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ADP

BEARING ACCESSORIES



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ADP Bearing Accessories



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Every care has been taken to ensure the accuracy of the information in this catalogue but no liability can be accepted for any error or omissions.

Appropriate adapter sleeves and extraction sleeves

Bearing type					Appropriate series of adapter sleeves and extraction (withdrawal) sleeves			
Self aligning ball bearings	Spherical roller bearings	Cylindrical roller bearings	Deep groove ball bearings	Insert (Wide) bearing units	Adapter sleeves	H 2	HE 2 HA 2 HS 2	SNW
1204K-1222K		N204K-N222K NU204K-NU222K	6204K-6222K			H 3	HE 3 HA 3 HS 3	
1304K-1322K 2204K-2222K	22208K-22222K 21308K-21322K	NU2205K-NU2222K N306K-N322K NU306K-NU322K	62205K-62220K 6305K-6322K	UK205-UK218		H 23 OH 23	HE 23 HA 23 HS 23	SNP
2304K-2322K	23218K-23256K 22308K-22356K	NU2224K-NU2264K N324K-N364K NU324K-NU364K		UK205-UK218 UK305-UK328 UKX05-UKX20		H 30 OH 30	HE 30 HA 30	
	23024K-230/500K	NU224K-NU264K N224K-N264K NU344K-NU356K N344K-N356K	6224K-6240K			H 31 OH 31	HE 31 HA 31	
	23120K-231/500K 22224K-22264K	NU2224K-NU2264K NU324K-NU340K N324K-N340K	6324K-6340K			H 39 OH 39		
	23936K-239/500K							
1208K-1222K		N208K-N222K NU208K-NU222K			Extraction (withdrawal) sleeves	AH 2	ASK	SK
						AH 3		
1308K-1322K 2208K-2220K	22208K-22220K 21308K-21322K	NU308K-NU322K N308K-N322K NU2208K-NU2220K	6311K-6322K			AH 22 AOH 22		
	22236K-22264K	NU2236K-NU2264K				AH 23 AOH 23		ASK
2308K-2322K	22308K-22356K 23244K-23256K	NU2308K-NU2356K				AH 30 AOH 30		
	23024K-230/500K	NU3024-NU3064K				AH 31 AOH 31		
2222K	22222K-22234K 23120K-231/500K					AH 32 AOH 32		
	23218K-23240K 23260K-232/500K					AH 39 AOH 39		
	23936K-239/500K					AH 240 AOH 240		
	24024K30-240/500K30					AH 241 AOH 241		
	24122K30-241/500K30							

Lock nuts and locking devices			
Lock nuts	Europe	Japan	American
	KM KML	AN ANL	N AN
	HM HML	HN HNL	
Washers			
	MB MBL	AW AWL	W
Locking clips or plates			
	MS	AL ALL	P

inch-mm Conversion List

Inch		Inches										
		0	1	2	3	4	5	6	7	8	9	10
		mm										
0	0	0	25.400	50.800	76.200	101.600	127.000	152.400	177.800	203.200	228.600	254.000
1/64	0.015625	0.397	25.797	51.197	76.597	101.997	127.397	152.797	178.197	203.597	228.997	254.397
1/32	0.03125	0.794	26.194	51.594	76.994	102.394	127.794	153.194	178.594	203.994	229.394	254.794
3/64	0.046875	1.191	26.591	51.991	77.391	102.791	128.191	153.591	178.991	204.391	229.791	255.191
1/16	0.0625	1.588	26.988	52.388	77.788	103.188	128.588	153.988	179.388	204.788	230.188	255.588
5/64	0.078125	1.984	27.384	52.784	78.184	103.584	128.984	154.384	179.784	205.184	230.584	255.984
3/32	0.09375	2.381	27.781	53.181	78.581	103.981	129.381	154.781	180.181	205.581	230.981	256.381
7/64	0.109375	2.778	28.178	53.578	78.978	104.378	129.778	155.178	180.578	205.978	231.378	256.778
1/8	0.125	3.175	28.575	53.975	79.375	104.775	130.175	155.575	180.975	206.375	231.775	257.175
9/64	0.140625	3.572	28.972	54.372	79.772	105.172	130.572	155.972	181.372	206.772	232.172	257.572
5/32	0.15625	3.969	29.369	54.769	80.169	105.569	130.969	156.369	181.769	207.169	232.569	257.969
11/64	0.171875	4.366	29.766	55.166	80.566	105.966	131.366	156.766	182.166	207.566	232.966	258.366
3/16	0.1875	4.762	30.162	55.562	80.962	106.362	131.762	157.162	182.562	207.962	233.362	258.762
13/64	0.203125	5.159	30.559	55.959	81.359	106.759	132.159	157.559	182.959	208.359	233.759	259.159
7/32	0.21875	5.556	30.956	56.356	81.756	107.156	132.556	157.956	183.356	208.756	234.156	259.556
15/64	0.234375	5.953	31.353	56.753	82.153	107.553	132.953	158.353	183.753	209.153	234.553	259.953
1/4	0.25	6.350	31.750	57.150	82.550	107.950	133.350	158.750	184.150	209.550	234.950	260.350
17/64	0.265625	6.747	32.147	57.547	82.947	108.347	133.747	159.147	184.547	209.947	235.347	260.747
9/32	0.28125	7.144	32.544	57.944	83.344	108.744	134.144	159.544	184.944	210.344	235.744	261.144
19/64	0.296875	7.541	32.941	58.341	83.741	109.141	134.541	159.941	185.341	210.741	236.141	261.541
5/16	0.3125	7.938	33.338	58.738	84.138	109.538	134.938	160.338	185.738	211.138	236.538	261.938
21/64	0.328125	8.334	33.734	59.134	84.534	109.934	135.334	160.734	186.134	211.534	236.934	262.334
11/32	0.34375	8.731	34.131	59.531	84.931	110.331	135.731	161.131	186.531	211.931	237.331	262.731
23/64	0.359375	9.128	34.528	59.928	85.328	110.728	136.128	161.528	186.928	212.328	237.728	263.128
3/8	0.375	9.525	34.925	60.325	85.725	111.125	136.525	161.925	187.325	212.725	238.125	263.525
25/64	0.390625	9.922	35.322	60.722	86.122	111.522	136.922	162.322	187.722	213.122	238.522	263.922
13/32	0.40625	10.319	35.719	61.119	86.519	111.919	137.319	162.719	188.119	213.519	238.919	264.319
27/64	0.421875	10.716	36.116	61.516	86.916	112.316	137.716	163.116	188.516	213.916	239.316	264.716
7/16	0.4375	11.112	36.512	61.912	87.312	112.712	138.112	163.512	188.912	214.312	239.712	265.112
29/64	0.453125	11.509	36.909	62.309	87.709	113.109	138.509	163.909	189.309	214.709	240.109	265.509
15/32	0.46875	11.906	37.306	62.706	88.106	113.506	138.906	164.306	189.706	215.106	240.506	265.906
31/64	0.484375	12.303	37.703	63.103	88.503	113.903	139.303	164.703	190.103	215.503	240.903	266.303
1/2	0.5	12.700	38.100	63.500	88.900	114.300	139.700	165.100	190.500	215.900	241.300	266.700
33/64	0.515625	13.097	38.497	63.897	89.297	114.697	140.097	165.497	190.897	216.297	241.697	267.097
17/32	0.53125	13.494	38.894	64.294	89.694	115.094	140.494	165.894	191.294	216.694	242.094	267.494
35/64	0.546875	13.891	39.291	64.691	90.091	115.491	140.891	166.291	191.691	217.091	242.491	267.891
9/16	0.5625	14.288	39.688	65.088	90.488	115.888	141.288	166.688	192.088	217.488	242.888	268.288
37/64	0.578125	14.684	40.084	65.484	90.884	116.284	141.684	167.084	192.484	217.884	243.284	268.684
19/32	0.59375	15.081	40.481	65.881	91.281	116.681	142.081	167.481	192.881	218.281	243.681	269.081
39/64	0.609375	15.478	40.878	66.278	91.678	117.078	142.478	167.878	193.278	218.678	244.078	269.478
5/8	0.625	15.875	41.275	66.675	92.075	117.475	142.875	168.275	193.675	219.075	244.475	269.875
41/64	0.640625	16.272	41.672	67.072	92.472	117.872	143.272	168.672	194.072	219.472	244.872	270.272
21/32	0.65625	16.669	42.069	67.469	92.869	118.269	143.669	169.069	194.469	219.869	245.269	270.669
43/64	0.671875	17.066	42.466	67.866	93.266	118.666	144.066	169.466	194.866	220.266	245.666	271.066
11/16	0.6875	17.462	42.862	68.262	93.662	119.062	144.462	169.862	195.262	220.662	246.062	271.462
45/64	0.703125	17.859	43.259	68.659	94.059	119.459	144.859	170.259	195.659	221.059	246.459	271.859
23/32	0.71875	18.256	43.656	69.056	94.456	119.856	145.256	170.656	196.056	221.456	246.856	272.256
47/64	0.734375	18.653	44.053	69.453	94.853	120.253	145.653	171.053	196.453	221.853	247.253	272.653
3/4	0.75	19.050	44.450	69.850	95.250	120.650	146.050	171.450	196.850	222.250	247.650	273.050
49/64	0.765625	19.447	44.847	70.247	95.647	121.047	146.447	171.847	197.247	222.647	248.047	273.447
25/32	0.78125	19.844	45.244	70.644	96.044	121.444	146.844	172.244	197.644	223.044	248.444	273.844
51/64	0.796875	20.241	45.641	71.041	96.441	121.841	147.241	172.641	198.041	223.441	248.841	274.241
13/16	0.8125	20.638	46.038	71.438	96.838	122.238	147.638	173.038	198.438	223.838	249.238	274.638
53/64	0.828125	21.034	46.434	71.834	97.234	122.634	148.034	173.434	198.834	224.234	249.634	275.034
27/32	0.84375	21.431	46.831	72.231	97.631	123.031	148.431	173.831	199.231	224.631	250.031	275.431
55/64	0.859375	21.828	47.228	72.628	98.028	123.428	148.828	174.228	199.628	225.028	250.428	275.828
7/8	0.875	22.225	47.625	73.025	98.425	123.825	149.225	174.625	200.025	225.425	250.825	276.225
57/64	0.890625	22.622	48.022	73.422	98.822	124.222	149.622	175.022	200.422	225.822	251.222	276.622
29/32	0.90625	23.019	48.419	73.819	99.219	124.619	150.019	175.419	200.819	226.219	251.619	277.019
59/64	0.921875	23.416	48.816	74.216	99.616	125.016	150.416	175.816	201.216	226.616	252.016	277.416
15/16	0.9375	23.812	49.212	74.612	100.012	125.412	150.812	176.212	201.612	227.012	252.412	277.812
61/64	0.953125	24.209	49.609	75.009	100.409	125.809	151.209	176.609	202.009	227.409	252.809	278.209
31/32	0.96875	24.606	50.006	75.406	100.806	126.206	151.606	177.006	202.406	227.806	253.206	278.606
63/64	0.984375	25.003	50.403	75.803	101.203	126.603	152.003	177.403	202.803	228.203	253.603	279.003

Inch		Inches									
		11	12	13	14	15	16	17	18	19	20
		mm									
0	0	279.400	304.800	330.200	355.600	381.000	406.400	431.800	457.200	482.600	508.000
1/16	0.0625	280.988	306.388	331.788	357.188	382.588	407.988	433.388	458.788	484.188	509.588
1/8	0.125	282.575	307.975	333.375	358.775	384.175	409.575	434.975	460.375	485.775	511.175
3/16	0.1875	284.162	309.562	334.962	360.362	385.762	411.162	436.562	461.962	487.362	512.762
1/4	0.25	285.750	311.150	336.550	361.950	387.350	412.750	438.150	463.550	488.950	514.350
5/16	0.3125	287.338	312.738	338.138	363.538	388.938	414.338	439.738	465.138	490.538	515.938
3/8	0.375	288.925	314.325	339.725	365.125	390.525	415.925	441.325	466.725	492.125	517.525
7/16	0.4375	290.512	315.912	341.312	366.712	392.112	417.512	442.912	468.312	493.712	519.112
1/2	0.5	292.100	317.500	342.900	368.300	393.700	419.100	444.500	469.900	495.300	520.700
9/16	0.5625	293.688	319.088	344.488	369.888	395.288	420.688	446.088	471.488	496.888	522.288
5/8	0.625	295.275	320.675	346.075	371.475	396.875	422.275	447.675	473.075	498.475	523.875
11/16	0.6875	296.862	322.262	347.662	373.062	398.462	423.862	449.262	474.662	500.062	525.462
3/4	0.75	298.450	323.850	349.250	374.650	400.050	425.450	450.850	476.250	501.650	527.050

Introduction of the Company



The company

Ningbo Eurotec Precision Industry Co., Ltd. is a Taiwanese-owners' company, was founded in 2007 taking the form of FDI(foreign direct invest) in mainland China. We specialize in the field of bearing accessories manufacturing and our products are marketed with the brand name—ADP. The ultimate goal of this company's very existence has been the commitment of delivering higher value against each dollar spent by our customers. You'll find our major differentiation proves to be value-adding.

Management team

The management team is headed by a seasoned application engineering manager who was working for one of the multinational bearing manufacturing companies for over 25 years. All the team members are also from precision bearing industry.

Descending from the culture of precision bearing manufacturing, we lay special eyes on the finished product precisions of roundness and run-out of inner & outer bores, and taper deviation even there's no criterion of any kind provided by ISO standard. Those proactively quality-oriented manufacturing from raw materials all the way down to finished products are precisely the drive that makes us the qualified supplier for one of the famous bearing manufacturer in Japan.

Quality management system

ISO 9001:2000 (certified by TÜV NORD CERT GmbH in Mar. 2008)

Manufacturing status of the company

Manufacturing floor

-floor area: 2,400 square meters

-machine tools:

4 sets of sawing machine

1 set of 70 tons punching press & 1 set of 45 tons

12 sets of medium to large-size CNC lathe

1 set of machining center

4 sets of milling machine

-max. throughput: 90 tons of seamless pipe and forging raw material / month

Measuring equipments

Full ranges of bearing measuring equipments are equipped to measure running accuracies and dimensional accuracies of sleeves and threads gauges for nuts. The sine bar is used for measuring taper precision.

Product range

The manufacturing program includes standardized accessories, made with the highest precision, for bearing industry. Moreover, we also offer on request custom-made products according to print or print designed in-house. Last but not least, given the opportunity of cooperation with our customers, we envision to become one of the top quality bearing accessories suppliers in the world.

Supply chain geography

Ningbo is a deepwater harbor city in the vicinity of Shanghai with very convenient daily air travel and short flight from Shanghai or Hong-Kong. The alternative is by car, it takes two and half hours from downtown of Shanghai to Ningbo via Hangzhou bay crossing highway.



CNC lathes for turning operations



Milling and drilling operations



Punching press operations



Raw material preparation from seamless steel tubes



Forged-steel rings for large-sized lock nuts



Snapshot of quality assurance center



Snapshot of quality assurance center

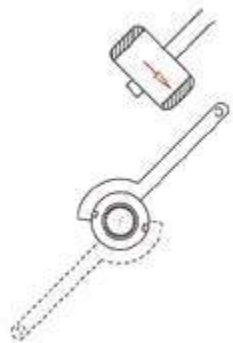


All products are 100% inspected on the production line

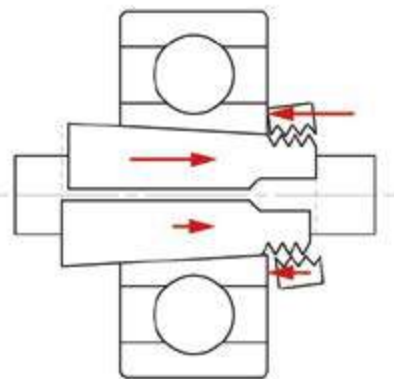
Bearing failures caused by inaccurate sleeve and incorrect mounting

Vibration and noise

Vibration and noise may occur in high speed application. The main cause is bearing skewing on its taper seating. As the bearing has a tendency to skew when being



pressed up it is advisable to re-position the hook spanner in a slot at 180° to that used for tightening and then apply a light hammer blow to the spanner. The bearing will be straightened up on its seating.

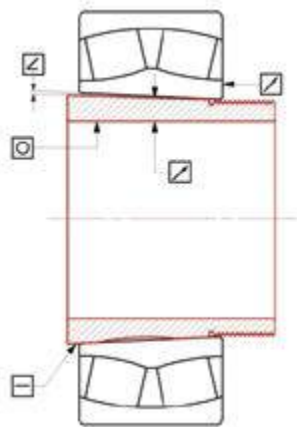


The bad sleeve may also get the bearing in troubles, i.e. inaccurate machining of sleeve or incorrect heat treatment.



Fretting corrosion

Fretting corrosion refers to corrosion damage at the asperities of contact surfaces. This damage is induced under load and in the presence of repeated relative surface motion, as for example by vibration. Pits or grooves and oxide debris characterize this damage, typically found in the contacted surfaces of adapter sleeves and extraction sleeves.



The volume of the oxide debris will grow gradually and increase the stress between the contact surfaces, the inner ring will be deformed after sometime. There are myriad reasons that could inflict fretting corrosion on bearing sleeves, such as bad surface roughness and form accuracy of sleeves, improper drive up of bearing onto sleeve, bending of the shaft under heavy load, etc.

Why ADP?

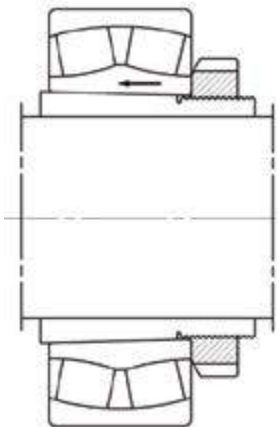
- 1 The management team comes from the bearing industry with the best knowledge about the products, manufacturing, applications, and field experiences.
- 2 ADP lays special eyes on the finished product precisions of roundness and run-out of inner & outer bores, and taper deviation even there has no criterion provided by ISO standard.
- 3 Advanced equipment for production
- 4 Full range of measuring equipment and thread gauges to guarantee dimensional and running accuracies of sleeves and nuts.
- 5 The ISO 9001 quality management system has been certified and audited by international accreditation institution.
- 6 All ADP products are 100% inspected.
- 7 Production and products are in line with global RoHS Compliance.
- 8 Innovations on product development

Mounting

Inner rings of bearings on adapter sleeves and extraction sleeves are always mounted with an interference fit. The degree of interferences depends on how far the bearing is driven on the sleeve. During the drive-up, the radial internal clearance of the bearing will be reduced gradually as the bearing expands, so that the reduction of internal clearance is a measure of the degree of interference. It is common practice to mount spherical roller bearings, self-align ball bearings and insert bearings on sleeves. Information regarding internal clearance reduction and axial drive-up is shown on pages 10 to 11.

Mounting of spherical roller bearings with taper bore

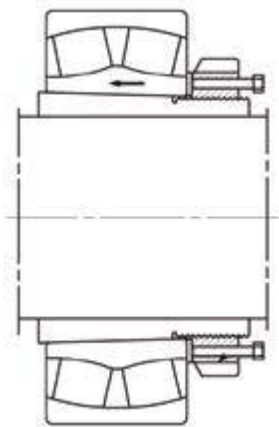
A: Mechanical mounting onto an adapter sleeve, with a lock nut, with a feeler gauge
Recommend for bearing bore diameter ≤ 120 mm



- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on shaft, sleeve and bearing thinly prior to mounting.
- 3 Place the bearing onto the tapered surface.
- 4 Screw the sleeve nut onto the sleeve.
- 5 Drive the bearing further up the tapered surface by tightening the nut with a hook wrench.
- 6 Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved.
- 7 Alternatively, the displacement specified in the table (page 10) may be measured using a depth micrometer, slide caliper or dial gauge.
- 8 Secure the sleeve nut.

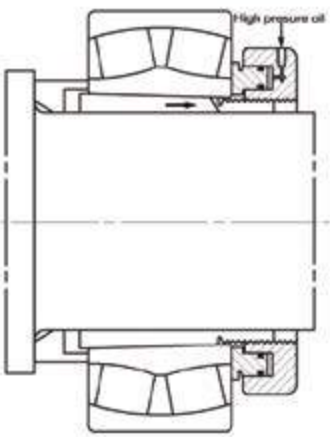
B: Mechanical mounting onto an adapter sleeve, with thrust bolts, with a feeler gauge

- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on the shaft, sleeve and bearing thinly prior to mounting.
- 3 Place the bearing onto the tapered surface.



- 4 Screw the sleeve nut onto the sleeve thread and screw the thrust bolts into the holes provided for this purpose. Insert a metal plate or ring between thrust bolts and bearing to protect the bearing from damage.
- 5 Drive the bearing further up the tapered surface by tightening the thrust bolts crosswise. Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved. Alternatively, the displacement specified in the table (page 10) may be measured using a depth micrometer, slide caliper or dial gauge.
- 6 Remove the thrust bolts. Screw sleeve nut further onto the sleeve thread until it abuts the bearing and secure it.

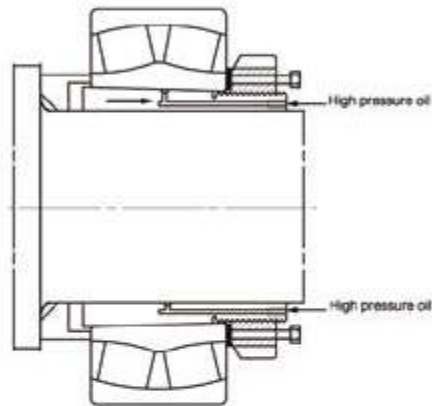
C: Mechanical mounting onto an adapter sleeve, with a hydraulic nut, with a feeler gauge



- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on the shaft, sleeve and bearing thinly prior to mounting.
- 3 Place the bearing onto the tapered surface.
- 4 Screw the hydraulic nut onto the sleeve and connect it to the pump.
- 5 Drive the bearing onto its tapered seat by pumping oil into the hydraulic nut.

- 6 Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved. Alternatively, the displacement specified in the table (page 10) may be measured using a depth micrometer, slide caliper or dial gauge.
- 7 Open the return valve at the pump and screw the hydraulic nut further so that the piston is pushed back completely into the nut body. Unscrew the hydraulic nut.
- 8 Screw sleeve nut further onto the sleeve thread until it abuts the bearing and secure it.

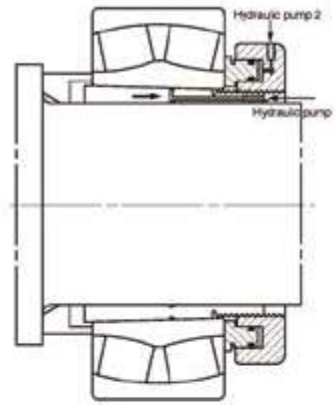
D: Hydraulic mounting onto an adapter sleeve, with thrust bolts, with a feeler gauge



- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on the shaft, sleeve and bearing thinly prior to mounting.
- 3 Place the bearing onto the tapered sleeve surface.
- 4 Screw the sleeve nut onto the sleeve thread and screw the thrust bolts into the holes provided for this purpose. Insert a metal plate or ring between thrust bolts and bearing to protect the bearing from damage.
- 5 Press oil between the bearing and the tapered seat using a hand pump until some oil escapes at the fitting joint.
- 6 Drive the bearing further up the tapered surface by tightening the thrust bolts crosswise. As you drive the bearing up the shaft, keep pumping to ensure there is a separating oil film in the fitting joint. Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved. Alternatively, the displacement specified in the table (page 10) may be measured using a depth micrometer, slide caliper or dial gauge.
- 7 It takes ca. 10 - 30 minutes until the high pressure oil has drained from the fitting joint.

- During this period the thrust bolts must not be loosened.
- 8 Remove the thrust bolts from the nut.
- 9 Screw the sleeve nut further onto the sleeve thread until it abuts the bearing and secure it.

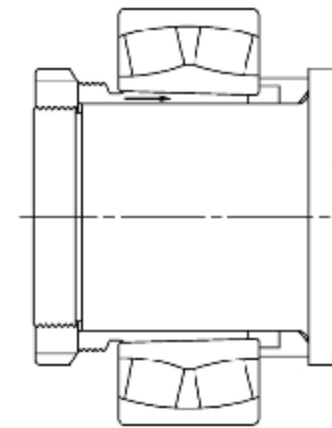
E: Hydraulic mounting onto an adapter sleeve, with a hydraulic nut, with a feeler gauge



- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on the shaft, sleeve and bearing thinly prior to mounting.
- 3 Place the bearing onto the tapered sleeve.
- 4 Screw the hydraulic nut onto the sleeve thread and connect it to pump "2".
- 5 Pump oil into the hydraulic nut by means of pump "2" until all form inaccuracies have been eliminated and bearing, sleeve and shaft fit together snugly over their entire circumference.
- 6 Press oil into the fitting joint by means of hand pump "1" until some oil escapes at the gaps between the sliding surfaces. As you drive the bearing up the sleeve, keep pumping to ensure there is a separating oil film in the fitting joint.
- 7 Drive the bearing onto the tapered seat by pumping more oil into the hydraulic nut. As you drive the bearing up the sleeve taper, keep pumping to ensure there is a separating oil film in the fitting joint.
- 8 Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved. Alternatively, the displacement specified in the table (page 10) may be measured using a depth micrometer, slide caliper or dial gauge.
- 9 Maintain the pressure inside the hydraulic nut but open the return valve of pump "1" to let the oil drain from the fitting joint. It takes ca. 10 - 30 minutes until the high pressure oil has drained from the fitting joint. During this period the pressure inside the hydraulic nut must be maintained.

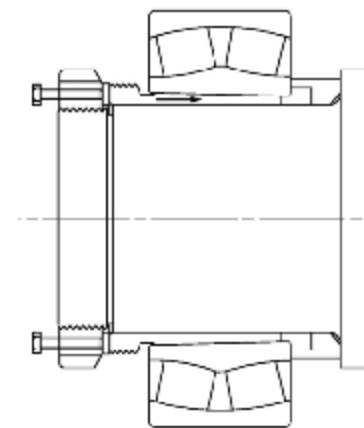
- 10 Open the return valve at pump "2" and screw hydraulic nut further onto the thread of the sleeve so that the piston is pushed back completely into the nut body. Unscrew the hydraulic nut.
- 11 Screw sleeve nut further onto the shaft and secure it.

F: Mechanical mounting onto a extraction sleeve, with a lock nut, with a feeler gauge
Recommend for bearing bore diameter ≤ 100 mm



- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on the shaft, sleeve and bearing thinly prior to mounting.
- 3 Place the bearing onto the shaft and insert the extraction sleeve between bearing and shaft.
- 4 Screw the lock nut onto the shaft thread.
- 5 Drive the bearing further up the tapered surface by tightening the nut with a hook wrench.
- 6 Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved. Alternatively, the displacement specified in the table on page 10 may be measured using a depth micrometer, slide caliper or dial gauge.
- 7 Secure the lock nut.

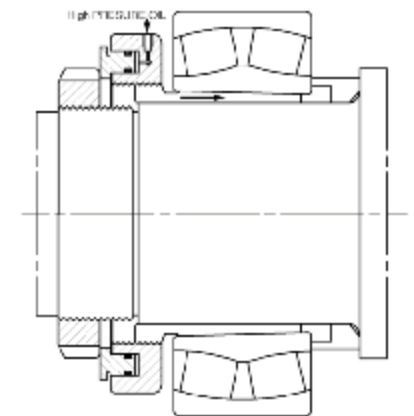
G: Mechanical mounting onto a extraction sleeve, with thrust bolts, with a feeler gauge



- 1 Measure the initial clearance of the bearing with the feeler gauge.

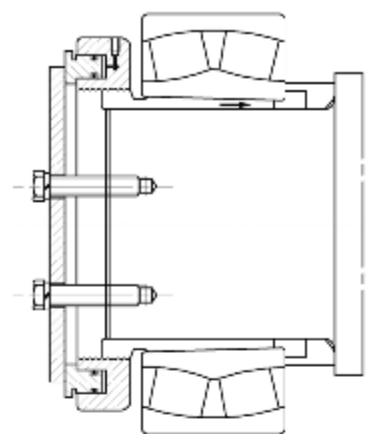
- 2 Oil the contact areas on the shaft, sleeve and bearing thinly prior to mounting.
- 3 Place the bearing onto the shaft and insert the extraction sleeve between bearing and shaft.
- 4 Screw the lock nut onto the shaft thread and screw the thrust bolts into the holes provided for this purpose. Insert a metal plate or ring between thrust bolts and sleeve to protect the sleeve from damage.
- 5 Press the sleeve between bearing and shaft by tightening the thrust bolts crosswise. Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved. Alternatively, the displacement specified in the table on page 10 may be measured using a depth micrometer, slide caliper or dial gauge.
- 6 Remove the thrust bolts, screw the lock nut further onto the shaft until it abuts the bearing and secure it.

H: Mechanical mounting onto a extraction sleeve, with a hydraulic nut, with a feeler gauge



- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on the shaft, sleeve and bearing thinly prior to mounting.
- 3 Place the bearing onto the shaft and insert the extraction sleeve between bearing and shaft.
- 4 Screw the hydraulic nut onto the sleeve thread with the piston pointing in the direction of the shaft end. Screw the shaft nut as a stop.
- 5 Press the sleeve between bearing and shaft by pumping oil into the hydraulic nut. Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved.
- 6 Open the return valve at the pump and screw shaft nut further onto the shaft so that the piston is pushed back completely into the nut body. Unscrew the shaft nut and hydraulic nut.
- 7 Screw lock nut further onto the shaft until it abuts the sleeve and secure it.

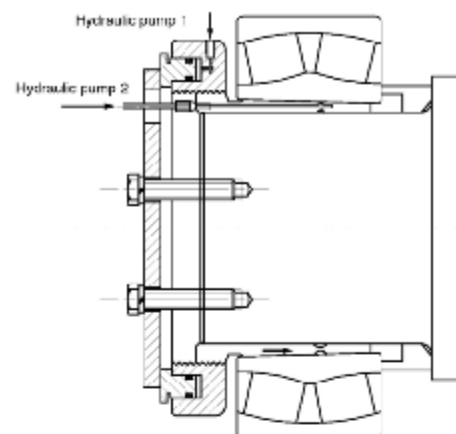
I: Mechanical mounting onto a extraction sleeve, with a hydraulic nut on the sleeve thread, supported by a thrust plate, with a feeler gauge



- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on the shaft, sleeve and bearing just very thinly prior to mounting.
- 3 Place the bearing onto the shaft and push the extraction sleeve onto the shaft and into the bearing.
- 4 Screw the hydraulic nut onto the sleeve thread with the piston pointing in the direction of the shaft end.
- 5 Screw the thrust plate to the shaft end.
- 6 Connect the hand pump to the hydraulic nut and pump in oil until all form inaccuracies have been eliminated and the bearing, sleeve and shaft fit together snugly over their entire circumference. In the process, the annular piston is supported by the thrust plate.
- 7 Pump oil into the hydraulic nut to press the sleeve between shaft and bearing. Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved. Alternatively, the displacement specified in the table on page 10 may be measured using a depth micrometer, slide caliper or dial gauge.
- 8 Open the return valve at the pump and screw the hydraulic nut further onto the thread; in the process the annular piston is pushed back into the nut body, and the oil is pressed back into the pump tank.
- 9 Remove the pumps and the hydraulic nut.

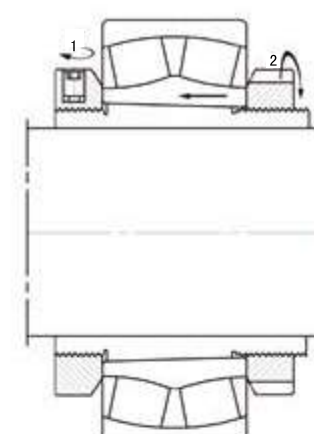
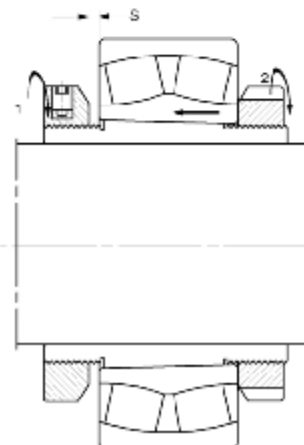
J: Hydraulic mounting onto a extraction sleeve, with a hydraulic nut on the sleeve thread, supported by a thrust plate, with a feeler gauge

- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on the shaft, sleeve and bearing only very thinly prior to mounting.
- 3 Place the bearing onto the shaft and push the extraction sleeve between shaft and bearing.
- 4 Screw the hydraulic nut onto the sleeve thread, with the annular piston pointing in the direction of the shaft end.
- 5 Screw the thrust plate to the shaft end.
- 6 Connect hand pump "1" to the hydraulic nut and pump in oil until all form inaccuracies have been



- eliminated and the bearing, sleeve and shaft fit together snugly over their entire circumference. In the process, the annular piston is supported by the thrust plate.
- 7 Press oil into the fitting joints using hand pump "2" until some oil escapes at the gaps between the sliding surfaces.
- 8 Pump oil into the hydraulic nut using pump "1" to press the sleeve between bearing and shaft. As you drive-up the sleeve, keep pumping in oil using pump "2" to ensure there is a separating oil film in the fitting joint. Check the radial clearance repeatedly with the feeler gauge until the specified radial clearance reduction has been achieved. Alternatively, the displacement specified in the table on page 10 may be measured using a depth micrometer, slide caliper or dial gauge.
- 9 Maintain the pressure inside the hydraulic nut but open the return valve at pump "2" to let the oil drain from the fitting joint. It takes ca. 10 - 30 minutes until the high pressure oil has drained from the fitting joint. During this period, the pressure inside the hydraulic nut must be maintained.
- 10 Screw the hydraulic nut onto the thread; in the process the annular piston is pushed back into the nut body, and the oil is pressed back into the pump tank.
- 11 Remove the pumps and the hydraulic nut.

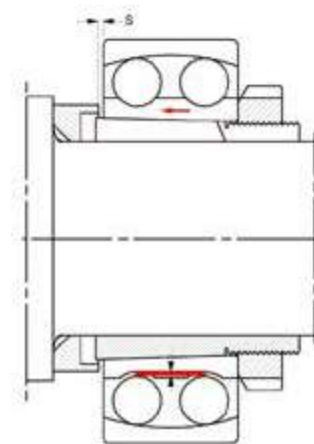
K: Mechanical mounting of ADP Easy Extraction Adapter sleeves with a feeler gauge



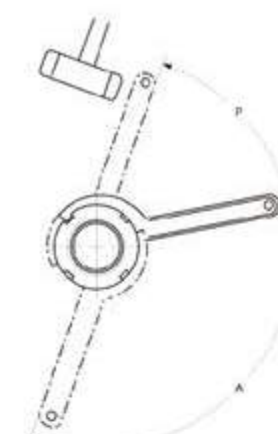
- 1 Measure the initial clearance of the bearing with the feeler gauge.
- 2 Oil the contact areas on the shaft, sleeve and bearing only very thinly prior to mounting.
- 3 Place the sleeve with it's extraction nut onto the shaft and then push the bearing onto the sleeve.
- 4 Screw the lock nut onto the sleeve thread, use lock nut drive the bearing a little bit on the taper seating, make sure that there is not any clearance between sleeve bore and the shaft
- 5 Insert the feeler gauge with corrected axial dive up distance (see page 10) then screw the extraction nut to clamp the feeler gauge .
- 6 Remove the feeler gauge, the gap between extraction nut and side face is the axial driving distance.
- 7 Screw the lock nut until the side face of large end bore of the bearing is stopped by the extraction nut.
- 8 Tighten the grub screw with torque recommend.

Mounting of self-aligning ball bearings with taper bore

L: Mechanical mounting onto an adapter sleeve, with a lock nut, with a hook wrench



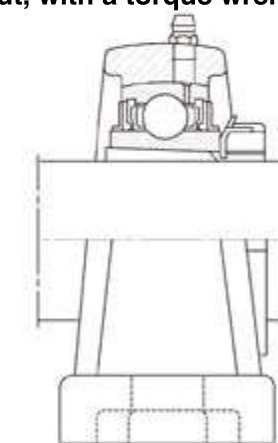
- 1 Oil the contact areas on the shaft, sleeve and bearing only very thinly prior to mounting.
- 2 Place the bearing onto the tapered surface.
- 3 Screw the sleeve nut onto the sleeve.
- 4 Drive the bearing further up the tapered surface by light tightening the nut (as shown the angle



- "p") with a hook wrench. This light tightening procedure will make sure that there is not any clearance between sleeve bore and the shaft.
- 5 Further tighten the lock nut with angle "A" in the table (page 11) is recommended.
- 6 Alternatively, the displacement specified in the table may be measured using a depth micrometer,slide caliper or dial gauge.
- 7 Secure the sleeve nut.

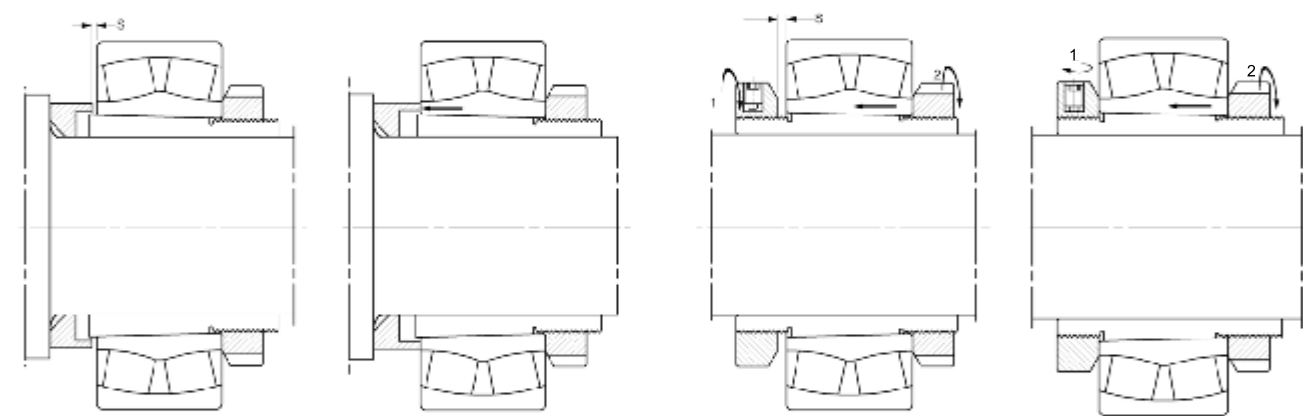
Mounting of insert bearings (wider inner ring bearings) with taper bore

M: Mechanical mounting onto an adapter sleeve, with a lock nut, with a torque wrench



- 1 Oil the contact areas on the shaft, sleeve and bearing only very thinly prior to mounting.
- 2 Place the bearing onto the tapered surface.
- 3 Screw the sleeve nut onto the sleeve.
- 4 Drive the bearing further up the tapered surface by tightening the nut with a torque wrench. The recommend tighten torque please see the table on page 11.
- 5 The recommended tightening torque is valid only for high quality adapter sleeves with best form accuracy and surface roughness better than 1.8µm(Ra),for example ADP adapter sleeves.

Mounting spherical roller bearings with taper bore



ADP Easy Extraction Adapter Sleeve

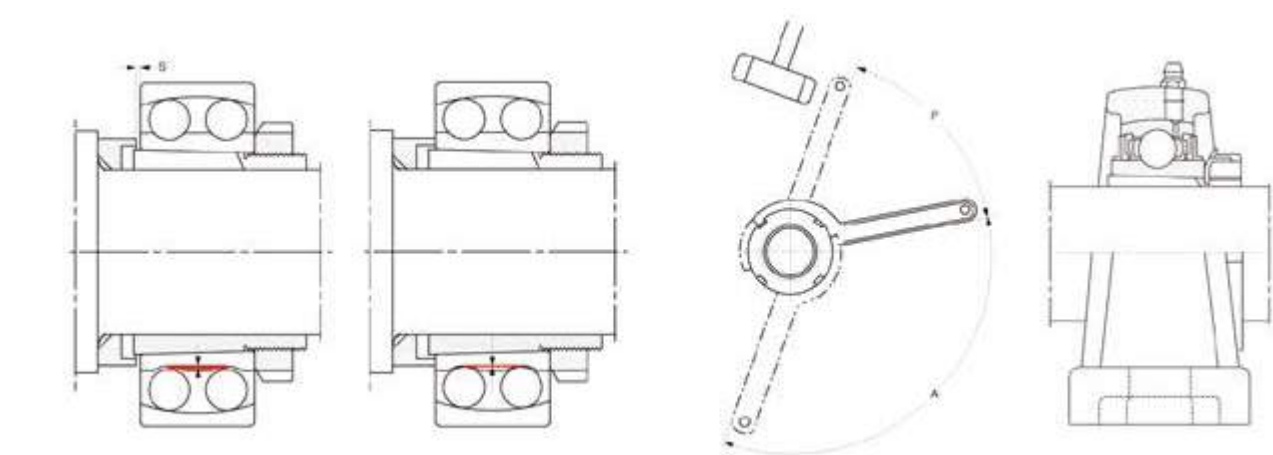
Bearing bore diameter		Radial clearance reduction	Axial displacement S * on taper 1:12		Axial displacement S * on taper 1:30		Minimum permissible residual clearance ** after mounting (mm)		
over	include		on shaft	on sleeve	on shaft	on sleeve	Normal	C3	C4
mm		mm	mm	mm	mm	mm			
30	40	0.020-0.025	0.35-0.40	0.35-0.45	-	-	0.015	0.025	0.040
40	50	0.025-0.030	0.40-0.45	0.45-0.50	-	-	0.020	0.030	0.050
50	65	0.030-0.040	0.45-0.60	0.50-0.70	-	-	0.025	0.035	0.055
65	80	0.040-0.050	0.60-0.75	0.70-0.85	-	-	0.025	0.040	0.070
80	100	0.045-0.060	0.70-0.90	0.75-1.00	1.75-2.25	1.80-2.40	0.035	0.050	0.080
100	120	0.050-0.070	0.70-1.10	0.80-1.20	1.90-2.70	2.00-2.80	0.050	0.065	0.100
120	140	0.065-0.090	1.10-1.40	1.20-1.50	2.70-3.50	2.80-3.60	0.055	0.080	0.110
140	160	0.075-0.100	1.20-1.60	1.30-1.70	3.00-4.00	3.10-4.20	0.055	0.090	0.130
160	180	0.080-0.110	1.30-1.70	1.40-1.90	3.20-4.20	3.30-4.60	0.060	0.100	0.150
180	200	0.090-0.130	1.40-2.00	1.50-2.20	3.50-4.50	3.60-5.00	0.070	0.100	0.160
200	225	0.100-0.140	1.60-2.20	1.70-2.40	4.00-5.50	4.20-5.70	0.080	0.120	0.180
225	250	0.110-0.150	1.70-2.40	1.80-2.60	4.20-6.00	4.60-6.20	0.090	0.130	0.200
250	280	0.120-0.170	1.90-2.60	2.00-2.90	4.70-6.70	4.80-6.90	0.100	0.140	0.220
280	315	0.130-0.190	2.00-3.00	2.20-3.20	5.00-7.50	5.20-7.70	0.110	0.150	0.240
315	355	0.150-0.210	2.40-3.40	2.60-3.60	6.00-8.20	6.20-8.40	0.120	0.170	0.260
355	400	0.170-0.230	2.60-3.60	2.90-3.90	6.50-9.00	6.80-9.20	0.130	0.190	0.290
400	450	0.200-0.260	3.10-4.10	3.40-4.40	7.70-10.00	8.00-10.40	0.130	0.200	0.310
450	500	0.210-0.280	3.30-4.40	3.60-4.80	8.20-11.00	8.40-11.20	0.160	0.230	0.350

* Valid for solid shaft only. Larger axial displacement are necessary for hollow shafts depending on the wall thickness

**The residual clearance must be checked in cases where the initial radial internal clearance is in the lower half of the tolerance range and where large temperature differentials between the bearing rings can arise in operation. The residual clearance must not be less than the minimum values quoted above.

The values apply to normal clearance and larger. For radial clearance values lower than CN, the radial clearance reduction must be checked individually depending on the application/operating conditions for, as a rule, there must always be a sufficiently large radial clearance in the bearing.

Mounting of self-aligning ball bearings and insert bearing units with taper bore



Self-aligning ball bearing

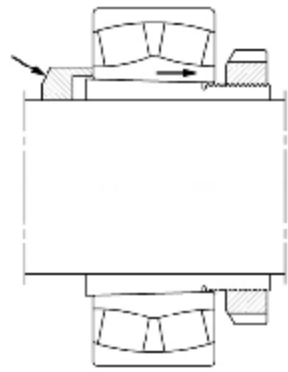
Insert bearing unit

Bearing bore diameter		Tighten angle	Axial displacement S Bearing series				Mean residual clearance after mounting		Tighten torque * Insert bearing units		
d		A	12 K	13 K	22 K	23 K	Normal	C3	UK 2	UKX	UK 3
mm		degree	mm				µm		Nm		
20		70	0.22	0.23	-	-	10	20	-	-	-
25		70	0.22	0.23	0.22	0.23	10	20	25	34	29
30		70	0.22	0.23	0.22	0.23	10	20	29	39	44
35		70	0.30	0.30	0.30	0.30	10	20	39	49	59
40		70	0.30	0.30	0.30	0.30	10	20	49	73	78
45		70	0.31	0.34	0.31	0.33	15	25	59	78	117
50		70	0.31	0.34	0.31	0.33	15	25	73	108	147
55		90	0.40	0.41	0.39	0.40	15	30	98	137	177
60		90	0.40	0.41	0.39	0.40	15	30	127	167	225
65		90	0.40	0.41	0.39	0.40	15	30	147	196	265
75		120	0.45	0.47	0.43	0.46	20	40	167	215	373
80		120	0.45	0.47	0.43	0.46	20	40	196	255	441
85		120	0.58	0.60	0.54	0.59	20	40	225	294	530
90		120	0.58	0.60	0.54	0.59	20	40	265	343	608
95		120	0.58	0.60	0.54	0.59	20	40	-	-	706
100		120	0.58	0.60	0.54	0.59	20	40	-	490	883
105		120	0.67	-	0.66	-	25	55	-	-	-
110		120	0.67	0.70	0.66	0.69	25	55	-	-	1220
120		120	0.67	-	-	-	25	55	-	-	1470
130		140	-	-	-	-	-	-	-	-	1770
140		150	-	-	-	-	-	-	-	-	2150

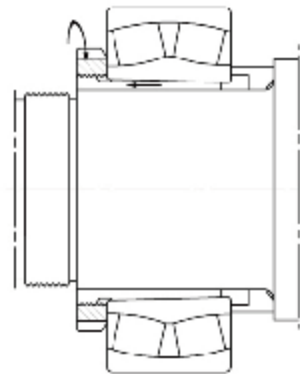
* Valid for high quality adapter sleeves with best form accuracy and surface roughness e.g. ADP adapter sleeves.

Dismounting

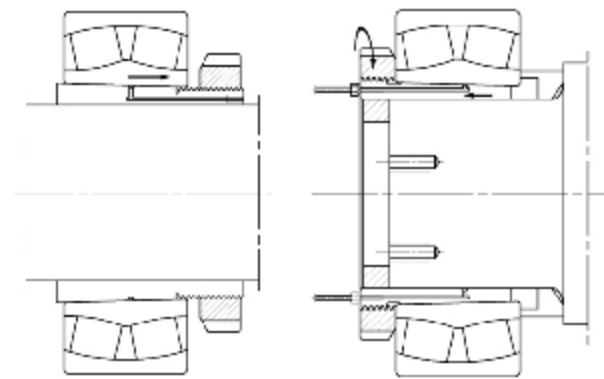
If the bearings are to be used again after removal, the dismounting force shouldn't be applied through the rolling elements.



Bearings mounted on an adapter sleeve can be removed by first disengaging the bent tab of the locking washer from the lock nut, loosening the lock nut a few turns and then using a hammer and tubular drift or special segmental drift.



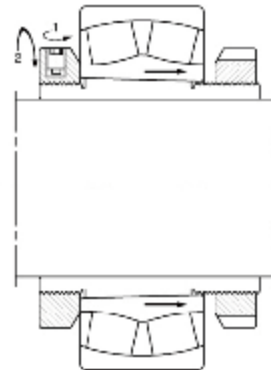
Only a few hammer blows to the inner ring face are required. When dismounting bearings on extraction sleeves, the axial locking device (shaft nut, end plate etc.) is removed first. The extraction nut is then screwed onto the threaded section of the sleeve and tightened until the sleeve becomes free. If the threaded section of the sleeve protrudes beyond the shaft end or shaft shoulder, a support ring should be inserted in the sleeve bore to prevent distortion and damage to the thread when the nut is tightened.



The dismounting of large bearings from adapter or extraction sleeves is greatly eased if a hydraulic nut is used, or if high pressure oil pumping is used. After the high pressure oil is pumping between the mating surface, the bearing will suddenly slide out from its taper seating. Some device of stop must therefore be provided, for instance, a shaft nut, to limit the movement of the bearing.

An ADP solution for easy dismounting

The ADP Easy Extraction Adapter Sleeves, as its name, is very convenient to dismount the bearing compare to conventional adapter sleeve.



First, disengaging the bent tab of the locking washer from the lock nut, then loosen the lock nut a few turns. Second, loosen the grub screw on extraction nut and then tighten the extraction nut, the bearing will become loosening.



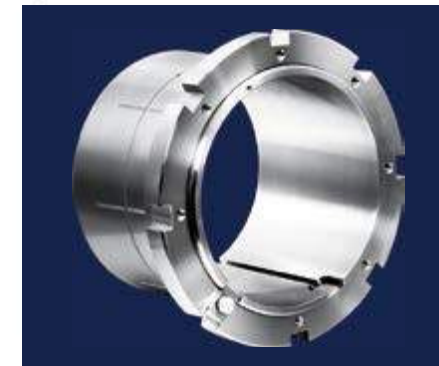
Typical application of ADP easy extraction adapter sleeves, mounted on smoothing shaft without space problems.

Adapter sleeves and extraction sleeves

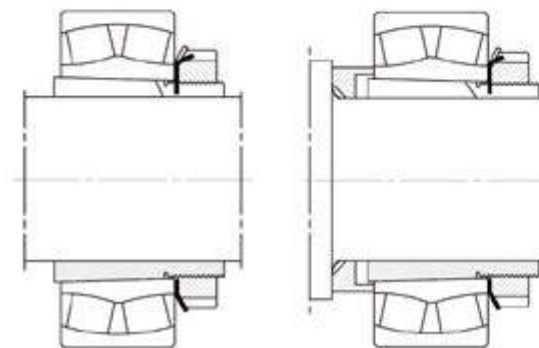
Adapter sleeves



Adapter sleeves are using for locating bearings with a tapered bore onto a cylindrical seating as they can be used on smooth or stepped shafts. They are easy to mount and require no additional location on the shaft.



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



dismounting is also facilitated.

Basic design

ADP adapter sleeves are supplied complete with lock nut and locking device. Smaller sizes use a lock nut with a locking washer, larger sizes use a nut with locking clip. The sleeves are slotted and have an external taper of 1:12. ADP supplies

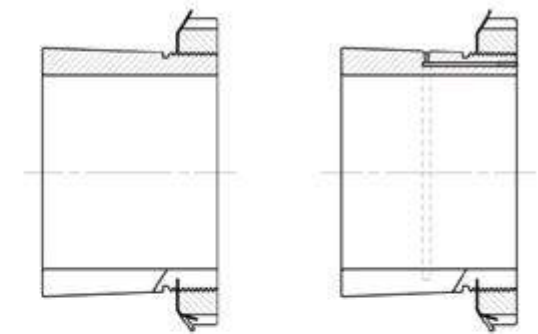
- metric adapter sleeves, series designations H and OH
- metric adapter sleeves for shafts with inch dimensions, series designations HA, HE and HS

–adapter sleeves with inch dimensions, series designations SNW and SNP

Designs for hydraulic mounting

Metric adapter sleeves

To enable the hydraulic mounting to ease mounting and dismounting, metric ADP adapter sleeves having a bore diameter of 140 mm up to 500 mm can be supplied to special order already prepared for hydraulic mountings. In addition to these standard sleeves which are designated



OH .. H and shown in the product tables, ADP produces sleeves to three other designs which differ in the number and arrangement of the oil ducts and distributor grooves.

Materials

The materials using in ADP adapter sleeves are carbon steel with a tensile strength at least 430N /mm²,

Dimensions

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

The dimensions of ADP adapter sleeves with inch dimensions are in accordance with ANSI/ABMA Std. 8.2.

Tolerances

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

The tolerances of ADP adapter sleeves with inch dimensions are in accordance with ANSI/ABMA Std. 8.2.

Thread

Metric ADP adapter sleeves up to size 40 have metric threads with 6g tolerances, according to ISO 965-3.

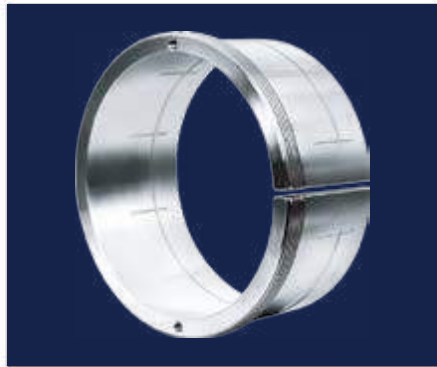
Larger adapter sleeves have metric trapezoidal threads with 7e tolerances, according to ISO 2903.

ADP adapter sleeves with inch dimensions up to and including size 64 (12 inch shaft diameter) have Unified Special Form threads (based on the old American National form, class 3 design). Larger sleeves have Acme Class 3G, General Purpose threads.

Shaft tolerances

Generally, the form tolerances must be kept within narrow limits as the accuracy of form directly affects the running accuracy of the bearing. shafts should be to an h9 tolerance but the cylindricity should be to IT5/2 according to ISO 1101.

Extraction sleeves

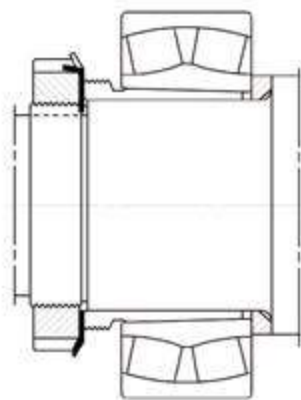


Extraction (withdrawal) sleeves can be used to mount bearings with a tapered bore on cylindrical seats of stepped shafts. The sleeve is pressed into the bore of the bearing that abuts a shaft shoulder or similar fixed component. The sleeve is located on the shaft by a nut or an end plate. Lock nuts or endplates are not supplied with the extraction sleeves. KM or HM lock nuts and respective locking washers are suitable but must be ordered separately. Further information will be found in the section "Lock nuts with locking washer or clip".

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

Basic design

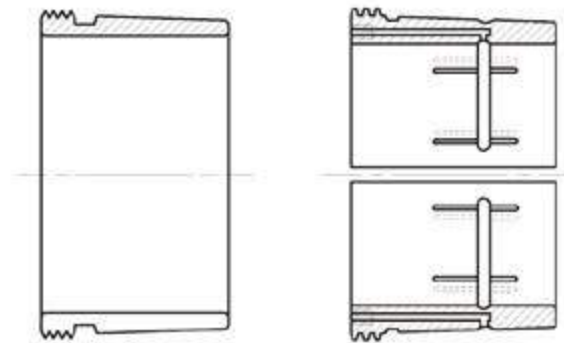
ADP extraction sleeves are slotted and have an external taper of 1:12 except for those in the A(O)H 240 and A(O)H 241 series which have an external taper of 1:30 and are intended for use with wide bearings in the 40 and 41 Dimension Series.



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

Design for hydraulic mounting

To enable the hydraulic mounting to be used for mounting and dismounting, ADP extraction sleeves with bore diameters of 200 mm and above are produced as standard with oil supply ducts and distributor grooves.



These AOH sleeves have two oil supply ducts at the threaded side as well as oil distributor grooves in the circumferential and axial directions, both in the outside surface and the sleeve bore. If oil is injected through these ducts and grooves, an oil film is formed between the mating surfaces of the bearing and sleeve and between the shaft and sleeve, and the force required to mount the bearing is considerably reduced. Details of the thread for attaching the oil supply lead to the ducts as well as of appropriate hydraulic nuts can be found in the product table.

Materials

The materials using in ADP extraction sleeves are carbon steel with a tensile strength at least 430N /mm².

Dimensions

The dimensions of ADP extraction sleeves are in accordance with ISO 2982-1.

Tolerances

The bore diameter of ADP extraction sleeves is to tolerance JS9, the width to h13.

Thread

ADP extraction sleeves up to size 38 have metric threads with 6g tolerances according to ISO 965-3. Larger extraction sleeves have metric trapezoidal threads with 7e tolerance according to ISO 2903.

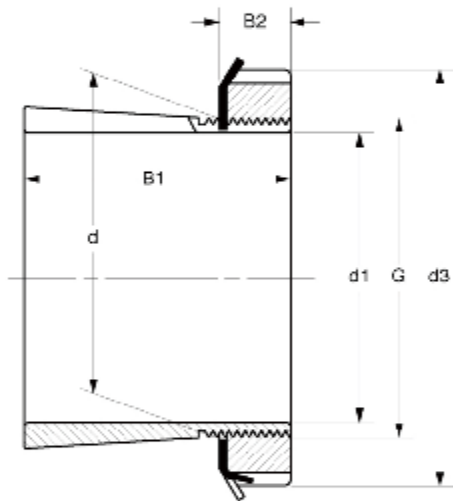
If standard nuts are not used, the threads of nuts for extraction sleeves up to size 38 should correspond to tolerance 5H according to ISO 965-3. The threads of nuts for larger extraction sleeves should correspond to tolerance 7H according to ISO 2903.

Shaft tolerances

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

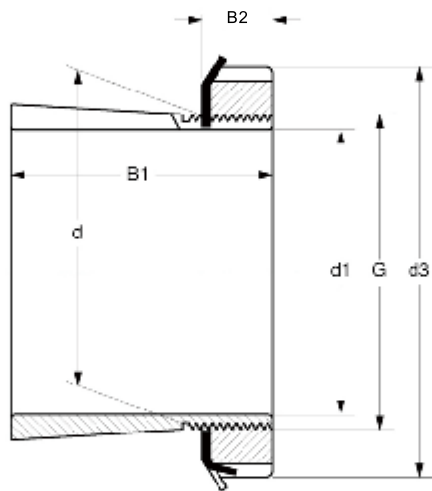


Adapter sleeves
d1 17 - 135 mm



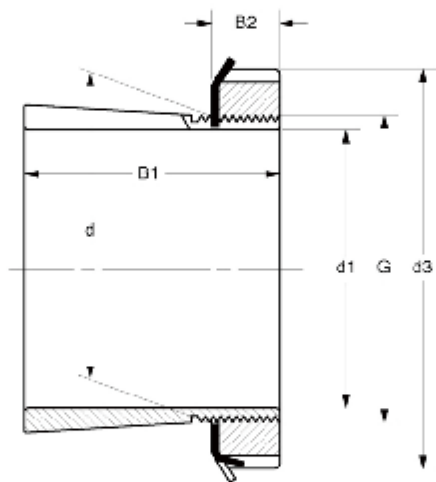
Dimensions						Mass	Designations				
d1	d	d3	B1	B2	G		Adapter sleeve complete set	lock nut	Locking device	Appropriate bearings	
mm						Kg					
17	20	32	24	7	M 20×1	0.036	H 204	KM 4	MB 4	1204 K	—
		32	28	7	M 20×1	0.04	H 304	KM 4	MB 4	2204 K,1304 K,	
		32	31	7	M 20×1	0.05	H 2304	KM 4	MB 4	2304 K	
20	25	38	26	8	M 25×1.5	0.064	H 205	KM 5	MB 5	1205 K	
		38	29	8	M 25×1.5	0.071	H 305	KM 5	MB 5	2205 K,1305 K,22205 K, UK205	
		38	29	8	M 25×1.5	0.071	H 305C	KM 5	MB 5 C	2205E-2RS1K	
		38	35	8	M 25×1.5	0.085	H 2305	KM 5	MB 5	2305 K, UK205, UKX05, UK305	
25	30	45	27	8	M 30×1.5	0.086	H 206	KM 6	MB 6	1206 K	
		45	31	8	M 30×1.5	0.095	H 306	KM 6	MB 6	2206 K,1306 K,22206 K, UK206	
		45	31	8	M 30×1.5	0.095	H 306C	KM 6	MB 6 C	2206E-2RS1K	
		45	38	8	M 30×1.5	0.11	H 2306	KM 6	MB 6	2306 K, UK206, UKX06, UK306	
30	35	52	29	9	M 35×1.5	0.12	H 207	KM 7	MB 7	1207 K	
		52	35	9	M 35×1.5	0.14	H 307	KM 7	MB 7	2207 K,1307 K,22207 K, UK207	
		52	35	9	M 35×1.5	0.14	H 307C	KM 7	MB 7 C	2207E-2RS1K	
		52	43	9	M 35×1.5	0.16	H 2307	KM 7	MB 7	2307 K, UK207, UKX07, UK307	
35	40	58	31	10	M 40×1.5	0.16	H 208	KM 8	MB 8	1208 K	
		58	36	10	M 40×1.5	0.17	H 308	KM 8	MB 8	2208 K,1308 K,22208 K, UK208	
									21308 K		
		58	36	10	M 40×1.5	0.17	H 308C	KM 8	MB 8 C	2208E-2RS1K	
40	45	58	46	10	M 40×1.5	0.22	H 2308	KM 8	MB 8	2308 K,22308 K, UK208, UKX08, UK308	
		65	33	11	M 45×1.5	0.21	H 209	KM 9	MB 9	1209 K	
		65	39	11	M 45×1.5	0.23	H 309	KM 9	MB 9	2209 K,1309 K,22209 K,UK209	
									21309 K		
45	50	65	39	11	M 45×1.5	0.23	H 309C	KM 9	MB 9 C	2209E-2RS1K	
		65	50	11	M 45×1.5	0.27	H 2309	KM 9	MB 9	2309 K,22309 K, UK209, UKX09, UK309	
		70	35	12	M 50×1.5	0.24	H 210	KM 10	MB 10	1210 K	
		70	42	12	M 50×1.5	0.27	H 310	KM 10	MB 10	2210 K,1310 K,22210 K,UK210	
50	55								21310 K		
		70	42	12	M 50×1.5	0.27	H 310C	KM 10	MB 10 C	2210-2RS1K	
		70	55	12	M 50×1.5	0.34	H 2310	KM 10	MB 10	2310 K,22310 K, UK210, UKX10, UK310	
		75	37	12.5	M 55×2	0.28	H 211	KM 11	MB 11	1211 K	
55	59	75	45	12.5	M 55×2	0.32	H 311	KM 11	MB 11	2211 K,1311 K,22211 K,UK211	
									21311 K		
		75	45	12.5	M 55×2	0.32	H 311C	KM 11	MB 11 C	2211E-2RS1K	
		75	59	12.5	M 55×2	0.39	H 2311	KM 11	MB 11	2311 K,22311 K, UK211, UKX11, UK311	

Adapter sleeves
d1 17 - 135 mm



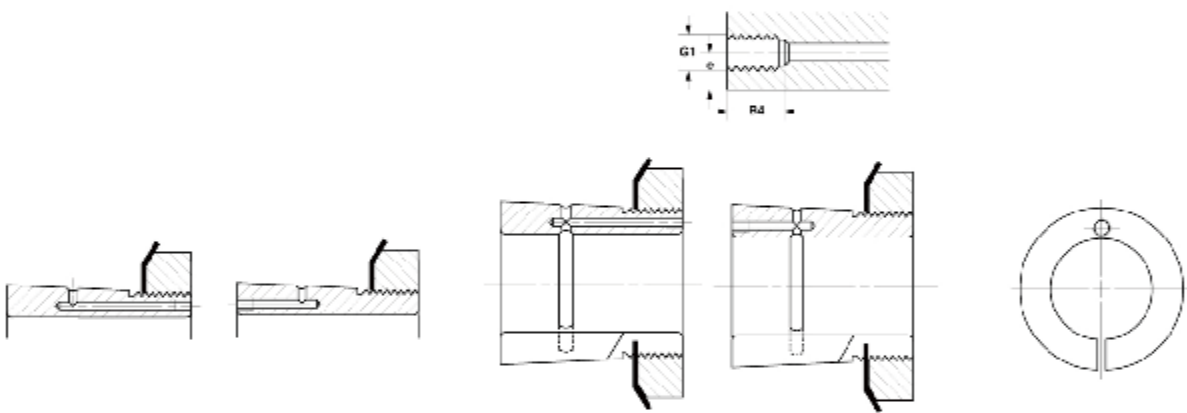
Dimensions						Mass	Designations				
d1	d	d3	B1	B2	G		Adapter sleeve complete set	lock nut	Locking device	Appropriate bearings	
mm						Kg					
55	60	80	38	13	M 60x2	0.31	H 212	KM 12	MB 12	1212 K	
		80	47	13	M 60x2	0.36	H 312	KM 12	MB 12	2212 K,1312 K,22212 K,UK212	
										21312 K	
		80	62	13	M 60x2	0.45	H 2312	KM 12	MB 12	2312 K,22312 K, UK212, UKX12, UK312	
60	65	85	40	14	M 65x2	0.36	H 213	KM 13	MB 13	1213 K	
		85	50	14	M 65x2	0.42	H 313	KM 13	MB 13	2213 K,1313 K,22213 K,21313 K,UK213	
		85	65	14	M 65x2	0.52	H 2313	KM 13	MB 13	2313 K,22313 K	
		70	92	52	M 70x2	0.67	H 314	KM 14	MB 14	22214,21314 K	
		92	68	14	M 70x2	0.88	H 2314	KM 14	MB 14	22314 K	
65	75	98	43	15	M 75x2	0.66	H 215	KM 15	MB 15	1215 K	
		98	55	15	M 75x2	0.78	H 315	KM 15	MB 15	2215 K,1315 K,22215 K,21315 K, UK215	
		98	73	15	M 75x2	1.10	H 2315	KM 15	MB 15	2315 K,22315 K, UK215, UKX15, UK315	
70	80	105	46	17	M 80x2	0.81	H 216	KM 16	MB 16	1216 K	
		105	59	17	M 80x2	0.95	H 316	KM 16	MB 16	2216 K,1316 K,22216 K,21316 K, UK216	
		105	78	17	M 80x2	1.20	H 2316	KM 16	MB 16	2316 K,22316 K, UK216, UKX16, UK316	
75	85	110	50	18	M 85x2	0.94	H 217	KM 17	MB 17	1217 K	
		110	63	18	M 85x2	1.10	H 317	KM 17	MB 17	2217 K,1317 K,22217 K,21317 K, UK217	
		110	82	18	M 85x2	1.35	H 2317	KM 17	MB 17	2317 K,22317 K, UK217, UKX17, UK317	
80	90	120	52	18	M 90x2	1.10	H 218	KM 18	MB 18	1218 K	
		120	65	18	M 90x2	1.30	H 318	KM 18	MB 18	2218 K,1318 K,22218 K,21318 K, UK218	
		120	86	18	M 90x2	1.60	H 2318	KM 18	MB 18	2318 K,23218 K,22318 K,UK218, UKX18 UK318	
85	95	125	55	19	M 95x2	1.25	H 219	KM 19	MB 19	1219 K	
		125	68	19	M 95x2	1.40	H 319	KM 19	MB 19	2219 K,1319 K,22219 K,21319 K	
		125	90	19	M 95x2	1.80	H 2319	KM 19	MB 19	2319 K,22319 K, UK319	
90	100	130	58	20	M 100x2	1.40	H 220	KM 20	MB 20	1220 K	
		130	71	20	M 100x2	1.60	H 320	KM 20	MB 20	2220 K,1320 K,22220 K,21320 K	
		130	97	20	M 100x2	2.00	H 2320	KM 20	MB 20	2320 K,23220 K,22320 K, UKX20, UK320	
		130	76	20	M 100x2	1.80	H 3120	KM 20	MB 20	23120 K	
95	105	140	60	20	M 105x2	1.60	H 221	KM 21	MB 21	1221 K	
		140	74	20	M 105x2	1.85	H 321	KM 21	MB 21	2221 K,1321 K	
100	110	145	63	21	M 110x2	1.80	H 222	KM 22	MB 22	1222 K	
		145	77	21	M 110x2	2.05	H 322	KM 22	MB 22	2222 K,1322 K,23022 K, 22222 K ,21322 K	

Adapter sleeves
d1 17 - 135 mm



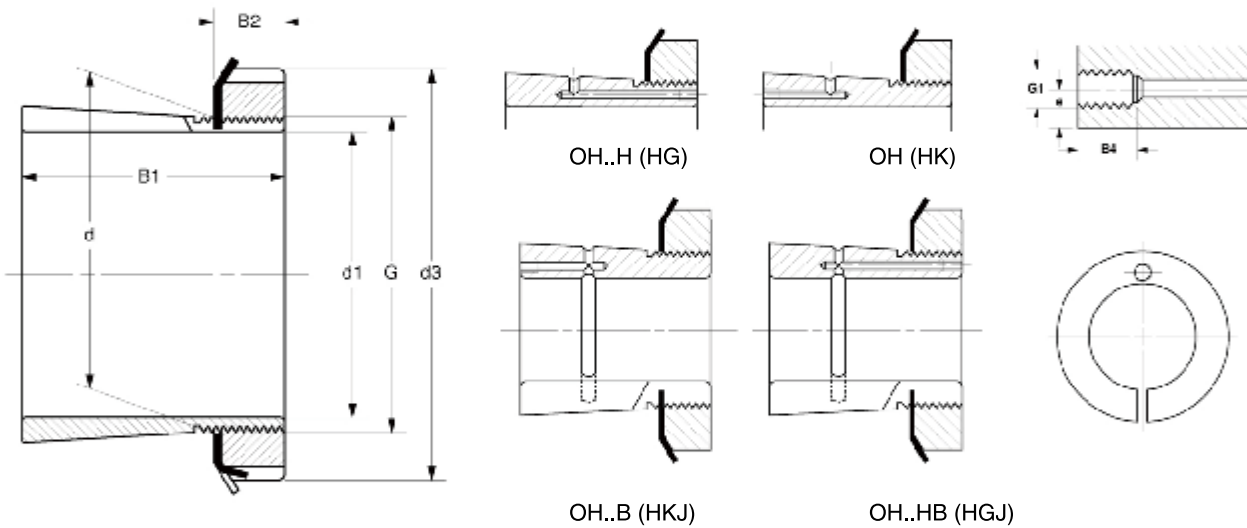
Dimensions						Mass	Designations	lock nut	Locking device	Appropriate bearings
d1	d	d3	B1	B2	G		Adapter sleeve complete set			
mm						Kg				
100	110	145	105	21	M 110×2	2.75	H 2322	KM 22	MB 22	2322 K,23222 K,22322 K, UK322
		145	81	21	M 110×2	2.10	H 3122	KM 22	MB 22	23122 K,
110	120	145	72	22	M 120×2	1.80	H 3024	KM L24	MB L24	1224 K,23024 K
		155	88	22	M 120×2	2.50	H 3124	KM 24	MB 24	23124 K,22224 K
		155	112	22	M 120×2	3.00	H 2324	KM 24	MB 24	23224 K,22324 K, UK324
115	130	155	80	23	M 130×2	2.80	H 3026	KM L26	MB L26	23026 K
		165	92	23	M 130×2	3.45	H 3126	KM 26	MB 26	23126 K,22226 K
		165	121	23	M 130×2	4.45	H 2326	KM 26	MB 26	23226 K,22326 K, UK326
125	140	165	82	24.0	M 140×2	3.05	H 3028	KM L28	MB L28	23028 K
		180	97	24.0	M 140×2	4.1	H 3128	KM 28	MB 28	23128 K
		180	131	24.0	M 140×2	5.4	H 2328	KM 28	MB 28	22228 K
135	150	180	87	26.0	M 150×2	3.75	H 3030	KM L30	MB L30	23030 K
		195	111	26.0	M 150×2	5.25	H 3130	KM 30	MB 30	23130 K,22230 K
		195	139	26.0	M 150×2	6.4	H 2330	KM 30	MB 30	23230 K,22330 K

Adapter sleeves
d1 140-500mm



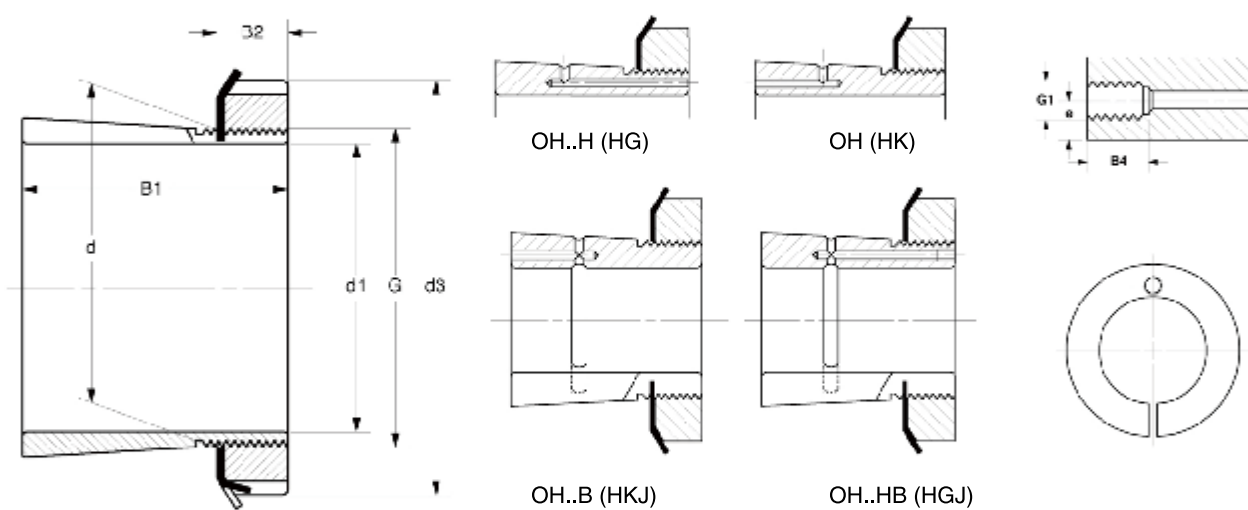
OH..H (HG)					OH (HK)					OH..HB (HGJ)					OH..B (HKJ)				
Dimensions											Mass	Designations		lock nut	Locking washer	Appropriate bearing			
d1	d	d3	B1	B2	B3	B4	e	G	G1		Sleeve complete set								
mm										in	kg								
140	160	190	93	27.5	-	-	-	M160×3	-	-	5.1	H3032	KML32	MBL32	23032K				
		190	93	27.5	-	9	4.2	M160×3	M6	-	5.1	OH3032H	KML32	MBL32	23032K				
		190	93	27.5	-	9	4.2	M160×3	M6	-	5.1	OH3032HB	KML32	MBL32	23032K				
		190	93	27.5	-	9	5	M160×3	M6	-	5.1	OH3032	KML32	MBL32	23032K				
		190	93	27.5	-	9	5	M160×3	M6	-	5.1	OH3032B	KML32	MBL32	23032K				
	210	210	119	28.0	-	-	-	M160×3	-	-	7.25	H3132	KM32	MB32	23132K				
		210	119	28.0	-	9	4.2	M160×3	M6	-	7.25	OH3132H	KM32	MB32	23132K				
		210	119	28.0	-	9	4.2	M160×3	M6	-	7.25	OH3132HB	KM32	MB32	23132K				
		210	119	28.0	-	13	6.8	M160×3	-	G 1/8	7.25	OH3132	KM32	MB32	23132K				
		210	119	28.0	-	13	6.8	M160×3	-	G 1/8	7.25	OH3132B	KM32	MB32	23132K				
	210	210	147	28.0	-	-	-	M160×3	-	-	8.8	H2332	KM32	MB32	23232K				
		210	147	28.0	-	9	4.2	M160×3	M6	-	8.8	OH2332H	KM32	MB32	23232K				
		210	147	28.0	-	9	4.2	M160×3	M6	-	8.8	OH2332HB	KM32	MB32	23232K				
		210	147	28.0	-	13	7	M160×3	-	G 1/8	8.8	OH2332	KM32	MB32	23232K				
		210	147	28.0	-	13	7	M160×3	-	G 1/8	8.8	OH2332B	KM32	MB32	23232K				
	150	170	200	101	28.5	-	-	-	M170×3	-	-	5.8	H3034	KML34	MBL34	23034K			
			200	101	28.5	-	9	4.2	M170×3	M6	-	5.8	OH3034H	KML34	MBL34	23034K			
			200	101	28.5	-	9	4.2	M170×3	M6	-	5.8	OH3034HB	KML34	MBL34	23034K			
			200	101	28.5	-	9	5	M170×3	M6	-	5.8	OH3034	KML34	MBL34	23034K			
			200	101	28.5	-	9	5	M170×3	M6	-	5.8	OH3034B	KML34	MBL34	23034K			
220		220	122	29	-	-	-	M170×3	-	-	8.1	H3134	KM34	MB34	23134K				
		220	122	29	-	9	4.2	M170×3	M6	-	8.1	OH3134H	KM34	MB34	23134K				
		220	122	29	-	9	4.2	M170×3	M6	-	8.1	OH3134HB	KM34	MB34	23134K				
		220	122	29	-	13	7	M170×3	-	G 1/8	8.1	OH3134	KM34	MB34	23134K				
		220	122	29	-	13	7	M170×3	-	G 1/8	8.1	OH3134B	KM34	MB34	23134K				
220	154	29	-	-	-	M170×3	-	-	9.9	H2334	KM34	MB34	23234K						

Adapter sleeves
d1 140-500mm



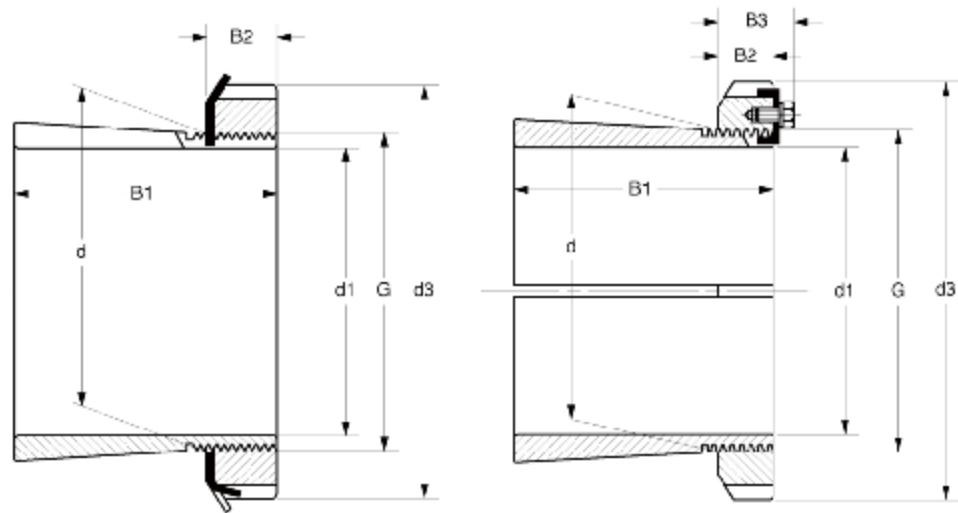
Type H															
Dimensions											Mass	Designations			
d1	d	d3	B1	B2	B3	B4	e	G	G1		Sleeve	lock nut	Locking	Appropriate	
mm									in	kg	complete set		washer	bearing	
150	170	220	154	29	-	9	4.2	M170×3	M6	-	9.9	OH2334H	KM34	MB34	23234K
															22334K
		220	154	29	-	9	4.2	M170×3	M6	-	9.9	OH2334HB	KM34	MB34	23234K
															22334K
		220	154	29	-	13	7	M170×3	-	G 1/8	9.9	OH2334	KM34	MB34	23234K
															22334K
		220	154	29	-	13	7	M170×3	-	G 1/8	9.9	OH2334B	KM34	MB34	23234K
															22334K
160	180	210	109	29.5	-	-	-	M180×3	-	-	6.7	H3036	KML36	MBL36	23036K
		210	109	29.5	-	9	4.2	M180×3	M6	-	6.7	OH3036H	KML36	MBL36	23036K
		210	109	29.5	-	9	4.2	M180×3	M6	-	6.7	OH3036HB	KML36	MBL36	23036K
		210	109	29.5	-	9	5	M180×3	M6	-	6.7	OH3036	KML36	MBL36	23036K
		210	109	29.5	-	9	5	M180×3	M6	-	6.7	OH3036B	KML36	MBL36	23036K
		230	131	30	-	-	-	M180×3	-	-	9.15	H3136	KM36	MB36	23136K
															22236K
		230	131	30	-	9	4.2	M180×3	M6	-	9.15	OH3136H	KM36	MB36	23136K
														22236K	
	230	131	30	-	9	4.2	M180×3	M6	-	9.15	OH3136HB	KM36	MB36	23136K	
														22236K	
	230	131	30	-	13	7	M180×3	-	G1/8	9.15	OH3136	KM36	MB36	23136K	
														22236K	
	230	131	30	-	13	7	M180×3	-	G 1/8	9.15	OH3136B	KM36	MB36	23136K	
														22236K	
	230	161	30	-	-	-	M180×3	-	-	11	H2336	KM36	MB36	23236K	
													22336K		
230	161	30	-	9	4.2	M180×3	M6	-	11	OH2336H	KM36	MB36	23236K		
													22336K		
230	161	30	-	9	4.2	M180×3	M6	-	11	OH2336HB	KM36	MB36	23236K		
													22336K		
230	161	30	-	13	7	M180×3	-	G1/8	11	OH2336	KM36	MB36	23236K		
													22336K		
230	161	30	-	13	7	M180×3	-	G1/8	11	OH2336B	KM36	MB36	23236K		
													22336K		
170	190	220	112	30.5	-	-	-	M190×3	-	-	7.25	H3038	KML38	MBL38	23038K
		220	112	30.5	-	9	4.2	M190×3	M6	-	7.25	OH3038H	KML38	MBL38	23038K
		220	112	30.5	-	9	4.2	M190×3	M6	-	7.25	OH3038HB	KML38	MBL38	23038K
		220	112	30.5	-	9	4.2	M190×3	M6	-	7.25	OH3038	KML38	MBL38	23038K
		220	112	30.5	-	9	4.2	M190×3	M6	-	7.25	OH3038B	KML38	MBL38	23038K
															23038K
	240	141	31	-	-	-	M190×3	-	-	10.5	H3138	KM38	MB38	23138K	
														22238K	

Adapter sleeves
d1 140-500mm



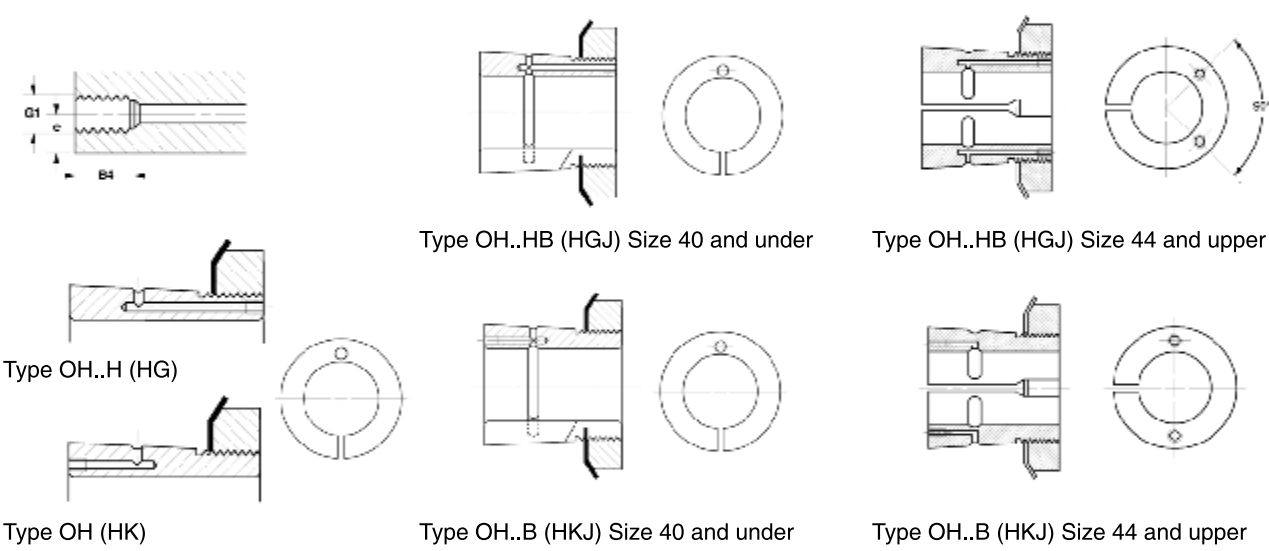
Type H															
Dimensions										Mass	Designations				
d1	d	d3	B1	B2	B3	B4	e	G	G1		Sleeve complete set	lock nut	Locking washer	Appropriate bearing	
mm										in	kg				
170	190	240	141	31	-	9	4.2	M190×3	M6	-	10.5	OH3138H	KM38	MB38	23138K
															22238K
		240	141	31	-	9	4.2	M190×3	M6	-	10.5	OH3138HB	KM38	MB38	23138K
															22238K
		240	141	31	-	13	7	M190×3	-	G 1/8	10.5	OH3138	KM38	MB38	23138K
															22238K
		240	141	31	-	13	7	M190×3	-	G 1/8	10.5	OH3138B	KM38	MB38	23138K
															22238K
		240	169	31	-	-	-	M190×3	-	-	12	H2338	KM38	MB38	23238K
															22338K
		240	169	31	-	9	4.2	M190×3	M6	-	12	OH2338H	KM38	MB38	23238K
															22338K
	240	169	31	-	9	4.2	M190×3	M6	-	12	OH2338HB	KM38	MB38	23238K	
														22338K	
	240	169	31	-	13	7	M190×3	-	G 1/8	12	OH2338	KM38	MB38	23238K	
														22338K	
	240	169	31	-	13	7	M190×3	-	G 1/8	12	OH2338B	KM38	MB38	23238K	
														23238K	
180	200	240	120	31.5	-	-	-	M200×3	-	-	8.9	H3040	KML40	MBL40	23040K
		240	120	31.5	-	9	4.2	M200×3	M6	-	8.9	OH3040H	KML40	MBL40	23040K
		240	120	31.5	-	9	4.2	M200×3	M6	-	8.9	OH3040HB	KML40	MBL40	23040K
		240	120	31.5	-	13	7	M200×3	-	G 1/8	8.9	OH3040	KML40	MBL40	23040K
		240	120	31.5	-	13	7	M200×3	-	G 1/8	8.9	OH3040B	KML40	MBL40	23040K
		250	150	32	-	-	-	M200×3	-	-	12	H3140	KM40	MB40	23140K
															22240K
		250	150	32	-	9	4.2	M200×3	M6	-	12	OH3140H	KM40	MB40	23140K
															22240K
		250	150	32	-	9	4.2	M200×3	M6	-	12	OH3140HB	KM40	MB40	23140K
															22240K
		250	150	32	-	13	7.5	M200×3	-	G 1/8	12	OH3140	KM40	MB40	23140K
															22240K
	250	150	32	-	13	7.5	M200×3	-	G 1/8	12	OH3140B	KM40	MB40	23140K	
														22240K	
	250	176	32	-	-	-	M200×3	-	-	13.5	H2340	KM40	MB40	23240K	
														22340K	
	250	176	32	-	9	4.2	M200×3	M6	-	13.5	OH2340H	KM40	MB40	23240K	
														22340K	
	250	176	32	-	9	4.2	M200×3	M6	-	13.5	OH2340HB	KM40	MB40	23240K	
														22340K	
	250	176	32	-	13	8	M200×3	-	G 1/8	13.5	OH2340	KM40	MB40	23240K	
														22340K	

Adapter sleeves
d1 140-500mm



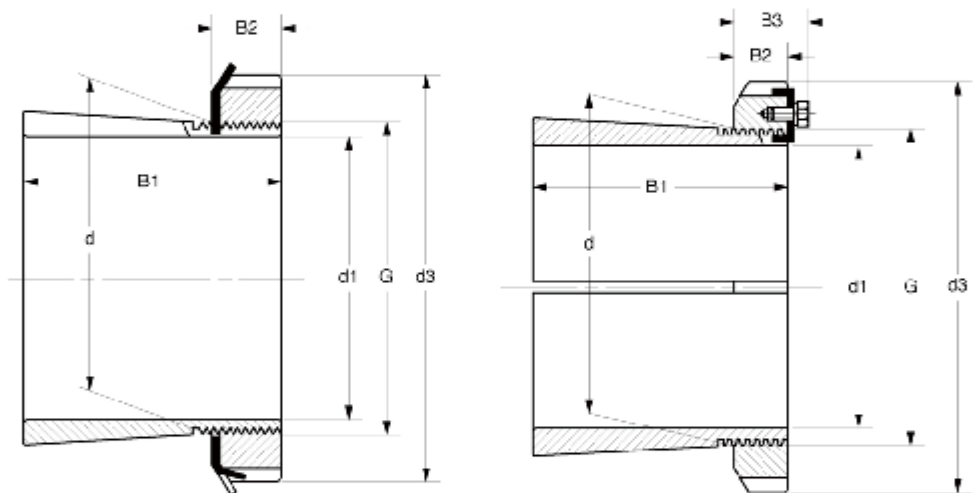
Type H											Type H				
Dimensions											Mass	Designations			
d1	d	d3	B1	B2	B3	B4	e	G	G1			Sleeve complete set	lock nut	Locking washer/clip	Appropriate bearing
mm											in	kg			
180	200	250	176	32	-	13	8	M200x3	-	G 1/8	13.5	OH2340B	KM40	MB40	23240K 22340K
200	220	260	96	30	41	9	4.2	Tr220x4	M6	-	7.95	OH3944H	HM3044	MS3044	23944K
		260	96	30	41	9	4.2	Tr220x4	M6	-	7.95	OH3944HB	HM3044	MS3044	23944K
		260	96	30	41	9	5	Tr220x4	M6	-	7.95	OH3944	HM3044	MS3044	23944K
		260	96	30	41	9	5	Tr220x4	M6	-	7.95	OH3944B	HM3044	MS3044	23944K
		260	96	30	41	-	-	Tr220x4	-	-	7.95	H3944	HM3044	MS3044	23944K
		260	126	30	41	9	4.2	Tr220x4	M6	-	9.9	OH3044H	HM3044	MS3044	23044K
	260	260	126	30	41	9	4.2	Tr220x4	M6	-	9.9	OH3044HB	HM3044	MS3044	23044K
		260	126	30	41	13	7	Tr220x4	-	G 1/8	9.9	OH3044	HM3044	MS3044	23044K
		260	126	30	41	13	7	Tr220x4	-	G 1/8	9.9	OH3044B	HM3044	MS3044	23044K
		260	126	30	41	-	-	Tr220x4	-	-	9.9	H3044	HM3044	MS3044	23044K
		280	158	32	43	9	4.2	Tr220x4	M6	-	15	OH3144H	HM3144	MS3144	23144K 22244K
		280	158	32	43	9	4.2	Tr220x4	M6	-	15	OH3144HB	HM3144	MS3144	23144K 22244K
	280	280	158	32	43	13	8	Tr220x4	-	G 1/8	15	OH3144	HM3144	MS3144	23144K 22244K
		280	158	32	43	13	8	Tr220x4	-	G 1/8	15	OH3144B	HM3144	MS3144	23144K 22244K
		280	158	32	43	-	-	Tr220x4	-	-	15	H3144	HM3144	MS3144	23144K 22244K
		280	183	32	43	9	4.2	Tr220x4	M6	-	17	OH2344H	HM3144	MS3144	23244K 22344K
		280	183	32	43	9	4.2	Tr220x4	M6	-	17	OH2344HB	HM3144	MS3144	23244K 22344K
		280	183	32	43	13	8.5	Tr220x4	-	G 1/8	17	OH2344	HM3144	MS3144	23244K 22344K
	280	280	183	32	43	13	8.5	Tr220x4	-	G 1/8	17	OH2344B	HM3144	MS3144	23244K 22344K
		280	183	32	43	-	-	Tr220x4	-	-	17	H2344	HM3144	MS3144	23244K 22344K
		290	101	34	46	9	4.2	Tr240x4	M6	-	11	OH3948H	HM3048	MS3052-48	23948K
		290	101	34	46	9	4.2	Tr240x4	M6	-	11	OH3948HB	HM3048	MS3052-48	23948K
		290	101	34	46	13	6.5	Tr240x4	-	G 1/8	11	OH3948	HM3048	MS3052-48	23948K
		290	101	34	46	13	6.5	Tr240x4	-	G 1/8	11	OH3948B	HM3048	MS3052-48	23948K
		290	101	34	46	-	-	Tr240x4	-	-	11	H3948	HM3048	MS3052-48	23948K
220	240	290	133	34	46	9	4.2	Tr240x4	M6	-	12	OH3048H	HM3048	MS3052-48	23048K
		290	133	34	46	9	4.2	Tr240x4	M6	-	12	OH3048HB	HM3048	MS3052-48	23048K
		290	133	34	46	13	7	Tr240x4	-	G 1/8	12	OH3048	HM3048	MS3052-48	23048K
		290	133	34	46	13	7	Tr240x4	-	G 1/8	12	OH3048B	HM3048	MS3052-48	23048K
		290	133	34	46	-	-	Tr240x4	-	-	12	H3048	HM3048	MS3052-48	23048K
		290	133	34	46	9	4.2	Tr240x4	M6	-	12	OH3048H	HM3048	MS3052-48	23048K
	290	290	133	34	46	9	4.2	Tr240x4	M6	-	12	OH3048HB	HM3048	MS3052-48	23048K
		290	133	34	46	13	7	Tr240x4	-	G 1/8	12	OH3048	HM3048	MS3052-48	23048K
		290	133	34	46	13	7	Tr240x4	-	G 1/8	12	OH3048B	HM3048	MS3052-48	23048K

Adapter sleeves
d1 140-500mm



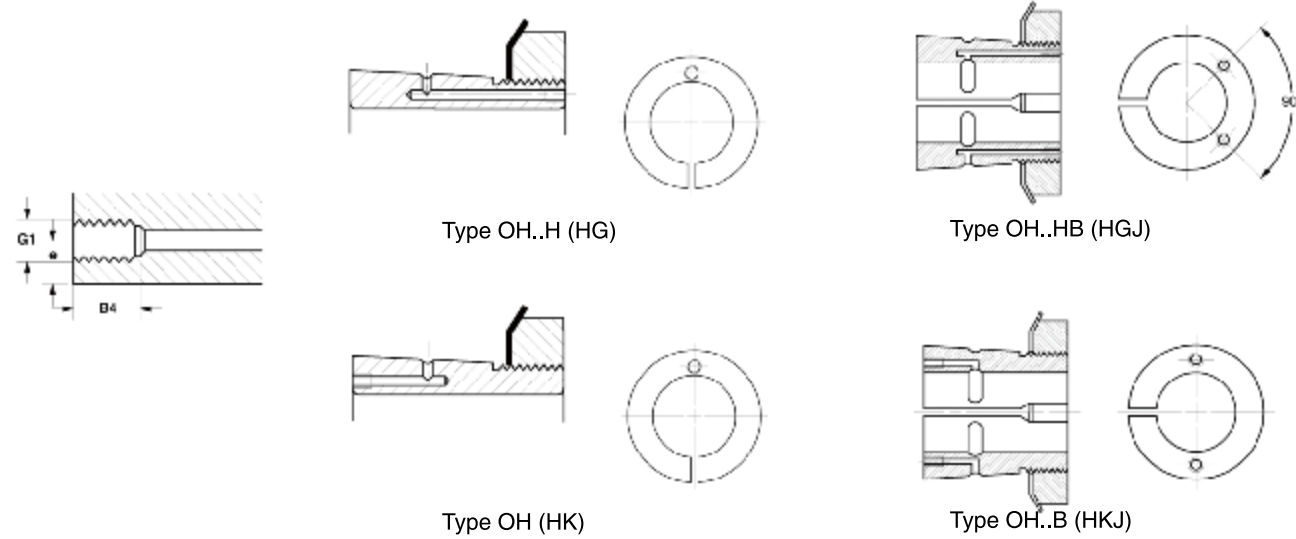
Type OH (HK)											Type OH..B (HKJ) Size 40 and under					Type OH..B (HKJ) Size 44 and upper				
Dimensions											Mass	Designations				Mass	Designations			
d1	d	d3	B1	B2	B3	B4	e	G	G1			Sleeve complete set	lock nut	Locking washer/clip	Appropriate bearing		Sleeve complete set	lock nut	Locking washer/clip	Appropriate bearing
mm											in	kg								
220	240	290	133	34	46	13	7	Tr240x4	-	G 1/8	12	OH3048B	HM3048	MS3052-48	23048K		OH3048B	HM3048	MS3052-48	23048K
		290	133	34	46	-	-	Tr240x4	-	-	12	H3048	HM3048	MS3052-48	23048K					
		300	169	34	46	9	4.2	Tr240x4	M6	-	16	OH3148H	HM3148	MS3148	23148K 22248K		OH3148H	HM3148	MS3148	23148K 22248K
		300	169	34	46	9	4.2	Tr240x4	M6	-	16	OH3148HB	HM3148	MS3148	23148K 22248K		OH3148HB	HM3148	MS3148	23148K 22248K
		300	169	34	46	13	8	Tr240x4	-	G 1/8	16	OH3148	HM3148	MS3148	23148K 22248K		OH3148	HM3148	MS3148	23148K 22248K
		300	169	34	46	13	8	Tr240x4	-	G 1/8	16	OH3148B	HM3148	MS3148	23148K 22248K		OH3148B	HM3148	MS3148	23148K 22248K
		300	169	34	46	-	-	Tr240x4	-	-	16	H3148	HM3148	MS3148	23148K 22248K		H3148	HM3148	MS3148	23148K 22248K
		300	196	34	46	9	4.2	Tr240x4	M6	-	19	OH2348H	HM3148	MS3148	23248K 22348K		OH2348H	HM3148	MS3148	23248K 22348K
		300	196	34	46	9	4.2	Tr240x4	M6	-	19	OH2348HB	HM3148	MS3148	23248K 22348K		OH2348HB	HM3148	MS3148	23248K 22348K
		300	196	34	46	13	9.5	Tr240x4	-	G 1/8	19	OH2348	HM3148	MS3148	23248K 22348K		OH2348	HM3148	MS3148	23248K 22348K
		300	196	34	46	13	9.5	Tr240x4	-	G 1/8	19	OH2348B	HM3148	MS3148	23248K 22348K		OH2348B	HM3148	MS3148	23248K 22348K
		300	196	34	46	-	-	Tr240x4	-	-	19	H2348	HM3148	MS3148	23248K 22348K		H2348	HM3148	MS3148	23248K 22348K
240	260	310	116	34	46	9	4.2	Tr260x4	M6	-	11.7	OH3952H	HM3052	MS3052-48	23952K		OH3952H	HM3052	MS3052-48	23952K
		310	116	34	46	9	4.2	Tr260x4	M6	-	11.7	OH3952HB	HM3052	MS3052-48	23952K		OH3952HB	HM3052	MS3052-48	23952K
		310	116	34	46	13	7	Tr260x4	-	G 1/8	11.7	OH3952	HM3052	MS3052-48	23952K		OH3952	HM3052	MS3052-48	23952K
		310	116	34	46	13	7	Tr260x4	-	G 1/8	11.7	OH3952B	HM3052	MS3052-48	23952K		OH3952B	HM3052	MS3052-48	23952K
		310	116	34	46	-	-	Tr260x4	-	-	11.7	H3952	HM3052	MS3052-48	23952K		H3952	HM3052	MS3052-48	23952K
		310	145	34	46	9	4.2	Tr260x4	M6	-	13.5	OH3052H	HM3052	MS3052-48	23052K		OH3052H	HM3052	MS3052-48	23052K
	310	310	145	34	46	9	4.2	Tr260x4	M6	-	13.5	OH3052HB	HM3052	MS3052-48	23052K		OH3052HB	HM3052	MS3052-48	23052K
		310	145	34	46	13	7.5	Tr260x4	-	G 1/8	13.5	OH3052	HM3052	MS3052-48	23052K		OH3052	HM3052	MS3052-48	23052K
		310	145	34	46	13	7.5	Tr260x4	-	G 1/8	13.5	OH3052B	HM3052	MS3052-48	23052K		OH3052B	HM3052	MS3052-48	23052K
		310	145	34	46	-	-	Tr260x4	-	-	13.5	H3052	HM3052	MS3052-48	23052K		H3052	HM3052	MS3052-48	23052K
		330	187	36	48	9	4.2	Tr260x4	M6	-	21	OH3152H	HM3152	MS3152	23152K 22252K		OH3152H	HM3152	MS3152	23152K 22252K
		330	187	36	48	9	4.2	Tr260x4	M6	-	21	OH3152HB	HM3152	MS3152	23152K 22252K		OH3152HB	HM3152	MS3152	23152K 22252K
	330	330	187	36	48	13	8	Tr260x4	-	G 1/8	21	OH3152	HM3152	MS3152	23152K 22252K		OH3152	HM3152	MS3152	23152K 22252K
		330	187	36	48	13	8	Tr260x4	-	G 1/8	21	OH3152B	HM3152	MS3152	23152K 22252K		OH3152B	HM3152	MS3152	23152K 22252K
		330	187	36	48	13	8	Tr260x4	-	G 1/8	21	OH3152	HM3152	MS3152	23152K 22252K		OH3152	HM3152	MS3152	23152K 22252K
		330	187	36	48	13	8	Tr260x4	-	G 1/8	21	OH3152B	HM3152	MS3152	23152K 22252K		OH3152B	HM3152	MS3152	23152K 22252K
		330	187	36	48	13	8	Tr260x4	-	G 1/8	21	OH3152	HM3152	MS3152	23152K 22252K		OH3152	HM3152	MS3152	

Adapter sleeves
d1 140-500mm



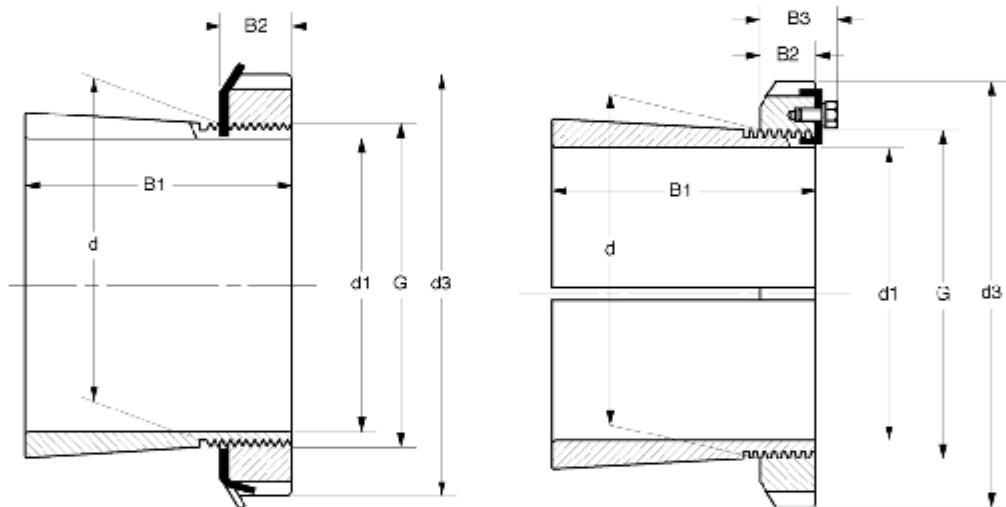
Type H															
Dimensions											Mass	Designations			
d1	d	d3	B1	B2	B3	B4	e	G	G1		Sleeve complete set	lock nut	Locking washer/clip	Appropriate bearing	
mm									in	kg					
240	260	330	187	36	48	13	8	Tr260x4	-	G 1/8	21	OH3152B	HM3152	MS3152	22252K
		330	187	36	48	-	-	Tr260x4	-	-	21	H3152	HM3152	MS3152	23152K 22252K
		330	208	36	48	9	4.2	Tr260x4	M6	-	23	OH2352H	HM3152	MS3152	23252K 22352K
		330	208	36	48	9	4.2	Tr260x4	M6	-	23	OH2352HB	HM3152	MS3152	23252K 22352K
	330	208	36	48	13	9	Tr260x4	-	G 1/8	23	OH2352	HM3152	MS3152	23252K 22352K	
	330	208	36	48	13	9	Tr260x4	-	G 1/8	23	OH2352B	HM3152	MS3152	23252K 22352K	
	330	208	36	48	-	-	Tr260x4	-	-	23	H2352	HM3152	MS3152	23252K 22352K	
260	280	330	121	38	50	9	4.2	Tr280x4	M6	-	15.3	OH3956H	HM3056	MS3056	23956K
		330	121	38	50	9	4.2	Tr280x4	M6	-	15.3	OH3956HB	HM3056	MS3056	23956K
		330	121	38	50	13	7	Tr280x4	-	G 1/8	15.3	OH3956	HM3056	MS3056	23956K
		330	121	38	50	13	7	Tr280x4	-	G 1/8	15.3	OH3956B	HM3056	MS3056	23956K
		330	121	38	50	-	-	Tr280x4	-	-	15.3	H3956	HM3056	MS3056	23956K
		330	152	38	50	9	4.2	Tr280x4	M6	-	16	OH3056H	HM3056	MS3056	23056K
		330	152	38	50	9	4.2	Tr280x4	M6	-	16	OH3056HB	HM3056	MS3056	23056K
		330	152	38	50	13	7.5	Tr280x4	-	G 1/8	16	OH3056	HM3056	MS3056	23056K
		330	152	38	50	13	7.5	Tr280x4	-	G 1/8	16	OH3056B	HM3056	MS3056	23056K
		330	152	38	50	-	-	Tr280x4	-	-	16	H3056	HM3056	MS3056	23056K
	350	192	38	50	9	4.2	Tr280x4	M6	-	23	OH3156H	HM3156	MS3156	23156K 22256K	
		192	38	50	9	4.2	Tr280x4	M6	-	23	OH3156HB	HM3156	MS3156	23156K 22256K	
		192	38	50	13	8	Tr280x4	-	G 1/8	23	OH3156	HM3156	MS3156	23156K 22256K	
		192	38	50	13	8	Tr280x4	-	G 1/8	23	OH3156B	HM3156	MS3156	23156K 22256K	
		192	38	50	-	-	Tr280x4	-	-	23	H3156	HM3156	MS3156	23156K 22256K	
	350	221	38	50	9	4.2	Tr280x4	M6	-	27	OH2356H	HM3156	MS3156	23256K 22356K	
		221	38	50	9	4.2	Tr280x4	M6	-	27	OH2356HB	HM3156	MS3156	23256K 22356K	
221		38	50	13	9.5	Tr280x4	-	G 1/8	27	OH2356	HM3156	MS3156	23256K 22356K		

Adapter sleeves
d1 140-500mm



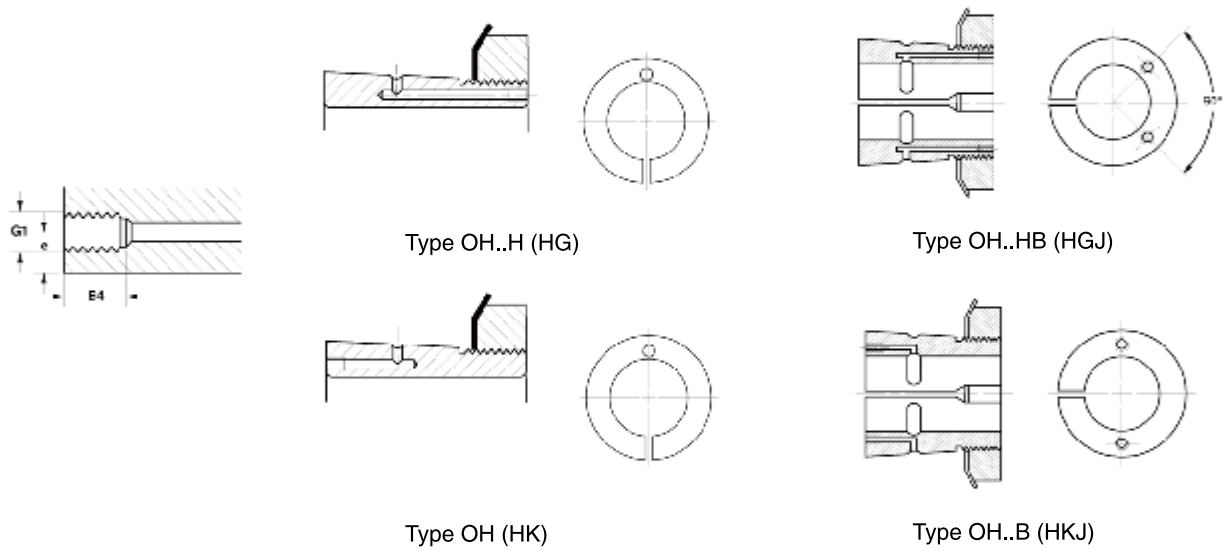
Dimensions											Mass	Designations			
d1	d	d3	B1	B2	B3	B4	e	G	G1			Sleeve complete set	lock nut	Locking washer/clip	Appropriate bearing
mm										in	kg				
260	280	350	221	38	50	13	9.5	Tr280×4	-	G 1/8	27	OH2356B	HM3156	MS3156	23256K 22356K
		350	221	38	50	-	-	Tr280×4	-	-	27	H2356	HM3156	MS3156	23256K 22356K
280	300	360	140	42	54	9	4.2	Tr300×4	M6	-	20	OH3960H	HM3060	MS3060	23960K
		360	140	42	54	9	4.2	Tr300×4	M6	-	20	OH3960HB	HM3060	MS3060	23960K
		360	140	42	54	13	7	Tr300×4	-	G 1/8	20	OH3960	HM3060	MS3060	23960K
		360	140	42	54	13	7	Tr300×4	-	G 1/8	20	OH3960B	HM3060	MS3060	23960K
		360	140	42	54	-	-	Tr300×4	-	-	20	H3960	HM3060	MS3060	23960K
	360	168	42	54	9	4.2	Tr300×4	M6	-	20.5	OH3060H	HM3060	MS3060	23060K	
		168	42	54	9	4.2	Tr300×4	M6	-	20.5	OH3060HB	HM3060	MS3060	23060K	
		168	42	54	13	7.5	Tr300×4	-	G 1/8	20.5	OH3060	HM3060	MS3060	23060K	
		168	42	54	13	7.5	Tr300×4	-	G 1/8	20.5	OH3060B	HM3060	MS3060	23060K	
		168	42	54	-	-	Tr300×4	-	-	20.5	H3060	HM3060	MS3060	23060K	
	380	208	40	53	9	4.2	Tr300×4	M6	-	29	OH3160H	HM3160	MS3160	23160K 22260K	
		208	40	53	9	4.2	Tr300×4	M6	-	29	OH3160HB	HM3160	MS3160	23160K 22260K	
		208	40	53	13	9	Tr300×4	-	G 1/8	29	OH3160	HM3160	MS3160	23160K 22260K	
		208	40	53	13	9	Tr300×4	-	G 1/8	29	OH3160B	HM3160	MS3160	23160K 22260K	
		208	40	53	-	-	Tr300×4	-	-	29	H3160	HM3160	MS3160	23160K 22260K	
	380	240	40	53	9	4.2	Tr300×4	M6	-	32	OH3260H	HM3160	MS3160	23260K	
		240	40	53	9	4.2	Tr300×4	M6	-	32	OH3260HB	HM3160	MS3160	23260K	
		240	40	53	15	9	Tr300×4	-	G 1/4	32	OH3260	HM3160	MS3160	23260K	
		240	40	53	15	9	Tr300×4	-	G 1/4	32	OH3260B	HM3160	MS3160	23260K	
		240	40	53	-	-	Tr300×4	-	-	32	H3260	HM3160	MS3160	23260K	
300	320	380	140	42	55	9	4	Tr320×5	M6	-	21.5	OH3964H	HM3064	MS3068-64	23964 K
		380	140	42	55	9	4	Tr320×5	M6	-	21.5	OH3964HB	HM3064	MS3068-64	23964 K
		380	140	42	55	13	7	Tr320×5	-	G 1/8	21.5	OH3964	HM3064	MS3068-64	23964 K
		380	140	42	55	13	7	Tr320×5	-	G 1/8	21.5	OH3964B	HM3064	MS3068-64	23964 K
		380	140	42	55	-	-	Tr320×5	-	-	21.5	H3964	HM3064	MS3068-64	23964 K
	380	171	42	55	9	4	Tr320×5	M6	-	22.0	OH3064H	HM3064	MS3068-64	23064 K	
		171	42	55	9	4	Tr320×5	M6	-	22.0	OH3064HB	HM3064	MS3068-64	23064 K	
		171	42	55	13	7.5	Tr320×5	-	G 1/8	22.0	OH3064	HM3064	MS3068-64	23064 K	
		171	42	55	13	7.5	Tr320×5	-	G 1/8	22.0	OH3064B	HM3064	MS3068-64	23064 K	

Adapter sleeves
d1 140-500mm



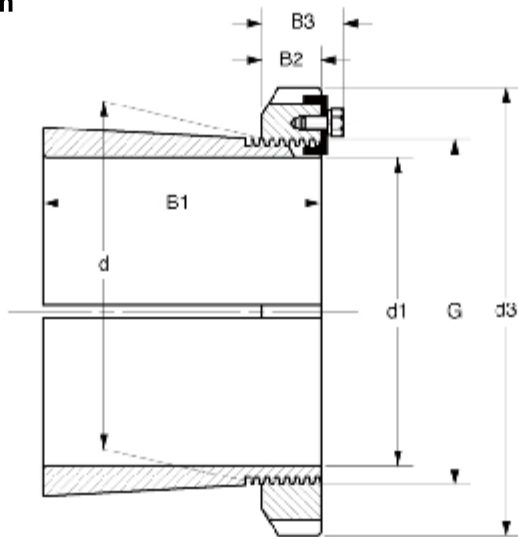
Type H											Type H						
Dimensions											Mass	Designations					
d1	d	d3	B1	B2	B3	B4	e	G	G1			Sleeve complete set	lock nut	Locking clip	Appropriate bearing		
mm										in	kg						
300	320	380	171	42	55	-	-	Tr320x5	-	-		22.0	H3064	HM3064	MS3068-64	23064 K	
			400	226	42	56	9	4.0	Tr320x5	M6	-	32.0	OH3164H	HM3164	MS3164	23164 K	
																22264 K	
			400	226	42	56	9	4.0	Tr320x5	M6	-	32.0	OH3164HB	HM3164	MS3164	23164 K	
																22264 K	
			400	226	42	56	13	9.5	Tr320x5	-	G 1/8	32.0	OH3164	HM3164	MS3164	23164 K	
																22264 K	
			400	226	42	56	13	9.5	Tr320x5	-	G 1/8	32.0	OH3164B	HM3164	MS3164	23164 K	
																22264 K	
	400	226	42	56	-	-	Tr320x5	-	-	32.0	H3164	HM3164	MS3164	23164 K			
															22264 K		
	400	258	42	56	9	4.0	Tr320x5	M6	-	35.0	OH3264H	HM3164	MS3164	23264 K			
	400	258	42	56	9	4.0	Tr320x5	M6	-	35.0	OH3264HB	HM3164	MS3164	23264 K			
	400	258	42	56	15	9.0	Tr320x5	-	G 1/4	35.0	OH3264	HM3164	MS3164	23264 K			
	400	258	42	56	15	9.0	Tr320x5	-	G 1/4	35.0	OH3264B	HM3164	MS3164	23264 K			
	400	258	42	56	-	-	Tr320x5	-	-	35.0	H3264	HM3164	MS3164	23264 K			
	320	340	400	144	45	58	9	4.0	Tr340x5	M6	-	24.5	OH3968H	HM3068	MS3068-64	23968 K	
				400	144	45	58	9	4.0	Tr340x5	M6	-	24.5	OH3968HB	HM3068	MS3068-64	23968 K
				400	144	45	58	13	7.0	Tr340x5	-	G 1/8	24.5	OH3968	HM3068	MS3068-64	23968 K
400				144	45	58	13	7.0	Tr340x5	-	G 1/8	24.5	OH3968B	HM3068	MS3068-64	23968 K	
400				144	45	58	-	-	Tr340x5	-	-	24.5	H3968	HM3068	MS3068-64	23968 K	
400				187	45	58	9	4.0	Tr340x5	M6	-	27.0	OH3068H	HM3068	MS3068-64	23068 K	
400				187	45	58	9	4.0	Tr340x5	M6	-	27.0	OH3068HB	HM3068	MS3068-64	23068 K	
400				187	45	58	13	8.0	Tr340x5	-	G 1/8	27.0	OH3068	HM3068	MS3068-64	23068 K	
400				187	45	58	13	8.0	Tr340x5	-	G 1/8	27.0	OH3068B	HM3068	MS3068-64	23068 K	
400				187	45	58	-	-	Tr340x5	-	-	27.0	H3068	HM3068	MS3068-64	23068 K	
440				254	55	72	9	4.0	Tr340x5	M6	-	50.0	OH3168H	HM3168	MS3172-68	23168 K	
440				254	55	72	9	4.0	Tr340x5	M6	-	50.0	OH3168HB	HM3168	MS3172-68	23168 K	
440				254	55	72	15	9.5	Tr340x5	-	G 1/4	50.0	OH3168	HM3168	MS3172-68	23168 K	
440		254	55	72	15	9.5	Tr340x5	-	G 1/4	50.0	OH3168B	HM3168	MS3172-68	23168 K			
440		254	55	72	-	-	Tr340x5	-	-	50.0	H3168	HM3168	MS3172-68	23168 K			
440		288	55	72	9	4.0	Tr340x5	M6	-	51.5	OH3268H	HM3168	MS3172-68	23268 K			
440		288	55	72	9	4.0	Tr340x5	M6	-	51.5	OH3268HB	HM3168	MS3172-68	23268 K			
440		288	55	72	15	10.0	Tr340x5	-	G 1/4	51.5	OH3268	HM3168	MS3172-68	23268 K			
440		288	55	72	15	10.0	Tr340x5	-	G 1/4	51.5	OH3268B	HM3168	MS3172-68	23268 K			
440		288	55	72	-	-	Tr340x5	-	-	51.5	H3268	HM3168	MS3172-68	23268 K			
340		360	420	144	45	58	9	4.0	Tr360x5	M6	-	25.2	OH3972H	HM3072	MS3072	23972 K	
				420	144	45	58	9	4.0	Tr360x5	M6	-	25.2	OH3972HB	HM3072	MS3072	23972 K

Adapter sleeves
d1 140-500mm



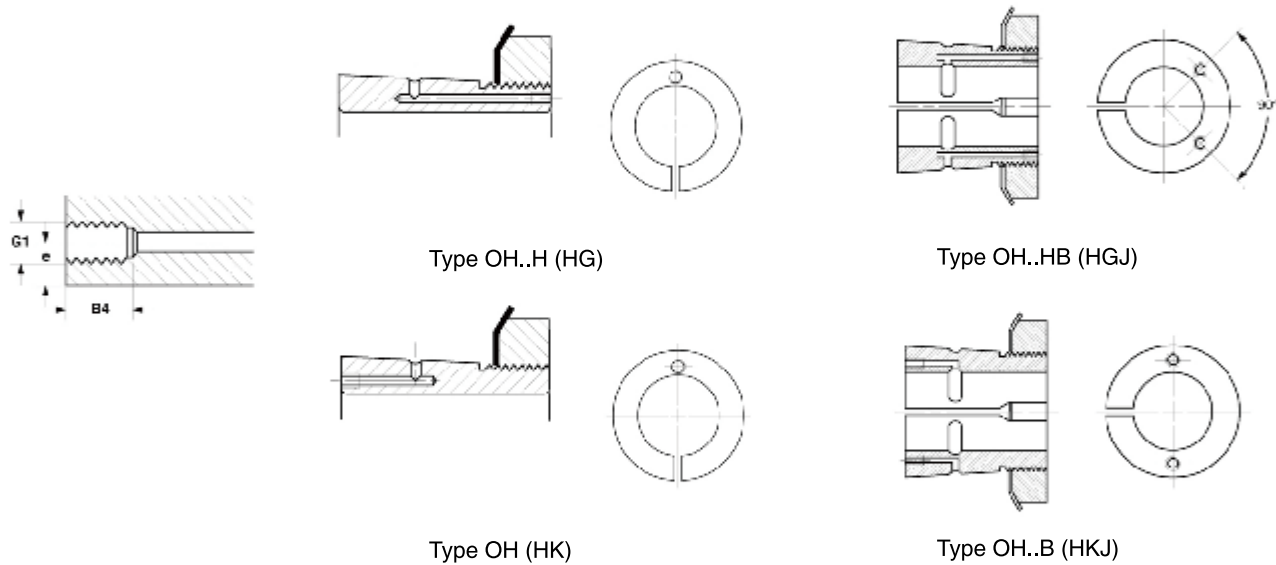
Dimensions											Mass	Designations				
d1	d	d3	B1	B2	B3	B4	e	G	G1		kg	Sleeve complete set	lock nut	Locking clip	Appropriate bearing	
mm										in						
340	360	420	144	45	58	13	7.0	Tr360x5	-	G 1/8	25.2	OH3972	HM3072	MS3072	23972 K	
		420	144	45	58	13	7.0	Tr360x5	-	G 1/8	25.2	OH3972B	HM3072	MS3072	23972 K	
		420	144	45	58	-	-	Tr360x5	-	-	25.2	H3972	HM3072	MS3072	23972 K	
	420	188	45	58	9	4.0	Tr360x5	M6	-	29.0	OH3072H	HM3072	MS3072	23072 K		
		188	45	58	9	4.0	Tr360x5	M6	-	29.0	OH3072HB	HM3072	MS3072	23072 K		
		188	45	58	13	8.0	Tr360x5	-	G 1/8	29.0	OH3072	HM3072	MS3072	23072 K		
		188	45	58	13	8.0	Tr360x5	-	G 1/8	29.0	OH3072B	HM3072	MS3072	23072 K		
		188	45	58	-	-	Tr360x5	-	-	29.0	H3072	HM3072	MS3072	23072 K		
		460	259	58	75	9	4.0	Tr360x5	M6	-	56.0	OH3172H	HM3172	MS3172-68	23172 K	
			259	58	75	9	4.0	Tr360x5	M6	-	56.0	OH3172HB	HM3172	MS3172-68	23172 K	
	259		58	75	15	9.5	Tr360x5	-	G 1/4	56.0	OH3172	HM3172	MS3172-68	23172 K		
	259		58	75	15	9.5	Tr360x5	-	G 1/4	56.0	OH3172B	HM3172	MS3172-68	23172 K		
	460	259	58	75	-	-	Tr360x5	-	-	56.0	H3172	HM3172	MS3172-68	23172 K		
		299	58	75	9	4.0	Tr360x5	M6	-	60.5	OH3272H	HM3172	MS3172-68	23272 K		
			58	75	9	4.0	Tr360x5	M6	-	60.5	OH3272HB	HM3172	MS3172-68	23272 K		
			58	75	15	10.0	Tr360x5	-	G 1/4	60.5	OH3272	HM3172	MS3172-68	23272 K		
		58	75	15	10.0	Tr360x5	-	G 1/4	60.5	OH3272B	HM3172	MS3172-68	23272 K			
		58	75	-	-	Tr360x5	-	-	60.5	H3272	HM3172	MS3172-68	23272 K			
		360	380	450	164	48	62	9	4.0	Tr380x5	M6	-	31.5	OH3976H	HM3076	MS3080-76
	450			164	48	62	9	4.0	Tr380x5	M6	-	31.5	OH3976HB	HM3076	MS3080-76	23976 K
450	164			48	62	13	7.5	Tr380x5	-	G 1/8	31.5	OH3976	HM3076	MS3080-76	23976 K	
450	164			48	62	13	7.5	Tr380x5	-	G 1/8	31.5	OH3976B	HM3076	MS3080-76	23976 K	
450	164			48	62	-	-	Tr380x5	-	-	31.5	H3976	HM3076	MS3080-76	23976 K	
450	193		48	62	9	4.0	Tr380x5	M6	-	35.5	OH3076H	HM3076	MS3080-76	23076 K		
	193		48	62	9	4.0	Tr380x5	M6	-	35.5	OH3076HB	HM3076	MS3080-76	23076 K		
	193		48	62	13	8.0	Tr380x5	-	G 1/8	35.5	OH3076	HM3076	MS3080-76	23076 K		
	193		48	62	13	8.0	Tr380x5	-	G 1/8	35.5	OH3076B	HM3076	MS3080-76	23076 K		
	193		48	62	-	-	Tr380x5	-	-	35.5	H3076	HM3076	MS3080-76	23076 K		
490	264		60	77	9	4.0	Tr380x5	M6	-	61.5	OH3176H	HM3176	MS3176	23176 K		
	264		60	77	9	4.0	Tr380x5	M6	-	61.5	OH3176HB	HM3176	MS3176	23176 K		
	264		60	77	15	9.5	Tr380x5	-	G 1/4	61.5	OH3176	HM3176	MS3176	23176 K		
	264		60	77	15	9.5	Tr380x5	-	G 1/4	61.5	OH3176B	HM3176	MS3176	23176 K		
	264		60	77	-	-	Tr380x5	-	-	61.5	H3176	HM3176	MS3176	23176 K		
490	310		60	77	9	4.0	Tr380x5	M6	-	69.5	OH3276H	HM3176	MS3176	23276 K		
	310		60	77	9	4.0	Tr380x5	M6	-	69.5	OH3276HB	HM3176	MS3176	23276 K		
	310		60	77	15	10.5	Tr380x5	-	G 1/4	69.5	OH3276	HM3176	MS3176	23276 K		

Adapter sleeves
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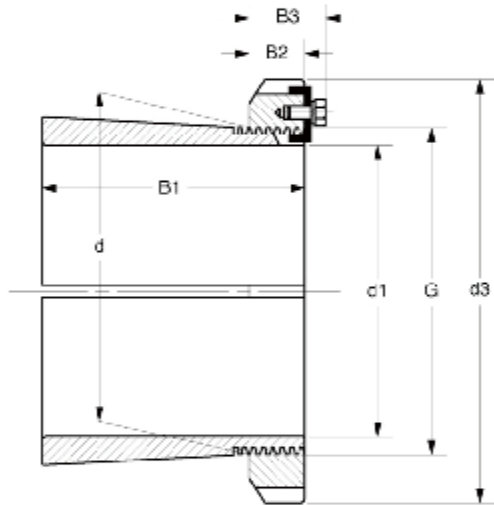
Dimensions											Mass	Designations			
d1	d	d3	B1	B2	B3	B4	e	G	G1			Sleeve complete set	lock nut	Locking clip	Appropriate bearing
mm											kg				
360	380	490	310	60	77	15	10.5	Tr380x5	-	G 1/4	69.5	OH3276B	HM3176	MS3176	23276 K
		490	310	60	77	-	-	Tr380x5	-	-	69.5	H3276	HM3176	MS3176	23276 K
380	400	470	168	52	66	9	4.0	Tr400x5	M6	-	35.0	OH3980H	HM3080	MS3080-76	23980 K
		470	168	52	66	9	4.0	Tr400x5	M6	-	35.0	OH3980HB	HM3080	MS3080-76	23980 K
		470	168	52	66	13	7.5	Tr400x5	-	G 1/8	35.0	OH3980	HM3080	MS3080-76	23980 K
		470	168	52	66	13	7.5	Tr400x5	-	G 1/8	35.0	OH3980B	HM3080	MS3080-76	23980 K
		470	168	52	66	-	-	Tr400x5	-	-	35.0	H3980	HM3080	MS3080-76	23980 K
		470	210	52	66	9	4.0	Tr400x5	M6	-	40.0	OH3080H	HM3080	MS3080-76	23080 K
		470	210	52	66	9	4.0	Tr400x5	M6	-	40.0	OH3080HB	HM3080	MS3080-76	23080 K
		470	210	52	66	13	8.5	Tr400x5	-	G 1/8	40.0	OH3080	HM3080	MS3080-76	23080 K
		470	210	52	66	13	8.5	Tr400x5	-	G 1/8	40.0	OH3080B	HM3080	MS3080-76	23080 K
		470	210	52	66	-	-	Tr400x5	-	-	40.0	H3080	HM3080	MS3080-76	23080 K
	420	520	272	62	82	9	4.0	Tr400x5	M6	-	73.0	OH3180H	HM3180	MS3184-80	23180 K
		520	272	62	82	9	4.0	Tr400x5	M6	-	73.0	OH3180HB	HM3180	MS3184-80	23180 K
		520	272	62	82	15	9.5	Tr400x5	-	G 1/4	73.0	OH3180	HM3180	MS3184-80	23180 K
		520	272	62	82	15	9.5	Tr400x5	-	G 1/4	73.0	OH3180B	HM3180	MS3184-80	23180 K
		520	272	62	82	-	-	Tr400x5	-	-	73.0	H3180	HM3180	MS3184-80	23180 K
		520	328	62	82	9	4.0	Tr400x5	M6	-	87.0	OH3280H	HM3180	MS3184-80	23280 K
		520	328	62	82	9	4.0	Tr400x5	M6	-	87.0	OH3280HB	HM3180	MS3184-80	23280 K
		520	328	62	82	15	11.0	Tr400x5	-	G 1/4	87.0	OH3280	HM3180	MS3184-80	23280 K
		520	328	62	82	15	11.0	Tr400x5	-	G 1/4	87.0	OH3280B	HM3180	MS3184-80	23280 K
		520	328	62	82	-	-	Tr400x5	-	-	87.0	H3280	HM3180	MS3184-80	23280 K
	400	490	168	52	66	9	4.0	Tr420x5	M6	-	36.0	OH3984H	HM3084	MS3084	23984 K
		490	168	52	66	9	4.0	Tr420x5	M6	-	36.0	OH3984HB	HM3084	MS3084	23984 K
		490	168	52	66	13	7.5	Tr420x5	-	G 1/8	36.0	OH3984	HM3084	MS3084	23984 K
		490	168	52	66	13	7.5	Tr420x5	-	G 1/8	36.0	OH3984B	HM3084	MS3084	23984 K
		490	168	52	66	-	-	Tr420x5	-	-	36.0	H3984	HM3084	MS3084	23984 K
		490	212	52	66	9	4.0	Tr420x5	M6	-	47.0	OH3084H	HM3084	MS3084	23084 K
		490	212	52	66	9	4.0	Tr420x5	M6	-	47.0	OH3084HB	HM3084	MS3084	23084 K
		490	212	52	66	13	8.5	Tr420x5	-	G 1/8	47.0	OH3084	HM3084	MS3084	23084 K
		490	212	52	66	13	8.5	Tr420x5	-	G 1/8	47.0	OH3084B	HM3084	MS3084	23084 K
		490	212	52	66	-	-	Tr420x5	-	-	47.0	H3084	HM3084	MS3084	23084 K
	400	540	304	70	90	9	4.0	Tr420x5	M6	-	80.0	OH3184H	HM3184	MS3184-80	23184 K
		540	304	70	90	9	4.0	Tr420x5	M6	-	80.0	OH3184HB	HM3184	MS3184-80	23184 K
		540	304	70	90	15	10.5	Tr420x5	-	G 1/4	80.0	OH3184	HM3184	MS3184-80	23184 K
		540	304	70	90	15	10.5	Tr420x5	-	G 1/4	80.0	OH3184B	HM3184	MS3184-80	23184 K
		540	304	70	90	-	-	Tr420x5	-	-	80.0	H3184	HM3184	MS3184-80	23184 K

Adapter sleeves
d1 140-500mm



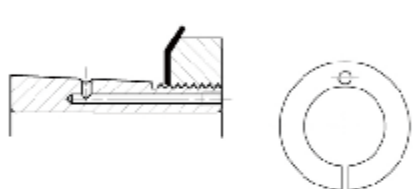
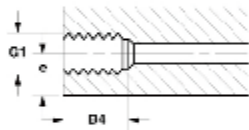
Dimensions											Mass	Designations			
d1	d	d3	B1	B2	B3	B4	e	G	G1			Sleeve complete set	lock nut	Locking clip	Appropriate bearing
mm											kg				
400	420	540	352	70	90	9	4.0	Tr420x5	M6	-	96.0	OH3284H	HM3184	MS3184-80	23284 K
		540	352	70	90	9	4.0	Tr420x5	M6	-	96.0	OH3284HB	HM3184	MS3184-80	23284 K
		540	352	70	90	15	11.0	Tr420x5	-	G 1/4	96.0	OH3284	HM3184	MS3184-80	23284 K
		540	352	70	90	15	11.0	Tr420x5	-	G 1/4	96.0	OH3284B	HM3184	MS3184-80	23284 K
		540	352	70	90	-	-	Tr420x5	-	-	96.0	H3284	HM3184	MS3184-80	23284 K
	440	520	189	60	77	12	6.5	Tr440x5	M8	-	58.0	OH3988H	HM3088	MS3092-88	23988 K
		520	189	60	77	12	6.5	Tr440x5	M8	-	58.0	OH3988HB	HM3088	MS3092-88	23988 K
		520	189	60	77	15	10.0	Tr440x5	-	G 1/4	58.0	OH3988	HM3088	MS3092-88	23988 K
		520	189	60	77	15	10.0	Tr440x5	-	G 1/4	58.0	OH3988B	HM3088	MS3092-88	23988 K
		520	189	60	77	-	-	Tr440x5	-	-	58.0	H3988	HM3088	MS3092-88	23988 K
		520	228	60	77	12	6.5	Tr440x5	M8	-	65.0	OH3088H	HM3088	MS3092-88	23088 K
		520	228	60	77	12	6.5	Tr440x5	M8	-	65.0	OH3088HB	HM3088	MS3092-88	23088 K
		520	228	60	77	15	11.0	Tr440x5	-	G 1/4	65.0	OH3088	HM3088	MS3092-88	23088 K
		520	228	60	77	15	11.0	Tr440x5	-	G 1/4	65.0	OH3088B	HM3088	MS3092-88	23088 K
		520	228	60	77	-	-	Tr440x5	-	-	65.0	H3088	HM3088	MS3092-88	23088 K
	430	560	307	70	90	12	6.5	Tr440x5	M8	-	95.0	OH3188H	HM3188	MS3192-88	23188 K
		560	307	70	90	12	6.5	Tr440x5	M8	-	95.0	OH3188HB	HM3188	MS3192-88	23188 K
		560	307	70	90	15	14.0	Tr440x5	-	G 1/4	95.0	OH3188	HM3188	MS3192-88	23188 K
		560	307	70	90	15	14.0	Tr440x5	-	G 1/4	95.0	OH3188B	HM3188	MS3192-88	23188 K
		560	307	70	90	-	-	Tr440x5	-	-	95.0	H3188	HM3188	MS3192-88	23188 K
		560	361	70	90	12	6.5	Tr440x5	M8	-	117.0	OH3288H	HM3188	MS3192-88	23288 K
		560	361	70	90	12	6.5	Tr440x5	M8	-	117.0	OH3288HB	HM3188	MS3192-88	23288 K
		560	361	70	90	15	16.0	Tr440x5	-	G 1/4	117.0	OH3288	HM3188	MS3192-88	23288 K
		560	361	70	90	15	16.0	Tr440x5	-	G 1/4	117.0	OH3288B	HM3188	MS3192-88	23288 K
		560	361	70	90	-	-	Tr440x5	-	-	117.0	H3288	HM3188	MS3192-88	23288 K
	460	540	189	60	77	12	6.5	Tr460x5	M8	-	60.0	OH3992H	HM3092	MS3092-88	23992 K
		540	189	60	77	12	6.5	Tr460x5	M8	-	60.0	OH3992HB	HM3092	MS3092-88	23992 K
		540	189	60	77	15	10.0	Tr460x5	-	G 1/4	60.0	OH3992	HM3092	MS3092-88	23992 K
		540	189	60	77	15	10.0	Tr460x5	-	G 1/4	60.0	OH3992B	HM3092	MS3092-88	23992 K
		540	189	60	77	-	-	Tr460x5	-	-	60.0	H3992	HM3092	MS3092-88	23992 K
		540	234	60	77	12	6.5	Tr460x5	M8	-	71.0	OH3092H	HM3092	MS3092-88	23092 K
		540	234	60	77	12	6.5	Tr460x5	M8	-	71.0	OH3092HB	HM3092	MS3092-88	23092 K
		540	234	60	77	15	11.0	Tr460x5	-	G 1/4	71.0	OH3092	HM3092	MS3092-88	23092 K
		540	234	60	77	15	11.0	Tr460x5	-	G 1/4	71.0	OH3092B	HM3092	MS3092-88	23092 K
		540	234	60	77	-	-	Tr460x5	-	-	71.0	H3092	HM3092	MS3092-88	23092 K
	480	580	326	75	95	12	6.5	Tr460x5	M8	-	119.0	OH3192H	HM3192	MS3192-88	23192 K
		580	326	75	95	12	6.5	Tr460x5	M8	-	119.0	OH3192HB	HM3192	MS3192-88	23192 K

Adapter sleeves
d1 140-500mm

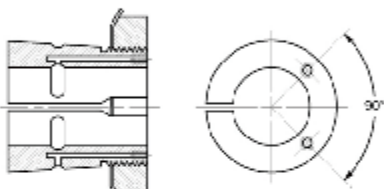


Dimensions											Mass	Designations			
d1	d	d3	B1	B2	B3	B4	e	G	G1			Sleeve complete set	lock nut	Locking clip	Appropriate bearing
mm										in	kg				
430	460	580	326	75	95	15	14.0	Tr460x5	-	G 1/4	119.0	OH3192	HM3192	MS3192-88	23192 K
		580	326	75	95	15	14.0	Tr460x5	-	G 1/4	119.0	OH3192B	HM3192	MS3192-88	23192 K
		580	326	75	95	-	-	Tr460x5	-	-	119.0	H3192	HM3192	MS3192-88	23192 K
		580	382	75	95	12	6.5	Tr460x5	M8	-	134.0	OH3292H	HM3192	MS3192-88	23292 K
		580	382	75	95	12	6.5	Tr460x5	M8	-	134.0	OH3292HB	HM3192	MS3192-88	23292 K
		580	382	75	95	15	17.0	Tr460x5	-	G 1/4	134.0	OH3292	HM3192	MS3192-88	23292 K
		580	382	75	95	15	17.0	Tr460x5	-	G 1/4	134.0	OH3292B	HM3192	MS3192-88	23292 K
		580	382	75	95	-	-	Tr460x5	-	-	134.0	H3292	HM3192	MS3192-88	23292 K
450	480	560	200	60	77	12	6.5	Tr480x5	M8	-	66.0	OH3996H	HM3096	MS30/500-96	23996 K
		560	200	60	77	12	6.5	Tr480x5	M8	-	66.0	OH3996HB	HM3096	MS30/500-96	23996 K
		560	200	60	77	15	10.0	Tr480x5	-	G 1/4	66.0	OH3996	HM3096	MS30/500-96	23996 K
		560	200	60	77	15	10.0	Tr480x5	-	G 1/4	66.0	OH3996B	HM3096	MS30/500-96	23996 K
		560	200	60	77	-	-	Tr480x5	-	-	66.0	H3996	HM3096	MS30/500-96	23996 K
		560	237	60	77	12	6.5	Tr480x5	M8	-	75.0	OH3096H	HM3096	MS30/500-96	23096 K
		560	237	60	77	12	6.5	Tr480x5	M8	-	75.0	OH3096HB	HM3096	MS30/500-96	23096 K
		560	237	60	77	15	11.0	Tr480x5	-	G 1/4	75.0	OH3096	HM3096	MS30/500-96	23096 K
		560	237	60	77	15	11.0	Tr480x5	-	G 1/4	75.0	OH3096B	HM3096	MS30/500-96	23096 K
		560	237	60	77	-	-	Tr480x5	-	-	75.0	H3096	HM3096	MS30/500-96	23096 K
		620	335	75	95	12	6.5	Tr480x5	M8	-	135.0	OH3196H	HM3196	MS3196	23196 K
		620	335	75	95	12	6.5	Tr480x5	M8	-	135.0	OH3196HB	HM3196	MS3196	23196 K
		620	335	75	95	15	14.0	Tr480x5	-	G 1/4	135.0	OH3196	HM3196	MS3196	23196 K
		620	335	75	95	15	14.0	Tr480x5	-	G 1/4	135.0	OH3196B	HM3196	MS3196	23196 K
		620	335	75	95	-	-	Tr480x5	-	-	135.0	H3196	HM3196	MS3196	23196 K
		620	397	75	95	12	6.5	Tr480x5	M8	-	153.0	OH3296H	HM3196	MS3196	23296 K
		620	397	75	95	12	6.5	Tr480x5	M8	-	153.0	OH3296HB	HM3196	MS3196	23296 K
		620	397	75	95	15	17.0	Tr480x5	-	G 1/4	153.0	OH3296	HM3196	MS3196	23296 K
		620	397	75	95	15	17.0	Tr480x5	-	G 1/4	153.0	OH3296B	HM3196	MS3196	23296 K
		620	397	75	95	-	-	Tr480x5	-	-	153.0	H3296	HM3196	MS3196	23296 K
470	500	580	208	68	85	12	6.5	Tr500x5	M8	-	74.3	OH39/500H	HM30/500	MS30/500-96	239/500 K
		580	208	68	85	12	6.5	Tr500x5	M8	-	74.3	OH39/500HB	HM30/500	MS30/500-96	239/500 K
		580	208	68	85	15	10.0	Tr500x5	-	G 1/4	74.3	OH39/500	HM30/500	MS30/500-96	239/500 K
		580	208	68	85	15	10.0	Tr500x5	-	G 1/4	74.3	OH39/500B	HM30/500	MS30/500-96	239/500 K
		580	208	68	85	-	-	Tr500x5	-	-	74.3	H39/500	HM30/500	MS30/500-96	239/500 K
		580	247	68	85	12	6.5	Tr500x5	M8	-	82.0	OH30/500H	HM30/500	MS30/500-96	230/500 K
		580	247	68	85	12	6.5	Tr500x5	M8	-	82.0	OH30/500HB	HM30/500	MS30/500-96	230/500 K
		580	247	68	85	15	11.0	Tr500x5	-	G 1/4	82.0	OH30/500	HM30/500	MS30/500-96	230/500 K
580	247	68	85	15	11.0	Tr500x5	-	G 1/4	82.0	OH30/500B	HM30/500	MS30/500-96	230/500 K		

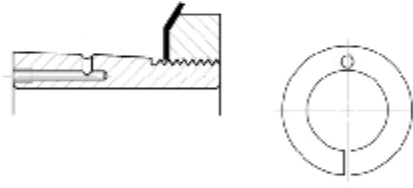
Adapter sleeves
d1 140-500mm



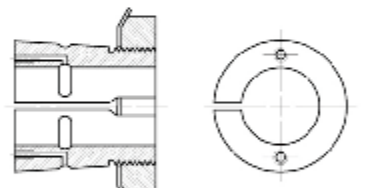
Type OH..H (HG)



Type OH..HB (HGJ)



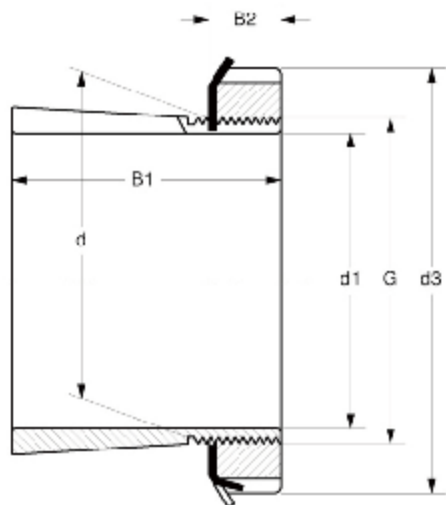
Type OH (HK)



Type OH..B (HKJ)

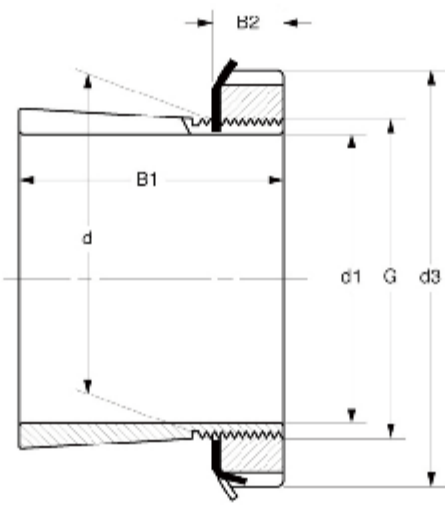
Dimensions											Mass	Designations						
d1	d	d3	B1	B2	B3	B4	e	G		G1			Sleeve complete set	lock nut	Locking clip	Appropriate bearing		
mm											in	kg						
470	500	580	247	68	85	-	-	Tr500x5	-	-	-	82.0	H30/500	HM30/500	MS30/500-96	230/500 K		
		630	356	80	100	12	6.5	Tr500x5	M8	-	-	145.0	OH31/500H	HM31/500	MS31/500	231/500 K		
		630	356	80	100	12	6.5	Tr500x5	M8	-	-	145.0	OH31/500HB	HM31/500	MS31/500	231/500 K		
		630	356	80	100	15	15.0	Tr500x5	-	G 1/4	-	145.0	OH31/500	HM31/500	MS31/500	231/500 K		
		630	356	80	100	15	15.0	Tr500x5	-	G 1/4	-	145.0	OH31/500B	HM31/500	MS31/500	231/500 K		
		630	356	80	100	-	-	Tr500x5	-	-	-	145.0	H31/500	HM31/500	MS31/500	231/500 K		
		630	428	80	100	12	6.0	Tr500x5	M8	-	-	170.0	OH32/500H	HM31/500	MS31/500	232/500 K		
		630	428	80	100	12	6.0	Tr500x5	M8	-	-	170.0	OH32/500HB	HM31/500	MS31/500	232/500 K		
		630	428	80	100	15	18.0	Tr500x5	-	G 1/4	-	170.0	OH32/500	HM31/500	MS31/500	232/500 K		
		630	428	80	100	15	18.0	Tr500x5	-	G 1/4	-	170.0	OH32/500B	HM31/500	MS31/500	232/500 K		
		630	428	80	100	-	-	Tr500x5	-	-	-	170.0	H32/500	HM31/500	MS31/500	232/500 K		
		500	530	630	216	68	90	12	6.0	Tr530x6	M8	-	-	87.9	OH39/530H	HM30/530	MS30/600-530	239/530 K
				630	216	68	90	12	6.0	Tr530x6	M8	-	-	87.9	OH39/530HB	HM30/530	MS30/600-530	239/530 K
				630	216	68	90	15	11.0	Tr530x6	-	G 1/4	-	87.9	OH39/530	HM30/530	MS30/600-530	239/530 K
				630	216	68	90	15	11.0	Tr530x6	-	G 1/4	-	87.9	OH39/530B	HM30/530	MS30/600-530	239/530 K
630	216			68	90	-	-	Tr530x6	-	-	-	87.9	H39/530	HM30/530	MS30/600-530	239/530 K		
630	265			68	90	12	6.0	Tr530x6	M8	-	-	105.0	OH30/530H	HM30/530	MS30/600-530	230/530 K		
630	265			68	90	12	6.0	Tr530x6	M8	-	-	105.0	OH30/530HB	HM30/530	MS30/600-530	230/530 K		
630	265			68	90	15	13.0	Tr530x6	-	G 1/4	-	105.0	OH30/530	HM30/530	MS30/600-530	230/530 K		
630	265			68	90	15	13.0	Tr530x6	-	G 1/4	-	105.0	OH30/530B	HM30/530	MS30/600-530	230/530 K		
630	265			68	90	-	-	Tr530x6	-	-	-	105.0	H30/530	HM30/530	MS30/600-530	230/530 K		
670	364			80	105	12	6.0	Tr530x6	M8	-	-	161.0	OH31/530H	HM31/530	MS31/530	231/530 K		
670	364			80	105	12	6.0	Tr530x6	M8	-	-	161.0	OH31/530HB	HM31/530	MS31/530	231/530 K		
670	364			80	105	15	15.0	Tr530x6	-	G 1/4	-	161.0	OH31/530	HM31/530	MS31/530	231/530 K		
670	364			80	105	15	15.0	Tr530x6	-	G 1/4	-	161.0	OH31/530B	HM31/530	MS31/530	231/530 K		
670	364			80	105	-	-	Tr530x6	-	-	-	161.0	H31/530	HM31/530	MS31/530	231/530 K		
670	447	80	105	12	6.0	Tr530x6	M8	-	-	192.0	OH32/530H	HM31/530	MS31/530	232/530 K				
670	447	80	105	12	6.0	Tr530x6	M8	-	-	192.0	OH32/530HB	HM31/530	MS31/530	232/530 K				
670	447	80	105	15	19.0	Tr530x6	-	G 1/4	-	192.0	OH32/530	HM31/530	MS31/530	232/530 K				
670	447	80	105	15	19.0	Tr530x6	-	G 1/4	-	192.0	OH32/530B	HM31/530	MS31/530	232/530 K				
670	447	80	105	-	-	Tr530x6	-	-	-	192.0	H32/530	HM31/530	MS31/530	232/530 K				

Adapter sleeves
for shaft with inch dimensions
d1 3/4 - 7 3/16 in



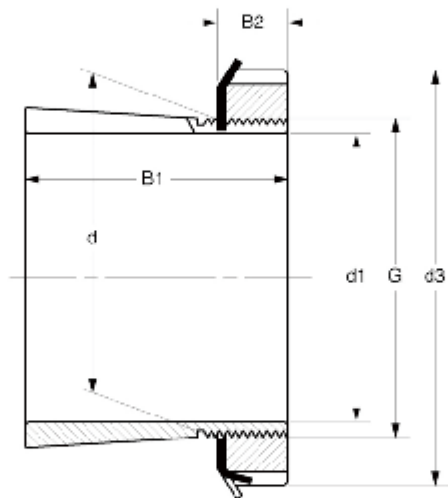
Dimensions						Mass	Designations	lock nut	Locking washers	Appropriate bearing(s)
d1 in	d	d3	B1	B2	G	Kg	Adapter sleeve completed set			
3/4	25	38	26	8	M25×1.5	0.07	HE205	KM 5	MB 5	1205 K
		38	29	8	M25×1.5	0.08	HE305	KM 5	MB 5	2205K,1305K,UK205
		38	35	8	M25×1.5	0.09	HE2305	KM 5	MB 5	2305K,UKX05,UK305
7/8	30	45	27	8	M30×1.5	0.11	HS206	KM 6	MB 6	1206K
		45	31	8	M30×1.5	0.12	HS306	KM 6	MB 6	2206K,1306K,
		45	38	8	M30×1.5	0.14	HS2306	KM 6	MB 8	UKX06,UK206
15/16	30	45	27	8	M30×1.5	0.1	HA206	KM 6	MB 6	1206K
		45	31	8	M30×1.5	0.12	HA306	KM 6	MB 6	2206K,1306K
		45	38	8	M30×1.5	0.13	HA2306	KM 6	MB 6	2306K,UKX06,UK306
1	30	45	27	8	M30×1.5	0.08	HE206	KM 6	MB 6	1206K
		45	31	8	M30×1.5	0.1	HE306	KM 6	MB 6	2206K,1306K,UK206
		45	38	8	M30×1.5	0.11	HE2306	KM 6	MB 6	2306K,UKX06,UK306
1 1/8	35	52	29	9	M35×1.5	0.14	HS207	KM 7	MB 7	1207K
		52	35	9	M35×1.5	0.16	HS307	KM 7	MB 7	2207K,1307K,22207K,UK207
		52	43	9	M35×1.5	0.19	HS2307	KM 7	MB 7	2307K,UKX07,UK307
1 3/16	35	52	29	9	M35×1.5	0.12	HA207	KM 7	MB 7	1207K
		52	35	9	M35×1.5	0.14	HA307	KM 7	MB 7	2207K,1307K,22207K,UK207
		52	43	9	M35×1.5	0.16	HA2307	KM 7	MB 7	2307K,UKX07,UK307
1 1/4	35	52	29	9	M35×1.5	0.13	HE207	KM 7	MB 7	1207K
		52	35	9	M35×1.5	0.15	HE307	KM 7	MB 7	2207K,1307K,22207K,UK207
		52	43	9	M35×1.5	0.17	HE2307	KM 7	MB 7	2307K,UKX07,UK307
1 1/4	40	58	31	10	M40×1.5	0.19	HE208	KM 8	MB 8	1208K
		58	36	10	M40×1.5	0.22	HE308	KM 8	MB 8	2208K,1308K,22208K,21308K,UK208
		58	46	10	M40×1.5	0.28	HE2308	KM 8	MB 8	2308K,22308K,UKX08,UKX308
1 3/8	40	58	31	10	M40×1.5	0.16	HS208	KM 8	MB 8	1208K
		58	36	10	M40×1.5	0.17	HS308	KM 8	MB 8	2208K,1308K,22208K,21308K,UK208
		58	46	10	M40×1.5	0.22	HS2308	KM 8	MB 8	2308K,22308K,UKX08,UKX308
1 7/16	45	65	33	11	M45×1.5	0.26	HA209	KM 9	MB 9	1209K
		65	39	11	M45×1.5	0.29	HA309	KM 9	MB 9	2209K,1309K,22209K,21309K,UK209
		65	50	11	M45×1.5	0.35	HA2309	KM 9	MB 9	2309K,22309K,UKX09,UK309
1 1/2	45	65	33	11	M45×1.5	0.2	HE209	KM 9	MB 9	1209K
		65	39	11	M45×1.5	0.24	HE309	KM 9	MB 9	2209K,1309K,22209K,21309K,UK209
		65	50	11	M45×1.5	0.31	HE2309	KM 9	MB 9	2309K,22309K,UKX09,UK309
1 5/8	45	65	33	11	M45×1.5	0.18	HS209	KM 9	MB 9	1209K

Adapter sleeves
for shaft with inch dimensions
d1 3/4 - 7 3/16 in



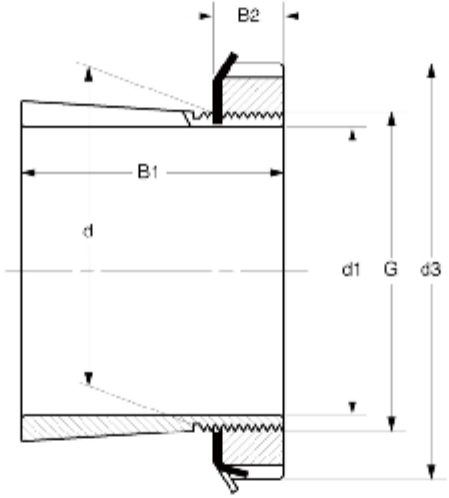
Dimensions						Mass	Designations	lock nut	Locking washers	Appropriate bearing(s)
d1 in	d	d3	B1	B2	G	Kg	Adapter sleeve completed set			
1 5/8	45	65	39	11	M45×1.5	0.22	HS309	KM 9	MB 9	2209K,1309K,22209K,21309K,UK209
		65	50	11	M45×1.5	0.24	HS2309	KM 9	MB 9	2309K,22309K,UKX09,UK309
1 5/8	50	70	35	12	M50×1.5	0.31	HS210	KM 10	MB 10	1210K
		70	42	12	M50×1.5	0.36	HS310	KM 10	MB 10	2210K,1310K,22210K,21310K,UK210
		70	55	12	M50×1.5	0.4	HS2310	KM 10	MB 10	2310K,22310K
1 11/16	50	70	35	12	M50×1.5	0.28	HA210	KM 10	MB 10	1210K
		70	42	12	M50×1.5	0.32	HA310	KM 10	MB 10	2210K,1310K,22210K,21310K,UK210
		70	55	12	M50×1.5	0.38	HA2310	KM 10	MB 10	2310K,22310K,UKX10,UK310
1 3/4	50	70	35	12	M50×1.5	0.26	HE210	KM10	MB10	1210K
		70	42	12	M50×1.5	0.29	HE310	KM10	MB10	2210K,1310K,22210K,21310K,UK210
		70	55	12	M50×1.5	0.36	HE2310	KM10	MB10	2310K,22310K,UKX10,UK310
1 7/8	55	75	37	12.5	M55×2	0.33	HS211	KM11	MB11	1211K
		75	45	12.5	M55×2	0.38	HS311	KM11	MB11	2211K,1311K,22211K,21311K,UK211
		75	59	12.5	M55×2	0.43	HS2311	KM11	MB11	2311K,22311K,UKX11,UK311
1 15/16	55	75	37	12.5	M55×2	0.3	HA211	KM11	MB11	1211K
		75	45	12.5	M55×2	0.34	HA311	KM11	MB11	2211K,1311K,22211K,21311K,UK211
		75	59	12.5	M55×2	0.42	HA2311	KM11	MB11	2311K,22311K
2	55	75	37	12.5	M55×2	0.26	HE211	KM11	MB11	1211K
		75	45	12.5	M55×2	0.29	HE311	KM11	MB11	2211K,1311K,22211K,21311K,UK211
		75	59	12.5	M55×2	0.36	HE2311	KM11	MB11	2311K,22311K,UKX11,UK311
2 1/4	60	80	38	13	M60×2	0.25	HE212	KM12	MB12	1212K
		80	47	13	M60×2	0.3	HE312	KM12	MB12	2212K,1312K,22212K,21312K,UK212
		80	62	13	M60×2	0.39	HE2312	KM12	MB12	2312K,22312K
2 1/8	60	80	38	13	M60×2	0.35	HS212	KM12	MB12	1212K
		80	47	13	M60×2	0.4	HS312	KM12	MB12	2212K,1312K,22212K,21312K,UK212
		80	62	13	M60×2	0.49	HS2312	KM12	MB12	2312K,22312K
2 3/16	65	85	40	14	M65×2	0.49	HA213	KM13	MB13	1213K
		85	50	14	M65×2	0.58	HA313	KM13	MB13	2213K,1313K,22213K,21313K
		85	65	14	M65×2	0.75	HA2313	KM13	MB13	2313K,22313K
2 1/4	65	85	40	14	M65×2	0.44	HE213	KM13	MB13	1213K
		85	50	14	M65×2	0.52	HE313	KM13	MB13	2213K,1313K,22213K,21313K,UK213
		85	65	14	M65×2	0.65	HE2313	KM13	MB13	2313K,22313K,UKX13,UK313
2 3/8	65	85	40	14	M65×2	0.44	HS213	KM13	MB13	1213K

Adapter sleeves
for shaft with inch dimensions
d1 3/4 - 7 3/16 in



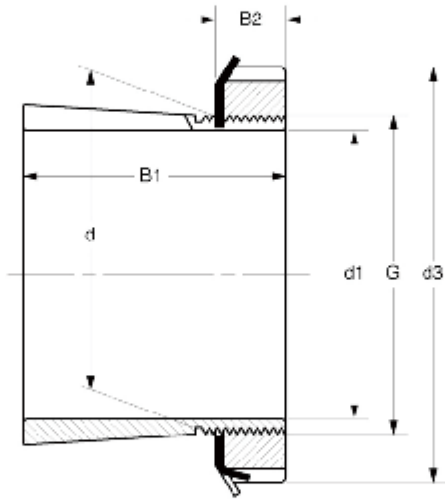
Dimensions						Mass	Designations	lock nut	Locking washers	Appropriate bearing(s)
d1	d	d3	B1	B2	G		Adapter sleeve completed set			
in						Kg				
2 3/8	65	85	50	14	M65x2	0.71	HS313	KM13	MB13	2213K,1313K,22213K,21313K,UK213
		85	65	14	M65x2	0.8	HS2313	KM13	MB13	2313K,22313K
2 7/16	75	98	43	15	M75x2	0.75	HA215	KM15	MB15	1215K
		98	55	15	M75x2	0.91	HA315	KM15	MB15	2215K,1315K,22215K,21315K,UK215
		98	73	15	M75x2	1.15	HA2315	KM15	MB15	2315K,22315K
2 1/2	75	98	43	15	M75x2	0.73	HE215	KM15	MB15	1215K
		98	55	15	M75x2	0.89	HE315	KM15	MB15	2215K,1315K,22215K,21315K
		98	73	15	M75x2	1.13	HE2315	KM15	MB15	2315K,22315K
2 5/8	75	98	43	15	M75x2	0.7	HS215	KM15	MB15	1215K
		98	55	15	M75x2	0.71	HS315	KM15	MB15	2215K,1315K,22215K,21315K
		98	73	15	M75x2	0.9	HS2315	KM15	MB15	2315K,22315K
2 11/16	80	105	46	17	M80x2	0.87	HA216	KM16	MB16	1216K
		105	59	17	M80x2	1.05	HA316	KM16	MB16	2216K,1316K,22216K,21316K,UK216
		105	78	17	M80x2	1.3	HA2316	KM16	MB16	2316K,22316K
2 3/4	80	105	46	17	M80x2	0.81	HE216	KM16	MB16	1216K
		105	59	17	M80x2	0.97	HE316	KM16	MB16	2216K,1316K,22216K,21316K,UK216
		105	78	17	M80x2	1.2	HE2316	KM16	MB16	2316K,22316K,UK316
2 15/16	85	110	50	18	M85x2	0.94	HA217	KM17	MB17	1217K
		110	63	18	M85x2	1.1	HA317	KM17	MB17	2217K,1317K,22217K,21317K,UK217
		110	82	18	M85x2	1.4	HA2317	KM17	MB17	2317K,22317K
3	85	110	50	18	M85x2	0.87	HE217	KM17	MB17	1217K
		110	63	18	M85x2	1	HE317	KM17	MB17	2217K,1317K,22217K,21317K,UK217
		110	82	18	M85x2	1.3	HE2317	KM17	MB17	2317K,22317K,UK317
3 3/16	90	120	52	18	M90x2	1.05	HA218	KM18	MB18	1218K
		120	65	18	M90x2	1.25	HA318	KM18	MB18	2218K,1318K,22218K,21318K
		120	86	18	M90x2	1.5	HA2318	KM18	MB18	2318K,23218K/W33,22318K
3 1/4	90	120	52	18	M90x2	0.97	HE218	KM18	MB18	1218K
		120	65	18	M90x2	1.1	HE318	KM18	MB18	2218K,1318K,22218K,21318K
		120	86	18	M90x2	1.4	HE2318	KM18	MB18	2318K,23218K,22318K,UK318
	95	125	55	19	M95x2	1.35	HE219	KM19	MB19	1219K
		125	68	19	M95x2	1.6	HE319	KM19	MB19	2219K,1319K,22219K,21319K
		125	90	19	M95x2	2	HE2319	KM19	MB19	2319K,22319K,UK319
3 7/16	100	130	58	20	M100x2	1.55	HA220	KM20	MB20	1220K

Adapter sleeves
for shaft with inch dimensions
d1 3/4 - 7 3/16 in



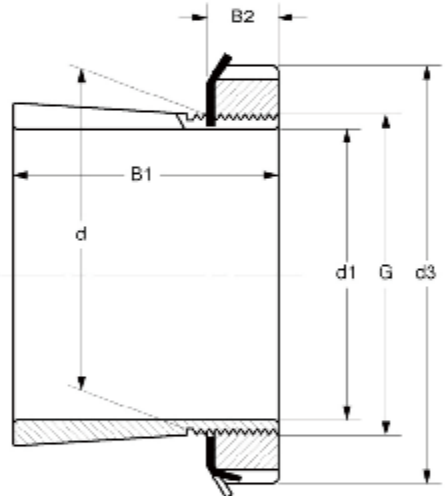
Dimensions						Mass	Designations	lock nut	Locking washers	Appropriate bearing(s)
d1	d	d3	B1	B2	G		Adapter sleeve completed set			
in						Kg				
3 7/16	100	130	71	20	M100x2	1.8	HA320	KM20	MB20	2220K,1320K,22220K,21320K
		130	97	20	M100x2	2.35	HA2320	KM20	MB20	2320K,23220K,22320K
3 1/2	100	130	58	20	M100x2	1.45	HE220	KM20	MB20	1220K
		130	71	20	M100x2	1.75	HE320	KM20	MB20	2220K,1320K,22220K,21320K
		130	97	20	M100x2	2.2	HE2320	KM20	MB20	2320K,23220K,22320K,UK320
		130	76	20	M100x2	1.8	HE3120	KM20	MB20	23120K
4	110	145	63	21	M110x2	1.65	HE222	KM22	MB22	1222K
		145	77	21	M110x2	1.9	HE322	KM22	MB22	2222K,1322K,23022K,22222K
		145	105	21	M110x2	2.4	HE2322	KM22	MB22	2322K,23222K,22322K,UK322
		145	81	21	M110x2	2.25	HE3122	KM22	MB22	23122K
4 3/16	120	145	72	22	M120x2	2.25	HA3024	KML24	MBL24	1224K,23024K
		155	88	22	M120x2	2.9	HA3124	KM24	MB24	2224K,23124K
		155	112	22	M120x2	3.6	HA2324	KM24	MB24	23224K,22324K
4 1/4	120	145	72	22	M120x2	2	HE3024	KML24	MBL24	1224K,23024K
		155	88	22	M120x2	2.8	HE3124	KM24	MB24	2224K,23124K
		155	112	22	M120x2	3.35	HE2324	KM24	MB24	23224K,22324K,UK324
4 7/16	130	155	80	23.0	M130x2	2.85	HA3026	KML26	MBL26	23026K
		165	92	23.0	M130x2	3.75	HA3126	KM26	MB26	23126K,22226K
		165	121	23.0	M130x2	4.75	HA2326	KM26	MB26	23226K,22326K
4 1/2	130	155	80	23	M130x2	2.9	HE3026	KML26	MBL26	23026K
		165	92	23	M130x2	3.6	HE3126	KM26	MB26	23126K,22226K
		165	121	23	M130x2	4.55	HE2326	KM26	MB26	23226K,22326K,UK326
4 15/16	140	165	82	24	M140x2	3	HA3028	KML28	MBL28	23028K
		180	97	24	M140x2	4.1	HA3128	KM28	MB28	23128K,22228K
		180	131	24	M140x2	5.3	HA2328	KM28	MB28	23228K,22328K
5	140	165	82	24	M140x2	2.8	HE3028	KML28	MBL28	23028K
		180	97	24	M140x2	3.15	HE3128	KM28	MB28	23128K,22228K
		180	131	24	M140x2	5	HE2328	KM28	MB28	23228K,22328K,UK328
5 3/16	150	180	87	26	M 150x2	4.7	HA3030	KML30	MBL30	23030K
		195	111	26	M 150x2	5.8	HA3130	KM30	MB30	23130K,22230K
		195	139	26	M 150x2	7.1	HA2330	KM30	MB30	23230K,22330K
5 1/4	150	180	87	26	M 150x2	4.65	HE3030	KML30	MBL30	23030K
		195	111	26	M 150x2	5.5	HE3130	KM30	MB30	23130K,22230K

Adapter sleeves
for shaft with inch dimensions
d1 3/4 - 7 3/16 in



Dimensions						Mass	Designations				
d1	d	d3	B1	B2	G		Adapter sleeve	lock nut	Locking	Appropriate	
in						Kg	completed set		washers	bearing(s)	
5 1/4	150	195	139	26	M 150×2	6.8	HE2330	KM30	MB30	23230K,22330K	
5 7/16	160	190	93	27.5	M 160×3	5.2	HA3032	KML32	MBL32	23032K	
		210	119	28	M 160×3	7.55	HA3132	KM32	MB32	23132K,22232K	
		210	147	28	M 160×3	9.4	HA2332	KM32	MB32	23232K,22332K	
5 1/2	160	190	93	27.5	M 160×3	5.1	HE3032	KML32	MBL32	23032K	
		210	119	28	M 160×3	7.3	HE3132	KM32	MB32	23132K,22232K	
		210	147	28	M 160×3	8.8	HE2332	KM32	MB32	23232K,22332K	
5 15/16	170	200	101	28.5	M 170×3	5.7	HA3034	KML34	MBL34	23034K	
		220	122	29	M 170×3	7.8	HA3134	KM34	MB34	23134K,22234K	
		220	154	29	M 170×3	9.6	HA2334	KM34	MB34	23234K,22334K	
6	170	200	101	28.5	M 170×3	5.4	HE3034	KML34	MBL34	23034K	
		220	122	29	M 170×3	7.55	HE3134	KM34	MB34	23134K,22234K	
		220	154	29	M 170×3	9.2	HE2334	KM34	MB34	23234K,22334K	
6 7/16	180	210	109	29.5	M 180×3	6.85	HA3036	KML36	MBL36	23036K	
		230	131	30	M 180×3	8.15	HA3136	KM36	MB36	23136K,22236K	
		230	161	30	M 180×3	9.9	HA2336	KM36	MB36	23236K,22336K	
6 1/2	180	210	109	29.5	M 180×3	5.55	HE3036	KML36	MBL36	23036K	
		230	131	30	M 180×3	7.8	HE3136	KM36	MB36	23136K,22236K	
		230	161	30	M 180×3	9.35	HE2336	KM36	MB36	23236K,22336K	
6 3/4	190	220	112	30.5	M 190×3	7.2	HE3038	KML38	MBL38	23038K	
		240	141	31	M 190×3	10.2	HE3138	KM38	MB38	23138K,22238K	
		240	169	31	M 190×3	11.7	HE2338	KM38	MB38	23238K,22338K	
6 15/16	190	220	112	30.5	M 190×3	7.2	HA3038	KML38	MBL38	23038K	
		240	141	31	M 190×3	8.5	HA3138	KM38	MB38	23138K,22238K	
		240	169	31	M 190×3	10	HA2338	KM38	MB38	23238K,22338K	
7	200	240	120	31.5	M 200×3	9.35	HE3040	KML40	MBL40	23040K	
		250	150	32	M 200×3	12.3	HE3140	KM40	MB40	23140K,22240K	
		250	176	32	M 200×3	14.2	HE2340	KM40	MB40	23240K,22340K	
7 3/16	200	240	120	31.5	M 200×3	8.5	HA3040	KML40	MBL40	23040K	
		250	150	32	M 200×3	10.8	HA3140	KM40	MB40	23140K,22240K	
		250	176	32	M 200×3	12.6	HA2340	KM40	MB40	23240K,22340K	

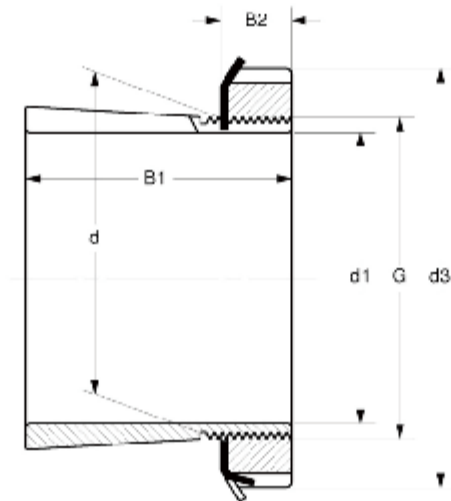
Adapter sleeves
with inch dimensions
d1 3/4 - 13 15/16 in



Threads: American National Form NS Class 3

Dimensions								Mass	Designations				
d1	d	d3	B1	B2	B3	G		No. of threads per in	Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	bearings
in	mm	in				nom.		Kg					
3/4	25	1 9/16	1.269	0.456	-	0.969	32	0.1	SNW 5×3/4	N05	W05	-	1205K
15/16	30	1 3/4	1.353	0.456	-	1.173	18	0.1	SNW 6×15/16	N06	W06	-	1206K,1306K
1	30	1 3/4	1.353	0.456	-	1.173	18	0.1	SNW 6×1	N06	W06	-	1206K,1306K
1 1/8	35	2 1/16	1.459	0.487	-	1.376	18	0.16	SNW 7×1 1/8	N07	W07	-	1207K,1307K,22207K
1 3 16	35	2 1/16	1.459	0.487	-	1.376	18	0.16	SNW 7×1 3/16	N07	W07	-	1207K,1307K,22207K
1 1/4	35	2 1/16	1.459	0.487	-	1.376	18	0.16	SNW 7×1 1/4	N07	W07	-	1207K,1307K,22207K
	40	2 1/4	1.504	0.495	-	1.563	18	0.19	SNW 8×1 1/4	N08	W08	-	1208K,1308K,22208K
1 3/8	40	2 1/4	1.504	0.495	-	1.563	18	0.19	SNW 8×1 3/8	N08	W08	-	1208K,1308K,22208K
	45	2 17/32	1.584	0.495	-	1.767	18	0.28	SNW 9×1 3/8	N09	W09	-	1209K,1309K,22209K,21309K
1 5/16	40	2 1/4	1.504	0.495	-	1.563	18	0.19	SNW 8×1 5/16	N08	W08	-	1208K,1308K,22208K
	45	2 17/32	1.584	0.495	-	1.767	18	0.28	SNW 9×1 5/16	N09	W09	-	1209K,1309K,22209K,21309K
1 7/16	45	2 17/32	1.584	0.495	-	1.767	18	0.28	SNW 9×1 7/16	N09	W09	-	1209K,1309K,22209K,21309K
		2 17/32	2.133	0.495	-	1.767	18	0.32	SNW 109×1 7/16	N09	W09	-	2309K,22309K
1 1/2	45	2 17/32	2.133	0.495	-	1.767	18	0.32	SNW 109×1 1/2	N09	W09	-	2309K,22309K
1 5/8	50	2 11/16	1.765	0.558	-	1.967	18	0.33	SNW 10×1 5/8	N10	W10	-	1210K,1310K,22210K,21310K
1 11/16	50	2 11/16	1.765	0.558	-	1.967	18	0.33	SNW 10×1 11/16	N10	W10	-	1210K,1310K,22210K,21310K
		2 11/16	2.394	0.558	-	1.967	18	0.39	SNW 110×1 11/16	N10	W10	-	2310K,22310K
1 3/4	50	2 11/16	1.765	0.558	-	1.967	18	0.33	SNW 10×1 3/4	N10	W10	-	1210K,1310K,22210K,21310K
	55	2 31/32	1.845	0.563	-	2.157	18	0.36	SNW 11×1 3/4	N11	W11	-	1211K,1311K

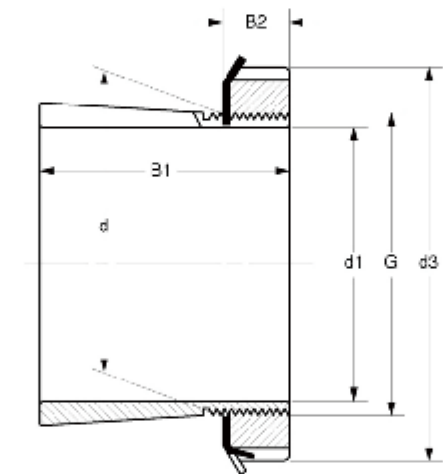
Adapter sleeves
with inch dimensions
d1 3/4 - 13 15/16 in



Threads: American National Form NS Class 3

Dimensions							Mass		Designations					
d1	d	d3	B1	B2	B3	G	No. of threads per in		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	bearings	
in	mm	in				nom.		Kg						
1 3/4	55	2 31/32	1.845	0.563	-	2.157	18	0.36	SNW 11×1 3/4	N11	W11	-	22211K,21311K	
1 13/16	55	2 31/32	1.845	0.563	-	2.157	18	0.36	SNW 11×1 13/16	N11	W11	-	1211K,1311K ,22211K,21311K	
1 7/8	55	2 31/32	1.845	0.563	-	2.157	18	0.36	SNW 11×1 7/8	N11	W11	-	1211K,1311K 22211K,21311K	
1 15/16	55	2 31/32	1.845	0.563	-	2.157	18	0.36	SNW 11×1 15/16	N11	W11	-	1211K,1311K 22211K,21311K	
		2 31/32	2.516	0.563	-	2.157	18	0.43	SNW111×1 15/16	N11	W11	-	2311K,22311K	
2	55	2 31/32	1.845	0.563	-	2.157	18	0.36	SNW 11× 2	N11	W11	-	1211K,1311K, 22211K,21311K	
		2 31/32	2.516	0.563	-	2.157	18	0.43	SNW111×2	N11	W11	-	2311K,22311K	
	65	3 3/8	2.1	0.625	-	2.548	18	0.64	SNW 13×2	N13	W13	-	1213K,1313K 22213K	
2 1/16	60	3 5/32	2.659	0.594	-	2.36	18	0.73	SNW 112×2 1/16	N12	W12	-	2312K,22312K	
2 3/16	65	3 3/8	2.100	0.625	-	2.548	18	0.64	SNW 13×2 3/16	N13	W13	-	1213K,1313K, 22213K	
		3 3/8	2.771	0.625	-	2.548	18	0.79	SNW 113×2 3/16	N13	W13	-	2313K,22313K	
2 1/4	65	3 3/8	2.100	0.625	-	2.548	18	0.64	SNW 13×2 1/4	N13	W13	-	1213K,1313K 22213K	
		3 3/8	2.771	0.625	-	2.548	18	0.79	SNW 113×2 1/4	N13	W13	-	2313K,22313K	
2 5/16	65	3 3/8	2.100	0.625	-	2.548	18	0.64	SNW 13×2 5/16	N13	W13	-	1213K,1313K 22213K	
2 3/8	75	3 7/8	2.296	0.665	-	2.933	12	1	SNW 15×2 3/8	AN15	W15	-	1215K,1315K 22215K	
2 7/16	75	3 7/8	2.296	0.665	-	2.933	12	1	SNW 15×2 7/16	AN15	W15	-	1215K,1315K 22215K	
		3 7/8	3.084	0.665	-	2.933	12	1.35	SNW115×2 7/16	AN15	W15	-	2315K,22315K	
2 11/16	80	4 5/32	2.376	0.665	-	3.137	12	1.1	SNW 16×2 11/16	AN16	W16	-	1216K,1316K 22216K	
		4 5/32	3.204	0.665	-	3.137	12	1.45	SNW116×2 11/16	AN16	W16	-	2316K,22316K	
2 3/4	80	4 5/32	2.376	0.665	-	3.137	12	1.1	SNW 16×2 3/4	AN16	W16	-	1216K,1316K	

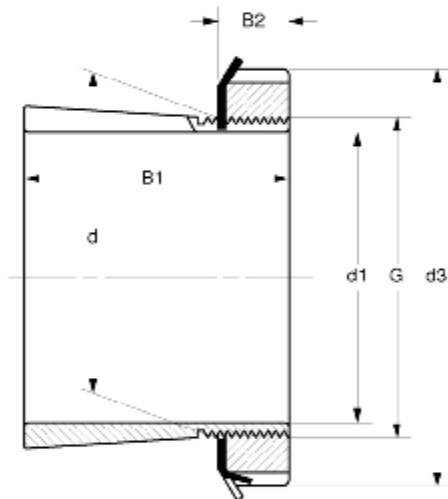
Adapter sleeves
with inch dimensions
d1 3/4 - 13 15/16 in



Threads: American National Form NS Class 3

Dimensions							Mass		Designations					
d1	d	d3	B1	B2	B3	G	No. of threads per in		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	bearings	
in	mm	in				nom.		Kg						
2 3/4	80	4 5/32	2.376	0.665	-	3.137	12	1.1	SNW 16×2 3/4	AN16	W16	-	22216K	
2 15/16	85	4 13/32	2.486	0.697	-	3.34	12	1.3	SNW 17×2 15/16	AN17	W17	-	1217K,1317K 22217K	
		4 13/32	3.312	0.697	-	3.34	12	1.55	SNW 117×2 15/16	AN17	W17	-	2317K,22317K	
3	85	4 13/32	2.486	0.697	-	3.34	12	1.3	SNW 17×3	AN17	W17	-	1217K,1317K 22217K	
		4 13/32	3.312	0.697	-	3.34	12	1.55	SNW 117×3	AN17	W17	-	2317K,22317K	
3 3/16	90	4 21/32	2.646	0.782	-	3.527	12	1.4	SNW 18×3 3/16	AN18	W18	HMVC18	1218K,1318K 22218K	
		4 21/32	3.553	0.782	-	3.527	12	1.8	SNW 118×3 3/16	AN18	W18	HMVC18	2318K,23218K 22318K	
3 1/4	90	4 21/32	2.646	0.782	-	3.527	12	1.4	SNW 18×3 1/4	AN18	W18	HMVC18	1218K,1318K 22218K	
3 5/16	95	4 15/16	2.760	0.813	-	3.73	12	1.85	SNW19×3 5/16	AN19	W19	HMVC19	1219K,1319K 22219K	
		4 15/16	3.702	0.813	-	3.73	12	2.2	SNW119×3 5/16	AN19	W19	HMVC19	23219K,22319K	
3 7/16	100	5 3/16	2.869	0.844	-	3.918	12	2	SNW 20×3 7/16	AN20	W20	HMVC20	1220K,1320K 22220K	
		5 3/16	3.971	0.844	-	3.918	12	2.85	SNW 120×3 7/16	AN20	W20	HMVC20	23220K,22320K	
3 1/2	100	5 3/16	2.869	0.844	-	3.918	12	2	SNW 20×3 1/2	AN20	W20	HMVC20	1220K,1320K 22220K	
		5 3/16	3.971	0.844	-	3.918	12	2.85	SNW 120×3 1/2	AN20	W20	HMVC20	23220K,22320K	
3 11/16	105	5 7/16	2.987	0.844	-	4.122	12	2.05	SNW 21×3 11/16	AN21	W21	-	1321K	
		5 23/32	3.206	0.906	-	4.325	12	2.25	SNW 22×3 11/16	AN22	W22	HMVC22	1222K,1322K 22222K	
3 15/16	110	5 23/32	3.206	0.906	-	4.325	12	2.25	SNW 22×3 15/16	AN22	W22	HMVC22	1222K,1322K 22222K	
		5 23/32	4.348	0.906	-	4.325	12	2.95	SNW 122×3 15/16	AN22	W22	HMVC22	23222K,22322K	
4	110	5 23/32	3.206	0.906	-	4.325	12	2.25	SNW 22×4	AN22	W22	HMVC22	1222K,1322K 22222K	
4 3/16	120	5 11/16	2.947	0.938	-	4.716	12	2.8	SNW 3024×4 3/16	N024	W024	HMVC24	23024K	

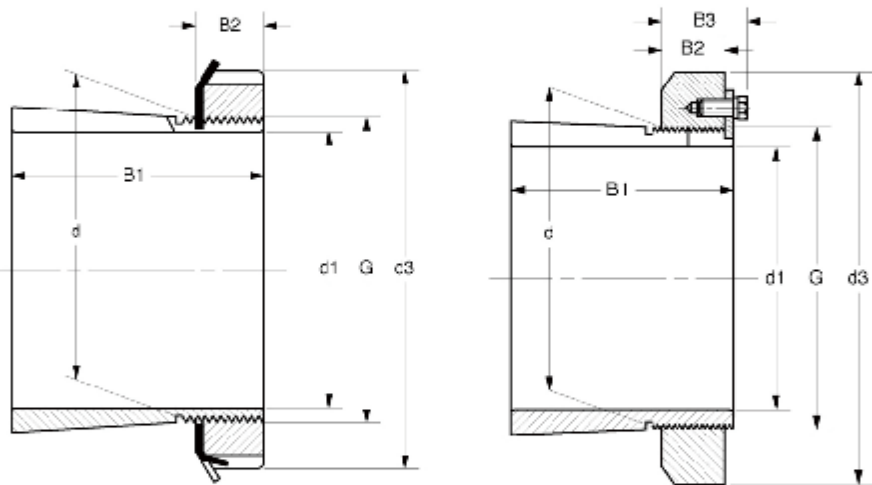
Adapter sleeves
with inch dimensions
d1 3/4 - 13 15/16 in



Threads: American National Form NS Class 3

Dimensions							Mass		Designations				
d1	d	d3	B1	B2	B3	G	No. of threads per in		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	bearings
in	mm	in				nom.		Kg					
4 3/16	120	5 11/16	3.466	0.938	-	4.716	12	2.65	SNW 3124x4 3/16	N024	W024	HMVC24	23124K
		6 1/8	3.466	0.938	-	4.716	12	3	SNW 24x4 3/16	AN24	W24	HMVC24	22224K
		6 1/8	4.648	0.938	-	4.716	12	3.55	SNW 124x4 3/16	AN24	W24	HMVC24	23224K,22324K
4 1/4	120	5 11/16	3.466	0.938	-	4.716	12	2.65	SNW 3124x4 1/4	N024	W024	HMVC24	23124K
		6 1/8	3.466	0.938	-	4.716	12	3	SNW 24x4 1/4	AN24	W24	HMVC24	22224K
4 7/16	130	6 1/8	3.237	1	-	5.106	12	3.4	SNW 3026x4 7/16	N026	W026	HMVC26	23026K
		6 1/8	3.762	1	-	5.106	12	3.8	SNW 3126x4 7/16	N026	W026	HMVC26	23126K
		6 3/4	3.762	1	-	5.106	12	4.4	SNW 26x4 7/16	AN26	W26	HMVC26	22226K
		6 3/4	4.982	1	-	5.106	12	5.65	SNW 126x4 7/16	AN26	W26	HMVC26	23226K,22326K
4 1/2	130	6 1/8	3.237	1	-	5.106	12	3.4	SNW 3026x4 1/2	N026	W026	HMVC26	23026K
		6 1/8	3.762	1	-	5.106	12	3.8	SNW 3126x4 1/2	N026	W026	HMVC26	23126K
		6 3/4	3.762	1	-	5.106	12	4.4	SNW 26x4 1/2	AN26	W26	HMVC26	22226K
4 15/16	140	6 1/2	3.340	1.063	-	5.497	12	3.8	SNW 3028x4 15/16	N028	W028	HMVC28	23028K
		6 1/2	3.981	1.063	-	5.497	12	4	SNW 3128x4 15/16	N028	W028	HMVC28	23128K
		7 3/32	3.981	1.063	-	5.497	12	4.75	SNW 28x4 15/16	AN28	W28	HMVC28	22228K
		7 3/32	5.323	1.063	-	5.497	12	5.9	SNW 128x4 15/16	AN28	W28	HMVC28	23228K,22328K
5	140	6 1/2	3.340	1.063	-	5.497	12	3.85	SNW 3028x5	N028	W028	HMVC28	23028K
		6 1/2	3.981	1.063	-	5.497	12	4	SNW 3128x5	N028	W028	HMVC28	23128K
		7 3/32	3.981	1.063	-	5.497	12	4.75	SNW 28x5	AN28	W28	HMVC28	22228K
5 3/16	150	7 1/8	3.492	1.094	-	5.888	12	4.45	SNW 3030x5 3/16	N030	W030	HMVC30	23030K
		7 1/8	4.241	1.094	-	5.888	12	6.2	SNW 3130x5 3/16	N030	W030	HMVC30	23130K
		7 11/16	4.241	1.125	-	5.888	12	7.25	SNW 30x5 3/16	AN30	W30	HMVC30	22230K
		7 11/16	5.621	1.125	-	5.888	12	8.15	SNW 130x5 3/16	AN30	W30	HMVC30	23230K,22330K
5 1/4	150	7 11/16	4.241	1.125	-	5.888	12	7.25	SNW 30x5 1/4	AN30	W30	HMVC30	22230K
5 7/16	160	7 1/2	3.711	1.156	-	6.284	8	5.45	SNW 3032x5 7/16	N032	W032	HMVC32	23032K
		7 1/2	4.578	1.156	-	6.284	8	6.1	SNW 3132x5 7/16	N032	W032	HMVC32	23132K
		8 1/16	4.578	1.187	-	6.284	8	7.05	SNW 32x5 7/16	AN32	W32	HMVC32	22232K
		8 1/16	5.920	1.187	-	6.284	8	8.15	SNW 132x5 7/16	AN32	W32	HMVC32	23232K,22332K
5 3/4	160	8 1/16	4.578	1.187	-	6.284	8	7.05	SNW 32x5 3/4	AN32	W32	HMVC32	22232K
5 15/16	170	7 7/8	4.019	1.188	-	6.659	8	6.1	SNW 3034x5 15/16	N034	W034	HMVC34	23034K
		7 7/8	4.487	1.188	-	6.659	8	7.3	SNW 3134x5 15/16	N034	W034	HMVC34	23134K
		8 21/32	4.487	1.219	-	6.659	8	8.85	SNW 34x5 15/16	AN34	W34	HMVC34	22234K
		8 21/32	6.188	1.219	-	6.659	8	9.55	SNW 134x5 15/16	AN34	W34	HMVC34	23234K,22334K

Adapter sleeves
with inch dimensions
d1 3/4 - 13 15/16 in

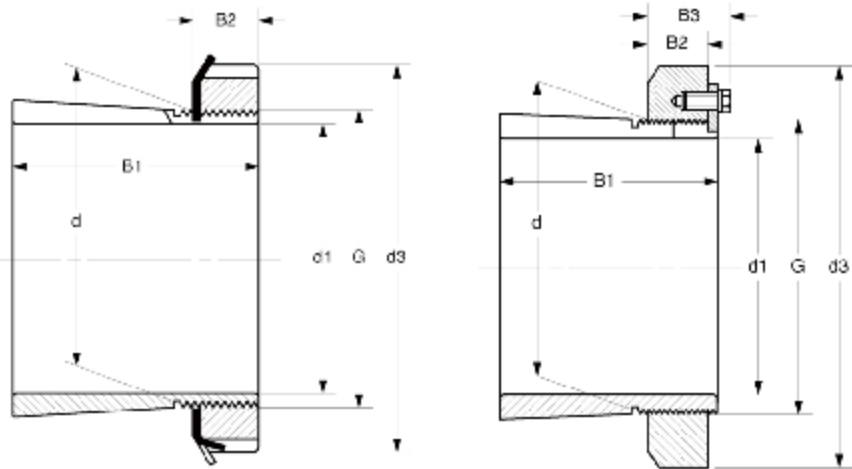


Threads: American National Form NS Class 3

SNP

Dimensions							Mass		Designations				
d1	d	d3	B1	B2	B3	G	No. of threads per in		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	bearings
in	mm	in				nom.		Kg					
6	170	7 7/8	4.019	1.188	-	6.659	8	6.1	SNW 3034x6	N034	W034	HMVC34	23034K
		7 7/8	4.487	1.188	-	6.659	8	7.3	SNW 3134x6	N034	W034	HMVC34	23134K
		8 21/32	4.487	1.219	-	6.659	8	8.85	SNW 34x6	AN34	W34	HMVC34	22234K
		8 21/32	6.188	1.219	-	6.659	8	9.55	SNW 134x6	AN34	W34	HMVC34	23234K,22334K
6 7/16	180	8 1/4	4.337	1.219	-	7.066	8	6.8	SNW 3036x6 7/16	N036	W036	HMVC36	23036K
		8 1/4	5.038	1.219	-	7.066	8	7.75	SNW 3136x6 7/16	N036	W036	HMVC36	23136K
		9 1/16	5.038	1.25	-	7.066	8	9.3	SNW 36x6 7/16	AN36	W36	HMVC36	22236K
		9 1/16	6.456	1.25	-	7.066	8	10	SNW 136x6 7/16	AN36	W36	HMVC36	23236K,22336K
6 1/2	180	8 1/4	5.038	1.219	-	7.066	8	7.75	SNW 3136x6 1/2	N036	W036	HMVC36	23136K
		9 1/16	5.038	1.25	-	7.066	8	9.3	SNW 36x6 1/2	AN36	W36	HMVC36	22236K
6 15/16	190	8 11/16	4.412	1.25	-	7.472	8	7.5	SNW 3038x6 15/16	N038	W038	HMVC38	23038K
		8 11/16	5.261	1.25	-	7.472	8	8.95	SNW 3138x6 15/16	N038	W038	HMVC38	23138K
		9 15/32	5.261	1.281	-	7.472	8	10.5	SNW 38x6 15/16	AN38	W38	HMVC38	22238K
		9 15/32	6.758	1.281	-	7.472	8	12.5	SNW 138x6 15/16	AN38	W38	HMVC38	23238K,22338K
7	190	8 11/16	4.412	1.25	-	7.472	8	7.5	SNW 3038x7	N038	W038	HMVC38	23038K
		8 11/16	5.261	1.25	-	7.472	8	8.95	SNW 3138x7	N038	W038	HMVC38	23138K
		9 15/32	5.261	1.281	-	7.472	8	10.5	SNW 38x7	AN38	W38	HMVC38	22238K
		9 15/32	6.758	1.281	-	7.472	8	12.5	SNW 138x7	AN38	W38	HMVC38	23238K,22338K
7 3/16	200	9 7/16	4.750	1.313	-	7.847	8	8.85	SNW 3040x7 3/16	N040	W040	HMVC40	23040K
		9 7/16	5.484	1.313	-	7.847	8	12.9	SNW 3140x7 3/16	N040	W040	HMVC40	23140K
		9 27/32	5.484	1.344	-	7.847	8	14	SNW 40x7 3/16	AN40	W40	HMVC40	22240K
		9 27/32	7.095	1.344	-	7.847	8	16	SNW 140x7 3/16	AN40	W40	HMVC40	23240K,22340K
7 15/16	220	10 1/4	5.130	1.375	-	8.628	8	11	SNW 3044x7 15/16	N044	W044	HMVC44	23044K
		10 1/4	5.901	1.375	-	8.628	8	12.8	SNW 3144x7 15/16	N044	W044	HMVC44	23144K
		11	5.901	1.406	-	8.628	8	14.5	SNW 44x7 15/16	N44	W44	HMVC44	22244K
		11	7.287	1.406	-	8.628	8	21	SNW 144x7 15/16	N44	W44	HMVC44	23244K,22344K
8	220	10 1/4	5.130	1.375	-	8.628	8	11	SNW 3044x8	N044	W044	HMVC44	23044K
		10 1/4	5.901	1.375	-	8.628	8	12.8	SNW 3144x8	N044	W044	HMVC44	23144K
		11	5.901	1.406	-	8.628	8	14.5	SNW 44x8	N44	W44	HMVC44	22244K
8 15/16	240	11 7/16	5.432	1.354	1.698	9.442	6	14.5	SNP 3048x8 15/16	N048	P48	HMVC48	23048K
		11 7/16	6.638	1.354	1.698	9.442	6	17	SNP 3148x8 15/16	N048	P48	HMVC48	23148K
		11 7/16	8.109	1.354	1.698	9.442	6	22	SNP 148x8 15/16	N048	P48	HMVC48	23248K,22348K

Adapter sleeves
with inch dimensions
d1 3/4 - 13 15/16 in

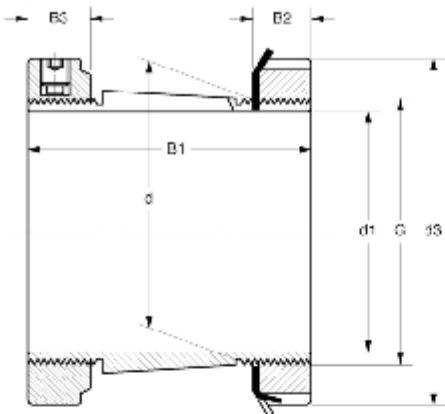


Threads: American National Form NS Class 3

SNP

Dimensions							Mass		Designations				
d1	d	d3	B1	B2	B3	G	No. of threads per in		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearings
in	mm	in				nom.		Kg					
9 7/16	260	12 3/16	6.019	1.416	1.76	10.192	6	18.6	SNP 3052x9 7/16	N052	P52	HMVC52	23052K
		12 3/16	7.593	1.416	1.76	10.192	6	20	SNP 3152x9 7/16	N052	P52	HMVC52	23152K
		12 3/16	8.744	1.416	1.76	10.192	6	24.8	SNP 152x9 7/16	N052	P52	HMVC52	23252K
9 1/2	260	12 3/16	6.019	1.416	1.76	10.192	6	18.6	SNP 3052x9 1/2	N052	P52	HMVC52	23052K
		12 3/16	7.593	1.416	1.76	10.192	6	20	SNP 3152x9 1/2	N052	P52	HMVC52	23152K
9 15/16	280	13	6.191	1.51	1.854	11.004	6	20.6	SNP 3056x9 15/16	N056	P56	HMVC56	23056K
10	280	13	6.191	1.51	1.854	11.004	6	20.6	SNP 3056x10	N056	P56	HMVC56	23056K
		13	7.766	1.51	1.854	11.004	6	21.1	SNP 3156x10	N056	P56	HMVC56	23156K
10 7/16	280	13	6.191	1.51	1.854	11.004	6	20.6	SNP 3056x10 7/16	N056	P56	HMVC56	23056K
		13	8.947	1.51	1.854	11.004	6	26.8	SNP 3256x10 7/16	N056	P56	HMVC56	23256K
10 1/2	280	13	6.191	1.51	1.854	11.004	6	20.6	SNP 3056x10 1/2	N056	P56	HMVC56	23056K
10 15/16	300	14 3/16	6.727	1.573	1.948	11.785	6	27	SNP 3060x10 15/16	N060	P60	HMVC60	23060K
		14 3/16	8.380	1.573	1.948	11.785	6	27	SNP 3160x10 15/16	N060	P60	HMVC60	23160K
		14 3/16	9.640	1.573	1.948	11.785	6	31	SNP 3260x10 15/16	N060	P60	HMVC60	23260K
11	300	14 3/16	6.727	1.573	1.948	11.785	6	27	SNP 3060x11	N060	P60	HMVC60	23060K
		14 3/16	9.640	1.573	1.948	11.785	6	31	SNP 3260x11	N060	P60	HMVC60	23260K
11 1/2	320	15	6.946	1.666	2.041	12.562	6	29.5	SNP 3064x11 1/2	N064	P64	HMVC64	23064K
11 15/16	320	15	6.946	1.666	2.041	12.562	6	29.5	SNP 3064x11 15/16	N064	P64	HMVC64	23064K
		15	10.371	1.666	2.041	12.562	6	44.5	SNP 3264x11 15/16	N064	P64	HMVC64	23264K
12	320	15	9.111	1.666	2.041	12.562	6	33.6	SNP 3164x12	N064	P64	HMVC64	23164K
12 7/16	340	15 3/4	7.543	1.791	2.166	13.303	5	35.3	SNP 3068x12 7/16	N068	P68	HMVC68	23068K
13 7/16	360	16 1/2	7.579	1.791	2.166	14.134	5	39	SNP 3072x13 7/16	N072	P72	HMVC72	23072K
13 15/16	380	17 3/4	7.743	1.916	2.353	14.921	5	43	SNP 3076x13 15/16	N076	P76	HMVC76	23076K

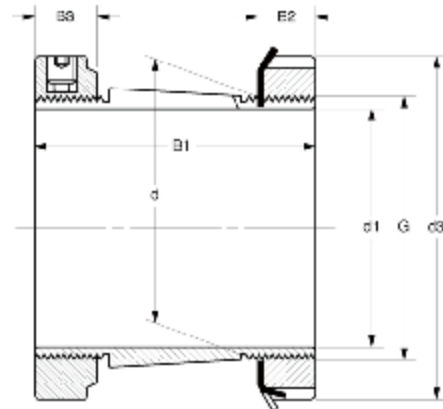
Easy extraction adapter sleeves
d1 20 mm- 135 mm



*Please see page 68 for recommend
tightening torque of grub screw

Dimensions							Designation					
d1	d	d3	B1	B2	B3	G		Lock nut	Locking washer	Extraction nut*	Bearing(s)	
mm												
20	25	38	38.5	8	10.5	M25x1.5	A 205	KM 5	MB 5	KMG 5	1205 K	
			40.5	8	10.5	M25x1.5	A 305	KM 5	MB 5	KMG 5	1305 K	
			41.5	8	10.5	M25x1.5	A 2205	KM 5	MB 5	KMG 5	22205 K	
			41.5	8	10.5	M25x1.5	A 2205	KM 5	MB 5	KMG 5	2205 K	
			44.5	8	10.5	M25x1.5	A K205	KM 5	MB 5	KMG 5	UK 205	
			46.5	8	10.5	M25x1.5	A KX05	KM 5	MB 5	KMG 5	UKX 05	
			47.5	8	10.5	M25x1.5	A 2305	KM 5	MB 5	KMG 5	2305 K	
			50.5	8	10.5	M25x1.5	A K305	KM 5	MB 5	KMG 5	UK 305	
25	30	45	39.5	8	10.5	M30x1.5	A 206	KM 6	MB 6	KMG 6	1206 K	
			42.5	8	10.5	M30x1.5	A 306	KM 6	MB 6	KMG 6	1306 K	
			43.5	8	10.5	M30x1.5	A 2206	KM 6	MB 6	KMG 6	22206 K	
			43.5	8	10.5	M30x1.5	A 2206	KM 6	MB 6	KMG 6	2206 K	
			46.5	8	10.5	M30x1.5	A K206	KM 6	MB 6	KMG 6	UK 206	
			49.5	8	10.5	M30x1.5	A KX06	KM 6	MB 6	KMG 6	UKX 06	
			50.5	8	10.5	M30x1.5	A 2306	KM 6	MB 6	KMG 6	2306 K	
			53.5	8	10.5	M30x1.5	A K306	KM 6	MB 6	KMG 6	UK 306	
30	35	52	42.5	9	11.5	M35x1.5	A 207	KM 7	MB 7	KMG 7	1207 K	
			46.5	9	11.5	M35x1.5	A 307	KM 7	MB 7	KMG 7	1307 K	
			48.5	9	11.5	M35x1.5	A 2207	KM 7	MB 7	KMG 7	22207 K	
			48.5	9	11.5	M35x1.5	A 2207	KM 7	MB 7	KMG 7	2207 K	
			51.5	9	11.5	M35x1.5	A K207	KM 7	MB 7	KMG 7	UK 207	
			52.5	9	11.5	M35x1.5	A KX07	KM 7	MB 7	KMG 7	UKX 07	
			56.5	9	11.5	M35x1.5	A 2307	KM 7	MB 7	KMG 7	2307 K	
			58.5	9	11.5	M35x1.5	A K307	KM 7	MB 7	KMG 7	UK 307	
35	40	58	46	10	13	M40x1.5	A 208	KM 8	MB 8	KMG 8	1208 K	
			51	10	13	M40x1.5	A 2208	KM 8	MB 8	KMG 8	22208 K	
			51	10	13	M40x1.5	A 2208	KM 8	MB 8	KMG 8	2208 K	
			51	10	13	M40x1.5	A 308	KM 8	MB 8	KMG 8	1308 K	
			55	10	13	M40x1.5	A K208	KM 8	MB 8	KMG 8	UK 208	
			57	10	13	M40x1.5	A KX08	KM 8	MB 8	KMG 8	UKX 08	
			61	10	13	M40x1.5	A 2308	KM 8	MB 8	KMG 8	2308 K	
			61	10	13	M40x1.5	A 2308	KM 8	MB 8	KMG 8	2308 K	
40	45	65	48	11	13	M45x1.5	A 209	KM 9	MB 9	KMG 9	1209 K	
			52	11	13	M45x1.5	A 2209	KM 9	MB 9	KMG 9	22209 K	
			52	11	13	M45x1.5	A 2209	KM 9	MB 9	KMG 9	2209 K	
			54	11	13	M45x1.5	A 309	KM 9	MB 9	KMG 9	1309 K	
			58	11	13	M45x1.5	A K209	KM 9	MB 9	KMG 9	UK 209	
			58	11	13	M45x1.5	A KX09	KM 9	MB 9	KMG 9	UKX 09	
			65	11	13	M45x1.5	A 2309	KM 9	MB 9	KMG 9	2309 K	
			65	11	13	M45x1.5	A 2309	KM 9	MB 9	KMG 9	2309 K	

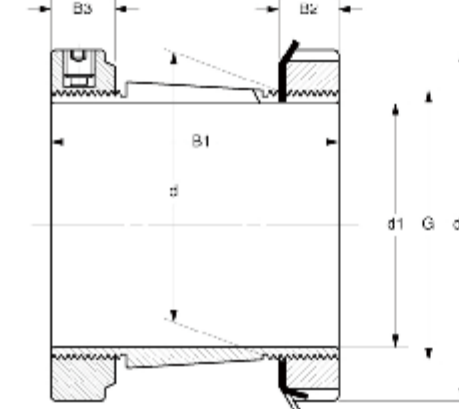
Easy extraction adapter sleeves
d1 20 mm- 135 mm



*Please see page 68 for recommend tightening torque of grub screw

Dimensions								Designation				
d1	d	d3	B1	B2	B3	G		Lock nut	Locking washer	Extraction nut*	Bearing(s)	
mm												
40	45	65	65	11	13	M45x1.5	A 2309	KM 9	MB 9	KMG 9	2309 K	
		65	67	11	13	M45x1.5	A K309	KM 9	MB 9	KMG 9	UK 309	
45	50	70	51	12	14	M50x1.5	A 210	KM 10	MB 10	KMG 10	1210 K	
		70	54	12	14	M50x1.5	A 2210	KM 10	MB 10	KMG 10	22210 K	
		70	54	12	14	M50x1.5	A 2210	KM 10	MB 10	KMG 10	2210 K	
		70	58	12	14	M50x1.5	A 310	KM 10	MB 10	KMG 10	1310 K	
		70	60	12	14	M50x1.5	A K210	KM 10	MB 10	KMG 10	UK 210	
		70	62	12	14	M50x1.5	A KX10	KM 10	MB 10	KMG 10	UKX 10	
		70	71	12	14	M50x1.5	A 2310	KM 10	MB 10	KMG 10	22310 K	
		70	71	12	14	M50x1.5	A 2310	KM 10	MB 10	KMG 10	2310 K	
		70	71	12	14	M50x1.5	A K310	KM 10	MB 10	KMG 10	UK 310	
		70	71	12	14	M50x1.5	A K310	KM 10	MB 10	KMG 10	UK 310	
50	55	75	54	12.5	14	M55x2	A 211	KM 11	MB 11	KMG 11	1211 K	
		75	58	12.5	14	M55x2	A 2211	KM 11	MB 11	KMG 11	22211 K	
		75	58	12.5	14	M55x2	A 2211	KM 11	MB 11	KMG 11	2211 K	
		75	62	12.5	14	M55x2	A 311	KM 11	MB 11	KMG 11	1311 K	
		75	64	12.5	14	M55x2	A K211	KM 11	MB 11	KMG 11	UK 211	
		75	66	12.5	14	M55x2	A KX11	KM 11	MB 11	KMG 11	UKX 11	
		75	76	12.5	14	M55x2	A 2311	KM 11	MB 11	KMG 11	22311 K	
		75	76	12.5	14	M55x2	A 2311	KM 11	MB 11	KMG 11	2311 K	
		75	76	12.5	14	M55x2	A K311	KM 11	MB 11	KMG 11	UK 311	
		75	76	12.5	14	M55x2	A K311	KM 11	MB 11	KMG 11	UK 311	
		75	76	12.5	14	M55x2	A K311	KM 11	MB 11	KMG 11	UK 311	
		75	76	12.5	14	M55x2	A K311	KM 11	MB 11	KMG 11	UK 311	
55	60	80	55	13	14	M60x2	A 212	KM 12	MB 12	KMG 12	1212 K	
		80	61	13	14	M60x2	A 2212	KM 12	MB 12	KMG 12	22212 K	
		80	61	13	14	M60x2	A 2212	KM 12	MB 12	KMG 12	2212 K	
		80	64	13	14	M60x2	A 312	KM 12	MB 12	KMG 12	1312 K	
		80	66	13	14	M60x2	A K212	KM 12	MB 12	KMG 12	UK 212	
		80	69	13	14	M60x2	A KX12	KM 12	MB 12	KMG 12	UKX 12	
		80	79	13	14	M60x2	A 2312	KM 12	MB 12	KMG 12	22312 K	
		80	79	13	14	M60x2	A 2312	KM 12	MB 12	KMG 12	2312 K	
		80	80	13	14	M60x2	A K312	KM 12	MB 12	KMG 12	UK 312	
		80	80	13	14	M60x2	A K312	KM 12	MB 12	KMG 12	UK 312	
		80	80	13	14	M60x2	A K312	KM 12	MB 12	KMG 12	UK 312	
		80	80	13	14	M60x2	A K312	KM 12	MB 12	KMG 12	UK 312	
60	65	85	58	14	15	M65x2	A 213	KM 13	MB 13	KMG 13	1213 K	
		85	66	14	15	M65x2	A 2213	KM 13	MB 13	KMG 13	22213 K	
		85	66	14	15	M65x2	A 2213	KM 13	MB 13	KMG 13	2213 K	
		85	68	14	15	M65x2	A 313	KM 13	MB 13	KMG 13	1313 K	
		85	71	14	15	M65x2	A K213	KM 13	MB 13	KMG 13	UK 213	
		85	75	14	15	M65x2	A KX13	KM 13	MB 13	KMG 13	UKX 13	
		85	83	14	15	M65x2	A 2313	KM 13	MB 13	KMG 13	22313 K	
		85	83	14	15	M65x2	A 2313	KM 13	MB 13	KMG 13	2313 K	
		85	84	14	15	M65x2	A K313	KM 13	MB 13	KMG 13	UK 313	
		85	84	14	15	M65x2	A K313	KM 13	MB 13	KMG 13	UK 313	
60	70	92	86	14	15	M65x2	A 2314	KM 14	MB 14	KMG 14	22314 K	
		92	86	14	15	M65x2	A 2214	KM 14	MB 14	KMG 14	22214 K	

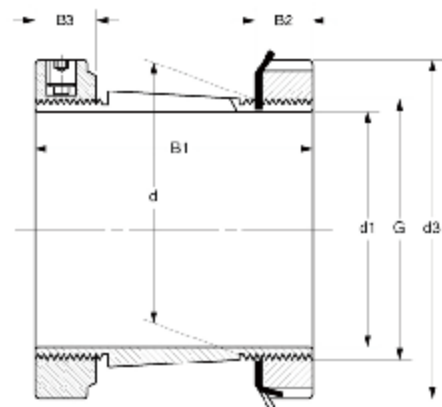
Easy extraction adapter sleeves
d1 20 mm- 135 mm



*Please see page 68 for recommend tightening torque of grub screw

Dimensions								Designation				
d1	d	d3	B1	B2	B3	G		Lock nut	Locking washer	Extraction nut*	Bearing(s)	
mm												
65	75	98	62	15	16	M75x2	A 215	KM 15	MB 15	KMG 15	1215 K	
		98	62	15	16	M75x2	A 215	KM 15	MB 15	KMG 15	1215 K	
		98	68	15	16	M75x2	A 2215	KM 15	MB 15	KMG 15	22215 K	
		98	68	15	16	M75x2	A 2215	KM 15	MB 15	KMG 15	2215 K	
		98	74	15	16	M75x2	A 315	KM 15	MB 15	KMG 15	1315 K	
		98	77	15	16	M75x2	A K215	KM 15	MB 15	KMG 15	UK 215	
		98	79	15	16	M75x2	A KX15	KM 15	MB 15	KMG 15	UKX 15	
		98	92	15	16	M75x2	A 2315	KM 15	MB 15	KMG 15	22315 K	
		98	92	15	16	M75x2	A 2315	KM 15	MB 15	KMG 15	2315 K	
		98	92	15	16	M75x2	A K315	KM 15	MB 15	KMG 15	UK 315	
70	80	105	67	17	18	M80x2	A 216	KM 16	MB 16	KMG 16	1216 K	
		105	74	17	18	M80x2	A 2216	KM 16	MB 16	KMG 16	22216 K	
		105	74	17	18	M80x2	A 2216	KM 16	MB 16	KMG 16	2216 K	
		105	80	17	18	M80x2	A 316	KM 16	MB 16	KMG 16	1316 K	
		105	83	17	18	M80x2	A K216	KM 16	MB 16	KMG 16	UK 216	
		105	85	17	18	M80x2	A KX16	KM 16	MB 16	KMG 16	UKX 16	
		105	96	17	18	M80x2	A K316	KM 16	MB 16	KMG 16	UK 316	
		105	99	17	18	M80x2	A 2316	KM 16	MB 16	KMG 16	22316 K	
		105	99	17	18	M80x2	A 2316	KM 16	MB 16	KMG 16	2316 K	
		105	99	17	18	M80x2	A 2316	KM 16	MB 16	KMG 16	2316 K	
75	85	110	71	18	19	M85x2	A 217	KM 17	MB 17	KMG 17	1217 K	
		110	79	18	19	M85x2	A 2217	KM 17	MB 17	KMG 17	22217 K	
		110	79	18	19	M85x2	A 2217	KM 17	MB 17	KMG 17	2217 K	
		110	84	18	19	M85x2	A 317	KM 17	MB 17	KMG 17	1317 K	
		110	87	18	19	M85x2	A K217	KM 17	MB 17	KMG 17	UK 217	
		110	91	18	19	M85x2	A KX17	KM 17	MB 17	KMG 17	UKX 17	
		110	103	18	19	M85x2	A 2317	KM 17	MB 17	KMG 17	22317 K	
		110	103	18	19	M85x2	A 2317	KM 17	MB 17	KMG 17	2317 K	
		110	103	18	19	M85x2	A K317	KM 17	MB 17	KMG 17	UK 317	
		110	103	18	19	M85x2	A K317	KM 17	MB 17	KMG 17	UK 317	
80	90	120	73	18	19	M90x2	A 218	KM 18	MB 18	KMG 18	1218 K	
		120	83	18	19	M90x2	A 2218	KM 18	MB 18	KMG 18	22218 K	
		120	83	18	19	M90x2	A 2218	KM 18	MB 18	KMG 18	2218 K	
		120	86	18	19	M90x2	A 318	KM 18	MB 18	KMG 18	1318 K	
		120	91	18	19	M90x2	A K218	KM 18	MB 18	KMG 18	UK 218	
		120	93	18	19	M90x2	A KX18	KM 18	MB 18	KMG 18	UKX 18	
		120	103	18	19	M90x2	A K318	KM 18	MB 18	KMG 18	UK 318	
		120	107	18	19	M90x2	A 2318	KM 18	MB 18	KMG 18	22318 K	
		120	107	18	19	M90x2	A 2318	KM 18	MB 18	KMG 18	2318 K	
		120	107	18	19	M90x2	A 2318	KM 18	MB 18	KMG 18	2318 K	
85	95	125	77	19	20	M95x2	A 219	KM 19	MB 19	KMG 19	1219 K	
		125	88	19	20	M95x2	A 2219	KM 19	MB 19	KMG 19	22219 K	

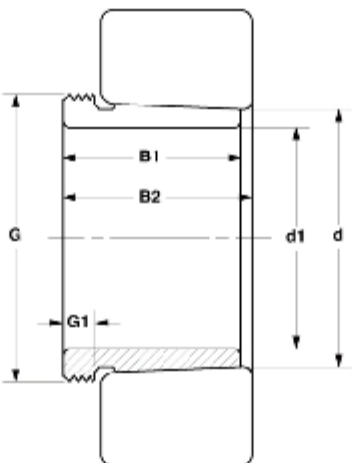
Easy extraction adapter sleeves
d1 20 mm- 135 mm



*Please see page 68 for recommend
tightening torque of grub screw

Dimensions							Designation					
d1	d	d3	B1	B2	B3	G		Lock nut	Locking washer	Extraction nut [*]	Bearing(s)	
mm												
85	95	125	88	19	20	M95x2	A 2219	KM 19	MB 19	KMG 19	2219 K	
		125	90	19	20	M95x2	A 319	KM 19	MB 19	KMG 19	1319 K	
		125	111	19	20	M95x2	A K319	KM 19	MB 19	KMG 19	UK 319	
		125	112	19	20	M95x2	A 2319	KM 19	MB 19	KMG 19	22319 K	
		125	112	19	20	M95x2	A 2319	KM 19	MB 19	KMG 19	2319 K	
90	100	130	81	20	21	M100x2	A 220	KM 20	MB 20	KMG 20	1220 K	
		130	83	20	21	M100x2	A 2220	KM 20	MB 20	KMG 20	22220 K	
		130	83	20	21	M100x2	A 2220	KM 20	MB 20	KMG 20	2220 K	
		130	84	20	21	M100x2	A320	KM 20	MB 20	KMG 20	1320 K	
		130	101	20	21	M100x2	A KX20	KM 20	MB 20	KMG 20	UKX 20	
		130	107.3	20	21	M100x2	A 3220	KM 20	MB 20	KMG 20	23220 K	
		130	115	20	21	M100x2	A K320	KM 20	MB 20	KMG 20	UK 320	
		130	120	20	21	M100x2	A 2320	KM 20	MB 20	KMG 20	22320 K	
		130	120	20	21	M100x2	A 2320	KM 20	MB 20	KMG 20	2320 K	
100	110	145	86.5	21	21.5	M110x2	A 222	KM 22	MB 22	KMG 22	1222 K	
		145	98.5	21	21.5	M110x2	A 322	KM 22	MB 22	KMG 22	1322 K	
		145	106.5	21	21.5	M110x2	A 2222	KM 22	MB 22	KMG 22	22222 K	
		145	106.5	21	21.5	M110x2	A 2222	KM 22	MB 22	KMG 22	2222 K	
		145	118.3	21	21.5	M110x2	A 3222	KM 22	MB 22	KMG 22	23222 K	
		145	126.5	21	21.5	M110x2	A K322	KM 22	MB 22	KMG 22	UK 322	
		145	128.5	21	21.5	M110x2	A 2322	KM 22	MB 22	KMG 22	22322 K	
		145	128.5	21	21.5	M110x2	A 2322	KM 22	MB 22	KMG 22	2322 K	
		145	128.5	21	21.5	M110x2	A 2322	KM 22	MB 22	KMG 22	2322 K	
110	120	155	96	22	26	M120x2	A 224	KM 24	MB 24	KMG 24	1224 K	
		155	112	22	26	M120x2	A 2224	KM 24	MB 24	KMG 24	22224 K	
		155	130	22	26	M120x2	A 3224	KM 24	MB 24	KMG 24	23224 K	
		155	140	22	26	M120x2	A 2324	KM 24	MB 24	KMG 24	22324 K	
		155	141	22	26	M120x2	A K324	KM 24	MB 24	KMG 24	UK 324	
115	130	165	121	23	28	M130x2	A 2226	KM 26	MB 26	KMG 26	22226 K	
		165	137	23	28	M130x2	A 3226	KM 26	MB 26	KMG 26	23226 K	
		165	144	23	28	M130x2	A K326	KM 26	MB 26	KMG 26	UK 326	
		165	150	23	28	M130x2	A 2326	KM 26	MB 26	KMG 26	22326 K	
125	140	165	127	24	29	M140x2	A 2228	KM 28	MB 28	KMG 28	22228 K	
		165	147	24	29	M140x2	A 3228	KM 28	MB 28	KMG 28	23228 K	
125	140	165	156	24	29	M140x2	A K328	KM 28	MB 28	KMG 28	UK 328	
		165	161	24	29	M140x2	A 2328	KM 28	MB 28	KMG 28	22328 K	
135	150	195	138	26	32	M150x2	A 2230	KM 30	MB 30	KMG 30	22230 K	
		195	161	26	32	M150x2	A 3230	KM 30	MB 30	KMG 30	23230 K	
		195	173	26	32	M150x2	A 2330	KM 30	MB 30	KMG 30	22330 K	

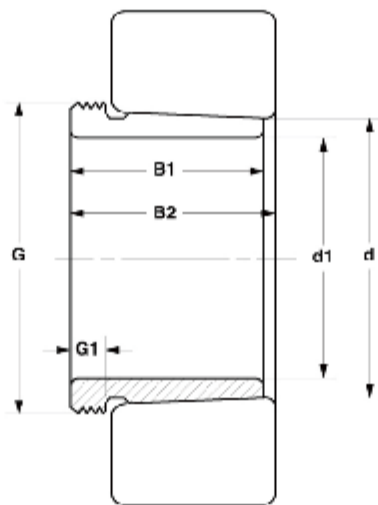
Extraction Sleeves
d1 35-480 mm



- 1) Width before the sleeve is pressed into the bearing bore
2) The designation of extraction sleeve with suffix G, please see page 54

Dimensions							Mass Designations								
d1	d	B1	B2 ¹⁾	G	G1	G2	e	Extraction sleeve 2)	Appropriate extraction nut	hydraulic nut	Lock nut	Locking washer	Bearings		
mm								Kg							
35	40	29	32	M 45x1.5	6	-	-	0.09	AH 308	KM9	-	KM 7	MB 7	2208K,1308K	
		40	43	M 45x1.5	7	-	-	0.13	AH 2308	KM9	-	KM 7	MB 7	22208K,21308K	
40	45	31	34	M 50x1.5	6	-	-	0.12	AH 309	KM10	HMV10	KM 8	MB 8	2209K,1309K	
		44	47	M 50x1.5	7	-	-	0.16	AH 2309	KM10	HMV10	KM 8	MB 8	22209K,21309K	
45	50	35	38	M 55x2	7	-	-	0.13	AHX 310	KM11	HMV11	KM 9	MB 9	2210K,1310K	
		50	53	M 55x2	9	-	-	0.19	AHX 2310	KM11	HMV11	KM 9	MB 9	22210K,21310K	
50	55	37	40	M 60x2	7	-	-	0.16	AHX 311	KM12	HMV12	KM 10	MB 10	2211K,1311K	
		54	57	M 60x2	10	-	-	0.26	AHX 2311	KM12	HMV12	KM 10	MB 10	22211K,21311K	
55	60	40	43	M 65x2	8	-	-	0.19	AHX312	KM13	HMV13	KM 11	MB 11	2212K,1312K	
		58	61	M 65x2	11	-	-	0.3	AHX 2312	KM13	HMV13	KM 11	MB 11	22212K,21312K	
60	65	42	45	M 75x2	8	-	-	0.25	AH 313	KM15	HMV15	KM 12	MB 12	2213K,1313K	
		61	64	M 75x2	12	-	-	0.39	AH 2313	KM15	HMV15	KM 12	MB 12	22213K,21313K	
65	70	64	68	M 80x2	12	-	-	0.7	AHX 2314/60	KM16	HMV16	KM 12	MB 12	2313K,22313K	
		64	68	M 80x2	12	-	-	0.45	AH 314	KM16	HMV16	KM 13	MB 13	22214K,21314K	
70	75	43	47	M 80x2	8	-	-	0.29	AHX 2314	KM16	HMV16	KM 13	MB 13	22314K	
		64	68	M 80x2	12	-	-	0.81	AHX 2315/65	KM17	HMV17	KM 13	MB 13	2315K,22315K	
75	80	45	49	M 85x2	8	-	-	0.32	AH 315	KM17	HMV17	KM 14	MB 14	2215K,1315K	
		68	72	M 85x2	12	-	-	0.53	AHX 2315	KM17	HMV17	KM 14	MB 14	22215K,21315K	
80	85	48	52	M 90x2	8	-	-	0.58	AH 316/70	KM18	HMV18	KM 14	MB 14	2315K,22315K	
		71	75	M 90x2	12	-	-	0.92	AHX 2316/70	KM18	HMV18	KM 14	MB 14	2216K,1316K	
85	90	48	52	M 90x2	8	-	-	0.37	AH 316	KM18	HMV18	KM 15	MB 15	22216K,21316K	
		71	75	M 90x2	12	-	-	0.57	AHX 2316	KM18	HMV18	KM 15	MB 15	2316K,22316K	
90	95	52	56	M 95x2	9	-	-	0.68	AHX 317/75	KM19	HMV19	KM 15	MB 15	2216K,1316K	
		74	78	M 95x2	13	-	-	1	AHX 317/75	KM19	HMV19	KM 15	MB 15	22217K,21317K	

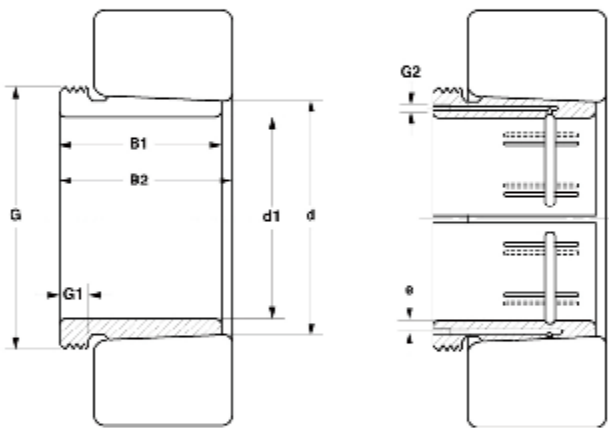
Extraction Sleeves
d1 35-480 mm



- 1) Width before the sleeve is pressed into the bearing bore
2) The designation of extraction sleeve with suffix G, please see page 54

Dimensions							Mass Designations							
d1	d	B1	B2 ¹⁾	G	G1	G2	e	Extraction sleeve 2)	Appropriate extraction nut	hydraulic nut	Lock nut	Locking washer	Bearings	
mm								Kg						
80	85	52	56	M 95x2	9	-	-	0.43	AHX 317	KM19	HMV19	KM 16	MB 16	2217K,1317K
		74	78	M 95x2	13	-	-	0.65	AHX 2317	KM19	HMV19	KM 16	MB 16	22217K,21317K
	90	53	57	M 100x2	9	-	-	0.73	AHX 318/80	KM20	HMV20	KM 16	MB 16	2317K,22317K
		79	83	M 100x2	14	-	-	1.15	AHX 2318/80	KM20	HMV20	KM 16	MB 16	2218K,1318K 22218K,21318K 2318K,22318K
85	90	53	57	M 100x2	9	-	-	0.46	AHX 318	KM20	HMV20	KM 17	MB 17	2218K,1318K 22218K,21318K
		79	83	M 100x2	14	-	-	0.76	AHX 2318	KM20	HMV20	KM 17	MB 17	2318K,22318K
		63	67	M 100x2	10	-	-	0.57	AHX 3218	KM20	HMV20	KM 17	MB 17	23218K
	95	57	61	M 105x2	10	-	-	0.85	AHX 319/85	KM21	HMV21	KM 17	MB 17	2219K,1319K 22219K,21319K
		85	89	M 105x2	16	-	-	1.35	AHX 2319/85	KM21	HMV21	KM 17	MB 17	2319K,22319K
90	95	57	61	M 105x2	10	-	-	0.54	AHX 319	KM21	HMV21	KM 18	MB 18	2219K,1319K 22219K,21319K
		85	89	M 105x2	16	-	-	0.9	AHX 2319	KM21	HMV21	KM 18	MB 18	2319K,22319K
	100	59	63	M 110x2	10	-	-	0.9	AHX 320/90	KM22	HMV22	KM 18	MB 18	2220K,1320K 22220K,21320K
		90	94	M 110x2	16	-	-	1.5	AHX 2320/90	KM22	HMV22	KM 18	MB 18	2320K,22320K
95	100	59	63	M 110x2	10	-	-	0.58	AHX 320	KM22	HMV22	KM 19	MB 19	2220K,1320K 22220K,21320K
		64	68	M 110x2	11	-	-	0.66	AHX 3120	KM22	HMV22	KM 19	MB 19	23120K
		73	77	M 110x2	11	-	-	0.76	AHX 3220	KM22	HMV22	KM 19	MB 19	23220K
		90	94	M 110x2	16	-	-	1	AHX 2320	KM22	HMV22	KM 19	MB 19	2320K,22320K
100	110	98	102	M 125x2	16	-	-	1.95	AHX 2322/100	KM25	HMV25	KM 20	MB 20	2322K,22322K
		68	72	M 120x2	11	-	-	1.2	AHX 3122/100	KM24	HMV24	KM 20	MB 20	2222K,23122K 22222K
105	110	63	67	M 120x2	12	-	-	0.77	AHX 322	KM24	HMV24	KM 21	MB 21	1322K,21322K
		98	102	M 125x2	16	-	-	1.35	AHX 2322	KM25	HMV25	KM 21	MB 21	2322K,22322K
		68	72	M 120x2	11	-	-	0.76	AHX 3122	KM24	HMV24	KM 21	MB 21	2222K,23122K 22222K,21322K
	82	86	M 125x2	11	-	-	1.05	AHX 3222	KM25	HMV25	KM 21	MB 21	23222K	
		82	91	M 115x2	13	-	-	0.71	AH 24122	KM23	HMV23	KM 21	MB 21	24122K30
110	120	105	109	M 135x2	17	-	-	2.35	AHX 2324/110	KM27	HMV27	KM 22	MB 22	22324K
		75	79	M 130x2	12	-	-	1.45	AHX 3124/110	KM26	HMV26	KM 22	MB 22	23124K,22224K
115	120	105	109	M 135x2	17	-	-	1.65	AHX 2324	KM27	HMV27	KM 22	MB 22	22324K
		60	64	M 130x2	13	-	-	0.73	AHX 3024	KM26	HMV26	KM 22	MB 22	23024K

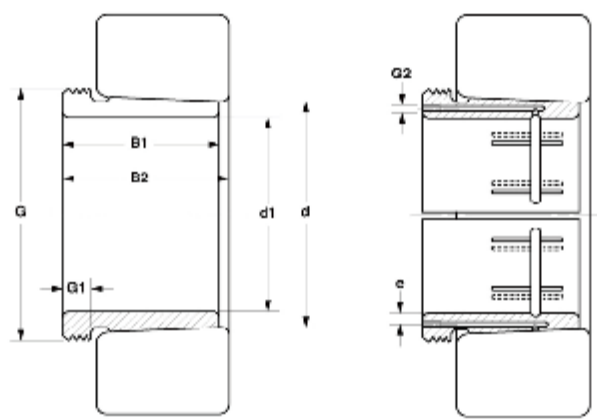
Extraction Sleeves
d1 35-480 mm



- 1) Width before the sleeve is pressed into the bearing bore
2) The designation of extraction sleeve with suffix G, please see page 54

Dimensions								Mass Designations						
d1	d	B1	B2 ¹⁾	G	G1	G2	e	Extraction sleeve 2)	Appropriate extraction nut	hydraulic nut	Lock nut	Locking washer	Bearings	
mm								Kg						
115	120	75	79	M 130x2	12	-	-	0.94	AHX 3124	KM26	HMV26	KM 22	MB 22	23124K,22224K
		90	94	M 135x2	13	-	-	1.3	AHX 3224	KM27	HMV27	KM 22	MB 22	23224K
		73	82	M 125x2	13	-	-	0.7	AH 24024	KM25	HMV25	KM 22	MB 22	24024K30
	130	93	102	M 130x2	13	-	-	1	AH 24124	KM26	HMV26	KM 22	MB 22	24124K30
		115	119	M 145x2	19	-	-	3.6	AHX 2326/115	KM29	HMV29	KM 22	MB 22	22326K
		78	82	M 140x2	12	-	-	2.2	AHX 3126/115	KM28	HMV28	KM 22	MB 22	23126K,22226K
125	130	115	119	M 145x2	19	-	-	2	AHX 2326	KM29	HMV29	KM 24	MB 24	22326K
		67	71	M 140x2	14	-	-	0.91	AHX 3026	KM28	HMV28	KM 24	MB 24	23026K
		78	82	M 140x2	12	-	-	1.1	AHX 3126	KM28	HMV28	KM 24	MB 24	23126K,22226K
		98	102	M 145x2	15	-	-	1.55	AHX 3226	KM29	HMV29	KM 24	MB 24	23226K
		83	93	M 135x2	14	-	-	0.88	AH 24026	KM27	HMV27	KM 24	MB 24	24026K30
	140	94	104	M 140x2	14	-	-	1.15	AH 24126	KM28	HMV28	KM 24	MB 24	24126K30
		125	130	M 155x3	20	-	-	4.3	AHX 2328/125	KM31	HMV31	KM 24	MB 24	22328K
		83	88	M 150x2	14	-	-	2.5	AHX 3128/125	KM30	HMV30	KM 24	MB 24	23128K,22228K
		135	140	125	130	M 155x3	20	-	-	2.35	AHX 2328	KM31	HMV31	KM 26
68	73			M 150x2	14	-	-	1	AHX3028	KM30	HMV30	KM 26	MB 26	23028K
83	88			M 150x2	14	-	-	1.3	AHX 3128	KM30	HMV30	KM 26	MB 26	23128K,22228K
104	109			M 155x3	15	-	-	1.85	AHX 3228	KM31	HMV31	KM 26	MB 26	23228K
83	93			M 145x2	14	-	-	0.95	AH 24028	KM29	HMV29	KM 26	MB 26	24028K
150	99		109	M 150x2	14	-	-	1.3	AH 24128	KM30	HMV30	KM 26	MB 26	24128K
	135		140	M 165x3	24	-	-	5.1	AHX 2330/135	KM33	HMV33	KM 26	MB 26	22330K
	96		101	M 165x3	15	-	-	3.4	AHX 3130/135	KM33	HMV33	KM 26	MB 26	23130K,22230K
140	160	140	146	M 180x3	24	-	-	7.25	AH 2332/140	KM36	HMV36	KM 28	MB 28	22332K
		103	108	M 180x3	16	-	-	4.25	AH 3132/140	KM36	HMV36	KM 28	MB 28	23132K,22232K
145	150	135	140	M 165x3	24	-	-	2.8	AHX 2330	KM33	HMV33	KM 28	MB 28	22330K
		72	77	M 160x3	15	-	-	1.15	AHX 3030	KM32	HMV32	KM 28	MB 28	23030K
		96	101	M 165x3	15	-	-	1.8	AHX 3130	KM33	HMV33	KM 28	MB 28	23130K,22230K
		114	119	M 165x3	17	-	-	2.2	AHX 3230	KM33	HMV33	KM 28	MB 28	23230K
		90	101	M 155x3	15	-	-	1.05	AH 24030	KM31	HMV31	KM 28	MB 28	24030K30
		115	126	M 160x3	15	-	-	1.55	AH 24130	KM32	HMV32	KM 28	MB 28	24130K30
150	160	140	146	M 180x3	24	-	-	4.65	AH 2332	KM36	HMV36	KM 30	MB 30	22332K
		140	146	M 180x3	24	M6	4.5	4.65	AOH 2332	KM36	HMV36	KM 30	MB 30	22332K
		77	82	M 170x3	16	-	-	2.05	AH 3032	KM34	HMV34	KM 30	MB 30	23023K
		77	82	M 170x3	16	M6	4	2.05	AOH 3032	KM34	HMV34	KM 30	MB 30	23023K
		103	108	M 180x3	16	-	-	3.2	AH 3132	KM36	HMV36	KM 30	MB 30	23132K,22232K
		103	108	M 180x3	16	M6	4.5	3.2	AOH 3132	KM36	HMV36	KM 30	MB 30	23132K,22232K
		124	130	M 180x3	20	-	-	4	AH 3232	KM36	HMV36	KM 30	MB 30	23232K
		124	130	M 180x3	20	M6	4.5	4	AOH 3232	KM36	HMV36	KM 30	MB 30	23232K

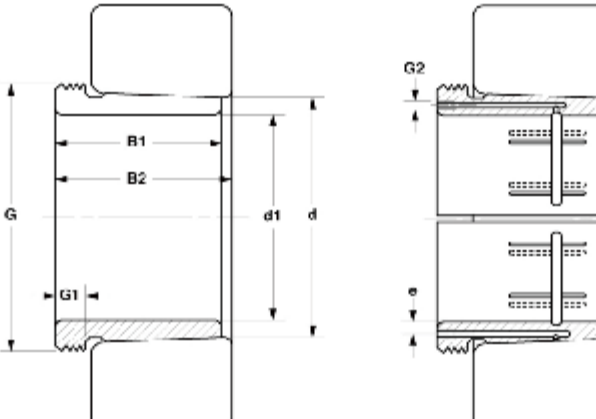
Extraction Sleeves
d1 35-480 mm



- 1) Width before the sleeve is pressed into the bearing bore
2) The designation of extraction sleeve with suffix G, please see page 54

Dimensions			Mass		Designations								
d1	d	B1	B2	G	G1	G2	e	Extraction sleeve 2)	Appropriate extraction nut	hydraulic nut	Lock nut	Locking washer	Bearings
mm							Kg						
150	160	95	106	M 170x3	15	-	2.3	AH 24032	KM34	HMV34	KM 30	MB 30	24032K30
		124	135	M 170x3	15	-	3	AH 24132	KM34	HMV34	KM 30	MB 30	24132K30
	170	146	152	M 190x3	24	-	8.05	AH 2334/150	KM38	HMV38	KM 30	MB 30	22334K
		104	109	M 190x3	16	-	5.4	AH 3134/150	KM38	HMV38	KM 30	MB 30	23134K,22234K
160	170	146	152	M 190x3	24	-	5.25	AH 2334	KM38	HMV38	KM 32	MB 32	22334K
		146	152	M 190x3	24	M6	4.5	AOH 2334	KM38	HMV38	KM 32	MB 32	22334K
		85	90	M 180x3	17	-	2.45	AH 3034	KM36	HMV36	KM 32	MB 32	23034K
		85	90	M 180x3	17	M6	4	AOH 3034	KM36	HMV36	KM 32	MB 32	23034K
		104	109	M 190x3	16	-	3.45	AH 3134	KM38	HMV38	KM 32	MB 32	23134K,22234K
		104	109	M 190x3	16	M6	4.5	AOH 3134	KM38	HMV38	KM 32	MB 32	23134K,22234K
		134	140	M 190x3	24	-	4.8	AH 3234	KM38	HMV38	KM 32	MB 32	23234K
		134	140	M 190x3	24	M6	4.5	AOH 3234	KM38	HMV38	KM 32	MB 32	23234K
		106	117	M 180x3	16	-	2.7	AH 24034	KM36	HMV36	KM 32	MB 32	24034K30
		125	136	M 180x3	16	-	3.25	AH 24134	KM36	HMV36	KM 32	MB 32	24134K30
160	180	105	110	M 200x3	17	-	5.8	AH 2236/160	KM40	HMV40	KM 32	MB 32	22236K
		154	160	M 200x3	26	-	9.15	AH 2336/160	KM40	HMV40	KM 32	MB 32	22336K
170	180	105	110	M 200x3	17	-	3.75	AH 2236	KM40	HMV40	KM 34	MB 34	22236K
		105	110	M 200x3	17	M6	4.5	AOH 2236	KM40	HMV40	KM 34	MB 34	22236K
		154	160	M 200x3	26	-	6.05	AH 2336	KM40	HMV40	KM 34	MB 34	22336K
		154	160	M 200x3	26	M6	4.5	AOH 2336	KM40	HMV40	KM 34	MB 34	22336K
		92	98	M 190x3	17	-	2.8	AH 3036	KM38	HMV38	KM 34	MB 34	23036K
		92	98	M 190x3	17	M6	4	AOH 3036	KM38	HMV38	KM 34	MB 34	23036K
		116	122	M 200x3	19	-	4.25	AH 3136	KM40	HMV40	KM 34	MB 34	23136K
		116	122	M 200x3	19	M6	4.5	AOH 3136	KM40	HMV40	KM 34	MB 34	23136K
		140	146	M 200x3	24	-	5.25	AH 3236	KM40	HMV40	KM 34	MB 34	23236K
		140	146	M 200x3	24	M6	4.5	AOH 3236	KM40	HMV40	KM 34	MB 34	23236K
		116	127	M 190x3	16	-	3.2	AH 24036	KM38	HMV38	KM 34	MB 34	24036K30
		134	145	M 190x3	16	-	3.75	AH 24136	KM38	HMV38	KM 34	MB 34	24136K30
	190	112	117	Tr 210x4	18	-	6.65	AH 2238/170	HM42 T	HMV42	KM 34	MB 34	22238K
		160	167	Tr 210x4	26	-	10.1	AH 2338/170	HM42 T	HMV42	KM 34	MB 34	22338K
180	190	112	117	Tr 210x4	18	-	4.25	AH 2238	HM42 T	HMV42	KM 36	MB 36	22238K
		112	117	Tr 210x4	18	M6	4.5	AOH 2238	HM42 T	HMV42	KM 36	MB 36	22238K
		160	167	Tr 210x4	26	-	6.7	AH 2338	HM42 T	HMV42	KM 36	MB 36	22338K
		160	167	Tr 210x4	26	M6	4.5	AOH 2338	HM42 T	HMV42	KM 36	MB 36	22338K
		96	102	Tr 205x4	18	-	3.4	AH 3038	HML41 T	HMV41	KM 36	MB 36	23038K
		96	102	Tr 205x4	18	M6	4	AOH 3038	HML41 T	HMV41	KM 36	MB 36	23038K
		125	131	Tr 210x4	20	-	4.9	AH 3138	HM42 T	HMV42	KM 36	MB 36	23138K
		125	131	Tr 210x4	20	M6	4.5	AOH 3138	HM42 T	HMV42	KM 36	MB 36	23138K
		145	152	Tr 210x4	25	-	5.9	AH 3238	HM42 T	HMV42	KM 36	MB 36	23238K

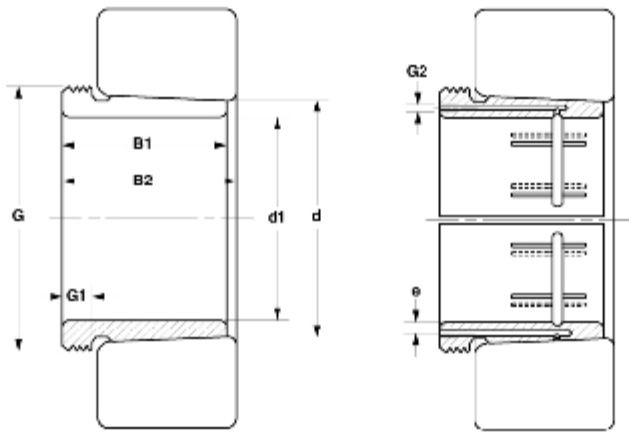
Extraction Sleeves
d1 35-480 mm



- 1) Width before the sleeve is pressed into the bearing bore
2) The designation of extraction sleeve with suffix G, please see page 54

Dimensions			Mass		Designations								
d1	d	B1	B2	G	G1	G2	e	Extraction sleeve 2)	Appropriate extraction nut	hydraulic nut	Lock nut	Locking washer	Bearings
mm							Kg						
180	190	145	152	Tr 210x4	25	M6	4.5	AOH 3238	HM42 T	HMV42	KM 36	MB 36	23238K
		118	131	M 200x3	18	-	3.55	AH 24038	KM40	HMV40	KM 36	MB 36	24038K30
		146	159	M 200x3	18	-	4.45	AH 24138	KM40	HMV40	KM 36	MB 36	24138K30
	200	118	123	Tr 220x4	19	-	7.4	AH 2240/180	HM44 T	HMV44	KM 36	MB 36	22240K
		170	177	Tr 220x4	30	-	11.5	AH 2340/180	HM44 T	HMV44	KM 36	MB 36	22340K
190	200	118	123	Tr 220x4	19	-	4.7	AH 2240	HM44 T	HMV44	KM 38	MB 38	22240K
		118	123	Tr 220x4	19	M6	4.5	AOH 2240	HM44 T	HMV44	KM 38	MB 38	22240K
		170	177	Tr 220x4	30	-	7.6	AH 2340	HM44 T	HMV44	KM 38	MB 38	22340K
		170	177	Tr 220x4	30	M6	4.5	AOH 2340	HM44 T	HMV44	KM 38	MB 38	22340K
		102	108	Tr 215x4	19	-	3.85	AH 3040	HML43 T	HMV43	KM 38	MB 38	23040K
		102	108	Tr 215x4	19	M6	4	AOH 3040	HML43 T	HMV43	KM 38	MB 38	23040K
		134	140	Tr 220x4	21	-	5.65	AH 3140	HM44 T	HMV44	KM 38	MB 38	23140K
		134	140	Tr 220x4	21	M6	4.5	AOH 3140	HM44 T	HMV44	KM 38	MB 38	23140K
		153	160	Tr 220x4	25	-	6.6	AH 3240	HM44 T	HMV44	KM 38	MB 38	23240K
		153	160	Tr 220x4	25	M6	4.5	AOH 3240	HM44 T	HMV44	KM 38	MB 38	23240K
		127	140	Tr 210x4	18	-	4	AH 24040	HM42 T	HMV42	KM 38	MB 38	24040K30
		158	171	Tr 210x4	18	-	5.05	AH 24140	HM42 T	HMV42	KM 38	MB 38	24140K30
200	220	181	189	Tr 240x4	30	G 1/4	9	AOH 2344	HM48 T	HMV48	KM 40	MB 40	23244K
													22344K
		111	117	Tr 235x4	20	G 1/8	7.5	AOH 3044	HML47 T	HMV47	KM 40	MB 40	23044K
		145	151	Tr 240x4	23	G 1/4	9	AOH 3144	HM48 T	HMV48	KM 40	MB 40	23144K
													22244K
		138	152	Tr 230x4	20	G 1/8	6.5	AOH 24044	HM46 T	HMV46	KM 40	MB 40	24044K30
220	240	189	197	Tr 260x4	30	G 1/4	9	AOH 2348	HM52 T	HMV52	HM44 T	MB 44	23248K
													22348K
		116	123	Tr 260x4	21	G 1/4	9	AOH 3048	HM3052	HMV52	HM44 T	MB 44	23048K
		154	161	Tr 260x4	25	G 1/4	9	AOH 3148	HM52 T	HMV52	HM44 T	MB 44	23148K
													22248K
		138	153	Tr 250x4	20	G 1/8	6.5	AOH 24048	HM50 T	HMV50	HM44 T	MB 44	24048K30
240	260	155	161	Tr 290x4	23	G 1/4	9.5	AOH 2252	HM58 T	HMV58 T	HM48 T	MB 48	22252K3
		205	213	Tr 290x4	30	G 1/4	10.5	AOH 2352	HM58 T	HMV58 T	HM48 T	MB 48	23252K3
													22352K
		128	135	Tr 280x4	23	G 1/4	9	AOH 3052	HM3056	HMV56	HM48 T	MB 48	23052K
		172	179	Tr 290x4	26	G 1/4	9.5	AOH 3152	HM58 T	HMV58	HM48 T	MB 48	23152K
		162	178	Tr 270x4	22	G 1/8	6.5	AOH 24052	HM54 T	HMV54	HM48 T	MB 48	24052K30
		202	218	Tr 280x4	22	G 1/4	9	AOH 24152	HM56 T	HMV56	HM48 T	MB 48	24152K30

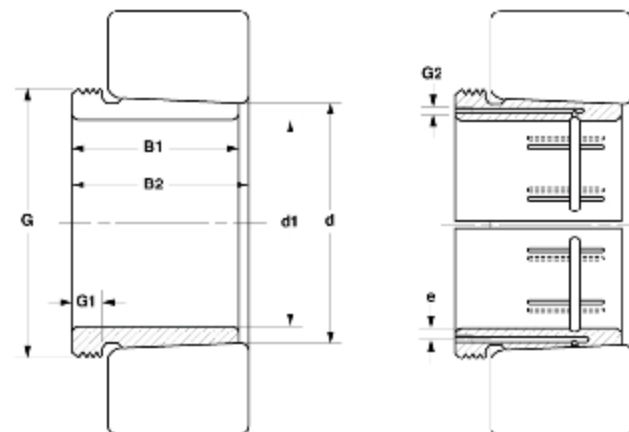
Extraction Sleeves
d1 35-480 mm



- 1) Width before the sleeve is pressed into the bearing bore
2) The designation of extraction sleeve with suffix G, please see page 54

Dimensions									Mass		Designations					
d1	d	B1	B2	1) G	G1	G2	e				Extraction sleeve 2)	Appropriate extraction nut	hydraulic nut	Lock nut	Locking washer/clip	Bearings
mm									Kg							
260	280	155	163	Tr 310x5	24	G 1/4	9.5	15	15	AOH 2256	HM62 T	HMV62	HM52 T	MB 52	22256K	
		212	220	Tr 310x5	30	G 1/4	11	19.5	19.5	AOH 2356	HM62 T	HMV62	HM52 T	MB 52	23256K	
															22356K	
		131	139	Tr 300x4	24	G 1/4	9	11	11	AOH 3056	HM3060	HMV60	HM52 T	MB 52	23056K	
		175	183	Tr 310x5	28	G 1/4	9.5	15.5	15.5	AOH 3156	HM62 T	HMV62	HM52 T	MB 52	23156K	
		162	179	Tr 290x4	22	G 1/8	6.5	11.5	11.5	AOH 24056	HM58 T	HMV58	HM52 T	MB 52	24056K30	
		202	219	Tr 300x4	22	G 1/4	9	15	15	AOH 24156	HM3160	HMV60	HM52 T	MB 52	24156K30	
280	300	170	178	Tr 330x5	26	G 1/4	10	18	18	AOH 2260	HM66 T	HMV66	HM56 T	MB 56	22260K	
		145	153	Tr 320x5	26	G 1/4	9	13	13	AOH 3060	HM3064	HMV64	HM56 T	MB 56	23060K	
		192	200	Tr 330x5	30	G 1/4	10.5	19	19	AOH 3160	HM66 T	HMV66	HM56 T	MB 56	23160K	
		228	236	Tr 330x5	34	G 1/4	11.5	23.5	23.5	AOH 3260	HM66 T	HMV66	HM56 T	MB 56	23260K	
		184	202	Tr 310x5	24	G 1/8	6.5	14	14	AOH 24060	HM62 T	HMV62	HM56 T	MB 56	24060K30	
		224	242	Tr 320x5	24	G 1/4	9	18.5	18.5	AOH 24160	HM3164	HMV64	HM56 T	MB 56	24160K30	
300	320	180	190	Tr 350x5	27	G 1/4	10	20	20	AOH 2264	HM70T	HMV70	HM3060	MS3060	22264K	
		149	157	Tr 345x5	27	G 1/4	9.5	14.5	14.5	AOH 3064	HML69T	HMV69	HM3060	MS3060	23064K	
		209	217	Tr 350x5	31	G 1/4	10.5	22.5	22.5	AOH 3164	HM70 T	HMV70	HM3060	MS3060	23164K	
		246	254	Tr 350x5	36	G 1/4	12	27.5	27.5	AOH 3264	HM70 T	HMV70	HM3060	MS3060	23264K	
		184	202	Tr 330x5	24	G 1/8	6.5	15	15	AOH 24064	HM66 T	HMV66	HM3060	MS3060	24064K30	
		242	260	Tr 340x5	24	G 1/4	9	20.5	20.5	AOH 24164	HM3168	HMV68	HM3060	MS3060	24164K30	
320	340	162	171	Tr 365x5	28	G 1/4	9.5	17.5	17.5	AOH 3068	HML73T	HMV73	HM3064	MS3068-64	23068K	
		225	234	Tr 370x5	33	G 1/4	11	26.5	26.5	AOH 3168	HM74T	HMV74	HM3064	MS3068-64	23168K	
		264	273	Tr 370x5	38	G 1/4	12.5	32	32	AOH 3268	HM74T	HMV74	HM3064	MS3068-64	23268K	
		206	225	Tr 360x5	26	G 1/4	9	18	18	AOH 24068	HM3072	HMV72	HM3064	MS3068-64	24068K30	
		269	288	Tr 360x5	26	G 1/4	9	25.5	25.5	AOH 24168	HM3172	HMV72	HM3064	MS3068-64	24168K30	
340	360	167	176	Tr 385x5	30	G 1/4	9.5	19	19	AOH 3072	HML77T	HMV77	HM3068	MS3068-64	23072K	
		229	238	Tr 400x5	35	G 1/4	11	30	30	AOH 3172	HM3180	HMV80	HM3068	MS3068-64	23172K	
		274	283	Tr 400x5	40	G 1/4	13	33	33	AOH 3272	HM3180	HMV80	HM3068	MS3068-64	23272K	
		206	226	Tr 380x5	26	G 1/4	9	20	20	AOH 24072	HM7076	HMV76	HM3068	MS3068-64	24072K30	
		269	289	Tr 380x5	26	G 1/4	9	26	26	AOH 24172	HM3176	HMV76	HM3068	MS3068-64	24172K30	
360	380	170	180	Tr 410x5	31	G 1/4	9.5	23.5	23.5	AOH 3076	HML82T	HMV82	HM3072	MS3072	23076K	
		232	242	Tr 420x5	36	G 1/4	11	38	38	AOH 3176	HM3184	HMV84	HM3072	MS3072	23176K	
		284	294	Tr 420x5	42	G 1/4	13	45.5	45.5	AOH 3276	HM3184	HMV84	HM3072	MS3072	23276K	
		208	228	Tr 400x5	28	G 1/4	9	23.5	23.5	AOH 24076	HM3080	HMV80	HM3072	MS3072	24076K30	
		271	291	Tr 400x5	28	G 1/4	9	31	31	AOH 24176	HM3180	HMV80	HM3072	MS3072	24176K30	
380	400	183	193	Tr 430x5	33	G 1/4	10	27	27	AOH 3080	HML86T	HMV86	HM3076	MS3080-76	23080K	
		240	250	Tr 440x5	38	G 1/4	11.5	39.5	39.5	AOH 3180	HM3188	HMV88	HM3076	MS3080-76	23180K	
		302	312	Tr 440x5	44	G 1/4	14	51.5	51.5	AOH 3280	HM3188	HMV88	HM3076	MS3080-76	23280K	

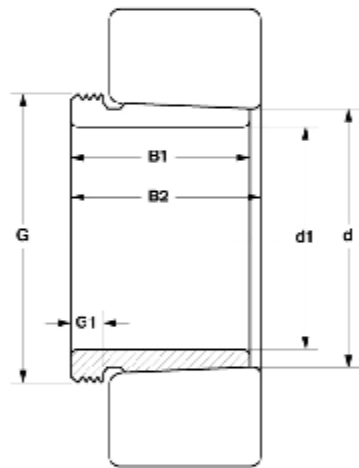
Extraction Sleeves
d1 35-480 mm



- 1) Width before the sleeve is pressed into the bearing bore
2) The designation of extraction sleeve with suffix G, please see page 54

Dimensions									Mass		Designations					
d1	d	B1	B2	1) G	G1	G2	e				Extraction sleeve 2)	Appropriate extraction nut	hydraulic nut	Lock nut	Locking clip	Bearings
mm									Kg							
380	400	228	248	Tr 420x5	28	G 1/4	9.0	27	27	AOH 24080	HM3084	HMV84	HM3076	MS3080-76	24080K30	
		278	298	Tr 420x5	28	G 1/4	9.0	35	35	AOH 24180	HM3184	HMV84	HM3076	MS3080-76	24180K30	
400	420	186	196	Tr 450x5	34	G 1/4	10.0	29	29	AOH 3084	HML90T	HMV90	HM3080	MS3080-76	23084K	
		266	276	Tr 460x5	40	G 1/4	12.5	46	46	AOH 3184	HM3192	HMV92	HM3080	MS3080-76	23184K	
		321	331	Tr 460x5	46	G 1/4	14.0	59	59	AOH 3284	HM3192	HMV92	HM3080	MS3080-76	23284K	
		230	252	Tr 440x5	30	G 1/4	9.0	29	29	AOH 24084	HM3088	HMV88	HM3080	MS3080-76	24084K30	
		310	332	Tr 440x5	30	G 1/4	9.0	39	39	AOH 24184	HM3188	HMV88	HM3080	MS3080-76	24184K30	
420	440	194	205	Tr 470x5	35	G 1/4	10.5	31.9	31.9	AOHX 3088	HML94T	HMV94	HM3084	MS3084	23088K	
		270	281	Tr 480x5	42	G 1/4	12.5	50	50	AOHX 3188	HM3196	HMV96	HM3084	MS3084	23188K	
		330	341	Tr 480x5	48	G 1/4	14.5	64.4	64.4	AOHX 3288	HM3196	HMV96	HM3084	MS3084	23288K	
		242	264	Tr 460x5	30	G 1/4	9.0	32	32	AOH 24088	HML92T	HMV92	HM3084	MS3084	24088K30	
		310	332	Tr 460x5	30	G 1/4	9.0	45.5	45.5	AOH 24188	HM3192	HMV92	HM3084	MS3084	24188K30	
440	460	202	213	Tr 490x5	37	G 1/4	11.0	35	35	AOHX 3092	HML98T	HMV98	HM3088	MS3092-88	23092K	
		285	296	Tr 510x6	43	G 1/4	13.0	58	58	AOHX 3192	HM102T	HMV102	HM3088	MS3092-88	23192K	
		349	360	Tr 510x6	50	G 1/4	15.0	75.3	75.3	AOHX 3292	HM102T	HMV102	HM3088	MS3092-88	23292K	
		250	273	Tr 480x5	32	G 1/4	9.0	34.7	34.7	AOH 24092	HML96T	HMV96	HM3088	MS3092-88	24092K30	
		332	355	Tr 480x5	32	G 1/4	9.0	50	50	AOH 24192	HM3196	HMV96	HM3088	MS3092-88	24192K30	
460	480	205	217	Tr 520x6	38	G 1/4	11.0	39.6	39.6	AOHX 3096	HML104T	HMV104	HM3092	MS3092-88	23096K	
		295	307	Tr 530x6	45	G 1/4	13.5	63	63	AOHX 3196	HM31/530	HMV106	HM3092	MS3092-88	23196K	
		364	376	Tr 530x6	52	G 1/4	15.5	82.5	82.5	AOHX 3296	HM31/530	HMV106	HM3092	MS3092-88	23296K	
		250	273	Tr 500x5	32	G 1/4	9.0	36.6	36.6	AOH 24096	HML100T	HMV100	HM3092	MS3092-88	24096K30	
		340	363	Tr 500x5	32	G 1/4	9.0	51.5	51.5	AOH 24196	HM31/530	HMV100	HM3092	MS3092-88	24196K30	
480	500	209	221	Tr 540x6	40	G 1/4	11.0	42.4	42.4	AOHX 30/500	HML108T	HMV108	HM3096	MS30/500-96	230/500 K	
		313	325	Tr 550x6	47	G 1/4	14.0	70.7	70.7	AOHX 31/500	HM110T	HMV110	HM3096	MS30/500-96	231/500 K	
		393	405	Tr 550x6	54	G 1/4	16.5	95.2	95.2	AOHX 32/500	HM110T	HMV110	HM3096	MS30/500-96	232/500 K	
		253	276	Tr 530x6	35	G 1/4	9.0	41.7	41.7	AOH 240/500	HML106T	HMV106	HM3096	MS30/500-96	240/500 K30	
		360	383	Tr 530x6	35	G 1/4	9.0	57	57	AOH 241/500	HM31/530	HMV106	HM3096	MS30/500-96	241/500 K30	

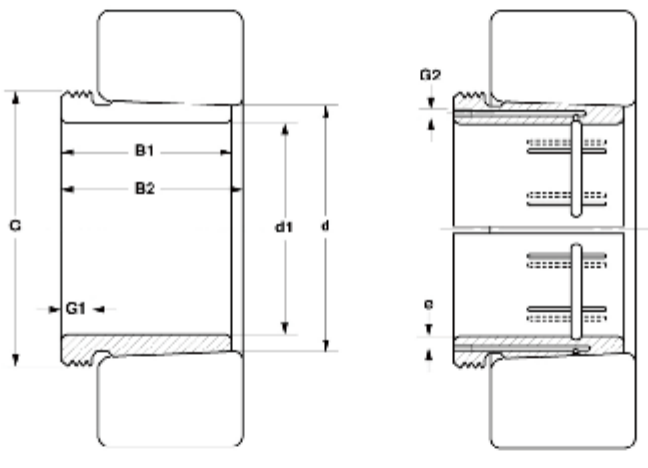
Extraction sleeves with small extraction nuts
d1 60-420 mm



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

Dimensions				Mass	Desi Gnations		Appropriate extraction nut	Lock nut	Locking washer	Bearings
d1	d	B1	B2 ¹⁾	G	G1	G2				
mm							Kg			
60	65	61	64	M 70x2	12	-	0,39	AH 2313 G	KM 14	2313K ,22313K
	70	64	68	M 75x2	12	-	0,70	AHX 2314/60 G	KM 15	22314K
65	70	64	68	M 75x2	12	-	0,42	AHX 2314 G	KM 15	22314K
	75	68	72	M 80x2	12	-	0,81	AHX 2315/65 G	KM 16	2315K ,22315K
70	75	68	72	M 80x2	12	-	0,48	AHX 2315 G	KM 16	2315K ,22315K
100	110	98	102	M 120x2	16	-	1,95	AHX 2322/100 G	KM 24	22322K
105	110	82	86	M 120x2	11	-	1,00	AHX 3222 G	KM 24	23222K
		98	102	M 120x2	16	-	1,30	AHX 2322 G	KM 24	2322K,22322K
110	120	105	109	M 130x2	17	-	2,35	AHX 2324/110 G	KM 26	22324K
115	120	90	94	M 130x2	13	-	1,70	AHX 3224 G	KM 26	23224K
		105	109	M 130x2	17	-	1,55	AHX 2324 G	KM 26	22324K
		130	115	M 140x2	19	-	3,60	AHX 2326/115 G	KM 28	22326K
125	130	98	102	M 140x2	15	-	1,50	AHX 3226 G	KM 28	23226K
		115	119	M 140x2	19	-	1,85	AHX 2326 G	KM 28	22326K
		140	125	M 150x2	20	-	4,30	AHX 2328/125 G	KM 30	22328K
135	140	104	109	M 150x2	15	-	1,75	AHX 3228 G	KM 30	23228K
		125	130	M 150x2	20	-	2,55	AHX 2328 G	KM 30	22328K
135	150	96	101	M 160x3	15	-	3,40	AHX 3130/135 G	KM 32	23130K,22230K
		135	140	M 160x3	24	-	5,10	AHX 2330/135 G	KM 32	22330K
140	160	103	108	M 170x3	16	-	4,25	AH 3132/140 G	KM 34	23132K,22232K
		140	146	M 170x3	24	-	7,25	AH 2332/140 G	KM 34	22332K
145	150	96	101	M 160x3	15	-	1,70	AHX 3130 G	KM 32	23130K,22230K
		114	119	M 160x3	17	-	2,10	AHX 3230 G	KM 32	23230K
		135	140	M 160x3	24	-	2,75	AHX 2330 G	KM 32	22330K
150	160	103	108	M 170x3	24	-	3,00	AH 3132 G	KM 34	23132K,22232K
		124	130	M 170x3	20	-	3,70	AH 3232 G	KM 34	23232K
		140	146	M 170x3	24	-	4,35	AH 2332 G	KM 34	22332K
		170	104	M 180x3	16	-	5,40	AH 3134/150 G	KM 36	23134K,22234K
		146	152	M 180x3	24	-	8,50	AH 2334/150 G	KM 36	22334K
160	170	104	109	M 180x3	16	-	3,20	AH 3134 G	KM 36	23134K,22234K

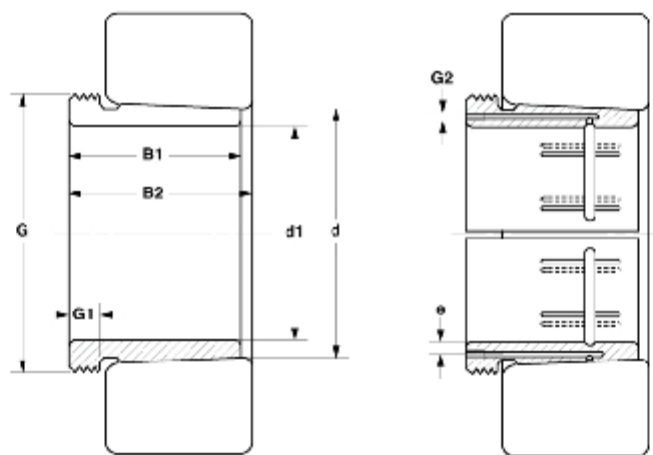
Extraction sleeves with small extraction nuts
d1 60-420 mm



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

Dimensions				Mass	Desi Gnations		Appropriate extraction nut	Lock nut	Locking washer/clip	Bearings
d1	d	B1	B2 ¹⁾	G	G1	G2				
mm							Kg			
160	170	134	140	M 180x3	24	-	4,35	AH 3234 G	KM 36	23234K
		146	152	M 180x3	24	-	4,85	AH 2334 G	KM 36	22334K
	180	105	110	M 190x3	17	-	5,80	AH 2236/160 G	KM 38	22236K
		154	160	M 190x3	26	-	9,15	AH 2336/160 G	KM 38	22336K
170	180	105	110	M 190x3	17	-	3,40	AH 2236 G	KM 38	22236K
		116	122	M 190x3	19	-	3,90	AH 3136 G	KM 38	23136K
		140	146	M 190x3	24	-	4,85	AH 3236 G	KM 38	23236K
		154	160	M 190x3	26	-	5,50	AH 2336 G	KM 38	22336K
	190	112	117	M 200x3	18	-	6,65	AH 2238/170 G	KM 40	22238K
		160	167	M 200x3	26	-	10,1	AH 2338/170 G	KM 40	22338K
180	190	96	102	M 200x3	18	-	3,30	AH 3038 G	KM 40	23038K
		112	117	M 200x3	18	-	3,90	AH 2238 G	KM 40	22238K
		125	131	M 200x3	20	-	4,50	AH 3138 G	KM 40	23138K
		145	152	M 200x3	25	-	5,90	AH 3238 G	KM 40	23238K
		160	167	M 200x3	26	-	6,10	AH 2338 G	KM 40	22338K
190	200	102	108	Tr 210x4	19	-	3,70	AH 3040 G	HM 42 T	23040K
200	220	111	117	Tr 230x4	19	M6	7,30	AOH 3044 G	HM 46 T	23044K
240	260	155	161	Tr 280x4	23	G 1/4	13,5	AOH 2252 G	HM 3056	22252K
		162	178	Tr 280x4	22	G 1/8	12,5	AOH 24052 G	HM 3056	24052K30
		172	179	Tr 280x4	26	G 1/4	15,5	AOH 3152 G	HM 3056	23148K
		205	213	Tr 280x4	30	G 1/4	19,0	AOH 2352 G	HM 3056	23252K
260	280	155	163	Tr 300x4	24	G 1/4	15,0	AOH 2256 G	HM 3160	22256K
		162	179	Tr 300x4	22	G 1/8	13,5	AOH 24056 G	HM 3160	24056K30
		175	183	Tr 300x4	28	G 1/4	17,0	AOH 3156 G	HM 3160	23156K
		212	220	Tr 300x4	30	G 1/4	21,5	AOH 2356 G	HM 3160	22356K
280	300	170	178	Tr 320x5	26	G 1/4	18,0	AOH 2260 G	HM 3164	22260K
		184	202	Tr 320x5	24	G 1/8	17,0	AOH 24060 G	HM 3164	24060K30
		192	200	Tr 320x5	30	G 1/4	20,5	AOH 3160 G	HM 3164	23160K
		228	236	Tr 320x5	34	G 1/4	23,5	AOH 3260 G	HM 3164	23260K
300	320	149	157	Tr 340x5	27	G 1/4	17,0	AOH 3064 G	HM 3068	23064K
		180	190	Tr 340x5	27	G 1/4	20,0	AOH 2264 G	HM 3168	22264K
		184	202	Tr 340x5	24	G 1/8	15	AOH 24064 G	HM 3168	24064K30
		209	217	Tr 340x5	31	G 1/4	24,5	AOH 3164 G	HM 3168	23164K
		246	254	Tr 340x5	36	G 1/4	27,5	AOH 3264 G	HM 3168	23264K

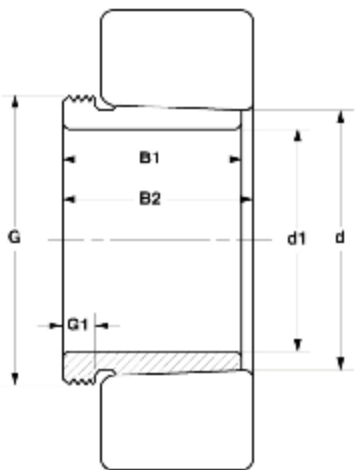
Extraction sleeves with small extraction nuts
d1 60-420 mm



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

Dimensions										Mass	Designations				
											Extraction sleeve	Appropriate extraction nut	Lock nut	Locking clip	Bearings
d1	d	B1	B2 ¹⁾	G	G1	G2	e								
mm															
320	340	162	171	Tr 360x5	28	G 1/4	9.5	17,5	AOH 3068 G						
		225	234	Tr 360x5	33	G 1/4	11.0	28,5	AOH 3168 G						
		264	273	Tr 360x5	38	G 1/4	12.5	32,0	AOH 3268 G						
340	360	167	176	Tr 380x5	30	G 1/4	9.5	21,0	AOH 3072 G						
		229	238	Tr 380x5	35	G 1/4	11.0	30,5	AOH 3172 G						
		274	283	Tr 380x5	40	G 1/4	13.0	35,5	AOH 3272 G						
360	380	170	180	Tr 400x5	31	G 1/4	9.5	22,5	AOH 3076 G						
		232	242	Tr 400x5	36	G 1/4	11.0	33,0	AOH 3176 G						
		284	294	Tr 400x5	42	G 1/4	13.0	42,0	AOH 3276 G						
380	400	183	193	Tr 400x5	33	G 1/4	10.0	26,0	AOH 3080 G						
		240	250	Tr 420x5	38	G 1/4	11.5	36,0	AOH 3180 G						
		302	312	Tr 420x5	44	G 1/4	14.0	48,0	AOH 3280 G						
400	420	186	196	Tr 440x5	34	G 1/4	10.0	28,0	AOH 3084 G						
		266	276	Tr 440x5	40	G 1/4	12.5	43,0	AOH 3184 G						
		321	331	Tr 440x5	46	G 1/4	14.0	54,5	AOH 3284 G						
420	440	194	205	Tr 460x5	35	G 1/4	10.0	31,0	AOHX 3088 G						

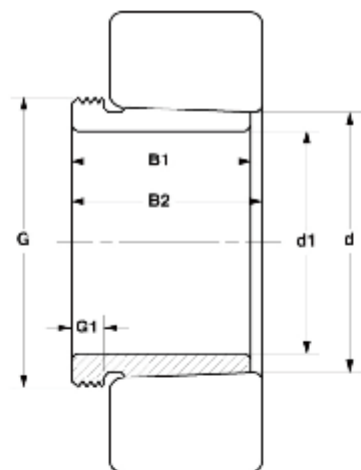
Extraction Sleeves
with inch dimensions
d1 35-220 mm



1) Width before the sleeve is pressed into the bearing bore
Threads: American National Form NS Class 3

Dimensions										Mass	Designations				
											Extraction sleeve	Appropriate extraction nut	Lock nut	Locking washer	Bearings
d1	d	B1	B2 ¹⁾	G	G1	No of threads per in.									
mm		in		nom.											
35	40	1.181	1.299	1.767	0.247	18	0.07	SK 8							
		1.575	1.693	1.767	0.287	18	0.11	SK 108							
40	45	1.260	1.378	1.967	0.247	18	0.1	SK 9							
		1.732	1.850	1.967	0.287	18	0.14	SK 109							
45	50	1.378	1.496	2.204	0.287	18	0.11	SK 10							
		1.969	2.087	2.204	0.326	18	0.21	SK 110							
50	55	1.457	1.575	2.407	0.287	18	0.14	SK 11							
		2.126	2.244	2.407	0.365	18	0.25	SK 111							
55	60	1.575	1.693	2.626	0.306	18	0.19	SK 12							
		2.244	2.362	2.626	0.405	18	0.31	SK 112							
60	65	1.654	1.772	2.933	0.306	12	0.23	ASK 13							
		2.402	2.520	2.933	0.447	12	0.38	ASK 113							
		1.732	1.890	3.137	0.306	12	0.43	ASK 14							
		2.559	2.716	3.137	0.486	12	0.7	ASK 114							
65	75	1.732	1.870	3.34	0.326	12	0.57	SK 2215							
		1.850	2.007	3.34	0.326	12	0.57	ASK 15							
		2.717	2.874	3.34	0.486	12	0.81	ASK 115							
70	80	1.732	1.870	3.527	0.365	12	0.57	SK 2216							
		1.969	2.126	3.527	0.365	12	0.57	ASK 16							
		2.835	2.992	3.527	0.486	12	0.91	ASK 116							
75	85	2.047	2.204	3.73	0.365	12	0.65	ASK 17							
		2.953	3.110	3.73	0.526	12	1	ASK 117							
80	90	2.087	2.244	3.918	0.365	12	0.7	ASK 18							
		3.150	3.307	3.918	0.565	12	1.15	ASK 118							
85	95	2.244	2.401	4.122	0.405	12	0.82	ASK 19							
		3.346	3.503	4.122	0.605	12	1.35	ASK 119							
90	100	2.323	2.480	4.325	0.427	12	0.91	ASK 20							
		3.543	3.700	4.325	0.605	12	1.55	ASK 120							
95	105	2.441	2.598	4.559	0.447	12	1.05	ASK 21							

Extraction Sleeves
with inch dimensions
d1 35-220 mm



1) Width before the sleeve is pressed into the bearing bore
Threads: American National Form NS Class 3

Dimensions								Mass	Designations						
d1	d	B1	B2 ¹⁾	G nom.	G1	No of threads per in.			Extraction sleeve	Appropriate extraction nut	Lock nut	Locking washer	Bearings		
mm	in						Kg								
100	110	2.559	2.716	4.778	0.447	12	1.1	ASK 22	ARN 22	AN 20	W 20		2222K,1322K,22222 K 21322 K 2322K,22322 K		
		3.858	4.015	4.778	0.644	12	1.95	ASK 122	ARN 22	AN 20	W 20				
110	120	2.835	2.992	5.185	0.486	12	1.4	ASK 24	ARN 24	AN 22	W 22		1324K,22224 K 2324K,22324 K		
		4.134	4.291	5.185	0.683	12	2.25	ASK 124	ARN 24	AN 22	W 22				
115	130	3.071	3.228	5.622	0.486	12	2.25	ASK 26	ARN 26	AN 22	W 22		22226 K 22326 K		
		4.528	4.685	5.622	0.765	12	3.65	ASK 126	ARN 26	AN 22	W 22				
125	140	3.228	3.425	6.097	0.526	8	2.65	SK 28	RN 28	AN 24	W 24		22228 K 22328 K		
		4.921	5.118	6.097	0.804	8	4.3	SK 128	RN 28	AN 24	W 24				
135	150	3.465	3.662	6.503	0.565	8	3.1	SK 30	RN 30	AN 26	W 26		22230 K 22330 K		
		5.315	5.512	6.503	0.962	8	5.15	SK 130	RN 30	AN 26	W 26				
140	160	3.780	3.977	6.925	0.565	8	4.5	SK 32	RN 32	AN 28	W 28		22232 K 22332 K		
		5.512	5.748	6.925	0.962	8	7.05	SK 132	RN 32	AN 28	W 28				
150	170	4.094	4.291	7.331	0.644	8	5.2	SK 34	RN 34	AN 30	W 30		22234 K 22334 K		
		5.748	5.984	7.331	0.962	8	7.85	SK 134	RN 34	AN 30	W 30				
160	180	4.094	4.291	7.753	0.644	8	5.65	SK 36	RN 36	AN 32	W 32		22236 K 22336 K		
		6.063	6.299	7.753	1.041	8	9.2	SK 136	RN 36	AN 32	W 32				
170	190	4.409	4.606	8.191	0.723	8	6.55	SK 38	RN 38	AN 34	W 34		22238 K 22338 K		
		6.299	6.575	8.191	1.041	8	10	SK 138	RN 38	AN 34	W 34				
180	200	4.646	4.843	8.628	0.723	8	7.45	SK 40	N 44	AN 36	W 36		22240 K 22340 K		
		6.693	6.969	8.628	1.198	8	11.5	SK 140	N 44	AN 36	W 36				
200	220	5.118	5.354	9.442	0.723	6	8.9	SK 44	N 048	AN 40	W 40		22244 K 22344 K		
		7.126	7.441	9.442	1.198	6	13.5	SK 144	N 048	AN 40	W 40				
220	240	5.669	5.905	10.192	0.723	6	11	SK 48	N 052	N 44	W 44		22248 K 22348 K		
		7.441	7.756	10.192	1.198	6	15	SK 148	N 052	N 44	W 44				

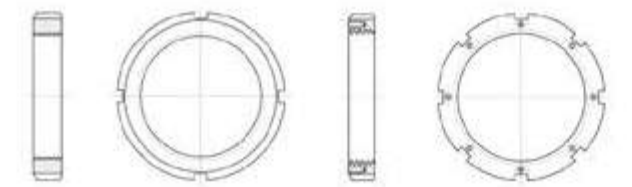


Lock nuts and locking washers

Lock nuts

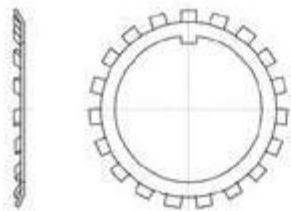


ADP supplies lock nuts in a wide range of sizes, they are also used as shaft or extraction nuts, depending on their usage. They are used to locate bearings and other components onto a shaft as well as to facilitate mounting bearings on tapered journals and dismounting bearings from extraction sleeves.



Locking washer

Locking washers are simple, stable and reliable fastening elements. The washer engages a keyway in the shaft and locks the nut in position if one of the tabs is bent over into



one of the slots around the circumference of the nut. Locking washers are used with lock nuts in the KM and KML series as well as for the lock nuts with inch dimensions in the N and AN series.

Locking clip or plate

Locking clips are attached to the nut using a bolt to engage a slot in the nut and a keyway in the shaft. Locking clips are used with lock nuts in the HM 30 and 31 series.

Locking plates are attached to the nut using two bolts to engage in a keyway in the shaft. Locking plates are used with lock nuts with inch dimensions in the N 0(00) series . ADP lock nuts with a locking washer or clip have four or eight equally spaced slots respectively, around the outside diameter to take a hook or impact spanner. The nut and the locking device must be ordered separately. The appropriate locking washer or clip is shown in the product tables.

KM(L) lock nuts with locking washer

Lock nuts in the KM and KML series are available for

metric ISO threads up to and including 200 mm and are locked with an MB(L) washer. KML lock nuts have the same thread and width as the corresponding KM nuts with the same size code, but a smaller outside diameter.

HM lock nuts with locking clip

Lock nuts in the HM 30 and HM 31 series with metric trapezoidal threads are locked by an MS locking clip consisting of the clip, a hexagon headed bolt to EN ISO 4017:2000. For easier handling, lock nuts from sizes HM 3168 resp. HM 3088 and above have a threaded hole in the outside diameter to fasten an eyebolt.

N and AN lock nuts with inch dimensions

Lock nuts with inch dimensions are available both in the light N 0(00) series and in the heavy N (00) and AN (00) series. Up to and including size 44 they are locked with washers. Larger nuts are locked with locking plates . N 0 (00) lock nuts have the same thread and width as the corresponding N or AN nut with the same size code, but a smaller outside diameter.

Dimensions

The dimensions and the thread of the metric nuts are in accordance with ISO 2982-2. The dimensions of locking washers and locking clips also follow this standard. Lock nuts with inch dimensions follow ANSI/ABMA Std. 8.2-1991.

Tolerances

The metric ISO thread of KM and KML lock nuts is machined to tolerance 5H according to ISO 965-3, and the metric trapezoidal thread of HM lock nuts to tolerance 7H, ISO 2903. Tolerances of inch dimension lock nuts are in accordance with ANSI/ABMA Std. 8.2 . The maximum axial run-out of the locating face with reference to the thread is between 0,04 and 0,06 mm for metric nuts and between 0,05 and 0,15 mm for inch dimensions nuts depending on the size of the lock nut.

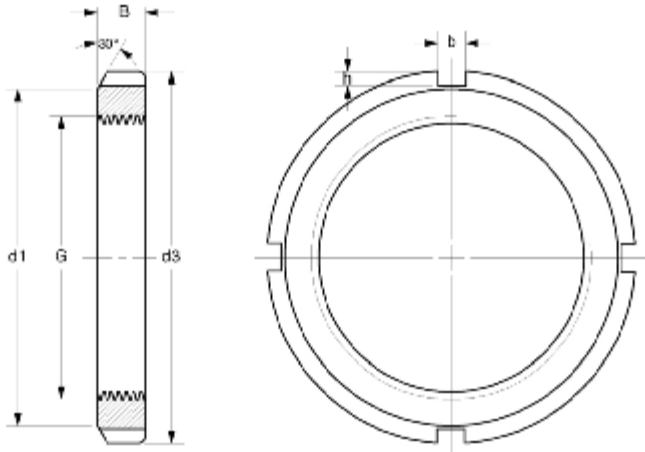
Materials

All ADP lock nuts are made of carbon steel or forged steel with tensile strength at least 430 N/mm². The locking washers and locking clips and plates are made of deep drawn steel strip.

Mating shaft threads

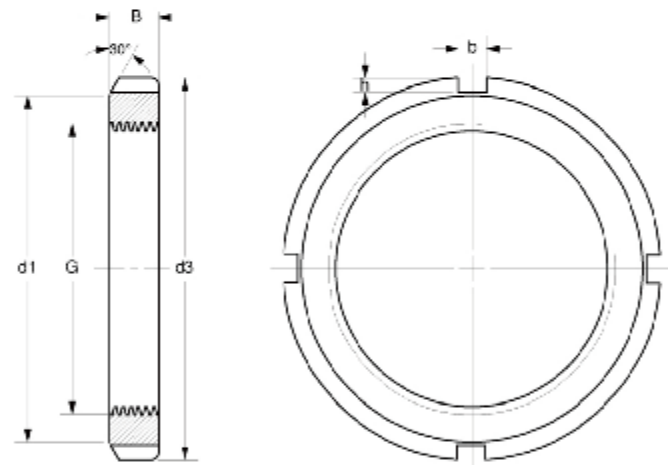
For the smaller metric lock nuts the mating thread on the shaft should be made to 6g according to ISO 965-3 and to tolerance 7e according to ISO 2903 for those with a trapezoidal thread. For inch dimension lock nuts up to size 60 the mating thread on the shaft should be a UNS-3A thread according to ANSI/ASME B1.1. Larger nuts need general-purpose ACME threads, class 3G according to ANSI/ASME B1.5.

Lock nut metric size M 10x0.75- Tr 500x5



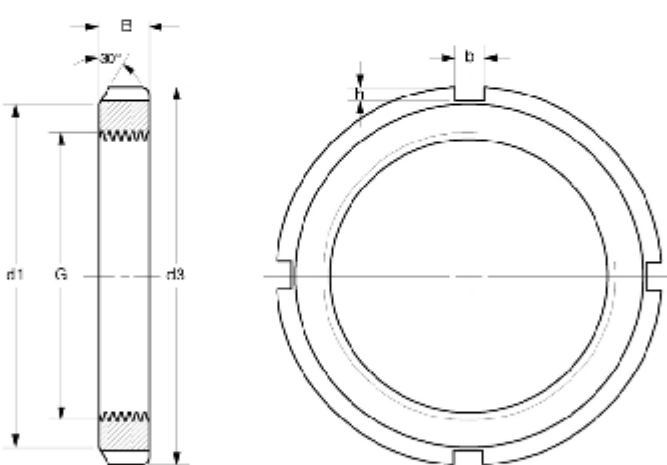
Dimensions						Mass	Designations		Appropriate	
G	d1	d3	B	b	h		Lock nut		Locking washer	
							Europe	Japan	Europe	Japan
mm						Kg				
M 10x0.75	13.5	18	4	3	2	0.006	KM 0	AN 00	MB 0	AW 00X
M 12x1	17	22	4	3	2	0.008	KM 1	AN 01	MB 1	AW 01X
M 15x1	21	25	5	4	2	0.012	KM 2	AN 02	MB 2	AW 02X
M 17x1	24	28	5	4	2	0.012	KM 3	AN 03	MB 3	AW 03X
M 20x1	26	32	6	4	2	0.02	KM 4	AN 04	MB 4	AW 04X
M 25x1.5	32	38	7	5	2	0.028	KM 5	AN 05	MB 5	AW 05X
M 30x1.5	38	45	7	5	2	0.038	KM 6	AN 06	MB 6	AW 06X
M 35x1.5	44	52	8	5	2	0.058	KM 7	AN 07	MB 7	AW 07X
M 40x1.5	50	58	9	6	2.5	0.078	KM 8	AN 08	MB 8	AW 08X
M 45x1.5	56	65	10	6	2.5	0.11	KM 9	AN 09	MB 9	AW 09X
M 50x1.5	61	70	11	6	2.5	0.14	KM 10	AN 10	MB 10	AW 10X
M 55x2	67	75	11	7	3	0.15	KM 11	AN 11	MB 11	AW 11X
M 60x2	73	80	11	7	3	0.16	KM 12	AN 12	MB 12	AW 12X
M 65x2	79	85	12	7	3	0.19	KM 13	AN 13	MB 13	AW 13X
M 70x2	85	92	12	8	3.5	0.22	KM 14	AN 14	MB 14	AW 14X
M 75x2	90	98	13	8	3.5	0.27	KM 15	AN 15	MB 15	AW 15X
M 80x2	95	105	15	8	3.5	0.36	KM 16	AN 16	MB 16	AW 16X
M 85x2	102	110	16	8	3.5	0.42	KM 17	AN 17	MB 17	AW 17X
M 90x2	108	120	16	10	4	0.51	KM 18	AN 18	MB 18	AW 18X
M 95x2	113	125	17	10	4	0.58	KM 19	AN 19	MB 19	AW 19X
M 100x2	120	130	18	10	4	0.68	KM 20	AN 20	MB 20	AW 20X
M 105x2	126	140	18	12	5	0.81	KM 21	AN 21	MB 21	AW 21X
M 110x2	133	145	19	12	5	0.89	KM 22	AN 22	MB 22	AW 22X
M 115x2	137	150	19	12	5	0.91	KM 23	AN 23	MB 23	AW 23X
M 120x2	133	145	20	12	5	0.69	KML 24	ANL 24	MBL 24	AWL 24X
	138	155	20	12	5	0.98	KM 24	AN 24	MB 24	AW 24X
M 125x2	148	160	21	12	5	1.10	KM 25	AN 25	MB 25	AW 25X
M 130x2	143	155	21	12	5	0.84	KML 26	ANL 26	MBL 26	AWL 26X
	149	165	21	12	5	1.20	KM 26	AN 26	MB 26	AW 26X
M 135x2	160	175	22	14	6	1.40	KM 27	AN 27	MB 27	AW 27X
M 140x2	151	165	22	14	6	0.92	KML 28	ANL 28	MBL 28	AWL 28X
	160	180	22	14	6	1.40	KM 28	AN 28	MB 28	AW 28X
M 145x2	171	190	24	14	6	1.85	KM 29	AN 29	MB 29	AW 29X
M 150x2	164	180	24	14	6	1.30	KML 30	ANL 30	MBL 30	AWL 30X
	171	195	24	14	6	1.85	KM 30	AN 30	MB 30	AW 30X

Lock nut metric size
M 10×0.75- Tr 500×5



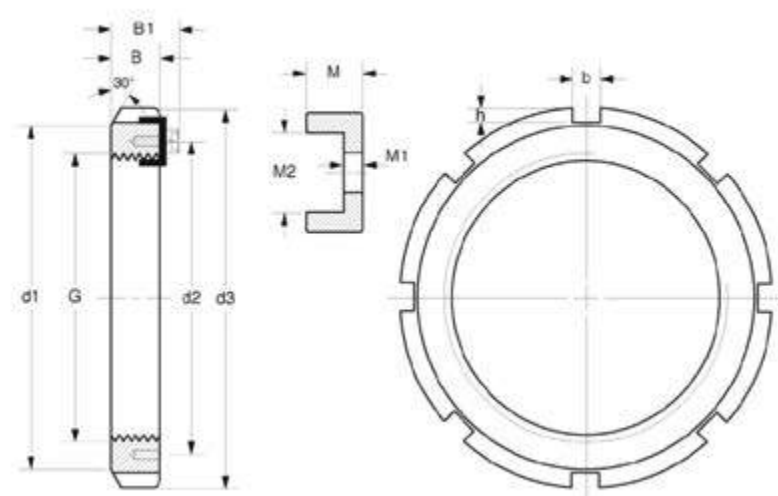
Dimensions						Mass	Designations		Appropriate Locking washer	
G	d1	d3	B	b	h		Lock nut		Europe	Japan
mm						Kg			Europe	Japan
M 155×3	182	200	25	16	7	2.05	KM 31	AN 31	MB 31	AW 31X
M 160×3	174	190	25	16	7	1.40	KML 32	ANL 32	MBL 32	AWL 32X
	182	210	25	16	7	2.25	KM 32	AN 32	MB 32	AW 32X
M 165×3	193	210	26	16	7	2.30	KM 33	AN 33	MB 33	AW 33X
M 170×3	184	200	26	16	7	1.60	KML 34	ANL 34	MBL 34	AWL 34X
	193	220	26	16	7	2.55	KM 34	AN 34	MB 34	AW 34X
M 180×3	192	210	27	18	8	1.80	KML 36	ANL 36	MBL 36	AWL 36X
	203	230	27	18	8	2.70	KM 36	AN 36	MB 36	AW 36X
M 190×3	202	220	28	18	8	1.90	KML 38	ANL 38	MBL 38	AWL 38X
	214	240	28	18	8	3.00	KM 38	AN 38	MB 38	AW 38X
M 200×3	218	240	29	18	8	2.60	KML 40	ANL 40	MBL 40	AWL 40X
	226	250	29	18	8	3.30	KM 40	AN 40	MB 40	AW 40X
Tr 205×4	232	250	30	18	8	3.2	HML 41 T	HNL 41	-	-
Tr 210×4	238	270	30	20	10	5.1	HM 42 T	HNL 42	-	-
Tr 215×4	242	260	30	20	9	3.3	HML 43 T	HNL 43	-	-
Tr 220×4	250	280	32	20	10	4.75	HM 44 T	HN 44	MB 44	AW 44X
Tr 230×4	260	290	34	20	10	5.45	HM 46 T	HN 46	-	-
Tr 235×4	262	280	34	20	9	4.1	HML 47 T	HNL 47	-	-
Tr 240×4	270	300	34	20	10	5.6	HM 48 T	HN 48	MB 48	AW 48X
Tr 250×4	290	320	36	20	10	7.45	HM 50 T	HN 50	-	-
Tr 260×4	290	310	34	20	10	5.8	HML 52 T	HNL 52	-	-
	300	330	36	24	12	7.55	HM 52 T	HN 52	MB 52	AW 52X
Tr 270×4	310	340	38	24	12	8.3	HM 54 T	HN 54	-	-
Tr 280×4	310	330	38	24	10	6.72	HML 56 T	HNL 56	-	-
	320	350	38	24	12	8.65	HM 56 T	HN 56	MB 56	AW 56X
Tr 290×4	330	370	40	24	12	10.5	HM 58 T	HN 58	-	-
Tr 300×4	336	360	40	24	12	9.6	HML 60 T	HNL 60	-	-
	340	380	40	24	12	12	HM 60 T	HN 60	MB 60	AW 60X
Tr 310×5.	350	390	42	24	12	13	HM 62 T	HN 62	-	-
Tr 320×5	356	380	42	24	12	10.5	HML 64 T	HNL 64	-	-
Tr 320×5	360	400	42	24	12	13.5	HM 64 T	HN 64	-	-
Tr 330×5.	380	420	52	28	15	20.0	HM 66 T	HN 66	-	-
Tr 340×5.	400	440	55	28	15	24.5	HM 68 T	HN 68	-	-
Tr 345×5.	384	410	45	28	13	13	HML 69 T	HNL 69	-	-

Lock nut metric size
M 10×0.75- Tr 500×5



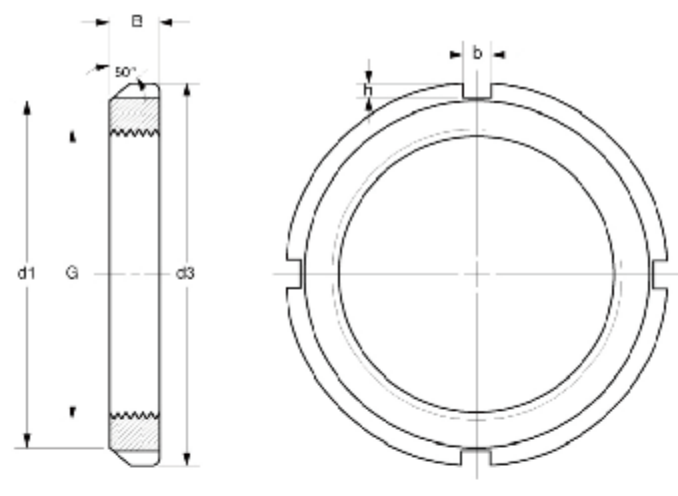
Dimensions						Mass	Designations		Appropriate Locking washer	
G	d1	d3	B	b	h		Lock nut		Europe	Japan
mm						Kg			Europe	Japan
Tr 350×5	410	450	55	28	15	25	HM 70 T	HN 70	-	-
Tr 360×5	394	420	45	28	13	12.1	HML 72 T	HNL 72	-	-
	420	460	58	28	15	27.5	HM 72 T	HN 72	-	-
Tr 365×5	404	430	48	28	13	14.2	HML 73 T	HNL 73	-	-
Tr 370×5	430	470	58	28	15	28	HM 74 T	HN 74	-	-
Tr 380×5	422	450	48	28	14	16	HML 76 T	HNL 76	-	-
Tr 385×5	422	450	48	28	14	15	HML 77 T	HNL 77	-	-
Tr 400×5	442	470	52	28	14	18.5	HML 80 T	HNL 80	-	-
	470	520	62	32	18	40	HM 80 T	HN 80	-	-
Tr 410×5	452	480	52	32	14	19	HML82T	HNL 82	-	-
Tr 420×5	462	490	52	32	14	19.4	HML 84 T	HNL 84	-	-
	490	540	70	32	18	47	HM 84 T	HN 84	-	-
Tr 430×5	472	500	52	32	14	20	HML 86T	HNL 86	-	-
Tr 440×5	490	520	60	32	15	27	HML 88 T	HNL 88	-	-
Tr 440×5	510	560	70	36	20	48.5	HM 88 T	HN 88	-	-
Tr 450×5	490	520	60	32	15	24	HML 90 T	HNL 90	-	-
Tr 460×5	510	540	60	32	15	28	HML 92 T	HNL 92	-	-
	540	580	75	36	20	55	HM 92 T	HN 92	-	-
Tr 470×5	510	540	60	32	15	25	HML 94 T	HNL 94	-	-
Tr 480×5	530	560	60	36	15	29.5	HML96T	HNL 96	-	-
	560	620	75	36	20	67	HM 96 T	HN 96	-	-
Tr 490×5	550	580	60	36	15	34	HML98T	HNL 98	-	-
Tr 500×5	550	580	68	36	15	35	HML100T	HNL 100	-	-
	590	630	80	40	23	69	HM 100 T	HN 100	-	-

Lock nuts with locking clip
Tr 220×4 - Tr 500×5



Dimensions												Mass	Designations	Hexagon-headed screw (DIN 933)
G	d1	d2	d3	B	B1	b	h	M	M1	M2			Lock nut +locking clip and screw	
mm												Kg		
Tr 220×4	242	229	260	30	41	20	9	12	4	13.5	2.75		HM 3044 + MS 3044	M 6×12
	250	238	280	32	43	20	10	12	4	22.5	5.27		HM 3144 + MS 3144	M 8×16
Tr 240×4	270	253	290	34	46	20	10	12	4	17.5	4.5		HM 3048 + MS 3052-48	M 8×16
	270	258	300	34	46	20	10	12	4	22.5	5.98		HM 3148 + MS 3148	M 8×16
Tr 260×4	290	273	310	34	46	20	10	12	4	17.5	4.8		HM 3052 + MS 3052-48	M 8×16
	300	281	330	36	48	24	12	12	4	25.5	8.08		HM 3152 + MS 3152	M 8×16
Tr 280×4	310	293	330	38	50	24	10	12	4	17.5	5.75		HM 3056 + MS 3056	M 8×16
	320	301	350	38	50	24	12	12	4	25.5	9.09		HM 3156 + MS 3156	M 8×16
Tr 300×4	336	316	360	42	54	24	12	12	4	20.5	8.35		HM 3060 + MS 3060	M 8×16
	340	326	380	40	53	24	12	12	4	30.5	11.5		HM 3160 + MS 3160	M 10×20
Tr 320×5	356	336	380	42	55	24	12	12	5	21	9		HM 3064 + MS 3068-64	M 8×16
	360	346	400	42	56	24	12	12	5	31	13		HM 3164 + MS 3164	M 10×20
Tr 340×5	376	356	400	45	58	24	12	15	5	21	11		HM 3068 + MS 3068-64	M 8×16
	400	373	440	55	72	28	15	15	5	38	24		HM 3168+ MS 3172-68	M12×25
Tr 360×5	394	375	420	45	58	28	13	15	5	20	11.5		HM 3072 + MS 3072	M 8×16
	420	393	460	58	75	28	15	15	5	38	26.5		HM 3172 + MS 3172-68	M12×25
Tr 380×5	422	399	450	48	62	28	14	15	5	24	15		HM 3076 + MS 3080-76	M10×20
	450	415	490	60	77	32	18	15	5	40	32		HM 3176 + MS 3176	M12×25
Tr 400×5	442	419	470	52	66	28	14	15	5	24	17		HM 3080 + MS 3080-76	M10×20
	470	440	520	62	82	32	18	15	5	45	38		HM 3180 + MS 3184-80	M16×30
Tr 420×5	462	439	490	52	66	32	14	15	5	24	18.5		HM 3084 + MS 3084	M10×20
	490	460	540	70	90	32	18	15	5	45	45		HM 3184 + MS 3184-80	M16×30
Tr 440×5	490	463	520	60	77	32	15	15	5	28	26		HM 3088 + MS 3092-88	M12×25
	510	478	560	70	90	36	20	15	5	43	46.5		HM 3188 + MS 3192-88	M16×30
Tr 460×5	510	483	540	60	77	32	15	15	5	28	27		HM 3092+ MS 3092-88	M12×25
	540	498	580	75	95	36	20	15	5	43	50.5		HM 3192 + MS 3192-88	M16×30
Tr 480×5	530	503	560	60	77	36	15	15	5	28	28		HM 3096 + MS 30/500-96	M12×25
	560	528	620	75	95	36	20	15	5	53	62		HM 3196 + MS 3196	M16×30
Tr 500×5	550	523	580	68	85	36	15	15	5	28	33.5		HM 30/500 + MS 30/500-96	M12×25
	580	540	630	80	100	40	23	15	5	45	63.5		HM 31/500 + MS 31/500	M16×30

Lock nut with inch dimensions - heavy section
G 0.391 - 8.628 in

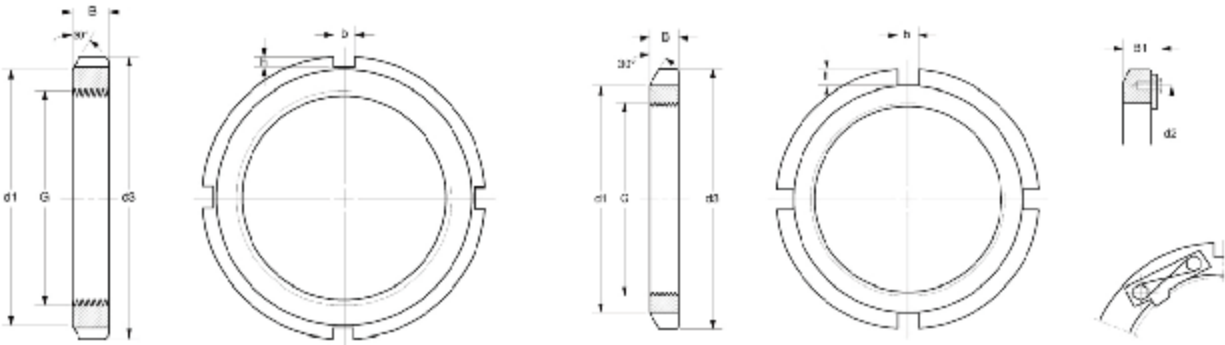


Threads: American National Form NS Class 3

Dimensions							Axial load carrying capacity static	Mass	Designations	Appropriate Locking washer
G	No.of threads per in	d1	d3	B	b	h			Lock nut	
in	—	in					KN	Kg		
0.391	32	0.625	0.755	0.229	0.120	0.073	13.2	0.007	N 00	W 00
0.469	32	0.719	0.880	0.323	0.120	0.073	23	0.015	N 01	W 01
0.586	32	0.813	1.005	0.323	0.120	0.104	26.5	0.017	N 02	W 02
0.664	32	0.938	1.130	0.354	0.120	0.104	33	0.025	N 03	W 03
0.781	32	1.125	1.380	0.385	0.178	0.104	44	0.040	N 04	W 04
0.969	32	1.281	1.568	0.416	0.178	0.104	54.5	0.050	N 05	W 05
1.173	18	1.500	1.755	0.416	0.178	0.104	57	0.058	N 06	W 06
1.376	18	1.813	2.068	0.448	0.178	0.104	73	0.089	N 07	W 07
1.563	18	2.000	2.255	0.448	0.240	0.104	77.5	0.096	N 08	W 08
1.767	18	2.281	2.536	0.448	0.240	0.104	86.5	0.120	N 09	W 09
1.967	18	2.438	2.693	0.510	0.240	0.104	101	0.150	N 10	W 10
2.157	18	2.656	2.974	0.510	0.240	0.135	113	0.170	N 11	W 11
2.360	18	2.844	3.161	0.541	0.240	0.135	122.5	0.200	N 12	W 12
2.548	18	3.063	3.380	0.573	0.240	0.135	138.5	0.240	N 13	W 13
2.751	18	3.313	3.630	0.573	0.240	0.135	147	0.270	N 14	W 14
2.933	12	3.563	3.880	0.604	0.360	0.135	153	0.320	AN 15	W 15
3.137	12	3.844	4.161	0.604	0.360	0.135	166	0.400	AN 16	W 16
3.340	12	4.031	4.411	0.635	0.360	0.166	185	0.450	AN 17	W 17
3.527	12	4.281	4.661	0.698	0.360	0.166	219	0.550	AN 18	W 18
3.730	12	4.563	4.943	0.729	0.360	0.166	245	0.700	AN 19	W 19
3.918	12	4.813	5.193	0.760	0.360	0.166	270	0.800	AN 20	W 20
4.122	12	5.000	5.443	0.760	0.485	0.198	280	0.850	AN 21	W 21
4.325	12	5.281	5.724	0.791	0.485	0.198	310	1.000	AN 22	W22
4.716	12	5.688	6.130	0.823	0.485	0.198	335	1.150	AN 24	W24
5.106	12	6.188	6.755	0.885	0.610	0.260	415	1.500	AN 26	W26
5.497	12	6.531	7.099	0.948	0.610	0.260	450	1.650	AN 28	W28
5.888	12	7.063	7.693	0.979	0.610	0.291	520	2.100	AN 30	W30
6.284	8	7.438	8.068	1.041	0.610	0.291	560	2.350	AN 32	W32
6.659	8	8.031	8.661	1.073	0.610	0.291	640	2.800	AN 34	W34
7.066	8	8.375	9.068	1.104	0.735	0.323	675	3.150	AN 36	W36
7.472	8	8.781	9.474	1.135	0.735	0.323	705	3.400	AN 38	W38
7.847	8	9.156	9.849	1.198	0.735	0.323	760	3.700	AN 40	W40
8.628	8	9.843	11.005	1.260	0.980	0.510	930	4.700	N 44 ¹⁾	W44

1)Nut locking angle 30°

Lock nut with inch dimensions-Light Section
G 4.325 - 31.504 in

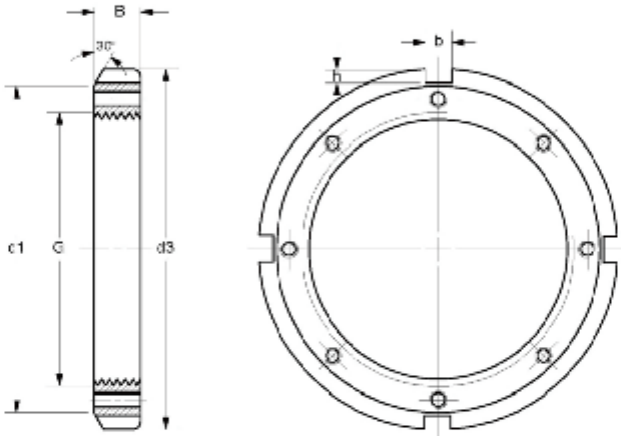


Lock nut N 022 - N 044

Lock nut N 048 - N 800

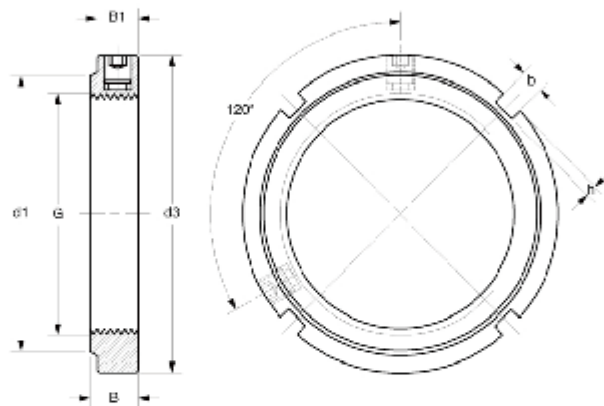
Dimensions									Mass	Designations		
G	No.of threads per in	d1	d2	d3	B	B1	b	h		Lock nut	Appropriate locking washer/ plate	hexagon headed screw
in	-	in							Kg			
4.325	12	4.901	-	5.318	0.791	-	0.485	0.198	0.63	N 022	W 022	-
4.716	12	5.313	-	5.693	0.823	-	0.485	0.198	0.710	N 024	W 024	-
5.106	12	5.703	-	6.130	0.885	-	0.485	0.198	0.860	N 026	W 026	-
5.497	12	6.109	-	6.505	0.948	-	0.485	0.198	0.980	N 028	W 028	-
5.888	12	6.688	-	7.130	0.979	-	0.610	0.229	1.350	N 030	W 030	-
6.284	8	7.094	-	7.505	1.041	-	0.610	0.229	1.500	N 032	W 032	-
6.659	8	7.484	-	7.880	1.073	-	0.610	0.229	1.650	N 034	W 034	-
7.066	8	7.875	-	8.255	1.104	-	0.610	0.229	1.750	N 036	W 036	-
7.472	8	8.266	-	8.693	1.135	-	0.610	0.229	1.950	N 038	W 038	-
7.847	8	8.750	-	9.443	1.198	-	0.735	0.323	2.750	N 040	W 040	-
8.628	8	9.531	-	10.255	1.260	-	0.860	0.385	3.200	N 044	W 044	-
9.442	6	10.625	10.423	11.443	1.354	1.698	0.860	0.385	4.500	N 048	P 48	5/16 - 18x5/8
10.192	6	11.406	11.298	12.193	1.416	1.760	0.860	0.385	5.100	N 052	P 52	5/16 - 18x5/8
11.004	6	12.219	12.110	13.005	1.510	1.854	0.980	0.385	5.800	N 056	P 56	5/16 - 18x5/8
11.785	6	13.219	13.110	14.193	1.573	1.948	0.980	0.510	7.800	N 060	P 60	3/8 - 16x3/4
12.562	6	14.031	13.860	15.005	1.666	2.041	0.980	0.510	9.000	N 064	P 64	3/8 - 16x3/4
13.339	5	14.813	14.735	15.755	1.791	2.166	0.980	0.510	10.700	N 068	P 68	3/8 - 16x3/4
14.170	5	15.500	15.485	16.505	1.791	2.166	1.230	0.510	10.800	N 072	P 72	3/8 - 16x3/4
14.957	5	16.625	16.485	17.755	1.916	2.353	1.230	0.604	14.600	N 076	P 76	1/2 - 13x7/8
15.745	5	17.438	17.235	18.505	2.073	2.500	1.230	0.604	16.500	N 080	P 80	1/2 - 13x7/8
16.532	5	18.188	18.110	19.318	2.073	2.500	1.355	0.604	17.300	N 084	P 84	1/2 - 13x7/8
17.319	5	19.250	19.110	20.505	2.385	2.906	1.355	0.604	24.100	N 088	P 88	5/8 - 11x1
18.107	5	20.688	19.985	21.255	2.385	2.906	1.355	0.604	25.500	N 092	P 92	5/8 - 11x1
18.894	5	20.750	20.673	22.068	2.385	2.937	1.480	0.604	25.900	N 096	P 96	5/8 - 11x1 1/4
19.682	5	21.688	21.610	22.818	2.703	3.250	1.480	0.604	37.000	N 500	P 500	5/8 - 11x1 1/4
20.867	4	23.250	23.360	24.818	2.703	3.250	1.605	0.823	49.000	N 530	P 530	5/8 - 11x1 1/4
22.048	4	24.000	24.110	25.568	2.953	3.500	1.605	0.823	50.000	N 560	P 560	5/8 - 11x1 1/4
23.623	4	26.000	25.923	27.568	2.953	3.500	1.605	0.823	60.500	N 600	P 600	5/8 - 11x1 1/4
24.804	4	27.125	27.235	28.755	2.953	3.500	1.855	0.823	63.000	N 630	P 630	5/8 - 11x1 1/4
26.379	4	29.125	28.985	30.693	3.140	3.687	1.855	0.823	78.000	N 670	P 670	5/8 - 11x1 1/4
27.961	3	30.688	30.610	32.693	3.578	4.125	1.980	1.010	103.500	N 710	P 710	5/8 - 11x1 1/4
29.536	3	32.313	32.235	34.255	3.578	4.156	2.230	1.010	108.500	N 750	P 750	5/8 - 11x1 1/4
31.504	3	34.250	34.610	36.255	3.578	4.156	2.230	1.010	116.000	N 800	P 800	5/8 - 11x1 1/4

THRUST BOLT NUTS
M 90x2-M 200x3



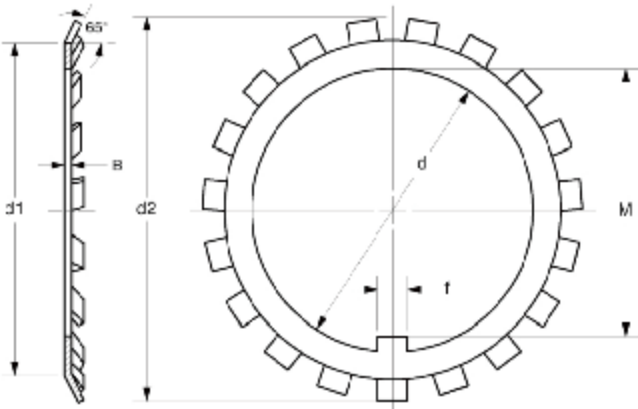
Thread size	Dimensions						Axial load carrying capacity static	Mass	Designations	Appropriate bolts	Bolt quantity	Thrust plate
G	d1	d3	B	b	h		kN	kg	Thrust bolt nut	-		
mm	mm											
M 90x2	108	120	16	10	4.0		216	0.51	TBN 18	M6xL40	8	TP 18
M 95x2	113	125	17	10	4.0		236	0.58	TBN 19	M6xL40	8	TP 19
M 100x2	120	130	18	10	4.0		255	0.68	TBN 20	M6xL40	8	TP 20
M 105x2	126	140	18	12	5.0		290	0.81	TBN 21	M6xL40	8	TP 21
M 110x2	133	145	19	12	5.0		310	0.89	TBN 22	M6xL40	8	TP 22
M 120x2	135	145	20	12	5		265	0.69	TBNL 24	M8xL45	8	TPL 24
	138	155	20	12	5		340	0.98	TBN 24	M8xL45	8	TP 24
M 130x2	145	155	21	12	5		285	0.84	TBNL 26	M8xL45	8	TPL 26
	149	165	21	12	5		365	1.20	TBN 26	M8xL45	8	TP 26
M 140x2	155	165	22	12	5		305	0.92	TBNL 28	M8xL45	8	TPL 28
	160	180	22	14	6		430	1.40	TBN 28	M8xL45	8	TP 28
M 150x2	170	180	24	14	5		390	1.30	TBNL 30	M10xL45	8	TPL 30
	171	195	24	14	6		530	1.85	TBN 30	M10xL45	8	TP 30
M 160x3	180	190	25	14	5		405	1.40	TBNL 32	M10xL45	8	TPL 32
	182	210	25	16	7		585	2.25	TBN 32	M10xL45	8	TP 32
M 170x3	190	200	26	16	5		430	1.60	TBNL 34	M10xL45	8	TPL 34
	193	220	26	16	7		620	2.55	TBN 34	M10xL45	8	TP 34
M 180x3	200	210	27	16	5		450	1.80	TBNL 36	M10xL45	8	TPL 36
	203	230	27	18	8		670	2.70	TBN 36	M10xL45	8	TP 36
M 190x3	210	220	28	16	5		475	1.90	TBNL 38	M10xL45	8	TPL 38
	214	240	28	18	8		695	3.00	TBN 38	M10xL45	8	TP 38
M 200x3	222	240	29	18	8		625	2.60	TBNL 40	M10xL45	8	TPL 40
	226	250	29	18	8		735	3.30	TBN 40	M10xL45	8	TP 40

KMG NUT
M 20x1-M 150x2



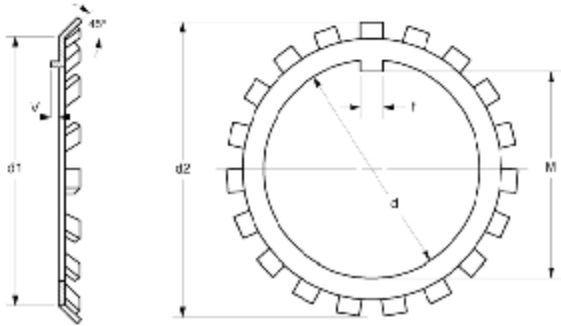
Thread size	Dimensions						Mass	Designations		Grub screw Size	Recommended tightening torque
	d3	B	B1	b	h	G		Lock nut	Appropriate spanner		
mm	mm					-	kg	-		-	Nm
20	32	9,5	6	4	2	M 20x1	0,031	KMG 4	HN 4	M 5	4
25	38	10,5	7	5	2	M 25x1.5	0,042	KMG 5	HN 5	M 5	4
30	45	10,5	7	5	2	M 30x1.5	0,058	KMG 6	HN 6	M 5	4
35	52	11,5	8	5	2	M 35x1.5	0,08	KMG 7	HN 7	M 5	4
40	58	13	9	6	2.5	M 40x1.5	0,11	KMG 8	HN 8	M 6	8
45	65	13	10	6	2.5	M 45x1.5	0,14	KMG 9	HN 9	M 6	8
50	70	14	11	6	2.5	M 50x1.5	0,16	KMG 10	HN 10	M 6	8
55	75	14	11	7	3	M 55x2	0,18	KMG 11	HN 11	M 6	8
60	80	14	11	7	3	M 60x2	0,19	KMG 12	HN 12	M 6	8
65	85	15	12	7	3	M 65x2	0,23	KMG 13	HN 13	M 6	8
70	92	15	12	8	3.5	M 70x2	0,26	KMG 14	HN 14	M 6	8
75	98	16	13	8	3.5	M 75x2	0,32	KMG 15	HN 15	M 6	8
80	105	18	15	8	3.5	M 80x2	0,42	KMG 16	HN 16	M 8	18
85	110	19	16	8	3.5	M 85x2	0,46	KMG 17	HN 17	M 8	18
90	120	19	16	10	4	M 90x2	0,58	KMG 18	HN 18	M 8	18
95	125	20	17	10	4	M 95x2	0,66	KMG 19	HN 19	M 8	18
100	130	21	18	10	4	M 100x2	0,71	KMG 20	HN 20	M 8	18
105	140	21	18	12	5	M 105x2	0,85	KMG 21	HN 21	M 8	18
110	145	21,5	19	12	5	M 110x2	0,93	KMG 22	HN 22	M 8	18
115	150	25	19	12	5	M 115x2	1,11	KMG 23	HN 23	M 10	35
120	155	26	20	12	5	M 120x2	1,16	KMG 24	HN 24	M 10	35
125	160	27	21	12	5	M 125x2	1,26	KMG 25	HN 25	M 10	35
130	165	28	21	12	5	M 130x2	1,33	KMG 26	HN 26	M 10	35
135	175	29	22	14	6	M 135x2	1,65	KMG 27	HN 27	M 10	35
140	180	29	22	14	6	M 140x2	1,71	KMG 28	HN 28	M 10	35
145	190	32	24	14	6	M 145x2	2,2	KMG 29	HN 29	M 10	35
150	195	32	24	14	6	M 150x2	2,27	KMG 30	HN 30	M 10	35

Locking washers
d 10 - 280 mm

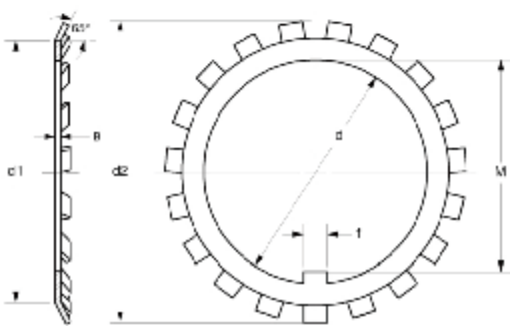


Dimensions						Mass Designations			Dimension						Mass Designations		
d	d1	d2	B	f	M	Europe		Japan	d	d1	d2	B	f	M	Europe		Japan
mm								g	mm								g
10	13.5	21	1.00	3.0	8.5	1	MB 0	AW 00X	120	135 138	152 164	2 2	14 14	115 115	70 108	MBL 24 MB 24	AWL 24X AW 24X
12	17.0	25	1.00	3.0	10.5	2	MB 1	AW 01X	125	148	170	2	14	120	115	MB 25	AW 25X
15	21.0	28	1.00	4.0	13.5	3	MB 2	AW 02X	130	145 149	161 175	2 2	14 14	125 125	80 115	MBL 26 MB 26	AWL 26X AW 26X
17	24.0	32	1.00	4.0	15.5	3	MB 3	AW 03X	135	160	185	2	14	130	140	MB 27	AW 27X
20	26.0	36	1.00	4.0	18.5	4	MB 4	AW 04X	140	155 160	172 192	2 2	16 16	135 135	90 135	MBL 28 MB 28	AWL 28X AW 28X
25	32.0	42	1.25	5.0	23.0	6	MB 5	AW 05X	145	172	202	2	16	140	165	MB 29	AW 29X
30	38.0	49	1.25	5.0	27.5	8	MB 6	AW 06X	150	170 171	189 205	2 2	16 16	145 145	100 180	MBL 30 MB 30	AWL 30X AW 30
35	44.0	57	1.25	6.0	32.5	11	MB 7	AW 07X	155	182	212	2.5	16	147.5	200	MB 31	AW 31X
40	50.0	62	1.25	6.0	37.5	13	MB 8	AW 08X	160	180 182	199 217	2.5 2.5	18 18	154 154	140 215	MBL 32 MB 32	AWL 32X AW 32X
45	56.0	69	1.25	6.0	42.5	15	MB 9	AW 09X	165	193	222	2.5	18	157.5	240	MB 33	AW 33X
50	61.0	74	1.25	6.0	47.5	16	MB 10	AW 10X	170	190 193	211 232	2.5 2.5	18 18	164 164	150 240	MBL 34 MB 34	AWL 34X AW 34X
55	67.0	81	1.50	8.0	52.5	22	MB 11	AW 11X	180	200 203	222 242	2.5 2.5	20 20	174 174	160 260	MBL 36 MB 36	AWL 36X AW 36X
60	73.0	86	1.50	8.0	57.5	24	MB 12	AW 12X	190	210 214	232 252	2.5 2.5	20 20	184 184	170 260	MBL 38 MB 38	AWL 38X AW 38X
65	79.0	92	1.50	8.0	62.5	30	MB 13	AW 13X	200	222 226	245 262	2.5 2.5	20 20	194 194	220 280	MBL 40 MB 40	AWL 40X AW 40X
70	85.0	98	1.50	8.0	66.5	32	MB 14	AW 14X	220	250	292	3	24	213	350	MB 44	AW 44X
75	90.0	104	1.50	8.0	71.5	35	MB 15	AW 15X	240	270	312	3	24	233	450	MB 48	AW 48X
80	95.0	112	1.75	10.0	76.5	46	MB 16	AW 16X	260	300	342	3	28	253	650	MB 52	AW 52X
85	102.0	119	1.75	10.0	81.5	53	MB 17	AW 17X	280	320	362	3	28	273	1050	MB 56	AW 56X
90	108.0	126	1.75	10.0	86.5	61	MB 18	AW 18X									
95	113.0	133	1.75	10.0	91.5	66	MB 19	AW 19X									
100	120.0	142	1.75	12.0	96.5	77	MB 20	AW 20X									
105	126.0	145	1.75	12.0	100.5	83	MB 21	AW 21X									
110	133.0	154	1.75	12.0	105.5	91	MB 22	AW 22X									
115	137	159	2	12	110.5	107	MB 23	AW 23X									

Locking washers with inch dimensions
 d 0.406 - 8.701in



W00 - W 44



W 022 - W044

Dimensions							Mass Designations	
d	d1	d2	B	f	M	V		
in							g	
0.406	0.625	0.875	0.032	0.120	0.334	0.062	2	W 00
0.484	0.719	1.106	0.032	0.120	0.412	0.062	2	W 01
0.601	0.813	1.156	0.032	0.120	0.529	0.062	3	W 02
0.679	0.938	1.328	0.032	0.120	0.607	0.062	5	W 03
0.801	1.125	1.531	0.032	0.176	0.729	0.062	7	W 04
0.989	1.281	1.719	0.040	0.176	0.909	0.094	8	W 05
1.193	1.500	1.922	0.040	0.176	1.093	0.094	8	W 06
1.396	1.813	2.250	0.040	0.176	1.296	0.094	14	W 07
1.583	2.000	2.469	0.048	0.290	1.475	0.094	19	W 08
1.792	2.281	2.734	0.048	0.290	1.684	0.125	21	W 09
1.992	2.438	2.922	0.048	0.290	1.884	0.125	20	W 10
2.182	2.656	3.109	0.053	0.290	2.069	0.125	22	W 11
2.400	2.844	3.344	0.053	0.290	2.267	0.125	25	W 12
2.588	3.063	3.578	0.053	0.290	2.455	0.125	27	W 13
2.791	3.313	3.828	0.053	0.290	2.658	0.188	32	W 14
2.973	3.563	4.109	0.062	0.290	2.831	0.188	48	W 15
3.177	3.844	4.375	0.062	0.353	3.035	0.188	53	W 16
3.395	4.031	4.625	0.062	0.353	3.253	0.188	57	W 17
3.582	4.281	4.938	0.084	0.353	3.418	0.188	70	W 18
3.800	4.563	5.219	0.084	0.353	3.636	0.188	82	W 19
3.988	4.813	5.500	0.084	0.353	3.809	0.250	94	W 20
4.192	5.000	5.703	0.084	0.353	4.013	0.250	100	W 21

Dimensions							Mass Designations	
d	d1	d2	B	f	M	V		
in							g	
4.395	4.921	5.688	0.115	0.350	4.185	—	94	W 022
	5.281	6.063	0.115	0.353	4.185	0.250	157	W 22
4.801	5.333	6.188	0.115	0.350	4.591	—	104	W 024
	5.688	6.649	0.115	0.353	4.591	0.250	170	W 24
5.191	5.723	6.625	0.115	0.469	4.961	—	126	W 026
	6.188	7.031	0.115	0.435	4.961	0.250	220	W 26
5.582	6.129	7.094	0.115	0.594	5.352	—	154	W 028
	6.531	7.438	0.115	0.590	5.352	0.250	220	W 28
5.983	6.708	7.719	0.115	0.594	5.722	—	190	W 030
	7.063	8.063	0.146	0.590	5.722	0.313	328	W 30
6.389	7.114	8.156	0.115	0.594	6.128	—	200	W 032
	7.438	8.438	0.146	0.590	6.128	0.313	335	W 32
6.764	7.508	8.594	0.115	0.719	6.503	—	232	W 034
	8.031	9.063	0.146	0.715	6.503	0.313	417	W 34
7.171	7.899	9.000	0.115	0.719	6.910	—	238	W 036
	8.375	9.438	0.146	0.715	6.910	0.313	432	W 36
7.577	8.290	9.438	0.115	0.719	7.316	—	246	W 038
	8.781	9.875	0.146	0.715	7.316	0.313	458	W 38
7.982	8.774	9.969	0.115	0.844	7.721	—	294	W 040
	9.156	10.313	0.146	0.840	7.721	0.313	470	W 40
8.701	9.570	10.406	0.115	0.945	8.327	—	300	W 044
	9.875	11.438	0.146	0.940	8.327	—	600	W44 ¹⁾

1) Washer locking angle 65°

ADP

ADP

ADP