



BEARINGS

Accessories



Accessories

The accessories for bearings include: adapter sleeves, withdrawal sleeves, lock nuts, locking washers and locking clamps.

Adapter sleeves



◁ 1:12
 H 30, $d_1 \leq 180$ mm
 H 31, $d_1 \leq 260$ mm
 H 2, H 3, H 23

◁ 1:12
 H 30, $d_1 > 180$ mm
 H 31, $d_1 > 260$ mm
 H 39, H 32

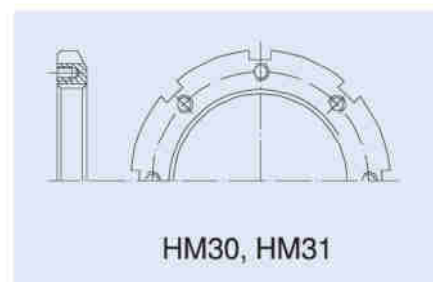
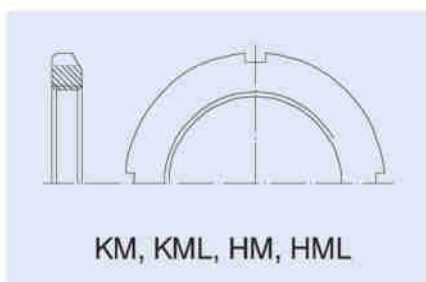
Withdrawal sleeves



◁ 1:12
 AH 39, AH 30
 AH 31, AH 32
 AH 3, AH 23

◁ 1:30
 AH 240
 AH 241

Lock nuts



Locking washers



Locking clamps



Adapter and withdrawal sleeves

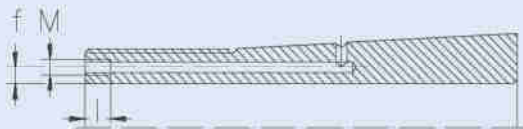
Adapter (H) and withdrawal (AH) sleeves are used when mounting tapered bore bearings on cylindrical shafts. In this case, shaft tolerances are larger than in case of bearings seated directly on the shaft. The tolerance classes recommended for shafts are h9 and h10. Form and position deviations will be in accordance with tolerance classes IT5/2 and IT7/2 (see pages 63, 80).

Adapter sleeves are manufactured according to standard ISO 2982-1 and withdrawal sleeves according to

standard ISO 2982-1.

For large-sized bearings, both adapter sleeves and withdrawal sleeves are provided with lubrication grooves, so that hydraulic systems can be used when mounting and dismounting (suffix H). The dimensions of threads for the connection to the hydraulic system are given in the tables below.

Tapered bore bearing mounting with adapter or withdrawal sleeves, bearing radial clearance after mounting and axial displacement necessary to obtain proper clearance are subjects treated in the chapter "Bearing mounting and dismounting", on page 72.



Connecting threads for adapter sleeves

Symbol		Connection dimensions			Number of entries
over	up to	M	f	l	
—		mm			—
H3032H	H3060H	M6	4,2	9	1
H3132H	H3160H	M6	4,2	9	1
	H3260H	M6	4,2	9	1
H2332H	H2356H	M6	4,2	9	1
H3964H	H3984H	M6	3,5	9	1
H3064H	H3084H	M6	3,5	9	1
H3164H	H3184H	M6	3,5	9	1
H3264H	H3284H	M6	3,5	9	1
H3988H	H39/500H	M8	6,5	12	1
H3088H	H30/500H	M8	6,5	12	1
H3188H	H31/500H	M8	6,5	12	1
H3288H	H32/500H	M8	6,5	12	1
H39/530H	H39/560H	M8	6	12	1
H30/530H	H30/560H	M8	6	12	1
H39/630H		M8	6	12	1

Connecting threads for withdrawal sleeves

Symbol		Connection dimensions			Number of entries
over	up to	M	f	l	
—		mm			—
AH3032H	AH3040H	M6	4,2	9	1
AH3132H	AH3140H	M6	4,5	9	1
AH3232H	AH3240H	M6	4,5	9	1
AH2332H	AH2340H	M6	4,5	9	1
AH2236H	AH2240H	M6	4,5	9	1
AH24044H	AH24064H	M6	8	9	2
AH24144H		M6	8	9	2

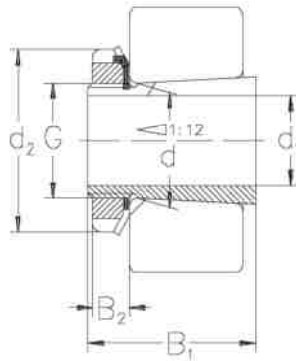
Lock nuts, locking washers and locking clamps

Lock nuts are used to fasten bearings and other parts on shafts. They are also used for bearing mounting on adapter sleeves or their dismounting from withdrawal sleeves.

Lock nuts are manufactured according to standard ISO 2982-2.

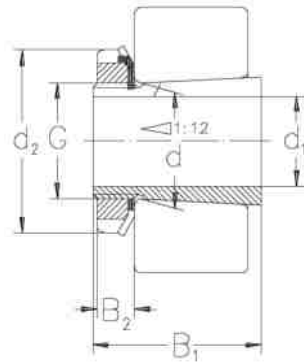
Locking washers and locking clamps are used for lock nuts securing. They are manufactured according to standard DIN 5406.

Adapter sleeves



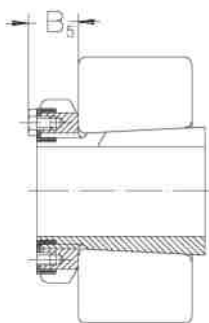
Dimensions		d ₂	B ₁	B ₂	B ₅	G	Designation sleeve	lock nut	lock washer	Weight
d ₁	d									
mm										kg
17	20	32	24	7		M20x 1	H204	KM4	MB4	0,041
	20	32	28	7		M20x 1	H304	KM4	MB4	0,045
	20	32	31	7		M20x 1	H2304	KM4	MB4	0,049
20	25	38	26	8		M25x 1,5	H205	KM5	MB5	0,070
	25	38	29	8		M25x 1,5	H305	KM5	MB5	0,075
	25	38	35	8		M25x 1,5	H2305	KM5	MB5	0,087
25	30	45	27	8		M30x 1,5	H206	KM6	MB6	0,099
	30	45	31	8		M30x 1,5	H306	KM6	MB6	0,109
	30	45	38	8		M30x 1,5	H2306	KM6	MB6	0,126
30	35	52	29	9		M35x 1,5	H207	KM7	MB7	0,125
	35	52	35	9		M35x 1,5	H307	KM7	MB7	0,142
	35	52	43	9		M35x 1,5	H2307	KM7	MB7	0,165
35	40	58	31	10		M40x 1,5	H208	KM8	MB8	0,174
	40	58	36	10		M40x 1,5	H308	KM8	MB8	0,189
	40	58	46	10		M40x 1,5	H2308	KM8	MB8	0,224
40	45	65	33	11		M45x 1,5	H209	KM9	MB9	0,227
	45	65	39	11		M45x 1,5	H309	KM9	MB9	0,248
	45	65	50	11		M45x 1,5	H2309	KM9	MB9	0,280
45	50	70	35	12		M50x 1,5	H210	KM10	MB10	0,274
	50	70	42	12		M50x 1,5	H310	KM10	MB10	0,303
	50	70	55	12		M50x 1,5	H2310	KM10	MB10	0,362
50	55	75	37	12		M55x 2	H211	KM11	MB11	0,308
	55	75	45	12		M55x 2	H311	KM11	MB11	0,345
	55	75	59	12		M55x 2	H2311	KM11	MB11	0,420
55	60	80	38	13		M60x 2	H212	KM12	MB12	0,346
	60	80	47	13		M60x 2	H312	KM12	MB12	0,394
	60	80	62	13		M60x 2	H2312	KM12	MB12	0,481
60	65	85	40	14		M65x 2	H213	KM13	MB13	0,401
	65	85	50	14		M65x 2	H313	KM13	MB13	0,458
	65	85	65	14		M65x 2	H2313	KM13	MB13	0,557
70	70	92	41	14		M70x 2	H214	KM14	MB14	0,593
	70	92	52	14		M70x 2	H314	KM14	MB14	0,723
	70	92	68	14		M70x 2	H2314	KM14	MB14	0,897
65	75	98	43	15		M75x 2	H215	KM15	MB15	0,707
	75	98	55	15		M75x 2	H315	KM15	MB15	0,831
	75	98	73	15		M75x 2	H2315	KM15	MB15	1,05
70	80	105	46	17		M80x 2	H216	KM16	MB16	0,882
	80	105	59	17		M80x 2	H316	KM16	MB16	1,03
	80	105	78	17		M80x 2	H2316	KM16	MB16	1,28

Adapter sleeves



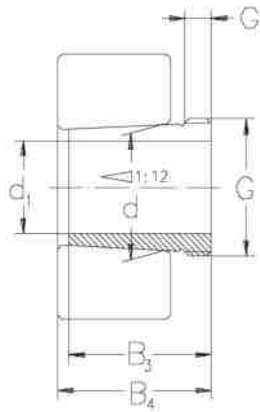
Dimensions		d_2	B_1	B_2	B_5	G	Designation sleeve	lock nut	lock washer	Weight
d_1	d									
mm										
75	85	110	50	18		M85× 2	H217	KM17	MB17	1,02
	85	110	63	18		M85× 2	H317	KM17	MB17	1,18
	85	110	82	18		M85× 2	H2317	KM17	MB17	1,45
80	90	120	52	18		M90× 2	H218	KM18	MB18	1,19
	90	120	65	18		M90× 2	H318	KM18	MB18	1,37
	90	120	86	18		M90× 2	H2318	KM18	MB18	1,69
85	95	125	55	19		M95× 2	H219	KM19	MB19	1,37
	95	125	68	19		M95× 2	H319	KM19	MB19	1,56
	95	125	90	19		M95× 2	H2319	KM19	MB19	1,92
90	100	130	58	20		M100× 2	H220	KM20	MB20	1,49
	100	130	71	20		M100× 2	H320	KM20	MB20	1,69
	100	130	76	20		M100× 2	H3120	KM20	MB20	1,80
	100	130	97	20		M100× 2	H2320	KM20	MB20	2,15
100	110	145	63	21		M110× 2	H222	KM22	MB22	1,93
	110	145	77	21		M110× 2	H322	KM22	MB22	2,18
	110	145	81	21		M110× 2	H3122	KM22	MB22	2,25
	110	145	105	21		M110× 2	H2322	KM22	MB22	2,74
110	120	145	72	22		M120× 2	H3024	KML24	MBL24	1,93
	120	155	88	22		M120× 2	H3124	KM24	MB24	2,64
	120	155	112	22		M120× 2	H2324	KM24	MB24	3,19
115	130	155	80	23		M130× 2	H3026	KML26	MBL26	2,85
	130	165	92	23		M130× 2	H3126	KM26	MB26	3,66
	130	165	121	23		M130× 2	H2326	KM26	MB26	4,60
125	140	165	82	24		M140× 2	H3028	KML28	MBL28	3,16
	140	180	97	24		M140× 2	H3128	KM28	MB28	4,34
	140	180	131	24		M140× 2	H2328	KM28	MB28	5,55
135	150	180	87	26		M150× 2	H3030	KML30	MBL30	3,89
	150	195	111	26		M150× 2	H3130	KM30	MB30	5,52
	150	195	139	26		M150× 2	H2330	KM30	MB30	6,63
140	160	190	93	27,5		M160× 3	H3032	KML32	MBL32	5,21
	160	210	119	28		M160× 3	H3132	KM32	MB32	7,67
	160	210	147	28		M160× 3	H2332	KM32	MB32	9,14
150	170	200	101	28,5		M170× 3	H3034	KML34	MBL34	5,99
	170	220	122	29		M170× 3	H3134	KM34	MB34	8,38
	170	220	154	29		M170× 3	H2334	KM34	MB34	10,2
160	180	210	109	29,5		M180× 3	H3036	KML36	MBL36	6,83
	180	230	131	30		M180× 3	H3136	KM36	MB36	9,50
	180	230	161	30		M180× 3	H2336	KM36	MB36	11,3

Adapter sleeves



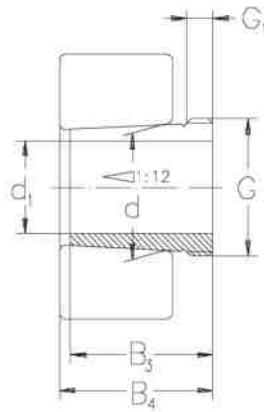
Dimensions		d ₂	B ₁	B ₂	B ₅	G	Designation sleeve	lock nut	lock washer	Weight
d ₁	d									
mm		—							kg	
170	190	220	112	30,5		M190× 3	H3038	KML38	MBL38	7,45
	190	240	141	31		M190× 3	H3138	KM38	MB38	10,8
170	190	240	169	31		M190× 3	H2338	KM38	MB38	12,6
180	200	240	120	31,5		M200× 3	H3040	KML40	MBL40	9,19
	200	250	150	32		M200× 3	H3140	KM40	MB40	12,1
	200	250	176	32		M200× 3	H2340	KM40	MB40	13,9

Withdrawal sleeves



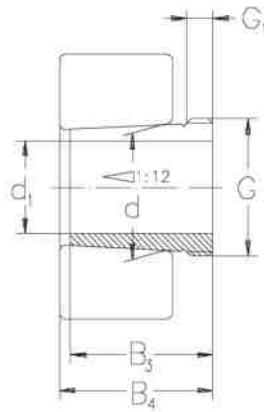
Dimensions		B_3	B_4	G	G_1	Designation sleeve	Weight lock nut		
d_1	d						kg		
mm		—						kg	
35	40	29	32	M45×1,5	6	AH308	KM9	0,090	
	40	40	43	M45×1,5	7	AH2308	KM9	0,128	
40	45	31	34	M50×1,5	6	AH309	KM10	0,109	
	45	44	47	M50×1,5	7	AH2309	KM10	0,164	
45	50	35	38	M55×2	7	AH310	KM11	0,137	
	50	50	53	M55×2	9	AH2310	KM11	0,209	
50	55	37	40	M60×2	7	AH311	KM12	0,161	
	55	54	57	M60×2	10	AH2311	KM12	0,253	
55	60	40	43	M65×2	8	AH312	KM13	0,189	
	60	58	61	M65×2	11	AH2312	KM13	0,297	
60	65	42	45	M75×2	8	AH313	KM15	0,253	
	65	61	64	M75×2	12	AH2313	KM15	0,395	
65	70	43	47	M80×2	8	AH314	KM16	0,280	
	70	64	68	M80×2	12	AH2314	KM16	0,466	
70	75	45	49	M85×2	8	AH315	KM17	0,313	
	75	68	72	M85×2	12	AH2315	KM17	0,534	
75	80	48	52	M90×2	8	AH316	KM18	0,365	
	80	71	75	M90×2	12	AH2316	KM18	0,597	
80	85	52	56	M95×2	9	AH317	KM19	0,429	
	85	74	78	M95×2	13	AH2317	KM19	0,670	
85	90	53	57	M100×2	9	AH318	KM20	0,461	
	90	63	67	M100×2	10	AH3218	KM20	0,570	
	90	79	83	M100×2	14	AH2318	KM20	0,779	
90	95	57	61	M105×2	10	AH319	KM21	0,532	
	95	67	71	M105×2	11	AH3219	KM21	0,655	
	95	85	89	M105×2	16	AH2319	KM21	0,886	
95	100	59	63	M110×2	10	AH320	KM22	0,582	
	100	64	68	M110×2	11	AH3120	KM22	0,650	
	100	73	77	M110×2	11	AH3220	KM22	0,767	
	100	90	94	M110×2	16	AH2320	KM22	0,998	
105	110	68	72	M120×2	11	AH3122	KM24	0,760	
	110	68	72	M120×2	11	AH3222	KM24	0,663	
	110	82	86	M125×2	11	AH3222	KM25	1,04	
	110	82	91	M115×2	13	AH24122	KM23	0,730	
	110	98	102	M125×2	16	AH2322	KM25	1,35	
115	120	60	64	M130×2	13	AH3024	KM26	0,750	
	120	73	82	M125×2	13	AH24024	KM25	0,650	

Withdrawal sleeves



Dimensions		B ₃	B ₄	G	G ₁	Designation sleeve	Weight lock nut	
d ₁	d							
mm		—						kg
115	120	75	79	M130× 2 12	AH3124	KM26	0,950	
	120	90	94	M135× 2 13	AH3224	KM27	1,30	
	120	93	102	M130× 2 13	AH24124	KM26	1,00	
	120	105	109	M135× 2 17	AH2324	KM27	1,60	
125	130	67	71	M140× 2 14	AH3026	KM28	0,930	
	130	78	82	M140× 2 12	AH3126	KM28	1,08	
	130	83	93	M135× 2 14	AH24026	KM27	0,840	
	130	94	104	M140× 2 14	AH24126	KM28	1,11	
	130	98	102	M145× 2 15	AH3226	KM29	1,58	
	130	115	119	M145× 2 19	AH2326	KM29	1,97	
135	140	68	73	M150× 2 14	AH3028	KM30	1,01	
	140	83	88	M150× 2 14	AH3128	KM30	1,28	
	140	83	93	M145× 2 14	AH24028	KM29	0,910	
	140	99	109	M150× 2 14	AH24128	KM30	1,25	
	140	104	109	M155× 3 15	AH3228	KM31	1,84	
	140	125	130	M155× 3 20	AH2328	KM31	2,33	
145	150	72	77	M160× 3 15	AH3030	KM32	1,15	
	150	90	101	M155× 3 15	AH24030	KM31	1,04	
	150	96	101	M165× 3 15	AH3130	KM33	1,79	
	150	114	119	M165× 3 17	AH3230	KM33	2,22	
	150	115	126	M160× 3 15	AH24130	KM32	1,56	
	150	135	140	M165× 3 24	AH2330	KM33	2,82	
150	160	77	82	M170× 3 16	AH3032	KM34	2,06	
	160	95	106	M170× 3 15	AH24032	KM34	2,33	
	160	103	108	M180× 3 16	AH3132	KM36	3,21	
	160	124	130	M180× 3 20	AH3232	KM36	4,08	
	160	124	135	M170× 3 15	AH24132	KM34	3,00	
	160	140	146	M180× 3 24	AH2332	KM36	4,72	
160	170	85	90	M180× 3 17	AH3034	KM36	2,43	
	170	104	109	M190× 3 16	AH3134	KM38	3,40	
	170	106	117	M180× 3 16	AH24034	KM36	2,80	
	170	125	136	M180× 3 16	AH24134	KM36	3,21	
	170	134	140	M190× 3 24	AH3234	KM38	4,80	
	170	146	152	M190× 3 24	AH2334	KM38	5,25	
170	180	92	98	M190× 3 17	AH3036	KM38	2,81	
	180	105	110	M200× 3 17	AH2236H	KM40	3,75	
	180	116	122	M200× 3 19	AH3136	KM40	4,22	
	180	116	127	M190× 3 16	AH24036	KM38	3,10	
	180	134	145	M190× 3 16	AH24136	KM38	3,68	

Withdrawal sleeves



Dimensions		B ₃	B ₄	G	G ₁	Designation sleeve	Weight lock nut	
d ₁	d						kg	
mm		—						
170	180	140	146	M200× 3 24	AH3236	KM40	5,32	
	180	154	160	M200× 3 26	AH2336	KM40	5,83	
180	190	96	102	Tr205× 4 18	AH3038	HML41T	3,32	
	190	112	117	Tr210× 4 18	AH2238	HM42T	4,25	
	190	118	131	M200× 3 18	AH24038	KM40	3,50	
	190	125	131	Tr210× 4 20	AH3138	HM42T	4,89	
	190	145	152	Tr210× 4 25	AH3238	HM42T	5,90	
	190	146	159	M200× 3 18	AH24138	KM40	4,28	
190	190	160	167	Tr210× 4 26	AH2338	HM42T	6,36	
	200	102	108	Tr215× 4 19	AH3040	HML43T	3,80	
	200	118	123	Tr220× 4 19	AH2240	HM44T	4,68	
	200	127	140	Tr210× 4 18	AH24040	HM42T	3,93	
	200	134	140	Tr220× 4 21	AH3140	HM44T	5,49	
	200	153	160	Tr220× 4 25	AH3240	HM44T	6,68	
	200	158	171	Tr210× 4 18	AH24140	HM42T	5,10	
	200	170	177	Tr220× 4 30	AH2340	HM44T	7,54	