

Fasteners and retainers

Adapter sleeves
Withdrawal sleeves
Locknuts
Shaft nuts
Tab washers
Retaining brackets

Fasteners and retainers

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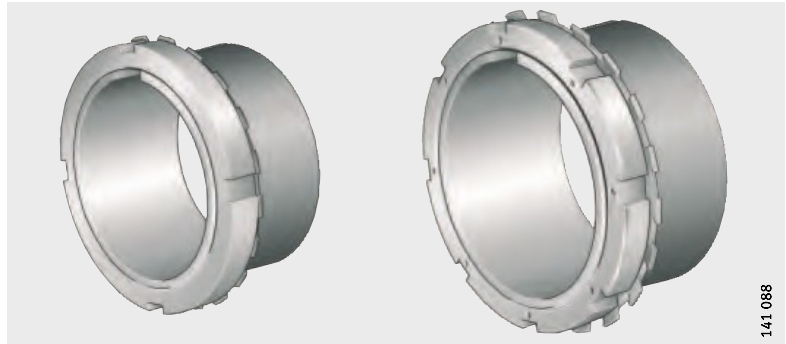


Product overview Fasteners and retainers

Adapter sleeves

With nut and retainer
Taper 1:12 or 1:30

H2, H3, H23, H30, H31, H32, H33, H39, H240, H241



Withdrawal sleeves

Taper 1:12 or 1:30

AH2, AH(X)3, AH22, AH(X)23, AH(X)30, AH(X)31, AH(X)32, AH33, AH39, AH240, AH241



Locknuts Shaft nuts

KM, KML, HM, HM30, HM31

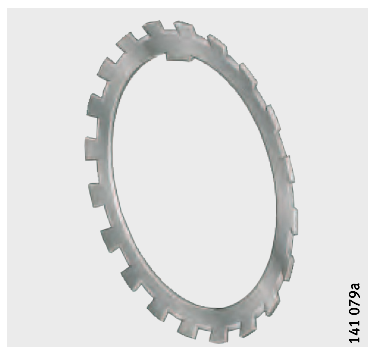


HMZ, HMZ30



Tab washers Retaining brackets with screw

MB, MBL



MS30, MS31



Fasteners and retainers

Features

The location of bearings with a tapered bore on cylindrical shaft studs can be carried out using easy-to-fit, reliable adapter and withdrawal sleeves.

Locknuts or shaft nuts can be used to locate bearings on shafts or adapter sleeves. Gradual loosening of nuts can be prevented using tab washers or retaining brackets. Shaft nuts are secured by means of force locking.

Adapter sleeves

For smooth and stepped shafts

Adapter sleeves are suitable where bearings with a tapered bore are to be located on cylindrical shafts. They do not need to be secured on the shaft by any additional means. The bearings can be positioned at any point on smooth shafts.

If adapter sleeves are used with a support ring on stepped shafts, the bearings can be axially located to high accuracy. In addition, this gives simpler dismantling of the bearings.

Adapter sleeves comprise slotted adapter sleeves, locknuts and tab washers. For larger sizes, retaining brackets are used instead of tab washers.

The tensile strength of the material is at least 430 N/mm^2 .

The outside surface of the sleeves has a taper of 1:12, in series H240 and H241 the taper is 1:30.

The dimension tables describe adapter sleeves for metric shafts. Sleeves for inch size shafts are available by agreement.

For hydraulic method

Fitting and dismantling of large bearings requires high mounting forces and is made easier by using the hydraulic method. There are adapter sleeves with oil slots on the tapered outside surface and a pump connector on the thread side. These adapter sleeves have the suffix HG. The dimension tables describe the threads for the pump connector.



Fasteners and retainers

Withdrawal sleeves

Withdrawal sleeves are suitable where bearings with a tapered bore are to be located on cylindrical shafts. The tapered sleeve is pressed into the bearing bore until the required reduction in radial internal clearance is achieved. The bearing is abutted, for example, against a shoulder on the shaft.

Retainers are not included in the delivery.

The tensile strength of the material is at least 430 N/mm^2 .

The outside surface of the slotted steel sleeves has a taper of 1:12, in series AH240 and AH241 the taper is 1:30.

For hydraulic method

Fitting and dismantling of large bearings requires high mounting forces and is made easier by using the hydraulic method. There are withdrawal sleeves with oil slots on the tapered outside surface and two pump connectors offset to each other by 90° . These withdrawal sleeves have the suffix H. The dimension tables give the mounting dimensions for the pump connector.

Locknuts

Locknuts can be used to locate bearings on shafts or adapter sleeves. They also give easier mounting of bearings with a tapered shaft seat and the fitting and dismantling of bearings on withdrawal sleeves.

The locknuts are made from steel and the tensile strength of the material is at least 350 N/mm^2 .

They have four or eight evenly spaced slots on the circumference, into which hook wrenches or striking-face wrenches can be fitted.

By agreement, locknuts of series HM30...-H and HM31...-H with threaded holes for mounting screws are available.

Precision locknuts are described in the section Bearings for screw drives.

Shaft nuts

Shaft nuts HMZ allow precise and secure axial location of bearings on cylindrical and tapered shafts or on adapter sleeves.

The shaft nuts are made from steel and the tensile strength is at least 350 N/mm^2 .

HMZ nuts are interchangeable with conventional locknuts HM and KM. They are secured, however, not by means of washers or brackets but by force locking. Four or eight axial clamping screws allow uniform clamping on the circumference, *Figure 1*.

For screw mounting on the shaft thread, the circumference of the nut has four or eight threaded blind holes into which the threaded rod also supplied is screwed. There is no need either for slots on the outside diameter of the nut or for any retainers. Since the shaft does not have a retaining slot, it has higher strength and is more economical to manufacture.

Shaft nuts HMZ are described in TPI WL 91-8.



Figure 1
Clamping screws for generating
a force locking connection
between the nut and shaft thread



Fasteners and retainers

Tab washers

Tab washers MB and MBL are simple, reliable elements for securing smaller locknuts (nuts of series KM and KML).

They have an inner tab and several outer tabs evenly spaced around the circumference. The inner tab grips in the slot on the adapter sleeve or shaft, one of the outer tabs is bent into a slot in the nut for location.

The washers are made from steel and the tensile strength of the material is at least 300 N/mm².

Retaining brackets

Retaining brackets of series MS are fixed to the locknut using a hexagonal screw. They engage in a slot in the nut and in the adapter sleeve or shaft.

The fixing screw has a self-locking thread up to M16, for sizes from M20 a standardised hexagonal screw with a retainer is used.

Retaining brackets are used with locknuts of series HM30 and HM31.

Suffixes

Suffixes for available designs: see table.

Available designs

Suffix	Description	Design
H	Hydraulic withdrawal sleeve	Standard
HG	Hydraulic adapter sleeve	

Design and safety guidelines

Shaft tolerances

Adapter and withdrawal sleeves adapt themselves to the shaft. Larger diameter tolerances are therefore permissible for shafts than in the case of a direct cylindrical seat for a bearing on the shaft.

For general applications, bearing seats toleranced to h9 are sufficient.

The geometrical tolerances must be tighter than the diameter tolerances since the geometrical accuracy affects the running accuracy of the bearing arrangement. The cylindricity tolerance of the bearing seat should be within IT5/2 or IT6/2.

Accuracy

Adapter sleeves

The dimensions and material conform to DIN 5 415/ISO 2 982-1.

The bore tolerance of the adapter sleeves, before splitting, for a taper 1:12 is in tolerance zone JS9, for a taper 1:30 in tolerance zone JS7.

Up to M200, the thread is a metric precision thread with a tolerance grade 6g to DIN/ISO 965-3, over M200 trapezoidal threads are used.

Withdrawal sleeves

The dimensions and material conform to DIN 5 416/ISO 2 982-1.

The bore tolerance of the withdrawal sleeves before splitting for a taper 1:12 is in tolerance zone JS9, for a taper 1:30 in tolerance zone JS7.

Up to M200, the thread is a metric precision thread with a tolerance grade 6g to DIN/ISO 965-3, over M200 trapezoidal threads are used.

Designs with a modified thread d_{2G} have the suffix G.

Locknuts and shaft nuts

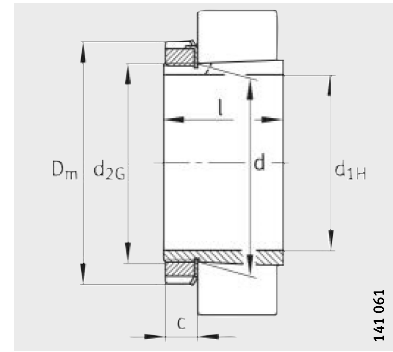
The dimensions and material conform to DIN 981/ISO 2 982-2. Deviations are indicated in the dimension tables.

Up to a thread diameter 200 mm, the thread is a metric precision thread, larger locknuts and shaft nuts have trapezoidal threads.



Adapter sleeves

With nut and retainer



Taper 1:12
(taper 1:30 for H240, H241)
Tab washer MB

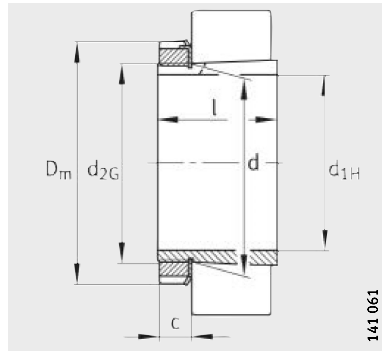
Dimension table · Dimensions in mm									
Designation			Mass m ≈kg	Dimensions					
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m ≈	l	c ≈	d _{2G}
H203	KM3	MB3	0,03	14	17	28	21	6	M17X1
H204	KM4	MB4	0,04	17	20	32	24	7	M20X1
H304	KM4	MB4	0,04	17	20	32	28	7	M20X1
H2304	KM4	MB4	0,05	17	20	32	31	7	M20X1
H205	KM5	MB5	0,07	20	25	38	26	9	M25X1,5
H305	KM5	MB5	0,07	20	25	38	29	9	M25X1,5
H2305	KM5	MB5	0,09	20	25	38	35	9	M25X1,5
H206	KM6	MB6	0,1	25	30	45	27	9	M30X1,5
H306	KM6	MB6	0,11	25	30	45	31	9	M30X1,5
H2306	KM6	MB6	0,13	25	30	45	38	9	M30X1,5
H207	KM7	MB7	0,12	30	35	52	29	10	M35X1,5
H307	KM7	MB7	0,14	30	35	52	35	10	M35X1,5
H2307	KM7	MB7	0,16	30	35	52	43	10	M35X1,5
H208	KM8	MB8	0,18	35	40	58	31	11	M40X1,5
H308	KM8	MB8	0,19	35	40	58	36	11	M40X1,5
H2308	KM8	MB8	0,23	35	40	58	46	11	M40X1,5
H3308	KM8	MB8	0,24	35	40	58	50	11	M40X1,5
H209	KM9	MB9	0,22	40	45	65	33	12	M45X1,5
H309	KM9	MB9	0,25	40	45	65	39	12	M45X1,5
H2309	KM9	MB9	0,29	40	45	65	50	12	M45X1,5
H3309	KM9	MB9	0,31	40	45	65	54	12	M45X1,5
H210	KM10	MB10	0,27	45	50	70	35	13	M50X1,5
H310	KM10	MB10	0,3	45	50	70	42	13	M50X1,5
H2310	KM10	MB10	0,36	45	50	70	55	13	M50X1,5
H3310	KM10	MB10	0,39	45	50	70	60	13	M50X1,5
H211	KM11	MB11	0,31	50	55	75	37	13	M55X2
H311	KM11	MB11	0,35	50	55	75	45	13	M55X2
H2311	KM11	MB11	0,42	50	55	75	59	13	M55X2
H3311	KM11	MB11	0,46	50	55	75	65	13	M55X2
H212	KM12	MB12	0,35	55	60	80	38	13	M60X2
H312	KM12	MB12	0,4	55	60	80	47	13	M60X2
H2312	KM12	MB12	0,49	55	60	80	62	13	M60X2
H3312	KM12	MB12	0,54	55	60	80	70	13	M60X2

Dimension table (continued) - Dimensions in mm									
Designation			Mass m ≈kg	Dimensions					
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m ≈	l	c ≈	d _{2G}
H213	KM13	MB13	0,4	60	65	85	40	14	M65X2
H313	KM13	MB13	0,46	60	65	85	50	14	M65X2
H2313	KM13	MB13	0,56	60	65	85	65	14	M65X2
H3313	KM13	MB13	0,63	60	65	85	75	14	M65X2
H214	KM14	MB14	0,63	60	70	92	41	14	M70X2
H314	KM14	MB14	0,74	60	70	92	52	14	M70X2
H2314	KM14	MB14	0,92	60	70	92	68	14	M70X2
H3314	KM14	MB14	1,08	60	70	92	81	14	M70X2
H215	KM15	MB15	0,71	65	75	98	43	15	M75X2
H315	KM15	MB15	0,84	65	75	98	55	15	M75X2
H2315	KM15	MB15	1,06	65	75	98	73	15	M75X2
H3315	KM15	MB15	1,25	65	75	98	87	15	M75X2
H216	KM16	MB16	0,89	70	80	105	46	17	M80X2
H316	KM16	MB16	1,04	70	80	105	59	17	M80X2
H2316	KM16	MB16	1,3	70	80	105	78	17	M80X2
H3316	KM16	MB16	1,46	70	80	105	89	17	M80X2
H217	KM17	MB17	1,03	75	85	110	50	18	M85X2
H317	KM17	MB17	1,19	75	85	110	63	18	M85X2
H2317	KM17	MB17	1,47	75	85	110	82	18	M85X2
H3317	KM17	MB17	1,68	75	85	110	95	18	M85X2
H218	KM18	MB18	1,21	80	90	120	52	18	M90X2
H318	KM18	MB18	1,39	80	90	120	65	18	M90X2
H2318	KM18	MB18	1,71	80	90	120	86	18	M90X2
H3318	KM18	MB18	1,87	80	90	120	95	18	M90X2
H219	KM19	MB19	1,39	85	95	125	55	19	M95X2
H319	KM19	MB19	1,58	85	95	125	68	19	M95X2
H2319	KM19	MB19	1,95	85	95	125	90	19	M95X2
H3319	KM19	MB19	2,16	85	95	125	101	19	M95X2
H220	KM20	MB20	1,52	90	100	130	58	20	M100X2
H320	KM20	MB20	1,73	90	100	130	71	20	M100X2
H3120	KM20	MB20	1,81	90	100	130	76	20	M100X2
H24020	KM20	MB20	1,77	90	100	130	80	20	M100X2
H24120	KM20	MB20	1,97	90	100	130	94	20	M100X2
H2320	KM20	MB20	2,2	90	100	130	97	20	M100X2
H3320	KM20	MB20	2,38	90	100	130	106	20	M100X2

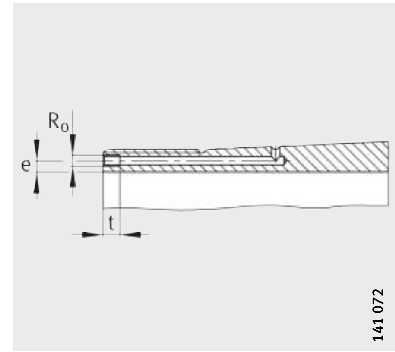


Adapter sleeves

With nut and retainer



Taper 1:12
(taper 1:30 for H240, H241)
Tab washer MB, MBL



Hydraulic adapter sleeve
(suffix HG)
Mounting dimensions

Dimension table (continued) · Dimensions in mm

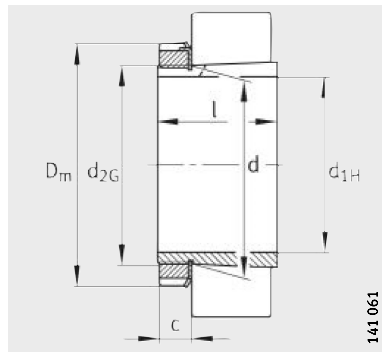
Designation			Mass m ≈kg	Dimensions					
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m ≈	l	c ≈	d _{2G}
H221	KM21	MB21	1,74	95	105	140	60	20	M105X2
H321	KM21	MB21	1,97	95	105	140	74	20	M105X2
H3121	KM21	MB21	2,09	95	105	140	80	20	M105X2
H2321	KM21	MB21	2,5	95	105	140	101	20	M105X2
H3321	KM21	MB21	2,71	95	105	140	111	20	M105X2
H222	KM22	MB22	1,95	100	110	145	63	21	M110X2
H322	KM22	MB22	2,21	100	110	145	77	21	M110X2
H3122	KM22	MB22	2,28	100	110	145	81	21	M110X2
H24022	KM22	MB22	2,3	100	110	145	90	21	M110X2
H24122	KM22	MB22	2,45	100	110	145	99	21	M110X2
H2322	KM22	MB22	2,78	100	110	145	105	21	M110X2
H3322	KM22	MB22	3,06	100	110	145	117	21	M110X2
H3924	KML24	MBL24	1,78	110	120	145	60	22	M120X2
H3024	KML24	MBL24	2,01	110	120	145	72	22	M120X2
H24024	KML24	MBL24	2,24	110	120	145	91	22	M120X2
H3124	KM24	MB24	2,67	110	120	155	88	22	M120X2
H24124	KM24	MB24	2,92	110	120	155	111	22	M120X2
H2324	KM24	MB24	3,24	110	120	155	112	22	M120X2
H3324	KM24	MB24	3,77	110	120	155	132	22	M120X2
H3926	KML26	MBL26	2,53	115	130	155	65	23	M130X2
H3026	KML26	MBL26	2,96	115	130	155	80	23	M130X2
H24026	KML26	MBL26	3,4	115	130	155	102	23	M130X2
H3126	KM26	MB26	3,72	115	130	165	92	23	M130X2
H24126	KM26	MB26	4,08	115	130	165	113	23	M130X2
H2326	KM26	MB26	4,69	115	130	165	121	23	M130X2
H3326	KM26	MB26	5,35	115	130	165	139	23	M130X2
H3928	KML28	MBL28	2,81	125	140	165	66	24	M140X2
H3028	KML28	MBL28	3,3	125	140	165	82	24	M140X2
H24028	KML28	MBL28	3,75	125	140	165	103	24	M140X2
H3128	KM28	MB28	4,4	125	140	180	97	24	M140X2
H24128	KM28	MB28	4,81	125	140	180	119	24	M140X2
H2328	KM28	MB28	5,66	125	140	180	131	24	M140X2
H3328	KM28	MB28	6,32	125	140	180	147	24	M140X2

Dimension table (continued) · Dimensions in mm												
Designation			Mass m ≈kg	Dimensions						Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m ≈	l	c ≈	d _{2G}	R ₀	e	t
H3930	KML30	MBL30	3,64	135	150	180	76	26	M150X2	–	–	–
H3030	KML30	MBL30	4,02	135	150	180	87	26	M150X2	–	–	–
H24030	KML30	MBL30	4,61	135	150	180	112	26	M150X2	–	–	–
H3130	KM30	MB30	5,6	135	150	195	111	26	M150X2	–	–	–
H24130	KM30	MB30	6,1	135	150	195	137	26	M150X2	–	–	–
H2330	KM30	MB30	6,76	135	150	195	139	26	M150X2	–	–	–
H3330	KM30	MB30	7,66	135	150	195	159	26	M150X2	–	–	–
H3932	KML32	MBL32	4,75	140	160	190	78	28	M160X3	–	–	–
H3932-HG	KML32	MBL32	4,75	140	160	190	78	28	M160X3	M6	4,2	7
H3032	KML32	MBL32	5,44	140	160	190	93	28	M160X3	–	–	–
H3032-HG	KML32	MBL32	5,44	140	160	190	93	28	M160X3	M6	4,2	7
H24032	KML32	MBL32	6,27	140	160	190	118	28	M160X3	–	–	–
H24032-HG	KML32	MBL32	6,27	140	160	190	118	28	M160X3	M6	4,2	7
H3132	KM32	MB32	7,81	140	160	210	119	28	M160X3	–	–	–
H3132-HG	KM32	MB32	7,81	140	160	210	119	28	M160X3	M6	4,2	7
H2332	KM32	MB32	9,32	140	160	210	147	28	M160X3	–	–	–
H2332-HG	KM32	MB32	9,32	140	160	210	147	28	M160X3	M6	4,2	7
H24132	KM32	MB32	8,66	140	160	210	148	28	M160X3	–	–	–
H24132-HG	KM32	MB32	8,66	140	160	210	148	28	M160X3	M6	4,2	7
H3332	KM32	MB32	10,7	140	160	210	170	28	M160X3	–	–	–
H3332-HG	KM32	MB32	10,7	140	160	210	170	28	M160X3	M6	4,2	7
H3934	KML34	MBL34	5,16	150	170	200	79	29	M170X3	–	–	–
H3934-HG	KML34	MBL34	5,16	150	170	200	79	29	M170X3	M6	4,2	7
H3034	KML34	MBL34	6,25	150	170	200	101	29	M170X3	–	–	–
H3034-HG	KML34	MBL34	6,25	150	170	200	101	29	M170X3	M6	4,2	7
H24034	KML34	MBL34	7,28	150	170	200	130	29	M170X3	–	–	–
H24034-HG	KML34	MBL34	7,28	150	170	200	130	29	M170X3	M6	4,2	7
H3134	KM34	MB34	8,52	150	170	220	122	29	M170X3	–	–	–
H3134-HG	KM34	MB34	8,52	150	170	220	122	29	M170X3	M6	4,2	7
H24134	KM34	MB34	9,32	150	170	220	149	29	M170X3	–	–	–
H24134-HG	KM34	MB34	9,32	150	170	220	149	29	M170X3	M6	4,2	7
H2334	KM34	MB34	10,4	150	170	220	154	29	M170X3	–	–	–
H2334-HG	KM34	MB34	10,4	150	170	220	154	29	M170X3	M6	4,2	7
H3334	KM34	MB34	11,7	150	170	220	175	29	M170X3	–	–	–
H3334-HG	KM34	MB34	11,7	150	170	220	175	29	M170X3	M6	4,2	7

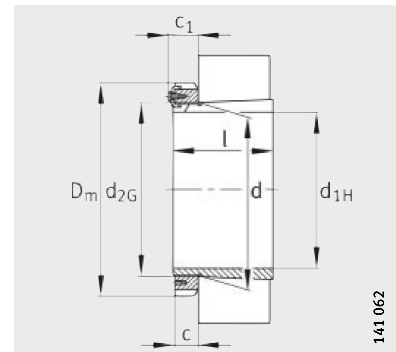


Adapter sleeves

With nut and retainer



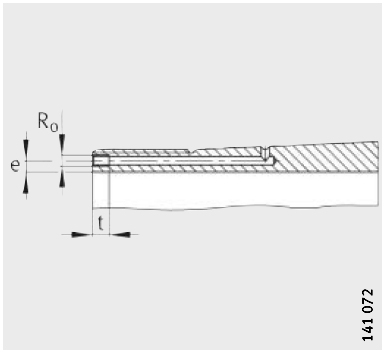
Taper 1:12
(taper 1:30 for H240, H241)
Tab washer MB, MBL



Taper 1:12
(taper 1:30 for H240)
Retaining bracket MS30

Dimension table (continued) · Dimensions in mm

Designation			Mass m ≈kg	Dimensions						Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m ≈	l	c ≈	d _{2G}	R ₀	e	t
H3936	KML36	MBL36	6,01	160	180	210	87	30	M180X3	-	-	-
H3936-HG	KML36	MBL36	6,01	160	180	210	87	30	M180X3	M6	4,2	7
H3036	KML36	MBL36	7,18	160	180	210	109	30	M180X3	-	-	-
H3036-HG	KML36	MBL36	7,18	160	180	210	109	30	M180X3	M6	4,2	7
H24036	KML36	MBL36	8,33	160	180	210	140	30	M180X3	-	-	-
H24036-HG	KML36	MBL36	8,33	160	180	210	140	30	M180X3	M6	4,2	7
H3136	KM36	MB36	9,67	160	180	230	131	30	M180X3	-	-	-
H3136-HG	KM36	MB36	9,67	160	180	230	131	30	M180X3	M6	4,2	7
H24136	KM36	MB36	10,5	160	180	230	159	30	M180X3	-	-	-
H24136-HG	KM36	MB36	10,5	160	180	230	159	30	M180X3	M6	4,2	7
H2336	KM36	MB36	11,6	160	180	230	161	30	M180X3	-	-	-
H2336-HG	KM36	MB36	11,6	160	180	230	161	30	M180X3	M6	4,2	7
H3336	KM36	MB36	13,3	160	180	230	186	30	M180X3	-	-	-
H3336-HG	KM36	MB36	13,3	160	180	230	186	30	M180X3	M6	4,2	7
H3938	KML38	MBL38	6,49	170	190	220	89	31	M190X3	-	-	-
H3938-HG	KML38	MBL38	6,49	170	190	220	89	31	M190X3	M6	4,2	7
H3038	KML38	MBL38	7,8	170	190	220	112	31	M190X3	-	-	-
H3038-HG	KML38	MBL38	7,8	170	190	220	112	31	M190X3	M6	4,2	7
H24038	KML38	MBL38	9	170	190	220	143	31	M190X3	-	-	-
H24038-HG	KML38	MBL38	9	170	190	220	143	31	M190X3	M6	4,2	7
H3138	KM38	MB38	11	170	190	240	141	31	M190X3	-	-	-
H3138-HG	KM38	MB38	11	170	190	240	141	31	M190X3	M6	4,2	7
H2338	KM38	MB38	12,9	170	190	240	169	31	M190X3	-	-	-
H2338-HG	KM38	MB38	12,9	170	190	240	169	31	M190X3	M6	4,2	7
H24138	KM38	MB38	11,9	170	190	240	172	31	M190X3	-	-	-
H24138-HG	KM38	MB38	11,9	170	190	240	172	31	M190X3	M6	4,2	7
H3338	KM38	MB38	14,7	170	190	240	193	31	M190X3	-	-	-
H3338-HG	KM38	MB38	14,7	170	190	240	193	31	M190X3	M6	4,2	7



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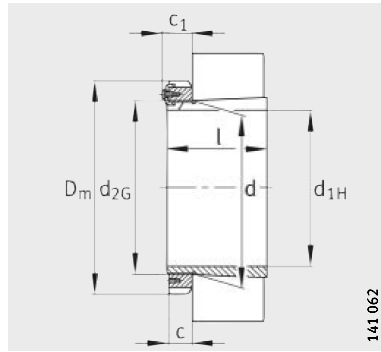
Hydraulic adapter sleeve
Suffix HG
Mounting dimensions

Dimension table (continued) - Dimensions in mm													
Designation			Mass m ≈kg	Dimensions							Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m	l	c ≈	c ₁ ≈	d _{2G}	R ₀	e	t
H3940	KML40	MBL40	8,14	180	200	240	98	32	–	M200X3	–	–	–
H3940-HG	KML40	MBL40	8,14	180	200	240	98	32	–	M200X3	M6	4,2	7
H3040	KML40	MBL40	9,5	180	200	240	120	32	–	M200X3	–	–	–
H3040-HG	KML40	MBL40	9,5	180	200	240	120	32	–	M200X3	M6	4,2	7
H24040	KML40	MBL40	10,8	180	200	240	153	32	–	M200X3	–	–	–
H24040-HG	KML40	MBL40	10,8	180	200	240	153	32	–	M200X3	M6	4,2	7
H3140	KM40	MB40	12,3	180	200	250	150	32	–	M200X3	–	–	–
H3140-HG	KM40	MB40	12,3	180	200	250	150	32	–	M200X3	M6	4,2	7
H2340	KM40	MB40	14,2	180	200	250	176	32	–	M200X3	–	–	–
H2340-HG	KM40	MB40	14,2	180	200	250	176	32	–	M200X3	M6	4,2	7
H24140	KM40	MB40	13,4	180	200	250	185	32	–	M200X3	–	–	–
H24140-HG	KM40	MB40	13,4	180	200	250	185	32	–	M200X3	M6	4,2	7
H3340	KM40	MB40	16,4	180	200	250	204	32	–	M200X3	–	–	–
H3340-HG	KM40	MB40	16,4	180	200	250	204	32	–	M200X3	M6	4,2	7
H3944	HM3044	MS3044	8,45	200	220	260	96	30	40	Tr220X4	–	–	–
H3944-HG	HM3044	MS3044	8,45	200	220	260	96	30	40	Tr220X4	M6	4,2	7
H3044X	HM3044	MS3044	10,5	200	220	260	126	30	40	Tr220X4	–	–	–
H3044X-HG	HM3044	MS3044	10,5	200	220	260	126	30	40	Tr220X4	M6	4,2	7
H24044	HM3044	MS3044	12,1	200	220	260	162	30	40	Tr220X4	–	–	–
H24044-HG	HM3044	MS3044	12,1	200	220	260	162	30	40	Tr220X4	M6	4,2	7
H3144X	HM44T	MB44	15,7	200	220	280	161	35	–	Tr220X4	–	–	–
H3144X-HG	HM44T	MB44	15,7	200	220	280	161	35	–	Tr220X4	M6	4,2	7
H2344X	HM44T	MB44	17,8	200	220	280	186	35	–	Tr220X4	–	–	–
H2344X-HG	HM44T	MB44	17,8	200	220	280	186	35	–	Tr220X4	M6	4,2	7
H24144	HM44T	MB44	17,1	200	220	280	199	35	–	Tr220X4	–	–	–
H24144-HG	HM44T	MB44	17,1	200	220	280	199	35	–	Tr220X4	M6	4,2	7
H3344	HM44T	MB44	21,1	200	220	280	223	35	–	Tr220X4	–	–	–
H3344-HG	HM44T	MB44	21,1	200	220	280	223	35	–	Tr220X4	M6	4,2	7

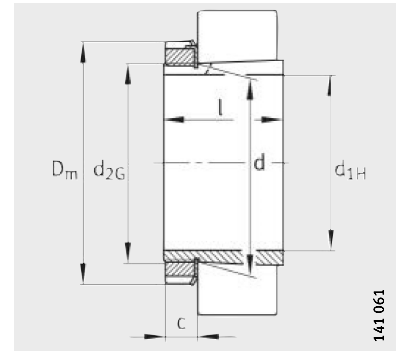


Adapter sleeves

With nut and retainer



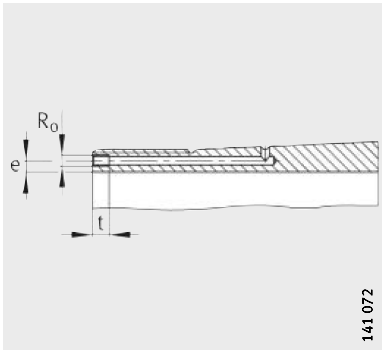
Taper 1:12
(taper 1:30 for H240, H241)
Retaining bracket MS30, MS31



Taper 1:12
(taper 1:30 for H241)
Tab washer MB

Dimension table (continued) · Dimensions in mm

Designation			Mass m ≈kg	Dimensions							Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m	l	c	c ₁	d _{2G}	R ₀	e	t
H3948	HM3048	MS3048	11,3	220	240	290	101	34	45	Tr240X4	-	-	-
H3948-HG	HM3048	MS3048	11,3	220	240	290	101	34	45	Tr240X4	M6	4,2	7
H3048	HM3048	MS3048	13,8	220	240	290	133	34	45	Tr240X4	-	-	-
H3048-HG	HM3048	MS3048	13,8	220	240	290	133	34	45	Tr240X4	M6	4,2	7
H24048	HM3048	MS3048	15,3	220	240	290	167	34	45	Tr240X4	-	-	-
H24048-HG	HM3048	MS3048	15,3	220	240	290	167	34	45	Tr240X4	M6	4,2	7
H3148X	HM48T	MB48	18,4	220	240	300	172	37	-	Tr240X4	-	-	-
H3148X-HG	HM48T	MB48	18,4	220	240	300	172	37	-	Tr240X4	M6	4,2	7
H2348X	HM48T	MB48	20,9	220	240	300	199	37	-	Tr240X4	-	-	-
H2348X-HG	HM48T	MB48	20,9	220	240	300	199	37	-	Tr240X4	M6	4,2	7
H24148	HM48T	MB48	19,9	220	240	300	212	37	-	Tr240X4	-	-	-
H24148-HG	HM48T	MB48	19,9	220	240	300	212	37	-	Tr240X4	M6	4,2	7
H3348	HM48T	MB48	25,1	220	240	300	240	37	-	Tr240X4	-	-	-
H3348-HG	HM48T	MB48	25,1	220	240	300	240	37	-	Tr240X4	M6	4,2	7
H3952	HM3052	MS3048	13,6	240	260	310	116	34	45	Tr260X4	-	-	-
H3952-HG	HM3052	MS3048	13,6	240	260	310	116	34	45	Tr260X4	M6	4,2	7
H3052X	HM3052	MS3048	16	240	260	310	145	34	45	Tr260X4	-	-	-
H3052X-HG	HM3052	MS3048	16	240	260	310	145	34	45	Tr260X4	M6	4,2	7
H24052	HM3052	MS3048	18,4	240	260	310	190	34	45	Tr260X4	-	-	-
H24052-HG	HM3052	MS3048	18,4	240	260	310	190	34	45	Tr260X4	M6	4,2	7
H3152X	HM52T	MB52	23,5	240	260	330	190	38	-	Tr260X4	-	-	-
H3152X-HG	HM52T	MB52	23,5	240	260	330	190	38	-	Tr260X4	M6	4,2	7
H2352X	HM52T	MB52	25,7	240	260	330	211	38	-	Tr260X4	-	-	-
H2352X-HG	HM52T	MB52	25,7	240	260	330	211	38	-	Tr260X4	M6	4,2	7
H24152	HM52T	MB52	25,2	240	260	330	235	38	-	Tr260X4	-	-	-
H24152-HG	HM52T	MB52	25,2	240	260	330	235	38	-	Tr260X4	M6	4,2	7
H3352	HM52T	MB52	30,5	240	260	330	253	38	-	Tr260X4	-	-	-
H3352-HG	HM52T	MB52	30,5	240	260	330	253	38	-	Tr260X4	M6	4,2	7



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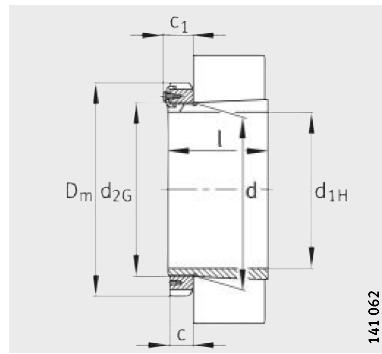
Hydraulic adapter sleeve
(suffix HG)
Mounting dimensions

Dimension table (continued) - Dimensions in mm													
Designation			Mass m ≈kg	Dimensions							Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m	l	c ≈	c ₁ ≈	d _{2G}	R ₀	e	t
H3956	HM3056	MS3056	15,6	260	280	330	121	38	49	Tr280X4	–	–	–
H3956-HG	HM3056	MS3056	15,6	260	280	330	121	38	49	Tr280X4	M6	4,2	7
H3056	HM3056	MS3056	18,5	260	280	330	152	38	49	Tr280X4	–	–	–
H3056-HG	HM3056	MS3056	18,5	260	280	330	152	38	49	Tr280X4	M6	4,2	7
H24056	HM3056	MS3056	20,9	260	280	330	195	38	49	Tr280X4	–	–	–
H24056-HG	HM3056	MS3056	20,9	260	280	330	195	38	49	Tr280X4	M6	4,2	7
H3156X	HM56T	MB56	26,4	260	280	350	195	39	–	Tr280X4	–	–	–
H3156X-HG	HM56T	MB56	26,4	260	280	350	195	39	–	Tr280X4	M6	4,2	7
H2356X	HM56T	MB56	29,8	260	280	350	224	39	–	Tr280X4	–	–	–
H2356X-HG	HM56T	MB56	29,8	260	280	350	224	39	–	Tr280X4	M6	4,2	7
H24156	HM56T	MB56	28	260	280	350	238	39	–	Tr280X4	–	–	–
H24156-HG	HM56T	MB56	28	260	280	350	238	39	–	Tr280X4	M6	4,2	7
H3356	HM56T	MB56	36	260	280	350	273	39	–	Tr280X4	–	–	–
H3356-HG	HM56T	MB56	36	260	280	350	273	39	–	Tr280X4	M6	4,2	7
H3960	HM3060	MS3060	20,9	280	300	360	140	42	53	Tr300X4	–	–	–
H3960-HG	HM3060	MS3060	20,9	280	300	360	140	42	53	Tr300X4	M6	4,2	7
H3060	HM3060	MS3060	23,8	280	300	360	168	42	53	Tr300X4	–	–	–
H3060-HG	HM3060	MS3060	23,8	280	300	360	168	42	53	Tr300X4	M6	4,2	7
H24060	HM3060	MS3060	26,9	280	300	360	220	42	53	Tr300X4	–	–	–
H24060-HG	HM3060	MS3060	26,9	280	300	360	220	42	53	Tr300X4	M6	4,2	7
H3160	HM3160	MS3160	30,6	280	300	380	208	40	53	Tr300X4	–	–	–
H3160-HG	HM3160	MS3160	30,6	280	300	380	208	40	53	Tr300X4	M6	4,2	7
H3260	HM3160	MS3160	34,7	280	300	380	240	40	53	Tr300X4	–	–	–
H3260-HG	HM3160	MS3160	34,7	280	300	380	240	40	53	Tr300X4	M6	4,2	7
H24160	HM3160	MS3160	32,7	280	300	380	258	40	53	Tr300X4	–	–	–
H24160-HG	HM3160	MS3160	32,7	280	300	380	258	40	53	Tr300X4	M6	4,2	7
H3360	HM3160	MS3160	40,8	280	300	380	284	40	53	Tr300X4	–	–	–
H3360-HG	HM3160	MS3160	40,8	280	300	380	284	40	53	Tr300X4	M6	4,2	7
H3964-HG	HM3064	MS3064	22	300	320	380	140	42	56	Tr320X5	M6	3,5	7
H3064-HG	HM3064	MS3064	25,4	300	320	380	171	42	56	Tr320X5	M6	3,5	7
H24064-HG	HM3064	MS3064	28,4	300	320	380	220	42	56	Tr320X5	M6	3,5	7
H3164-HG	HM3164	MS3164	35,4	300	320	400	226	42	56	Tr320X5	M6	3,5	7
H3264-HG	HM3164	MS3164	40	300	320	400	258	42	56	Tr320X5	M6	3,5	7
H24164-HG	HM3164	MS3164	37,4	300	320	400	278	42	56	Tr320X5	M6	3,5	7
H3364-HG	HM3164	MS3164	47,8	300	320	400	308	42	56	Tr320X5	M6	3,5	7

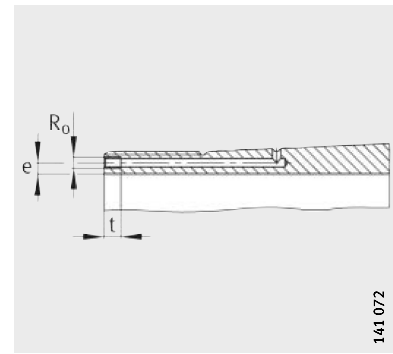


Adapter sleeves

With nut and retainer



Taper 1:12
(taper 1:30 for H240, H241)



Hydraulic adapter sleeve
Mounting dimensions

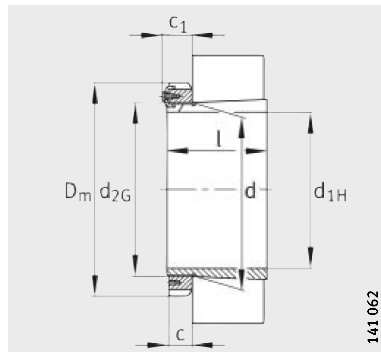
Dimension table (continued) · Dimensions in mm													
Designation			Mass m ≈kg	Dimensions							Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m	l	c ≈	c ₁ ≈	d _{2G}	R ₀	e	t
H3968-HG	HM3068	MS3064	24,8	320	340	400	144	45	57	Tr340X5	M6	3,5	7
H3068-HG	HM3068	MS3064	30	320	340	400	187	45	57	Tr340X5	M6	3,5	7
H24068-HG	HM3068	MS3064	33,8	320	340	400	244	45	57	Tr340X5	M6	3,5	7
H3168-HG	HM3168	MS3168	50,1	320	340	440	254	55	70	Tr340X5	M6	3,5	7
H3268-HG	HM3168	MS3168	55,4	320	340	440	288	55	70	Tr340X5	M6	3,5	7
H24168-HG	HM3168	MS3168	53	320	340	440	317	55	70	Tr340X5	M6	3,5	7
H3368-HG	HM3168	MS3168	63,6	320	340	440	336	55	70	Tr340X5	M6	3,5	7
H3972-HG	HM3072	MS3072	25,9	340	360	420	144	45	57	Tr360X5	M6	3,5	7
H3072-HG	HM3072	MS3072	31,6	340	360	420	188	45	57	Tr360X5	M6	3,5	7
H24072-HG	HM3072	MS3072	35,5	340	360	420	244	45	57	Tr360X5	M6	3,5	7
H3172-HG	HM3172	MS3168	54,3	340	360	460	259	58	73	Tr360X5	M6	3,5	7
H3272-HG	HM3172	MS3168	61	340	360	460	299	58	73	Tr360X5	M6	3,5	7
H24172-HG	HM3172	MS3168	57,1	340	360	460	321	58	73	Tr360X5	M6	3,5	7
H3372-HG	HM3172	MS3168	71,8	340	360	460	357	58	73	Tr360X5	M6	3,5	7
H3976-HG	HM3076	MS3076	32,1	360	380	450	164	48	62	Tr380X5	M6	3,5	7
H3076-HG	HM3076	MS3076	36,2	360	380	450	193	48	62	Tr380X5	M6	3,5	7
H24076-HG	HM3076	MS3076	40,1	360	380	450	248	48	62	Tr380X5	M6	3,5	7
H3176-HG	HM3176	MS3176	62,4	360	380	490	264	60	75	Tr380X5	M6	3,5	7
H3276-HG	HM3176	MS3176	70,7	360	380	490	310	60	75	Tr380X5	M6	3,5	7
H24176-HG	HM3176	MS3176	64,9	360	380	490	323	60	75	Tr380X5	M6	3,5	7
H3376-HG	HM3176	MS3176	82,8	360	380	490	370	60	75	Tr380X5	M6	3,5	7
H3980-HG	HM3080	MS3076	35,4	380	400	470	168	52	66	Tr400X5	M6	3,5	7
H3080-HG	HM3080	MS3076	41,7	380	400	470	210	52	66	Tr400X5	M6	3,5	7
H24080-HG	HM3080	MS3076	46,4	380	400	470	272	52	66	Tr400X5	M6	3,5	7
H3180-HG	HM3180	MS3180	71,3	380	400	520	272	62	81	Tr400X5	M6	3,5	7
H3280-HG	HM3180	MS3180	82,1	380	400	520	328	62	81	Tr400X5	M6	3,5	7
H24180-HG	HM3180	MS3180	73,8	380	400	520	332	62	81	Tr400X5	M6	3,5	7
H3380-HG	HM3180	MS3180	93,4	380	400	520	380	62	81	Tr400X5	M6	3,5	7
H3984-HG	HM3084	MS3084	36,9	400	420	490	168	52	66	Tr420X5	M6	3,5	7
H3084X-HG	HM3084	MS3084	43,8	400	420	490	212	52	66	Tr420X5	M6	3,5	7
H24084-HG	HM3084	MS3084	48,6	400	420	490	274	52	66	Tr420X5	M6	3,5	7
H3184-HG	HM3184	MS3180	85,1	400	420	540	304	70	89	Tr420X5	M6	3,5	7
H3284-HG	HM3184	MS3180	95,3	400	420	540	352	70	89	Tr420X5	M6	3,5	7
H24184-HG	HM3184	MS3180	87,8	400	420	540	372	70	89	Tr420X5	M6	3,5	7
H3384-HG	HM3184	MS3180	105	400	420	540	395	70	89	Tr420X5	M6	3,5	7

Dimension table (continued) - Dimensions in mm													
Designation			Mass m ≈kg	Dimensions							Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m	l	c ≈	c ₁ ≈	d _{2G}	R ₀	e	t
H3988-HG	HM3088	MS3088	59	410	440	520	189	60	75	Tr440X5	M8	6,5	12
H3088-HG	HM3088	MS3088	67,7	410	440	520	228	60	75	Tr440X5	M8	6,5	12
H24088-HG	HM3088	MS3088	76,4	410	440	520	294	60	75	Tr440X5	M8	6,5	12
H3188-HG	HM3188	MS3188	105	410	440	560	307	70	89	Tr440X5	M8	6,5	12
H3288-HG	HM3188	MS3188	120	410	440	560	361	70	89	Tr440X5	M8	6,5	12
H24188-HG	HM3188	MS3188	111	410	440	560	372	70	89	Tr440X5	M8	6,5	12
H3388-HG	HM3188	MS3188	140	410	440	560	426	70	89	Tr440X5	M8	6,5	12
H3992-HG	HM3092	MS3088	61,4	430	460	540	189	60	75	Tr460X5	M8	6,5	12
H3092-HG	HM3092	MS3088	71,8	430	460	540	234	60	75	Tr460X5	M8	6,5	12
H24092-HG	HM3092	MS3088	80,8	430	460	540	300	60	75	Tr460X5	M8	6,5	12
H3192-HG	HM3192	MS3188	118	430	460	580	326	75	94	Tr460X5	M8	6,5	12
H3292-HG	HM3192	MS3188	134	430	460	580	382	75	94	Tr460X5	M8	6,5	12
H24192-HG	HM3192	MS3188	124	430	460	580	398	75	94	Tr460X5	M8	6,5	12
H3392-HG	HM3192	MS3188	157	430	460	580	451	75	94	Tr460X5	M8	6,5	12
H3996-HG	HM3096	MS3096	66,8	450	480	560	200	60	75	Tr480X5	M8	6,5	12
H3096-HG	HM3096	MS3096	75,9	450	480	560	237	60	75	Tr480X5	M8	6,5	12
H24096-HG	HM3096	MS3096	84,7	450	480	560	301	60	75	Tr480X5	M8	6,5	12
H3196-HG	HM3196	MS3196	135	450	480	620	335	75	94	Tr480X5	M8	6,5	12
H3296-HG	HM3196	MS3196	155	450	480	620	397	75	94	Tr480X5	M8	6,5	12
H24196-HG	HM3196	MS3196	142	450	480	620	408	75	94	Tr480X5	M8	6,5	12
H3396-HG	HM3196	MS3196	177	450	480	620	462	75	94	Tr480X5	M8	6,5	12
H39/500-HG	HM30/500	MS3096	75,2	470	500	580	208	68	83	Tr500X5	M8	6,5	12
H30/500-HG	HM30/500	MS3096	85,2	470	500	580	247	68	83	Tr500X5	M8	6,5	12
H240/500-HG	HM30/500	MS3096	93,8	470	500	580	309	68	83	Tr500X5	M8	6,5	12
H31/500-HG	HM31/500	MS31/500	145	470	500	630	356	80	99	Tr500X5	M8	6,5	12
H32/500-HG	HM31/500	MS31/500	170	470	500	630	428	80	99	Tr500X5	M8	6,5	12
H241/500-HG	HM31/500	MS31/500	151	470	500	630	430	80	99	Tr500X5	M8	6,5	12
H33/500-HG	HM31/500	MS31/500	189	470	500	630	480	80	99	Tr500X5	M8	6,5	12
H39/530-HG	HM30/530	MS30/530	89	500	530	630	216	68	89	Tr530X6	M8	6	12
H30/530-HG	HM30/530	MS30/530	103	500	530	630	265	68	89	Tr530X6	M8	6	12
H240/530-HG	HM30/530	MS30/530	115	500	530	630	343	68	89	Tr530X6	M8	6	12
H31/530-HG	HM31/530	MS31/530	161	500	530	670	364	80	102	Tr530X6	M8	6	12
H241/530-HG	HM31/530	MS31/530	167	500	530	670	440	80	102	Tr530X6	M8	6	12
H32/530-HG	HM31/530	MS31/530	192	500	530	670	447	80	102	Tr530X6	M8	6	12
H33/530-HG	HM31/530	MS31/530	215	500	530	670	504	80	102	Tr530X5	M8	6	12

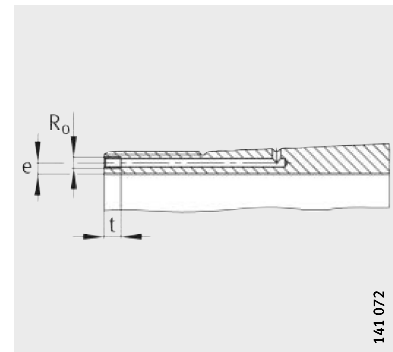


Adapter sleeves

With nut and retainer



Taper 1:12
(taper 1:30 for H240, H241)



Hydraulic adapter sleeve
Mounting dimensions

Dimension table (continued) · Dimensions in mm													
Designation			Mass m ≈kg	Dimensions							Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m	l	c ≈	c ₁ ≈	d _{2G}	R ₀	e	t
H39/560-HG	HM30/560	MS30/560	95,6	530	560	650	227	75	96	Tr560X6	M8	6	12
H30/560-HG	HM30/560	MS30/560	112	530	560	650	282	75	96	Tr560X6	M8	6	12
H240/560-HG	HM30/560	MS30/560	124	530	560	650	358	75	96	Tr560X6	M8	6	12
H31/560-HG	HM31/560	MS31/560	184	530	560	710	377	85	107	Tr560X6	M8	6	12
H32/560-HG	HM31/560	MS31/560	218	530	560	710	462	85	107	Tr560X6	M8	6	12
H241/560-HG	HM31/560	MS31/560	195	530	560	710	468	85	107	Tr560X6	M8	6	12
H33/560-HG	HM31/560	MS31/560	250	530	560	710	535	85	107	Tr560X6	M8	6	12
H39/600-HG	HM30/600	MS30/530	129	560	600	700	239	75	96	Tr600X6	G1/8	8	12
H30/600-HG	HM30/600	MS30/530	149	560	600	700	289	75	96	Tr600X6	G1/8	8	12
H240/600-HG	HM30/600	MS30/530	171	560	600	700	377	75	96	Tr600X6	G1/8	8	12
H31/600-HG	HM31/600	MS31/560	234	560	600	750	399	85	107	Tr600X6	G1/8	8	12
H32/600-HG	HM31/600	MS31/560	279	560	600	750	487	85	107	Tr600X6	G1/8	8	12
H241/600-HG	HM31/600	MS31/560	249	560	600	750	490	85	107	Tr600X6	G1/8	8	12
H33/600-HG	HM31/600	MS31/560	320	560	600	750	561	85	107	Tr600X6	G1/8	8	12
H39/630-HG	HM30/630	MS30/630	123	600	630	730	254	75	96	Tr630X6	M8	6	12
H30/630-HG	HM30/630	MS30/630	139	600	630	730	301	75	96	Tr630X6	M8	6	12
H240/630-HG	HM30/630	MS30/630	157	600	630	730	395	75	96	Tr630X6	M8	6	12
H31/630-HG	HM31/630	MS31/630	251	600	630	800	424	95	117	Tr630X6	M8	6	12
H32/630-HG	HM31/630	MS31/630	297	600	630	800	521	95	117	Tr630X6	M8	6	12
H241/630-HG	HM31/630	MS31/630	263	600	630	800	525	95	117	Tr630X6	M8	6	12
H33/630-HG	HM31/630	MS31/630	338	600	630	800	597	95	117	Tr630X6	M8	6	12
H39/670-HG	HM30/670	MS30/670	166	630	670	780	264	80	101	Tr670X6	G1/8	8	12
H30/670-HG	HM30/670	MS30/670	194	630	670	780	324	80	101	Tr670X6	G1/8	8	12
H240/670-HG	HM30/670	MS30/670	218	630	670	780	418	80	101	Tr670X6	G1/8	8	12
H31/670-HG	HM31/670	MS31/670	341	630	670	850	456	106	128	Tr670X6	G1/8	8	12
H241/670-HG	HM31/670	MS31/670	355	630	670	850	548	106	128	Tr670X6	G1/8	8	12
H32/670-HG	HM31/670	MS31/670	402	630	670	850	558	106	128	Tr670X6	G1/8	8	12
H33/670-HG	HM31/670	MS31/670	453	630	670	850	635	106	128	Tr670X6	G1/8	8	12
H39/710-HG	HM30/710	MS30/710	200	670	710	830	286	90	111	Tr710X7	G1/8	8	12
H30/710-HG	HM30/710	MS30/710	228	670	710	830	342	90	111	Tr710X7	G1/8	8	12
H240/710-HG	HM30/710	MS30/710	254	670	710	830	438	90	111	Tr710X7	G1/8	8	12
H31/710-HG	HM31/710	MS31/710	376	670	710	900	467	106	131	Tr710X7	G1/8	8	12
H32/710-HG	HM31/710	MS31/710	444	670	710	900	572	106	131	Tr710X7	G1/8	8	12
H241/710-HG	HM31/710	MS31/710	397	670	710	900	577	106	131	Tr710X7	G1/8	8	12
H33/710-HG	HM31/710	MS31/710	501	670	710	900	652	106	131	Tr710X7	G1/8	8	12

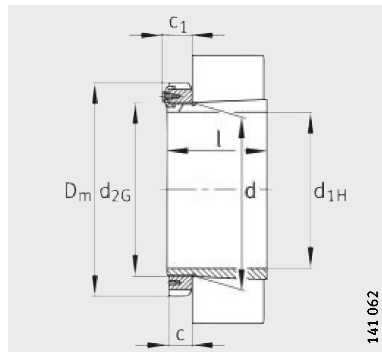
Dimension table (continued) · Dimensions in mm

Designation			Mass m ≈kg	Dimensions							Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m	l	c ≈	c ₁ ≈	d _{2G}	R ₀	e	t
H39/750-HG	HM30/750	MS30/750	213	710	750	870	291	90	111	Tr750X7	G1/8	8	12
H30/750-HG	HM30/750	MS30/750	248	710	750	870	356	90	111	Tr750X7	G1/8	8	12
H240/750-HG	HM30/750	MS30/750	278	710	750	870	460	90	111	Tr750X7	G1/8	8	12
H31/750-HG	HM31/750	MS31/750	432	710	750	950	493	112	137	Tr750X7	G1/8	8	12
H32/750-HG	HM31/750	MS31/750	508	710	750	950	603	112	137	Tr750X7	G1/8	8	12
H241/750-HG	HM31/750	MS31/750	461	710	750	950	622	112	137	Tr750X7	G1/8	8	12
H33/750-HG	HM31/750	MS31/750	574	710	750	950	688	112	137	Tr750X7	G1/8	8	12
H39/800-HG	HM30/800	MS30/750	263	750	800	920	303	90	111	Tr800X7	G1/8	10	12
H30/800-HG	HM30/800	MS30/750	305	750	800	920	366	90	111	Tr800X7	G1/8	10	12
H240/800-HG	HM30/800	MS30/750	349	750	800	920	475	90	111	Tr800X7	G1/8	10	12
H31/800-HG	HM31/800	MS31/750	515	750	800	1000	505	112	137	Tr800X7	G1/8	10	12
H32/800-HG	HM31/800	MS31/750	611	750	800	1000	618	112	137	Tr800X7	G1/8	10	12
H241/800-HG	HM31/800	MS31/750	552	750	800	1000	627	112	137	Tr800X7	G1/8	10	12
H33/800-HG	HM31/800	MS31/750	716	750	800	1000	730	112	137	Tr800X7	G1/8	10	12
H39/850-HG	HM30/850	MS30/850	292	800	850	980	308	90	115	Tr850X7	G1/8	10	12
H30/850-HG	HM30/850	MS30/850	344	800	850	980	380	90	115	Tr850X7	G1/8	10	12
H240/850-HG	HM30/850	MS30/850	393	800	850	980	495	90	115	Tr850X7	G1/8	10	12
H31/850-HG	HM31/850	MS31/850	590	800	850	1060	536	118	143	Tr850X7	G1/8	10	12
H32/850-HG	HM31/850	MS31/850	696	800	850	1060	651	118	143	Tr850X7	G1/8	10	12
H241/850-HG	HM31/850	MS31/850	624	800	850	1060	658	118	143	Tr850X7	G1/8	10	12
H33/850-HG	HM31/850	MS31/850	814	800	850	1060	766	118	143	Tr850X7	G1/8	10	12
H39/900-HG	HM30/900	MS30/850	335	850	900	1030	326	100	122	Tr900X7	G1/8	10	12
H30/900-HG	HM30/900	MS30/850	392	850	900	1030	400	100	122	Tr900X7	G1/8	10	12
H240/900-HG	HM30/900	MS30/850	446	850	900	1030	520	100	122	Tr900X7	G1/8	10	12
H31/900-HG	HM31/900	MS31/900	674	850	900	1120	557	125	150	Tr900X7	G1/8	10	12
H32/900-HG	HM31/900	MS31/900	775	850	900	1120	660	125	150	Tr900X7	G1/8	10	12
H241/900-HG	HM31/900	MS31/900	712	850	900	1120	685	125	150	Tr900X7	G1/8	10	12
H33/900-HG	HM31/900	MS31/900	923	850	900	1120	795	125	150	Tr900X7	G1/8	10	12
H39/950-HG	HM30/950	MS30/950	369	900	950	1080	344	100	122	Tr950X8	G1/8	10	12
H30/950-HG	HM30/950	MS30/950	432	900	950	1080	420	100	122	Tr950X8	G1/8	10	12
H240/950-HG	HM30/950	MS30/950	499	900	950	1080	557	100	122	Tr950X8	G1/8	10	12
H31/950-HG	HM31/950	MS31/950	738	900	950	1170	583	125	150	Tr950X8	G1/8	10	12
H32/950-HG	HM31/950	MS31/950	835	900	950	1170	675	125	150	Tr950X8	G1/8	10	12
H241/950-HG	HM31/950	MS31/950	776	900	950	1170	715	125	150	Tr950X8	G1/8	10	12
H33/950-HG	HM31/950	MS31/950	1000	900	950	1170	815	125	150	Tr950X8	G1/8	10	12

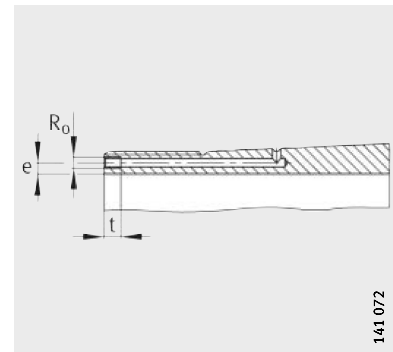


Adapter sleeves

With nut and retainer



Taper 1:12
(taper 1:30 for H240, H241)



Hydraulic adapter sleeve
Mounting dimensions

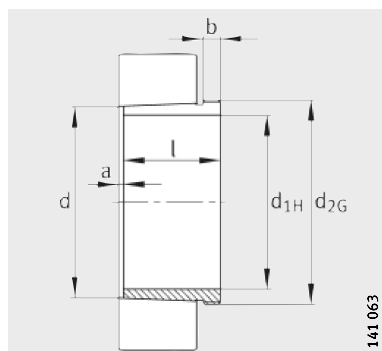
Dimension table (continued) · Dimensions in mm

Designation			Mass m ≈kg	Dimensions							Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m	l	c ≈	c ₁ ≈	d _{2G}	R ₀	e	t
H39/1000-HG	HM30/1000	MS30/1000	410	950	1 000	1 140	358	100	122	Tr1000X8	G1/8	10	12
H30/1000-HG	HM30/1000	MS30/1000	474	950	1 000	1 140	430	100	122	Tr1000X8	G1/8	10	12
H240/1000-HG	HM30/1000	MS30/1000	539	950	1 000	1 140	562	100	122	Tr1000X8	G1/8	10	12
H31/1000-HG	HM31/1000	MS31/1000	840	950	1 000	1 240	609	125	150	Tr1000X8	G1/8	10	12
H32/1000-HG	HM31/1000	MS31/1000	952	950	1 000	1 240	707	125	150	Tr1000X8	G1/8	10	12
H241/1000-HG	HM31/1000	MS31/1000	886	950	1 000	1 240	755	125	150	Tr1000X8	G1/8	10	12
H33/1000-HG	HM31/1000	MS31/1000	1 144	950	1 000	1 240	857	125	150	Tr1000X8	G1/8	10	12
H39/1060-HG	HM30/1060	MS30/1000	493	1 000	1 060	1 200	372	100	122	Tr1060X8	G1/4	12	15
H30/1060-HG	HM30/1060	MS30/1000	574	1 000	1 060	1 200	447	100	122	Tr1060X8	G1/4	12	15
H240/1060-HG	HM30/1060	MS30/1000	665	1 000	1 060	1 200	588	100	122	Tr1060X8	G1/4	12	15
H31/1060-HG	HM31/1060	MS31/1000	985	1 000	1 060	1 300	622	125	150	Tr1060X8	G1/4	12	15
H241/1060-HG	HM31/1060	MS31/1000	1 056	1 000	1 060	1 300	775	125	150	Tr1060X8	G1/4	12	15
H39/1120-HG	HM30/1120	MS30/1000	521	1 060	1 120	1 260	372	100	122	Tr1120X8	G1/4	12	15
H30/1120-HG	HM30/1120	MS30/1000	631	1 060	1 120	1 260	467	100	122	Tr1120X8	G1/4	12	15
H240/1120-HG	HM30/1120	MS30/1000	728	1 060	1 120	1 260	612	100	122	Tr1120X8	G1/4	12	15
H31/1120-HG	HM31/1120	MS31/1000	1 060	1 060	1 120	1 360	622	125	150	Tr1120X8	G1/4	12	15
H241/1120-HG	HM31/1120	MS31/1000	1 168	1 060	1 120	1 360	805	125	150	Tr1120X8	G1/4	13	15
H39/1180-HG	HM30/1180	MS30/1000	576	1 120	1 180	1 320	394	100	122	Tr1180X8	G1/4	12	15
H30/1180-HG	HM30/1180	MS30/1000	682	1 120	1 180	1 320	479	100	122	Tr1180X8	G1/4	12	15
H240/1180-HG	HM30/1180	MS30/1000	782	1 120	1 180	1 320	625	100	122	Tr1180X8	G1/4	12	15
H31/1180-HG	HM31/1180	MS31/1000	1 163	1 120	1 180	1 420	647	125	150	Tr1180X8	G1/4	12	15
H241/1180-HG	HM31/1180	MS31/1000	1 287	1 120	1 180	1 420	845	125	150	Tr1180X8	G1/4	13	15
H39/1250-HG	HM30/1250	MS30/1000	708	1 180	1 250	1 390	407	110	132	Tr1250X8	G1/4	14	15
H30/1250-HG	HM30/1250	MS30/1000	858	1 180	1 250	1 390	509	110	132	Tr1250X8	G1/4	15	15
H240/1250-HG	HM30/1250	MS30/1000	988	1 180	1 250	1 390	660	110	132	Tr1250X8	G1/4	14	15
H31/1250-HG	HM31/1250	MS31/1000	1 377	1 180	1 250	1 490	677	125	150	Tr1250X8	G1/4	14	15
H241/1250-HG	HM31/1250	MS31/1000	1 542	1 180	1 250	1 490	885	125	150	Tr1250X8	G1/4	14	15
H39/1320-HG	HM30/1320	MS30/1000	781	1 250	1 320	1 460	430	110	132	Tr1320X8	G1/4	14	15
H30/1320-HG	HM30/1320	MS30/1000	946	1 250	1 320	1 460	534	110	132	Tr1320X8	G1/4	15	15
H240/1320-HG	HM30/1320	MS30/1000	1 085	1 250	1 320	1 460	690	110	132	Tr1320X8	G1/4	14	15
H31/1320-HG	HM31/1320	MS31/1000	1 515	1 250	1 320	1 560	710	125	150	Tr1320X8	G1/4	14	15
H241/1320-HG	HM31/1320	MS31/1000	1 703	1 250	1 320	1 560	935	125	150	Tr1320X8	G1/4	14	15

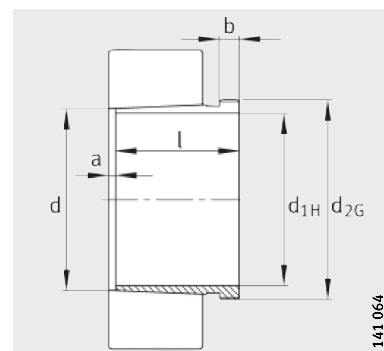
Dimension table (continued) - Dimensions in mm													
Designation			Mass m ≈kg	Dimensions							Mounting dimensions		
Adapter sleeve Complete	Nut	Retainer		d _{1H}	d	D _m	l	c ≈	c ₁ ≈	d _{2G}	R ₀	e	t
H39/1400-HG	HM30/1400	MS30/1000	924	1 320	1 400	1 540	445	110	132	Tr1400X8	G1/4	15	15
H30/1400-HG	HM30/1400	MS30/1000	1 113	1 320	1 400	1 540	546	110	132	Tr1400X8	G1/4	15	15
H240/1400-HG	HM30/1400	MS30/1000	1 287	1 320	1 400	1 540	705	110	132	Tr1400X8	G1/4	14	15
H31/1400-HG	HM31/1400	MS31/1000	1 792	1 320	1 400	1 640	735	130	155	Tr1400X8	G1/4	15	15
H241/1400-HG	HM31/1400	MS31/1000	2 030	1 320	1 400	1 640	965	130	155	Tr1400X8	G1/4	15	15
H39/1500-HG	HM30/1500	MS30/1500	1 210	1 400	1 500	1 650	465	110	132	Tr1500X8	G1/4	15	15
H30/1500-HG	HM30/1500	MS30/1500	1 534	1 400	1 500	1 650	600	110	132	Tr1500X8	G1/4	15	15
H240/1500-HG	HM30/1500	MS30/1500	1 791	1 400	1 500	1 650	775	110	132	Tr1500X8	G1/4	14	15
H31/1500-HG	HM31/1500	MS31/1000	2 227	1 400	1 500	1 740	755	130	155	Tr1500X8	G1/4	15	15
H241/1500-HG	HM31/1500	MS31/1000	2 564	1 400	1 500	1 740	990	130	155	Tr1500X8	G1/4	15	15
H39/1600-HG	MU-195 077A	MS30/850	2 481	1 500	1 600	1 730	465	100	112	Tr1600X8	G1/4	15	15
H39/1700-HG	MU-195 078A	MS30/850	2 619	1 600	1 700	1 830	475	100	112	Tr1700X8	G1/4	15	15



Withdrawal sleeves



Taper 1:12



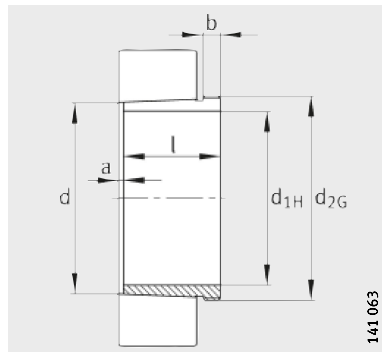
AH240, AH241
Taper 1:30

Dimension table · Dimensions in mm							
Designation	Mass m ≈kg	Dimensions					
		d _{1H}	d	l	a ≈	b	d _{2G}
AH208	0,08	35	40	25	2	6	M45X1,5
AH308	0,09	35	40	29	3	6	M45X1,5
AH2308	0,13	35	40	40	3	7	M45X1,5
AH3308	0,15	35	40	44	3	7	M45X1,5
AH209	0,09	40	45	26	3	6	M50X1,5
AH309	0,11	40	45	31	3	6	M50X1,5
AH2309	0,17	40	45	44	3	7	M50X1,5
AH3309	0,18	40	45	47	3	7	M50X1,5
AH210	0,12	45	50	28	3	7	M55X2
AHX310	0,14	45	50	35	3	7	M55X2
AHX2310	0,22	45	50	50	3	9	M55X2
AH3310	0,24	45	50	54	3	9	M55X2
AH211	0,13	50	55	29	3	7	M60X2
AHX311	0,17	50	55	37	3	7	M60X2
AHX2311	0,26	50	55	54	3	10	M60X2
AH3311	0,3	50	55	60	3	10	M60X2
AH212	0,16	55	60	32	3	8	M65X2
AHX312	0,2	55	60	40	3	8	M65X2
AHX2312	0,32	55	60	58	3	11	M65X2
AH3312	0,41	55	60	65	3	11	M70X2
AH213	0,21	60	65	32,5	3,5	8	M75X2
AH213G	0,18	60	65	32,5	3,5	8	M70X2
AH313	0,27	60	65	42	3	8	M75X2
AH313G	0,23	60	65	42	3	8	M70X2
AH2313	0,42	60	65	61	3	12	M75X2
AH2313G	0,36	60	65	61	3	12	M70X2
AH3313	0,49	60	65	71	3	12	M75X2
AH214	0,23	65	70	33,5	3,5	8	M80X2
AH214G	0,2	65	70	33,5	3,5	8	M75X2
AH314	0,29	65	70	43	4	8	M80X2
AH314G	0,26	65	70	43	4	8	M75X2
AHX2314	0,47	65	70	64	4	12	M80X2
AHX2314G	0,42	65	70	64	4	12	M75X2
AH3314	0,57	65	70	76	4	12	M80X2

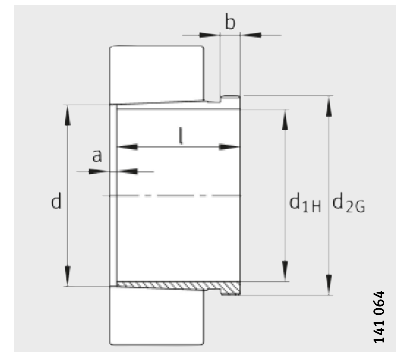
Dimension table (continued) · Dimensions in mm							
Designation	Mass m ≈kg	Dimensions					
		d _{1H}	d	l	a ≈	b	d _{2G}
AH215	0,26	70	75	34,5	3,5	8	M85X2
AH215G	0,22	70	75	34,5	3,5	8	M80X2
AH315	0,33	70	75	45	4	8	M85X2
AH315G	0,29	70	75	45	4	8	M80X2
AHX2315	0,54	70	75	68	4	12	M85X2
AHX2315G	0,48	70	75	68	4	12	M80X2
AH3315	0,66	70	75	81	4	12	M85X2
AH216	0,28	75	80	35,5	3,5	8	M90X2
AH316	0,38	75	80	48	4	8	M90X2
AHX2316	0,61	75	80	71	4	12	M90X2
AH3316	0,71	75	80	81	4	12	M90X2
AH217	0,33	80	85	38,5	3,5	9	M95X2
AHX317	0,44	80	85	52	4	9	M95X2
AH3217	0,52	80	85	60	4	10	M95X2
AHX2317	0,68	80	85	74	4	13	M95X2
AH3317	0,81	80	85	86	4	13	M95X2
AH218	0,36	85	90	40	4	9	M100X2
AHX318	0,48	85	90	53	4	9	M100X2
AHX3218	0,58	85	90	63	4	10	M100X2
AHX2318	0,78	85	90	79	4	14	M100X2
AH3318	0,88	85	90	87	4	14	M100X2
AH219	0,42	90	95	43	4	10	M105X2
AHX319	0,55	90	95	57	4	10	M105X2
AHX3219	0,67	90	95	67	4	11	M105X2
AHX2319	0,91	90	95	85	4	16	M105X2
AH3319	1,03	90	95	94	4	16	M105X2
AH220	0,46	95	100	45	4	10	M110X2
AHX320	0,6	95	100	59	4	10	M110X2
AH24020	0,5	95	100	62	9	12	M105X2
AHX3120	0,67	95	100	64	4	11	M110X2
AHX3220	0,78	95	100	73	4	11	M110X2
AH24120	0,63	95	100	78	9	13	M105X2
AHX2320	1,03	95	100	90	4	16	M110X2
AH3320	1,16	95	100	99	4	16	M110X2



Withdrawal sleeves



Taper 1:12



AH240, AH241
Taper 1:30

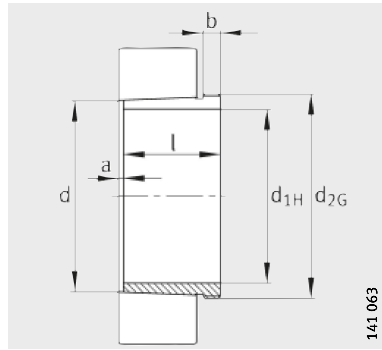
Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions					
		d _{1H}	d	l	a ≈	b	d _{2G}
AH222	0,57	105	110	50	4	11	M120X2
AHX322	0,73	105	110	63	4	12	M120X2
AHX3122	0,79	105	110	68	4	11	M120X2
AH24022	0,65	105	110	73	9	13	M115X2
AH24122	0,73	105	110	82	9	13	M115X2
AHX3222A	0,98	105	110	82	4	11	M120X2
AHX2322	1,38	105	110	98	4	16	M125X2
AHX2322G	1,26	105	110	98	4	16	M120X2
AH3322	1,54	105	110	108	4	16	M125X2
AH224	0,67	115	120	53	4	12	M130X2
AHX3024	0,77	115	120	60	4	13	M130X2
AHX324	0,89	115	120	69	4	13	M130X2
AH24024	0,71	115	120	73	9	13	M125X2
AHX3124	0,97	115	120	75	4	12	M130X2
AHX3224A	1,22	115	120	90	4	13	M130X2
AH24124	1,02	115	120	93	9	13	M130X2
AHX2324	1,64	115	120	105	4	17	M135X2
AHX2324G	1,5	115	120	105	4	17	M130X2
AH3324	1,99	115	120	123	4	17	M135X2
AH226	0,72	125	130	53	4	12	M140X2
AHX3026	0,94	125	130	67	4	14	M140X2
AHX326	1,05	125	130	74	4	14	M140X2
AHX3126	1,1	125	130	78	4	12	M140X2
AH24026	0,89	125	130	83	10	14	M135X2
AH24126	1,13	125	130	94	10	14	M140X2
AHX3226	1,61	125	130	98	4	15	M145X2
AHX3226G	1,48	125	130	98	4	15	M140X2
AHX2326	2	125	130	115	4	19	M145X2
AHX2326G	1,84	125	130	115	4	19	M140X2
AH3326	2,36	125	130	131	4	19	M145X2

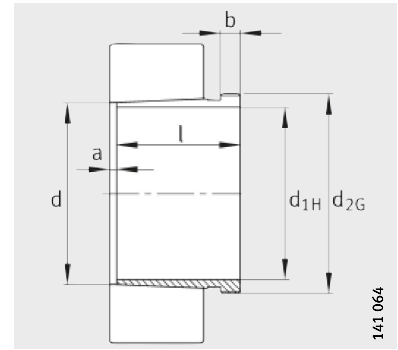
Dimension table (continued) · Dimensions in mm							
Designation	Mass m ≈kg	Dimensions					
		d _{1H}	d	l	a ≈	b	d _{2G}
AH228	0,83	135	140	56	5	13	M150X2
AHX3028	1,03	135	140	68	5	14	M150X2
AHX328	1,18	135	140	77	5	14	M150X2
AH24028	0,96	135	140	83	10	14	M145X2
AHX3128	1,29	135	140	83	5	14	M150X2
AH24128	1,29	135	140	99	10	14	M150X2
AHX3228	1,86	135	140	104	5	15	M155X3
AHX3228G	1,72	135	140	104	5	15	M150X2
AHX2328	2,4	135	140	125	5	20	M155X3
AHX2328G	2,21	135	140	125	5	20	M150X2
AH3328	2,72	135	140	138	5	20	M155X3
AH230	0,97	145	150	60	5	14	M160X3
AHX3030	1,18	145	150	72	5	15	M160X3
AHX330	1,54	145	150	83	5	15	M165X3
AHX330G	1,39	145	150	83	5	15	M160X3
AH24030	1,12	145	150	90	11	15	M155X3
AHX3130	1,81	145	150	96	5	15	M165X3
AHX3130G	1,66	145	150	96	5	15	M160X3
AHX3230	2,25	145	150	114	5	17	M165X3
AHX3230G	2,09	145	150	114	5	17	M160X3
AH24130	1,63	145	150	115	11	15	M160X3
AHX2330	2,88	145	150	135	5	24	M165X3
AHX2330G	2,64	145	150	135	5	24	M160X3
AH3330	3,36	145	150	152	5	24	M165X3



Withdrawal sleeves



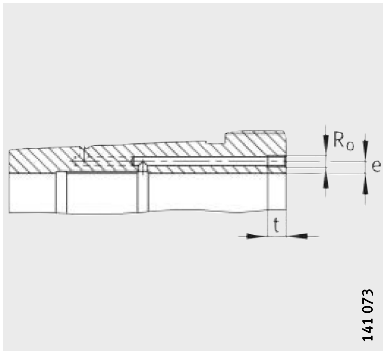
Taper 1:12



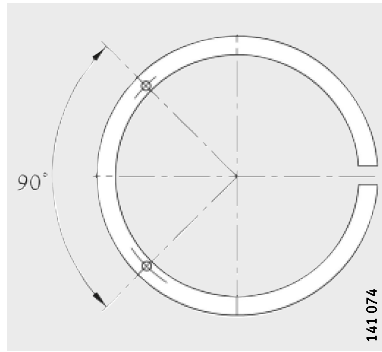
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH232	1,71	150	160	64	5	15	M170X3	–	–	–
AH3032	2,09	150	160	77	5	16	M170X3	–	–	–
AH3032-H	2,09	150	160	77	5	16	M170X3	M6	4,2	7
AH332	2,76	150	160	88	5	16	M180X3	–	–	–
AH332G	2,42	150	160	88	5	16	M170X3	–	–	–
AH24032	2,31	150	160	95	11	15	M170X3	–	–	–
AH3132A	2,9	150	160	103	5	16	M170X3	–	–	–
AH3132A-H	2,9	150	160	103	5	16	M170X3	M6	4,5	7
AH24132	3,04	150	160	124	11	15	M170X3	–	–	–
AH3232	4,08	150	160	124	6	20	M180X3	–	–	–
AH3232G	3,65	150	160	124	6	20	M170X3	–	–	–
AH3232G-H	3,65	150	160	124	6	20	M170X3	M6	4,5	7
AH3232-H	4,08	150	160	124	6	20	M180X3	M6	4,5	7
AH2332	4,77	150	160	140	6	24	M180X3	–	–	–
AH2332G	4,26	150	160	140	6	24	M170X3	–	–	–
AH2332G-H	4,26	150	160	140	6	24	M170X3	M6	4,5	7
AH2332-H	4,77	150	160	140	6	24	M180X3	M6	4,5	7
AH3332	5,58	150	160	160	6	24	M180X3	–	–	–
AH3332-H	5,58	150	160	160	6	24	M180X3	M6	4,5	7



Hydraulic withdrawal sleeve
(suffix H)
Mounting dimensions

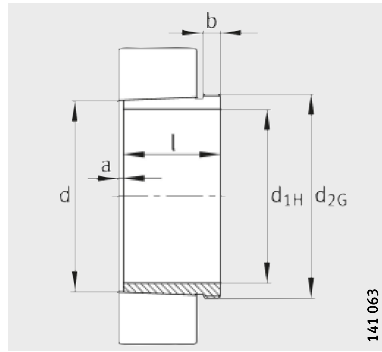


Pump connectors for
hydraulic withdrawal sleeve

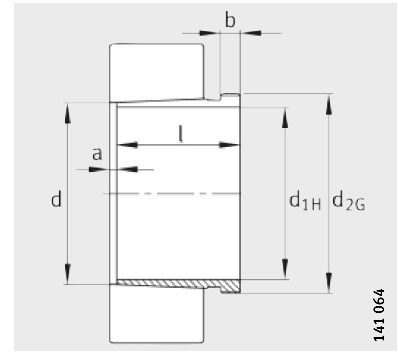
Dimension table (continued) · Dimensions in mm										
Designation	Mass m ≈ kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3934A	1,65	160	170	59	5	13	M180X3	-	-	-
AH234	1,98	160	170	69	5	16	M180X3	-	-	-
AH3034	2,48	160	170	85	5	17	M180X3	-	-	-
AH3034-H	2,48	160	170	85	5	17	M180X3	M6	4,2	7
AH334	3,13	160	170	93	5	17	M190X3	-	-	-
AH334G	2,75	160	170	93	5	17	M180X3	-	-	-
AH3134A	3,12	160	170	104	5	16	M180X3	-	-	-
AH3134A-H	3,12	160	170	104	5	16	M180X3	M6	4,5	7
AH24034	2,76	160	170	106	11	16	M180X3	-	-	-
AH24134	3,27	160	170	125	11	16	M180X3	-	-	-
AH3234	4,83	160	170	134	6	24	M190X3	-	-	-
AH3234G	4,29	160	170	134	6	24	M180X3	-	-	-
AH3234G-H	4,29	160	170	134	6	24	M180X3	M6	4,5	7
AH3234-H	4,83	160	170	134	6	24	M190X3	M6	4,5	7
AH2334	5,32	160	170	146	6	24	M190X3	-	-	-
AH2334G	4,78	160	170	146	6	24	M180X3	-	-	-
AH2334G-H	4,78	160	170	146	6	24	M180X3	M6	4,5	7
AH2334-H	5,32	160	170	146	6	24	M190X3	M6	4,5	7
AH3334	6,11	160	170	164	6	24	M190X3	-	-	-
AH3334-H	6,11	160	170	164	6	24	M190X3	M6	4,5	7



Withdrawal sleeves



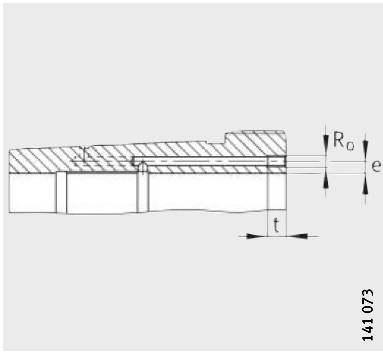
Taper 1:12



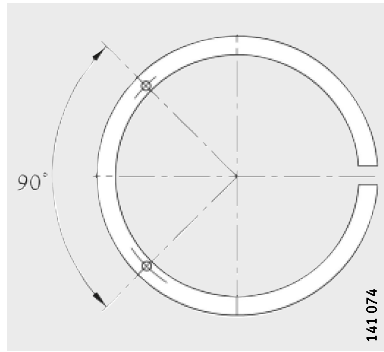
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3936	1,96	170	180	66	5	13	M190X3	-	-	-
AH236	2,1	170	180	69	5	16	M190X3	-	-	-
AH3036	2,87	170	180	92	6	17	M190X3	-	-	-
AH3036-H	2,87	170	180	92	6	17	M190X3	M6	4,2	7
AH2236G	3,35	170	180	105	5	17	M190X3	-	-	-
AH2236G-H	3,28	170	180	105	5	17	M190X3	M6	4,5	7
AH2236-H	3,68	170	180	105	5	17	M200X3	M6	4,5	7
AH3236	5,39	170	180	140	6	25	M200X3	-	-	-
AH24036	3,21	170	180	116	11	16	M190X3	-	-	-
AH3136A	3,79	170	180	116	6	19	M190X3	-	-	-
AH3136A-H	3,79	170	180	116	6	19	M190X3	M6	4,5	7
AH24136	3,74	170	180	134	11	16	M190X3	-	-	-
AH2236	3,76	170	180	105	5	17	M200X3	-	-	-
AH3236G	4,8	170	180	140	6	25	M190X3	-	-	-
AH3236G-H	4,8	170	180	140	6	25	M190X3	M6	4,5	7
AH3236-H	5,39	170	180	140	6	25	M200X3	M6	4,5	7
AH2336	6,04	170	180	154	6	26	M200X3	-	-	-
AH2336G	5,42	170	180	154	6	26	M190X3	-	-	-
AH2336G-H	5,42	170	180	154	6	26	M190X3	M6	4,5	7
AH2336-H	6,04	170	180	154	6	26	M200X3	M6	4,5	7
AH3336	7,1	170	180	176	6	26	M200X3	-	-	-
AH3336-H	7,1	170	180	176	6	26	M200X3	M6	4,5	7



Hydraulic withdrawal sleeve
(suffix H)
Mounting dimensions

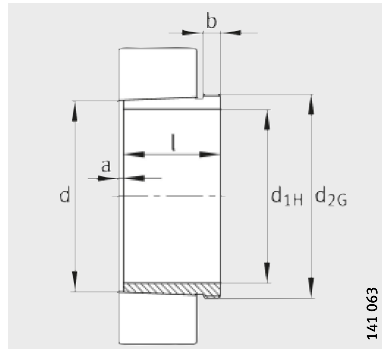


Pump connectors for
hydraulic withdrawal sleeve

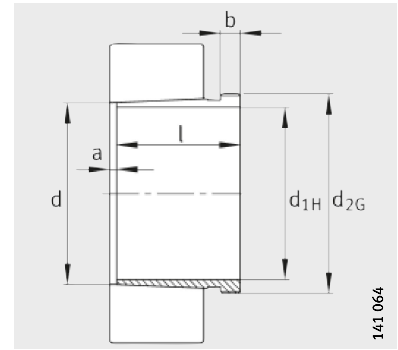
Dimension table (continued) · Dimensions in mm										
Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3938	2,07	180	190	66	5	13	M200X3	-	-	-
AH238	2,57	180	190	73	5	17	Tr205X4	-	-	-
AH238G	2,36	180	190	73	5	17	M200X3	-	-	-
AH3038	3,42	180	190	96	6	18	Tr205X4	-	-	-
AH3038G	3,19	180	190	96	6	18	M200X3	-	-	-
AH3038G-H	3,19	180	190	96	6	18	M200X3	M6	4,2	7
AH3038-H	3,42	180	190	96	6	18	Tr205X4	M6	4,2	7
AH2238	4,28	180	190	112	5	18	Tr210X4	-	-	-
AH2238G	3,83	180	190	112	5	18	M200X3	-	-	-
AH2238G-H	3,75	180	190	112	5	18	M200X3	M6	4,5	7
AH2238-H	4,19	180	190	112	5	18	Tr210X4	M6	4,5	7
AH24038	3,48	180	190	118	13	18	M200X3	-	-	-
AH3138	4,89	180	190	125	6	20	Tr210X4	-	-	-
AH3138G	4,39	180	190	125	6	20	M200X3	-	-	-
AH3138G-H	4,39	180	190	125	6	20	M200X3	M6	4,5	7
AH3138-H	4,89	180	190	125	6	20	Tr210X4	M6	4,5	7
AH3238	5,92	180	190	145	7	25	Tr210X4	-	-	-
AH3238G	5,3	180	190	145	7	25	M200X3	-	-	-
AH3238G-H	5,3	180	190	145	7	25	M200X3	M6	4,5	7
AH3238-H	5,92	180	190	145	7	25	Tr210X4	M6	4,5	7
AH24138	4,37	180	190	146	13	18	M200X3	-	-	-
AH2338	6,67	180	190	160	7	26	Tr210X4	-	-	-
AH2338G	6,02	180	190	160	7	26	M200X3	-	-	-
AH2338G-H	6,02	180	190	160	7	26	M200X3	M6	4,5	7
AH2338-H	6,67	180	190	160	7	26	Tr210X4	M6	4,5	7
AH3338	7,76	180	190	181	7	26	Tr210X4	-	-	-
AH3338-H	7,76	180	190	181	7	26	Tr210X4	M6	4,5	7



Withdrawal sleeves



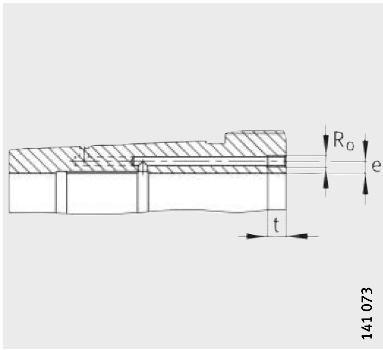
Taper 1:12



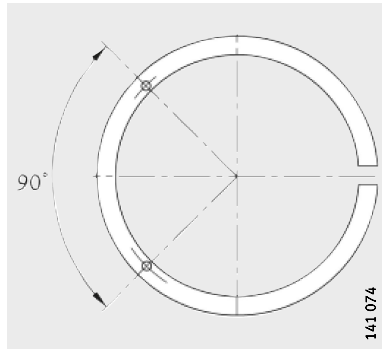
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH240	2,88	190	200	77	5	18	Tr215X4	-	-	-
AH240G	2,43	190	200	77	5	18	Tr210X4	-	-	-
AH3940	2,62	190	200	77	6	16	Tr210X4	-	-	-
AH3040	3,86	190	200	102	6	19	Tr215X4	-	-	-
AH3040G	3,62	190	200	102	6	19	Tr210X4	-	-	-
AH3040G-H	3,62	190	200	102	6	19	Tr210X4	M6	4,2	7
AH3040-H	3,86	190	200	102	6	19	Tr215X4	M6	4,2	7
AH2240	4,8	190	200	118	5	19	Tr220X4	-	-	-
AH2240-H	4,7	190	200	118	5	19	Tr220X4	M6	4,5	7
AH24040	3,96	190	200	127	13	18	Tr210X4	-	-	-
AH3140	5,6	190	200	134	6	21	Tr220X4	-	-	-
AH3140-H	5,6	190	200	134	6	21	Tr220X4	M6	4,5	7
AH3240	6,61	190	200	153	7	24	Tr220X4	-	-	-
AH3240-H	6,61	190	200	153	7	24	Tr220X4	M6	4,5	7
AH24140	5,02	190	200	158	13	18	Tr210X4	-	-	-
AH2340	7,64	190	200	170	7	30	Tr220X4	-	-	-
AH2340-H	7,64	190	200	170	7	30	Tr220X4	M6	4,5	7
AH3340	9,04	190	200	195	7	30	Tr220X4	-	-	-
AH3340-H	9,04	190	200	195	7	30	Tr220X4	M6	4,5	7



Hydraulic withdrawal sleeve
(suffix H)
Mounting dimensions

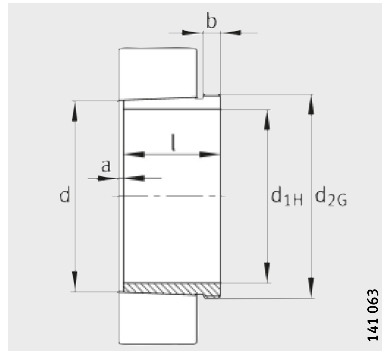


Pump connectors for
hydraulic withdrawal sleeve

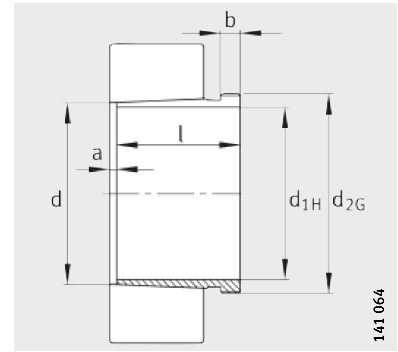
Dimension table (continued) · Dimensions in mm										
Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3944	4,81	200	220	77	6	16	Tr230X4	–	–	–
AH3944-H	4,81	200	220	77	6	16	Tr230X4	M8	7,5	12
AH244	5,62	200	220	85	6	18	Tr235X4	–	–	–
AH244G	5,36	200	220	85	6	18	Tr230X4	–	–	–
AH3044	7,47	200	220	111	6	20	Tr235X4	–	–	–
AH3044G	7,18	200	220	111	6	20	Tr230X4	–	–	–
AH3044G-H	7,18	200	220	111	6	20	Tr230X4	G1/8	6,5	12
AH3044-H	7,47	200	220	111	6	20	Tr235X4	G1/8	8,5	12
AH2244	9,17	200	220	130	6	20	Tr240X4	–	–	–
AH2244-H	8,99	200	220	130	6	20	Tr240X4	G1/8	8,5	12
AH24044	8,22	200	220	138	14	18	Tr230X4	–	–	–
AH24044-H	8,22	200	220	138	14	18	Tr230X4	M6	8	7
AH3144	10,4	200	220	145	6	23	Tr240X4	–	–	–
AH3144-H	10,4	200	220	145	6	23	Tr240X4	G1/8	8,5	12
AH24144	10,3	200	220	170	14	20	Tr230X4	–	–	–
AH24144-H	10,3	200	220	170	14	20	Tr230X4	M6	8	7
AH2344	13,6	200	220	181	8	30	Tr240X4	–	–	–
AH2344-H	13,6	200	220	181	8	30	Tr240X4	G1/8	8,5	12
AH3344	16,2	200	220	210	8	30	Tr240X4	–	–	–
AH3344-H	16,2	200	220	210	8	30	Tr240X4	G1/8	8,5	12



Withdrawal sleeves



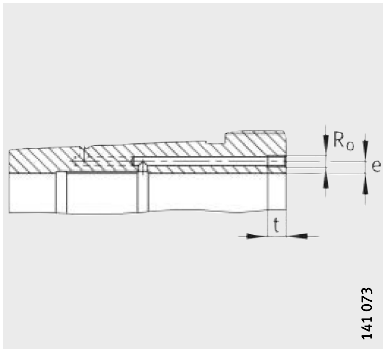
Taper 1:12



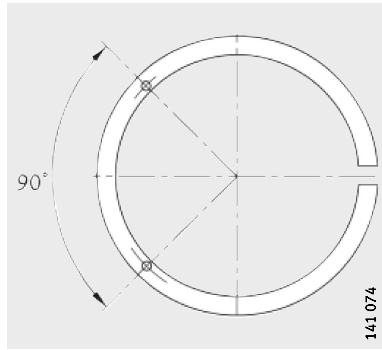
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3948	5,26	220	240	77	6	16	Tr250X4	–	–	–
AH3948-H	5,26	220	240	77	6	16	Tr250X4	M8	7,5	12
AH248	7,41	220	240	96	6	22	Tr260X4	–	–	–
AH3048	8,92	220	240	116	7	21	Tr260X4	–	–	–
AH3048-H	8,92	220	240	116	7	21	Tr260X4	G1/8	8,5	12
AH24048	9,03	220	240	138	15	20	Tr250X4	–	–	–
AH24048-H	9,03	220	240	138	15	20	Tr250X4	M6	8	7
AH2248	11,3	220	240	144	6	21	Tr260X4	–	–	–
AH2248-H	11,0	220	240	144	6	21	Tr260X4	G1/8	8,5	12
AH3148	12,3	220	240	154	7	25	Tr260X4	–	–	–
AH3148-H	12,3	220	240	154	7	25	Tr260X4	G1/8	8,5	12
AH24148	12,6	220	240	180	15	20	Tr260X4	–	–	–
AH24148-H	12,6	220	240	180	15	20	Tr260X4	G1/8	8,5	12
AH2348	15,6	220	240	189	8	30	Tr260X4	–	–	–
AH2348-H	15,6	220	240	189	8	30	Tr260X4	G1/8	8,5	12
AH3348	19,3	220	240	225	8	30	Tr260X4	–	–	–
AH3348-H	19,3	220	240	225	8	30	Tr260X4	G1/8	8,5	12



Hydraulic withdrawal sleeve
(suffix H)
Mounting dimensions



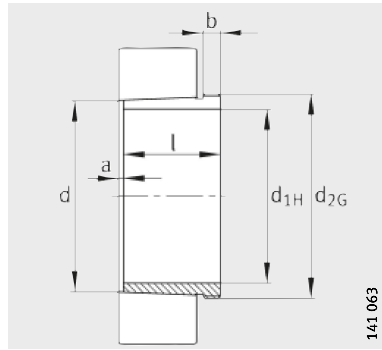
Pump connectors for
hydraulic withdrawal sleeve

Dimension table (continued) · Dimensions in mm

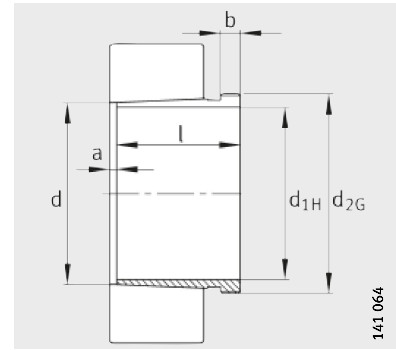
Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3952	7,39	240	260	94	6	18	Tr275X4	–	–	–
AH3952G	7,7	240	260	94	6	18	Tr280X4	–	–	–
AH3952G-H	7,7	240	260	94	6	18	Tr280X4	M8	7,5	12
AH3952-H	7,39	240	260	94	6	18	Tr275X4	M8	7,5	12
AH252	8,83	240	260	105	6	23	Tr280X4	–	–	–
AH3052	10,8	240	260	128	7	23	Tr280X4	–	–	–
AH3052-H	10,8	240	260	128	7	23	Tr280X4	G1/8	8,5	12
AH2252	14,1	240	260	155	6	23	Tr290X4	–	–	–
AH2252G	13,3	240	260	155	6	23	Tr280X4	–	–	–
AH2252G-H	13,1	240	260	155	6	23	Tr280X4	G1/8	8,5	12
AH2252-H	13,8	240	260	155	6	23	Tr290X4	G1/8	8,5	12
AH24052	11,6	240	260	162	16	20	Tr270X4	–	–	–
AH24052G	12,3	240	260	162	16	20	Tr280X4	–	–	–
AH24052G-H	12,3	240	260	162	16	20	Tr280X4	M6	8	7
AH24052-H	11,6	240	260	162	16	20	Tr270X4	M6	8	7
AH3152	16	240	260	172	7	26	Tr290X4	–	–	–
AH3152G	15,1	240	260	172	7	26	Tr280X4	–	–	–
AH3152G-H	15,1	240	260	172	7	26	Tr280X4	G1/8	7	12
AH3152-H	16	240	260	172	7	26	Tr290X4	G1/8	7	12
AH24152	15,5	240	260	202	16	22	Tr280X4	–	–	–
AH24152-H	15,5	240	260	202	16	22	Tr280X4	G1/8	8,5	12
AH2352	19,7	240	260	205	8	30	Tr290X4	–	–	–
AH2352G	18,7	240	260	205	8	30	Tr280X4	–	–	–
AH2352G-H	18,7	240	260	205	8	30	Tr280X4	G1/8	8,5	12
AH2352-H	19,7	240	260	205	8	30	Tr290X4	G1/8	8,5	12
AH3352	23,2	240	260	236	8	30	Tr290X4	–	–	–
AH3352-H	23,2	240	260	236	8	30	Tr290X4	G1/8	8,5	12



Withdrawal sleeves



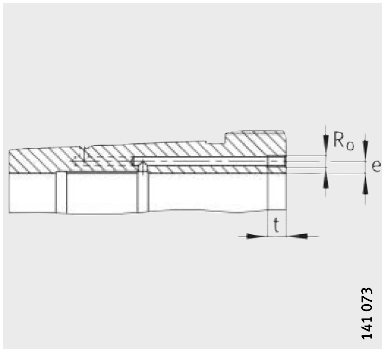
Taper 1:12



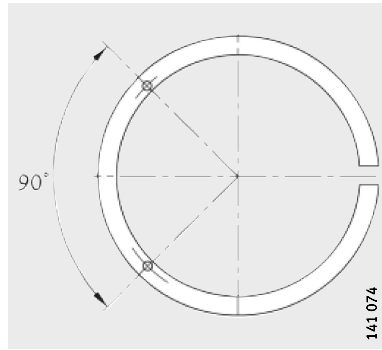
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3956	7,98	260	280	94	6	18	Tr295X4	–	–	–
AH3956G	8,3	260	280	94	6	18	Tr300X4	–	–	–
AH3956G-H	8,3	260	280	94	6	18	Tr300X4	M8	7,5	12
AH3956-H	7,98	260	280	94	6	18	Tr295X4	M8	7,5	12
AH256	9,52	260	280	105	8	23	Tr300X4	–	–	–
AH3056	12	260	280	131	8	24	Tr300X4	–	–	–
AH3056-H	12	260	280	131	8	24	Tr300X4	G1/8	8,5	12
AH2256	15,3	260	280	155	8	24	Tr310X4	–	–	–
AH2256G	14,4	260	280	155	8	24	Tr300X4	–	–	–
AH2256G-H	14,1	260	280	155	8	24	Tr300X4	G1/8	8,5	12
AH2256-H	15	260	280	155	8	24	Tr310X4	G1/8	8,5	12
AH24056	12,6	260	280	162	17	22	Tr290X4	–	–	–
AH24056G	13,4	260	280	162	17	22	Tr300X4	–	–	–
AH24056G-H	13,4	260	280	162	17	22	Tr300X4	M6	8	7
AH24056-H	12,6	260	280	162	17	22	Tr290X4	M6	8	7
AH3156	17,7	260	280	175	8	28	Tr310X4	–	–	–
AH3156G	16,7	260	280	175	8	28	Tr300X4	–	–	–
AH3156G-H	16,7	260	280	175	8	28	Tr300X4	G1/8	8,5	12
AH3156-H	17,7	260	280	175	8	28	Tr310X4	G1/8	8,5	12
AH24156	16,7	260	280	202	17	22	Tr300X4	–	–	–
AH24156-H	16,7	260	280	202	17	22	Tr300X4	G1/8	8,5	12
AH2356	22,1	260	280	212	8	30	Tr310X4	–	–	–
AH2356G	20,9	260	280	212	8	30	Tr300X4	–	–	–
AH2356G-H	20,9	260	280	212	8	30	Tr300X4	G1/8	8,5	12
AH2356-H	22,1	260	280	212	8	30	Tr310X4	G1/8	8,5	12
AH3356	27,4	260	280	254	8	30	Tr310X4	–	–	–
AH3356-H	27,4	260	280	254	8	30	Tr310X4	G1/8	8,5	12



Hydraulic withdrawal sleeve
(suffix H)
Mounting dimensions

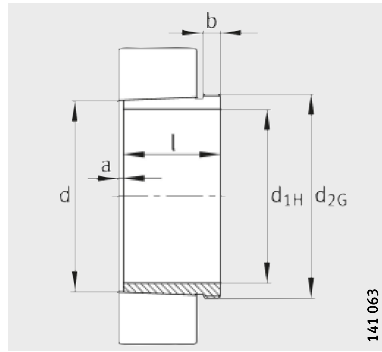


Pump connectors for
hydraulic withdrawal sleeve

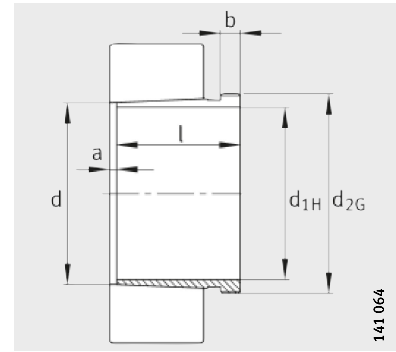
Dimension table (continued) · Dimensions in mm										
Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3960	10,4	280	300	112	7	21	Tr315X5	–	–	–
AH3960G	10,8	280	300	112	7	21	Tr320X5	–	–	–
AH3960G-H	10,8	280	300	112	7	21	Tr320X5	M8	7,5	12
AH3960-H	10,4	280	300	112	7	21	Tr315X5	M8	7,5	12
AH3060	14,4	280	300	145	8	26	Tr320X5	–	–	–
AH3060-H	14,4	280	300	145	8	26	Tr320X5	G1/8	8,5	12
AH2260	18,3	280	300	170	8	26	Tr330X5	–	–	–
AH2260G	17,2	280	300	170	8	26	Tr320X5	–	–	–
AH2260G-H	16,9	280	300	170	8	26	Tr320X5	G1/8	8,5	12
AH2260-H	17,9	280	300	170	8	26	Tr330X5	G1/8	8,5	12
AH24060	15,5	280	300	184	18	24	Tr310X4	–	–	–
AH24060G	16,4	280	300	184	18	24	Tr320X5	–	–	–
AH24060G-H	16,4	280	300	184	18	24	Tr320X5	M6	8	7
AH24060-H	15,5	280	300	184	18	24	Tr310X4	M6	8	7
AH3160	21,2	280	300	192	8	30	Tr330X5	–	–	–
AH3160G	20	280	300	192	8	30	Tr320X5	–	–	–
AH3160G-H	20	280	300	192	8	30	Tr320X5	G1/8	8,5	12
AH3160-H	21,2	280	300	192	8	30	Tr330X5	G1/8	8,5	12
AH24160	20,1	280	300	224	18	24	Tr320X5	–	–	–
AH24160-H	20,1	280	300	224	18	24	Tr320X5	G1/8	8,5	12
AH3260	26	280	300	228	8	34	Tr330X5	–	–	–
AH3260G	24,6	280	300	228	8	34	Tr320X5	–	–	–
AH3260G-H	24,6	280	300	228	8	34	Tr320X5	G1/8	8,5	12
AH3260-H	26	280	300	228	8	34	Tr330X5	G1/8	8,5	12
AH3360	31,8	280	300	270	8	34	Tr330X5	–	–	–
AH3360-H	31,8	280	300	270	8	34	Tr330X5	G1/8	8,5	12



Withdrawal sleeves



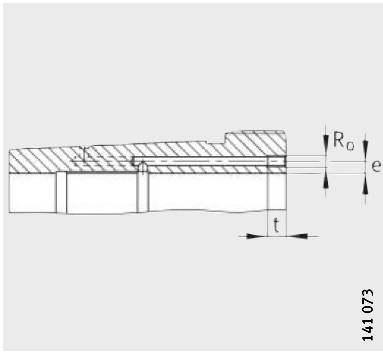
Taper 1:12



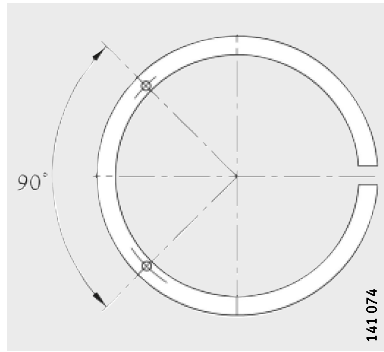
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3964G-H	11,5	300	320	112	7	21	Tr340X5	M8	7,5	12
AH3964-H	11,1	300	320	112	7	21	Tr335X5	M8	7,5	12
AH3064G-H	15,9	300	320	149	8	27	Tr340X5	G1/8	8,5	12
AH3064-H	16,5	300	320	149	8	27	Tr345X5	G1/8	8,5	12
AH2264G-H	19,3	300	320	180	10	27	Tr340X5	G1/8	8,5	12
AH2264-H	20,4	300	320	180	10	27	Tr350X5	G1/8	8,5	12
AH24064G-H	17,5	300	320	184	18	24	Tr340X5	M6	8	7
AH24064-H	16,6	300	320	184	18	24	Tr330X5	M6	8	7
AH3164G-H	23,6	300	320	209	8	31	Tr340X5	G1/8	8,5	12
AH3164-H	24,9	300	320	209	8	31	Tr350X5	G1/8	8,5	12
AH24164-H	23,4	300	320	242	18	24	Tr340X5	G1/8	8,5	12
AH3264G-H	28,9	300	320	246	8	36	Tr340X5	G1/8	8,5	12
AH3264-H	30,4	300	320	246	8	36	Tr350X5	G1/8	8,5	12
AH3364-H	37,9	300	320	294	8	36	Tr350X5	G1/8	8,5	12
AH3968G-H	12,3	320	340	112	7	21	Tr360X5	M8	7,5	12
AH3968-H	11,8	320	340	112	7	21	Tr355X5	M8	7,5	12
AH3068G-H	18,6	320	340	162	9	28	Tr360X5	G1/8	8,5	12
AH3068-H	19,2	320	340	162	9	28	Tr365X5	G1/8	8,5	12
AH24068-H	21,1	320	340	206	19	26	Tr360X5	G1/8	8,5	12
AH3168G-H	27,5	320	340	225	9	33	Tr360X5	G1/8	8,5	12
AH3168-H	28,9	320	340	225	9	33	Tr370X5	G1/8	8,5	12
AH3268G-H	33,6	320	340	264	9	38	Tr360X5	G1/8	8,5	12
AH3268-H	35,3	320	340	264	9	38	Tr370X5	G1/8	8,5	12
AH24168-H	28	320	340	269	19	26	Tr360X5	G1/8	8,5	12
AH3368-H	43,1	320	340	310	9	38	Tr370X5	G1/8	8,5	12



Hydraulic withdrawal sleeve
(suffix H)
Mounting dimensions

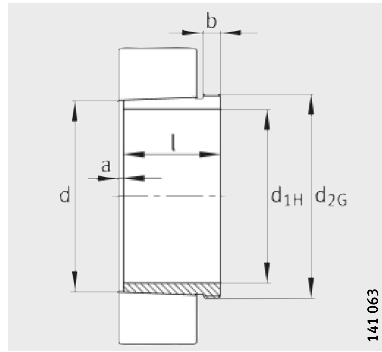


Pump connectors for
hydraulic withdrawal sleeve

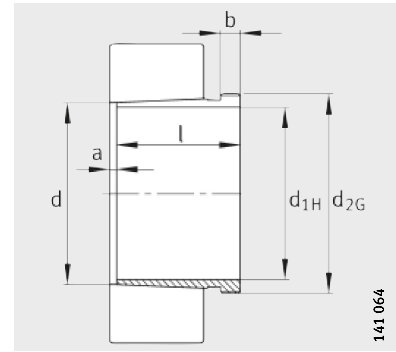
Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3972G-H	13	340	360	112	7	21	Tr380X5	M8	7,5	12
AH3972-H	12,5	340	360	112	7	21	Tr375X5	M8	7,5	12
AH3072G-H	20,5	340	360	167	9	30	Tr380X5	G1/8	8,5	12
AH3072-H	21,2	340	360	167	9	30	Tr385X5	G1/8	8,5	12
AH24072-H	22,3	340	360	206	20	26	Tr380X5	G1/8	8,5	12
AH3172G-H	29,8	340	360	229	9	35	Tr380X5	G1/8	8,5	12
AH3172-H	33,1	340	360	229	9	35	Tr400X5	G1/8	8,5	12
AH24172-H	29,7	340	360	269	20	26	Tr380X5	G1/8	8,5	12
AH3272G-H	37,3	340	360	274	9	40	Tr380X5	G1/8	8,5	12
AH3272-H	41,1	340	360	274	9	40	Tr400X5	G1/8	8,5	12
AH3372-H	51,5	340	360	330	9	40	Tr400X5	G1/8	8,5	12
AH3976G-H	16,1	360	380	130	8	22	Tr400X5	M8	7,5	12
AH3976-H	15,6	360	380	130	8	22	Tr395X5	M8	7,5	12
AH3076G-H	22,1	360	380	170	10	31	Tr400X5	G1/8	8,5	12
AH3076-H	23,6	360	380	170	10	31	Tr410X5	G1/8	8,5	12
AH24076-H	24	360	380	208	20	28	Tr400X5	G1/8	8,5	12
AH3176G-H	32	360	380	232	10	36	Tr400X5	G1/8	8,5	12
AH3176-H	35,6	360	380	232	10	36	Tr420X5	G1/8	8,5	12
AH24176-H	31,8	360	380	271	20	28	Tr400X5	G1/8	8,5	12
AH3276G-H	41,3	360	380	284	10	42	Tr400X5	G1/8	8,5	12
AH3276-H	45,5	360	380	284	10	42	Tr420X5	G1/8	8,5	12
AH3376-H	57,1	360	380	342	10	42	Tr420X5	G1/8	8,5	12
AH3980G-H	17	380	400	130	8	22	Tr420X5	M8	7,5	12
AH3980-H	16,4	380	400	130	8	22	Tr415X5	M8	7,5	12
AH3080G-H	25,4	380	400	183	10	33	Tr420X5	G1/8	8,5	12
AH3080-H	27,1	380	400	183	10	33	Tr430X5	G1/8	8,5	12
AH24080-H	27,8	380	400	228	20	28	Tr420X5	G1/8	8,5	12
AH3180G-H	35,1	380	400	240	10	38	Tr420X5	G1/8	8,5	12
AH3180-H	39,1	380	400	240	10	38	Tr440X5	G1/8	8,5	12
AH24180-H	34,4	380	400	278	20	28	Tr420X5	G1/8	8,5	12
AH3280G-H	47,1	380	400	302	10	44	Tr420X5	G1/8	8,5	12
AH3280-H	51,7	380	400	302	10	44	Tr440X5	G1/8	8,5	12
AH3380-H	62,5	380	400	352	10	44	Tr440X5	G1/8	8,5	12

Withdrawal sleeves



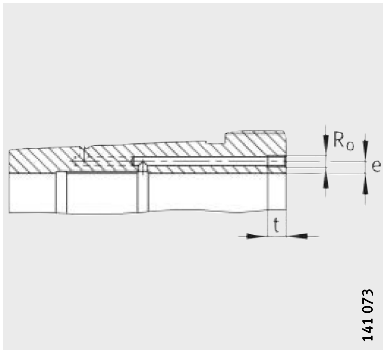
Taper 1:12



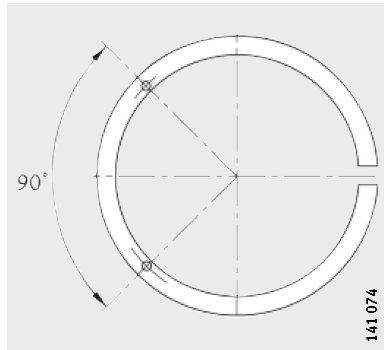
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3984G-H	17,8	400	420	130	8	22	Tr440X5	M8	7,5	12
AH3984-H	17,3	400	420	130	8	22	Tr435X5	M8	7,5	12
AH3084G-H	27,2	400	420	186	10	34	Tr440X5	G1/8	8,5	12
AH3084-H	29,1	400	420	186	10	34	Tr450X5	G1/8	8,5	12
AH24084-H	29,6	400	420	230	22	30	Tr440X5	G1/8	8,5	12
AH3184G-H	42	400	420	266	10	40	Tr440X5	G1/8	8,5	12
AH3184-H	46,4	400	420	266	10	40	Tr460X5	G1/8	8,5	12
AH24184-H	41	400	420	310	22	30	Tr440X5	G1/8	8,5	12
AH3284G-H	53,6	400	420	321	10	46	Tr440X5	G1/8	8,5	12
AH3284-H	58,6	400	420	321	10	46	Tr460X5	G1/8	8,5	12
AH3384-H	67,9	400	420	361	10	46	Tr460X5	G1/8	8,5	12
AH3988-H	21,2	420	440	145	8	25	Tr460X5	G1/8	8,5	12
AHX3088G-H	30	420	440	194	11	35	Tr460X5	G1/8	8,5	12
AHX3088-H	31,9	420	440	194	11	35	Tr470X5	G1/8	8,5	12
AH24088-H	32,8	420	440	242	22	30	Tr460X5	G1/8	8,5	12
AHX3188G-H	44,9	420	440	270	11	42	Tr460X5	G1/8	8,5	12
AHX3188-H	49,7	420	440	270	11	42	Tr480X5	G1/8	8,5	12
AH24188-H	42,9	420	440	310	22	30	Tr460X5	G1/8	8,5	12
AHX3288G-H	58,2	420	440	330	11	48	Tr460X5	G1/8	8,5	12
AHX3288-H	63,7	420	440	330	11	48	Tr480X5	G1/8	8,5	12
AH3388-H	79,6	420	440	393	11	48	Tr480X5	G1/8	8,5	12
AH3992-H	22,2	440	460	145	8	25	Tr480X5	G1/8	8,5	12
AHX3092G-H	32,9	440	460	202	11	37	Tr480X5	G1/8	8,5	12
AHX3092-H	35,1	440	460	202	11	37	Tr490X5	G1/8	8,5	12
AH24092-H	35,6	440	460	250	23	32	Tr480X5	G1/8	8,5	12
AHX3192G-H	50,3	440	460	285	11	43	Tr480X5	G1/8	8,5	12
AHX3192-H	58	440	460	285	11	43	Tr510X6	G1/8	8,5	12
AH24192-H	48,7	440	460	332	23	32	Tr480X5	G1/8	8,5	12
AHX3292G-H	65,6	440	460	349	11	50	Tr480X5	G1/8	8,5	12
AHX3292-H	74,6	440	460	349	11	50	Tr510X6	G1/8	8,5	12
AH3392-H	92,6	440	460	415	11	50	Tr510X6	G1/8	8,5	12



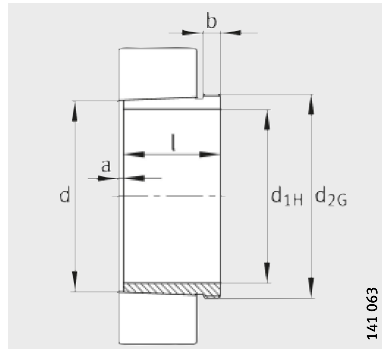
Hydraulic withdrawal sleeve
Mounting dimensions



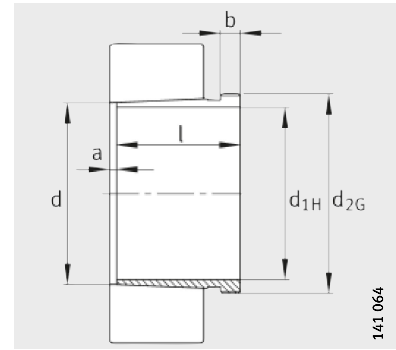
Pump connectors for
hydraulic withdrawal sleeve

Dimension table (continued) · Dimensions in mm										
Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH3996-H	25,7	460	480	158	9	28	Tr500X5	G1/8	8,5	12
AHX3096G-H	35	460	480	205	12	38	Tr500X5	G1/8	8,5	12
AHX3096-H	39,7	460	480	205	12	38	Tr520X6	G1/8	8,5	12
AH24096-H	37,2	460	480	250	23	32	Tr500X5	G1/8	8,5	12
AHX3196G-H	54,8	460	480	295	12	45	Tr500X5	G1/8	8,5	12
AHX3196-H	63,3	460	480	295	12	45	Tr530X6	G1/8	8,5	12
AH24196G-H	52,2	460	480	340	23	32	Tr500X5	G1/8	8,5	12
AH24196-H	52,9	460	480	343	25	35	Tr500X5	G1/8	8,5	12
AHX3296G-H	72,4	460	480	364	12	52	Tr500X5	G1/8	8,5	12
AHX3296-H	82,2	460	480	364	12	52	Tr530X6	G1/8	8,5	12
AH3396-H	100	460	480	427	12	52	Tr530X6	G1/8	8,5	12
AH39/500G-H	29,8	480	500	162	10	32	Tr530X6	G1/8	8,5	12
AH39/500-H	27,7	480	500	162	10	32	Tr520X6	G1/8	8,5	12
AHX30/500G-H	39,9	480	500	209	12	40	Tr530X6	G1/8	8,5	12
AHX30/500-H	42,5	480	500	209	12	40	Tr540X6	G1/8	8,5	12
AH240/500G-H	41,7	480	500	253	23	35	Tr530X6	G1/8	8,5	12
AH240/500-H	39,5	480	500	253	23	35	Tr520X6	G1/8	8,5	12
AHX31/500G-H	64,7	480	500	313	12	47	Tr530X6	G1/8	8,5	12
AHX31/500-H	70,9	480	500	313	12	47	Tr550X6	G1/8	8,5	12
AH241/500G-H	60,5	480	500	360	23	35	Tr530X6	G1/8	8,5	12
AH241/500-H	58,8	480	500	362	25	37	Tr520X6	G1/8	8,5	12
AHX32/500G-H	87,3	480	500	393	12	54	Tr530X6	G1/8	8,5	12
AHX32/500-H	94,4	480	500	393	12	54	Tr550X6	G1/8	8,5	12
AH33/500-H	110	480	500	442	12	54	Tr550X6	G1/8	8,5	12
AH39/530G-H	45,6	500	530	175	10	37	Tr560X6	G1/4	10	15
AH39/530-H	43,1	500	530	175	10	37	Tr550X6	G1/4	10	15
AH30/530A-H	61,7	500	530	230	12	45	Tr560X6	G1/4	10	15
AH240/530G-H	67,5	500	530	285	24	35	Tr560X6	G1/4	8,5	15
AH240/530-H	66,8	500	530	290	25	40	Tr550X6	G1/4	8,5	15
AH31/530A-H	92,3	500	530	325	12	53	Tr560X6	G1/4	10	15
AH241/530G-H	89	500	530	370	24	35	Tr560X6	G1/4	10	15
AH241/530-H	88,2	500	530	375	25	40	Tr550X6	G1/4	10	15
AH32/530AG-H	124	500	530	412	12	57	Tr560X6	G1/4	10	15
AH32/530-A-H	132	500	530	412	12	57	Tr580X6	G1/4	10	15
AH33/530-H	155	500	530	469	12	57	Tr580X6	G1/4	10	15

Withdrawal sleeves



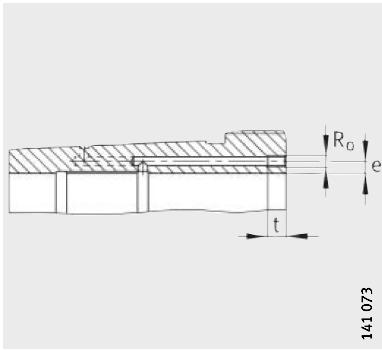
Taper 1:12



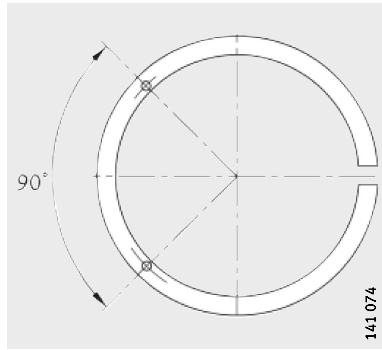
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH39/560G-H	52,3	530	560	180	10	37	Tr600X6	G1/4	12	15
AH39/560-H	47	530	560	180	10	37	Tr580X6	G1/4	12	15
AH30/560AG-H	71,6	530	560	240	12	45	Tr600X6	G1/4	12	15
AH30/560A-H	68,4	530	560	240	12	45	Tr590X6	G1/4	12	15
AH240/560G-H	77,5	530	560	296	24	38	Tr600X6	G1/4	8,5	15
AH240/560-H	72,7	530	560	298	25	40	Tr580X6	G1/4	8,5	15
AH31/560AG-H	105	530	560	335	12	55	Tr600X6	G1/4	12	15
AH31/560A-H	101	530	560	335	12	55	Tr590X6	G1/4	12	15
AH241/560G-H	104	530	560	393	24	38	Tr600X6	G1/4	12	15
AH241/560-H	101	530	560	400	28	45	Tr580X6	G1/4	12	15
AH32/560AG-H	139	530	560	422	12	57	Tr600X6	G1/4	12	15
AH32/560A-H	144	530	560	422	12	57	Tr610X6	G1/4	12	15
AH33/560-H	166	530	560	475	12	57	Tr610X6	G1/4	12	15
AH39/600G-H	57	570	600	192	10	38	Tr630X6	G1/4	12	15
AH39/600-H	55,6	570	600	192	10	38	Tr625X6	G1/4	12	15
AH30/600A-H	75	570	600	245	14	45	Tr630X6	G1/4	12	15
AH240/600G-H	84,1	570	600	310	26	38	Tr630X6	G1/4	8,5	15
AH240/600-H	85,4	570	600	317	30	45	Tr625X6	G1/4	8,5	15
AH31/600A-H	116	570	600	355	14	55	Tr630X6	G1/4	12	15
AH241/600G-H	114	570	600	413	26	38	Tr630X6	G1/4	12	15
AH241/600-H	118	570	600	425	30	50	Tr625X6	G1/4	12	15
AH32/600AG-H	155	570	600	445	14	57	Tr630X6	G1/4	12	15
AH32/600A-H	164	570	600	445	14	57	Tr650X6	G1/4	12	15
AH33/600-H	200	570	600	519	14	57	Tr650X6	G1/4	12	15



Hydraulic withdrawal sleeve
(suffix H)
Mounting dimensions



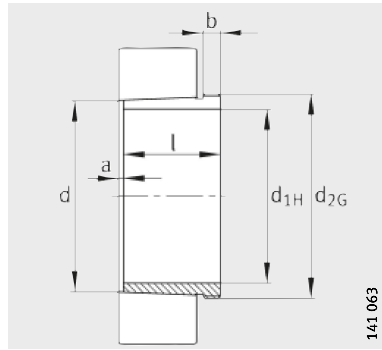
Pump connectors for
hydraulic withdrawal sleeve

Dimension table (continued) · Dimensions in mm

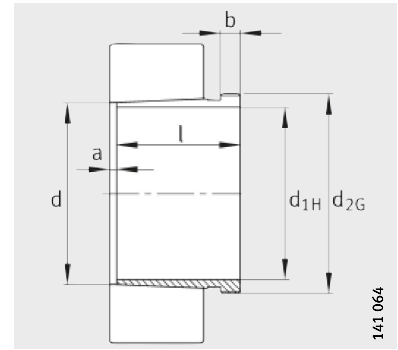
Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH39/630G-H	69,4	600	630	210	12	40	Tr670X6	G1/4	12	15
AH39/630-H	64,5	600	630	210	12	40	Tr655X6	G1/4	12	15
AH30/630A-H	87,3	600	630	258	14	46	Tr670X6	G1/4	12	15
AH240/630G-H	97,9	600	630	330	26	40	Tr670X6	G1/4	8,5	15
AH240/630-H	95,1	600	630	335	30	45	Tr655X6	G1/4	8,5	15
AH31/630A-H	136	600	630	375	14	60	Tr670X6	G1/4	12	15
AH241/630G-H	133	600	630	440	26	40	Tr670X6	G1/4	12	15
AH241/630-H	132	600	630	450	30	50	Tr655X6	G1/4	12	15
AH32/630AG-H	183	600	630	475	14	63	Tr670X6	G1/4	12	15
AH32/630A-H	188	600	630	475	14	63	Tr680X6	G1/4	12	15
AH33/630-H	227	600	630	550	14	62	Tr680X6	G1/4	12	15
AH39/670G-H	92,9	630	670	216	12	41	Tr710X7	G1/4	12	15
AH39/670-H	87,7	630	670	216	12	41	Tr695X6	G1/4	12	15
AH30/670A-H	124	630	670	280	14	50	Tr710X7	G1/4	12	15
AH240/670G-H	137	630	670	348	26	40	Tr710X7	G1/4	8,5	15
AH240/670-H	137	630	670	358	30	50	Tr695X6	G1/4	8,5	15
AH31/670A-H	185	630	670	395	14	60	Tr710X7	G1/4	12	15
AH241/670G-H	180	630	670	452	26	40	Tr710X7	G1/4	12	15
AH241/670-H	183	630	670	467	30	55	Tr695X6	G1/4	12	15
AH32/670AG-H	247	630	670	500	14	63	Tr710X7	G1/4	12	15
AH32/670A-H	252	630	670	500	14	63	Tr720X7	G1/4	12	15
AH33/670-H	303	630	670	577	14	62	Tr720X7	G1/4	12	15
AH39/710G-H	105	670	710	228	12	43	Tr750X7	G1/4	15	15
AH39/710-H	101	670	710	228	12	43	Tr740X7	G1/4	15	15
AH30/710A-H	135	670	710	286	16	50	Tr750X7	G1/4	15	15
AH240/710G-H	152	670	710	360	26	45	Tr750X7	G1/4	8,5	15
AH240/710-H	151	670	710	365	33	50	Tr740X7	G1/4	8,5	15
AH31/710A-H	202	670	710	405	16	60	Tr750X7	G1/4	15	15
AH241/710G-H	207	670	710	483	26	45	Tr750X7	G1/4	15	15
AH241/710-H	209	670	710	493	33	55	Tr740X7	G1/4	15	15
AH32/710AG-H	272	670	710	515	16	65	Tr750X7	G1/4	15	15
AH32/710A-H	278	670	710	515	16	65	Tr760X7	G1/4	15	15
AH33/710-H	334	670	710	595	16	65	Tr760X7	G1/4	15	15



Withdrawal sleeves



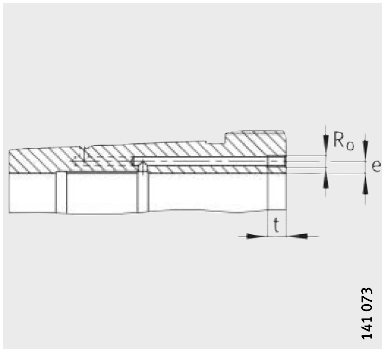
Taper 1:12



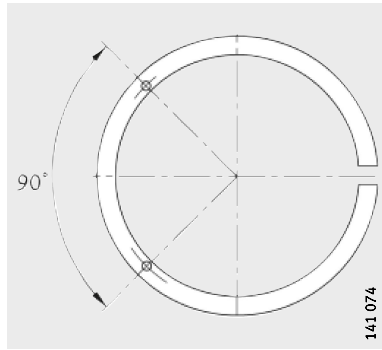
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈ kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH39/750G-H	118	710	750	234	12	44	Tr800X7	G1/4	15	15
AH39/750-H	110	710	750	234	12	44	Tr780X7	G1/4	15	15
AH30/750A-H	155	710	750	300	16	50	Tr800X7	G1/4	15	15
AH240/750G-H	174	710	750	380	28	45	Tr800X7	G1/4	8,5	15
AH240/750-H	169	710	750	385	35	50	Tr780X7	G1/4	8,5	15
AH31/750A-H	232	710	750	425	16	60	Tr800X7	G1/4	15	15
AH241/750G-H	241	710	750	520	28	45	Tr800X7	G1/4	15	15
AH241/750-H	239	710	750	530	35	55	Tr780X7	G1/4	15	15
AH32/750A-H	312	710	750	540	16	65	Tr800X7	G1/4	15	15
AH33/750-H	377	710	750	625	16	65	Tr800X7	G1/4	15	15
AH39/800G-H	155	750	800	245	12	45	Tr850X7	G1/4	15	15
AH39/800-H	146	750	800	245	12	45	Tr830X7	G1/4	15	15
AH30/800A-H	198	750	800	308	18	50	Tr850X7	G1/4	15	15
AH240/800G-H	232	750	800	395	28	50	Tr850X7	G1/4	15	15
AH240/800-H	221	750	800	395	40	50	Tr830X7	G1/4	15	15
AH31/800A-H	297	750	800	438	18	63	Tr850X7	G1/4	15	15
AH241/800G-H	311	750	800	525	28	50	Tr850X7	G1/4	15	15
AH241/800-H	304	750	800	530	40	55	Tr830X7	G1/4	15	15
AH32/800AG-H	391	750	800	550	18	62	Tr850X7	G1/4	15	15
AH32/800A-H	396	750	800	555	18	67	Tr850X7	G1/4	15	15
AH33/800-H	500	750	800	667	18	67	Tr850X7	G1/4	15	15
AH39/850G-H	176	800	850	258	12	50	Tr900X7	G1/4	15	15
AH39/850-H	165	800	850	258	12	50	Tr880X7	G1/4	15	15
AH30/850A-H	224	800	850	325	18	53	Tr900X7	G1/4	15	15
AH240/850G-H	259	800	850	415	30	50	Tr900X7	G1/4	15	15
AH240/850-H	250	800	850	418	40	53	Tr880X7	G1/4	15	15
AH31/850A-H	336	800	850	462	18	63	Tr900X7	G1/4	15	15
AH241/850G-H	358	800	850	560	40	60	Tr900X7	G1/4	15	15
AH241/850-H	345	800	850	560	40	60	Tr880X7	G1/4	15	15
AH32/850A-H	450	800	850	585	18	70	Tr900X7	G1/4	15	15
AH33/850-H	567	800	850	700	18	70	Tr900X7	G1/4	15	15



Hydraulic withdrawal sleeve
(suffix H)
Mounting dimensions

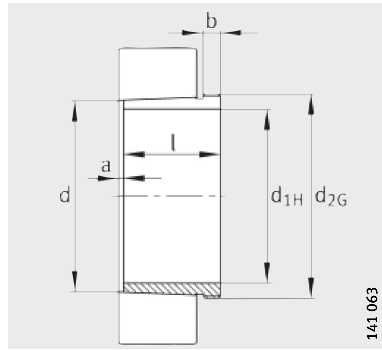


Pump connectors for
hydraulic withdrawal sleeve

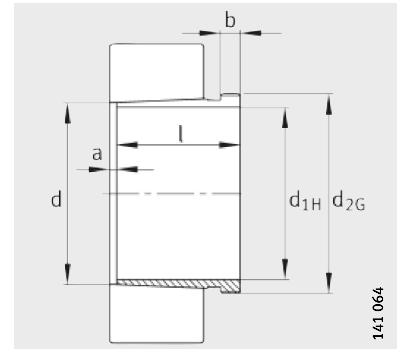
Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH39/900G-H	192	850	900	265	12	51	Tr950X8	G1/4	15	15
AH39/900-H	180	850	900	265	12	51	Tr930X8	G1/4	15	15
AH30/900A-H	246	850	900	335	20	55	Tr950X8	G1/4	15	15
AH240/900G-H	287	850	900	430	45	55	Tr950X8	G1/4	15	15
AH240/900-H	274	850	900	430	45	55	Tr930X8	G1/4	15	15
AH31/900A-H	368	850	900	475	20	63	Tr950X8	G1/4	15	15
AH241/900G-H	390	850	900	575	45	60	Tr950X8	G1/4	15	15
AH241/900-H	376	850	900	575	45	60	Tr930X8	G1/4	15	15
AH32/900A-H	476	850	900	585	20	70	Tr950X8	G1/4	15	15
AH33/900-H	623	850	900	720	20	70	Tr950X8	G1/4	15	15
AH39/950G-H	216	900	950	282	15	51	Tr1000X8	G1/4	15	15
AH39/950-H	203	900	950	282	15	51	Tr980X8	G1/4	15	15
AH30/950A-H	277	900	950	355	20	55	Tr1000X8	G1/4	15	15
AH240/950G-H	329	900	950	467	45	55	Tr1000X8	G1/4	15	15
AH240/950-H	316	900	950	467	45	55	Tr980X8	G1/4	15	15
AH31/950A-H	414	900	950	500	20	63	Tr1000X8	G1/4	15	15
AH32/950A-H	519	900	950	600	20	70	Tr1000X8	G1/4	15	15
AH241/950G-H	435	900	950	605	45	60	Tr1000X8	G1/4	15	15
AH241/950-H	421	900	950	605	45	60	Tr980X8	G1/4	15	15
AH33/950-H	683	900	950	740	20	70	Tr1000X8	G1/4	15	15
AH39/1000G-H	246	950	1000	296	15	52	Tr1060X8	G1/4	15	15
AH39/1000-H	229	950	1000	296	15	52	Tr1035X8	G1/4	15	15
AH30/1000A-H	309	950	1000	365	22	57	Tr1060X8	G1/4	15	15
AH240/1000G-H	357	950	1000	469	50	57	Tr1060X8	G1/4	15	15
AH240/1000-H	339	950	1000	469	50	57	Tr1035X8	G1/4	15	15
AH31/1000A-H	471	950	1000	525	22	63	Tr1060X8	G1/4	15	15
AH32/1000A-H	591	950	1000	630	22	70	Tr1060X8	G1/4	15	15
AH241/1000-H	502	950	1000	645	50	65	Tr1060X8	G1/4	15	15
AH33/1000-H	781	950	1000	780	22	70	Tr1060X8	G1/4	15	15
AH39/1060G-H	312	1000	1060	310	15	52	Tr1120X8	G1/4	15	15
AH39/1060-H	294	1000	1060	310	15	52	Tr1095X8	G1/4	15	15
AH30/1060A-H	396	1000	1060	385	22	60	Tr1120X8	G1/4	15	15
AH240/1060G-H	465	1000	1060	498	50	60	Tr1120X8	G1/4	15	15
AH240/1060-H	445	1000	1060	498	50	60	Tr1095X8	G1/4	15	15
AH31/1060A-H	583	1000	1060	540	22	65	Tr1120X8	G1/4	15	15
AH241/1060-H	632	1000	1060	665	50	65	Tr1120X8	G1/4	15	15

Withdrawal sleeves



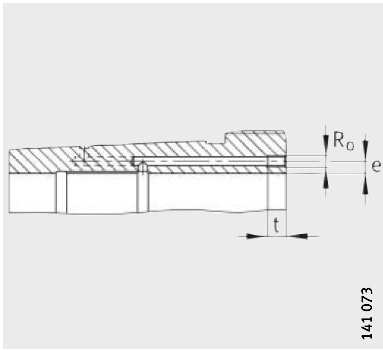
Taper 1:12



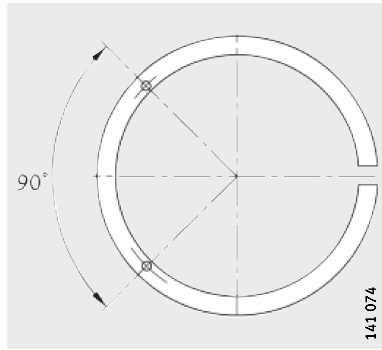
AH240, AH241
Taper 1:30

Dimension table (continued) · Dimensions in mm

Designation	Mass m ≈ kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH30/1 120A-H	451	1 060	1 120	410	22	65	Tr1180X8	G1/4	15	15
AH240/1120G-H	524	1 060	1 120	527	50	65	Tr1180X8	G1/4	15	15
AH240/1120-H	501	1 060	1 120	527	50	65	Tr1155X8	G1/4	15	15
AH241/1120-H	717	1 060	1 120	705	50	75	Tr1180X8	G1/4	15	15
AH39/1120G-H	289	1 070	1 120	310	15	52	Tr1180X8	G1/4	15	15
AH39/1120-H	271	1 070	1 120	310	15	52	Tr1155X8	G1/4	15	15
AH30/1 180A-H	498	1 120	1 180	420	22	65	Tr1250X8	G1/4	15	15
AH240/1180G-H	577	1 120	1 180	540	50	65	Tr1250X8	G1/4	15	15
AH240/1180-H	543	1 120	1 180	540	50	65	Tr1215X8	G1/4	15	15
AH241/1180-H	824	1 120	1 180	750	50	80	Tr1250X8	G1/4	15	15
AH39/1180G-H	336	1 130	1 180	330	15	55	Tr1250X8	G1/4	15	15
AH39/1180-H	307	1 130	1 180	330	15	55	Tr1215X8	G1/4	15	15
AH30/1 250A-H	629	1 180	1 250	445	22	70	Tr1320X8	G1/4	15	15
AH240/1250G-H	733	1 180	1 250	570	50	70	Tr1320X8	G1/4	15	15
AH240/1250-H	694	1 180	1 250	570	50	70	Tr1285X8	G1/4	15	15
AH241/1250-H	1 048	1 180	1 250	795	50	85	Tr1320X8	G1/4	15	15
AH39/1250G-H	367	1 200	1 250	340	18	55	Tr1320X8	G1/4	15	15
AH39/1250-H	336	1 200	1 250	340	18	55	Tr1285X8	G1/4	15	15



Hydraulic withdrawal sleeve
(suffix H)
Mounting dimensions

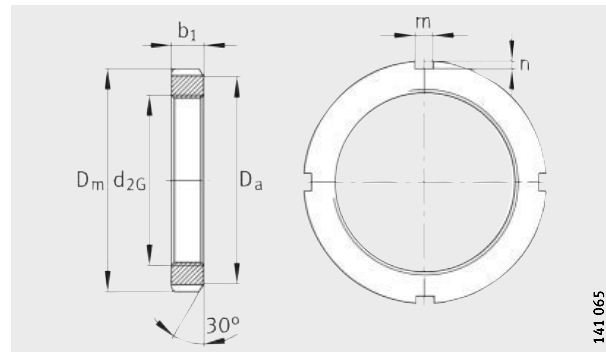


Pump connectors for
hydraulic withdrawal sleeve

Dimension table (continued) · Dimensions in mm										
Designation	Mass m ≈kg	Dimensions						Mounting dimensions		
		d _{1H}	d	l	a ≈	b	d _{2G}	R ₀	e	t
AH30/1 320A-H	718	1250	1320	470	22	70	Tr1400X8	G1/4	15	15
AH240/1320G-H	828	1250	1320	600	50	70	Tr1400X8	G1/4	15	15
AH240/1320-H	775	1250	1320	600	50	70	Tr1355X8	G1/4	15	15
AH241/1320-H	1194	1250	1320	840	50	90	Tr1400X8	G1/4	15	15
AH39/1320G-H	421	1270	1320	360	18	55	Tr1400X8	G1/4	15	15
AH39/1320-H	379	1270	1320	360	18	55	Tr1355X8	G1/4	15	15
AH30/1 400A-H	902	1320	1400	487	22	75	Tr1500X8	G1/4	15	15
AH240/1400G-H	1026	1320	1400	615	50	70	Tr1500X8	G1/4	15	15
AH240/1400-H	944	1320	1400	615	50	70	Tr1435X8	G1/4	15	15
AH241/1400-H	1496	1320	1400	870	50	95	Tr1500X8	G1/4	15	15
AH39/1400G-H	499	1350	1400	380	20	60	Tr1500X8	G1/4	15	15
AH39/1400-H	429	1350	1400	380	20	60	Tr1435X8	G1/4	15	15
AH30/1500A-H	1257	1400	1500	537	22	75	Tr1600X8	G1/4	15	15
AH241/1500-H	1961	1400	1500	895	50	95	Tr1600X8	G1/4	15	15
AH39/1500G-H	563	1450	1500	400	20	60	Tr1600X8	G1/4	15	15
AH39/1500-H	494	1450	1500	400	20	60	Tr1540X8	G1/4	15	15



Locknuts

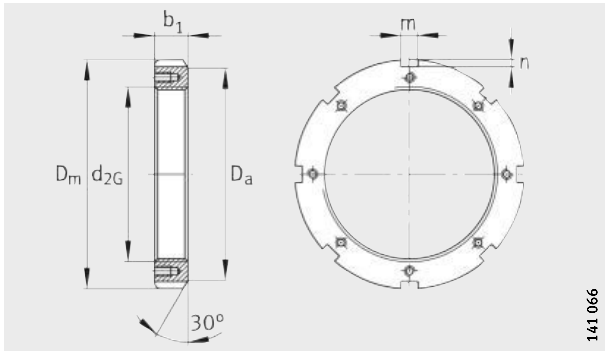


KM, KML, HM..T

141 065

Dimension table · Dimensions in mm

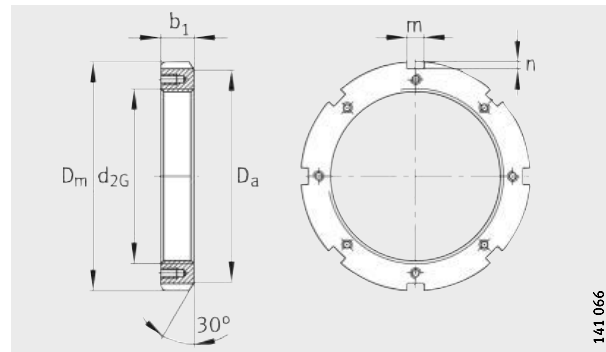
Designation		Mass m ≈kg	Dimensions			Mounting dimensions		
Nut	Suitable retainer		d_{2G}	D_m	b_1	D_a	m	n
KM0	MB0	0,005	M10X0,75	18	4	13,5	3	2
KM1	MB1	0,007	M12X1	22	4	17	3	2
KM2	MB2	0,01	M15X1	25	5	21	4	2
KM3	MB3	0,02	M17X1	28	5	24	4	2
KM4	MB4	0,019	M20X1	32	6	26	4	2
KM5	MB5	0,025	M25X1,5	38	7	32	5	2
KM6	MB6	0,043	M30X1,5	45	7	38	5	2
KM7	MB7	0,07	M35X1,5	52	8	44	5	2
KM8	MB8	0,085	M40X1,5	58	9	50	6	2,5
KM9	MB9	0,119	M45X1,5	65	10	56	6	2,5
KM10	MB10	0,148	M50X1,5	70	11	61	6	2,5
KM11	MB11	0,158	M55X2	75	11	67	7	3
KM12	MB12	0,18	M60X2	80	11	73	7	3
KM13	MB13	0,22	M65X2	85	12	79	7	3
KM14	MB14	0,26	M70X2	92	12	85	8	3,5
KM15	MB15	0,3	M75X2	98	13	90	8	3,5
KM16	MB16	0,4	M80X2	105	15	95	8	3,5
KM17	MB17	0,46	M85X2	110	16	102	8	3,5
KM18	MB18	0,6	M90X2	120	16	108	10	4
KM19	MB19	0,658	M95X2	125	17	113	10	4
KM20	MB20	0,73	M100X2	130	18	120	10	4
KM21	MB21	0,87	M105X2	140	18	126	12	5
KM22	MB22	0,965	M110X2	145	19	133	12	5
KM23	MB23	1,01	M115X2	150	19	137	12	5
KML24	MBL24	0,79	M120X2	145	20	135	12	5
KM24	MB24	1,08	M120X2	155	20	138	12	5
KM25	MB25	1,22	M125X2	160	21	148	12	5
KML26	MBL26	0,9	M130X2	155	21	145	12	5
KM26	MB26	1,24	M130X2	165	21	149	12	5
KM27	MB27	1,55	M135X2	175	22	160	14	6
KML28	MBL28	1,01	M140X2	165	22	155	12	5
KM28	MB28	1,56	M140X2	180	22	160	14	6
KM29	MB29	2,05	M145X2	190	24	171	14	6



HM30, HM31

Dimension table (continued) - Dimensions in mm								
Designation		Mass m ≈ kg	Dimensions			Mounting dimensions		
Nut	Suitable retainer		d _{2G}	D _m	b ₁	D _a	m	n
KML30	MBL30	1,44	M150X2	180	24	170	14	5
KM30	MB30	2,06	M150X2	195	24	171	14	6
KM31	MB31	2,27	M155X3	200	25	182	16	7
KML32	MBL32	1,62	M160X3	190	25	180	14	5
KM32	MB32	2,52	M160X3	210	25	182	16	7
KM33	MB33	2,7	M165X3	210	26	193	16	7
KML34	MBL34	1,72	M170X3	200	26	190	16	5
KM34	MB34	2,8	M170X3	220	26	193	16	7
KML36	MBL36	1,96	M180X3	210	27	200	16	5
KM36	MB36	3,04	M180X3	230	27	203	18	8
KML38	MBL38	2,13	M190X3	220	28	210	16	5
KM38	MB38	3,34	M190X3	240	28	214	18	8
KML40	MBL40	2,9	M200X3	240	29	220	18	8
KM40	MB40	3,69	M200X3	250	29	226	18	8
HM3044	MS3044	3,21	Tr220X4	260	30	242	20	9
HM44T	MB44	5,3	Tr220X4	280	32	250	20	10
HM3144	MS3144	4,93	Tr220X4	280	32	250	20	10
HM3048	MS3048	5,12	Tr240X4	290	34	270	20	10
HM48T	MB48	6,15	Tr240X4	300	34	270	20	10
HM3148	MS3144	5,75	Tr240X4	300	34	270	20	10
HM3052	MS3048	5,54	Tr260X4	310	34	290	20	10
HM52T	MB52	8,05	Tr260X4	330	35	300	24	12
HM3152	MS3152	7,43	Tr260X4	330	36	300	24	12
HM3056	MS3056	6,61	Tr280X4	330	38	310	24	10
HM56T	MB56	8,9	Tr280X4	350	36	320	24	12
HM3156	MS3152	8,26	Tr280X4	350	38	320	24	12
HM3060	MS3060	9,48	Tr300X4	360	42	336	24	12
HM3160	MS3160	11,4	Tr300X4	380	40	340	24	12
HM3064	MS3064	10,1	Tr320X5	380	42	356	24	12
HM3164	MS3164	12,8	Tr320X5	400	42	360	24	12
HM3068	MS3064	11,5	Tr340X5	400	45	376	24	12
HM3168	MS3168	23	Tr340X5	440	55	400	28	15
HM3072	MS3072	11,9	Tr360X5	420	45	394	28	13
HM3172	MS3168	25,7	Tr360X5	460	58	420	28	15
HM3076	MS3076	15,9	Tr380X5	450	48	422	28	14
HM3176	MS3176	30	Tr380X5	490	60	440	32	18

Locknuts



HM30, HM31

141 066

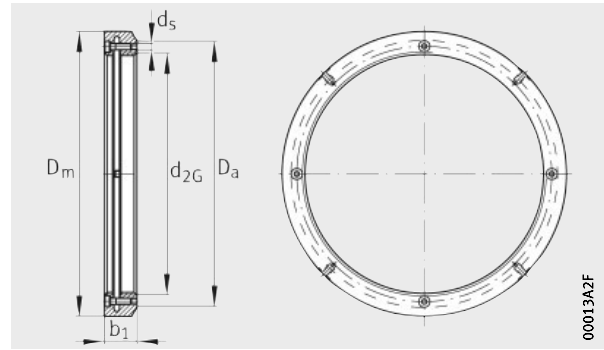
Dimension table (continued) · Dimensions in mm

Designation		Mass m ≈kg	Dimensions			Mounting dimensions		
Nut	Suitable retainer		d _{2G}	D _m	b ₁	D _a	m	n
HM3080	MS3076	18,2	Tr400X5	470	52	442	28	14
HM3180	MS3180	35,7	Tr400X5	520	62	460	32	18
HM3084	MS3084	18,9	Tr420X5	490	52	462	32	14
HM3184	MS3180	43,4	Tr420X5	540	70	490	32	18
HM3088	MS3088	26,5	Tr440X5	520	60	490	32	15
HM3188	MS3188	44,3	Tr440X5	560	70	510	36	20
HM3092	MS3088	27,7	Tr460X5	540	60	510	32	15
HM3192	MS3188	53,8	Tr460X5	580	75	540	36	20
HM3096	MS3096	28,7	Tr480X5	560	60	530	36	15
HM3196	MS3196	62,2	Tr480X5	620	75	560	36	20
HM30/500	MS3096	34	Tr500X5	580	68	550	36	15
HM31/500	MS31/500	62,1	Tr500X5	630	80	580	40	23
HM30/530	MS30/530	44,7	Tr530X6	630	68	590	40	20
HM31/530	MS31/530	71,2	Tr530X6	670	80	610	40	23
HM30/560	MS30/560	46,2	Tr560X6	650	75	610	40	20
HM31/560	MS31/560	85,6	Tr560X6	710	85	650	45	25
HM30/600	MS30/530	55,9	Tr600X6	700	75	660	40	20
HM31/600	MS31/560	91,7	Tr600X6	750	85	690	45	25
HM30/630	MS30/630	58,3	Tr630X6	730	75	690	45	20
HM31/630	MS31/630	122	Tr630X6	800	95	730	50	28
HM30/670	MS30/670	73,8	Tr670X6	780	80	740	45	20
HM31/670	MS31/670	156	Tr670X6	850	106	775	50	28
HM30/710	MS30/710	94,8	Tr710X7	830	90	780	50	25
HM31/710	MS31/710	173	Tr710X7	900	106	825	55	30
HM30/750	MS30/750	99,5	Tr750X7	870	90	820	55	25
HM31/750	MS31/750	202	Tr750X7	950	112	875	60	34
HM30/800	MS30/750	106	Tr800X7	920	90	870	55	25
HM31/800	MS31/750	215	Tr800X7	1 000	112	925	60	34
HM30/850	MS30/850	113	Tr850X7	980	90	925	60	25
HM31/850	MS31/850	246	Tr850X7	1 060	118	975	70	38
HM30/900	MS30/850	135	Tr900X7	1 030	100	975	60	25
HM31/900	MS31/900	293	Tr900X7	1 120	125	1 030	70	38
HM30/950	MS30/950	143	Tr950X8	1 080	100	1 025	60	25
HM31/950	MS31/950	310	Tr950X8	1 170	125	1 080	70	38

Dimension table (continued) · Dimensions in mm								
Designation		Mass m ≈ kg	Dimensions			Mounting dimensions		
Nut	Suitable retainer		d _{2G}	D _m	b ₁	D _a	m	n
HM30/1000	MS30/1000	165	Tr1000X8	1 140	100	1 085	60	25
HM31/1000	MS31/1000	361	Tr1000X8	1 240	125	1 140	70	38
HM30/1060	MS30/1000	175	Tr1060X8	1 200	100	1 145	60	25
HM31/1060	MS31/1000	386	Tr1060X8	1 300	125	1 210	70	38
HM30/1120	MS30/1000	185	Tr1120X8	1 260	100	1 205	60	25
HM31/1120	MS31/1000	427	Tr1120X8	1 360	125	1 270	70	38
HM30/1180	MS30/1000	196	Tr1180X8	1 320	100	1 265	60	25
HM31/1180	MS31/1000	459	Tr1180X8	1 420	125	1 330	70	38
HM30/1250	MS30/1000	233	Tr1250X8	1 390	110	1 335	60	25
HM31/1250	MS31/1000	485	Tr1250X8	1 490	125	1 400	70	38
HM30/1320	MS30/1000	245	Tr1320X8	1 460	110	1 405	60	25
HM31/1320	MS31/1000	511	Tr1320X8	1 560	125	1 470	70	38
HM30/1400	MS30/1000	259	Tr1400X8	1 540	110	1 485	60	25
HM31/1400	MS31/1000	562	Tr1400X8	1 640	130	1 550	70	38
HM30/1500	MS30/1500	297	Tr1500X8	1 650	110	1 595	60	25
HM31/1500	MS31/1000	601	Tr1500X8	1 740	130	1 650	70	38



Shaft nuts



HMZ, HMZ30

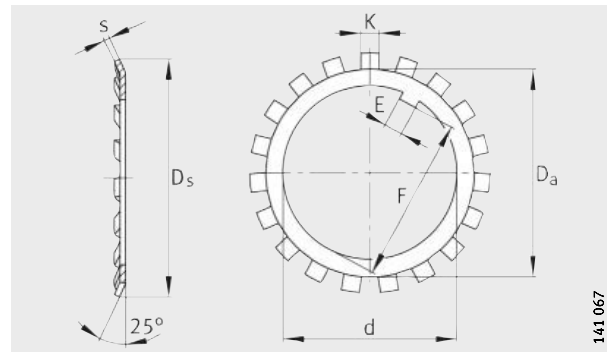
Dimension table · Dimensions in mm

Designation	Mass m ≈kg	Dimensions					Clamping screw Quantity	Tightening torque per clamping screw MaL Nm
		d _{2G}	D _m	b ₁	D _a	d _s		
HMZ18	0,6	M90x2	120	16	108	M5	4	6
HMZ19	0,7	M95x2	125	17	113	M5	4	6
HMZ20	0,8	M100x2	130	18	120	M6	4	11
HMZ21	0,9	M105x2	140	18	126	M6	4	11
HMZ22	1	M110x2	145	19	133	M6	4	11
HMZ23	1,1	M115x2	150	19	137	M6	4	11
HMZ24	1,1	M120x2	155	20	138	M6	4	11
HMZ25	1,3	M125x2	160	21	148	M6	4	11
HMZ26	1,3	M130x2	165	21	149	M6	4	11
HMZ27	1,6	M135x2	175	22	160	M6	4	11
HMZ28	1,6	M140x2	180	22	160	M6	4	11
HMZ29	2,2	M145x2	190	24	171	M6	4	11
HMZ30	2,2	M150x2	195	24	171	M6	4	11
HMZ31	2,4	M155x3	200	25	182	M6	4	11
HMZ32	2,6	M160x3	210	25	182	M6	4	11
HMZ33	2,8	M165x3	210	26	193	M8	4	27
HMZ34	2,9	M170x3	220	26	193	M8	4	27
HMZ36	3,2	M180x3	230	27	203	M8	4	27
HMZ38	3,5	M190x3	240	28	214	M8	4	27
HMZ40	3,9	M200x3	250	29	226	M8	4	27
HMZ3044	3,4	Tr220x4	260	30	242	M8	4	27
HMZ3048	5,4	Tr240x4	290	34	270	M10	4	54
HMZ3052	5,8	Tr260x4	310	34	290	M10	4	54
HMZ3056	6,9	Tr280x4	330	38	310	M10	4	54
HMZ3060	10	Tr300x4	360	42	336	M10	4	54
HMZ3064	10,6	Tr320x5	380	42	356	M10	4	54
HMZ3068	12,1	Tr340x5	400	45	376	M12	4	93
HMZ3072	12,5	Tr360x5	420	45	394	M12	4	93
HMZ3076	16,7	Tr380x5	450	48	422	M12	4	93
HMZ3080	19,1	Tr400x5	470	52	442	M16	4	230
HMZ3084	19,8	Tr420x5	490	52	462	M16	4	230
HMZ3088	27,8	Tr440x5	520	60	490	M16	4	230
HMZ3092	29,1	Tr460x5	540	60	510	M16	4	230
HMZ3096	30,1	Tr480x5	560	60	530	M16	4	230
HMZ30/500	35,7	Tr500x5	580	68	550	M20	4	464

Dimension table (continued) · Dimensions in mm								
Designation	Mass m ≈kg	Dimensions					Clamping screw Quantity	Tightening torque per clamping screw M _{aL} Nm
		d _{2G}	D _m	b ₁	D _a	d _s		
HMZ30/530	46,9	Tr530x6	630	68	590	M20	4	464
HMZ30/560	48,5	Tr560x6	650	75	610	M20	4	464
HMZ30/600	58,7	Tr600x6	700	75	660	M20	4	464
HMZ30/630	61,2	Tr630x6	730	75	690	M20	4	464
HMZ30/670	77,5	Tr670x6	780	80	740	M20	4	464
HMZ30/710	99,5	Tr710x7	830	90	780	M20	4	464
HMZ30/750	105	Tr750x7	870	90	820	M20	4	464
HMZ30/800	111	Tr800x7	920	90	870	M20	4	464
HMZ30/850	119	Tr850x7	980	90	925	M20	4	464
HMZ30/900	142	Tr900x7	1 030	100	975	M24	8	798
HMZ30/950	150	Tr950x8	1 080	100	1 025	M24	8	798
HMZ30/1000	173	Tr1000x8	1 140	100	1 085	M24	8	798
HMZ30/1060	184	Tr1060x8	1 200	100	1 145	M24	8	798
HMZ30/1120	194	Tr1120x8	1 260	100	1 205	M24	8	798
HMZ30/1180	206	Tr1180x8	1 320	100	1 265	M24	8	798
HMZ30/1250	245	Tr1250x8	1 390	110	1 335	M24	8	798
HMZ30/1320	257	Tr1320x8	1 460	110	1 405	M24	8	798
HMZ30/1400	272	Tr1400x8	1 540	110	1 485	M24	8	798
HMZ30/1500	312	Tr1500x8	1 650	110	1 595	M24	8	798



Tab washers



MB, MBL

Dimension table · Dimensions in mm

Designation	Mass m 100 piece ≈ kg	Dimensions			Mounting dimensions			
		d	D _s ≈	s	D _a	E ¹⁾	F	K
MB0	0,13	10	21	1	13,5	3	8,5	3
MB1	0,192	12	25	1	17	3	10,5	3
MB2	0,253	15	28	1	21	4	13,5	4
MB3	0,313	17	32	1	24	4	15,5	4
MB4	0,35	20	36	1	26	4	18,5	4
MB5	0,64	25	42	1,25	32	5	23	5
MB6	0,78	30	49	1,25	38	5	27,5	5
MB7	1,04	35	57	1,04	44	6	32,5	5
MB8	1,23	40	62	1,25	50	6	37,5	6
MB9	1,52	45	69	1,25	56	6	42,5	6
MB10	1,6	50	74	1,25	61	6	47,5	6
MB11	1,96	55	81	1	67	8	52,5	7
MB12	2,53	60	86	1	73	8	57,5	7
MB13	2,9	65	92	1	79	8	62,5	7
MB14	3,34	70	98	1	85	8	66,5	8
MB15	3,6	75	104	1	90	8	71,5	8
MB16	4,64	80	112	1,8	95	10	76,5	8
MB17	5,24	85	119	1,8	102	10	81,5	8
MB18	6,23	90	126	1,8	108	10	86,5	10
MB19	6,7	95	133	1,8	113	10	91,5	10
MB20	7,65	100	142	1,8	120	12	96,5	10
MB21	8,26	105	145	1,75	126	12	100,5	12
MB22	9,4	110	154	1,75	133	12	105,5	12
MB23	10,8	115	159	2	137	12	110,5	12
MBL24	7,7	120	151	2	135	14	115	12
MB24	10,5	120	164	2	138	14	115	12
MB25	11,8	125	170	2	148	14	120	12
MBL26	8,7	130	161	2	145	14	125	12
MB26	11,3	130	175	2	149	14	125	12
MB27	14,4	135	185	2	160	14	130	14

¹⁾ The dimension E can be used as a minimum dimension for the slot width in shafts.

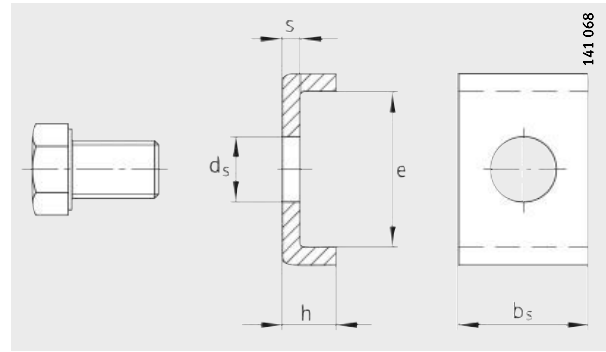
Dimension table (continued) · Dimensions in mm								
Designation	Mass m 100 piece ≈kg	Dimensions			Mounting dimensions			
		d	D _s ≈	s	D _a	E ¹⁾	F	K
MBL28	10,9	140	171	2	155	16	135	12
MB28	14,2	140	192	2	160	16	135	14
MB29	16,8	145	202	2	171	16	140	14
MBL30	11,3	150	188	2	170	16	145	14
MB30	15,5	150	205	2	171	16	145	14
MB31	20,9	155	212	2,5	182	16	147,5	16
MBL32	16,2	160	199	2,5	180	18	154	14
MB32	22,2	160	217	2,5	182	18	154	16
MB33	24,1	165	222	2,5	193	18	157,5	16
MBL34	17	170	211	2,5	190	18	164	16
MB34	24,7	170	232	2,5	193	18	164	16
MBL36	18	180	221	2,5	200	20	174	16
MB36	26,8	180	242	2,5	203	20	174	18
MBL38	20,5	190	231	2,5	210	20	184	16
MB38	27,8	190	252	2,5	214	20	184	18
MBL40	21,4	200	248	2,5	222	20	194	18
MB40	29,3	200	262	2,5	226	20	194	18
MB44	40	220	292	3	250	24	213	20
MB48	40	240	312	3	270	24	233	20
MB52	60	260	342	3	300	28	253	24
MB56	62	280	362	3	320	28	273	24

1) The dimension E can be used as a minimum dimension for the slot width in shafts.



Retaining brackets

With hexagon head cap screw



Dimension table · Dimensions in mm

Designation		Tightening torque Nm	Mass m ≈ kg	Dimensions					Mounting dimensions Shaft slot	
Retaining bracket Complete	Hexagon head cap screw ¹⁾			s	b _s	h	d _s	e	b _w	t
MS3044	M6X10	10	0,026	4	20	12	7	13,5	22	9
MS3144	M8X16	25	0,038	4	20	12	9	22,5	22	9
MS3048	M8X16	25	0,035	4	20	12	9	17,5	22	9
MS3152	M10X20	51	0,056	4	24	12	11	25,5	26	9
MS3056	M8X16	25	0,04	4	24	12	9	17,5	26	9
MS3060	M8X16	25	0,043	4	24	12	9	20,5	26	9
MS3160	M10X20	51	0,059	4	24	12	12	30,5	26	9
MS3064	M8X16	25	0,057	5	24	15	9	21	26	10
MS3164	M10X20	51	0,074	5	24	15	12	31	26	10
MS3168	M12X22	87	0,115	5	28	15	14	38	30	10
MS3072	M8X16	25	0,064	5	28	15	9	20	30	10
MS3076	M10X20	51	0,076	5	28	15	12	24	30	10
MS3176	M12X22	87	0,115	5	32	15	14	40	34	10
MS3180	M16X25	215	0,154	5	32	15	18	45	34	10
MS3084	M10X20	51	0,085	5	32	15	12	24	34	10
MS3088	M12X22	87	0,1	5	32	15	14	28	34	10
MS3188	M16X25	215	0,163	5	36	15	18	43	38	10
MS3096	M12X22	87	0,109	5	36	15	14	28	38	12
MS3196	M16X25	215	0,177	5	36	15	18	53	38	12
MS31/500	M16X25	215	0,178	5	40	15	18	45	42	12

¹⁾ Up to thread M16: self-retaining screw.