Adapter sleeves

FAG accessories – adapter sleeves, withdrawal sleeves, locknuts, lock washers, and locking clamps – must be listed separately in the order.

Adapter sleeves

Split adapter sleeves with a tapered surface area are used for fastening bearings with a tapered bore on cylindrical shafts (see also page 140). This allows the shafts to be machined to larger diameter tolerances than would be the case with direct cylindrical seats on the shaft; the form tolerances must be narrower than the diameter tolerances (shaft tolerances, pages 110 to 114). Adapter sleeves are supplied complete with locknut and locking device.

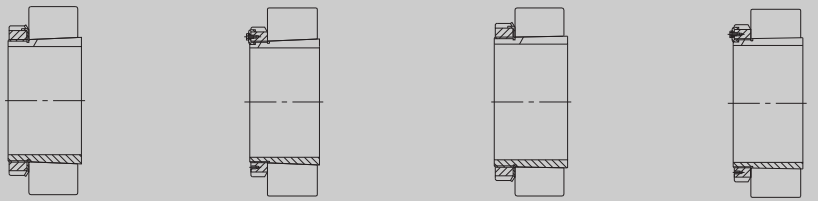
The dimension tables list adapter sleeves for metric shafts. Dimensions and material of the adapter sleeves according to DIN 5415 (edition 02.93) and to ISO 2982-1 (edition 09.95). The adapter sleeves are made of steel (tensile strength at least 430 N/mm^2).

Adapter sleeves for inch-size shafts are supplied on request.

The bore tolerance of the sleeves before splitting corresponds to JS9 at a 1:12 taper and JS7 at a 1:30 taper.

Mounting and dismounting of large bearings is made easier by the hydraulic method (see also pages 140 and 143). For such cases adapter sleeves with oil grooves in the tapered surface and pump connections at the thread end (suffix HG) are available. The threads for the pump connections are indicated in the dimension tables.

Adapter sleeves with locknut and locking device



H38, H39, H30 $d_1 \leqq 180$ mm
H31, H33 $d_1 \leqq 260$ mm
H2, H3, H23
Taper 1:12

H38, H39, H30 $d_1 > 180$ mm
H31, H33 $d_1 > 260$ mm
H32
Taper 1:12

H240 $d_1 \leqq 180$ mm
H241 $d_1 \leqq 260$ mm
Taper 1:30
on request

H240 $d_1 > 180$ mm
H241 $d_1 > 260$ mm
Taper 1:30
on request

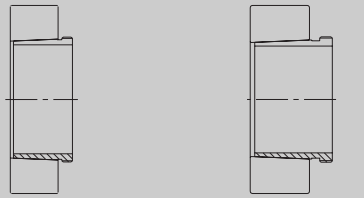
Withdrawal sleeves

Split withdrawal sleeves with a tapered surface area are used for fastening bearings with a tapered bore on cylindrical shafts (see also page 140). The bearing rests against a shaft shoulder; the tapered sleeve is pushed into the bearing bore until the radial clearance is reduced to the required amount.

Dimensions and material of the withdrawal sleeves correspond to DIN 5416 (edition 03.90) and, with suffix G for a changed thread d_2, to ISO 2982-1 (edition 09.95). The withdrawal sleeves are made of steel (tensile strength at least 430 N/mm^2). The bore tolerance of the sleeves before splitting corresponds to JS9 at a 1:12 taper and JS7 at a 1:30 taper.

The connection dimensions for FAG withdrawal sleeves with oil grooves and pump connections (suffix H) are listed in the dimension tables. The two pump connections are offset by 90°.

Withdrawal sleeves



AH38, AH39, AH(X)30,
AH(X)31, AH2, AH22.
AH(X)32, AH(X)3
AH(X)23, AH33
Taper 1:12

AH240, AH241
Taper 1:30

Locknuts

Locknuts are used to fix bearings on shafts or on adapter sleeves (locknut and locking device are supplied together with the sleeves). Locknuts are also useful for mounting and dismounting bearings on withdrawal sleeves or on tapered shaft journals.

Locknuts have four or eight slots which are evenly spaced over the circumference; hook spanners are inserted in these slots (FAG hook spanners cf. publ. no. WL 80 200).

The dimensions and material of the locknuts correspond to standards DIN 981 (edition 02.93) and ISO 2982-2 (edition 09.95) except some nuts which are marked in the tables. The locknuts are made of steel (tensile strength at least 350 N/mm^2).

Locknuts with a thread diameter up to 200 mm have a metric fine-pitch thread, larger locknuts a trapezoid thread.

Lock washers, locking clamps

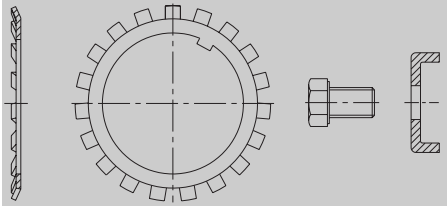
DIN 5406 (02.93)

Small locknuts are secured by means of lock washers (series MB, MBL). The thickness of the lock washers from MB1A to MB2A which are not automatically supplied with the adapter sleeves, deviates from DIN 5406, edition 02.93.

Locking clamps (series MS), which engage in the slot of the sleeve, are used for big locknuts.

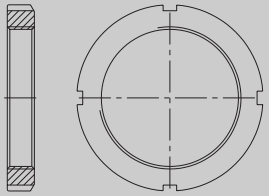
Lock washers and locking clamps are made of steel (tensile strength at least 300 N/mm^2).

Lock washer **Locking clamp with hexagon head screw**

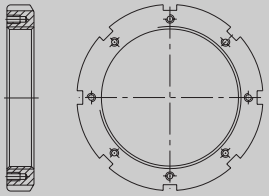


MB, MBL MS30, MS31

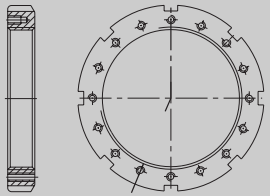
Locknuts



KM, KML, HM

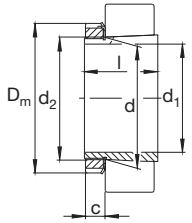


HM30, HM31



HM30H, HM31H
Tapped holes for
mounting bolts (on request)

FAG Adapter Sleeves
with locknut and locking device



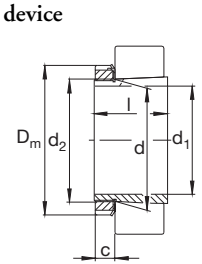
Shaft	Dimensions						Code			Mass ≈
	d	d_1	D_m	l	c ≈	d_2	Adapter sleeve complete	Locknut	Locking device	
	mm						FAG	FAG	FAG	kg
14	17	14	28	21	6	M17x1	**H203**	KM3	MB3	0.032
17	20	17	32	24	7	M20x1	**H204**	KM4	MB4	0.041
	20	17	32	28	7	M20x1	**H304**	KM4	MB4	0.045
	20	17	32	31	7	M20x1	**H2304**	KM4	MB4	0.047
20	25	20	38	26	9	M25x1.5	**H205**	KM5	MB5	0.069
	25	20	38	29	9	M25x1.5	**H305**	KM5	MB5	0.075
	25	20	38	35	9	M25x1.5	**H2305**	KM5	MB5	0.087
25	30	25	45	27	9	M30x1.5	**H206**	KM6	MB6	0.091
	30	25	45	31	9	M30x1.5	**H306**	KM6	MB6	0.1
	30	25	45	38	9	M30x1.5	**H2306**	KM6	MB6	0.117
30	35	30	52	29	10	M35x1.5	**H207**	KM7	MB7	0.129
	35	30	52	35	10	M35x1.5	**H307**	KM7	MB7	0.147
	35	30	52	43	10	M35x1.5	**H2307**	KM7	MB7	0.171
35	40	35	58	31	11	M40x1.5	**H208**	KM8	MB8	0.17
	40	35	58	36	11	M40x1.5	**H308**	KM8	MB8	0.185
	40	35	58	46	11	M40x1.5	**H2308**	KM8	MB8	0.222
	40	35	58	50	11	M40x1.5	**H3308**	KM8	MB8	0.261
40	45	40	65	33	12	M45x1.5	**H209**	KM9	MB9	0.216
	45	40	65	39	12	M45x1.5	**H309**	KM9	MB9	0.246
	45	40	65	50	12	M45x1.5	**H2309**	KM9	MB9	0.283
	45	40	65	54	12	M45x1.5	**H3309**	KM9	MB9	0.339
45	50	45	70	35	13	M50x1.5	**H210**	KM10	MB10	0.264
	50	45	70	42	13	M50x1.5	**H310**	KM10	MB10	0.301
	50	45	70	55	13	M50x1.5	**H2310**	KM10	MB10	0.353
	50	45	70	60	13	M50x1.5	**H3310**	KM10	MB10	0.379
50	55	50	75	37	13	M55x2	**H211**	KM11	MB11	0.292
	55	50	75	45	13	M55x2	**H311**	KM11	MB11	0.35
	55	50	75	59	13	M55x2	**H2311**	KM11	MB11	0.426
	55	50	75	65	13	M55x2	**H3311**	KM11	MB11	0.509
55	60	55	80	38	13	M60x2	**H212**	KM12	MB12	0.344
	60	55	80	47	13	M60x2	**H312**	KM12	MB12	0.373
	60	55	80	62	13	M60x2	**H2312**	KM12	MB12	0.533
	60	55	80	70	13	M60x2	**H3312**	KM12	MB12	0.591

FAG Adapter Sleeves
with locknut and locking device

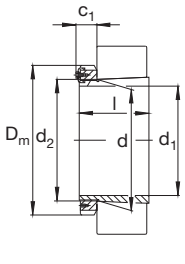
Shaft	Dimensions						Code			Mass ≈
	d	d_1	D_m	l	c ≈	d_2	Adapter sleeve complete	Locknut	Locking device	
	mm						FAG	FAG	FAG	kg
60	65	60	85	40	14	M65x2	**H213**	KM13	MB13	0.393
	65	60	85	50	14	M65x2	**H313**	KM13	MB13	0.452
	65	60	85	65	14	M65x2	**H2313**	KM13	MB13	0.553
	65	60	85	75	14	M65x2	**H3313**	KM13	MB13	0.629
	70	60	92	41	14	M70x2	**H214**	KM14	MB14	0.603
	70	60	92	52	14	M70x2	**H314**	KM14	MB14	0.715
	70	60	92	68	14	M70x2	**H2314**	KM14	MB14	0.895
	70	60	92	81	14	M70x2	**H3314**	KM14	MB14	1.05
65	75	65	98	43	15	M75x2	**H215**	KM15	MB15	0.777
	75	65	98	55	15	M75x2	**H315**	KM15	MB15	0.826
	75	65	98	73	15	M75x2	**H2315**	KM15	MB15	1.16
	75	65	98	87	15	M75x2	**H3315**	KM15	MB15	1.36
70	80	70	105	46	17	M80x2	**H216**	KM16	MB16	0.876
	80	70	105	59	17	M80x2	**H316**	KM16	MB16	1.03
	80	70	105	78	17	M80x2	**H2316**	KM16	MB16	1.27
	80	70	105	89	17	M80x2	**H3316**	KM16	MB16	1.56
75	85	75	110	50	18	M85x2	**H217**	KM17	MB17	1.09
	85	75	110	63	18	M85x2	**H317**	KM17	MB17	1.16
	85	75	110	82	18	M85x2	**H2317**	KM17	MB17	1.55
	85	75	110	95	18	M85x2	**H3317**	KM17	MB17	1.79
80	90	80	120	52	18	M90x2	**H218**	KM18	MB18	1.29
	90	80	120	65	18	M90x2	**H318**	KM18	MB18	1.39
	90	80	120	86	18	M90x2	**H2318**	KM18	MB18	1.69
	90	80	120	95	18	M90x2	**H3318**	KM18	MB18	2
85	95	85	125	55	19	M95x2	**H219**	KM19	MB19	1.45
	95	85	125	68	19	M95x2	**H319**	KM19	MB19	1.51
	95	85	125	90	19	M95x2	**H2319**	KM19	MB19	2.06
	95	85	125	101	19	M95x2	**H3319**	KM19	MB19	2.27
90	100	90	130	58	20	M100x2	**H220**	KM20	MB20	1.63
	100	90	130	71	20	M100x2	**H320**	KM20	MB20	1.73
	100	90	130	76	20	M100x2	**H3120**	KM20	MB20	1.78
	100	90	130	97	20	M100x2	**H2320**	KM20	MB20	2.17
	100	90	130	106	20	M100x2	**H3320**	KM20	MB20	2.55
95	105	95	140	60	20	M105x2	**H221**	KM21	MB21	1.82
	105	95	140	74	20	M105x2	**H321**	KM21	MB21	2.08
	105	95	140	101	20	M105x2	**H2321**	KM21	MB21	2.65
	105	95	140	111	20	M105x2	**H3321**	KM21	MB21	2.88

Information on other designs will be supplied on request.

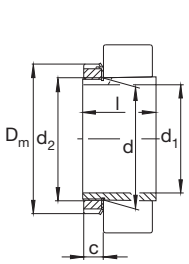
FAG Adapter Sleeves
with locknut and locking device



Taper 1:12
Lock washer MB, MBL



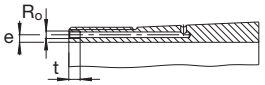
Taper 1:12
Locking clamp MS30



Taper 1:30 (H240)
Lock washer MBL

Shaft	Dimensions									Code			Mass ≈
	d	d_1	D_m	l	c ≈	d_2	R_o	e	t	Adapter sleeve complete	Locknut	Locking device	
	mm									FAG	FAG	FAG	kg
100	110	100	145	63	21	M110x2				**H222**	KM22	MB22	2.03
	110	100	145	77	21	M110x2				**H322**	KM22	MB22	2.16
	110	100	145	81	21	M110x2				**H3122**	KM22	MB22	2.23
	110	100	145	105	21	M110x2				**H2322**	KM22	MB22	2.74
	110	100	145	117	21	M110x2				**H3322**	KM22	MB22	3.23
110	120	110	145	60	22	M120x2				**H3924**	KML24	MBL24	1.86
	120	110	145	72	22	M120x2				**H3024**	KML24	MBL24	1.95
	120	110	155	88	22	M120x2				**H3124**	KM24	MB24	2.61
	120	110	155	112	22	M120x2				**H2324**	KM24	MB24	3.18
	120	110	155	132	22	M120x2				**H3324**	KM24	MB24	3.98
115	130	115	155	65	23	M130x2				**H3926**	KML26	MBL26	2.65
	130	115	155	80	23	M130x2				**H3026**	KML26	MBL26	2.9
	130	115	165	92	23	M130x2				**H3126**	KM26	MB26	3.63
	130	115	165	121	23	M130x2				**H2326**	KM26	MB26	4.9
	130	115	165	139	23	M130x2				**H3326**	KM26	MB26	5.6
125	140	125	165	66	24	M140x2				**H3928**	KML28	MBL28	2.94
	140	125	165	82	24	M140x2				**H3028**	KML28	MBL28	3.25
	140	125	180	97	24	M140x2				**H3128**	KM28	MB28	4.33
	140	125	180	131	24	M140x2				**H2328**	KM28	MB28	5.94
	140	125	180	147	24	M140x2				**H3328**	KM28	MB28	6.63
135	150	135	180	76	26	M150x2				**H3930**	KML30	MBL30	3.85
	150	135	180	87	26	M150x2				**H3030**	KML30	MBL30	3.98
	150	135	195	111	26	M150x2				**H3130**	KM30	MB30	5.49
	150	135	195	139	26	M150x2				**H2330**	KM30	MB30	6.71
	150	135	195	159	26	M150x2				**H3330**	KM30	MB30	8.07
140	160	140	190	78	28	M160x3				**H3932**	KML32	MBL32	4.99
	160	140	190	78	28	M160x3	M6	4.2	7	**H3932HG**	KML32	MBL32	4.99
	160	140	190	93	28	M160x3				**H3032**	KML32	MBL32	5.33
	160	140	190	93	28	M160x3	M6	4.2	7	**H3032HG**	KML32	MBL32	5.32
	160	140	210	119	28	M160x3				**H3132**	KM32	MB32	7.57
	160	140	210	119	28	M160x3	M6	4.2	7	**H3132HG**	KM32	MB32	7.55
	160	140	210	147	28	M160x3				**H2332**	KM32	MB32	9.65
	160	140	210	147	28	M160x3	M6	4.2	7	**H2332HG**	KM32	MB32	9.65
	160	140	210	170	28	M160x3				**H3332**	KM32	MB32	11.1
150	170	150	200	65	29	M170x3				**H3834**	KML34	MBL34	4.66
	170	150	200	79	29	M170x3				**H3934**	KML34	MBL34	5.36
	170	150	200	79	29	M170x3	M6	4.2	7	**H3934HG**	KML34	MBL34	5.36
	170	150	200	101	29	M170x3				**H3034**	KML34	MBL34	6.08
	170	150	200	101	29	M170x3	M6	4.2	7	**H3034HG**	KML34	MBL34	6.06
	170	150	220	122	29	M170x3				**H3134**	KM34	MB34	8.87
	170	150	220	122	29	M170x3	M6	4.2	7	**H3134HG**	KM34	MB34	8.87
	170	150	200	130	29	M170x3				**H24034**	KML34	MBL34	7.07
	170	150	200	130	29	M170x3	M6	4.2	7	**H24034HG**	KML34	MBL34	7.05

FAG Adapter Sleeves
with locknut and locking device



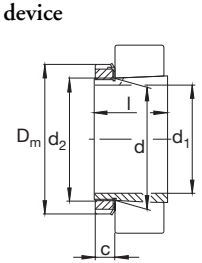
Hydraulic adapter sleeves
(suffix HG)

Shaft	Dimensions										Code				Mass ≈
	d	d_1	D_m	l	c ≈	c_1 ≈	d_2	R_o	e	t	Adapter sleeve complete	Locknut	Locking device	Hexagon head screw, self-locking	
	mm										FAG	FAG	FAG		kg
150	170	150	220	154	29		M170x3				**H2334**	KM34	MB34		10.2
	170	150	220	154	29		M170x3	M6	4.2	7	**H2334HG**	KM34	MB34		10.2
	170	150	220	175	29		M170x3				**H3334**	KM34	MB34		12.2
160	180	160	210	66	30		M180x3				**H3836**	KML36	MBL36		5.13
	180	160	210	87	30		M180x3				**H3936**	KML36	MBL36		6.25
	180	160	210	87	30		M180x3	M6	4.2	7	**H3936HG**	KML36	MBL36		6.25
	180	160	210	109	30		M180x3				**H3036**	KML36	MBL36		7.01
	180	160	210	109	30		M180x3	M6	4.2	7	**H3036HG**	KML36	MBL36		6.99
	180	160	230	131	30		M180x3				**H3136**	KM36	MB36		9.46
	180	160	230	131	30		M180x3	M6	4.2	7	**H3136HG**	KM36	MB36		9.44
	180	160	230	161	30		M180x3				**H2336**	KM36	MB36		12
	180	160	230	161	30		M180x3	M6	4.2	7	**H2336HG**	KM36	MB36		12
	180	160	230	186	30		M180x3				**H3336**	KM36	MB36		13.8
170	190	170	220	70	31		M190x3				**H3838**	KML38	MBL38		5.72
	190	170	220	89	31		M190x3				**H3938**	KML38	MBL38		6.8
	190	170	220	89	31		M190x3	M6	4.2	7	**H3938HG**	KML38	MBL38		6.8
	190	170	220	112	31		M190x3				**H3038**	KML38	MBL38		7.66
	190	170	220	112	31		M190x3	M6	4.2	7	**H3038HG**	KML38	MBL38		7.64
	190	170	220	143	31		M190x3				**H24038**	KML38	MBL38		8.82
	190	170	220	143	31		M190x3	M6	4.2	7	**H24038HG**	KML38	MBL38		8.8
	190	170	240	141	31		M190x3				**H3138**	KM38	MB38		10.8
	190	170	240	141	31		M190x3	M6	4.2	7	**H3138HG**	KM38	MB38		10.7
	190	170	240	169	31		M190x3				**H2338**	KM38	MB38		12.7
	190	170	240	169	31		M190x3	M6	4.2	7	**H2338HG**	KM38	MB38		12.7
	190	170	240	193	31		M190x3				**H3338**	KM38	MB38		15.4
180	200	180	240	72	32		M200x3				**H3840**	KML40	MBL40		6.79
	200	180	240	98	32		M200x3				**H3940**	KML40	MBL40		7.82
	200	180	240	98	32		M200x3	M6	4.2	7	**H3940HG**	KML40	MBL40		7.8
	200	180	240	120	32		M200x3				**H3040**	KML40	MBL40		9.22
	200	180	240	120	32		M200x3	M6	4.2	7	**H3040HG**	KML40	MBL40		9.2
	200	180	240	153	32		M200x3				**H24040**	KML40	MBL40		10.5
	200	180	240	153	32		M200x3	M6	4.2	7	**H24040HG**	KML40	MBL40		10.5
	200	180	250	150	32		M200x3				**H3140**	KM40	MB40		12.1
	200	180	250	150	32		M200x3	M6	4.2	7	**H3140HG**	KM40	MB40		12.1
	200	180	250	176	32		M200x3				**H2340**	KM40	MB40		14
	200	180	250	176	32		M200x3	M6	4.2	7	**H2340HG**	KM40	MB40		14
	200	180	250	204	32		M200x3				**H3340**	KM40	MB40		17.3
200	220	200	260	96		40	Tr220x4	M6	4.2	7	**H3944HG**	HM3044	MS3044	M6x10	8.93
	220	200	260	126		40	Tr220x4	M6	4.2	7	**H3044XHG**	HM3044	MS3044	M6x10	10.3
	220	200	280	161	35		Tr220x4	M6	4.2	7	**H3144XHG**	HM44T	MB44		15.4
	220	200	280	186	35		Tr220x4	M6	4.2	7	**H2344XHG**	HM44T	MB44		17.5
220	240	220	290	101		45	Tr240x4	M6	4.2	7	**H3948HG**	HM3048	MS3048	M8x16	11.7
	240	220	290	133		45	Tr240x4	M6	4.2	7	**H3048HG**	HM3048	MS3048	M8x16	13.3

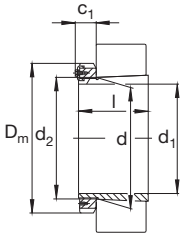
Information on other designs will be supplied on request.

FAG Adapter Sleeves

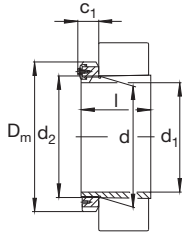
with locknut and locking device



Taper 1:12
Lock washer MB



Taper 1:12
Locking clamp MS30, MS31

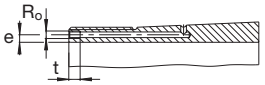


Taper 1:30 (H240, H241)

Shaft	Dimensions										Code				Mass ≈
	d	d_1	D_m	l	c ≈	c_1 ≈	d_2	R_o	e	t	Adapter sleeve complete FAG	Locknut FAG	Locking device FAG	Hexagon head screw, self-locking	
	mm														kg
220	240	220	290	167		45	Tr240x4	M6	4.2	7	**H24048HG**	HM3048	MS3048	M8x16	14.8
	240	220	300	172	37		Tr240x4	M6	4.2	7	**H3148XHG**	HM48T	MB48		18
	240	220	300	199	37		Tr240x4	M6	4.2	7	**H2348XHG**	HM48T	MB48		20.5
240	260	240	310	116		45	Tr260x4	M6	4.2	7	**H3952HG**	HM3052	MS3048	M8x16	14
	260	240	310	145		45	Tr260x4	M6	4.2	7	**H3052XHG**	HM3052	MS3048	M8x16	15.5
	260	240	330	190	39		Tr260x4	M6	4.2	7	**H3152XHG**	HM52T	MB52		22.9
	260	240	330	211	39		Tr260x4	M6	4.2	7	**H2352XHG**	HM52T	MB52		25.1
260	280	260	330	121		49	Tr280x4	M6	4.2	7	**H3956HG**	HM3056	MS3056	M8x16	15
	280	260	330	152		49	Tr280x4	M6	4.2	7	**H3056HG**	HM3056	MS3056	M8x16	17.9
	280	260	330	195		49	Tr280x4	M6	4.2	7	**H24056HG**	HM3056	MS3056	M8x16	20.2
	280	260	350	195	41		Tr280x4	M6	4.2	7	**H3156XHG**	HM56T	MB56		25.4
	280	260	350	224	41		Tr280x4	M6	4.2	7	**H2356XHG**	HM56T	MB56		28.7
280	300	280	360	140		53	Tr300x4	M6	4.2	7	**H3960HG**	HM3060	MS3060	M8x16	20.2
	300	280	360	168		53	Tr300x4	M6	4.2	7	**H3060HG**	HM3060	MS3060	M8x16	23.2
	300	280	380	208		53	Tr300x4	M6	4.2	7	**H3160HG**	HM3160	MS3160	M10x20	29.9
	300	280	380	240		53	Tr300x4	M6	4.2	7	**H3260HG**	HM3160	MS3160	M10x20	34
300	320	300	380	140		56	Tr320x5	M6	3.5	7	**H3964HG**	HM3064	MS3064	M8x16	21.5
	320	300	380	171		56	Tr320x5	M6	3.5	7	**H3064HG**	HM3064	MS3064	M8x16	25
	320	300	400	226		56	Tr320x5	M6	3.5	7	**H3164HG**	HM3164	MS3164	M10x20	34.7
	320	300	400	258		56	Tr320x5	M6	3.5	7	**H3264HG**	HM3164	MS3164	M10x20	39.3
320	340	320	400	144		57	Tr340x5	M6	3.5	7	**H3968HG**	HM3068	MS3064	M8x16	23.9
	340	320	400	187		57	Tr340x5	M6	3.5	7	**H3068HG**	HM3068	MS3064	M8x16	29.2
	340	320	400	244		57	Tr340x5	M6	3.5	7	**H24068HG**	HM3068	MS3064	M8x16	32.9
	340	320	440	254		70	Tr340x5	M6	3.5	7	**H3168HG**	HM3168	MS3168	M12x22	49.5
	340	320	440	288		70	Tr340x5	M6	3.5	7	**H3268HG**	HM3168	MS3168	M12x22	44.6
340	360	340	420	144		57	Tr360x5	M6	3.5	7	**H3972HG**	HM3072	MS3072	M8x16	27.1
	360	340	420	188		57	Tr360x5	M6	3.5	7	**H3072HG**	HM3072	MS3072	M8x16	30.8
	360	340	460	259		73	Tr360x5	M6	3.5	7	**H3172HG**	HM3172	MS3168	M12x22	54.3
	360	340	460	299		73	Tr360x5	M6	3.5	7	**H3272HG**	HM3172	MS3168	M12x22	61
360	380	360	450	164		62	Tr380x5	M6	3.5	7	**H3976HG**	HM3076	MS3076	M10x20	32.3
	380	360	450	193		62	Tr380x5	M6	3.5	7	**H3076HG**	HM3076	MS3076	M10x20	36.4
	380	360	490	264		75	Tr380x5	M6	3.5	7	**H3176HG**	HM3176	MS3176	M12x22	60.9
	380	360	490	310		75	Tr380x5	M6	3.5	7	**H3276HG**	HM3176	MS3176	M12x22	69.2
380	400	380	470	168		66	Tr400x5	M6	3.5	7	**H3980HG**	HM3080	MS3076	M10x20	38.5
	400	380	470	210		66	Tr400x5	M6	3.5	7	**H3080HG**	HM3080	MS3076	M10x20	42.2
	400	380	520	272		81	Tr400x5	M6	3.5	7	**H3180HG**	HM3180	MS3180	M16x25	69.5
	400	380	520	328		81	Tr400x5	M6	3.5	7	**H3280HG**	HM3180	MS3180	M16x25	80.4

FAG Adapter Sleeves

with locknut and locking device



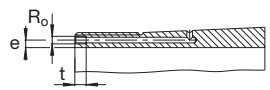
Hydraulic adapter sleeves
(suffix HG)

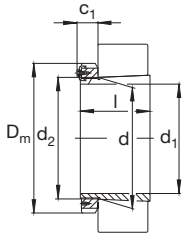
Shaft	Dimensions									Code				Mass ≈
	d	d_1	D_m	l	c_1 ≈	d_2	R_o	e	t	Adapter sleeve complete FAG	Locknut FAG	Locking device FAG	Hexagon head screw, self-locking	
	mm													kg
400	420	400	490	168	66	Tr420x5	M6	3.5	7	**H3984HG**	HM3084	MS3084	M10x20	37.4
	420	400	490	212	66	Tr420x5	M6	3.5	7	**H3084XHG**	HM3084	MS3084	M10x20	44.5
	420	400	490	274	66	Tr420x5	M6	3.5	7	**H24084HG**	HM3084	MS3084	M10x20	49.1
	420	400	540	304	89	Tr420x5	M6	3.5	7	**H3184HG**	HM3184	MS3180	M16x25	84.4
	420	400	540	352	89	Tr420x5	M6	3.5	7	**H3284HG**	HM3184	MS3180	M16x25	101
410	440	410	520	189	75	Tr440x5	M8	6.5	12	**H3988HG**	HM3088	MS3088	M12x22	61.9
	440	410	520	228	75	Tr440x5	M8	6.5	12	**H3088HG**	HM3088	MS3088	M12x22	66.9
	440	410	560	307	89	Tr440x5	M8	6.5	12	**H3188HG**	HM3188	MS3188	M16x25	103
	440	410	560	361	89	Tr440x5	M8	6.5	12	**H3288HG**	HM3188	MS3188	M16x25	125
430	460	430	540	189	75	Tr460x5	M8	6.5	12	**H3992HG**	HM3092	MS3088	M12x22	64.7
	460	430	540	234	75	Tr460x5	M8	6.5	12	**H3092HG**	HM3092	MS3088	M12x22	76
	460	430	580	326	94	Tr460x5	M8	6.5	12	**H3192HG**	HM3192	MS3188	M16x25	127
	460	430	580	382	94	Tr460x5	M8	6.5	12	**H3292HG**	HM3192	MS3188	M16x25	137
450	480	450	560	200	75	Tr480x5	M8	6.5	12	**H3996HG**	HM3096	MS3096	M12x22	70.2
	480	450	560	237	75	Tr480x5	M8	6.5	12	**H3096HG**	HM3096	MS3096	M12x22	75.1
	480	450	620	335	94	Tr480x5	M8	6.5	12	**H3196HG**	HM3196	MS3196	M16x25	134
	480	450	620	397	94	Tr480x5	M8		12	**H3296HG**	HM3196	MS3196	M16x25	154
470	500	470	580	208	83	Tr500x5	M8	6.5	12	**H39/500HG**	HM30/500	MS3096	M12x22	73.5
	500	470	580	247	83	Tr500x5	M8	6.5	12	**H30/500HG**	HM30/500	MS3096	M12x22	84.3
	500	470	580	309	83	Tr500x5	M8	6.5	12	**H240/500HG**	HM30/500	MS3096	M12x22	92.6
	500	470	630	356	99	Tr500x5	M8	6.5	12	**H31/500HG**	HM31/500	MS31/500	M16x25	143
	500	470	630	428	99	Tr500x5	M8	6.5	12	**H32/500HG**	HM31/500	MS31/500	M16x25	168
500	530	500	630	216	89	Tr530x6	M8	6	12	**H39/530HG**	HM30/530	MS30/530	M16x25	89.1
	530	500	630	265	89	Tr530x6	M8	6	12	**H30/530HG**	HM30/530	MS30/530	M16x25	110
	530	500	630	343	89	Tr530x6	M8	6	12	**H240/530HG**	HM30/530	MS30/530	M16x25	115
	530	500	670	364	102	Tr530x6	M8	6	12	**H31/530HG**	HM31/530	MS31/530	M20x40	160
530	560	530	650	227	96	Tr560x6	M8	6	12	**H39/560HG**	HM30/560	MS30/560	M16x25	95.6
	560	530	650	282	96	Tr560x6	M8	6	12	**H30/560HG**	HM30/560	MS30/560	M16x25	112
	560	530	650	358	96	Tr560x6	M8	6	12	**H240/560HG**	HM30/560	MS30/560	M16x25	124
	560	530	710	377	107	Tr560x6	M8	6	12	**H31/560HG**	HM31/560	MS31/560	M20x40	183
	560	530	710	462	107	Tr560x6	M8	6	12	**H32/560HG**	HM31/560	MS31/560	M20x40	217
	560	530	710	468	107	Tr560x6	M8	6	12	**H241/560HG**	HM31/560	MS31/560	M20x40	193
560	600	560	700	239	96	Tr600x6	G1/8	8	12	**H39/600HG**	HM30/600	MS30/530	M16x25	137
	600	560	700	289	96	Tr600x6	G1/8	8	12	**H30/600HG**	HM30/600	MS30/530	M16x25	149
	600	560	700	377	96	Tr600x6	G1/8	8	12	**H240/600HG**	HM30/600	MS30/530	M16x25	171
	600	560	750	399	107	Tr600x6	G1/8	8	12	**H31/600HG**	HM31/600	MS31/560	M20x40	233
	600	560	750	490	107	Tr600x6	G1/8	8	12	**H241/600HG**	HM31/600	MS31/560	M20x40	247

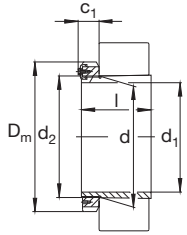
Information on other designs will be supplied on request.

FAG Adapter Sleeves

with locknut and locking device







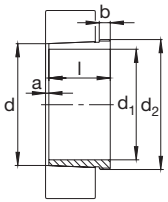
Hydraulic adapter sleeves (suffix HG)

Taper 1:12

H240, H241
Taper 1:30

Shaft	Dimensions									Code				Mass ≈
	d	d_1	D_m	l	c_1 ≈	d_2	R_o	e	t	Adapter sleeve complete FAG	Locknut FAG	Locking device FAG	Hexagon head screw, self-locking	
	mm													kg
600	630	600	730	254	96	Tr630x6	M8	6	12	**H39/630HG**	HM30/630	MS30/630	M16x25	123
	630	600	730	301	96	Tr630x6	M8	6	12	**H30/630HG**	HM30/630	MS30/630	M16x25	140
	630	600	730	395	96	Tr630x6	M8	6	12	**H240/630HG**	HM30/630	MS30/630	M16x25	157
	630	600	800	424	117	Tr630x6	M8	6	12	**H31/630HG**	HM31/630	MS31/630	M20x40	265
	630	600	800	521	117	Tr630x6	M8	6	12	**H32/630HG**	HM31/630	MS31/630	M20x40	296
	630	600	800	525	117	Tr630x6	M8	6	12	**H241/630HG**	HM31/630	MS31/630	M20x40	261
630	670	630	780	264	101	Tr670x6	G1/8	8	12	**H39/670HG**	HM30/670	MS30/670	M16x25	166
	670	630	780	324	101	Tr670x6	G1/8	8	12	**H30/670HG**	HM30/670	MS30/670	M16x25	194
	670	630	780	418	101	Tr670x6	G1/8	8	12	**H240/670HG**	HM30/670	MS30/670	M16x25	218
	670	630	850	456	128	Tr670x6	G1/8	8	12	**H31/670HG**	HM31/670	MS31/670	M20x40	343
	670	630	850	548	128	Tr670x6	G1/8	8	12	**H241/670HG**	HM31/670	MS31/670	M20x40	352
670	710	670	830	286	111	Tr710x7	G1/8	8	12	**H39/710HG**	HM30/710	MS30/710	M16x25	201
	710	670	830	342	111	Tr710x7	G1/8	8	12	**H30/710HG**	HM30/710	MS30/710	M16x25	229
	710	670	900	467	131	Tr710x7	G1/8	8	12	**H31/710HG**	HM31/710	MS31/710	M24x45	395
710	750	710	870	291	111	Tr750x7	G1/8	8	12	**H39/750HG**	HM30/750	MS30/750	M16x25	227
	750	710	950	493	137	Tr750x7	G1/8	8	12	**H31/750HG**	HM31/750	MS31/750	M24x45	433
750	800	750	920	303	111	Tr800x7	G1/8	10	12	**H39/800HG**	HM30/800	MS30/750	M16x25	263
	800	750	920	366	111	Tr800x7	G1/8	10	12	**H30/800HG**	HM30/800	MS30/750	M16x25	306
800	850	800	980	308	112	Tr850x7	G1/8	10	12	**H39/850HG**	HM30/850	MS30/850	M20x40	300
850	900	850	1030	326	122	Tr900x7	G1/8	10	12	**H39/900HG**	HM30/900	MS30/850	M20x40	326
	900	850	1030	400	112	Tr900x7	G1/8	10	12	**H30/900HG**	HM30/900	MS30/850	M20x40	426
900	950	900	1080	344	122	Tr950x8	G1/8	10	12	**H39/950HG**	HM30/950	MS30/950	M20x40	380
950	1000	950	1140	358	122	Tr1000x8	G1/8	10	12	**H39/1000HG**	HM30/1000	MS30/1000	M20x40	428
1000	1060	1000	1200	372	122	Tr1060x8	G1/8	10	12	**H39/1060HG**	HM30/1060	MS30/1000	M20x40	488

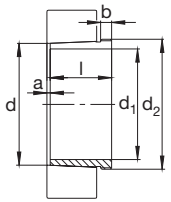
FAG Withdrawal Sleeves



Taper 1:12

Shaft	Dimensions						Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	Withdrawal sleeve FAG	
	mm							kg
35	40	35	25	2	6	M45x1,5	**AH208**	0.081
	40	35	29	3	6	M45x1.5	**AH308**	0.09
	40	35	40	3	7	M45x1.5	**AH2308**	0.13
	40	35	44	3	7	M45x1.5	**AH3308**	0.147
40	45	40	26	3	6	M50x1.5	**AH209**	0.095
	45	40	31	3	6	M50x1.5	**AH309**	0.11
	45	40	44	3	7	M50x1.5	**AH2309**	0.134
	45	40	47	3	7	M50x1.5	**AH3309**	0.18
45	50	45	28	3	7	M55x2	**AH210**	0.114
	50	45	35	3	7	M55x2	**AHX310**	0.139
	50	45	50	3	9	M55x2	**AHX2310**	0.213
	50	45	54	3	9	M55x2	**AH3310**	0.24
50	55	50	29	3	7	M60x2	**AH211**	0.132
	55	50	37	3	7	M60x2	**AHX311**	0.164
	55	50	54	3	10	M60x2	**AHX2311**	0.258
	55	50	60	3	10	M60x2	**AH3311**	0.301
55	60	55	32	3	8	M65x2	**AH212**	0.161
	60	55	40	3	8	M65x2	**AHX312**	0.189
	60	55	58	3	11	M65x2	**AHX2312**	0.305
	60	55	65	3	11	M70x2	**AH3312**	0.408
60	65	60	33	4	8	M75x2	**AH213**	0.213
	65	60	33	4	8	M70x2	**AH213G**	0.168
	65	60	42	3	8	M75x2	**AH313**	0.264
	65	60	42	3	8	M70x2	**AH313G**	0.224
	65	60	61	3	12	M75x2	**AH2313**	0.4
	65	60	61	3	12	M70x2	**AH2313G**	0.352
	65	60	71	3	12	M75x2	**AH3313**	0.492
65	70	65	34	4	8	M80x2	**AH214**	0.24
	70	65	34	4	8	M75x2	**AH214G**	0.187
	70	65	43	4	8	M80x2	**AH314**	0.28
	70	65	43	4	8	M75x2	**AH314G**	0.25
	70	65	64	4	12	M80x2	**AHX2314**	0.459
	70	65	64	4	12	M75x2	**AHX2314G**	0.407
	70	65	76	4	12	M80x2	**AH3314**	0.572
70	75	70	35	4	8	M85x2	**AH215**	0.259
	75	70	35	4	8	M80x2	**AH215G**	0.207
	75	70	45	4	8	M85x2	**AH315**	0.32
	75	70	45	4	8	M80x2	**AH315G**	0.284
	75	70	68	4	12	M85x2	**AHX2315**	0.534
	75	70	68	4	12	M80x2	**AHX2315G**	0.473
	75	70	81	4	12	M85x2	**AH3315**	0.668

See pages 581 to 585 for suitable locknuts.
Information on other designs will be supplied on request.



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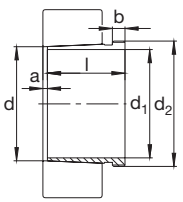
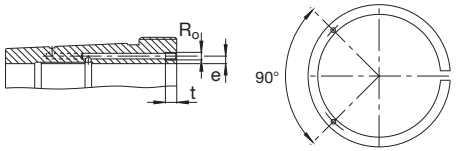


AH240, AH241
Taper 1:30

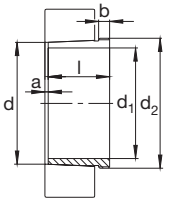
Shaft	Dimensions						Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	Withdrawal sleeve FAG	
	mm							kg
75	80	75	36	4	8	M90x2	**AH216**	0.284
	80	75	48	4	8	M90x2	**AH316**	0.366
	80	75	71	4	12	M90x2	**AHX2316**	0.594
	80	75	81	4	12	M90x2	**AH3316**	0.712
80	85	80	39	4	9	M95x2	**AH217**	0.314
	85	80	52	4	9	M95x2	**AHX317**	0.429
	85	80	60	4	10	M95x2	**AH3217**	0.517
	85	80	74	4	13	M95x2	**AHX2317**	0.672
	85	80	86	4	13	M95x2	**AH3317**	0.81
85	90	85	40	4	9	M100x2	**AH218**	0.351
	90	85	53	4	9	M100x2	**AHX318**	0.466
	90	85	63	4	10	M100x2	**AHX3218**	0.576
	90	85	79	4	14	M100x2	**AHX2318**	0.774
	90	85	87	4	14	M100x2	**AH3318**	0.88
90	95	90	43	4	10	M105x2	**AH219**	0.403
	95	90	57	4	10	M105x2	**AHX319**	0.532
	95	90	85	4	16	M105x2	**AHX2319**	0.894
	95	90	94	4	16	M105x2	**AH3319**	1.03
95	100	95	45	4	10	M110x2	**AH220**	0.481
	100	95	59	4	10	M110x2	**AHX320**	0.603
	100	95	62	9	12	M105x2	**AH24020**	0.5
	100	95	64	4	11	M110x2	**AHX3120**	0.65
	100	95	78	9	13	M105x2	**AH24120**	0.641
	100	95	73	4	11	M110x2	**AHX3220**	0.765
	100	95	90	4	16	M110x2	**AHX2320**	1.01
	100	95	99	4	16	M110x2	**AH3320**	1.16
105	110	105	50	4	11	M120x2	**AH222**	0.547
	110	105	63	4	12	M120x2	**AHX322**	0.663
	110	105	73	9	13	M115x2	**AH24022**	0.64
	110	105	68	4	11	M120x2	**AHX3122**	0.76
	110	105	82	9	13	M115x2	**AH24122**	0.73
	110	105	98	4	16	M125x2	**AHX2322**	1.35
	110	105	98	4	16	M120x2	**AHX2322G**	1.24
	110	105	108	4	16	M125x2	**AH3322**	1.54
115	120	115	53	4	12	M130x2	**AH224**	0.679
	120	115	60	4	13	M130x2	**AHX3024**	0.75
	120	115	73	9	13	M125x2	**AH24024**	0.65
	120	115	75	4	12	M130x2	**AHX3124**	0.957
	120	115	93	9	13	M130x2	**AH24124**	1
	120	115	105	4	17	M135x2	**AHX2324**	1.61
	120	115	105	4	17	M130x2	**AHX2324G**	1.48
	120	115	123	4	17	M135x2	**AH3324**	1.98



Hydraulic withdrawal sleeves
(suffix H)

Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve FAG	
	mm										kg
125	130	125	53	4	12	M140x2				**AH226**	0.725
	130	125	67	4	14	M140x2				**AHX3026**	0.93
	130	125	83	10	14	M135x2				**AH24026**	0.84
	130	125	78	4	12	M140x2				**AHX3126**	1.08
	130	125	94	10	14	M140x2				**AH24126**	1.12
	130	125	98	4	15	M145x2				**AHX3226**	1.59
	130	125	98	4	15	M140x2				**AHX3226G**	1.47
	130	125	115	4	19	M145x2				**AHX2326**	1.98
	130	125	115	4	19	M140x2				**AHX2326G**	1.83
	130	125	131	4	19	M145x2				**AH3326**	2.34
135	140	135	56	5	13	M150x2				**AH228**	0.818
	140	135	68	5	14	M150x2				**AHX3028**	1.01
	140	135	83	10	14	M145x2				**AH24028**	0.944
	140	135	83	5	14	M150x2				**AHX3128**	1.28
	140	135	99	10	14	M150x2				**AH24128**	1.28
	140	135	104	5	15	M155x3				**AHX3228**	1.83
	140	135	104	5	15	M150x2				**AHX3228G**	1.72
	140	135	125	5	20	M155x3				**AHX2328**	2.36
	140	135	125	5	20	M150x2				**AHX2328G**	2.21
	140	135	138	5	20	M155x3				**AH3328**	2.7
145	150	145	60	5	14	M160x3				**AH230**	0.963
	150	145	83	5	15	M160x3				**AHX330G**	1.36
	150	145	72	5	15	M160x3				**AHX3030**	1.15
	150	145	90	11	15	M155x3				**AH24030**	1.11
	150	145	96	5	15	M165x3				**AHX3130**	1.78
	150	145	96	5	15	M160x3				**AHX3130G**	1.64
	150	145	115	11	15	M160x3				**AH24130**	1.62
	150	145	114	5	17	M165x3				**AHX3230**	2.23
	150	145	114	5	17	M160x3				**AHX3230G**	2.07
	150	145	135	5	24	M165x3				**AHX2330**	2.83
	150	145	135	5	24	M160x3				**AHX2330G**	2.6
	150	145	152	5	24	M165x3				**AH3330**	3.34
150	160	150	64	5	15	M170x3				**AH232**	1.7
	160	150	88	5	16	M180x3				**AH332**	2.69
	160	150	88	5	16	M170x3				**AH332G**	2.37
	160	150	77	5	16	M170x3				**AH3032**	2.06
	160	150	77	5	16	M170x3	M6	4.2	7	**AH3032H**	2
	160	150	95	11	15	M170x3				**AH24032**	2.27
	160	150	95	11	15	M170x3	M6	8	7	**AH24032H**	2.27
	160	150	103	5	16	M170x3				**AH3132A**	2.87
	160	150	103	5	16	M170x3	M6	4.5	7	**AH3132AH**	2.81
	160	150	124	11	15	M170x3				**AH24132**	3
	160	150	124	6	20	M180x3				**AH3232**	4.03
	160	150	124	6	20	M180x3	M6	4.5	7	**AH3232H**	3.97
	160	150	124	6	20	M170x3				**AH3232G**	3.63
	160	150	140	6	24	M180x3				**AH2332**	4.72
	160	150	140	6	24	M180x3	M6	4.5	7	**AH2332H**	4.66
	160	150	140	6	24	M170x3				**AH2332G**	4.24

See pages 581 to 585 for suitable locknuts.
Information on other designs will be supplied on request.



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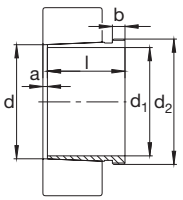
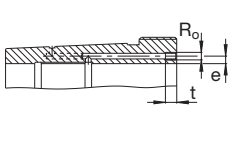
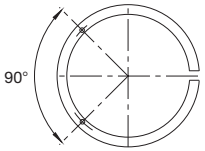


AH240, AH241
Taper 1:30

Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve FAG	kg
	mm										
150	160	150	140	6	24	M170x3	M6	4.5	7	**AH2332GH**	4.17
	160	150	160	6	24	M180x3				**AH3332**	5.51
160	170	160	48	5	13	M180x3				**AH3834**	1.36
	170	160	69	5	16	M180x3				**AH234**	1.98
	170	160	93	5	17	M190x3				**AH334**	3.07
	170	160	93	5	17	M180x3				**AH334G**	2.7
	170	160	85	5	17	M180x3				**AH3034**	2.43
	170	160	85	5	17	M180x3	M6	4.2	7	**AH3034H**	2.39
	170	160	106	11	16	M180x3				**AH24034**	2.8
	170	160	104	5	16	M190x3				**AH3134**	3.4
	170	160	104	5	16	M190x3	M6	4.5	7	**AH3134H**	5.29
	170	160	125	11	16	M180x3				**AH24134**	3.21
	170	160	134	6	24	M190x3				**AH3234**	4.77
	170	160	134	6	24	M190x3	M6	4.5	7	**AH3234H**	4.7
	170	160	134	6	24	M180x3				**AH3234G**	4.25
	170	160	146	6	24	M190x3				**AH2334**	5.27
	170	160	146	6	24	M190x3	M6	4.5	7	**AH2334H**	5.21
	170	160	146	6	24	M180x3				**AH2334G**	4.76
	170	160	146	6	24	M180x3	M6	4.5	7	**AH2334GH**	4.69
	170	160	164	6	24	M190x3				**AH3334**	6.05
170	180	170	48	5	13	M190x3				**AH3836**	1.44
	180	170	66	5	13	M190x3				**AH3936**	1.91
	180	170	69	5	16	M190x3				**AH236**	2.14
	180	170	92	6	17	M190x3				**AH3036**	2.84
	180	170	92	6	17	M190x3	M6	4.2	7	**AH3036H**	2.77
	180	170	116	11	16	M190x3				**AH24036**	3.18
	180	170	105	5	17	M200x3				**AH2236**	3.7
	180	170	105	5	17	M200x3	M6	4.5	7	**AH2236H**	3.62
	180	170	105	5	17	M190x3				**AH2236G**	3.32
	180	170	116	6	19	M200x3				**AH3136A**	4.22
	180	170	116	6	19	M190x3	M6	4.5	7	**AH3136AH**	3.7
	180	170	134	11	16	M190x3				**AH24136**	3.72
	180	170	140	6	25	M200x3				**AH3236**	5.33
	180	170	140	6	25	M200x3	M6	4.5	7	**AH3236H**	5.25
	180	170	140	6	25	M190x3				**AH3236G**	4.77
	180	170	140	6	25	M190x3	M6	4.5	7	**AH3236GH**	4.69
	180	170	154	6	26	M200x3				**AH2336**	5.99
	180	170	154	6	26	M200x3	M6	4.5	7	**AH2336H**	5.91
	180	170	154	6	26	M190x3				**AH2336G**	5.4
	180	170	154	6	26	M190x3	M6	4.5	7	**AH2336GH**	5.32
	180	170	176	6	26	M200x3				**AH3336**	7.04
180	190	180	51	5	13	M200x3				**AH3838**	1.6
	190	180	66	5	13	M200x3				**AH3938**	2.02
	190	180	73	5	17	Tr205x4				**AH238**	2.52
	190	180	73	5	17	M200x3				**AH238G**	2.3
	190	180	96	6	18	Tr205x4				**AH3038**	3.36
	190	180	96	6	18	Tr205x4	M6	4.2	7	**AH3038H**	3.28
	190	180	96	6	18	M200x3				**AH3038G**	3.16
	190	180	96	6	18	M200x3	M6	4.2	7	**AH3038GH**	3.08





Hydraulic withdrawal sleeves
(suffix H)

Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve FAG	kg
	mm										
180	190	180	118	13	18	M200x3				**AH24038**	3.46
	190	180	112	5	18	Tr210x4				**AH2238**	4.21
	190	180	112	5	18	Tr210x4	M6	4.5	7	**AH2238H**	4.13
	190	180	112	5	18	M200x3				**AH2238G**	3.8
	190	180	112	5	18	M200x3	M6	4.5	7	**AH2238GH**	3.72
	190	180	125	6	20	Tr210x4				**AH3138**	4.84
	190	180	125	6	20	Tr210x4	M6	4.5	7	**AH3138H**	4.75
	190	180	125	6	20	M200x3				**AH3138G**	4.38
	190	180	146	13	18	M200x3				**AH24138**	4.37
	190	180	145	7	25	Tr210x4				**AH3238**	5.88
	190	180	145	7	25	Tr210x4	M6	4.5	7	**AH3238H**	5.8
	190	180	145	7	25	M200x3				**AH3238G**	5.3
	190	180	145	7	25	M200x3	M6	4.5	7	**AH3238GH**	5.22
	190	180	160	7	26	Tr210x4				**AH2338**	6.64
	190	180	160	7	26	Tr210x4	M6	4.5	7	**AH2338H**	6.56
	190	180	160	7	26	M200x3				**AH2338G**	6.04
	190	180	160	7	26	M200x3	M6	4.5	7	**AH2338GH**	5.95
	190	180	181	7	26	Tr210x4				**AH3338**	7.71
190	200	190	54	6	16	Tr210x4				**AH3840**	1.84
	200	190	77	6	16	Tr210x4				**AH3940**	2.62
	200	190	77	5	18	Tr215x4				**AH240**	2.87
	200	190	77	5	18	Tr210x4				**AH240G**	2.56
	200	190	102	6	19	Tr215x4				**AH3040**	3.8
	200	190	102	6	19	Tr215x4	M6	4.2	7	**AH3040H**	3.72
	200	190	102	6	19	Tr210x4				**AH3040G**	3.57
	200	190	102	6	19	Tr210x4	M6	4.2	7	**AH3040GH**	3.49
	200	190	127	13	18	Tr210x4				**AH24040**	3.93
	200	190	127	13	18	Tr210x4	M6	8	7	**AH24040H**	3.93
	200	190	118	5	19	Tr220x4				**AH2240**	4.68
	200	190	134	6	21	Tr220x4				**AH3140**	5.55
	200	190	134	6	21	Tr220x4	M6	4.5	7	**AH3140H**	5.46
	200	190	158	13	18	Tr210x4				**AH24140**	5.1
	200	190	153	7	24	Tr220x4				**AH3240**	6.59
	200	190	153	7	24	Tr220x4	M6	4.5	7	**AH3240H**	6.5
	200	190	170	7	30	Tr220x4				**AH2340**	7.59
	200	190	170	7	30	Tr220x4	M6	4.5	7	**AH2340H**	7.5
	200	190	195	7	30	Tr220x4				**AH3340**	8.95
200	220	200	77	6	16	Tr230x4	M8	7.5	12	**AH3944H**	4.65
	220	200	85	6	18	Tr230x4				**AH244G**	5.29
	220	200	111	6	20	Tr235x4	$G^1/_8$	8.5	12	**AH3044H**	7.29
	220	200	111	6	20	Tr230x4				**AH3044G**	7.13
	220	200	111	6	20	Tr230x4	$G^1/_8$	6.5	12	**AH3044GH**	7.02
	220	200	138	14	20	Tr230x4	M6	8	7	**AH24044H**	8.25
	220	200	130	6	20	Tr240x4	$G^1/_8$	8.5	12	**AH2244H**	9.1
	220	200	145	6	23	Tr240x4	$G^1/_8$	8.5	12	**AH3144H**	10.4
	220	200	170	14	20	Tr230x4	M6	8	7	**AH24144H**	10.2
	220	200	181	8	30	Tr240x4	$G^1/_8$	8.5	12	**AH2344H**	13.5

See pages 581 to 585 for suitable locknuts.
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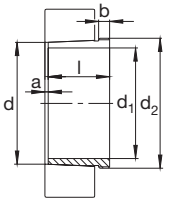

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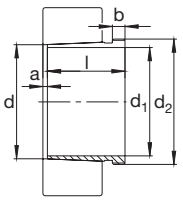
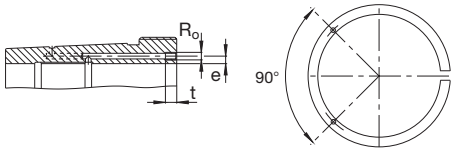


AH240, AH241
Taper 1:30

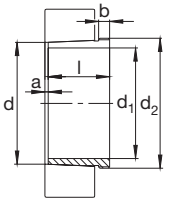
Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve FAG	
	mm										kg
220	240	220	77	6	16	Tr250x4	M8	7.5	12	**AH3948H**	5.29
	240	220	116	7	21	Tr260x4	G 1/8	8.5	12	**AH3048H**	8.75
	240	220	138	15	20	Tr250x4	M6	8	7	**AH24048H**	8.86
	240	220	144	6	21	Tr260x4	G 1/8	8.5	12	**AH2248H**	11.1
	240	220	154	7	25	Tr260x4	G 1/8	8.5	12	**AH3148H**	12
	240	220	180	15	20	Tr260x4	G 1/8	8.5	12	**AH24148H**	12.5
	240	220	189	8	30	Tr260x4	G 1/8	8.5	12	**AH2348H**	15.4
240	260	240	94	6	18	Tr275x4	M8	7.5	12	**AH3952H**	7.16
	260	240	94	6	18	Tr280x4				**AH3952G**	7.58
	260	240	128	7	23	Tr280x4	G 1/8	8.5	12	**AH3052H**	10.7
	260	240	162	16	20	Tr270x4	M6	8	7	**AH24052H**	11.8
	260	240	162	16	20	Tr280x4				**AH24052G**	12.3
	260	240	155	6	23	Tr290x4	G 1/8	8.5	12	**AH2252H**	14
	260	240	155	6	23	Tr280x4				**AH2252G**	13.3
	260	240	172	7	26	Tr290x4	G 1/8	7	12	**AH3152H**	15.7
	260	240	172	7	26	Tr280x4				**AH3152G**	15.1
	260	240	172	7	26	Tr280x4	G 1/8	7	12	**AH3152GH**	14.9
	260	240	202	16	22	Tr280x4	G 1/8	8.5	12	**AH24152H**	15.4
	260	240	205	8	30	Tr290x4	G 1/8	8.5	12	**AH2352H**	19.5
	260	240	205	8	30	Tr280x4				**AH2352G**	18.7
	260	240	205	8	30	Tr280x4	G 1/8	8.5	12	**AH2352GH**	18.5
260	280	260	94	6	18	Tr300x4				**AH3956G**	8.19
	280	260	131	8	24	Tr300x4	G 1/8	8.5	12	**AH3056H**	11.7
	280	260	162	17	22	Tr290x4	M6	8	7	**AH24056H**	12.4
	280	260	162	17	22	Tr300x4				**AH24056G**	13.3
	280	260	162	17	22	Tr300x4	M6	8	7	**AH24056GH**	13.2
	280	260	155	8	24	Tr310x5	G 1/8	8.5	12	**AH2256H**	15.2
	280	260	155	8	23	Tr300x4				**AH2256G**	14.4
	280	260	175	8	28	Tr310x5	G 1/8	8.5	12	**AH3156H**	17.4
	280	260	175	8	28	Tr300x4				**AH3156G**	16.7
	280	260	175	8	28	Tr300x4	G 1/8	8.5	12	**AH3156GH**	16.5
	280	260	202	17	22	Tr300x4	G 1/8	8.5	12	**AH24156H**	16.3
	280	260	212	8	30	Tr310x5	G 1/8	8.5	12	**AH2356H**	21.8
	280	260	212	8	30	Tr300x4				**AH2356G**	21
	280	260	212	8	30	Tr300x4	G 1/8	8.5	12	**AH2356GH**	20.8
280	300	280	112	7	21	Tr315x5	M8	7.5	12	**AH3960H**	10.1
	300	280	112	7	21	Tr320x5				**AH3960G**	10.7
	300	280	112	7	21	Tr320x5	M8	7.5	12	**AH3960GH**	10.5
	300	280	145	8	26	Tr320x5	G 1/8	8.5	12	**AH3060H**	14.4
	300	280	184	18	24	Tr310x5	M6	8	7	**AH24060H**	15.3
	300	280	184	18	24	Tr320x5				**AH24060G**	16.4
	300	280	170	8	26	Tr330x5	G 1/8	8.5	12	**AH2260H**	18
	300	280	170	8	26	Tr320x5				**AH2260G**	17.2
	300	280	170	8	26	Tr320x5	G 1/8	8.5	12	**AH2260GH**	17
	300	280	192	8	30	Tr330x5	G 1/8	8.5	12	**AH3160H**	20.8
	300	280	192	8	30	Tr320x5				**AH3160G**	19.9
	300	280	192	8	30	Tr320x5	G 1/8	8.5	12	**AH3160GH**	19.7
	300	280	224	18	24	Tr320x5	G 1/8	8.5	12	**AH24160H**	20



Hydraulic withdrawal sleeves
(suffix H)

Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve FAG	
	mm										kg
280	300	280	228	8	34	Tr330x5	G 1/8	8.5	12	**AH3260H**	26
	300	280	228	8	34	Tr320x5				**AH3260G**	24.6
300	320	300	112	7	21	Tr340x5				**AH3964G**	11.4
	320	300	149	8	27	Tr345x5	G 1/8	8.5	12	**AH3064H**	16.1
	320	300	149	8	27	Tr340x5				**AH3064G**	15.8
	320	300	149	8	27	Tr340x5	G 1/8	8.5	12	**AH3064GH**	15.6
	320	300	184	18	24	Tr330x5	M6	8	7	**AH24064H**	16.6
	320	300	184	18	24	Tr340x5				**AH24064G**	17.5
	320	300	180	10	27	Tr350x5	G 1/8	8.5	12	**AH2264H**	20.6
	320	300	180	10	27	Tr340x5				**AH2264G**	19.8
	320	300	180	10	27	Tr340x5	G 1/8	8.5	12	**AH2264GH**	19.6
	320	300	209	8	31	Tr350x5	G 1/8	8.5	12	**AH3164H**	24.6
	320	300	209	8	31	Tr340x5				**AH3164G**	23.6
	320	300	209	8	31	Tr340x5	G 1/8	8.5	12	**AH3164GH**	23.4
	320	300	242	18	24	Tr340x5	G 1/8	8.5	12	**AH24164H**	21.4
	320	300	246	8	36	Tr350x5	G 1/8	8.5	12	**AH3264H**	30.1
	320	300	246	8	36	Tr340x5				**AH3264G**	28.9
	320	300	246	8	36	Tr340x5	G 1/8	8.5	12	**AH3264GH**	28.7
320	340	320	112	7	21	Tr355x5	M8	7.5	12	**AH3968H**	11.4
	340	320	112	7	21	Tr360x5				**AH3968G**	12.1
	340	320	162	9	28	Tr365x5	G 1/8	8.5	12	**AH3068H**	18.9
	340	320	162	9	28	Tr360x5				**AH3068G**	18.6
	340	320	162	9	28	Tr360x5	G 1/8	8.5	12	**AH3068GH**	18.3
	340	320	206	19	26	Tr360x5	G 1/8	8.5	12	**AH24068H**	21.7
	340	320	225	9	33	Tr370x5	G 1/8	8.5	12	**AH3168H**	28.7
	340	320	225	9	33	Tr360x5				**AH3168G**	27.6
	340	320	269	19	26	Tr360x5	G 1/8	8.5	12	**AH24168H**	27.1
	340	320	264	9	38	Tr370x5	G 1/8	8.5	12	**AH3268H**	35.2
	340	320	264	9	38	Tr360x5				**AH3268G**	33.7
340	360	340	112	7	21	Tr375x5	M8	7.5	12	**AH3972H**	12.1
	360	340	112	7	21	Tr380x5				**AH3972G**	12.8
	360	340	112	7	21	Tr380x5	M8	7.5	12	**AH3972GH**	12.6
	360	340	167	9	30	Tr385x5	G 1/8	8.5	12	**AH3072H**	20.8
	360	340	167	9	30	Tr380x5				**AH3072G**	20.4
	360	340	167	9	30	Tr380x5	G 1/8	8.5	12	**AH3072GH**	20.1
	360	340	206	20	26	Tr380x5	G 1/8	8.5	12	**AH24072H**	22.7
	360	340	229	9	35	Tr400x5	G 1/8	8.5	12	**AH3172H**	32.7
	360	340	229	9	35	Tr380x5				**AH3172G**	29.9
	360	340	229	9	35	Tr380x5	G 1/8	8.5	12	**AH3172GH**	29.5
	360	340	269	20	26	Tr380x5	G 1/8	8.5	12	**AH24172H**	29.6
	360	340	274	9	40	Tr400x5	G 1/8	8.5	12	**AH3272H**	40.8
	360	340	274	9	40	Tr380x5				**AH3272G**	37.5
	360	340	274	9	40	Tr380x5	G 1/8	8.5	12	**AH3272GH**	37.1
360	380	360	130	8	22	Tr395x5	M8	7.5	12	**AH3976H**	15.2
	380	360	130	8	22	Tr400x5				**AH3976G**	16
	380	360	130	8	22	Tr400x5	M8	7.5	12	**AH3976GH**	15.7
	380	360	170	10	31	Tr410x5	G 1/8	8.5	12	**AH3076H**	23.2

See pages 581 to 585 for suitable locknuts.
Information on other designs will be supplied on request.



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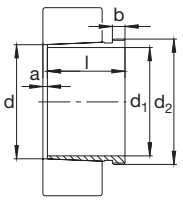
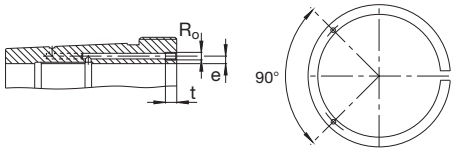


AH240, AH241
Taper 1:30

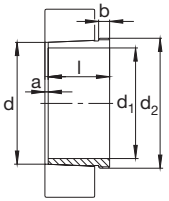
Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve FAG	
	mm										kg
360	380	360	170	10	31	Tr400x5				**AH3076G**	22.1
	380	360	208	20	28	Tr400x5	G 1/8	8.5	12	**AH24076H**	23.7
	380	360	232	10	36	Tr420x5	G 1/8	8.5	12	**AH3176H**	35.7
	380	360	232	10	36	Tr400x5				**AH3176G**	32.2
	380	360	271	20	28	Tr400x5	G 1/8	8.5	12	**AH24176H**	31.3
	380	360	284	10	42	Tr420x5	G 1/8	8.5	12	**AH3276H**	45.6
	380	360	284	10	42	Tr400x5				**AH3276G**	41.5
380	400	380	130	8	22	Tr415x5	M8	7.5	12	**AH3980H**	16
	400	380	130	8	22	Tr420x5				**AH3980G**	16.9
	400	380	183	10	33	Tr430x5	G 1/8	8.5	12	**AH3080H**	27.3
	400	380	183	10	33	Tr420x5				**AH3080G**	25.4
	400	380	228	20	28	Tr420x5	G 1/8	8.5	12	**AH24080H**	27.1
	400	380	240	10	38	Tr440x5	G 1/8	8.5	12	**AH3180H**	39.5
	400	380	240	10	38	Tr420x5				**AH3180G**	35.3
	400	380	278	20	28	Tr420x5	G 1/8	8.5	12	**AH24180H**	34.5
	400	380	302	10	44	Tr440x5	G 1/8	8.5	12	**AH3280H**	51.4
	400	380	302	10	44	Tr420x5				**AH3280G**	47.4
400	420	400	130	8	22	Tr435x5	M8	7.5	12	**AH3984H**	17
	420	400	130	8	22	Tr440x5				**AH3984G**	17.8
	420	400	186	10	34	Tr450x5	G 1/8	8.5	12	**AH3084H**	28.6
	420	400	186	10	34	Tr440x5				**AH3084G**	27.2
	420	400	186	10	34	Tr440x5	G 1/8	8.5	12	**AH3084GH**	26.9
	420	400	230	22	30	Tr440x5	G 1/8	8.5	12	**AH24084H**	29
	420	400	266	10	40	Tr460x5	G 1/8	8.5	12	**AH3184H**	46.1
	420	400	266	10	40	Tr440x5				**AH3184G**	42.3
	420	400	266	10	40	Tr440x5	G 1/8	8.5	12	**AH3184GH**	41.9
	420	400	310	22	30	Tr440x5	G 1/8	8.5	12	**AH24184H**	40.3
	420	400	321	10	46	Tr460x5	G 1/8	8.5	12	**AH3284H**	58.4
	420	400	321	10	46	Tr440x5				**AH3284G**	54
	420	400	321	10	46	Tr440x5	G 1/8	8.5	12	**AH3284GH**	53.5
420	440	420	194	11	35	Tr460x5				**AHX3088G**	30.1
	440	420	194	11	35	Tr460x5	G 1/8	8.5	12	**AHX3088GH**	29.6
	440	420	242	22	30	Tr460x5	G 1/8	8.5	12	**AH24088H**	31.9
	440	420	270	11	42	Tr460x5				**AHX3188G**	45.3
	440	420	270	11	42	Tr460x5	G 1/8	8.5	12	**AHX3188GH**	44.7
	440	420	310	22	30	Tr460x5	G 1/8	8.5	12	**AH24188H**	42.3
	440	420	330	11	48	Tr460x5				**AHX3288G**	58.8
440	460	440	145	8	25	Tr480x5	G 1/8	8.5	12	**AH3992H**	22.5
	460	440	202	11	37	Tr480x5				**AHX3092G**	33.1
	460	440	202	11	37	Tr480x5	G 1/8	8.5	12	**AHX3092GH**	32.6
	460	440	250	23	32	Tr480x5	G 1/8	8.5	12	**AH24092H**	34.7
	460	440	285	11	43	Tr480x5				**AHX3192G**	50.8
	460	440	285	11	43	Tr480x5	G 1/8	8.5	12	**AHX3192GH**	50.2
	460	440	332	23	32	Tr480x5	G 1/8	8.5	12	**AH24192H**	47.4
	460	440	349	11	50	Tr480x5				**AHX3292G**	66.2



Hydraulic withdrawal sleeves
(suffix H)

Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve FAG	
	mm										kg
460	480	460	158	9	28	Tr500x5	G 1/8	8.5	12	**AH3996H**	25.1
	480	460	205	12	38	Tr500x5				**AHX3096G**	35.2
	480	460	250	23	32	Tr500x5	G 1/8	8.5	12	**AH24096H**	36.6
	480	460	295	12	45	Tr500x5				**AHX3196G**	55.5
	480	460	295	12	45	Tr500x5	G 1/8	8.5	12	**AHX3196GH**	54.9
	480	460	343	25	35	Tr500x5	G 1/8	8.5	12	**AH24196H**	53.1
	480	460	340	23	32	Tr500x5				**AH24196G**	53.1
	480	460	364	12	52	Tr500x5				**AHX3296G**	73.3
480	500	480	162	10	32	Tr520x6	G 1/8	8.5	12	**AH39/500H**	28
	500	480	162	10	32	Tr530x6				**AH39/500G**	29.6
	500	480	209	12	40	Tr530x6				**AHX30/500G**	40
	500	480	253	23	35	Tr520x6	G 1/8	8.5	12	**AH240/500H**	39
	500	480	253	23	35	Tr530x6				**AH240/500G**	41.8
	500	480	253	23	35	Tr530x6	G 1/8	8.5	12	**AH240/500GH**	41.2
	500	480	313	12	47	Tr530x6				**AHX31/500G**	65.3
	500	480	362	25	37	Tr520x6	G 1/8	8.5	12	**AH241/500H**	59
	500	480	360	23	35	Tr530x6				**AH241/500G**	61.2
	500	480	360	23	35	Tr530x6	G 1/8	8.5	12	**AH241/500GH**	60.5
	500	480	393	12	54	Tr530x6				**AHX32/500G**	88.1
	500	480	393	12	54	Tr530x6	G 1/8	8.5	12	**AHX32/500GH**	87.4
500	530	500	175	10	37	Tr550x6	G 1/4	10	15	**AH39/530H**	43.4
	530	500	175	10	37	Tr560x6	G 1/4	10	15	**AH39/530G**	45.3
	530	500	230	12	45	Tr560x6	G 1/4	15	15	**AH30/530AH**	61.9
	530	500	290	25	40	Tr550x6	G 1/4	8.5	15	**AH240/530H**	66.9
	530	500	285	24	35	Tr560x6				**AH240/530G**	67.9
	530	500	375	25	40	Tr550x6	G 1/4	10	15	**AH241/530H**	88.4
	530	500	370	25	35	Tr560x6				**AH241/530G**	89.9
	530	500	412	12	57	Tr580x6				**AH32/530AG**	125
530	560	530	180	10	37	Tr580x6	G 1/4	12	15	**AH39/560H**	46.2
	560	530	180	10	37	Tr600x6				**AH39/560G**	52.1
	560	530	180	10	37	Tr600x6	G 1/4	12	15	**AH39/560GH**	51.3
	560	530	240	12	45	Tr590x6	G 1/4	15	15	**AH30/560AH**	68.6
	560	530	240	12	45	Tr600x6				**AH30/560AG**	71.8
	560	530	298	25	40	Tr580x6	G 1/4	8.5	15	**AH240/560H**	72.3
	560	530	296	24	38	Tr600x6				**AH240/560G**	77.8
	560	530	296	24	38	Tr600x6	G 1/4	8.5	15	**AH240/560GH**	76.9
	560	530	335	12	55	Tr600x6				**AH31/560AG**	106
	560	530	400	28	45	Tr580x6	G 1/4	12	15	**AH241/560H**	101
	560	530	393	24	38	Tr600x6				**AH241/560G**	105
	560	530	422	12	57	Tr610x6	G 1/4	12	15	**AH32/560AH**	144
	560	530	422	12	57	Tr600x6				**AH32/560AG**	140
570	600	570	192	10	38	Tr625x6	G 1/4	12	15	**AH39/600H**	54.6
	600	570	192	10	38	Tr630x6				**AH39/600G**	57
	600	570	192	10	38	Tr630x6	G 1/4	12	15	**AH39/600GH**	56
	600	570	245	14	45	Tr630x6	G 1/4	15	15	**AH30/600AH**	74.5
	600	570	317	30	45	Tr625x6	G 1/4	8.5	15	**AH240/600H**	86
	600	570	310	26	38	Tr630x6				**AH240/600G**	84.8

See pages 581 to 585 for suitable locknuts.
Information on other designs will be supplied on request.



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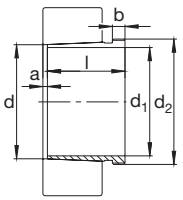
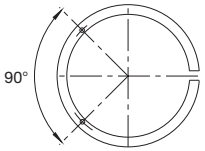


AH240, AH241
Taper 1:30

Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve FAG	
	mm										kg
570	600	570	355	14	55	Tr630x6	G 1/4	12	15	**AH31/600AH**	118
	600	570	425	30	50	Tr625x6	G 1/4	12	15	**AH241/600H**	118
	600	570	413	26	38	Tr630x6				**AH241/600G**	116
	600	570	413	26	38	Tr630x6	G 1/4	12	15	**AH241/600GH**	115
	600	570	445	14	57	Tr630x6				**AH32/600AG**	157
600	630	600	210	12	40	Tr655x6	G 1/4	12	15	**AH39/630H**	62.8
	630	600	210	12	40	Tr655x6				**AH39/630G**	69.4
	630	600	258	14	46	Tr670x6	G 1/4	15	15	**AH30/630AH**	87.8
	630	600	335	30	45	Tr655x6	G 1/4	8.5	15	**AH240/630H**	95.5
	630	600	330	26	40	Tr670x6				**AH240/630G**	98.7
	630	600	375	14	60	Tr670x6	G 1/4	12	15	**AH31/630AH**	138
	630	600	450	30	50	Tr655x6	G 1/4	12	15	**AH241/630H**	135
	630	600	440	26	40	Tr670x6				**AH241/630G**	134
	630	600	475	14	63	Tr670x6				**AH32/630AG**	185
630	670	630	216	12	41	Tr695x6	G 1/4	12	15	**AH39/670H**	85.5
	670	630	216	12	41	Tr710x7				**AH39/670G**	92.9
	670	630	280	14	50	Tr710x7	G 1/4	15	15	**AH30/670AH**	123
	670	630	358	30	50	Tr695x6	G 1/4	8.5	15	**AH240/670H**	136
	670	630	348	26	40	Tr710x7				**AH240/670G**	138
	670	630	467	30	55	Tr695x6	G 1/4	12	15	**AH241/670H**	184
	670	630	452	26	40	Tr710x7				**AH241/670G**	182
	670	630	452	26	40	Tr710x7	G 1/4	12	15	**AH241/670GH**	181
	670	630	500	14	62	Tr710x7				**AH32/670AG**	249
670	710	670	228	12	43	Tr740x7	G 1/4	15	15	**AH39/710H**	99.5
	710	670	228	12	43	Tr750x7				**AH39/710G**	105
	710	670	228	12	43	Tr750x7	G 1/4	15	15	**AH39/710GH**	103
	710	670	286	16	50	Tr750x7	G 1/4	15	15	**AH30/710AH**	21.3
	710	670	365	33	50	Tr740x7	G 1/4	8.5	15	**AH240/710H**	150
	710	670	360	26	45	Tr750x7				**AH240/710G**	153
	710	670	493	33	55	Tr740x7	G 1/4	15	15	**AH241/710H**	209
	710	670	483	26	45	Tr750x7				**AH241/710G**	209
	710	670	515	16	65	Tr750x7				**AH32/710AG**	275
680	710	680	163	12	43	Tr740x7	G 1/4	12	15	**AH38/710H**	58.6
710	750	710	234	12	44	Tr780x7	G 1/4	15	15	**AH39/750H**	108
	750	710	234	12	44	Tr800x7				**AH39/750G**	118
	750	710	234	12	44	Tr800x7	G 1/4	15	15	**AH39/750GH**	116
	750	710	385	35	50	Tr780x7	G 1/4	8.5	15	**AH240/750H**	170
	750	710	380	28	45	Tr800x7				**AH240/750G**	175
	750	710	425	16	60	Tr800x7	G 1/4	15	15	**AH31/750AH**	236
	750	710	530	35	55	Tr780x7	G 1/4	15	15	**AH241/750H**	241
	750	710	520	28	45	Tr800x7				**AH241/750G**	244
	750	710	520	28	45	Tr800x7	G 1/4	15	15	**AH241/750GH**	242

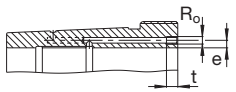


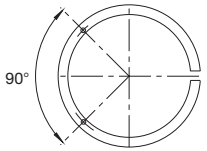
Hydraulic withdrawal sleeves
(suffix H)

Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve FAG	
	mm										kg
750	800	750	245	12	45	Tr830x7	G 1/4	15	15	**AH39/800H**	147
	800	750	245	12	45	Tr830x7				**AH39/800G**	155
	800	750	308	18	53	Tr850x7	G 1/4	15	15	**AH30/800AH**	200
	800	750	395	40	50	Tr830x7	G 1/4	15	15	**AH240/800H**	223
	800	750	395	28	50	Tr850x7				**AH240/800G**	233
	800	750	438	18	63	Tr850x7	G 1/4	15	15	**AH31/800AH**	299
	800	750	530	40	55	Tr830x7	G 1/4	15	15	**AH241/800H**	307
	800	750	525	28	50	Tr850x7				**AH241/800G**	313
	800	750	525	28	50	Tr850x7	G 1/4	15	15	**AH241/800GH**	311
	800	750	550	18	62	Tr850x7				**AH32/800AG**	396
800	850	800	258	12	50	Tr880x7	G 1/4	15	15	**AH39/850H**	164
	850	800	258	12	50	Tr900x7				**AH39/850G**	176
	850	800	258	12	50	Tr900x7	G 1/4	15	15	**AH39/850GH**	174
	850	800	418	40	53	Tr880x7	G 1/4	15	15	**AH240/850H**	252
	850	800	415	30	50	Tr900x7				**AH240/850G**	261
	850	800	560	40	60	Tr880x7	G 1/4	15	15	**AH241/850H**	344
	850	800	560	40	60	Tr900x7				**AH241/850G**	363
850	900	850	265	12	51	Tr930x8	G 1/4	15	15	**AH39/900H**	182
	900	850	265	12	51	Tr950x8				**AH39/900G**	191
	900	850	335	20	55	Tr950x8	G 1/4	15	15	**AH30/900AH**	248
	900	850	430	45	55	Tr930x8	G 1/4	15	15	**AH240/900H**	276
	900	850	430	45	55	Tr950x8				**AH240/900G**	291
	900	850	575	45	60	Tr930x8	G 1/4	15	15	**AH241/900H**	383
	900	850	575	45	60	Tr950x8				**AH241/900G**	397
860	900	860	193	12	51	Tr930x8	G 1/4	15	15	**AH38/900H**	109
900	950	900	282	15	51	Tr980x8	G 1/4	15	15	**AH39/950H**	206
	950	900	282	15	51	Tr1000x8				**AH39/950G**	216
	950	900	467	45	55	Tr980x8	G 1/4	15	15	**AH240/950H**	318
	950	900	467	45	55	Tr1000x8				**AH240/950G**	335
	950	900	605	45	60	Tr980x8	G 1/4	15	15	**AH241/950H**	426
	950	900	605	45	60	Tr1000x8				**AH241/950G**	443
	950	900	605	45	60	Tr1000x8	G 1/4	15	15	**AH241/950GH**	440
950	1000	950	296	15	52	Tr1060x8				**AH39/1000G**	247
	1000	950	469	50	57	Tr1035x8	G 1/4	15	15	**AH240/1000H**	353
	1000	950	469	50	57	Tr1060x8				**AH240/1000G**	363
	1000	950	525	22	63	Tr1060x8	G 1/4	15	15	**AH31/1000AH**	482
	1000	950	645	50	65	Tr1035x8	G 1/4	15	15	**AH241/1000H**	482
1000	1060	1000	310	15	52	Tr1095x8	G 1/4	15	15	**AH39/1060H**	294
	1060	1000	310	15	52	Tr1120x8				**AH39/1060G**	313
	1060	1000	498	50	60	Tr1095x8	G 1/4	15	15	**AH240/1060H**	440
	1060	1000	498	50	60	Tr1120x8				**AH240/1060G**	473
	1060	1000	665	50	65	Tr1095x8	G 1/4	15	15	**AH241/1060H**	605

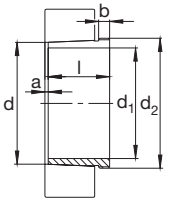
See pages 581 to 585 for suitable locknuts.
Information on other designs will be supplied on request.

FAG Withdrawal Sleeves

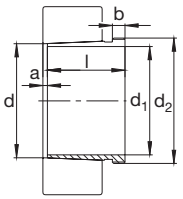




Hydraulic withdrawal sleeves
(suffix H)



Taper 1:12

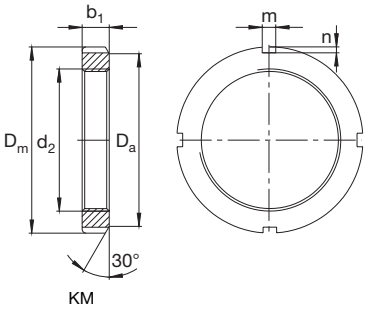


AH240, AH241
Taper 1:30

Shaft	Dimensions									Code	Mass ≈
	d	d_1	l	a ≈	b	d_2	R_o	e	t	Withdrawal sleeve	
	mm									FAG	kg
1060	1120	1060	527	50	65	Tr1155x8	G 1/4	15	15	**AH240/1120H**	490
	1120	1060	527	50	65	Tr1180x8				**AH240/1120G**	533
	1120	1060	705	50	75	Tr1180x8	G 1/4	15	15	**AH241/1120H**	727
1070	1120	1070	310	15	52	Tr1180x8				**AH39/1120G**	291
1120	1180	1120	540	50	65	Tr1215x8	G 1/4	15	15	**AH240/1180H**	530
	1180	1120	540	50	65	Tr1250x8				**AH240/1180G**	586
1130	1180	1130	330	15	55	Tr1215x8	G 1/4	15	15	**AH39/1180H**	306
	1180	1130	330	15	55	Tr1250x8				**AH39/1180G**	337
1180	1250	1180	570	50	70	Tr1285x8	G 1/4	15	15	**AH240/1250H**	680
	1250	1180	570	50	70	Tr1320x8				**AH240/1250G**	743
1200	1250	1200	340	18	55	Tr1320x8				**AH39/1250G**	370
1250	1320	1250	600	50	70	Tr1355x8	G 1/4	15	15	**AH240/1320H**	760
	1320	1250	600	50	70	Tr1400x8				**AH240/1320G**	840
1270	1320	1270	360	18	55	Tr1400x8				**AH39/1320G**	425
1320	1400	1320	615	50	70	Tr1435x8	G 1/4	15	15	**AH240/1400H**	930
	1400	1320	615	50	70	Tr1500x8				**AH240/1400G**	1040
1350	1400	1350	380	20	60	Tr1500x8				**AH39/1400G**	504
1450	1500	1450	400	20	60	Tr1600x8				**AH39/1500G**	569

See pages 581 to 585 for suitable locknuts.

FAG Locknuts

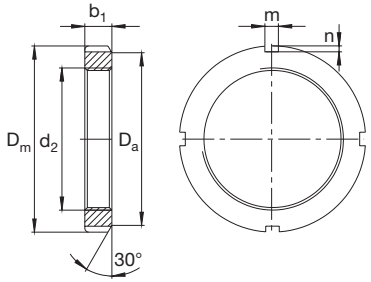


KM

Thread	Dimensions					Mass ≈	Code	
d_2	D_m	b_1	D_a	m	n	Nut	Nut	Suitable locking device
	mm					kg	FAG	FAG
M10x0.75	18	4	13.5	3	2	0.005	**KM0**	MB0
M12x1	22	4	17	3	2	0.005	**KM1**	MB1, MB1A
M15x1	25	5	21	4	2	0.01	**KM2**	MB2, MB2A
M17x1	28	5	24	4	2	0.015	**KM3**	MB3, MB3A
M20x1	32	6	26	4	2	0.02	**KM4**	MB4, MB4A
M25x1.5	38	7	32	5	2	0.03	**KM5**	MB5, MB5A
M30x1.5	45	7	38	5	2	0.04	**KM6**	MB6, MB6A
M35x1.5	52	8	44	5	2	0.065	**KM7**	MB7, MB7A
M40x1.5	58	9	50	6	2.5	0.085	**KM8**	MB8, MB8A
M45x1.5	65	10	56	6	2.5	0.12	**KM9**	MB9, MB9A
M50x1.5	70	11	61	6	2.5	0.15	**KM10**	MB10, MB10A
M55x2	75	11	67	7	3	0.16	**KM11**	MB11, MB11A
M60x2	80	11	73	7	3	0.175	**KM12**	MB12, MB12A
M65x2	85	12	79	7	3	0.22	**KM13**	MB13, MB13A
M70x2	92	12	85	8	3.5	0.255	**KM14**	MB14, MB14A
M75x2	98	13	90	8	3.5	0.3	**KM15**	MB15, MB15A
M80x2	105	15	95	8	3.5	0.4	**KM16**	MB16, MB16A
M85x2	110	16	102	8	3.5	0.46	**KM17**	MB17, MB17A
M90x2	120	16	108	10	4	0.575	**KM18**	MB18, MB18A

Information on other designs will be supplied on request.

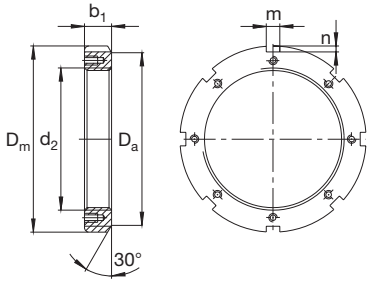
FAG Locknuts



KM, KML, HM..T

Thread	Dimensions					Mass ≈	Code	
d_2	D_m	b_1	D_a	m	n	Nut	Nut	Suitable locking device
	mm					kg	**FAG**	**FAG**
M95x2	125	17	113	10	4	0.645	**KM19**	MB19, MB19A
M100x2	130	18	120	10	4	0.725	**KM20**	MB20, MB20A
M105x2	140	18	126	12	5	0.87	**KM21**	MB21
M110x2	145	19	133	12	5	0.97	**KM22**	MB22
M115x2	150	19	137	12	5	1.01	**KM23**	MB23
M120x2	145	20	135	12	5	0.79	**KML24**	MBL24
M120x2	155	20	138	12	5	1.08	**KM24**	MB24
M125x2	160	21	148	12	5	1.22	**KM25**	MB25
M130x2	155	21	145	12	5	0.9	**KML26**	MBL26
M130x2	165	21	149	12	5	1.24	**KM26**	MB26
M135x2	175	22	160	14	6	1.55	**KM27**	MB27
M140x2	165	22	155	12	5	1.01	**KML28**	MBL28
M140x2	180	22	160	14	6	1.56	**KM28**	MB28
M145x2	190	24	171	14	6	2.05	**KM29**	MB29
M150x2	180	24	170	14	5	1.44	**KML30**	MBL30
M150x2	195	24	171	14	6	2.06	**KM30**	MB30
M155x3	200	25	182	16	7	2.27	**KM31**	MB31
M160x3	190	25	180	14	5	1.62	**KML32**	MBL32
M160x3	210	25	182	16	7	2.52	**KM32**	MB32
M165x3	210	26	193	16	7	2.7	**KM33**	MB33
M170x3	200	26	190	16	5	1.72	**KML34**	MBL34
M170x3	220	26	193	16	7	2.8	**KM34**	MB34

FAG Locknuts

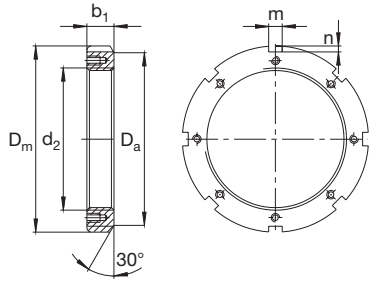


HM30, HM31

Thread	Dimensions					Mass ≈	Code	
d_2	D_m	b_1	D_a	m	n	Nut	Nut	Suitable locking device
	mm					kg	**FAG**	**FAG**
M180x3	210	27	200	16	5	1.96	**KML36**	MBL36
M180x3	230	27	203	18	8	3.04	**KM36**	MB36
M190x3	220	28	210	16	5	2.13	**KML38**	MBL38
M190x3	240	28	214	18	8	3.34	**KM38**	MB38
M200x3	240	29	222	18	8	2.9	**KML40**	MBL40
M200x3	250	29	226	18	8	3.69	**KM40**	MB40
Tr220x4	260	30	242	20	9	3.21	**HM3044**	MS3044
Tr220x4	280	32	250	20	10	5.3	**HM44T**	MB44
Tr240x4	290	34	270	20	10	5.12	**HM3048**	MS3048
Tr240x4	300	34	270	20	10	6.15	**HM48T**	MB48
Tr260x4	310	34	290	20	10	5.54	**HM3052**	MS3048
Tr260x4	330	35	300	24	12	8.05	**HM52T**	MB52
Tr280x4	330	38	310	24	10	6.61	**HM3056**	MS3056
Tr280x4	350	36	320	24	12	8.9	**HM56T**	MB56
Tr300x4	360	42	336	24	12	9.48	**HM3060**	MS3060
Tr300x4	380	40	340	24	12	11.4	**HM3160**	MS3160
Tr320x5	380	42	356	24	12	10.1	**HM3064**	MS3064
Tr320x5	400	42	360	24	12	12.8	**HM3164**	MS3164
Tr340x5	400	45	376	24	12	11.5	**HM3068**	MS3064
Tr340x5	440	55	400	28	15	23	**HM3168**	MS3168
Tr360x5	420	45	394	28	13	11.9	**HM3072**	MS3072
Tr360x5	460	58	420	28	15	25.7	**HM3172**	MS3168
Tr380x5	450	48	422	28	14	15.9	**HM3076**	MS3076
Tr380x5	490	60	440	32	18	30	**HM3176**	MS3168
Tr400x5	470	52	442	28	14	18.2	**HM3080**	MS3076
Tr400x5	520	62	460	32	18	35.7	**HM3180**	MS3180
Tr420x5	490	52	462	32	14	18.9	**HM3084**	MS3084
Tr420x5	540	70	490	32	18	43.4	**HM3184**	MS3180

Information on other designs will be supplied on request.

FAG Locknuts



HM30, HM31

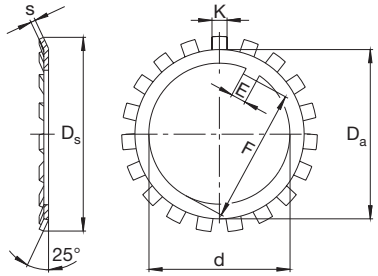
Thread	Dimensions					Mass ≈	Code	
d_2	D_m	b_1	D_a	m	n	Nut	Nut	Suitable locking device
	mm					kg	**FAG**	**FAG**
Tr440x5	520	60	490	32	15	26.5	**HM3088**	MS3088
Tr440x5	560	70	510	36	20	44.3	**HM3188**	MS3188
Tr460x5	540	60	510	32	15	27.7	**HM3092**	MS3088
Tr460x5	580	75	540	36	20	53.8	**HM3192**	MS3188
Tr480x5	560	60	530	36	15	28.7	**HM3096**	MS3096
Tr480x5	620	75	560	36	20	62.2	**HM3196**	MS3196
Tr500x5	580	68	550	36	15	34	**HM30/500**	MS3096
Tr500x5	630	80	580	40	23	62.1	**HM31/500**	MS31/500
Tr530x6	630	68	590	40	20	44.7	**HM30/530**	MS30/530
Tr530x6	670	80	610	40	23	71.2	**HM31/530**	MS31/530
Tr560x6	650	75	610	40	20	46.2	**HM30/560**	MS30/560
Tr560x6	710	85	650	45	25	85.6	**HM31/560**	MS31/560
Tr600x6	700	75	660	40	20	55.9	**HM30/600**	MS30/530
Tr600x6	750	85	690	45	25	91.7	**HM31/600**	MS31/560
Tr630x6	730	75	690	45	20	58.3	**HM30/630**	MS30/630
Tr630x6	800	95	730	50	28	122	**HM31/630**	MS31/630
Tr670x6	780	80	740	45	20	73.8	**HM30/670**	MS30/670
Tr670x6	850	106	775	50	28	156	**HM31/670**	MS31/670
Tr710x7	830	90	780	50	25	94.8	**HM30/710**	MS30/710
Tr710x7	900	106	825	55	30	173	**HM31/710**	MS31/710
Tr750x7	870	90	820	55	25	99.5	**HM30/750**	MS30/750
Tr750x7	950	112	875	60	34	202	**HM31/750**	MS31/750
Tr800x7	920	90	870	55	25	106	**HM30/800**	MS30/750
Tr800x7	1000	112	925	60	34	215	**HM31/800**	MS31/750
Tr850x7	980	90	925	60	25	113	**HM30/850**	MS30/850
Tr850x7	1060	118	975	70	38	246	**HM31/850**	MS31/850
Tr900x7	1030	100	975	60	25	135	**HM30/900**	MS30/850
Tr900x7	1120	125	1030	70	38	293	**HM31/900**	MS31/900

FAG Locknuts

Thread	Dimensions					Mass ≈	Code	
d_2	D_m	b_1	D_a	m	n	Nut	Nut	Suitable locking device
	mm					kg	**FAG**	**FAG**
Tr950x8	1080	100	1025	60	25	143	**HM30/950**	MS30/950
Tr950x8	1170	125	1080	70	38	310	**HM31/950**	MS31/950
Tr1000x8	1140	100	1085	60	25	165	**HM30/1000**	MS30/1000
Tr1000x8	1240	125	1140	70	38	361	**HM31/1000**	MS31/1000
Tr1060x8	1200	100	1145	60	25	175	**HM30/1060**	MS30/1000
Tr1060x8	1300	125	1210	70	38	386	**HM31/1060**	MS31/1000
Tr1120x8	1260	100	1205	60	25	185	**HM30/1120**	MS30/1000
Tr1120x8	1360	125	1270	70	38	427	**HM31/1120**	MS31/1000
Tr1180x8	1320	100	1265	60	25	196	**HM30/1180**	MS30/1000
Tr1180x8	1420	125	1330	70	38	459	**HM31/1180**	MS31/1000
Tr1250x8	1390	110	1335	60	25	233	**HM30/1250**	MS30/1000
Tr1250x8	1490	125	1400	70	38	485	**HM31/1250**	MS31/1000
Tr1320x8	1460	110	1405	60	25	245	**HM30/1320**	MS30/1000
Tr1320x8	1560	125	1470	70	38	511	**HM31/1320**	MS31/1000
Tr1400x8	1540	110	1485	60	25	259	**HM30/1400**	MS30/1000
Tr1400x8	1640	130	1550	70	38	562	**HM31/1400**	MS31/1000
Tr1500x8	1650	110	1595	60	25	297	**HM30/1500**	MS30/1000
Tr1500x8	1740	130	1650	70	38	601	**HM31/1500**	MS31/1000

Information on other designs will be supplied on request.

FAG Lock Washers



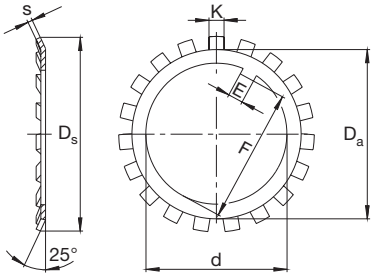
Code	Dimensions							Mass ≈
Lock washer	d	D_s ≈	D_a	s[1])	E[2])	F	K	100 pieces
FAG	mm							kg
MB0	10	21	13.5	1	3	8.5	3	0.13
MB1	12	25	17	1	3	10.5	3	0.192
MB1A	12	25	17	1.2	3	10.5	3	0.23
MB2	15	28	21	1	4	13.5	4	0.253
MB2A	15	28	21	1.2	4	13.5	4	0.31
MB3	17	32	24	1	4	15.5	4	0.313
MB3A	17	32	24	1.2	4	15.5	4	0.38
MB4	20	36	26	1	4	18.5	4	0.35
MB4A	20	36	26	1.2	4	18.5	4	0.4
MB5	25	42	32	1.25	5	23	5	0.64
MB5A	25	42	32	1.8	5	23	5	0.9
MB6	30	49	38	1.25	5	27.5	5	0.78
MB6A	30	49	38	1.8	5	27.5	5	1.1
MB7	35	57	44	1.04	6	32.5	5	1.04
MB7A	35	57	44	1.85	6	32.5	5	1.5
MB8	40	62	50	1.25	6	37.5	6	1.23
MB8A	40	62	50	1.8	6	37.5	6	1.8
MB9	45	69	56	1.25	6	42.5	6	1.52
MB9A	45	69	56	1.8	6	42.5	6	2.2
MB10	50	74	61	1.25	6	47.5	6	1.6
MB10A	50	74	61	1.8	6	47.5	6	2.3
MB11	55	81	67	1.5	8	52.5	7	1.96
MB11A	55	81	67	2.5	8	52.5	7	3.9
MB12	60	86	73	1.5	8	57.5	7	2.53
MB12A	60	86	73	2.5	8	57.5	7	4.2
MB13	65	92	79	1.5	8	62.5	7	2.9
MB13A	65	92	79	2.5	8	62.5	7	4.8

[1]) The sheet metal thickness s of the lock washers with suffix A is not in accordance with DIN 5406.
[2]) Dimension E may be used as minimum shaft groove width.

FAG Lock Washers

Code	Dimensions							Mass ≈
Lock washer	d	D_s ≈	D_a	s[1])	E[2])	F	K	100 pieces
FAG	mm							kg
MB14	70	98	85	1.5	8	66.5	8	3.34
MB14A	70	98	85	2.5	8	66.5	8	5.6
MB15	75	104	90	1.5	8	71.5	8	3.56
MB15A	75	104	90	2.5	8	71.5	8	5.9
MB16	80	112	95	1.8	10	76.5	8	4.64
MB16A	80	112	95	2.5	10	76.5	8	6.6
MB17	85	119	102	1.8	10	81.5	8	5.24
MB17A	85	119	102	2.5	10	81.5	8	7.5
MB18	90	126	108	1.8	10	86.5	10	6.23
MB18A	90	126	108	2.5	10	86.5	10	8.9
MB19	95	133	113	1.8	10	91.5	10	6.7
MB19A	95	133	113	2.5	10	91.5	10	9.6
MB20	100	142	120	1.8	12	96.5	10	7.65
MB20A	100	142	120	2.5	12	96.5	10	10.9
MB21	105	145	126	1.75	12	100.5	12	8.26
MB22	110	154	133	1.75	12	105.5	12	9.4
MB23	115	159	137	2	12	110.5	12	10.8
MBL24	120	151	135	2	14	115	12	7.7
MB24	120	164	138	2	14	115	12	10.5
MB25	125	170	148	2	14	120	12	11.8
MBL26	130	161	145	2	14	125	12	8.7
MB26	130	175	149	2	14	125	12	11.3
MB27	135	185	160	2	14	130	14	14.4
MBL28	140	171	155	2	16	135	12	10.9
MB28	140	192	160	2	16	135	14	14.2

FAG Lock Washers

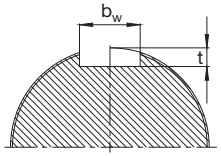


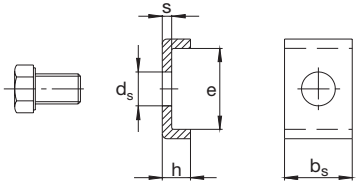
Code	Dimensions							Mass ≈
Lock washer	d	D_s ≈	D_a	s	E[2])	F	K	100 pieces
FAG	mm							kg
MB29	145	202	171	2	16	140	14	16.8
MBL30	150	188	170	2	16	145	14	11.3
MB30	150	205	171	2	16	145	14	15.5
MB31	155	212	182	2.5	16	147.5	16	20.9
MBL32	160	199	180	2.5	18	154	14	16.2
MB32	160	217	182	2.5	18	154	16	22.2
MB33	165	222	193	2.5	18	157.5	16	24.1
MBL34	170	211	190	2.5	18	164	16	17
MB34	170	232	193	2.5	18	164	16	24.7
MBL36	180	221	200	2.5	20	174	16	18
MB36	180	242	203	2.5	20	174	18	26.8
MBL38	190	231	210	2.5	20	184	16	20.5
MB38	190	252	214	2.5	20	184	18	27.8
MBL40	200	248	222	2.5	20	194	18	21.4
MB40	200	262	226	2.5	20	194	18	29.3
MB44	220	292	250	3	24	213	20	40
MB48	240	312	270	3	24	233	20	40
MB52	260	342	300	3	28	253	24	60
MB56	280	362	320	3	28	273	24	62

[2]) Dimension E may be used as minimum shaft groove width.

FAG Locking Clamps

with hexagon head screw

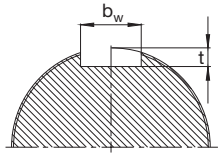




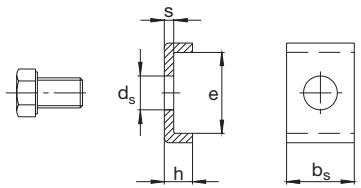
Up to thread M16:
Self-locking screw
From thread M20 onwards:
Standardized hexagon head screw with locking element

Code	Dimensions					Hexagon head screw self-locking	Tightening torque	Shaft groove		Mass ≈
Locking clamp complete	s	b_s	h	d_s	e			b_w	t	
FAG	mm						Nm	mm		kg
MS3044	4	20	12	7	13.5	M6x10	10	22	9	0.026
MS3144	4	20	12	9	22.5	M8x16	25	22	9	0.038
MS3048	4	20	12	9	17.5	M8x16	25	22	9	0.035
MS3152	4	24	12	11	25.5	M10x20	51	26	9	0.056
MS3056	4	24	12	9	17.5	M8x16	25	26	9	0.04
MS3060	4	24	12	9	20.5	M8x16	25	26	9	0.043
MS3160	4	24	12	12	30.5	M10x20	51	26	9	0.059
MS3064	5	24	15	9	21	M8x16	25	26	10	0.057
MS3164	5	24	15	12	31	M10x20	51	26	10	0.074
MS3168	5	28	15	14	38	M12x22	87	30	10	0.115
MS3072	5	28	15	9	20	M8x16	25	30	10	0.064
MS3076	5	28	15	12	24	M10x20	51	30	10	0.076
MS3176	5	32	15	14	40	M12x22	87	34	10	0.115
MS3180	5	32	15	18	45	M16x25	215	34	10	0.154
MS3084	5	32	15	12	24	M10x20	51	34	10	0.085
MS3088	5	32	15	14	28	M12x22	87	34	10	0.1
MS3188	5	36	15	18	43	M16x25	215	38	10	0.163
MS3096	5	36	15	14	28	M12x22	87	38	12	0.109
MS3196	5	36	15	18	53	M16x25	215	38	12	0.177
MS31/500	5	40	15	18	45	M16x25	215	42	12	0.178
MS30/530	7	40	21	18	34	M16x25	215	42	14	0.223
MS31/530	7	40	21	22	51	M20x40	430	42	14	0.347

FAG Locking Clamps
with hexagon head screw



Shaft



Up to thread M16:
Self-locking screw
From thread M20 onwards:
Standardized hexagon head screw with locking element

Code	Dimensions					Hexagon head screw	Tightening torque	Shaft groove		Mass ≈
Locking clamp complete FAG	s	b_s	h	d_s	e	self-locking		b_w	t	
	mm						Nm	mm		kg
MS30/560	7	40	21	18	29	M16x25	215	42	14	0.212
MS31/560	7	45	21	22	54	M20x40	430	47	14	0.38
MS30/630	7	45	21	18	34	M16x25	215	47	14	0.244
MS31/630	7	50	21	22	61	M20x40	430	52	15	0.426
MS30/670	7	45	21	18	39	M16x25	215	47	14	0.257
MS31/670	7	50	21	22	66	M20x40	430	52	15	0.439
MS30/710	7	50	21	18	39	M16x25	215	52	15	0.279
MS31/710	7	55	21	26	69	M24x45	740	57	15	0.58
MS30/750	7	55	21	18	39	M16x25	215	57	15	0.301
MS31/750	7	60	21	26	70	M24x45	740	62	15	0.614
MS30/850	7	60	21	22	44	M20x40	430	62	15	0.426
MS31/850	7	70	21	26	71	M24x45	740	72	16	0.679
MS31/900	7	70	21	26	76	M24x45	740	72	16	0.698
MS30/950	7	60	21	22	46	M20x40	430	62	16	0.433
MS31/950	7	70	21	26	78	M24x45	740	72	16	0.706
MS30/1000	7	60	21	22	51	M20x40	430	62	16	0.449
MS31/1000	7	70	21	26	88	M24x45	740	72	16	0.744
MS30/1500	7	60	21	22	56	M20x40	430	62	16	0.466