/go/17000-25-3 .	thread 9.442 to 37.410 in. (sizes 056 to 950) These lock nuts are not listed in this catalogue, but can be found online at skf.com/go/17000-25-8 .	thread 20 to 200 mm (sizes 4 to 40)	thread 10 to 100 mm (sizes 0 to 20) These lock nuts are not listed in this catalogue, but can be found online at skf.com/go/17000-25-5 .
A simple, stable and reliable fastening element	A simple, stable and reliable fastening element	A simple, stable and reliable fastening element	Fastened with an integral locking screw and front face adapted for use with certain CARB and sealed bearings	Fastened with a threaded steel insert and a grub screw
Reusable with new locking device	Reusable with new locking device	Reusable with new locking device	Reusable	Reusable
Simple to install and remove	Simple to install and remove	Simple to install and remove	Simple to install and robust locking	Simple to install
Keyway in shaft thread required for lock washer	Keyway in shaft thread required for locking clip	Keyway in shaft thread required for locking plate	For shaft threads without keyways	For shaft threads without keyways

Locking principle

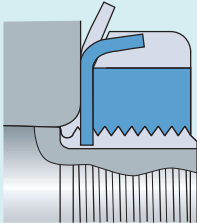
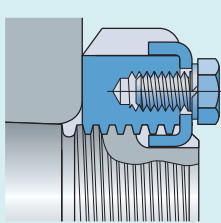
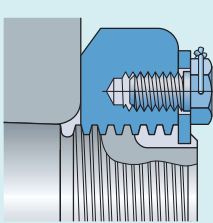
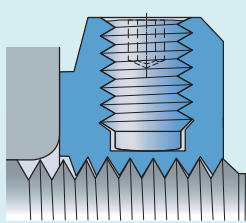
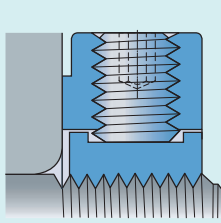
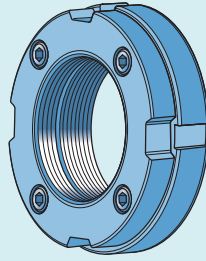
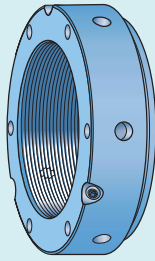
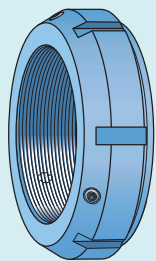
				
Locks with a separate lock washer engaged in a key- way in the shaft thread and having a tab that is bent over into one of the slots in the nut	Locks with a separate lock- ing clip that is attached to the nut and engages with a keyway in the shaft thread and one of the slots in the nut	Locks with a locking plate that engages with a keyway in the shaft thread and is secured to the nut by two screws and locking wire	Locks by tightening the grub screw to press the lock nut thread against the shaft thread	Locks by tightening the grub screws to press a threaded steel insert in the lock nut against the shaft thread

Table 2

SKF precision lock nuts



KMT

Precision lock nuts with locking pins

KMTA

KMD

Precision lock nuts with axial locking screws

thread 10 to 200 mm
(sizes 0 to 40)
Larger sizes on request

thread 25 to 200 mm
(sizes 5 to 40)

thread 20 to 105 mm (sizes 4 to 21)
These lock nuts are not listed in this catalogue, but can be found online at skf.com/go/17000-25-6.

Maximum axial run-out between the locating face and thread:
0,005 mm

Maximum axial run-out between the locating face and thread: 0,005 mm

Can be adjusted to compensate for slight angular deviations

Effective axial locking, simple to position

Reusable

Reusable

Simple to install and remove

Simple to install and remove

For shaft threads without keyways

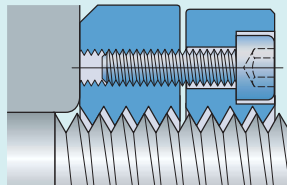
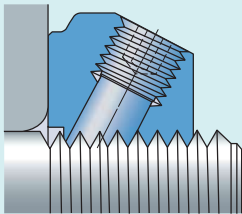
For shaft threads without keyways

Designed for frequent installation and removal

Designed for frequent installation and removal

High axial load capacity

Locking principle



Locks to the shaft thread by friction generated by tightening three radial locking pins with grub screws against its unloaded flanks

Locks to the shaft thread by friction generated by tightening four axial screws that press the rear part of the nut against the unloaded thread flanks

Lock nuts requiring a keyway

KM, KML and HM .. T metric lock nuts

KM and KML lock nuts (fig. 1):

- have metric threads
- are designed to be used with lock washers
- have four equally-spaced slots located around their circumference to accommodate a hook or impact spanner (fig. 2)
- are also referred to as shaft or withdrawal nuts
- are available for thread M 10x0,75 to M 200x3 (sizes 0 to 40)
- can be locked with either the MB lock washer (fig. 3) or with a stronger, MB .. A lock washer

KML lock nuts have a lower cross-sectional height than KM lock nuts.

HM .. T lock nuts (fig. 1):

- have metric trapezoidal threads
 - are also referred to as removal nuts
 - are available for thread Tr 210x4 to Tr 280x4 (sizes 42 to 56)
- For some sizes, no lock washer is available because these nuts are intended to dismount bearings with a tapered bore from a withdrawal sleeve.

KM, KML and HM...T lock nuts can be reused, provided they are not damaged. A new lock washer should be used each time the corresponding lock nut is installed.

Features and benefits

- Simple, stable and reliable fastening
- Wide range of sizes
- Easy to install and remove
- Thread diameters ranging from 10 to 280 mm

N and AN inch lock nuts

N and AN inch lock nuts (fig. 1):

- using a W lock washer (fig. 3) are available up to and including size 44 (thread diameter 8.628 in.)
- using a locking plate (fig. 4) are low-profile-series lock nuts for nominal thread diameters ranging from 9.442 to 37.410 in. (sizes N 048 to N 950)
- have four, equally spaced slots around their circumference to accommodate a hook or impact spanner (fig. 2)
- are also referred to as shaft or withdrawal nuts
- N 00 to N 14, AN 15 to AN 40 and N 44 lock nuts are normal series lock nuts commonly used together with bearings in the 12, 13, 222, 223 and 232 series up to size 23244, mounted directly to the shaft or via an adapter sleeve.
- N 022 to N 044 lock nuts are low-profile-series lock nuts commonly used together with bearings in the 230 series. They can also be used to secure other bearing types and other machine components.
- N lock nuts with a locking plate are commonly used with bearings in the 230, 231 and 232 series (sizes ≥ 48), but can also be used to retain any suitable bearing or other machine component.

N and AN lock nuts can be reused, provided they are not damaged. A new lock washer or locking plate should be used each time the corresponding lock nut is installed.

Features and benefits

- Simple, stable and reliable fastening element
- Wide range of sizes
- Easy to install and remove
- Lock washers available for thread 0.391 to 8.628 in. (sizes 00 to 44)
- Locking plates available for thread 9.442 to 18.894 in. (sizes 048 to 096) and for thread 19.682 to 37.410 in. (sizes 500 to 950)

These lock nuts are not listed in this catalogue, but can be found online at skf.com/go/17000-25-8.

Fig. 1

KM, KML, HM .. T, AN and N (size ≤ 44) lock nut

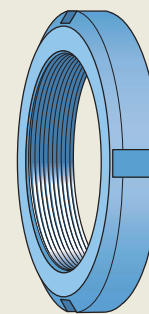


Fig. 2

KM, KML, HM .. T, AN and N (size ≤ 44) lock nut

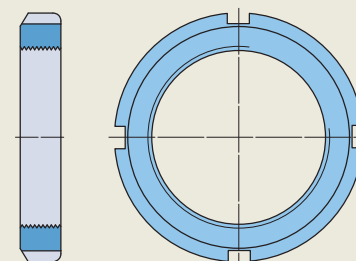


Fig. 3

MB or W lock washer

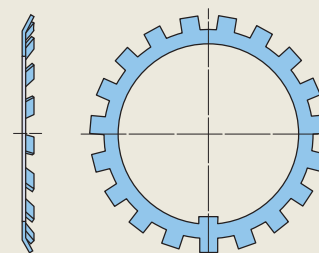
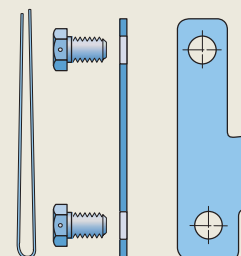


Fig. 4

PL locking plate



HM and HME metric lock nuts

HM and HME lock nuts (fig. 5):

- have metric trapezoidal threads
- have eight equally-spaced slots located around their circumference to accommodate an impact spanner (fig. 6)
- are located on the shaft by MS locking clips (fig. 7)

When compared to HM lock nuts, HME lock nuts have a recessed side face to accommodate axial displacement of CARB toroidal roller bearings (fig. 8).

HM and HME lock nuts can be reused, provided they are not damaged. A new locking clip should be used each time the corresponding lock nut is reinstalled.

Features and benefits

- Simple, stable and reliable fastening element
- Wide range of sizes
- Easy to install and remove
- Available for thread Tr 220x4 to Tr 1120x8 (sizes 44 to /1120)

The locking principles

Lock washers, locking clips and locking plates are simple, stable and reliable fastening elements.

- Lock washers (fig. 3, page 1093) engage a keyway in a shaft, or adapter sleeve thread. The washer locks the nut in position when one of the washer tabs is bent into one of the slots on the nut's outside diameter (fig. 9).
- Locking plates (fig. 4, page 1093) engage a keyway in a shaft or adapter sleeve and are attached to the side face of the nut by two bolts secured with locking wire. A locking plate consists of a plate, two hexagonal head bolts with drilled heads and lock wire to secure them (fig. 10).
- Locking clips (fig. 7) engage a keyway in a shaft or adapter sleeve and one of the slots in the outside diameter of the lock nut. Locking clips are attached to the nut by a bolt (fig. 11).

Fig. 8

HME lock nut, with recessed side face

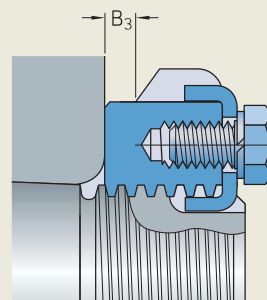


Fig. 5

HM and HME lock nut

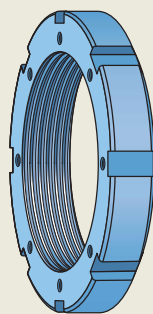


Fig. 9

Locking with a washer

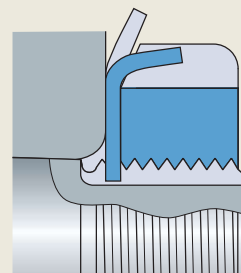


Fig. 6

HM and HME lock nut

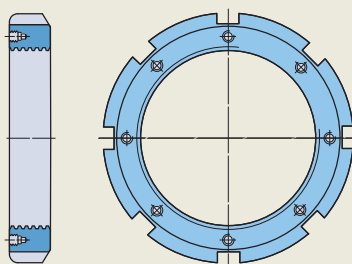


Fig. 10

Locking with a plate

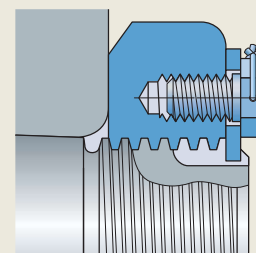


Fig. 7

MS locking clip

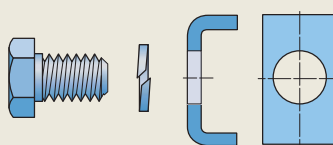
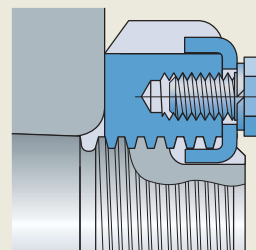


Fig. 11

Locking with a clip



Lock nuts with integral locking

Lock nuts with integral locking reduce the cost of the shaft as no keyway is required. Installation is quicker and easier because no separate locking device is necessary.

KMFE lock nuts

KMFE lock nuts (fig. 12):

- are designed to locate CARB toroidal roller bearings, sealed spherical roller bearings and sealed self-aligning ball bearings axially on a shaft
- have appropriate contact faces for the intended bearings
- are available for thread M 20x1 to M 200x3 (sizes 4 to 40)

KMFE lock nuts should not be used on shafts with a keyway. They should only be used with special adapter sleeves with a narrow slot. Damage to the nut can result if the grub screw aligns with a keyway or wide slot. KMFE lock nuts can be reused, provided they are not damaged.

Features and benefits

- Maximum axial run-out between the locating face and thread: 0,02 to 0,03 mm
- No keyway required
- Simple to install
- Simple and robust locking
- Reusable
- Appropriate contact faces for intended bearings
- Equipped with visual marks for the use of tightening angles

KMK lock nuts

KMK lock nuts (fig. 13):

- are intended to locate radial bearings in less demanding applications
- are available for thread M 10x0,75 to M 100x2 (sizes 0 to 20)

KMK lock nuts should not be used on shafts with keyways or adapter sleeves with key slots. Damage to the locking device can result if it aligns with a keyway or slot. KMK lock nuts can be reused, provided they are not damaged.

These lock nuts are not listed in this catalogue, but can be found online at skf.com/go/17000-25-5.

The locking principle

Lock nuts with integral locking are locked by friction. The friction is sufficient to lock the nut in place.

KMFE lock nuts have an integral grub (set) screw, to lock the nut in place. When the grub screw is tightened, it causes the nut thread to deform and press against the shaft or sleeve thread (fig. 14).

KMK have a threaded steel insert in their bore. The threads on the insert match the lock nut threads. The insert acts as a pressure plate when a grub screw, which runs through the body of the lock nut, is tightened (fig. 15).

Fig. 12

KMFE lock nut

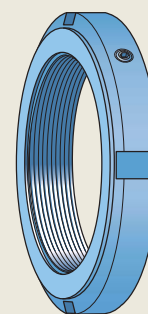


Fig. 13

KMK lock nut

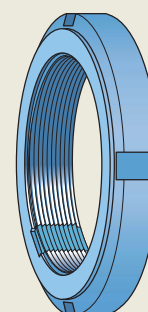


Fig. 14

Locking with a locking screw – KMFE

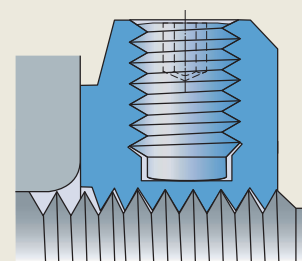
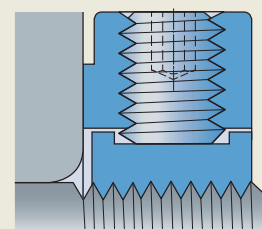


Fig. 15

Locking with an integral locking device – KMK



Precision lock nuts with locking pins

KMT and KMTA lock nuts are intended for applications where high precision, simple assembly and reliable locking are required¹⁾. The three equally-spaced locking pins enable these lock nuts to be accurately positioned at right angles to the shaft. However, they can also be adjusted to compensate for slight angular deviations of adjacent components.

KMT lock nuts (fig. 16):

- are available for thread M 10x0,75 to M 200x3 (sizes 0 to 40)
- are available on request for thread Tr 220x4 to Tr 420x5 (sizes 44 to 84)

KMTA lock nuts (fig. 17):

- are available for thread M 25x1,5 to M 200x3 (sizes 5 to 40)
- have a cylindrical outside surface and, for some sizes, a different thread pitch than KMT lock nuts
- are intended primarily for applications where space is limited and the cylindrical outside surface can be used as an element of a gap-type seal

Features and benefits

- Maximum axial run-out between the locating face and thread (sizes ≤ 40): 0,005 mm
- Adjustable to compensate for slight angular deviations (fig. 18)
- Fine thread pitch
- Withstands high axial loads
- Reliable, effective locking mechanism
- Simple installation and removal
- No keyway required¹⁾
- Reusable
- Designed for frequent installation and removal

¹⁾ KMT and KMTA lock nuts should not be used on shafts with keyways in the thread or adapter sleeves. Damage to the locking pins can result if they align with either.

Fig. 16

KMT precision lock nut

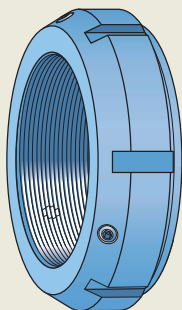


Fig. 17

KMTA precision lock nut

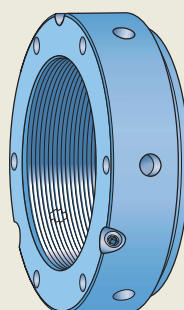
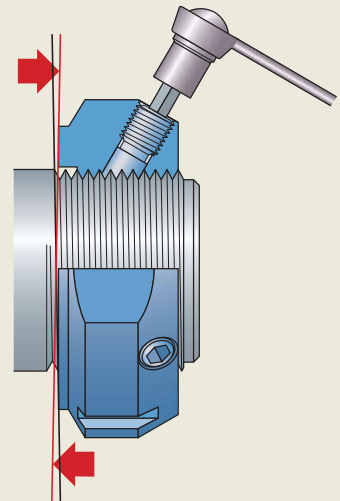


Fig. 18

Adjustable to minimise axial run-out



The locking principle

KMT and KMTA series precision lock nuts have three locking pins equally spaced around their circumference (fig. 19 to fig. 21) that can be tightened with grub screws to lock the nut onto the shaft. The end face of each pin is machined to match the shaft thread. The holes for the locking pins and grub screws are drilled with their axis parallel to the loaded flanks of the shaft thread (fig. 22). The locking screws, when tightened to the recommended torque, provide sufficient friction between the ends of the pins and the unloaded thread flanks to prevent the nut from loosening under normal operating conditions (*Loosening torque*, page 1098). Because the locking pins are tightened against the unloaded flanks of the shaft thread, they are not subjected to any application loads imposed on the nut.

Precision lock nuts with axial locking screws

KMD lock nuts (fig. 23) were designed specifically for screw compressors but can be used in other applications where high precision, simple assembly and reliable locking are required. Once the four locking screws are tightened, the lock nut will be accurately positioned at right angles to the shaft thread. The locking screws, when tightened to the recommended tightening torque, preload the lock nut and shaft threads and generate sufficient friction to prevent the nut from loosening under normal operating conditions. The locking screws do not carry any part of the supported load in service.

KMD lock nuts are available for thread M 20x1 to M 105x2 (sizes 4 to 21).

Features and benefits

- Maximum axial run-out between the locating face and thread: 0,005 mm
- Adjustable for precise axial positioning
- Effective locking prevents the nut from loosening under normal operating conditions
- Simple installation and removal
- No keyway required
- Reusable
- Designed for frequent installation and removal

These lock nuts are not listed in this catalogue, but can be found online at skf.com/go/17000-25-6.

The locking principle

KMD lock nuts are locked with axial locking screws (fig. 24). The front of the lock nut locates the component on the shaft. The rear is tightened against the unloaded flanks of the shaft thread by axial locking screws, creating sufficient friction to prevent the lock nut from loosening under normal operating conditions.

Fig. 19

KMT lock nut with two opposed flats

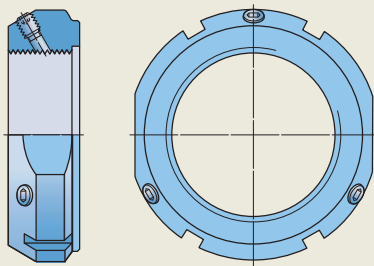


Fig. 21

KMTA lock nuts with holes around their circumference and in one side face

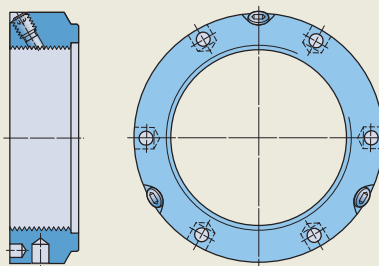


Fig. 23

KMD precision lock nut

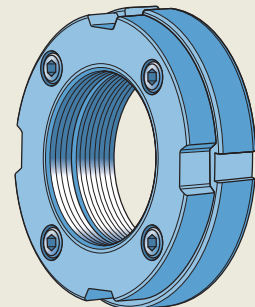


Fig. 20

KMT lock nut with six slots and no flats

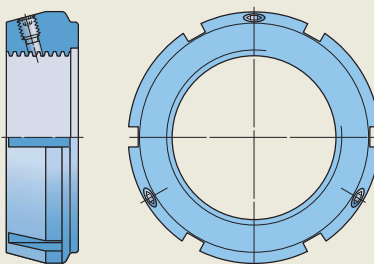


Fig. 22

Locking with locking pins

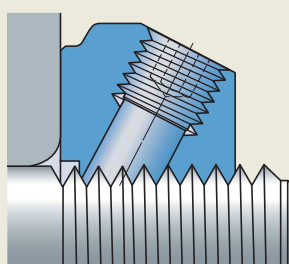
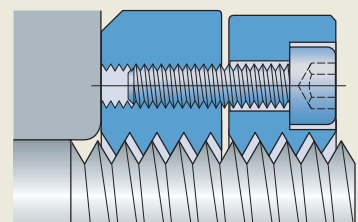


Fig. 24

Locking with axial locking screws



Product data

	Lock nuts requiring a keyway KM, KML, HM .. T, HM and HME	Lock nuts with integral locking KMFE and KMK
Dimension standards	ISO 2982-2	ISO 2982-2, except for the lock nut width and the outside diameter of the clamp face Grub screws: • KMFE → ISO 4028, material class 45H • KMK → ISO 4026, material class 45H
Tolerances	KM and KML Metric thread, 5H: ISO 965-3 Maximum axial run-out locating face/thread: 0,02 to 0,06 mm, depending on the lock nut size Mounting slots according to DIN 981 HM, HME and HM .. T Metric trapezoidal thread, 7H: ISO 2903 Maximum axial run-out locating face/thread: 0,06 to 0,16 mm, depending on the lock nut size	Metric thread, 5H: ISO 965-3
Mating shaft threads (recommendation)	KM and KML Metric thread, 6g: ISO 965-3 HM, HME and HM .. T Metric trapezoidal thread, 7e: ISO 2903	Metric thread, 6g: ISO 965-3
Loosening torque	–	KMFE and KMK lock nuts are locked on the shaft (sleeve) by friction. The friction, and therefore the loosening torque, varies as a result of the accuracy of the tightening torque of the grub (set) screw, the surface finish of the shaft (sleeve) thread, the amount of lubricant on the thread, etc. The lock nuts should be properly mounted to threads that are dry or only have a minimum amount of lubricant on them. KMFE and KMK lock nuts provide sufficient locking for intended bearing applications.



Precision lock nuts with locking pins

KMT and KMTA

Metric thread: ISO 965-3

Metric thread, 5H: ISO 965-3

Maximum axial run-out locating face/thread (sizes ≤ 40): 0,005 mm

Metric thread, 6g: ISO 965-3

Trapezoidal thread, 7e: ISO 2903

KMT and KMTA lock nuts are locked on the shaft (sleeve) by friction. The friction, and therefore the loosening torque, varies as a result of the accuracy of the tightening torque of the grub screw, the surface finish of the shaft thread, the amount of lubricant on the thread, etc. KMT and KMTA lock nuts should be properly mounted to threads that are dry or only have a minimum amount of lubricant on them.

Providing that they are properly mounted to a dry or minimally lubricated thread, experience has shown that SKF KMT and KMTA lock nuts have sufficient locking for typical super-precision and general rolling bearing applications.



Installation and removal

Lock nuts requiring a keyway

Lock nuts requiring a keyway are easy to install. Each nut is provided with four equally-spaced slots around their circumference to accommodate a hook or impact spanner. The designations of the associated spanners are listed in the relevant product tables.

Lock nuts requiring a keyway can be reused, provided they are not damaged. A new lock washer, locking clip or locking plate should be used each time the corresponding lock nut is reinstalled.

Using lock nuts with lock washer to lock a bearing

Mounting bearings and components on a cylindrical shaft

- 1 Put the bearing in place onto the cylindrical shaft.
- 2 Go ahead with step 5 below *Locking the bearing*.

Mounting bearings on an adapter sleeve or tapered seat

- 1 Slide the bearing onto the adapter sleeve or tapered seat.
- 2 With the chamfer facing the bearing, screw the nut (without the lock washer) onto the adapter sleeve or shaft thread (fig. 25).
- 3 Tighten the nut with a hook or impact spanner until the correct clearance in the bearing is obtained (fig. 26).
- 4 Remove the nut. Go to step 5.

Locking the bearing

- 5 Slide the lock washer onto the thread until it touches the bearing. With the chamfer facing the bearing, screw the lock nut into place (fig. 27).
- 6 Tighten the nut firmly against the lock washer and bearing with a hook or impact spanner, making sure to not over tighten the nut. For bearings on adapter sleeves or tapered shafts, make sure that the bearing is not driven up any further on its seat.
- 7 Lock the nut in place by bending one of the lock washer tabs down into one of the slots on the nut (fig. 28). Do not bend the tab to the bottom of the slot.

Using lock nuts with locking clips to lock a bearing

- 1 With the bearing or component in position, screw the lock nut into place.
- 2 Tighten the nut against the bearing or component with an impact spanner (fig. 29), aligning one of the slots in its outside diameter with the keyway in the shaft thread and making sure to not over tighten it.
- 3 Place the spring washer and locking clip onto the attachment bolt.
- 4 Position the locking clip in the keyway in the shaft thread, and the slot in the nut outside diameter, and secure with the attachment bolt and spring washer. Align the bolt with one of the threaded holes on the side face of the lock nut.
- 5 Tighten the bolt with an appropriate wrench (fig. 30).

Fig. 25

Screw the nut, without the lock washer, onto the adapter sleeve or shaft thread

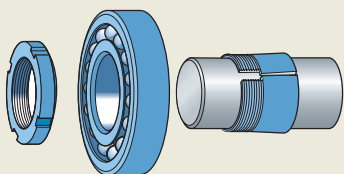


Fig. 26

Tighten the nut with a hook or impact spanner

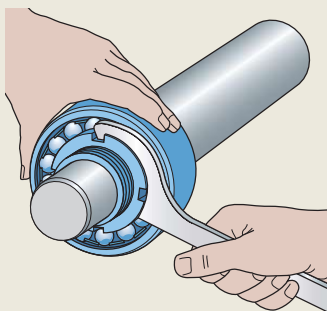
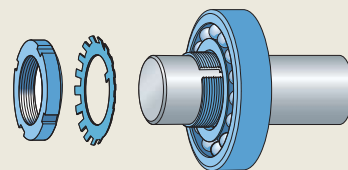


Fig. 27

Slide the lock washer onto the the thread and screw the lock nut into place



Lock nuts with integral locking

Lock nuts with integral locking are easy to install. Each nut is provided with four equally spaced slots around its circumference to accommodate a hook spanner. The designations of the associated spanners are listed in the [product table, page 1112](#).

Lock nuts with integral locking can be reused, provided they are not damaged.

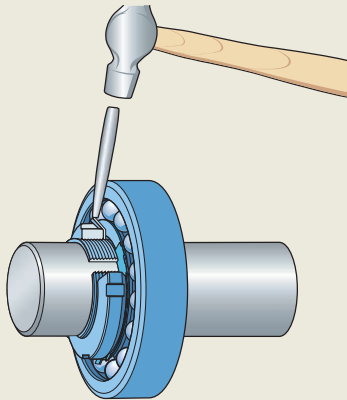
Mounting

Mounting bearings on a tapered seat or special adapter sleeve

- 1 Slide the bearing onto its tapered seat.
- 2 With the contact face toward the bearing, screw the nut onto the shaft.
- 3 Tighten the nut with a hook or impact spanner, until the required internal clearance in the bearing is obtained.
- 4 Tighten the grub (set) screw to the torque value listed in the [product table](#).

Fig. 28

Lock the nut in place by bending one of the lock washer tabs down into one of the slots on the nut



Locking bearings on a cylindrical seat

- 1 With the bearing in position, screw the lock nut into place.
- 2 Tighten the nut against the bearing with a hook spanner, making sure to not over-tighten it.
- 3 Tighten the grub (set) screw to the torque value listed in the [product table](#).

Dismounting

- 1 To remove the lock nut, loosen the grub screw. Even when the grub screw is removed, the lock nut will generate a limited locking torque.
- 2 In order to completely release the locking system and facilitate the reuse of the lock nut, tap the areas near the grub screw with a hammer and soft bar. Do not damage the threaded bores for the grub screw.
- 3 Unscrew the lock nut using a hook spanner.

Fig. 29

Tighten the nut against the bearing or component with an impact spanner

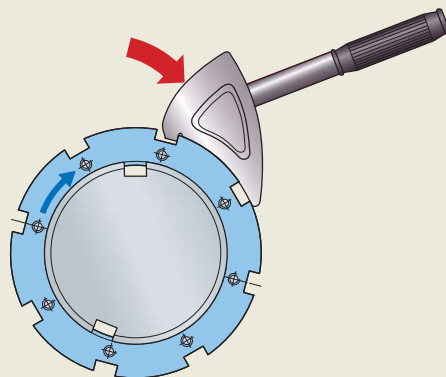
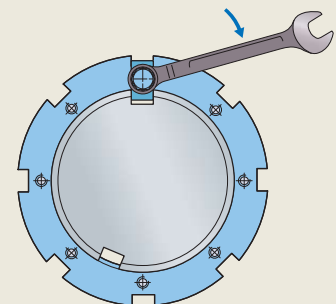


Fig. 30

Tighten the bolt with an appropriate wrench



Precision lock nuts with locking pins

KMT precision lock nuts have slots around their circumference to accommodate a hook or impact spanner (fig. 19, page 1097, and fig. 20, page 1097). The designations of the associated spanners are listed in the [product table, page 1114](#). KMT precision lock nuts with a thread ≤ 75 mm (sizes ≤ 15) have additionally to the slots two opposed flats to accommodate a spanner. Those lock nuts with a thread ≥ 80 mm (sizes ≥ 16) have six slots and no flats.

KMTA precision lock nuts have holes around their circumference and in one side face (fig. 21, page 1097). They can be tightened with a pin wrench or a pin-type face spanner. Associated spanners in accordance with DIN 1810 are listed in the [product table, page 1116](#).

Precision lock nuts with locking pins are designed for frequent installation and removal, provided they are not damaged.

Installation

- 1 With the bearing in position, screw the lock nut into place.
- 2 Tighten the nut with a hook or impact spanner making sure not to over tighten it.
- 3 Tighten the grub screws carefully until the locking pins engage the shaft thread.
- 4 Tighten the grub screws alternately with a torque wrench until the recommended torque value, listed in the product tables, is achieved.

Precision lock nuts with locking pins should not be used to drive a bearing up onto a tapered seat.

Adjustment

Precision lock nuts with locking pins are adjustable. The three equally-spaced locking pins enable these lock nuts to be accurately positioned at right angles to the shaft. However, they can also be adjusted to compensate for slight angular deviations of adjacent components.

Adjustments can be made using the following procedure (fig. 31 and fig. 32):

- 1 Loosen the grub screw(s) at the position showing the greatest deviation.
- 2 Tighten the remaining screw(s) equally.
- 3 Retighten the screw(s) that were loosened.
- 4 Check that the alignment of the nut, relative to the shaft, is currently as required.
- 5 Repeat the procedure if necessary.

Removal

When removing precision lock nuts with locking pins, the locking pins can still engage the shaft thread even after the grub screws have been loosened. Using a rubber hammer, tap the nut lightly in the vicinity of the pins to loosen them.

Fig. 31

Example 1: Adjustment procedure for KMT and KMTA lock nuts

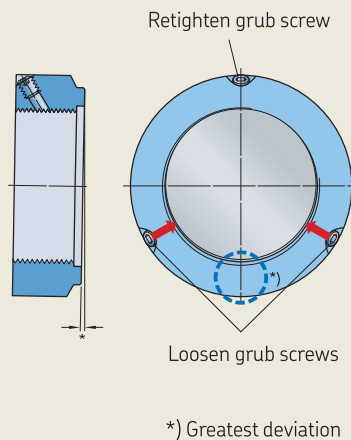
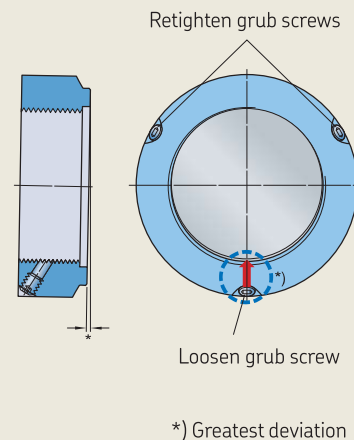


Fig. 32

Example 2: Adjustment procedure for KMT and KMTA lock nuts



Designation system

Product type

AN	Lock nut, dimensions in accordance with ANSI standard, normal series
HM	Lock nut with a trapezoidal thread
HME	HM lock nut with a recessed outside diameter
HML	HM lock nut, light series
HMLL	HML lock nut with a lower cross-sectional height
KM	Lock nut dimensions in accordance with ISO standard
KMD	Two-part precision lock nut with axial locking screws
KMFE	Lock nut with an integral locking screw, contact face designed for CARB toroidal roller bearings, sealed spherical roller bearings and sealed self-aligning ball bearings
KMK	Lock nut with an integral locking device
KML	Lock nut with a lower cross-sectional height
KMT	Precision lock nut with locking pins
KMTA	Precision lock nut with locking pins and with cylindrical outside surface (some with different thread pitch to KMT nuts)
N	Lock nut, dimensions in accordance with ANSI standard N lock nuts are available in two series; N 00 normal series and N 000 low profile series
MB	Lock washer, dimensions in accordance with ISO standard for a KM lock nut
MBL	Lock washer, dimensions in accordance with ISO standard for a KML lock nut
MS	Locking clip, dimensions in accordance with ISO standard for an HM or HME lock nut
PL	Locking plate, dimensions in accordance with ANSI standard
W	Lock washer, dimensions in accordance with ANSI standard W lock washers are available in two series; W 00 for lock nuts in normal series (AN and N) and W 000 for lock nuts in low profile series (N 0) without an axial tab

Size identification

for metric dimensions

0	10 mm thread diameter
1	12 mm thread diameter
2	15 mm thread diameter
3	17 mm thread diameter
4	(x5) 20 mm thread diameter
to	to
96	(x5) 480 mm thread diameter
/500 to	500 mm thread diameter
to	to
/1120	1 120 mm thread diameter

for inch dimensions

0	0.391 in. thread diameter
1	0.469 in. thread diameter
2	0.586 in. thread diameter
3	0.664 in. thread diameter
4	0.781 in. thread diameter
to	to
96	18.894 in. thread diameter
500	19.682 in. thread diameter
to	to
950	37.410 in. thread diameter

Suffixes

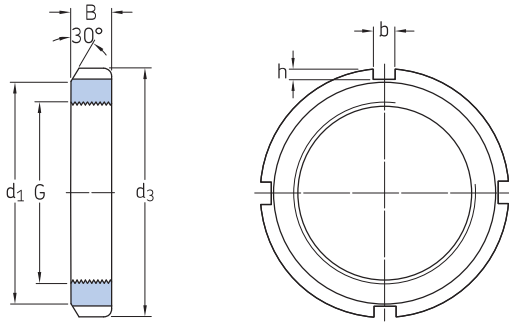
A	Increased plate thickness for MB lock washers
B	Whitworth thread
H	Bigger contact diameter
L	Smaller contact diameter
P	Sintered material
T	Trapezoidal thread



25.1 KM(L) and HM .. T lock nuts

M 10x0,75 – M 200x3

Tr 210x4 – Tr 280x4



Dimensions						Axial load carrying capacity static	Mass	Designations		
G	d ₁	d ₃	B	b	h			Lock nut	Associated lock washer	spanner
mm						kN	kg	–		
M 10x0,75	13,5	18	4	3	2	9,8	0,004	► KM 0	MB 0	HN 0
M 12x1	17	22	4	3	2	11,8	0,006	► KM 1	MB 1	HN 1
M 15x1	21	25	5	4	2	14,6	0,009	► KM 2	MB 2	HN 2-3
M 17x1	24	28	5	4	2	19,6	0,012	► KM 3	MB 3	HN 2-3
M 20x1	26	32	6	4	2	24	0,025	► KM 4	MB 4	HN 4
M 25x1,5	32	38	7	5	2	31,5	0,028	► KM 5	MB 5	HN 5-6
M 30x1,5	38	45	7	5	2	36,5	0,039	► KM 6	MB 6	HN 5-6
M 35x1,5	44	52	8	5	2	50	0,059	► KM 7	MB 7	HN 7
M 40x1,5	50	58	9	6	2,5	62	0,078	► KM 8	MB 8	HN 8-9
M 45x1,5	56	65	10	6	2,5	78	0,11	► KM 9	MB 9	HN 8-9
M 50x1,5	61	70	11	6	2,5	91,5	0,14	► KM 10	MB 10	HN 10-11
M 55x2	67	75	11	7	3	91,5	0,15	► KM 11	MB 11	HN 10-11
M 60x2	73	80	11	7	3	95	0,16	► KM 12	MB 12	HN 12-13
M 65x2	79	85	12	7	3	108	0,19	► KM 13	MB 13	HN 12-13
M 70x2	85	92	12	8	3,5	118	0,23	► KM 14	MB 14	HN 14
M 75x2	90	98	13	8	3,5	134	0,27	► KM 15	MB 15	HN 15
M 80x2	95	105	15	8	3,5	173	0,36	► KM 16	MB 16	HN 16
M 85x2	102	110	16	8	3,5	190	0,41	► KM 17	MB 17	HN 17
M 90x2	108	120	16	10	4	216	0,51	► KM 18	MB 18	HN 18-20
M 95x2	113	125	17	10	4	236	0,55	► KM 19	MB 19	HN 18-20
M 100x2	120	130	18	10	4	255	0,64	► KM 20	MB 20	HN 18-20
M 105x2	126	140	18	12	5	290	0,79	► KM 21	MB 21	HN 21-22
M 110x2	133	145	19	12	5	310	0,87	► KM 22	MB 22	HN 21-22

25.1



► Popular item

Dimensions						Axial load carrying capacity static	Mass	Designations		
G	d ₁	d ₃	B	b	h			Lock nut	Associated lock washer	spanner
mm						kN	kg	–		
M 115x2	137	150	19	12	5	315	0,91	► KM 23	MB 23	TMFN 23-30
M 120x2	135	145	20	12	5	265	0,69	► KML 24	MBL 24	HN 21-22
	138	155	20	12	5	340	0,97	► KM 24	MB 24	TMFN 23-30
M 125x2	148	160	21	12	5	360	1,1	► KM 25	MB 25	TMFN 23-30
M 130x2	145	155	21	12	5	285	0,8	► KML 26	MBL 26	TMFN 23-30
	149	165	21	12	5	365	1,1	► KM 26	MB 26	TMFN 23-30
M 135x2	160	175	22	14	6	430	1,4	► KM 27	MB 27	TMFN 23-30
M 140x2	155	165	22	12	5	305	0,92	► KML 28	MBL 28	TMFN 23-30
	160	180	22	14	6	430	1,4	► KM 28	MB 28	TMFN 23-30
M 145x2	171	190	24	14	6	520	1,8	► KM 29	MB 29	TMFN 23-30
M 150x2	170	180	24	14	5	390	1,25	► KML 30	MBL 30	TMFN 23-30
	171	195	24	14	6	530	1,9	► KM 30	MB 30	TMFN 23-30
M 155x3	182	200	25	16	7	540	2,1	► KM 31	MB 31	TMFN 30-40
M 160x3	180	190	25	14	5	405	1,4	► KML 32	MBL 32	TMFN 23-30
	182	210	25	16	7	585	2,3	► KM 32	MB 32	TMFN 30-40
M 165x3	193	210	26	16	7	570	2,3	► KM 33	MB 33	TMFN 30-40
M 170x3	190	200	26	16	5	430	1,55	► KML 34	MBL 34	TMFN 30-40
	193	220	26	16	7	620	2,35	► KM 34	MB 34	TMFN 30-40
M 180x3	200	210	27	16	5	450	1,8	► KML 36	MBL 36	TMFN 30-40
	203	230	27	18	8	670	2,8	► KM 36	MB 36	TMFN 30-40
M 190x3	210	220	28	16	5	475	1,85	► KML 38	MBL 38	TMFN 30-40
	214	240	28	18	8	695	3,05	► KM 38	MB 38	TMFN 30-40
M 200x3	222	240	29	18	8	625	2,6	► KML 40	MBL 40	TMFN 30-40
	226	250	29	18	8	735	3,35	► KM 40	MB 40	TMFN 30-40
Tr 210x4	238	270	30	20	10	Contact SKF	5,1	► HM 42 T	–1)	TMFN 40-52
Tr 220x4	250	280	32	20	10	Contact SKF	4,75	► HM 44 T	MB 44	TMFN 40-52
Tr 230x4	260	290	34	20	10	Contact SKF	5,45	HM 46 T	–1)	TMFN 40-52
Tr 240x4	270	300	34	20	10	Contact SKF	5,6	► HM 48 T	MB 48	TMFN 40-52
Tr 250x4	290	320	36	20	10	Contact SKF	7,45	HM 50 T	–1)	TMFN 40-52
Tr 260x4	300	330	36	24	12	Contact SKF	7,55	► HM 52 T	MB 52	TMFN 52-64
Tr 280x4	320	350	38	24	12	Contact SKF	8,65	► HM 56 T	MB 56	TMFN 52-64

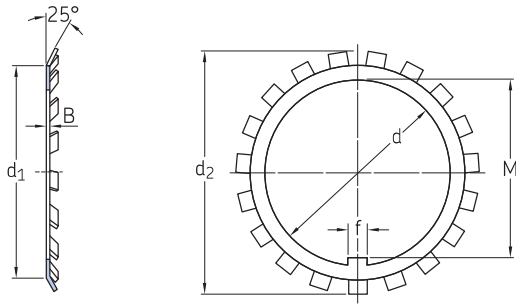
► Popular item

¹⁾ HM .. T nuts having no associated lock washer are intended only for removal purposes.



25.2 MB(L) lock washers

MB 0 – MB 56



Designation	Dimensions						Mass
	d	d ₁	d ₂	B	f	M	
–	mm						kg
► MB 0	10	13,5	21	1	3	8,5	0,001
► MB 1	12	17	25	1	3	10,5	0,002
MB 1 A		17	25	1,2	3	10,5	0,0025
► MB 2	15	21	28	1	4	13,5	0,003
MB 2 A		21	28	1,2	4	13,5	0,0035
► MB 3	17	24	32	1	4	15,5	0,003
MB 3 A		24	32	1,2	4	15,5	0,0035
► MB 4	20	26	36	1	4	18,5	0,004
MB 4 A		26	36	1,2	4	18,5	0,005
► MB 5	25	32	42	1,25	5	23	0,006
MB 5 A		32	42	1,8	5	23	0,0085
► MB 6	30	38	49	1,25	5	27,5	0,008
MB 6 A		38	49	1,8	5	27,5	0,011
► MB 7	35	44	57	1,25	6	32,5	0,011
MB 7 A		44	57	1,8	6	32,5	0,016
► MB 8	40	50	62	1,25	6	37,5	0,013
MB 8 A		50	62	1,8	6	37,5	0,018
► MB 9	45	56	69	1,25	6	42,5	0,015
MB 9 A		56	69	1,8	6	42,5	0,021
► MB 10	50	61	74	1,25	6	47,5	0,016
MB 10 A		61	74	1,8	6	47,5	0,023
► MB 11	55	67	81	1,5	8	52,5	0,022
MB 11 A		67	81	2,5	8	52,5	0,037
► MB 12	60	73	86	1,5	8	57,5	0,024
MB 12 A		73	86	2,5	8	57,5	0,04
► MB 13	65	79	92	1,5	8	62,5	0,03
MB 13 A		79	92	2,5	8	62,5	0,05
► MB 14	70	85	98	1,5	8	66,5	0,032
MB 14 A		85	98	2,5	8	66,5	0,053
► MB 15	75	90	104	1,5	8	71,5	0,035
MB 15 A		90	104	2,5	8	71,5	0,058

Designation	Dimensions						Mass
	d	d ₁	d ₂	B	f	M	
–	mm						kg
► MB 16	80	95	112	1,75	10	76,5	0,046
MB 16 A		95	112	2,5	10	76,5	0,066
► MB 17	85	102	119	1,75	10	81,5	0,053
MB 17 A		102	119	2,5	10	81,5	0,076
► MB 18	90	108	126	1,75	10	86,5	0,061
MB 18 A		108	126	2,5	10	86,5	0,087
► MB 19	95	113	133	1,75	10	91,5	0,066
MB 19 A		113	133	2,5	10	91,5	0,094
► MB 20	100	120	142	1,75	12	96,5	0,077
MB 20 A		120	142	2,5	12	96,5	0,11
► MB 21	105	126	145	1,75	12	100,5	0,083
► MB 22	110	133	154	1,75	12	105,5	0,091
► MB 23	115	137	159	2	12	110,5	0,11
► MBL 24	120	135	152	2	14	115	0,07
MB 24		138	164	2	14	115	0,11
► MB 25	125	148	170	2	14	120	0,12
MBL 26	130	145	161	2	14	125	0,08
MB 26		149	175	2	14	125	0,12
► MB 27	135	160	185	2	14	130	0,14
► MBL 28	140	155	172	2	16	135	0,09
MB 28		160	192	2	16	135	0,14
► MB 29	145	172	202	2	16	140	0,17
► MBL 30	150	170	189	2	16	145	0,1
MB 30		171	205	2	16	145	0,18
► MB 31	155	182	212	2,5	16	147,5	0,2
► MBL 32	160	180	199	2,5	18	154	0,14
MB 32		182	217	2,5	18	154	0,22
► MB 33	165	193	222	2,5	18	157,5	0,24

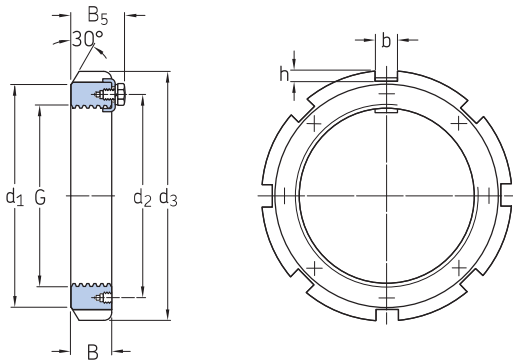


Designation	Dimensions						Mass
	d	d ₁	d ₂	B	f	M	
–	mm						kg
► MBL 34	170	190	211	2,5	18	164	0,15
► MB 34		193	232	2,5	18	164	0,24
► MBL 36	180	200	222	2,5	20	174	0,16
► MB 36		203	242	2,5	20	174	0,26
► MBL 38	190	210	232	2,5	20	184	0,17
► MB 38		214	252	2,5	20	184	0,26
► MBL 40	200	222	245	2,5	20	194	0,22
► MB 40		226	262	2,5	20	194	0,28
► MB 44	220	250	292	3	24	213	0,35
► MB 48	240	270	312	3	24	233	0,45
► MB 52	260	300	342	3	28	253	0,65
► MB 56	280	320	362	3	28	273	0,7



25.3 HM lock nuts

Tr 280x4 – Tr 1120x8



Dimensions								Mass	Designations	Associated		
G	d ₁	d ₂	d ₃	B	B ₅	b	h		Lock nut	locking clip	spanner	eye bolt
mm								kg	–			
Tr 280x4	310	293	330	38	50	24	10	5,75	► HM 3056	MS 3056	TMFN 52-64	–
Tr 300x4	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 320x5	356	336	380	42	55	24	12	9	► HM 3064	MS 3068-64	TMFN 52-64	–
	360	346	400	42	56	24	12	13	► HM 3164	MS 3164	TMFN 52-64	–
Tr 340x5	376	356	400	45	58	24	12	11	► HM 3068	MS 3068-64	TMFN 52-64	–
	400	373	440	55	72	28	15	24	► HM 3168	MS 3172-68	TMFN 64-80	M 10
Tr 360x5	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	M 10
Tr 380x5	422	399	450	48	62	28	14	15	► HM 3076	MS 3080-76	TMFN 64-80	–
	440	415	490	60	77	32	18	32	► HM 3176	MS 3176	TMFN 64-80	M 10
Tr 400x5	442	419	470	52	66	28	14	17	► HM 3080	MS 3080-76	TMFN 64-80	–
	460	440	520	62	82	32	18	38	► HM 3180	MS 3184-80	TMFN 64-80	M 10
Tr 420x5	462	439	490	52	66	32	14	18,5	► HM 3084	MS 3084	TMFN 64-80	–
	490	460	540	70	90	32	18	45	► HM 3184	MS 3184-80	TMFN 80-500	M 10
Tr 440x5	490	463	520	60	77	32	15	26	► HM 3088	MS 3092-88	TMFN 64-80	M 10
	510	478	560	70	90	36	20	46,5	► HM 3188	MS 3192-88	TMFN 80-500	M 10
Tr 460x5	510	483	540	60	77	32	15	27	► HM 3092	MS 3092-88	TMFN 80-500	M 10
	540	498	580	75	95	36	20	50,5	HM 3192	MS 3192-88	TMFN 80-500	M 10
Tr 480x5	560	528	620	75	95	36	20	62	HM 3196	MS 3196	TMFN 80-500	M 10
Tr 500x5	550	523	580	68	85	36	15	33,5	► HM 30/500	MS 30/500-96	TMFN 500-600	M 10
Tr 530x6	590	558	630	68	90	40	20	42,5	► HM 30/530	MS 30/600-530	TMFN 500-600	M 10
Tr 560x6	610	583	650	75	97	40	20	44,5	► HM 30/560	MS 30/560	TMFN 500-600	M 10
Tr 600x6	660	628	700	75	97	40	20	52,5	► HM 30/600	MS 30/600-530	TMFN 500-600	M 10
Tr 630x6	690	658	730	75	97	45	20	55	► HM 30/630	MS 30/630	TMFN 500-600	M 10
Tr 670x6	740	703	780	80	102	45	20	68,5	► HM 30/670	MS 30/670	TMFN 600-750	M 10
Tr 710x7	780	742	830	90	112	50	25	91,5	► HM 30/710	MS 30/710	TMFN 600-750	M 12
Tr 750x7	820	782	870	90	112	55	25	94	► HM 30/750	MS 30/800-750	TMFN 600-750	M 12

► Popular item

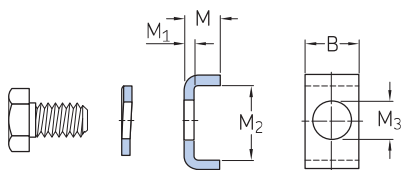


Dimensions								Mass	Designations	Associated		
G	d ₁	d ₂	d ₃	B	B ₅	b	h		Lock nut	locking clip	spanner	eye bolt
mm								kg	–			
Tr 800x7	870	832	920	90	112	55	25	99,5	► HM 30/800	MS 30/800-750	TMFN 600-750	M 12
Tr 850x7	925	887	980	90	115	60	25	115	► HM 30/850	MS 30/900-850	–	M 12
Tr 900x7	975	937	1 030	100	125	60	25	131	► HM 30/900	MS 30/900-850	–	M 16
Tr 950x8	1 025	985	1 080	100	125	60	25	139	► HM 30/950	MS 30/950	–	M 16
Tr 1000x8	1 085	1 040	1 140	100	125	60	25	157	► HM 30/1000	MS 30/1000	–	M 16
Tr 1060x8	1 145	1 100	1 200	100	125	60	25	166	► HM 30/1060	MS 30/1000	–	M 16
Tr 1120x8	1 205	1 160	1 260	100	125	60	25	175	► HM 30/1120	MS 30/1000	–	M 16



25.4 MS locking clips

MS 3044 – MS 31/1000



Designations Locking clip	Included hexagonal head bolt	spring washer in accordance with DIN 128	Dimensions					Mass
			B	M	M ₁	M ₂	M ₃	
–			mm					kg
► MS 3044	M 6x12	A 6	20	12	4	13,5	7	0,022
► MS 3052-48	M 8x16	A 8	20	12	4	17,5	9	0,024
► MS 3056	M 8x16	A 8	24	12	4	17,5	9	0,03
► MS 3060	M 8x16	A 8	24	12	4	20,5	9	0,033
► MS 3068-64	M 8x16	A 8	24	15	5	21	9	0,046
► MS 3072	M 8x16	A 8	28	15	5	20	9	0,051
► MS 3080-76	M 10x20	A 10	28	15	5	24	12	0,055
► MS 3084	M 10x20	A 10	32	15	5	24	12	0,063
► MS 3092-88	M 12x25	A 12	32	15	5	28	14	0,067
► MS 30/500-96	M 12x25	A 12	36	15	5	28	14	0,076
► MS 30/560	M 16x30	A 16	40	21	7	29	18	0,15
► MS 30/600-530	M 16x30	A 16	40	21	7	34	18	0,14
► MS 30/630	M 16x30	A 16	45	21	7	34	18	0,17
MS 30/670	M 16x30	A 16	45	21	7	39	18	0,19
MS 30/710	M 16x30	A 16	50	21	7	39	18	0,21
MS 30/800-750	M 16x30	A 16	55	21	7	39	18	0,23
MS 30/900-850	M 20x40	A 20	60	21	7	44	22	0,26
MS 30/950	M 20x40	A 20	60	21	7	46	22	0,26
MS 30/1000	M 20x40	A 20	60	21	7	51	22	0,28
► MS 3160	M 10x20	A 10	24	12	4	30,5	12	0,04
► MS 3164	M 10x20	A 10	24	15	5	31	12	0,055
► MS 3172-68	M 12x25	A 12	28	15	5	38	14	0,069
MS 3176	M 12x25	A 12	32	15	5	40	14	0,083
► MS 3184-80	M 16x30	A 16	32	15	5	45	18	0,089

► Popular item

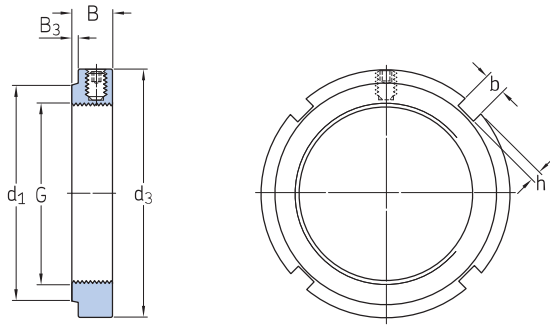


Designations Locking clip	Included hexagonal head bolt	spring washer in accordance with DIN 128	Dimensions					Mass
			B	M	M ₁	M ₂	M ₃	
–			mm					kg
► MS 3192-88	M 16x30	A 16	36	15	5	43	18	0,097
MS 3196	M 16x30	A 16	36	15	5	53	18	0,11
MS 31/500	M 16x30	A 16	40	15	5	45	18	0,11
MS 31/530	M 20x40	A 20	40	21	7	51	22	0,19
MS 31/600-560	M 20x40	A 20	45	21	7	54	22	0,22
MS 31/630	M 20x40	A 20	50	21	7	61	22	0,27
MS 31/670	M 20x40	A 20	50	21	7	66	22	0,28
MS 31/710	M 24x50	A 24	55	21	7	69	26	0,32
MS 31/800-750	M 24x50	A 24	60	21	7	70	26	0,35
MS 31/850	M 24x50	A 24	70	21	7	71	26	0,41
MS 31/900	M 24x50	A 24	70	21	7	76	26	0,41
MS 31/950	M 24x50	A 24	70	21	7	78	26	0,42
MS 31/1000	M 24x50	A 24	70	21	7	88	26	0,5



25.5 KMFE lock nuts with a locking screw

M 20x1 – M 200x3



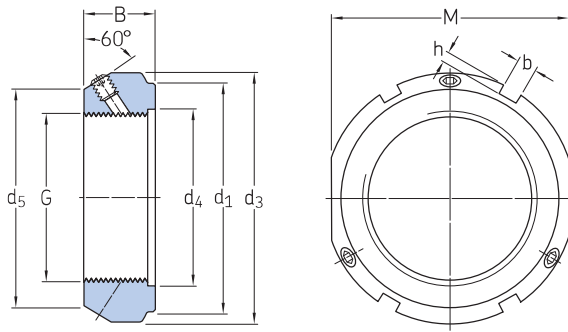
Dimensions							Axial load carrying capacity static	Mass	Designations		Grub (set) screw	
G	d ₁	d ₃	B	B ₃	b	h			Lock nut	Associated spanner	Size	Recommended tightening torque
mm							kN	kg	–		–	Nm
M 20x1	26	32	9,5	1	4	2	24	0,034	► KMFE 4	HN 4	M5	4,5
M 25x1,5	31	38	10,5	2	5	2	31,5	0,049	► KMFE 5	HN 5-6	M5	4,5
M 30x1,5	36	45	10,5	2	5	2	36,5	0,066	► KMFE 6	HN 5-6	M5	4,5
M 35x1,5	42,5	52	11,5	3	5	2	50	0,092	► KMFE 7	HN 7	M5	4,5
M 40x1,5	47	58	13	3	6	2,5	62	0,12	► KMFE 8	HN 8-9	M6	8
M 45x1,5	53	65	13	3	6	2,5	78	0,15	► KMFE 9	HN 8-9	M6	8
M 50x1,5	57,5	70	14	3	6	2,5	91,5	0,18	► KMFE 10	HN 10-11	M6	8
M 55x2	64	75	14	3	7	3	91,5	0,21	► KMFE 11	HN 10-11	M6	8
M 60x2	69	80	14	3	7	3	95	0,22	► KMFE 12	HN 12-13	M6	8
M 65x2	76	85	15	3	7	3	108	0,26	► KMFE 13	HN 12-13	M6	8
M 70x2	79	92	15	3	8	3,5	118	0,3	► KMFE 14	HN 14	M6	8
M 75x2	84	98	16	3	8	3,5	134	0,36	► KMFE 15	HN 15	M6	8
M 80x2	91,5	105	18	3	8	3,5	173	0,48	► KMFE 16	HN 16	M8	18
M 85x2	98	110	19	4	8	3,5	190	0,53	► KMFE 17	HN 17	M8	18
M 90x2	102	120	19	4	10	4	216	0,66	► KMFE 18	HN 18-20	M8	18
M 95x2	110	125	20	4	10	4	236	0,75	► KMFE 19	HN 18-20	M8	18
M 100x2	112	130	21	4	10	4	255	0,81	► KMFE 20	HN 18-20	M8	18
M 110x2	121	145	21,5	4	12	5	310	1,05	► KMFE 22	HN 21-22	M8	18
M 120x2	130	155	26	6	12	5	340	1,3	► KMFE 24	TMFN 23-30	M10	35
M 130x2	141	165	28	7	12	5	365	1,5	► KMFE 26	TMFN 23-30	M10	35
M 140x2	152	180	28	7	14	6	440	1,85	► KMFE 28	TMFN 23-30	M10	35
M 150x2	162	195	30	9	14	6	495	2,25	► KMFE 30	TMFN 23-30	M10	35
M 160x3	173	210	32	11	16	7	540	2,8	► KMFE 32	TMFN 30-40	M10	35



Dimensions							Axial load carrying capacity static	Mass	Designations		Grub (set) screw	
G	d ₁	d ₃	B	B ₃	b	h			Lock nut	Associated spanner	Size	Recommended tightening torque
mm							kN	kg	–		–	Nm
M 170x3	184	220	33	12	16	7	550	3	► KMFE 34	TMFN 30-40	M10	35
M 180x3	194	230	34	12	18	8	590	3,3	► KMFE 36	TMFN 30-40	M10	35
M 190x3	207	240	34	12	18	8	610	3,55	► KMFE 38	TMFN 30-40	M10	35
M 200x3	217	250	34	12	18	8	625	3,7	► KMFE 40	TMFN 30-40	M10	35

25.6 KMT precision lock nuts with locking pins

M 10x0,75 – M 200x3



Dimensions						Axial load carrying capacity static			Mass	Designations		Grub (set) screw	
G	d ₁	d ₃	d ₄	d ₅	B	M	b	h		Lock nut	Associated spanner	Size	Recommended tightening torque
mm									kN	kg	–	–	Nm
M 10x0,75	23	28	11	21	14	24	4	2	35	0,045	► KMT 0	HN 2-3	M 5 4,5
M 12x1	25	30	13	23	14	27	4	2	40	0,05	► KMT 1	HN 4	M 5 4,5
M 15x1	28	33	16	26	16	30	4	2	60	0,075	► KMT 2	HN 4	M 5 4,5
M 17x1	33	37	18	29	18	34	5	2	80	0,1	► KMT 3	HN 5-6	M 6 8
M 20x1	35	40	21	32	18	36	5	2	90	0,11	► KMT 4	HN 5-6	M 6 8
M 25x1,5	39	44	26	36	20	41	5	2	130	0,13	► KMT 5	HN 5-6	M 6 8
M 30x1,5	44	49	32	41	20	46	5	2	160	0,16	► KMT 6	HN 7	M 6 8
M 35x1,5	49	54	38	46	22	50	5	2	190	0,19	► KMT 7	HN 7	M 6 8
M 40x1,5	59	65	42	54	22	60	6	2,5	210	0,3	► KMT 8	HN 8-9	M 8 18
M 45x1,5	64	70	48	60	22	65	6	2,5	240	0,33	► KMT 9	HN 10-11	M 8 18
M 50x1,5	68	75	52	64	25	70	7	3	300	0,4	► KMT 10	HN 10-11	M 8 18
M 55x2	78	85	58	74	25	80	7	3	340	0,54	► KMT 11	HN 12-13	M 8 18
M 60x2	82	90	62	78	26	85	8	3,5	380	0,61	► KMT 12	HN 12-13	M 8 18
M 65x2	87	95	68	83	28	90	8	3,5	460	0,71	► KMT 13	HN 15	M 8 18
M 70x2	92	100	72	88	28	95	8	3,5	490	0,75	► KMT 14	HN 15	M 8 18
M 75x2	97	105	77	93	28	100	8	3,5	520	0,8	► KMT 15	HN 16	M 8 18
M 80x2	100	110	83	98	32	–	8	3,5	620	0,9	► KMT 16	HN 17	M 8 18
M 85x2	110	120	88	107	32	–	10	4	650	1,15	► KMT 17	HN 18-20	M 10 35
M 90x2	115	125	93	112	32	–	10	4	680	1,2	► KMT 18	HN 18-20	M 10 35
M 95x2	120	130	98	117	32	–	10	4	710	1,25	► KMT 19	HN 18-20	M 10 35
M 100x2	125	135	103	122	32	–	10	4	740	1,3	► KMT 20	HN 21-22	M 10 35
M 110x2	134	145	112	132	32	–	10	4	800	1,45	► KMT 22	HN 21-22	M 10 35

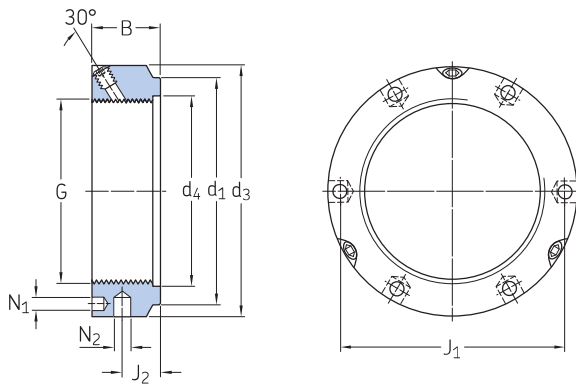


Dimensions									Axial load carrying capacity static	Mass	Designations		Grub (set) screw	
G	d ₁	d ₃	d ₄	d ₅	B	M	b	h			Lock nut	Associated spanner	Size	Recommended tightening torque
mm									kN	kg	–		–	Nm
M 120x2	144	155	122	142	32	–	10	4	860	1,6	► KMT 24	HN 21-22	M 10	35
M 130x2	154	165	132	152	32	–	12	5	920	1,7	► KMT 26	TMFN 23-30	M 10	35
M 140x2	164	175	142	162	32	–	14	5	980	1,8	► KMT 28	TMFN 23-30	M 10	35
M 150x2	174	185	152	172	32	–	14	5	1 040	1,95	► KMT 30	TMFN 23-30	M 10	35
M 160x3	184	195	162	182	32	–	14	5	1 100	2,1	► KMT 32	TMFN 23-30	M 10	35
M 170x3	192	205	172	192	32	–	14	5	1 160	2,2	► KMT 34	TMFN 30-40	M 10	35
M 180x3	204	215	182	202	32	–	16	5	1 220	2,3	► KMT 36	TMFN 30-40	M 10	35
M 190x3	214	225	192	212	32	–	16	5	1 280	2,4	► KMT 38	TMFN 30-40	M 10	35
M 200x3	224	235	202	222	32	–	18	5	1 340	2,5	► KMT 40	TMFN 30-40	M 10	35



25.7 KMTA precision lock nuts with locking pins

M 25x1,5 – M 200x3



Dimensions									Axial load carrying capacity static	Mass	Designations		Grub (set) screw	
G	d ₁	d ₃	d ₄	B	J ₁	J ₂	N ₁	N ₂			Lock nut	Associated spanner	Size	Recommended tightening torque
mm									kN	kg	–	–	–	Nm
M 25x1,5	35	42	26	20	32,5	11	4,3	4	130	0,13	► KMTA 5	B 40-42	M 6	8
M 30x1,5	40	48	32	20	40,5	11	4,3	5	160	0,16	► KMTA 6	B 45-50	M 6	8
M 35x1,5	47	53	38	20	45,5	11	4,3	5	190	0,19	► KMTA 7	B 52-55	M 6	8
M 40x1,5	52	58	42	22	50,5	12	4,3	5	210	0,23	► KMTA 8	B 58-62	M 6	8
M 45x1,5	58	68	48	22	58	12	4,3	6	240	0,33	► KMTA 9	B 68-75	M 6	8
M 50x1,5	63	70	52	24	61,5	13	4,3	6	300	0,34	► KMTA 10	B 68-75	M 6	8
M 55x1,5	70	75	58	24	66,5	13	4,3	6	340	0,37	► KMTA 11	B 68-75	M 6	8
M 60x1,5	75	84	62	24	74,5	13	5,3	6	380	0,49	► KMTA 12	B 80-90	M 8	18
M 65x1,5	80	88	68	25	78,5	13	5,3	6	460	0,52	► KMTA 13	B 80-90	M 8	18
M 70x1,5	86	95	72	26	85	14	5,3	8	490	0,62	► KMTA 14	B 95-100	M 8	18
M 75x1,5	91	100	77	26	88	13	6,4	8	520	0,66	► KMTA 15	B 95-100	M 8	18
M 80x2	97	110	83	30	95	16	6,4	8	620	1	► KMTA 16	B 110-115	M 8	18
M 85x2	102	115	88	32	100	17	6,4	8	650	1,15	► KMTA 17	B 110-115	M 10	35
M 90x2	110	120	93	32	108	17	6,4	8	680	1,2	► KMTA 18	B 120-130	M 10	35
M 95x2	114	125	98	32	113	17	6,4	8	710	1,25	► KMTA 19	B 120-130	M 10	35
M 100x2	120	130	103	32	118	17	6,4	8	740	1,3	► KMTA 20	B 120-130	M 10	35
M 110x2	132	140	112	32	128	17	6,4	8	800	1,45	► KMTA 22	B 135-145	M 10	35
M 120x2	142	155	122	32	140	17	6,4	8	860	1,85	► KMTA 24	B 155-165	M 10	35
M 130x3	156	165	132	32	153	17	6,4	8	920	2	► KMTA 26	B 155-165	M 10	35
M 140x3	166	180	142	32	165	17	6,4	10	980	2,45	► KMTA 28	B 180-195	M 10	35
M 150x3	180	190	152	32	175	17	6,4	10	1 040	2,6	► KMTA 30	B 180-195	M 10	35
M 160x3	190	205	162	32	185	17	8,4	10	1 100	3,15	► KMTA 32	B 205-220	M 10	35



Dimensions									Axial load carrying capacity static	Mass	Designations		Grub (set) screw	
G	d ₁	d ₃	d ₄	B	J ₁	J ₂	N ₁	N ₂			Lock nut	Associated spanner	Size	Recommended tightening torque
mm									kN	kg	–		–	Nm
M 170x3	205	215	172	32	195	17	8,4	10	1 160	3,3	► KMTA 34	B 205-220	M 10	35
M 180x3	215	230	182	32	210	17	8,4	10	1 220	3,9	► KMTA 36	B 230-245	M 10	35
M 190x3	225	240	192	32	224	17	8,4	10	1 280	4,1	► KMTA 38	B 230-245	M 10	35
M 200x3	237	245	202	32	229	17	8,4	10	1 340	3,85	► KMTA 40	B 230-245	M 10	35

