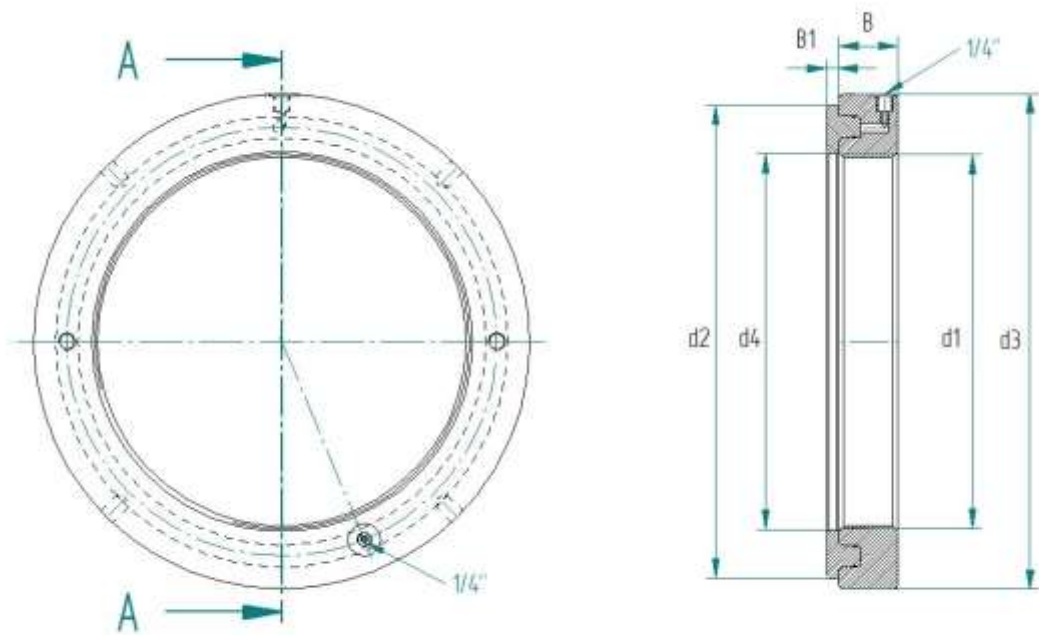


wide range engineering

HYDRAULIC NUTS
FOR USE WHEN MOUNTING AND DISMOUNTING ROLLING
BEARINGS ON A TAPER SLEEVE OR TAPER SHAFT.





SECTION A-A

Designation	d1	d3	d4	d2	B	B1	Permitted piston displacement	Piston area	Weight
	Thread	mm	mm	mm	mm	mm	mm	mm ²	kg
HMV 10E	M 50 x 1,5	114	50,5	104	38	4	5	2.900	2,8
HMV 11E	M 55 x 2	120	55,5	109	38	4	5	3.150	2,85
HMV 12E	M 60 x 2	125	60,5	115	38	5	5	3.300	2,9
HMV 13E	M 65 x 2	130	65,5	121	38	5	5	3.600	3,0
HMV 14E	M 70 x 2	135	70,5	127	38	5	5	3.800	3,2
HMV 15E	M 75 x 2	140	75,5	132	38	5	5	4.000	3,45
HMV 16E	M 80 x 2	146	80,5	137	38	5	5	4.200	3,70
HMV 17E	M 85 x 2	150	85,5	142	38	5	5	4.400	3,75
HMV 18E	M 90 x 2	156	90,5	147	38	5	5	4.700	4,10
HMV 19E	M 95 x 2	162	95,5	153	38	5	5	4.900	4,30
HMV 20E	M 100 x 2	166	100,5	158	38	6	5	5.100	4,50
HMV 21E	M 105 x 2	172	105,5	163	38	6	5	5.300	4,60
HMV 22E	M 110 x 2	178	110,5	169	38	6	5	5.600	4,95
HMV 23E	M 115 x 2	182	115,5	174	38	6	5	5.800	5,00
HMV 24E	M 120 x 2	188	120,5	179	38	6	5	6.000	5,28
HMV 25E	M 125 x 2	192	125,5	184	38	6	5	6.200	5,35
HMV 26E	M 130 x 2	198	130,5	190	38	6	5	6.400	5,65
HMV 27E	M 135 x 2	204	135,5	195	38	6	5	6.600	5,90
HMV 28E	M 140 x 2	208	140,5	200	38	7	5	6.800	6,00
HMV 29E	M 145 x 2	214	145,5	206	39	7	5	7.300	6,5
HMV 30E	M 150 x 2	220	150,5	211	39	7	5	7.500	6,9
HMV 31E	M 155 x 3	226	155,5	218	39	7	5	8.100	7
HMV 32E	M 160 x 3	232	160,5	224	40	7	6	8.600	7,5
HMV 33E	M 165 x 3	238	165,5	229	40	7	6	8.900	8
HMV 34E	M 170 x 3	244	170,5	235	41	7	6	9.400	9
HMV 36E	M 180 x 3	256	180,5	247	41	7	6	10.300	9,5
HMV 38E	M 190 x 3	270	191	259	42	8	7	11.500	10,8
HMV 40E	M 200 x 3	282	201	271	43	8	8	12.500	11,5
HMV 41E	Tr 205 x 4	288	207	276	43	8	8	12.800	12
HMV 42E	Tr 210 x 4	294	212	282	44	8	9	13.400	12,9



HMV 43E	Tr 215 x 4	300	217	287	44	8	9	13.700	13
HMV 44E	Tr 220 x 4	306	222	293	44	8	9	14.400	14
HMV 45E	Tr 225 x 4	312	227	300	45	8	9	15.200	14,5
HMV 46E	Tr 230 x 4	318	232	305	45	8	9	15.500	15
HMV 47E	Tr 235 x 4	326	237	311	46	8	10	16.200	16
HMV 48E	Tr 240 x 4	330	242	316	46	9	10	16.500	17
HMV 50E	Tr 250 x 4	342	252	329	46	9	10	17.600	18
HMV 52E	Tr 260 x 4	356	262	341	47	9	11	18.800	19
HMV 54E	Tr 270 x 4	368	272	352	48	9	12	19.800	21
HMV 56E	Tr 280 x 4	380	282	363	49	9	12	21.100	22
HMV 58E	Tr 290 x 4	390	292	375	49	9	13	22.400	23
HMV 60E	Tr 300 x 4	404	302	386	51	10	14	23.600	26
HMV 62E	Tr 310 x 5	416	312	397	52	10	14	24.900	28
HMV 64E	Tr 320 x 5	428	322	409	53	10	14	26.300	29
HMV 66E	Tr 330 x 5	438	332	419	53	10	14	27.000	30
HMV 68E	Tr 340 x 5	450	342	430	54	10	14	28.400	32
HMV 69E	Tr 345 x 5	456	347	436	54	10	14	29.400	33
HMV 70E	Tr 350 x 5	464	352	442	56	10	14	29.400	35,5
HMV 72E	Tr 360 x 5	472	362	455	56	10	15	31.300	36
HMV 73E	Tr 365 x 5	482	367	460	57	11	15	31.700	39
HMV 74E	Tr 370 x 5	486	372	466	57	11	16	32.800	39
HMV 76E	Tr 380 x 5	498	382	476	58	11	16	33.500	41
HMV 77E	Tr 385 x 5	504	387	483	58	11	16	34.700	42
HMV 80E	Tr 400 x 5	522	402	499	60	11	17	36.700	46
HMV 82E	Tr 410 x 5	534	412	510	61	11	17	38.300	49
HMV 84E	Tr 420 x 5	546	422	522	61	11	17	40.000	51
HMV 86E	Tr 430 x 5	556	432	532	62	11	17	40.800	53
HMV 88E	Tr 440 x 5	566	442	543	62	12	17	42.500	55
HMV 90E	Tr 450 x 5	580	452	554	64	12	17	44.100	58
HMV 92E	Tr 460 x 5	590	462	565	64	12	17	45.100	62
HMV 94E	Tr 470 x 5	602	472	576	65	12	18	46.900	63
HMV 96E	Tr 480 x 5	612	482	587	65	12	19	48.600	64
HMV 98E	Tr 490 x 5	624	492	597	66	12	19	49.500	67
HMV 100E	Tr 500 x 5	636	502	609	67	12	19	51.500	71
HMV 102E	Tr 510 x 6	648	512	624	68	12	20	53.300	75
HMV 104E	Tr 520 x 6	658	522	634	68	13	20	54.300	76
HMV 106E	Tr 530 x 6	670	532	645	69	13	21	56.200	80
HMV 108E	Tr 540 x 6	682	542	657	69	13	21	58.200	82
HMV 110E	Tr 550 x 6	693	552	667	70	13	21	59.200	85
HMV 112E	Tr 560 x 6	704	562	678	71	13	22	61.200	89
HMV 114E	Tr 570 x 6	716	572	689	72	13	23	63.200	92
HMV 116E	Tr 580 x 6	726	582	699	72	13	23	64.200	95
HMV 120E	Tr 600 x 6	748	602	721	73	13	23	67.300	102
HMV 126E	Tr 630 x 6	782	632	754	74	14	23	72.900	111
HMV 130E	Tr 650 x 6	804	652	775	75	14	23	76.200	116
HMV 134E	Tr 670 x 6	826	672	796	76	14	24	79.500	121
HMV 138E	Tr 690 x 6	848	692	819	77	14	25	84.200	128
HMV 142E	Tr 710 x 7	870	712	840	78	15	25	87.700	136
HMV 150E	Tr 750 x 7	912	752	883	79	15	25	95.200	148
HMV 160E	Tr 800 x 7	965	802	936	80	16	25	103.900	163
HMV 170E	Tr 850 x 7	1020	852	990	83	16	26	114.600	182
HMV 180E	Tr 900 x 7	1075	902	104	86	17	30	124.100	206
HMV 190E	Tr 950 x 8	1126	952	109	86	17	30	135.700	219
HMV 200E	Tr 1000 x 8	1180	1002	115	88	17	34	145.800	240

Threads

HMV 10E - 40E ISO 965/iii-1980, tolerance class 6H

HMV 50E - 200E ISO 2901-1977, tolerance class 7H



Some useful hints on application of Hydraulic Nuts

Application

Hydraulic nuts are typically use to mount rolling bearings with an adapter sleeve or directly on a taper shaft also to mount couplings, impellers etc. WRE hydraulic nuts are manufactured locally in South Africa. We keep certain sizes in stock, larger sizes and quantities will be subject to manufacture.

Design

WRE hydraulic nuts comprise of a press ring and a piston. The piston is hydraulically operated. The chamber behind the piston (also called the pressure chamber) is sealed by two o-rings to create the pressure to force the piston forward. These hydraulic nuts are designed to handle a max. of 800 bar or 80 MPa. Metric and trapezoidal threads are available as a standard, a smooth bore can also be supplied on request for heavy duty designs.

The hydraulic oil connectors are G1/4" thread. Two connecting points are supplied as a standard one on the front face behind the piston and one on the circumferential face. Four holes on the circumferential and four on the front faces makes handling easier. These holes increase in size as the nuts size increases. Larger nuts will be supplied with an eyebolt for easy lifting.

Hydraulic Pumps

Hydraulic pumps can be supplied on request.



Mounting of rolling bearings using hydraulic nuts.

When mounting a bearing two types of adaptor sleeves can be used, adaptor sleeve without oil injection or with oil injection. Mounting bearings with an adaptor sleeve without oil injection means there is no oil film between the inner ring of the bearing and the sleeve, these are normally recommended for smaller bearings. Mounting bearings with an adaptor sleeve with oil injection means there is an oil film injected between the inner ring of the bearing and the sleeve, normally recommended for Larger bearings.

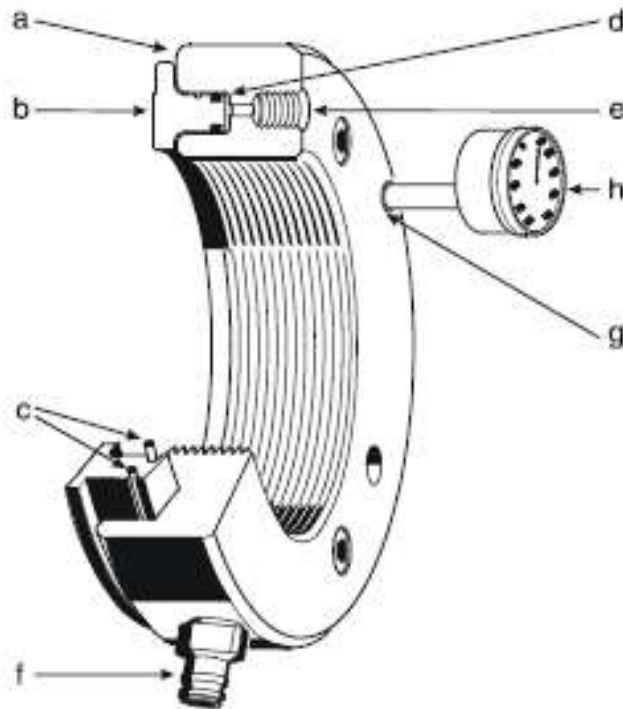
Procedure

When a spherical roller bearing is being driven up a taper shaft, the bearing is first located on the shaft and the hydraulic nut is then screwed onto the threaded section of the shaft until the bearing is firmly seated. When pressure is applied by the hydraulic nut to the inner ring of the bearing the axial displacement (movement of the bearing on the bearing seat) will start to decrease the internal radial clearance of the bearing. During the drive up the internal radial clearance must be checked continually by means of a feeler gauge. The values of the radial clearance for spherical roller bearings can be found on the WRE Radial Clearance Reduction chart.

When mounting a spherical roller bearing with an adaptor or withdrawal sleeves, the same method is used. The shaft has to be measured first. Then the adaptor sleeve and the bearing fitted to the shaft. When in position it can be driven up to the correct radial clearance.



Basic operation of the WRE Hydraulic Nut.



Above see the Parts that make up the hydraulic nut

The WRE hydraulic nut save considerable time and effort when mounting or dismounting rolling bearings with tapered bores. Two main components make up the WRE Hydraulic nut: a steel ring (item a) with internal thread and a groove in one side face, and an annular piston (item b) that fits into the groove. The two o-rings (item c) between the two components ensure proper sealing.

When oil is pumped into the pressure chamber (item d), it presses the piston out with a force that is sufficient for mounting and dismounting rolling bearings. An unthreaded hole (item g) on the outer ring is provided to hold a dial indicator (item h). The measuring tip of the



indicator rests against the shoulder of the piston to indicate axial travel. The drive-up distance or Axial displacement is then used to determine correct mounting. The correct drive up can be found on the WRE clearance reduction chart.

Two threaded holes are provided in the outer ring to attachment the hose of the Pump. The first hole is in the side face (item e), and the second on the circumference (item f). The unused hole must be plugged with when not in use. The hole that is used for the hose connection should be fitted with a quick coupling, this will be supplied with the hydraulic nut. A right angle dial gauge, 0-10 mm is normally used and can be supplied on request. All nuts have to be serviced after use.

Please consult WRE regarding purchasing or renting these Hydraulic nuts kits which includes a pump with all the necessary equipment. These kits can be serviced by WRE after every use.



722 / I-1200 FLANGED • BND SOLID TYPE • SPA / THDS / TH / THM TAKE UP • SN / SSN / SNH / SNU / FSN / SAF / SD / SDAF / SDJC / SDG PLUMMER BLOCKS • TRUNNION MILL / BALL MILL / ROD MILL / PINION / SHEAVE WHEEL / DIFFUSER HEAD SHAFT / SHREDDER / CANE KNIFE / SHAKER SCREEN / DRAGLINE / DAVIDSON HOUSINGS • WFO OIL BATH PLUMMER BLOCK • WRB DUAL FAN GREASE & OIL LUBRICATED / VWRB VERTICAL / MAJAX / DINGLER / CODELCO • TVN HANGER • MANIFOLD SUPPORT • PRE STRESS BOLTS / NUTS & STUOL • OIL INJECTION ADAPTER SLEEVES • TS LABYRINTH / TACONITE SEALS • END DISKS / LOCATING RINGS • HYDRAULIC NUTS / PUMPS & ACCESSORIES • FABRICATION OF HOUSINGS & COMPONENTS • GENERAL ENGINEERING.

For more information please contact us on:

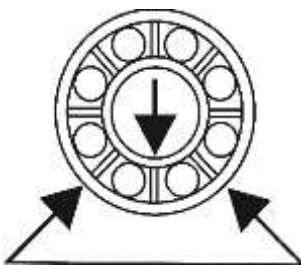
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