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Original instructions

EU Declaration of Conformity

We,
SKF Maintenance Products
Kelvinbaan 16,
3439 MT Nieuwegein
The Netherlands

herewith declare that the following products:

Hydraulic Nuts HMV..E and HMVC..E series

which this declaration refers to, are in accordance with the conditions of the following directive:

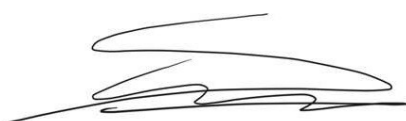
Machinery Directive 2006/42/EC

and are in conformity with the following standards:

EN-ISO 12100:2010,

EN-ISO 4413

Nieuwegein, The Netherlands
August 2013



Sébastien David
Manager Product Development and Quality



Safety recommendations

As high pressures/forces constitute a potential safety risk, the following instructions must be considered:

- Only trained personnel should operate the equipment.
- Always follow the operating instructions.
- Check the hydraulic nut and all accessories carefully before use. Never use even slightly damaged components.
- Make sure all air has been removed from the hydraulic system, before putting the equipment under pressure.
- Do not use the hydraulic nut for applications other than mounting/dismounting bearings.
- Always use a pressure gauge.
- Always prevent the workpiece/tool from being projected upon sudden release of pressure (e.g. by use of retaining nut).
- Do not exceed the maximum permitted piston displacement.
- Use protective goggles.
- Never modify the unit.
- Use original parts only.
- Only use clean, recommended hydraulic oils (e.g. SKF LHM 300, or similar).
- Nuts should be lifted and handled in accordance with safe working practices and local regulations.
- Steel lifting cables should not be directly applied to the nut, as they could damage the nut threads.
- Eye bolt(s), where provided, must be properly fitted.
- In case of any uncertainties regarding the use of the hydraulic nut, contact SKF.

1. Description

1.1 Principle of operation

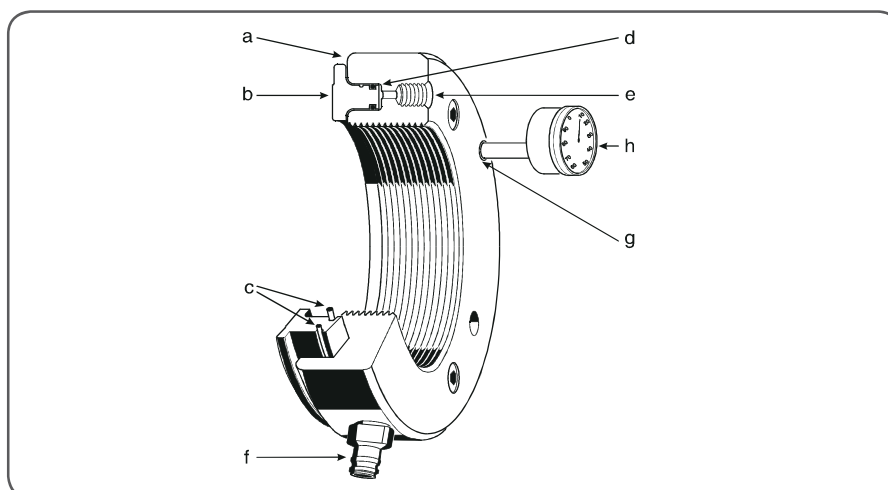


Figure 1. Parts of the hydraulic nut

The hydraulic nut has proved to save considerable effort when mounting or dismounting rolling bearings with tapered bores. It comprises two main components: a steel ring (fig. 1a) with internal thread and a groove in one side face, and an annular piston (fig. 1b) that rests in the groove. The seal (fig. 1c) between the two parts consists of two O-rings. When oil is pumped into the pressure chamber (fig. 1d), the piston is pressed out with a force that normally is sufficient for mounting and dismounting rolling bearings. The outer ring is provided with an unthreaded hole (fig. 1g) to hold a dial indicator (fig. 1h). The measuring tip of the indicator will rest against the shoulder of the piston to indicate axial travel.

(Note: The drive-up distance can be used to determine correct mounting; see skf.com/mount or download the SKF Drive-up Method Program at skf.com. Alternatively download the SKF Drive-up Method app on the App Store® or on Google Play™).

Two threaded holes are provided in the steel ring for attachment of the hose from the pump: one in the side face (fig. 1e), and the other in the circumference (fig. 1f). The hole that is not in use must be plugged with a ball plug, which is supplied with the nut.

The hole used for the hose connection should be fitted with a 729832 A nipple, included with the hydraulic nut. A spare set of O-rings, a maintenance set, and a tommy bar for tightening the nut are all included as standard accessories.

1.2 Load carrying capacity

SKF hydraulic nuts are designed to withstand the pressure normally encountered when rolling bearings are mounted or dismounted.

The maximum oil pressure with permitted piston displacement that can be applied to a HMV series hydraulic nut is as follows:

HMV 10 - 60	80 MPa (11 600 psi)
HMV 61 - 100	40 MPa (5 800 psi)
HMV 101 - 200	25 MPa (3 600 psi)

2. Operating instructions

2.1 How to apply the nut

To enable easy mounting, especially for larger nuts, it is important that the nut is properly centred on the mating thread before rotation.

Large nuts must be supported during installation.

One way of doing this is to use a special mounting tool similar to that shown in figure 2.

When the bearing is mounted on a sleeve, make sure that the sleeve is straight, that is, with the thread aligned over the slotted part of the sleeve.

It is recommended to always use a thread lubricant before applying the nut on the mating thread.

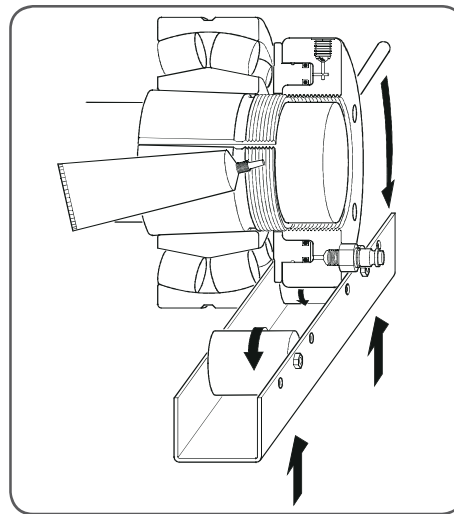


Figure 2. Support for a large hydraulic nut

To thread the nut onto the shaft or sleeve use the tommy bar provided. This is inserted in one of the four unthreaded holes in the outside cylindrical surface or in one of the two holes on the side surface.

Nuts of size HMV(C) 94E and larger have the provision for two eye bolts (DIN 580) to be fitted. One or both of the eye bolts, when properly fitted, can be used to safely lift the nut. The size of the eye bolts is shown in the following table:

HMV(C) ..E nut size	Eye Bolt Thread Size (DIN 580)
94 - 130	M10
134 - 160	M12
170 - 200	M16

To facilitate the mounting of nuts of size HMV(C) 94E and larger, an arrow is marked on the nut circumference showing the position of the first thread.

2.2 How to generate the pressure

SKF produces a comprehensive range of pumps to complement the complete range of HMV(C)..E nuts.

The following pumps are recommended for the various nut sizes:

HMV(C) 10E - HMV(C) 54E	729124/TMJL 50/TMJL 100/728619E
HMV(C) 56E - HMV(C) 92E	TMJL 50/TMJL 100/728619E
HMV(C) 94E - HMV(C) 200E	TMJL 50/728619E

When using the SKF Drive-up Method, the following pumps are recommended:

HMV(C) 10E ... 54E	729124 DU/TMJL 50DU/TMJL 100DU
HMV(C) 56E ... 92E	TMJL 50DU/TMJL 100DU
HMV(C) 94E ... 200E	TMJL 50DU

Note:

All DU pumps are supplied with the THGD 100 (0 - 100 MPa, 0 - 15 000 psi) digital pressure gauge.

Oil having a viscosity of approximately 300 mm²/s at the operating temperature, SKF Mounting Fluid LHM 300 for example, should be used as a pressure medium. When connecting the pump, be sure that all air is purged from the hydraulic system. Opening the ball plug whilst at the highest point and pumping oil until air-free oil emerges can achieve this. The ball plug is then tightened and the nut is ready for use.

2.3 Mounting of bearings

The nut should be carefully screwed onto a threaded section of the shaft or the sleeve until the nut abuts the bearing inner ring (fig. 3, 4), the withdrawal sleeve (fig. 5), or a special support nut/plate (fig. 6). It is important that as much as possible, but not less than 80 %, of the thread of the hydraulic nut is engaged. If this is not possible, a help ring to support the nut is necessary. The piston should then be fully retracted into the nut.

Mounting



Figure 3.
HMV nut for driving
the bearing onto a
tapered seating.



Figure 4.
HMV nut for driving
the bearing onto an
adapter sleeve.



Figure 5.
HMV nut screwed
onto the shaft
for driving in a
withdrawal sleeve.



Figure 6.
HMV nut and special
stop nut for driving
in a withdrawal
sleeve.

A pump is used to provide pressurised oil to the nut. The permissible stroke (axial displacement) has been chosen to enable all bearings having bores with a taper of 1:12 or 1:30 to be mounted in a single operation. The permitted piston displacement, which is indicated by a groove in the outside of the piston, should not be exceeded. After mounting has been completed, the return valve of the pump should be opened so that the pressurised oil can leave the nut. To completely empty the nut, the piston has to be returned to its original position. This is most easily accomplished by threading the nut further up the shaft or sleeve thread, causing the piston to retract. This causes the oil to flow back to the pump.

2.4 Dismounting of bearings

When dismounting rolling bearings from withdrawal or adapter sleeves, the hydraulic nut is screwed onto the sleeve thread until it rests against the bearing inner ring (fig. 7) or a special support ring (fig. 8). By displacing the piston, the sleeve will be withdrawn from the bearing bore or the bearing will be pressed off the adapter sleeve.

Dismounting



Figure 7.
HMV nut used to free a withdrawal sleeve



Figure 8.
HMV nut and stop ring in position to press loose an adapter sleeve

2.5 SKF Drive-up Method for mounting bearings with a tapered bore

Traditionally the radial internal clearance reduction has been measured when mounting bearings with a tapered bore. The accuracy of this method is highly dependent on the technician being skilled in the use of feeler gauges applied to the measurement of the clearance reduction. The SKF Drive-up Method considerably improves the reliability and ease in fitting bearings with a tapered bore and can be used for SKF spherical roller bearings, SKF CARB®, and some SKF self-aligning ball bearings. To be able to use the method, you will need a pump with a highly accurate digital pressure gauge and a dial indicator (fig. 9). Pumps with the suffix DU are supplied with a digital gauge reading from 0 - 100 MPa (0 - 15 000 psi).

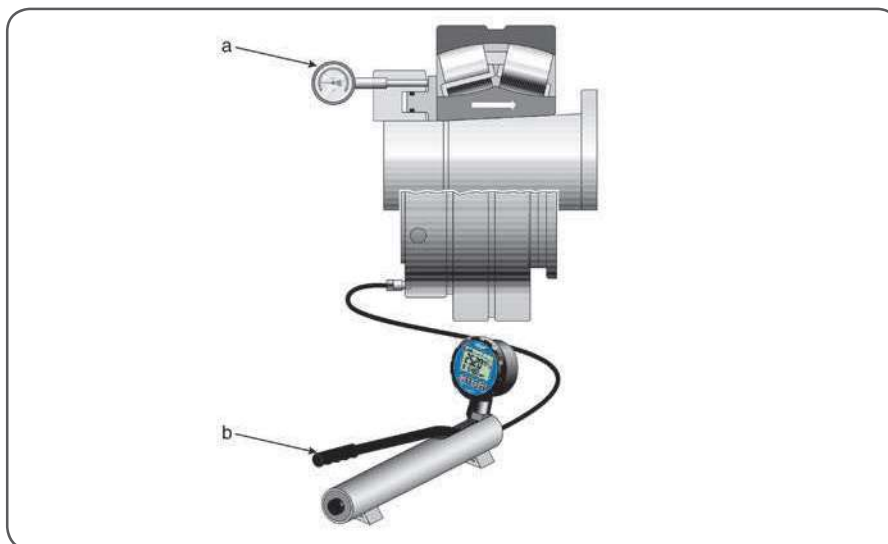


Figure 9. Dial indicator and hydraulic pump.

Dial indicators (fig. 9a)

Calibrated in millimetres	TMCD 10R / TMCD 5P
Calibrated in inches	TMCD 1/2R

Hydraulic pumps with digital pressure gauge (fig. 9b)

0 - 100 MPa (0 - 15 000 psi)

Maximum nut size	HMV (C) 54E	HMV (C) 92E	HMV (C) 200E
Pump reference	729124 DU	TMJL 100DU	TMJL 50DU

Step by step mounting procedure

Step 1

Ensure that the bearing size is compatible with the HMV(C) E nut size. For example, for bearing 23936 CCK/W33 mounted direct on a shaft, use HMV(C) 36E. Otherwise the pressure corresponding to the starting position must be adjusted.

Step 2

Determine whether one or two surfaces slide during mounting. See figures 10 - 13.

Step 3

Drive the bearing up to the starting position by applying the correct hydraulic pressure to the HMV(C) E nut. See figure 14.

As an alternative, the SKF digital pressure gauge can be screwed directly into the hydraulic

nut. Drive the bearing up the taper the required distance. Use a dial indicator to monitor the axial drive-up.

The starting hydraulic pressure (MPa/psi) and axial drive-up (mm) can be found at skf.com/mount or by downloading the SKF Drive-up Method PC Program at skf.com. Alternatively download the SKF Drive-up Method app on the App Store or on Google Play.

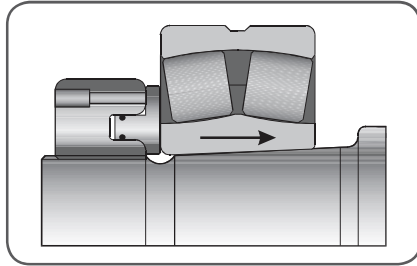


Figure 10. One sliding surface

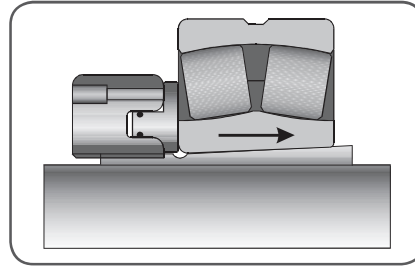


Figure 11. One sliding surface

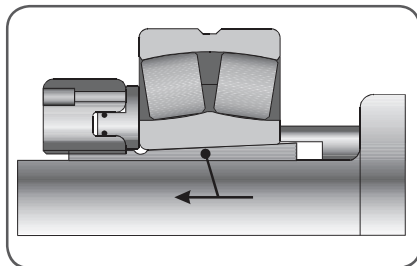


Figure 12. Two sliding surfaces

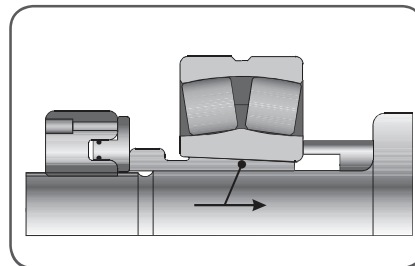


Figure 13. Two sliding surfaces

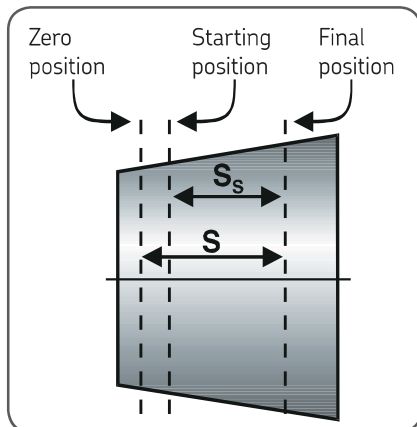


Figure 14. Bearing position



3. Maintenance

When the nut is not in use, it should be protected against rust, and the hose connection holes should be plugged to prevent entry of dirt.

3.1 In case of leakage

If oil leaves the hydraulic nut when the piston is operated, this generally means the seal is torn or damaged and must be replaced. To do this, the piston has to be pressed out of the ring. To facilitate this operation, three auxiliary holes with closure nipples are provided in the full face of the ring. Using the threaded pins supplied with the nut, the piston can be pushed out of the ring (fig. 15). The O-rings are then removed, the grooves cleaned, and the new O-rings put in position. If necessary, grease can be used to keep the new O-rings in the correct position during the replacement operation.

A spare set of O-rings is also supplied with the nut. Additional replacement rings can be obtained from SKF.

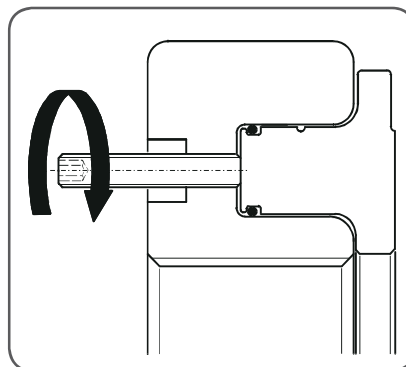


Figure 15. Pushing the piston out of the ring

3.2 Replacement parts

Description	Designation
O-rings	Nut designation followed by /233983, for example HMV 10/233983
Ball plug	233950
Quick connection nipple	729832 A
Nylon screws to secure dial indicator (supplied in packs of 10 pieces)	HMVE M5x10 (nut size 10...69) HMVE M5x17 (nut size 70 and larger)
Maintenance set (threaded pins, copper rings, hexagonal keys)	HMVM 10/29 (nut size 10...29) HMVM 30/69 (nut size 30...69) HMVM 70/200 (nut size 70...200)

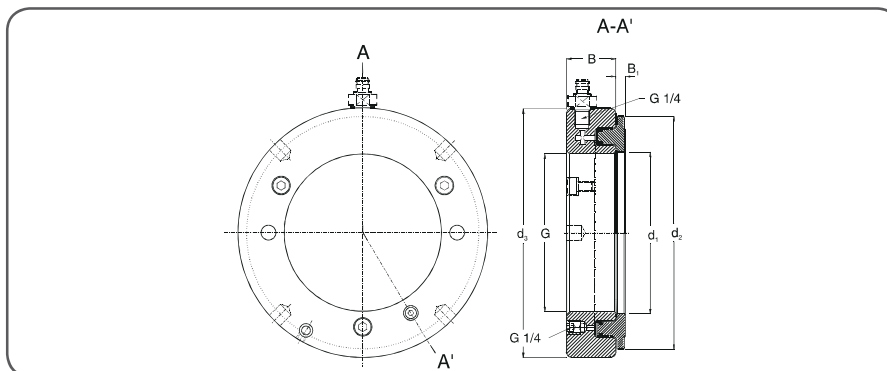
3.3 Accessories

Description	Designation
Mounting fluid (5 litres)	LHMF 300/5
Dial indicators	TMCD 5P (parallel dial, 0-5 mm) TMCD 10R (right angle dial, 0-10 mm) TMCD 1/2R (right angle dial, 0 - 1/2 in)

4. Dimensions

In the following tables dimensions are given for SKF standard hydraulic nuts HMV...E (metric), and HMVC...E (inch) as well as for hydraulic nuts without threads, HMV...E/A101. The nuts can also be made in other sizes, with special threads, or with unthreaded bores. Additional information will be provided on request.

4.1 Hydraulic nuts - HMV...E series



Threads

HMV 10E - HMV 40E	ISO 965/III-1980, tolerance class 6H
HMV 41E - HMV 200E	ISO 2901-1977, tolerance class 7H

Recommended mating threads

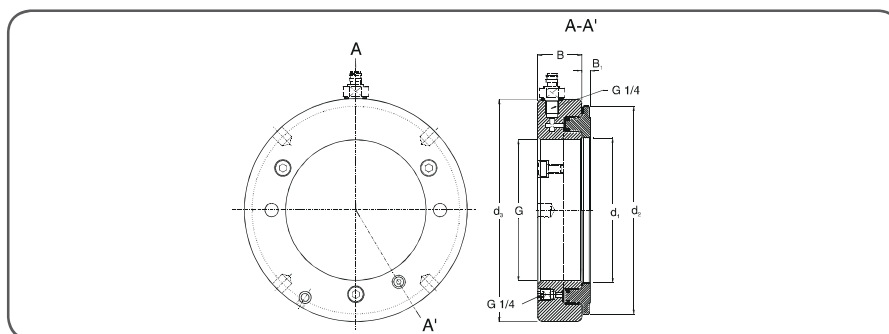
HMV 10E - HMV 40E	ISO 965/III-1980, tolerance class 6g
HMV 41E - HMV 200E	ISO 2901-1977, tolerance class 7e

Designation		Dimensions					Permitted piston displacement	Piston area	Weight
	G	d ₁	d ₂	d ₃	B	B ₁			
-	thread	mm	mm	mm	mm	mm	mm	mm ²	kg
HMV 10E	M 50x1.5	50,5	104	114	38	4	5	2 900	2,70
HMV 11E	M 55x2	55,5	109	120	38	4	5	3 150	2,75
HMV 12E	M 60x2	60,5	115	125	38	5	5	3 300	2,80
HMV 13E	M 65x2	65,5	121	130	38	5	5	3 600	3,00
HMV 14E	M 70x2	70,5	127	135	38	5	5	3 800	3,20
HMV 15E	M 75x2	75,5	132	140	38	5	5	4 000	3,40
HMV 16E	M 80x2	80,5	137	146	38	5	5	4 200	3,70
HMV 17E	M 85x2	85,5	142	150	38	5	5	4 400	3,75
HMV 18E	M 90x2	90,5	147	156	38	5	5	4 700	4,00
HMV 19E	M 95x2	95,5	153	162	38	5	5	4 900	4,30
HMV 20E	M 100x2	100,5	158	166	38	6	5	5 100	4,40
HMV 21E	M 105x2	105,5	163	172	38	6	5	5 300	4,65
HMV 22E	M 110x2	110,5	169	178	38	6	5	5 600	4,95
HMV 23E	M 115x2	115,5	174	182	38	6	5	5 800	5,00
HMV 24E	M 120x2	120,5	179	188	38	6	5	6 000	5,25
HMV 25E	M 125x2	125,5	184	192	38	6	5	6 200	5,35
HMV 26E	M 130x2	130,5	190	198	38	6	5	6 400	5,65
HMV 27E	M 135x2	135,5	195	204	38	6	5	6 600	5,90
HMV 28E	M 140x2	140,5	200	208	38	7	5	6 800	6,00
HMV 29E	M 145x2	145,5	206	214	39	7	5	7 300	6,50
HMV 30E	M 150x2	150,5	211	220	39	7	5	7 500	6,60
HMV 31E	M 155x3	155,5	218	226	39	7	5	8 100	6,95
HMV 32E	M 160x3	160,5	224	232	40	7	6	8 600	7,60
HMV 33E	M 165x3	165,5	229	238	40	7	6	8 900	7,90
HMV 34E	M 170x3	170,5	235	244	41	7	6	9 400	8,40
HMV 36E	M 180x3	180,5	247	256	41	7	6	10 300	9,15
HMV 38E	M 190x3	191	259	270	42	8	7	11 500	10,5
HMV 40E	M 200x3	201	271	282	43	8	8	12 500	11,5
HMV 41E	Tr 205x4	207	276	288	43	8	8	12 800	12,0
HMV 42E	Tr 210x4	212	282	294	44	8	9	13 400	12,5
HMV 43E	Tr 215x4	217	287	300	44	8	9	13 700	13,0
HMV 44E	Tr 220x4	222	293	306	44	8	9	14 400	13,5
HMV 45E	Tr 225x4	227	300	312	45	8	9	15 200	14,5
HMV 46E	Tr 230x4	232	305	318	45	8	9	15 500	14,5
HMV 47E	Tr 235x4	237	311	326	46	8	10	16 200	16,0
HMV 48E	Tr 240x4	242	316	330	46	9	10	16 500	16,0
HMV 50E	Tr 250x4	252	329	342	46	9	10	17 600	17,5
HMV 52E	Tr 260x4	262	341	356	47	9	11	18 800	19,5
HMV 54E	Tr 270x4	272	352	368	48	9	12	19 800	20,5
HMV 56E	Tr 280x4	282	363	380	49	9	12	21 100	22,0
HMV 58E	Tr 290x4	292	375	390	49	9	13	22 400	22,5
HMV 60E	Tr 300x4	302	386	404	51	10	14	23 600	25,5

Designation		Dimensions					Permitted piston displacement	Piston area	Weight
	G	d ₁	d ₂	d ₃	B	B ₁			
-	thread	mm	mm	mm	mm	mm	mm	mm ²	kg
HMV 62E	Tr 310x5	312	397	416	52	10	14	24 900	27,0
HMV 64E	Tr 320x5	322	409	428	53	10	14	26 300	29,5
HMV 66E	Tr 330x5	332	419	438	53	10	14	27 000	30,0
HMV 68E	Tr 340x5	342	430	450	54	10	14	28 400	31,5
HMV 69E	Tr 345x5	347	436	456	54	10	14	29 400	32,5
HMV 70E	Tr 350x5	352	442	464	56	10	14	29 900	35,0
HMV 72E	Tr 360x5	362	455	472	56	10	15	31 300	35,5
HMV 73E	Tr 365x5	367	460	482	57	11	15	31 700	38,5
HMV 74E	Tr 370x5	372	466	486	57	11	16	32 800	39,0
HMV 76E	Tr 380x5	382	476	498	58	11	16	33 500	40,5
HMV 77E	Tr 385x5	387	483	504	58	11	16	34 700	41,0
HMV 80E	Tr 400x5	402	499	522	60	11	17	36 700	45,5
HMV 82E	Tr 410x5	412	510	534	61	11	17	38 300	48,0
HMV 84E	Tr 420x5	422	522	546	61	11	17	40 000	50,0
HMV 86E	Tr 430x5	432	532	556	62	11	17	40 800	52,5
HMV 88E	Tr 440x5	442	543	566	62	12	17	42 500	54,0
HMV 90E	Tr 450x5	452	554	580	64	12	17	44 100	57,5
HMV 92E	Tr 460x5	462	565	590	64	12	17	45 100	60,0
HMV 94E	Tr 470x5	472	576	602	65	12	18	46 900	62,0
HMV 96E	Tr 480x5	482	587	612	65	12	19	48 600	63,0
HMV 98E	Tr 490x5	492	597	624	66	12	19	49 500	66,0
HMV 100E	Tr 500x5	502	609	636	67	12	19	51 500	70,0
HMV 102E	Tr 510x6	512	624	648	68	12	20	53 300	74,0
HMV 104E	Tr 520x6	522	634	658	68	13	20	54 300	75,0
HMV 106E	Tr 530x6	532	645	670	69	13	21	56 200	79,0
HMV 108E	Tr 540x6	542	657	682	69	13	21	58 200	81,0
HMV 110E	Tr 550x6	552	667	693	70	13	21	59 200	84,0
HMV 112E	Tr 560x6	562	678	704	71	13	22	61 200	88,0
HMV 114E	Tr 570x6	572	689	716	72	13	23	63 200	91,0
HMV 116E	Tr 580x6	582	699	726	72	13	23	64 200	94,0
HMV 120E	Tr 600x6	602	721	748	73	13	23	67 300	100
HMV 126E	Tr 630x6	632	754	782	74	14	23	72 900	110
HMV 130E	Tr 650x6	652	775	804	75	14	23	76 200	115
HMV 134E	Tr 670x6	672	796	826	76	14	24	79 500	120
HMV 138E	Tr 690x6	692	819	848	77	14	25	84 200	127
HMV 142E	Tr 710x7	712	840	870	78	15	25	87 700	135
HMV 150E	Tr 750x7	752	883	912	79	15	25	95 200	146
HMV 160E	Tr 800x7	802	936	965	80	16	25	103 900	161
HMV 170E	Tr 850x7	852	990	1 020	83	16	26	114 600	181
HMV 180E	Tr 900x7	902	1 043	1 075	86	17	30	124 100	205
HMV 190E	Tr 950x8	952	1 097	1 126	86	17	30	135 700	218
HMV 200E	Tr 1000x8	1 002	1 150	1 180	88	17	34	145 800	239

4.2 Hydraulic nuts - HMVC...E series (inch threads)

The HMVC...E nuts are supplied with both a quick connection nipple (729832 A) and a male G 1/4 to female NPT 3/8 threaded nipple (729106/100MPA).



Threads standards as recommended by the Anti-Friction Bearing Manufacturers Association (AFBMA) in the US:

HMVC 10-64E American National Form Threads Class 3

HMVC 68-190E ACME General Purpose Threads Class 3 G

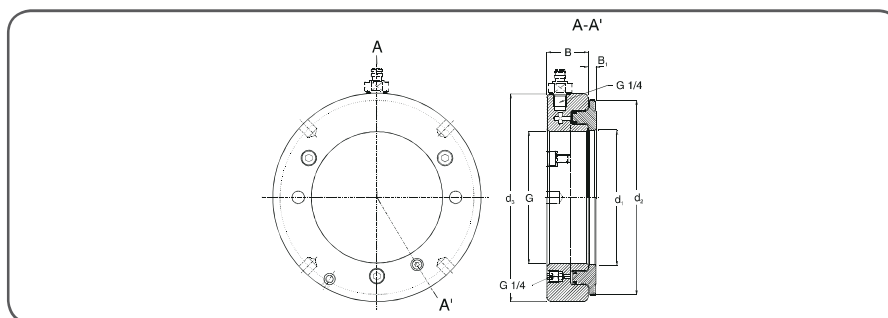
	G	Pitch diameter	Threads per in	d ₁	d ₂	d ₃	B	B ₁	Permitted piston dis- placement	Piston area	Weight
-	in	in	-	in	in	in	in	in	in	in ²	lb
HMVC 10E	1 967	1 9309	18	2.0	4.1	4.5	1.5	0.16	0.20	4.5	6.0
HMVC 11E	2 157	2 1209	18	2.2	4.3	4.7	1.5	0.16	0.20	4.9	6.1
HMVC 12E	2 360	2 3239	18	2.4	4.5	4.9	1.5	0.20	0.20	5.1	6.2
HMVC 13E	2 548	2 5119	18	2.6	4.8	5.1	1.5	0.20	0.20	5.6	6.6
HMVC 14E	2 751	2 7149	18	2.8	5.0	5.3	1.5	0.20	0.20	5.9	7.1
HMVC 15E	2 933	2 8789	12	3.0	5.2	5.5	1.5	0.20	0.20	6.2	7.5
HMVC 16E	3 137	3 0829	12	3.2	5.4	5.7	1.5	0.20	0.20	6.5	8.2
HMVC 17E	3 340	3 2859	12	3.4	5.6	5.9	1.5	0.20	0.20	6.8	8.3
HMVC 18E	3 527	3 4729	12	3.6	5.8	6.1	1.5	0.20	0.20	7.3	8.8
HMVC 19E	3 730	3 6759	12	3.8	6.0	6.4	1.5	0.20	0.20	7.6	9.5
HMVC 20E	3 918	3 8639	12	4.0	6.2	6.5	1.5	0.24	0.20	7.9	9.7
HMVC 21E	4 122	4 0679	12	4.2	6.4	6.8	1.5	0.24	0.20	8.2	10.3
HMVC 22E	4 325	4 2709	12	4.4	6.7	7.0	1.5	0.24	0.20	8.7	10.9
HMVC 24E	4 716	4 6619	12	4.7	7.0	7.4	1.5	0.24	0.20	9.3	11.6
HMVC 26E	5 106	5 0519	12	5.1	7.5	7.8	1.5	0.24	0.20	9.9	12.5
HMVC 28E	5 497	5 4429	12	5.5	7.9	8.2	1.5	0.28	0.20	10.5	13.2
HMVC 30E	5 888	5 8339	12	5.9	8.3	8.7	1.5	0.28	0.20	11.6	14.6
HMVC 32E	6 284	6 2028	8	6.3	8.8	9.1	1.6	0.28	0.24	13.3	16.8
HMVC 34E	6 659	6 5778	8	6.7	9.3	9.6	1.6	0.28	0.24	14.6	18.5
HMVC 36E	7 066	6 9848	8	7.1	9.7	10.1	1.6	0.28	0.24	16.0	20.2
HMVC 38E	7 472	7 3908	8	7.5	10.2	10.6	1.7	0.31	0.28	17.8	23.1

	G	Pitch diameter	Threads per in	d ₁	d ₂	d ₃	B	B ₁	Permitted piston dis- placement	Piston area	Weight
-	in	in	-	in	in	in	in	in	in	in ²	lb
HMVC 40E	7 847	7 7658	8	7.9	10.7	11.1	1.7	0.31	0.31	19.4	25.4
HMVC 44E	8 628	8 5468	8	8.7	11.5	12.0	1.7	0.31	0.35	22.3	29.8
HMVC 48E	9 442	9 3337	6	9.5	12.4	13.0	1.8	0.35	0.39	25.6	35.3
HMVC 52E	10 192	10 0837	6	10.3	13.4	14.0	1.9	0.35	0.43	29.1	41.9
HMVC 54E	10 604	10 4960	6	10.7	13.9	14.5	1.9	0.35	0.47	30.7	45.2
HMVC 56E	11 004	10 8957	6	11.1	14.3	15.0	1.9	0.35	0.47	32.7	48.5
HMVC 60E	11 785	11 6767	6	11.9	15.2	15.9	2.0	0.39	0.55	36.6	56.2
HMVC 64E	12 562	12 4537	6	12.7	16.1	16.9	2.1	0.39	0.55	40.8	65.0
HMVC 68E	13 339	13 2190	5	13.5	16.9	17.7	2.1	0.39	0.55	44.0	69.4
HMVC 72E	14 170	14 0500	5	14.3	17.9	18.6	2.2	0.39	0.59	48.5	78.3
HMVC 76E	14 957	14 8370	5	15.0	18.7	19.6	2.3	0.43	0.63	51.9	89.3
HMVC 80E	15 745	15 6250	5	15.8	19.6	20.6	2.4	0.43	0.67	56.9	100
HMVC 84E	16 532	16 4120	5	16.6	20.6	21.5	2.4	0.43	0.67	62.0	110
HMVC 88E	17 319	17 1990	5	17.4	21.4	22.3	2.4	0.47	0.67	65.9	119
HMVC 92E	18 107	17 9870	5	18.2	22.2	23.3	2.5	0.47	0.67	69.9	132
HMVC 96E	18 894	18 7740	5	19.0	23.1	24.1	2.6	0.47	0.75	75.3	139
HMVC 100E	19 682	19 5620	5	19.8	24.0	25.0	2.6	0.47	0.75	79.8	154
HMVC 106E	20 867	20 7220	4	20.9	25.4	26.4	2.7	0.51	0.83	87.1	174
HMVC 112E	22 048	21 9030	4	22.1	26.7	27.7	2.8	0.51	0.87	94.9	194
HMVC 120E	23 623	23 4780	4	23.7	28.4	29.4	2.9	0.51	0.91	104.3	220
HMVC 126E	24 804	24 6590	4	24.9	29.7	30.8	2.9	0.55	0.91	113.0	243
HMVC 134E	26 379	26 2340	4	26.5	31.3	32.5	3.0	0.55	0.94	123.2	265
HMVC 142E	27 961	27 7740	3	28.0	33.1	34.3	3.1	0.59	0.98	135.9	298
HMVC 150E	29 536	29 3490	3	29.6	34.8	35.9	3.1	0.59	0.98	147.6	322
HMVC 160E	31 504	31 3170	3	31.6	36.9	38.0	3.1	0.63	0.98	161.0	355
HMVC 170E	33 473	33 2860	3	33.5	39.0	40.2	3.3	0.63	1.02	177.6	399
HMVC 180E	35 441	35 2540	3	35.5	41.1	42.3	3.4	0.67	1.18	192.4	452
HMVC 190E	37 410	37 2230	3	37.5	43.2	44.3	3.4	0.67	1.18	210.3	481

4.3 Hydraulic nuts without threads

Application

HMV series hydraulic nuts with the suffix of /A101 are manufactured without threads. Bore diameter "G" is found in the table below. For additional dimensions refer to the table in section 4.1.



Designation	Bore diameter G		Designation	Bore diameter G	
	mm	in		mm	in
HMV 10E/A101	46,7	1.84	HMV 62E/A101	304,7	12.00
HMV 11E/A101	51,1	2.01	HMV 64E/A101	314,7	12.39
HMV 12E/A101	56,1	2.21	HMV 66E/A101	324,7	12.78
HMV 13E/A101	61,1	2.41	HMV 68E/A101	334,7	13.18
HMV 14E/A101	66,1	2.60	HMV 69E/A101	339,7	13.37
HMV 15E/A101	71,1	2.80	HMV 70E/A101	344,7	13.57
HMV 16E/A101	76,1	3.00	HMV 72E/A101	354,7	13.96
HMV 17E/A101	81,1	3.19	HMV 73E/A101	359,7	14.16
HMV 18E/A101	86,1	3.39	HMV 74E/A101	364,7	14.36
HMV 19E/A101	91,1	3.59	HMV 76E/A101	374,7	14.75
HMV 20E/A101	96,1	3.78	HMV 77E/A101	379,7	14.95
HMV 21E/A101	101,1	3.98	HMV 80E/A101	394,7	15.54
HMV 22E/A101	106,1	4.18	HMV 82E/A101	404,7	15.93
HMV 23E/A101	111,1	4.37	HMV 84E/A101	414,7	16.33
HMV 24E/A101	116,1	4.57	HMV 86E/A101	424,7	16.72
HMV 25E/A101	121,1	4.77	HMV 88E/A101	434,7	17.11
HMV 26E/A101	126,1	4.96	HMV 90E/A101	444,7	17.51
HMV 27E/A101	131,1	5.16	HMV 92E/A101	454,7	17.90
HMV 28E/A101	136,1	5.36	HMV 94E/A101	464,7	18.30
HMV 29E/A101	141,1	5.56	HMV 96E/A101	474,7	18.69
HMV 30E/A101	146,1	5.75	HMV 98E/A101	484,7	19.08
HMV 31E/A101	149,8	5.90	HMV 100E/A101	494,7	19.48
HMV 32E/A101	154,8	6.09	HMV 102E/A101	503,7	19.83
HMV 33E/A101	159,8	6.29	HMV 104E/A101	513,7	20.22
HMV 34E/A101	164,8	6.49	HMV 106E/A101	523,7	20.62

Designation	Bore diameter G		Designation	Bore diameter G	
	mm	in		mm	in
HMV 36E/A101	174,8	6.88	HMV 108E/A101	533,7	21.01
HMV 38E/A101	184,8	7.28	HMV 110E/A101	543,7	21.41
HMV 40E/A101	194,8	7.67	HMV 112E/A101	553,7	21.80
HMV 41E/A101	200,2	7.88	HMV 114E/A101	563,7	22.19
HMV 42E/A101	205,2	8.08	HMV 116E/A101	573,7	22.59
HMV 43E/A101	210,2	8.28	HMV 120E/A101	593,7	23.37
HMV 44E/A101	215,2	8.47	HMV 126E/A101	623,7	24.56
HMV 45E/A101	220,2	8.67	HMV 130E/A101	643,7	25.34
HMV 46E/A101	225,2	8.87	HMV 134E/A101	663,7	26.13
HMV 47E/A101	230,2	9.06	HMV 138E/A101	683,7	26.92
HMV 48E/A101	235,2	9.26	HMV 142E/A101	702,7	27.67
HMV 50E/A101	245,2	9.65	HMV 150E/A101	742,7	29.24
HMV 52E/A101	255,2	10.05	HMV 160E/A101	792,7	31.21
HMV 54E/A101	265,2	10.44	HMV 170E/A101	842,7	33.18
HMV 56E/A101	275,2	10.83	HMV 180E/A101	892,7	35.15
HMV 58E/A101	285,2	11.23	HMV 190E/A101	941,7	37.07
HMV 60E/A101	295,2	11.62	HMV 200E/A101	991,7	39.04

Notes:

[illegible]

English