NSK

BEARING MAINTENANCE TOOLS

STAY IN MOTION. STAY IN CONTROL.

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MOUNTING AND DISMOUNTING TOOLS

BALL BEARING PULLER BPN62

Bearing Puller Tool Kit

Easy dismounting of ball bearings in blind housings

The toolkit BPN62 enables in many cases easy dismounting of ball bearings without dismantling the shaft. It consists of 6 puller arm sets and 2 supporting spindles and is suitable for deep groove ball bearings from 10 to 100 mm shaft diameter.

- 6 puller arm sets and 2 spindles in a display case weighing only 3.2 kg
- Hinged puller arms for power transmission to the bearing
- User-friendly because of the elastic locking ring, which keeps the puller arms in the right position
- Puller arms made of high quality steel
- Selection chart for deep groove ball bearings inside the case

B	P	N	6	2
BEARING	PULLER	NSK	# OF PULLER ARMS	# OF SPINDLES

Selection Chart BPN62

BALL BEARING TYPE				PULLER ARM	SPINDLE
60..	62..	63..	64..		
6000	6200			BPNA1	
6001					
6002					
6003					
6004	6201			BPNA2	BPNM12
6005	6202				
6006	6203				
6007	6204	6300		BPNA3	
6008	6205	6301			
6009		6302			
6010					
6011	6206	6303		BPNA4	
6012		6304			
6013					
6014	6207	6305	6403	BPNA5	BPNM16
6015	6208	6306			
6016	6209	6307			
6017	6210				
	6211				
6018	6212	6008	6404	BPNA6	
6019	6213	6309	6405		
6020	6214	6310	6406		
	6215	6311	6407		
	6216	6312	6408		
	6217	6313	6409		
			6410		

FITTING TOOL FTN333

F	T	N	333
FITTING	TOOL	NSK	STOCK #

Bearing Fitting Tool FTN333
Minimize the danger of damaging the bearing

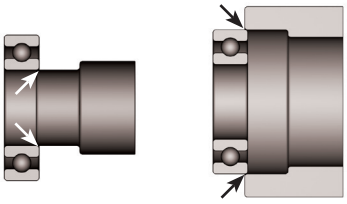
The NSK bearing fitting tools are designed for the fast, precise and secure mounting of bearings with bore diameters from 10 to 50 mm. The right combination of impact rings and impact sleeves makes sure that the mounting forces never go through the rolling elements of a bearing.

- Impact rings are made of extremely shock-resistant material
- Even power transmission to the bearing rings due to the special construction of the impact rings
- Nylon double-sided hammer head prevents damage of the bearings effectively
- Also suitable for the fitting of bushings, seals, pulleys, etc.
- Suitable for a wide range of bearing sizes
- Impact rings and impact sleeves are also available individually
- Blow-back proof hammer FTN333-H included
- No mechanical damage of the bearing during the cold mounting process

Cold Mounting of Bearings
Incorrect mounting can lead to damages and to an early breakdown of the bearing. Reasons for this can be:

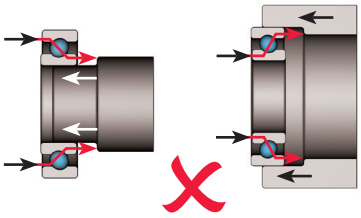
- Damages caused during the mounting process
- Wrong tolerances of the bearing carrier on the shaft or inside the housing
- Loosening of the locknut during operation
- Burrs and damages on the shaft and the housing seats and shoulders

Interference Fits - Cylindrical Bearing Shaft
For most bearings either the inner or the outer ring (in certain cases even both) are mounted onto the shaft or into the housing with an interference fit. Please review NSK recommended interference fits (Bearing and Linear Replacement Guide).



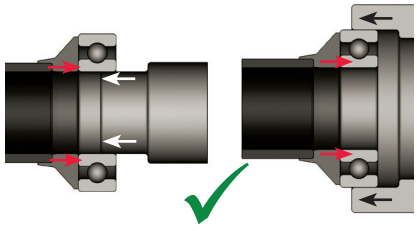
Shaft Interference Fit | Housing Interference Fit

Improper Mounting
During cold mounting of a roller bearing, it must be made sure that the mounting forces are always applied to the ring with the interference fit. Mounting forces should never go through the rolling elements.



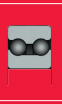
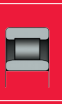
The raceway can be damaged by application of force on the wrong bearing ring.

Proper Mounting
The danger of damaging raceways can be minimized by the use of the specifically designed NSK fitting tools (FTN333, NMK 10-30).



Raceway damages can be prevented with the correct tools.

SELECTION TABLE FITTING TOOL FTN333

IMPACT SLEEVES	IMPACT RINGS	ROLLER BEARINGS OF THE FOLLOWING SERIES							
									
	d / D	60 63 62 64	12 13 22 23	72B 73B	32 32	222 223 213	NU-NJ-N 2 3 4	302 303 322	313 323
A FTN333-A	10 / 26	6000	129						
	10 / 30	6200	1200		3200				
	10 / 30		2200						
	10 / 35	6300	1300						
	12 / 28	6001							
	12 / 32	6201	1201		3201				
	12 / 32		2201						
	12 / 37	6301	1301						
	12 / 37		2301						
	15 / 32	6002							
	15 / 35	6202	1202	7202 B	3202				
	15 / 35		2202						
	15 / 42	6302	1302		3302			30302	
	15 / 42		2302						
	17 / 35	6003							
	17 / 40	6203	1203	7203 B	3203			30203	
	17 / 40		2203						
	17 / 47	6303	1303	7303 B	3303			30303	
	17 / 47								
B FTN333-B	20 / 42	6004							
	20 / 47	6204	1204	7204 B	3204		204		
	20 / 47		2204						
	20 / 52	6304	1304	7304 B	3304	22205/20	304	30304	32304
	20 / 52	6403	2304						
	25 / 47	6005							
	25 / 52	6205	1205	7205 B	3205	22205	205	30205	
	25 / 52		2205						
	25 / 62	6305	1305	7305 B	3305	21305	305	30305	31305
	25 / 62	6404	2305						32305
	30 / 55	6006							
	30 / 62	6206	1206	7206 B	3206	22206	206	30206	
	30 / 62		2206					32206	
	30 / 72	6306	1306	7306 B	3306	21306	306	30306	31306
	30 / 72	6405	2306				405		32307
C FTN333-C	35 / 62	6007							
	35 / 72	6207	1207	7207 B	3207	22207	207	30207	
	35 / 72		2207					32207	
	35 / 80	6307	1307	7307 B	3307	21307	307	30307	31307
	35 / 80	6406	2307				406		32307
	40 / 68	6008							
	40 / 80	6208	1208	7208 B	3208	22208	208	30208	
	40 / 80								
	40 / 90	6308	1308	7308 B	3308	21308	308	30308	31308
	40 / 90	6407	2308			22308	407		32308
	45 / 75	6009							
	45 / 85	6209	1209	7209 B	3209	22209	209	30209	
	45 / 85		2209					32209	
	45 / 85								
	45 / 100	6309	1309	7309 B	3309	21309	309	30309	31309
	45 / 100	6408	2309			22309	408		32309
	45 / 100*	6013	1211	7211 B	3211	22211	211		
	45 / 100*	6211	2211						
	50 / 80	6010							
	50 / 90	6210	1210	7210 B	3210	22210	210	30210	
	50 / 90		2210					32210	
	50 / 90*	6011							
	50 / 90*	6012							
	50 / 110	6310	1310	7310 B	3310	21310	310	30310	31310
	50 / 110	6409	2310			22310	409		32310
	50 / 110*	6014	1212	7212 B	3212	22212	212		
	50 / 110*	6015	1213	7213 B	3213	22213	213		
	50 / 110*	6212	2212	7311 B	3311	21311	311		
	50 / 110*	6313	2213			22311	410		
	50 / 110*	6311	1311						
	50 / 110*	6410	2311						

*outer ring fitting only

BEARING HANDLING TOOL BHTN300-500 AND BHTN500-700

BHTN

BASE NUMBER

300-500

OUTER DIAMETER SIZE RANGE

300-500: 300 - 500mm
500-700: 500 - 700mm

The NSK Bearing Handling Tool is ideally suited to professional, safe handling and lifting of heavy bearings.

Handling large and heavy bearings with the Bearing Handling Tool prevents the risk of damage to the bearing.

The Bearing Handling Tool encompasses the outer ring of the bearing with a steel strip. Two opposite handles and two carrying belts allow easy handling with a lifting crane.

Advantages:

- Safe handling
- Prevents damage to bearings
- 50% time-saving compared to conventional mounting methods
- Can be used for heated bearings with a temperature up to 320°F /160°C
- Easy mounting aid for large bearings

With the Bearing Handling Tool bearings can be fitted onto a horizontal or vertical shaft. It is even possible to safely handle spherical ball bearings without damaging them thanks to two opposite anti-rotation bars that are positioned against the bearing's inner race.

The Bearing Handling Tool consists of:

- 2 carrying belts
- 2 high-quality handles
- 2 turning handles for safe handling
- 2 inner ring holders
- 1 clamping strip made of steel
- 1 pair of protective gloves

SPANNER WRENCH

HN

BASE NUMBER

1

SIZE

Numbered 1 to 22 according to AN locknuts part number

HN IMPACT

BASE NUMBER

23-30

SIZE

23 -30: fits AN 23-30 locknuts
30 - 40: fits AN 30 - 40 locknuts
40 - 52: fits AN 40 - 52 locknuts

LOCKNUT P/N			STANDARD SPANNER WRENCH P/N
INCH	METRIC		
	NSK	SKF	
N01		KM1	**HN1**
N02	AN02	KM2	**HN2**
N03	AN03	KM3	**HN3**
N04	AN04	KM4	**HN4**
N05	AN05	KM5	**HN5**
N06	AN06	KM6	**HN6**
N07	AN07	KM7	**HN7**
N08	AN08	KM8	**HN8**
N09	AN09	KM9	**HN9**
N10	AN10	KM10	**HN10**
N11	AN11	KM11	**HN11**
N12	AN 12	KM12	**HN12**
N13	AN13	KM13	**HN13**
N14	AN14	KM14	**HN14**
AN15	AN15	KM15	**HN15**
AN16	AN16	KM16	**HN16**
AN17	AN17	KM17	**HN17**
AN18	AN18	KM18	**HN18**
AN19	AN19	KM19	**HN19**
AN20	AN20	KM20	**HN20**
AN21	AN21	KM21	**HN21**
AN22	AN22	KM22	**HN22***

* The largest standard spanner wrench is HN22.

Spanner wrenches are a simple and inexpensive means of installing small size tapered bore bearings onto shafts and adapter sleeves. Because they clamp onto the slot in the locknut, they do not cause damage to the locknut which frequently occurs when using a hammer and keystock.

NSK standard spanner wrenches are made from 1/4" (7mm) thick plates. The heads of impact spanner wrenches are made of forged steel, which is welded to a strong alloyed steel handle covered by easy grip rubber.

NSK impact-spanner wrenches are heavy duty and can withstand the impact force of a hammer. All wrenches come with a convenient hole for ease of storage or hanging.

LOCKNUT P/N**								NSK IMPACT SPANNER WRENCH P/N
LOCKNUT SERIES	KM	HM..T	HML..T	HM30	HM31	AN-00	N-00	
Locknut Number	23-30	*	*	*	*	24-30	026-032	**HN IMPACT 23-30**
	30-40	*	41-42	*	*	30-40	034-040	**HN IMPACT 30-40**
	40-52	41-0	41-54	44-52	*	40-44	044-052	**HN IMPACT 40-52**

* Locknut of that size does not exist in this series.
** All Locknut Series have letter and number part numbers (i.e. AN-24).

PULLERS AND TRI-SECTION PRESS PLATES

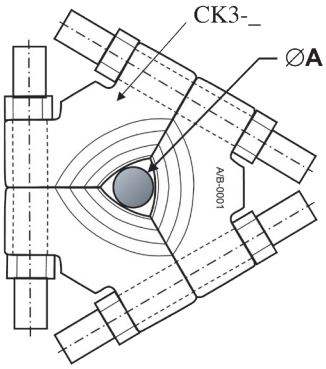
CK	3	-6	in	HCL
BASE NUMBER	**TYPE**	**SERIES**	**STYLE**	**SPECIAL FEATURE**
	blank: puller **3:** tri-section press plate		**in:** pump built in cylinder **5:** pump separate of cylinder	**blank:** standard **H:** high capacity cylinder **C:** strong cobra jaw **L:** long jaw **3:** kit with tri-section press plate

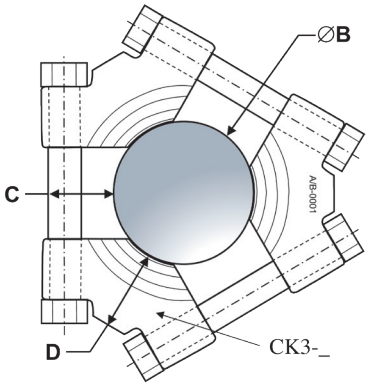
Pullers and tri-section press plates are useful in the quick, easy and safe installation and removal of bearings, rings, pulleys and gears. The use of these tools is helpful in protecting the shaft, bearings and surrounding equipment from damage. They also help reduce the potential for bodily harm to the operator.

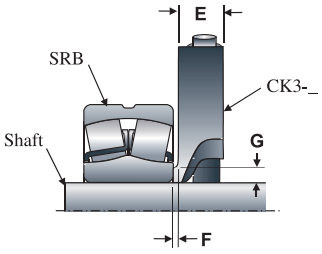
NSK's family of pullers and tri-section press plates come in a full range of sizes and come individually or in kits specifically matched to customer needs.

NSK offers a hydraulic puller and tri-section press plate in a single heavy duty case making transportation and storage more convenient as well as reducing the possibility of lost parts. Pullers are available in non-interchangeable standard and high capacity designs. The high capacity design includes a high pressure cylinder and cobra jaw. Hydraulic pullers from NSK incorporate coarse threads which make it easier and quicker to assemble than competitive bearing removal products.

Tri-Section Press Plates







CK3-50	21304	22310
CK3-100	22205	22320
CK3-160	22211	23232
CK3-260	23120	23252
CK3-380	23032	24176

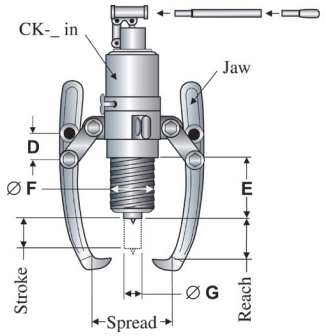
CK3-50	61801	6410
CK3-100	61805	6320
CK3-160	61811	6232
CK3-260	61820	6252
CK3-380	61832	6076

CK3-50		
CK3-100	NN4920	NN4120
CK3-160	NN4920	NNU4132
CK3-260	NN3020	NNU4152
CK3-380	NNU49323	NNU4176

PART NUMBER	CAPACITY		DIMENSIONS							WEIGHT
	kN	TON (IMP)	ØA	ØB	C	D	E	F	G	kg
			mm							
CK3-50	80	8	12	50	20	26	15	2	4	0.5
CK3-100	200	20	26	100	36	45	25	3	6	2.8
CK3-160	300	30	50	160	45	60	33	4	8	6.5
CK3-260	450	45	90	260	70	88	47	6	11	19.5
CK3-380	600	60	140	380	81	112	63	8	14	48.4

PULLERS AND TRI-SECTION PRESS PLATES (CONT)

Puller



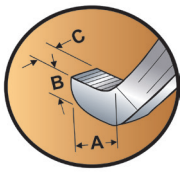
PART NUMBER	REACH* (MAX)	SPREAD	STROKE	CAPACITY		JAW**				CYLINDER		PULLER	TRI-SECTION PRESS PLATE
				kN	TON (IMP)	STD.		COBRA		(KPSI)			
	mm					S	L	S	L	10	12		
CK-6sd	152	30/150	55	40	4	■				■		■	
CK-6in	152	30/200	82	60	6	■				■		■	
CK-6inL	190	30/200	82	60	6		■			■		■	
CK-6inHC	182	280	82	100	10			■			■	■	
CK-6inHCL	220	280	82	100	10				■		■	■	
CK-6in3	152	30/200	82	60	6	■				■		■	■ (CK3-100)
CK-6in3H	182	280	82	100	10						■	■	■ (CK3-100)
CK-8in	190	30/250	82	80	8	■				■		■	
CK-8inL	229	30/250	82	80	8		■			■		■	
CK-8inHCL	259	305	82	120	12				■		■	■	
CK-8in3	190	30/250	82	80	8	■				■		■	■ (CK3-160)
CK-8in3H	220	305	82	120	12			■			■	■	■ (CK3-160)
CK-10in	229	280	82	150	15	■				■		■	
CK-10inL	300	280	82	150	15		■			■		■	
CK-10in3	229	280	82	150	15	■				■		■	■ (CK3-160)
CK-11inHCL	300	356	82	200	20				■		■	■	
CK-11in3H	259	356	82	200	20			■			■	■	■ (CK3-160)
CK-12inHC	300	406	110	250	25			■			■	■	
CK-12inHCL	375	406	110	250	25				■		■	■	
CK-15inHC	375	50/540	110	300	30			■			■	■	
CK-105	229	280	82	150	15	■				■		■	
CK-105L	300	280	82	150	15		■			■		■	
CK-105HCL	300	356	82	175	17.5				■		■	■	
CK-104	150	100/410	82	150	15								
CK-104A	205	100/410	82	150	15							■	

* Min Reach = Max Reach - E

** S = short, L = long

Note: Spread of puller must be wider than OD of bearing.

Puller



DIMENSIONS							WT	CASE†	SAFETY BAG††	PART NUMBER
A	B	C	D	E	F	G				
mm							kg			
11	6	22	32	53	42	25	5.0	PE	M	CK-6sd
11	6	22	32	83	42	25	5.5	PE	M	CK-6in
11	10	25	51	83	42	25	6.3	PE	M	CK-6inL
11	6	22	32	113	42	25	6.7	M	B	CK-6inHC
11	10	25	51	113	42	25	7.6	M	B	CK-6inHCL
11	6	22	32	83	42	25	9.1	PE	M	CK-6in3
11	6	22	32	113	42	25	9.5	PE	B	CK-6in3H
11	10	25	51	83	50	28	7.3	PE	M	CK-8in
14	10	29	51	83	50	28	8.1	PE	M	CK-8inL
14	10	29	51	113	50	25	10.7	M	B	CK-8inHCL
11	10	25	51	83	50	28	13.8	PE	M	CK-8in3
11	10	25	51	113	50	25	15.7	PE	B	CK-8in3H
14	10	29	51	83	60	35	9.3	PE	M	CK-10in
30	28	33	75	83	60	35	12.9	M	B	CK-10inL
14	10	29	51	83	60	35	15.8	PE	M	CK-10in3
30	28	33	75	113	60	35	14.2	M	B	CK-11inHCL
14	10	29	51	113	60	35	18.6	PE	B	CK-11in3H
30	28	33	75	140	70	45	19.3	W	B	CK-12inHC
27	36	38	78	140	70	45	24.3	M	B	CK-12inHCL
27	36	38	78	170	74	55	32.4	W	B	CK-15inHC
14	10	29	51	83	60	35	13.8	M	M	CK-105
30	28	33	75	83	60	35	17.3	M	B	CK-105L
30	28	33	75	113	60	35	18.6	M	B	CK-105HCL
						60	10.4	CB		CK-104
32	17	35					9.1	CB		CK-104A

† CB = cardboard, M = metal, PE = plastic enclosure, W = wood box

†† B = PVC bag, M = PVC mesh

SINE BAR GAGES

SINEBAR — **BASE NUMBER**

K — **TAPER**

K: 1:12
K30: 1:30

-5.5

-3: one 3 inch long sine bar
-4: one 4 inch long sine bar
-5.5: one 5.5 inch long sine bar
-7: one 7 inch long sine bar
-10: one 10 inch long sine bar
-14: one 14 inch long sine bar

SINEBAR — **BASE NUMBER**

BLK — **BLOCK**

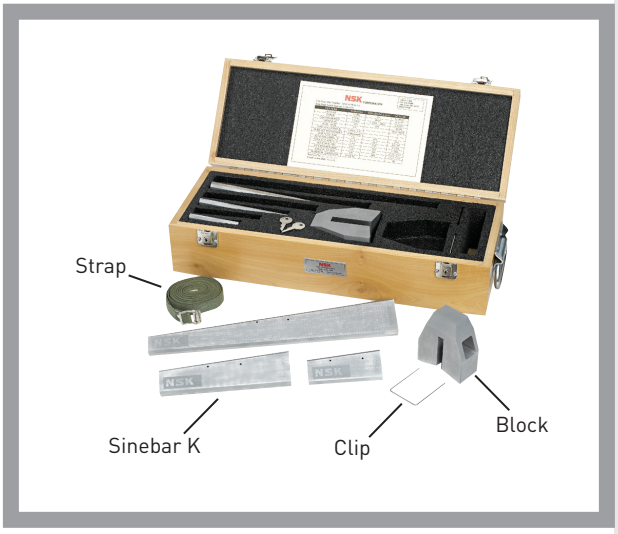
1/2 — **SIZE**

1/2: Block used with large bars
3/8: Block used with small bars

SINEBAR — **BASE NUMBER**

CLIP

Clip: Clip component
Strap: Strap component
Box/Set K: Complete K set in box
Box/Set K30: Complete K30 set in box



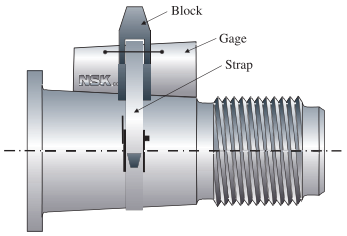
Accurate fit between a tapered bore bearing and its journal is critical if a bearing is to reach maximum life. Certified NSK Sine Bar Gages are designed to provide an accurate and easy method to measure a journal's taper, size, contact area and out of roundness.

A complete sine bar gage set for measurement of either 1:12 or 1:30 shaft tapered journals consists of:

- 3, 4, 5.5, 7, 10 and 14 inch long sine bar gages
- 2 sine bar blocks
- a strap
- calibration reports
- wooden box for transportation
- 2 clamps
- journal detail charts
- instructions for use

NSK sine bars are coated with a special anti-rusting treatment, come with easy to read laminated instructions and are available individually, in combination or as complete sets. They are lightweight, easy to handle and a cost effective way to ensure maximum bearing life.

NOTE: If ordering a single sine bar not in a set, the sinebar block, strap, and clamps do not come with that sine bar. Those components can be ordered separately if you do not already have them.



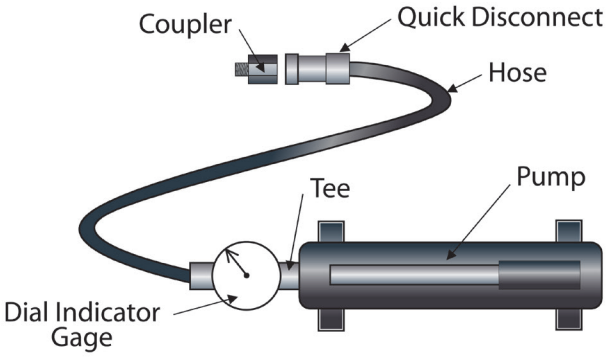
BEARING			1:12 TAPERED JOURNAL														1:30 TAPERED JOURNAL			
BORE SIZE			222 SERIES		223 SERIES		230 SERIES		231 SERIES		232 SERIES		238 SERIES		239 SERIES		240 SERIES		241 SERIES	
BORE SYMBOL	BORE - MILLIMETERS	BORE - INCHES	GAGE NO.	BLOCK NO.	GAGE NO.	BLOCK NO.	GAGE NO.	BLOCK NO.	GAGE NO.	BLOCK NO.	GAGE NO.	BLOCK NO.	GAGE NO.	BLOCK NO.	GAGE NO.	BLOCK NO.	GAGE NO.	BLOCK NO.	GAGE NO.	BLOCK NO.
20	100	3.9370			3	3/8			3	3/8	3	3/8								
22	110	4.3307			3	3/8			3	3/8	3	3/8							3	3/8
24	120	4.7244	3	3/8	3	3/8			3	3/8	3	3/8							3	3/8
26	130	5.1181	3	3/8	3	3/8			3	3/8	3	3/8					3	3/8	3	3/8
28	140	5.5118	3	3/8	4	3/8			3	3/8	3	3/8					3	3/8	3	3/8
30	150	5.9055	3	3/8	4	3/8			3	3/8	3	3/8					3	3/8	4	3/8
32	160	6.2992	3	3/8	4	3/8			3	3/8	4	3/8					3	3/8	4	3/8
34	170	6.6929	3	3/8	4	3/8	3	3/8	3	3/8	4	3/8					3	3/8	4	3/8
36	180	7.0866	3	3/8	4	3/8	3	3/8	3	3/8	4	3/8					4	3/8	4	3/8
38	190	7.4803	3	3/8	4	3/8	3	3/8	4	3/8	4	3/8					4	3/8	4	3/8
40	200	7.8740	3	3/8	5.5	3/8	3	3/8	4	3/8	4	3/8			3	3/8	4	3/8	5.5	3/8
44	220	8.6614	4	3/8	5.5	3/8	3	3/8	4	3/8	5.5	3/8			3	3/8	4	3/8	5.5	3/8
48	240	9.4488	4	3/8	5.5	3/8	3	3/8	4	3/8	5.5	3/8			3	3/8	4	3/8	5.5	3/8
52	260	10.2362	4	3/8	5.5	3/8	4	3/8	5.5	3/8	5.5	3/8			3	3/8	5.5	3/8	7	1/2
56	280	11.0236	4	3/8	5.5	3/8	4	3/8	5.5	3/8	5.5	3/8	3	3/8	3	3/8	5.5	3/8	7	1/2
60	300	11.8110	5.5	3/8			4	3/8	5.5	3/8	7	1/2	3	3/8	3	3/8	5.5	3/8	7	1/2
64	320	12.5984	5.5	3/8			4	3/8	5.5	3/8	7	1/2	3	3/8	3	3/8	5.5	3/8	7	1/2
68	340	13.3858					4	3/8	7	1/2	7	1/2	3	3/8	3	3/8	7	1/2	7	1/2
72	360	14.1732					4	3/8	7	1/2	7	1/2	3	3/8	3	3/8	7	1/2	7	1/2
76	380	14.9606					4	3/8	7	1/2	7	1/2	3	3/8	4	3/8	7	1/2	7	1/2
80	400	15.7480					5.5	3/8	7	1/2	10	1/2	3	3/8	4	3/8	7	1/2	10	1/2
84	420	16.5354					5.5	3/8	7	1/2	10	1/2	3	3/8	4	3/8	7	1/2	10	1/2
88	440	17.3228					5.5	3/8	7	1/2	10	1/2	3	3/8	4	3/8	7	1/2	10	1/2
92	460	18.1102					5.5	3/8	7	1/2	10	1/2	3	3/8	4	3/8	7	1/2	10	1/2
96	480	18.8976					5.5	3/8	7	1/2	10	1/2	3	3/8	4	3/8	7	1/2	10	1/2
/500	500	19.6850					5.5	3/8	10	1/2	10	1/2	3	3/8	4	3/8	7	1/2	10	1/2
/530	530	20.8661					7	1/2	10	1/2	10	1/2	3	3/8	5.5	3/8	10	1/2	10	1/2
/560	560	22.0472					7	1/2	10	1/2	14	1/2	3	3/8	5.5	3/8	10	1/2	14	1/2
/600	600	23.6220					7	1/2	10	1/2	14	1/2	3	3/8	5.5	3/8	10	1/2	14	1/2
/630	630	24.8031					7	1/2	10	1/2	14	1/2	4	3/8	5.5	3/8	10	1/2	14	1/2
/670	670	26.3780					7	1/2	10	1/2	14	1/2	4	3/8	5.5	3/8	10	1/2	14	1/2
/710	710	27.9528					7	1/2	10	1/2	14	1/2	4	3/8	7	1/2	10	1/2	14	1/2
/750	750	29.5276					7	1/2	14	1/2	14	1/2	4	3/8	7	1/2	10	1/2	14	1/2
/800	800	31.4961					10	1/2	14	1/2	14	1/2	5.5	3/8	7	1/2	10	1/2	14	1/2
/850	850	33.4646					10	1/2	14	1/2	14	1/2	5.5	3/8	7	1/2	14	1/2	14	1/2
/900	900	35.4331					10	1/2	14	1/2	14	1/2	5.5	3/8	7	1/2	14	1/2	14	1/2
/950	950	37.4016					10	1/2	14	1/2	14	1/2	5.5	3/8	7	1/2	14	1/2	14	1/2
/1000	1000	39.3701					10	1/2	14	1/2	14	1/2	5.5	3/8	10	1/2	14	1/2	14	1/2

Note: Empty spaces in the above chart indicate that a bearing is not an ISO standard size.

BORE SIZE			I SERIES	
BEARING NUMBER	BORE - MILLIMETERS	BORE - INCHES	GAGE NO.	BLOCK NO.
I-112618	250	9.8425	4	3/8
I-112630	350	13.7795	7	1/2

HYDRAULIC PUMP

PUMP	HSS	LARGE
BASE NUMBER	**TYPE** **HSS:** Hydraulic Single Stage	**TANK CAPACITY** **LARGE**



NSK offers hydraulic pumps that inject oil into hydraulic nuts during bearing installation and simplify the bearing removal process by pumping oil between the inner ring and journal. NSK heavy duty pumps are offered in two sizes, are lightweight and come in a specially designed protective carrying case.

NSK P/N**	PUMP DESCRIPTION	MAX. WORKING PRESSURE*	USABLE OIL CAPACITY	OIL DISPLACEMENT PER STROKE INCH³		MAX HANDLE EFFORT	PISTON STROKE	OIL OUTLET PORT	WEIGHT	PUMP DIMENSIONS INCH (mm)		
		PSI	INCH³	1ST STAGE	2ND STAGE	lbs	INCH	NPTF	lbs	L	W	H
PUMP HSS LARGE	Hand Pump Single Speed	10,000	48		0.15	24.4	0.98	3/8" -18	16.50	22.05 (560)	5.51 (140)	5.51 (140)

*All pumps include a relief valve set at 10,000 psi.
** All pumps come in kits which include a pump, hose, quick disconnect, coupler (nipple), gage, tee and a metal case.

HYDRAULIC NUTS

HMV

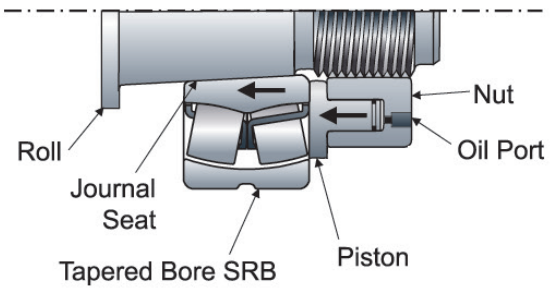
BASE NUMBER

HMV: Metric Thread
HMVC: Inch Thread

10EM

BORE CODE

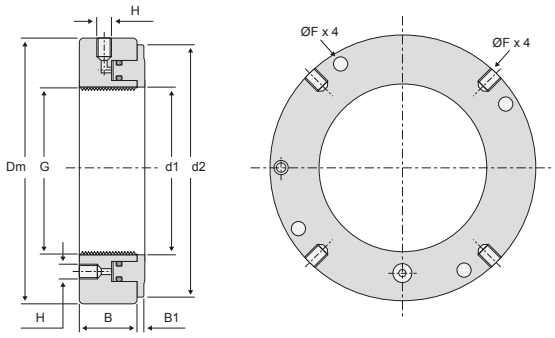
10EM: 50 mm
20EM: 100mm
150EM: 750mm



Hydraulic nuts from NSK aid in the mounting of tapered bore bearings onto tapered or cylindrical shafts when using an appropriate bearing adapter. Used in conjunction with a dial indicator and a manually operated hydraulic pump, a NSK hydraulic nut can make the bearing installation process safe, easy and reliable. The hydraulic pressure provides the installation force so there is no need to hammer on a spanner wrench. In addition to mounting bearings, the hydraulic nut can also be used to dismount a tapered bore bearing installed using a withdrawal sleeve mounting arrangement.

The hydraulic nut kit includes the instruction manual, pin wrench (tommy bar) and a replacement O-ring seal set. Dial indicator, hydraulic pump and hydraulic fittings are supplied separately. The hydraulic nut is manufactured from durable SAE 1045 steel and is available in a wide range of sizes covering all the standard adapters. Special sizes and threads may be available upon request.

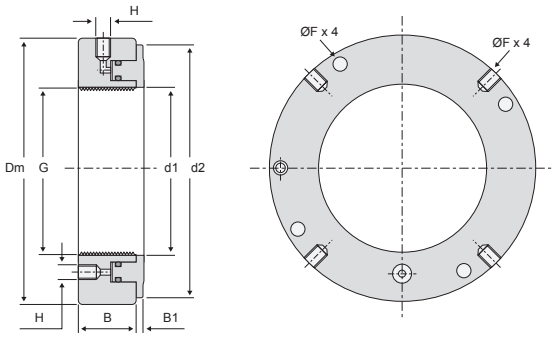
HYDRAULIC NUTS - METRIC
HMV 10E THROUGH HMV 26E



PN	NOMINAL THREAD G mm	PISTON ID d1 mm	PISTON FLANGE OD d2 mm	OUTER DIAMETER Dm mm	THICKNESS B mm	PISTON THICKNESS B1 mm	MAX. AXIAL DISPLACEMENT mm	INJECTION HOLE THREAD H	ØF mm
HMV 10EM	M 50x1,5	50.5	104	114	38	4	5	1/4"-18NPTF	9.6
HMV 11x1.5EM	M 55x1,5	55.5	109	120	38	4	5	1/4"-18NPTF	9.6
HMV 12x1.5EM	M 60x1,5	60.5	115	125	38	5	5	1/4"-18NPTF	
HMV 13x1.5EM	M 65x1,5	65.5	121	130	38	5	5	1/4"-18NPTF	9.6
HMV 14EM	M 70x2	70.5	127	135	38	5	5	1/4"-18NPTF	9.6
HMV 15EM	M 75x2	75.5	132	140	38	5	5	1/4"-18NPTF	9.6
HMV 16EM	M 80x2	80.5	137	146	38	5	5	1/4"-18NPTF	9.6
HMV 17EM	M 85x2	85.5	142	150	38	5	5	1/4"-18NPTF	9.6
HMV 18EM	M 90x2	90.5	147	156	38	5	5	1/4"-18NPTF	9.6
HMV 19EM	M 95x2	95.5	153	162	38	5	5	1/4"-18NPTF	9.6
HMV 20EM	M 100x2	100.5	158	166	38	6	5	1/4"-18NPTF	9.6
HMV 21EM	M 105x2	105.5	163	172	38	6	5	1/4"-18NPTF	12.7
HMV 22EM	M 110x2	110.5	169	178	38	6	5	1/4"-18NPTF	12.7
HMV 24EM	M 120x2	120.5	179	188	38	6	5	1/4"-18NPTF	12.7
HMV 26EM	M 130x2	130.5	190	198	38	6	5	1/4"-18NPTF	12.7

SLEEVE OPTION 1	BEARING OPTION 1	SLEEVE OPTION 2	BEARING OPTION 2	SLEEVE OPTION 3	BEARING OPTION 3	SLEEVE OPTION 4	BEARING OPTION 4	SLEEVE OPTION 5	BEARING OPTION 5	SLEEVE OPTION 6	BEARING OPTION 6
H 310	1310K 21310K 2210K 22210K	H 2310	22310K 2310K								
H 311	1311K 21311K 2211K 22211K	H 2311	22311K 2311K								
H 312	1312K 2212K 22212K	H 2312	22312K 2312K								
H 313	1313K 21313K 2213K 22213K	H 2313	22313K 2313K								
H 314	1314K 21314K 2214K 22214K	H 2314	22314K 2314K								
H 315	1315K 21315K 2215K 22215K	H 2315	22315K 2315K								
H 316	1316K 21316K 2216K 22216K	H 2316	22316K 2316K								
H 317	1317K 21317K 2217K 22217K	H 2317	22317K 2317K								
H 318	1318K 21318K 2218K 22218K	H 2318	22318K 2318K 23218K								
H 319	1319K 21319K 2219K 22219K	H 2319	22319K 2319K								
H 320	1320K 21320K 2220K 22220K	H 2320	2320K 23220K 22320K	H 3120	23120K						
H 321	21321K 2221K 22221K	H 2321	23221K								
H 322	1322K 21322K 22222K 2222K 23022K	H 2322	22322K 23222K	H 3122	23122K	H 24022	24022K30	H 24122	24122K30		
H 3024	1224K 23024K	H 2324	22324K 23224K	H 24024	24024K30	H 24124	24124K30	H 3124	22224K 23124K	H 3924	23924K
H 2326	22326K 23226K	H 24026	24026K30	H 24126	24126K30	H 3026	23026K	H 3126	22226K 23126K	H 3926	23926K

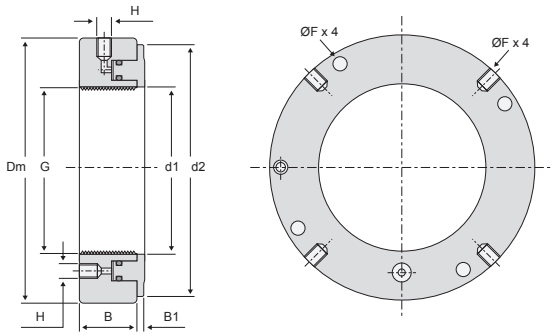
HYDRAULIC NUTS - METRIC
HMV 28E THROUGH HMV 96E



PN	NOMINAL THREAD G mm	PISTON ID d1 mm	PISTON FLANGE OD d2 mm	OUTER DIAMETER Dm mm	THICKNESS B mm	PISTON THICKNESS B1 mm	MAX. AXIAL DISPLACEMENT mm	INJECTION HOLE THREAD H	ØF mm	SLEEVE OPTION 1	BEARING OPTION 1
HMV 28EM	M 140x2	140.5	200	208	38	7	5	1/4"-18NPTF	12.7	H 2328	22328K 23228K
HMV 30EM	M 150x2	150.5	211	220	39	7	5	1/4"-18NPTF	12.7	H 2330	22330K 23230K
HMV 32EM	M 160x3	160.5	224	232	40	7	6	1/4"-18NPTF	12.7	H 2332	22332K 23232K
HMV 34EM	M 170x3	170.5	235	244	41	7	6	1/4"-18NPTF	12.7	H 2334	22334K 23234K
HMV 36EM	M 180x3	180.5	247	256	41	7	6	1/4"-18NPTF	12.7	H 2336	22336K 23236K
HMV 38EM	M 190x3	191	259	270	42	8	7	1/4"-18NPTF	12.7	H 2338	22338K 23238K
HMV 40EM	M 200x3	201	271	282	43	8	8	1/4"-18NPTF	14.3	H 2340	22340K 23240K
HMV 44EM	Tr 220x4	222	293	306	43	8	9	1/4"-18NPTF	14.3	H 2344	22344K 23244K
HMV 48EM	Tr 240x4	242	316	330	46	9	10	3/8"-18NPTF	14.3	H 2348	22348K 23248K
HMV 52EM	Tr 260x4	262	341	356	47	9	11	3/8"-18NPTF	14.3	H 2352	22352K 23252K
HMV 56EM	Tr 280x4	282	363	380	49	9	12	3/8"-18NPTF	15.9	H 2356	22356K 23256K
HMV 60EM	Tr 300x4	302	386	404	50	10	14	3/8"-18NPTF	15.9	H 24060	24060K30
HMV 64EM	Tr 320x5	322	409	428	53	10	14	3/8"-18NPTF	15.9	H 24064	24064K30
HMV 68EM	Tr 340x5	342	430	450	54	10	14	3/8"-18NPTF	15.9	H 24068	24068K30
HMV 72EM	Tr 360x5	362	455	472	56	10	15	3/8"-18NPTF	15.9	H 24072	24072K30
HMV 76EM	Tr 380x5	382	476	498	58	11	16	3/8"-18NPTF	19.1	H 24076	24076K30
HMV 80EM	Tr 400x5	402	499	522	60	11	17	3/8"-18NPTF	19.1	H 24080	24080K30
HMV 84EM	Tr 420x5	422	522	546	61	11	17	3/8"-18NPTF	19.1	H 24084	24084K30
HMV 88EM	Tr 440x5	442	543	566	62	12	17	3/8"-18NPTF	19.1	H 24088	24088K30
HMV 92EM	Tr 460x5	462	565	590	64	12	17	3/8"-18NPTF	19.1	H 24092	24092K30
HMV 96EM	Tr 480x5	482	578	612	65	12	19	3/8"-18NPTF	19.1	H 24096	24096K30

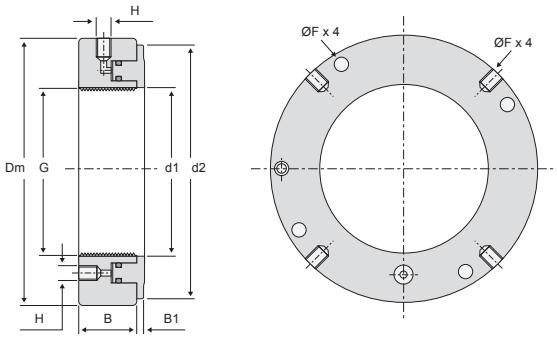
SLEEVE OPTION 2	BEARING OPTION 2	SLEEVE OPTION 3	BEARING OPTION 3	SLEEVE OPTION 4	BEARING OPTION 4	SLEEVE OPTION 5	BEARING OPTION 5	SLEEVE OPTION 6	BEARING OPTION 6	SLEEVE OPTION 7	BEARING OPTION 7
H 24028	24028K30	H 24128	24128K30	H 3028	23028K	H 3128	22228K 23128K	H 3928	23928K		
H 24030	24030K30	H 24130	24130K30	H 3030	23030K	H 3130	22230K 23130K	H 3930	23930K		
H 24032	24032K30	H 24132	24132K30	H 3032	23032K	H 3132	22232K 23132K	H 3932	23932K		
H 24034	24034K30	H 24134	24134K30	H 3034	23034K	H 3134	22234K 23134K	H 3934	23934K		
H 24036	24036K30	H 24136	24136K30	H 3036	20336K 23036K	H 3136	22236K 23136K	H 3936	23936K		
H 24038	24038K30	H 24138	24138K30	H 3038	20338K 23038K	H 3138	22238K 23138K	H 3938	23938K		
H 24040	24040K30	H 24140	24140K30	H 3040	20340K 23040K	H 3140	22240K 23140K	H 3940	23940K		
H 24044	24044K30	H 24144	24144K30	H 3044	20344K 23044K	H 3144	22244K 23144K	H 3944	23944K		
H 24048	24048K30	H 24148	24148K30	H 3048	20348K 23048K	H 3148	22248K 23148K	H 3948	23948K		
H 2352	22352K 23252K	H 24052	24052K30	H 24152	24152K30	H 3052	23052K	H 3152	22252K 23152K	H 3952	23952K
H 2356	22356K 23256K	H 24056	24056K30	H 24156	24156K30	H 3056	23056K	H 3156	22256K 23156K	H 3956	23956K
H 24160	24160K30	H 3060	23060K	H 3160	22260K 23160K	H 3260	22360K 23260K	H 3960	23960K		
H 24164	24164K30	H 3064	23064K	H 3164	22264K 23164K	H 3264	22364K 23264K	H 3964	23964K		
H 24168	24168K30	H 3068	23068K	H 3168	23168K	H 3268	23268K 22368K	H 3968	23968K		
H 24172	24172K30	H 3072	23072K	H 3172	23172K	H 3272	22372H 22372K	H 3972	23972K		
H 24176	24176K30	H 3076	23076K	H 3176	23176K	H 3276	23268K 22376K	H 3976	23976K		
H 24180	24180K30	H 3080	23080K	H 3180	23180K	H 3280	22380K 23280K	H 3980	23980K		
H 24184	24184K30	H 3084	23084K	H 3184	23184K	H 3284	23284K 22384K	H 3984	23984K		
H 24188	24188K30	H 3088	23088K	H 3188	23188K	H 3288	23288K 22388K	H 3988	23988K		
H 24192	24192K30	H 3092	23092K	H 3192	23192K	H 3292	23292K 22392K	H 3992	23992K		
H 24196	24196K30	H 3096	23096K	H 3196	23196K	H 3296	23296K 22396K	H 3996	23996K		

HYDRAULIC NUTS - METRIC
HMV 100E THROUGH HMV 142E



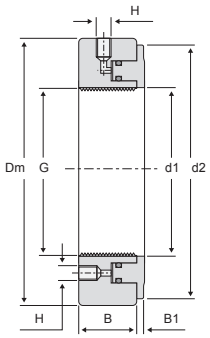
PN	NOMINAL THREAD G mm	PISTON ID d1 mm	PISTON FLANGE OD d2 mm	OUTER DIAMETER Dm mm	THICKNESS B mm	PISTON THICKNESS B1 mm	MAX. AXIAL DISPLACEMENT mm	INJECTION HOLE THREAD H	ØF mm	SLEEVE OPTION 1	BEARING OPTION 1
HMV 100EM	Tr 500x5	502	609	636	67	12	19	3/8"-NPTF	19.1	H 30/500 H 31/500 H 32/500 H 39/500 H 240/500 H 241/500	230/500K 231/500K 232/500K 239/500K 240/500K30 241/500K30
HMV 106EM	Tr 530x6	532	645	670	69	13	21	3/8"-NPTF	19.1	H 30/530 H 31/530 H 32/530 H 39/530 H 240/530 H 241/530	230/530K 231/530K 232/530K 239/530K 240/530K30 241/530K30
HMV 112EM	Tr 560x6	562	678	704	71	13	22	3/8"-NPTF	19.1	H 30/560 H 31/560 H 32/560 H 39/560 H 240/560 H 241/560	230/560K 231/560K 232/560K 239/560K 240/560K30 241/560K30
HMV 120EM	Tr 600x6	602	721	748	73	13	23	3/8"-NPTF	22.3	H 30/600 H 31/600 H 32/600 H 39/600 H 240/600 H 241/600	230/600K 231/600K 232/600K 239/600K 240/600K30 241/600K30
HMV 126EM	Tr 630x6	632	754	782	74	14	23	3/8"-NPTF	22.3	H 30/630 H 31/630 H 32/630 H 39/630 H 240/630 H 241/630	230/630K 231/630K 232/630K 239/630K 240/630K30 241/630K30
HMV 134EM	Tr 670x6	672	796	826	75	14	24	3/8"-NPTF	22.3	H 30/670 H 31/670 H 32/670 H 39/670 H 240/670 H 241/670	230/670K 231/670K 232/670K 239/670K 240/670K30 241/670K30
HMV 142EM	Tr 710x7	712	840	870	78	15	25	3/8"-NPTF	22.3	H 30/710 H 31/710 H 32/710 H 39/710 H240/710 H241/710	230/710K 231/710K 232/710K 239/710K 240/710K30 241/710K30

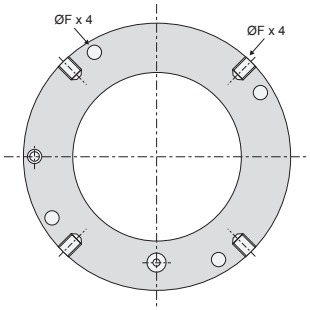
HYDRAULIC NUTS - METRIC
HMV150E THROUGH HMV212E



PN	NOMINAL THREAD G mm	PISTON ID d1 mm	PISTON FLANGE OD d2 mm	OUTER DIAMETER Dm mm	THICKNESS B mm	PISTON THICKNESS B1 mm	MAX. AXIAL DISPLACEMENT mm	INJECTION HOLE THREAD H	ØF mm	SLEEVE OPTION 1	BEARING OPTION 1
HMV 150EM	Tr 750x7	752	883	912	79	15	25	3/8"-NPTF	22.3	H 30/750 H 31/750 H 32/750 H 39/750 H 240/750 H 241/750	230/750K 231/750K 232/750K 239/750K 240/750K30 241/750K30
HMV 160EM	Tr 800x7	802	936	965	80	16	25	3/8"-NPTF	22.3	H 30/800 H 31/800 H 32/800 H 39/800 H 240/800 H 241/800	230/800K 231/800K 232/800K 239/800K 240/800K30 241/800K30
HMV 170EM	Tr 850x7	852	990	1020	83	16	26	3/8"-NPTF	22.3	H 30/850 H 31/850 H 32/850 H 39/850 H 240/850 H 241/850	230/850K 231/850K 232/850K 239/850K 240/850K30 241/850K30
HMV 180EM	Tr 900x7	902	1043	1075	86	17	30	3/8"-NPTF	25.4	H 30/900 H 31/900 H 32/900 H 39/900 H 240/900 H 241/900	230/900K 231/900K 232/900K 239/900K 240/900K30 241/900K30
HMV 190EM	Tr 950x8	952	1097	1126	86	17	30	3/8"-NPTF	25.4	H 30/950 H 31/950 H 32/950 H 39/950 H 240/950 H 241/950	230/950K 231/950K 232/950K 239/950K 240/950K30 241/950K30
HMV 200EM	Tr 1000x8	1002	1150	1180	88	17	34	3/8"-NPTF	25.4	H 30/1000 H 31/1000 H 32/1000 H 39/1000 H 240/1000 H 241/1000	230/1000K 231/1000K 232/1000K 239/1000K 240/1000K30 241/1000K30
HMV 212EM	Tr 1060x8	1063	1220	1255	97	18	35	3/8"-NPTF	25.4	H 30/1060 H 31/1060 H 39/1060 H 240/1060 H 241/1060	230/1060K 231/1060K 239/1060K 240/1060K30 241/1060K30

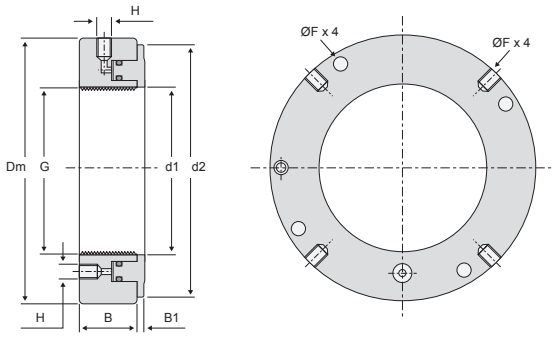
HYDRAULIC NUTS - INCH
HMVC 10E THROUGH HMVC 16E





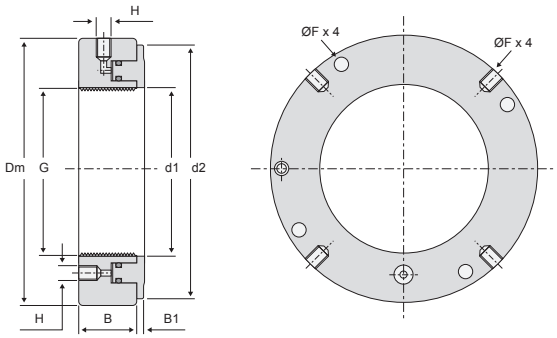
PN	NOMINAL THREAD G mm	PISTON ID d1 mm	PISTON FLANGE OD d2 mm	OUTER DIAMETER Dm mm	THICKNESS B mm	PISTON THICKNESS B1 mm	MAX. AXIAL DISPLACEMENT mm	INJECTION HOLE THREAD H	ØF mm	SLEEVE OPTION 1	BEARING OPTION 1	SLEEVE OPTION 2	BEARING OPTION 2
HMVC 10EM	1.967"x18F	50.5	104	114	38	4	5	1/4"-18NPTF	9.6	SNW10	1210K 1310K 2210K 1310K 2210K 22210K	SNW110	22310K 23210K
HMVC 11EM	2.157"x18F	55.5	109	120	38	4	5	1/4"-18NPTF	9.6	SNW11	1211K 1311K 2211K 1311K 2211K 22211K	SNW111	22311K 23211K
HMVC 12EM	2.360"x18F	60.5	115	125	38	5	5	1/4"-18NPTF	9.6	SNW12	1212K 1312K 2212K 1312K 2212K 22212K	SNW112	22312K 23212K
HMVC 13EM	2.548"x18F	65.5	121	130	38	5	5	1/4"-18NPTF	9.6	SNW13	1213K 1313K 2213K 1313K 2213K 22213K	SNW113	22313K 23213K
HMVC 14EM	2.751"x18F	70.5	127	135	38	5	5	1/4"-18NPTF	9.6	SNW14	1214K 1314K 2214K 1314K 2214K 22214K	SNW114	22314K 23214K
HMVC 15EM	2.933"x12F	75.5	132	140	38	5	5	1/4"-18NPTF	9.6	SNW15	1215K 1315K 2215K 1315K 2215K 22215K	SNW115	22315K 23215K
HMVC 16EM	3.137"x12F	80.5	137	146	38	5	5	1/4"-18NPTF	9.6	SNW16	1216K 1316K 2216K 1316K 2216K 22216K	SNW116	22316K 23216K

HYDRAULIC NUTS - INCH
HMVC 17E THROUGH HMVC 22E



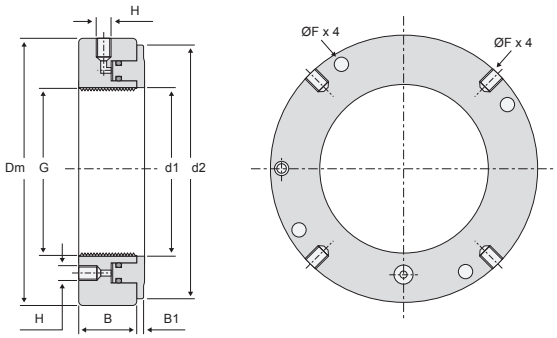
PN	NOMINAL THREAD G mm	PISTON ID d1 mm	PISTON FLANGE OD d2 mm	OUTER DIAMETER Dm mm	THICKNESS B mm	PISTON THICKNESS B1 mm	MAX. AXIAL DISPLACEMENT mm	INJECTION HOLE THREAD H	ØF mm	SLEEVE OPTION 1	BEARING OPTION 1	SLEEVE OPTION 2	BEARING OPTION 2
HMVC 17EM	3.340"x12F	85.5	142	150	38	5	5	1/4"-18NPTF	9.6	SNW17	1217K 1317K 2217K 1317K 2217K 22217K	SNW117	22317K 23217K
HMVC 18EM	3.527"x12F	90.5	147	156	38	5	5	1/4"-18NPTF	9.6	SNW18	1218K 1318K 2218K 1318K 2218K 22218K	SNW118	22318K 23218K
HMVC 19EM	3.730"x12F	95.5	153	162	38	5	5	1/4"-18NPTF	9.6	SNW19	1219K 1319K 2219K 1319K 2219K 22219K	SNW119	22319K 23219K
HMVC 20EM	3.918"x12F	100.5	158	166	38	6	5	1/4"-18NPTF	9.6	SNW20	1220K 1320K 2220K 1320K 2220K 22220K	SNW120	22320K 23220K
HMVC 21EM	4.122"x12F	105.5	163	172	38	6	5	1/4"-18NPTF	12.7	SNW21	1221K 1321K 2221K 1321K 2221K 22221K	SNW121	22321K 23221K
HMVC 22EM	4.325"x12F	110.5	169	178	38	6	5	1/4"-18NPTF	12.7	SNW22	1222K 1322K 2222K 1322K 2222K 22222K	SNW122	22322K 23222K

HYDRAULIC NUTS - INCH
HMVC 24E THROUGH HMVC 44E



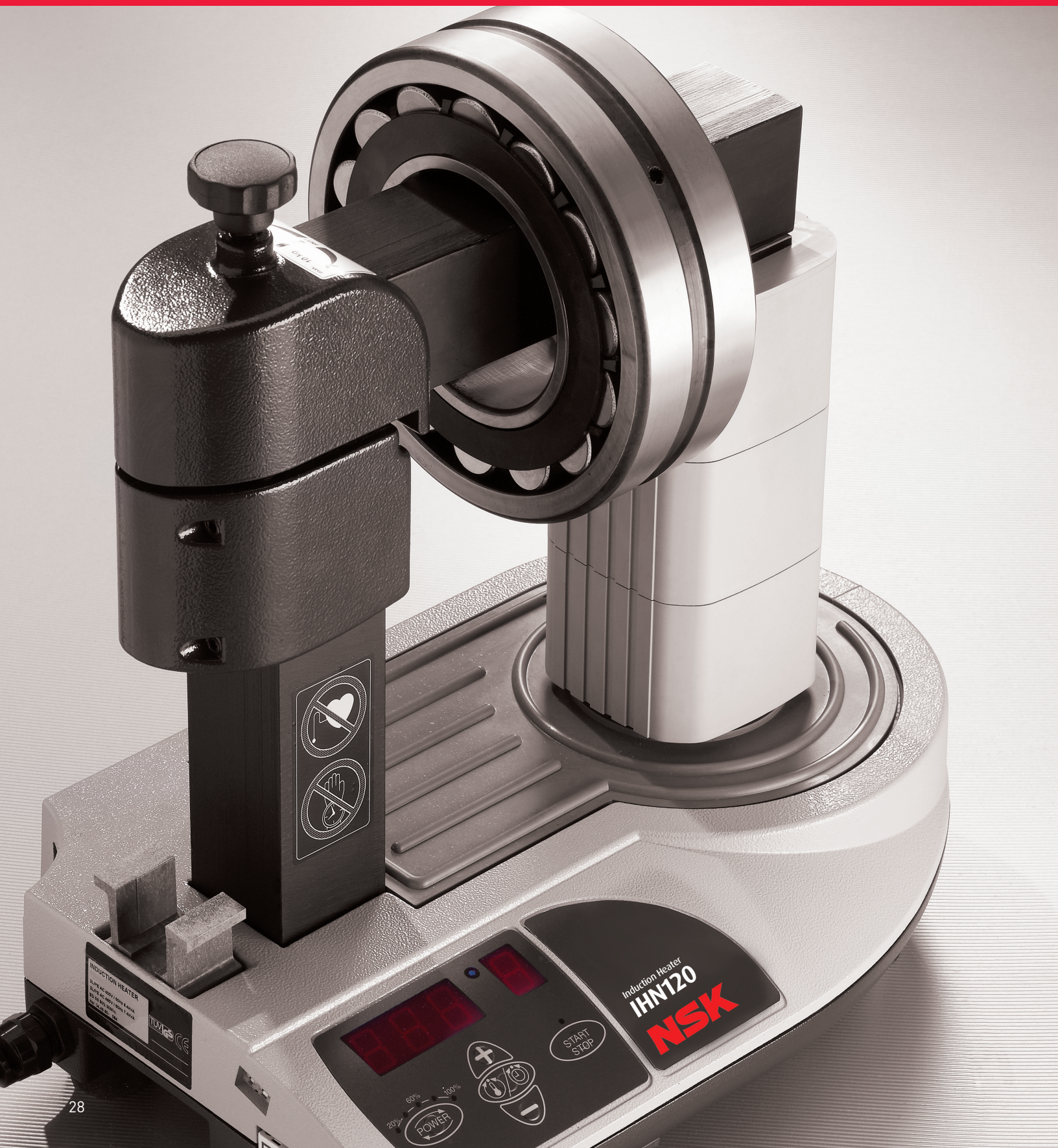
PN	NOMINAL THREAD G mm	PISTON ID d1 mm	PISTON FLANGE OD d2 mm	OUTER DIAMETER Dm mm	THICKNESS B mm	PISTON THICKNESS B1 mm	MAX. AXIAL DISPLACEMENT mm	INJECTION HOLE THREAD H	ØF mm	SLEEVE OPTION 1	BEARING OPTION 1	SLEEVE OPTION 2	BEARING OPTION 2	SLEEVE OPTION 3	BEARING OPTION 3
HMVC 24EM	4.716"x12F	120.5	179	188	38	6	5	1/4"-18NPTF	12.7	SNW24	1224K 1324K 2224K 1324K 2224K 22224K	SNW124	22324K 23224K	SNW3024	23024K
HMVC 26EM	5.106"x12F	130.5	190	198	38	6	5	1/4"-18NPTF	12.7	SNW26	1226K 1326K 2226K 1326K 2226K 22226K	SNW126	22326K 23226K	SNW3026	23026K
HMVC 28EM	5.497"x12F	140.5	200	208	38	7	5	1/4"-18NPTF	12.7	SNW28	1228K 1328K 2228K 1328K 2228K 22228K	SNW128	22328K 23228K	SNW3028	23028K
HMVC 30EM	5.888"x12F	150.5	211	220	39	7	5	1/4"-18NPTF	12.7	SNW30	1230K 1330K 2230K 1330K 2230K 22230K	SNW130	22330K 23230K	SNW3030	23030K
HMVC 32EM	6.284"x8F	160.5	224	232	40	7	6	1/4"-18NPTF	12.7	SNW32	1232K 1332K 2232K 1332K 2232K 22232K	SNW132	22332K 23232K	SNW3032	23032K
HMVC 34EM	6.659"x8F	170.5	235	244	41	7	6	1/4"-18NPTF	12.7	SNW34	1234K 1334K 2234K 1334K 2234K 22234K	SNW134	22334K 23234K	SNW3034	23034K
HMVC 36EM	7.066"x8F	180.5	247	256	41	7	6	1/4"-18NPTF	12.7	SNW36	1236K 1336K 2236K 1336K 2236K 22236K	SNW136	22336K 23236K	SNW3036	23036K
HMVC 38EM	7.472"x8F	191	259	270	42	8	7	1/4"-18NPTF	12.7	SNW38	1238K 1338K 2238K 1338K 2238K 22238K	SNW138	22338K 23238K	SNW3038	23038K
HMVC 40EM	7.847"x8F	201	271	282	43	8	8	1/4"-18NPTF	14.3	SNW40	1240K 1340K 2240K 1340K 2240K 22240K	SNW140	22340K 23240K	SNW3040	23040K
HMVC 44EM	8.628"x8F	222	293	306	43	8	9	1/4"-18NPTF	14.3	SNW44	1244K 1344K 2244K 1344K 2244K 22244K	SNW144	22344K 23244K	SNW3044	23044K

HYDRAULIC NUTS - INCH
HMVC 48E THROUGH HMVC 100E



PN	NOMINAL THREAD G mm	PISTON ID d1 mm	PISTON FLANGE OD d2 mm	OUTER DIAMETER Dm mm	THICKNESS B mm	PISTON THICKNESS B1 mm	MAX. AXIAL DISPLACEMENT mm	INJECTION HOLE THREAD H	ØF mm	SLEEVE OPTION 1	BEARING OPTION 1
HMVC 48EM	9.442"x6F	242	316	330	46	9	10	3/8"-18NPTF	14.3	SNP3048	23048K
HMVC 52EM	10.192"x6F	262	341	356	47	9	11	3/8"-18NPTF	14.3	SNP3052	23052K
HMVC 56EM	11.004"x6F	282	363	380	49	9	12	3/8"-18NPTF	15.9	SNP3056	23056K
HMVC 60EM	11.785"x6F	302	386	404	50	10	14	3/8"-18NPTF	15.9	SNP3060	23060K
HMVC 64EM	12.562"x6F	322	409	428	53	10	14	3/8"-18NPTF	15.9	SNP3064	23064K
HMVC 68EM	13.339"x5F	342	430	450	54	10	14	3/8"-18NPTF	15.9	SNP3068	23068K
HMVC 72EM	14.170"x5F	362	455	472	56	10	15	3/8"-18NPTF	15.9	SNP3072	23072K
HMVC 76EM	14.957"x5F	382	476	498	58	11	16	3/8"-18NPTF	19.1	SNP3076	23076K
HMVC 80EM	15.745"x5F	402	499	522	60	11	17	3/8"-18NPTF	19.1	SNP3080	23080K
HMVC 84EM	16.532"x5F	422	522	546	61	11	17	3/8"-18NPTF	19.1	SNP3084	23084K
HMVC 88EM	17.319"x5F	442	543	566	62	12	17	3/8"-18NPTF	19.1	SNP3088	23088K
HMVC 92EM	18.107"x5F	462	565	590	64	12	17	3/8"-18NPTF	19.1	SNP3092	23092K
HMVC 96EM	18.894"x5F	482	578	612	65	12	19	3/8"-18NPTF	19.1	SNP3096	23096K
HMVC 100EM	19.682"x5F	502	609	636	67	12	19	3/8"-18NPTF	19.1	SNP3500	230/500K

INDUCTION HEATERS



PRINCIPLES OF INDUCTION HEATING

The force needed to mount a bearing increases considerably with the size of the bearing. If the heat expansion of metals is made use of, bearings or other ring-shaped parts can easily be mounted onto a shaft or into a housing. For the fast warm-up of bearings, you can use an induction heater where a hot oil bath was often used in the past.

INDUCTION HEATER

Its function equals that of an electric transformer. With an induction coil, a very high amperage with a low voltage is induced into a ring-shaped work-piece. Thereby, it is heated consistently within minutes. Heat is only induced to the workpiece whereas the heater itself remains at ambient temperature and can be touched without risk at any time. The inductive heating is very efficient, as the workpiece is being heated directly with the inductive flow. Non-metallic parts such as sealings, lubricant and cages are not heated. The advantage is that the cold bearings can be lubricated before mounting. Since inductively heated bearings become magnetized, the NSK induction heaters are always equipped with a demagnetization unit. It prevents the bearings from attracting metal particles which could cause long-term damage to the bearing.

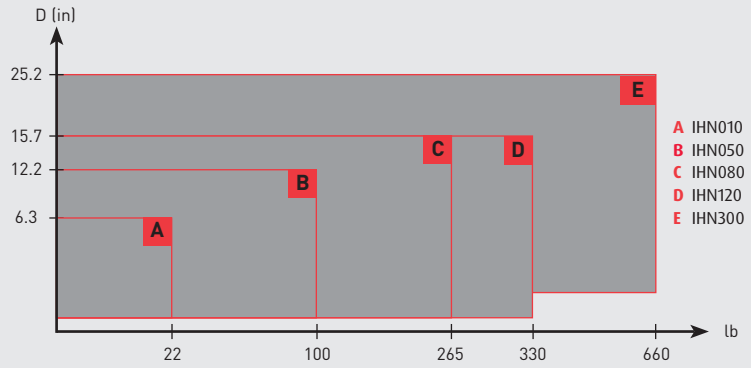
MOUNTING OF THE HEATED WORKPIECE

In order to mount a bearing to its seat, a heating temperature of 230 °F (110 °C) is recommended. Higher temperatures are not necessary and must be prohibited. Temperatures higher than 257 °F (125 °C) can cause structural changes of the bearing material. The bearing temperature must therefore be observed with a temperature probe. Shrink collars or other ring-shaped parts, however, can be heated up to a temperature of about 752 °F (400 °C) with an induction heater.

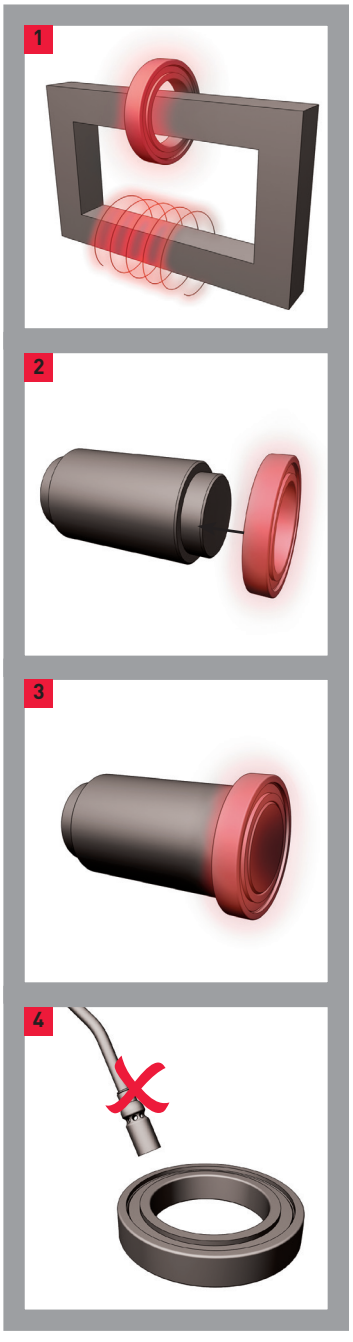
During mounting hot bearings, clean protective gloves must be worn. The mounted bearing must be pushed along the shaft up to the abutment and held in this position until a tight fit is obtained. For heating of bearings and other ring-shaped workpieces, NSK supplies a wide range of induction heaters for almost all mounting requirements.

The suitable heater for your application

The choice of a NSK induction heater depends largely on the geometrical dimensions and the weight of the workpiece you want to heat. The graphic serves as a selection guide.



1 principle of an induction heater
2 bearing before mounting
3 bearing after mounting
4 never heat a bearing using an open flame



THE LATEST GENERATION OF NSK INDUCTION HEATERS:
INDUCTION HEATER IHN010 HOTSPOT

Heating bearings can cost a lot of time and energy, however, with the latest induction heaters from NSK you can save both. A workpiece of 460 lb (210 kg) can be heated up to a temperature of 230 °F (110 °C) in less than 20 minutes. The new generation of induction heaters includes three different sizes. To obtain maximum heating efficiency, the induction coil was transferred to the outside of the heaters housing allowing the bearing to be placed around it. This improvement results in a reduction of the heating time and the power consumption by up to 80%, ultimately saving up to 70% on heating cost. All heaters are provided with the following technical characteristics:

Characteristics:

- Four-step power reduction in the range of 20 - 80%. In combination with smaller yokes, smaller bearings can be heated securely at lower power consumption.
- Thermal overheating protection of the induction coil and electronics
- Automatic time and temperature control for the heating of bearings and other ring-shaped metal parts
- Automatic demagnetization
- Compact construction, modern design
- Light weight
- A range of standard yoke sizes is included with every induction heater

Induction Heater IHN010 HotSpot
The lightweight portable device with convincing performance

The **NSK IHN010 HotSpot** marks the start of a new era in the field of portable induction heaters. The patented technology enables outstanding heating performance from an extremely light structure. You can use it to heat roller bearings with an inner diameter as small as 20 mm (0.79 in) up to an outer diameter of 160 mm (6.30 in) with a width up to 60 mm (2.3 in) and a weight of up to 22 lbs (10 kg). To do this, simply place the workpiece onto the **HotSpot's** cone shaped heating surface.

- Portable, compact and very light (7.7 lbs)
- A bearing weighing 11 lbs can be heated to 230°F in under four minutes
- Silent operation
- No support yoke required – simply place the workpiece on the device
- Predictive temperature control (PTC) software for automatic temperature monitoring

INDUCTION HEATERS IHN050 AND IHN080

INDUCTION HEATER IHN050

NSK IHN050

For heating small and medium size bearings with a weight up to 99 lb (45 kg), the IHN050 is the perfect choice.

- Smallest and fastest device in its performance class
- Smallest external induction coil
- Available in three power versions: 100, 115 and 230V
- Three yokes are included
- For workpieces with an inner diameter of 20 - 310 mm
- Extendable bearing support arms
- Compact design - including yokes weighs 17kg

INDUCTION HEATER IHN080

NSK IHN080

For heating small and medium size bearings with a weight up to 176 lb (80 kg), the IHN080 is the perfect choice.

- Available in two power versions: 230 V/50 Hz and 110 V/60 Hz
- Three yokes are included
- Very compact design, 77 lb (35 kg) overall weight including three yokes
- Swivel arm is available as an option
- Other power versions are available on request

INDUCTION HEATERS IHN120 AND IHN300

INDUCTION HEATER IHN120

NSK IHN120

For heating small and medium size bearings with a weight up to 260 lb (120 kg) and for permanent operation, the IHN120 is the best solution.

- Available in the power versions 400 V/50 Hz and 460 V/60 Hz
- Three yokes are included
- Very compact design, 84 lb (38 kg) overall weight including three yokes
- Swivel arm is included
- Fan radiator for permanent operation is included
- Other power versions are available on request
- This model needs to be hard wired by a qualified electrician

INDUCTION HEATER IHN300

NSK IHN300

The IHN300 is a large and exceptionally powerful high end induction heater

Suitable for workpieces up to 660 lb (300 kg) of weight.

- Available in the power versions 400 V/50Hz or 460 V/60 Hz
- A sliding arm permits easy placement and removal of the bearing
- Two yokes are included
- Compact design, 165 lb (75 kg) overall weight including two yokes
- A fan version IHN300F for permanent operation is available
- Other power versions are available on request
- This model needs to be hard wired by a qualified electrician

MF INDUCTION HEATERS
10KW, 22KW AND 44KW

INDUCTION HEATER 10KW, 22KW

INDUCTION HEATER 44KW

NSK MF Quick Heater

The smart and eco-friendly way of heating - for dismounting and mounting of all sorts of transmission components

- Safe, energy efficient operation (no oil or gas)
- Compact design with digital 3.5" display
- Smart electronics ensure optimal operating frequency
- Adjustable power control
- Dual temperature sensing (monitoring ΔT)
- Temperature or time controlled heating: demand is constantly monitored. Once the preset temperature or time has been reached, the device will switch off automatically.

Inductor Choices

For tension-free heating, we offer fixed or flexible inductors. This depends on work piece application.

- Fixed inductors for repeat jobs on the same size work piece: installing/removing bearings, labyrinth rings, sleeves, etc.
- Flexible inductors for a large size range of work pieces: can be placed around or in the work piece or both.

Application Examples

- Mounting and dismounting of bearings, sleeves, bearing houses and power transmission components
- Dismounting of bearings, inner rings (NU, NJ), labyrinth rings and seals (i.e. railway, steel mills)
- Mounting of machine parts such as large gears, bearing houses, couplings (i.e. steel plants, wind power, paper mills)

TECHNICAL DATA OF THE INDUCTION HEATERS

DESIGNATION	IHN010 HOTSPOT	IHN050	IHN080
WORKPIECE			
- MAXIMUM WEIGHT	10kg	45kg	80kg
- MINIMUM BORE	20 mm	20mm	20 mm
- MAXIMUM OUTSIDE DIAMETER	160 mm	310mm	600 mm
- MAXIMUM THICKNESS	60 mm	114mm	145 mm
VOLTAGE V/HZ *	115V 10.5A 1.2kVA (standard)	100 V / 50 – 60 Hz / 1.5 kVA	110V/60Hz (standard)
	100V 10.5A 1.05kVA (special order)	110 – 120 V / 50 – 60 Hz / 1.7 kVA	230V/50Hz (special order)
	230V 6.5A 1.5kVA (special order)	220 – 240 V / 50 – 60 Hz / 2.1 kVA	
TEMPERATURE CONTROL			
- RANGE	68 - 356°F (20 - 180°C)	68 - 356°F (20 - 180°C)	32 - 482°F (0 – 250°C)
- MAGNETIC PROBE	yes, type K	yes, type K	yes, type K
TIME CONTROL			
- RANGE	0 - 10 minutes	0 - 60 minutes	0 – 60 minutes
- ACCURACY	± 0.1 minutes	± 0.1 minutes	± 0.01 seconds
MAXIMUM TEMPERATURE (APPROX.)	356°F (180°C)	356°F (180°C)	752°F (400°C)
THERMOMETER MODE	yes	yes	yes
BEARING TEMPERATURE MODE	no	yes	yes
AUTOMATIC DEMAGNETIZATION	yes	yes	yes
CAN HEAT SEALED BEARINGS	yes	yes	yes
CAN HEAT PRE-GREASED BEARINGS	yes	yes	yes
THERMAL OVERLOAD PROTECTION	yes	yes	yes
SIZE OF THE OPERATING AREA (W X H)	N/A	114 x 160mm	145 x 205mm
COIL DIAMETER	N/A	89mm	115mm
DIMENSIONS (W X D X H)	340 x 250 x 64mm (over cone 121mm)	320 x 267 x 293mm	420 x 280 x 345mm
OVERALL WEIGHT INCLUDING YOKES	7.7 lb (3.5kg)	37.5 lb (17kg)	77 lb (35kg)
MAXIMUM POWER CONSUMPTION	1.7kVA	2.1kVA	3.7kVA
NUMBER OF STANDARD YOKES	N/A	3	3
STANDARD YOKES	N/A	42.5 x 42.5 x 219mm for bearings with a bore diameter of 60mm	55 X 55 X 275mm for bearings with bore diameters of 78mm
		28 x 28 x 219mm for bearings with a bore diameter of 40mm	28 x 28 x 275mm for bearings with bore diameters of 40mm
		14 x 14 x 219mm for bearings with a bore diameter of 20mm	14 x 14 x 275mm for bearings with bore diameters of 20mm
CORE CROSS SECTION	N/A	42.5 x 42.5mm	55 x 55mm
HOUSING MATERIAL	Plastic	Plastic	Aluminum

*Other power versions are available upon request.

IHN120**	IHN300**	MF QUICK HEATERS	DESIGNATION
			WORKPIECE
120kg	300kg	NA - no limitations	- MAXIMUM WEIGHT
20 mm	60 mm	NA - no limitations	- MINIMUM BORE
600 mm	850 mm	NA - no limitations	- MAXIMUM OUTSIDE DIAMETER
145 mm	250 mm	NA - no limitations	- MAXIMUM THICKNESS
400V/50Hz – 460V/60Hz (standard)	400V/50Hz – 460V/60Hz (standard)	400, 450, 500, 600V 50/60 Hz	VOLTAGE V/HZ *
500V/50Hz – 575V/60Hz (special order)	500V/50Hz – 575V/60Hz (special order)		
			TEMPERATURE CONTROL
32 - 482°F (0 – 250°C)	32 - 482°F (0 – 250°C)	32 - 572°F (0 – 300°C)	- RANGE
yes, type K	yes, type K	yes, type K	- MAGNETIC PROBE
			TIME CONTROL
0 – 60 minutes	0 – 60 minutes	NA - no limitations	- RANGE
± 0.01 seconds	± 0.01 seconds	± 0.01 seconds	- ACCURACY
752°F (400°C)	752°F (400°C)	572°F(300°C)	MAXIMUM TEMPERATURE (APPROX.)
yes	yes	yes	THERMOMETER MODE
yes	yes	yes	BEARING TEMPERATURE MODE
yes	yes	yes	AUTOMATIC DEMAGNETIZATION
yes	yes	yes	CAN HEAT SEALED BEARINGS
yes	yes	yes	CAN HEAT PRE-GREASED BEARINGS
yes	yes	yes	THERMAL OVERLOAD PROTECTION
145 x 205mm	250 x 250mm	NA - no limitations	SIZE OF THE OPERATING AREA (W X H)
115mm	135mm	NA - no limitations	COIL DIAMETER
420 x 280 x 420mm	600 x 350 x 420mm	NA - no limitations	DIMENSIONS (W X D X H)
84 lb (38kg)	165 lb (75kg)	172 lb (78kg)	OVERALL WEIGHT INCLUDING YOKES
9.2kVA	11.5kVA	55kVA	MAXIMUM POWER CONSUMPTION
3	2	N/A	NUMBER OF STANDARD YOKES
55 X 55 X 275mm for bearings with bore diameters of 78mm	70 x 70 x 420mm for bearings with bore diameters of 100mm	N/A	STANDARD YOKES
28 x 28 x 275mm for bearings with bore diameters of 40mm	40 x 40 x 420mm for bearings with bore diameters of 60mm		
14 x 14 x 275mm for bearings with bore diameters of 20mm			
55 x 55mm	70 x 70 mm	NA - no limitations	CORE CROSS SECTION
Aluminum	Aluminum	Steel	HOUSING MATERIAL

**This model needs to be hard wired by a qualified electrician.

LASER ALIGNMENT TOOLS
SHAFT-SET AND BELT-SET

WHY CORRECT ALIGNMENT IS SO IMPORTANT

Accurate alignment is difficult to achieve using traditional methods. In today's challenging world, fast and precise set up of machinery is a prerequisite and this is where laser alignment tools comes into play.

Alignment of rotating machinery components is extremely important for correct operation and optimum power usage. However, this is not often appreciated and over half of all installations are not aligned correctly. This results in machines that don't perform to their potential causing early wear and failure of components such as bearings, gears, seals and couplings. But not only this, higher energy usage and larger maintenance costs are encountered.

BENEFITS OF LASER ALIGNMENT

- Increased bearing lifetime
- Increased machinery uptime, efficiency and productivity
- Reduced wear on machine components
- Reduced energy usage
- Smooth running with reduced vibration and noise
- Quick operation, measurement and adjustment

NSK's Laser alignment equipment includes devices for both shaft and belt drive systems:

- LAS-Set: Shaft
- LAB-Set: Belt

SHAFT ALIGNMENT: LAS-SET

Laser alignment systems use the repeatability of accurate industrial lasers to take measurements. This gives a great advantage as there are no factors such as bar sag which has to be compensated for in traditional methods. The laser transmitter and sensors are mounted directly on the shaft of the machinery removing the inaccuracies associated with using the coupling. The measurement process is fast and efficient and allows for live updates as adjustments are made. Due to the easy instructions provided, all trained maintenance team members can perform accurate shaft alignment.

TRADITIONAL SHAFT ALIGNMENT METHODS

Accurate measurement and adjustment of drive systems is a highly skilled job when using traditional methods such as Rim and Face or Reversed Dial. They rely heavily on the accuracy of the coupling components and have to be performed many times as alignment adjustments are made. It is a complex three dimensional challenge, not to mention further calculations for bar sag and thermal expansion, and at best does not achieve truly accurate results.

LAS-SET: THE SOLUTION TO YOUR SHAFT ALIGNMENT NEEDS

With the LAS-Set it is easy to use and setup with the intuitive display unit which takes you through the shaft alignment process stage by stage. This allows you to efficiently make alignment measurements and to make the necessary adjustments with live feedback. A simple red / green indicator tells you when you are in tolerance.

BENEFITS OF LAS-SET

- Easy to mount and set up with dual line laser/sensor combination
- Easy operation with step by step instructions given by the display unit
- Built in tolerance limits depending on operating speed
- Results stored in display unit and easily downloaded to PC

TWO SENSOR UNITS WITH TWO LASER BEAMS

The LAS-Set tool has two sensor units with integrated sensor technology and line lasers allowing quick set up without the need for rough adjustment and laser targeting even for larger angular misalignments. The sensor units feature wireless communication paired to the display unit. This gives more freedom when moving around the machine, particularly when using the live results for adjusting the motor. The sensors are positively mounted to the shaft using the precision V-brackets and chain clamp allowing for a large range of shaft sizes.

THE ALIGNMENT PROCESS WITH LAS-SET

The easy to use software guides you through each stage of the alignment process

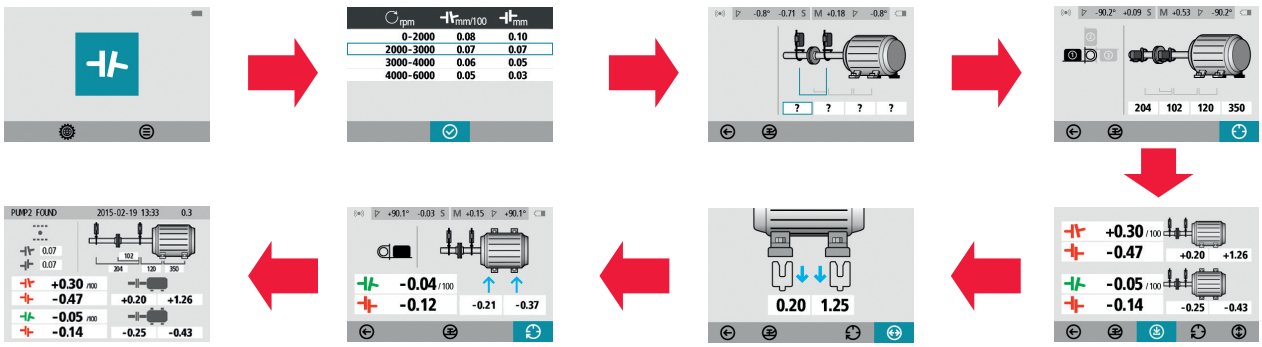
- Softfoot - Checking the motor mounting is stable and not causing deflection
- Tolerance Selection - Inbuilt recommended alignment tolerances based on speed or enter your own
- Dimensional Input - Input of the sensor positions relative to the coupling and motor feet
- Initial Measurement - Shaft Alignment in 3 positions 90° apart
- Adjustment - Guided adjustment of the motor with live feedback
- Final Measurement - Recorded alignment condition after adjustment

ALL IN ONE BOX

The LAS-Set is supplied in a durable case and contains all of the parts needed for your shaft alignment tasks. The system uses rechargeable batteries for up to 8 hours of continuous use. The system also includes a power management and resume function to save battery life. Each of the parts is charged using a standard mini USB port and included charger.

SOFTWARE ALIGNMENT: LAS-SET

Using the LAS-Set is so easy – the software is icon based and intuitive, guiding you from one step to the next.



FEATURES

- Both shaft positions are monitored simultaneously
- Live values during adjustment
- Measures once, adjustment control in two directions
- Adaptive and icon based user interface
- Color screen
- Color coded measurement results
- All digital system
- 2nd generation sensor – allows for high repeatability
- Unparalleled digital signal control
- Integrated wireless units
- Compact sensor units
- Compatible with all standard 5V mini USB chargers, battery life extenders and 12V car adapter

HORIZONTAL SHAFT ALIGNMENT

Determine and correct the relative position of two horizontally mounted machines that are connected, such as a motor and a pump, so that the rotational centers of the shafts are collinear.

SOFTFOOT CHECK

This function checks if there is a soft foot condition, i.e. when the motor is not positioned firmly on all its feet.

MEMORY MANAGER

Measurements can be organized in folders and subfolders. Single measurements and/or complete data structures can be copied to a PC via USB connector.

POWER MANAGEMENT SYSTEM

The LAS-Set has exceptional power management with an integrated resume function. This function automatically saves all critical data if and when it goes into energy saving mode or if the battery goes flat. Once the system is switched on again, the program restarts from where you left off.

TECHNICAL DATA: LAS-SET

DISPLAY UNIT	
WEIGHT	328 g
DIMENSIONS	184 x 100 x 33 mm
ENVIRONMENTAL PROTECTION	IP54
FLASH STORAGE MEMORY	500MB
DISPLAY	Color TFT-LCD backlit
DISPLAY SIZE	4" diagonal (84 x 56 mm)
POWER SUPPLY	Rechargeable Li-Ion battery or external power supply
OPERATING TIME	8 hours continuous use

SENSOR UNITS	
WEIGHT	222 g
DIMENSIONS	94 x 87 x 37 mm
ENVIRONMENTAL PROTECTION	IP54
LASER	650 nm class II diode laser
MEASUREMENT DISTANCE	Up to 2 m
DETECTOR	Digital line sensor
POWER SUPPLY	Li-Ion battery or external power
OPERATING TIME	12 hours continuous use (measuring)

SHAFT BRACKETS	
SHAFT DIAMETER	Ø 30-150 mm Ø 30-500 mm (with optional extension chains)
RODS	2 pcs 150 mm

COMPLETE SYSTEM	
WEIGHT (INCL. ALL STANDARD PARTS)	3.95 kg
STORAGE TEMPERATURE	-20 to 70° C

CASE	
MATERIAL	Double Walled Polypropylene
DIMENSIONS	390 x 310 x 192 mm

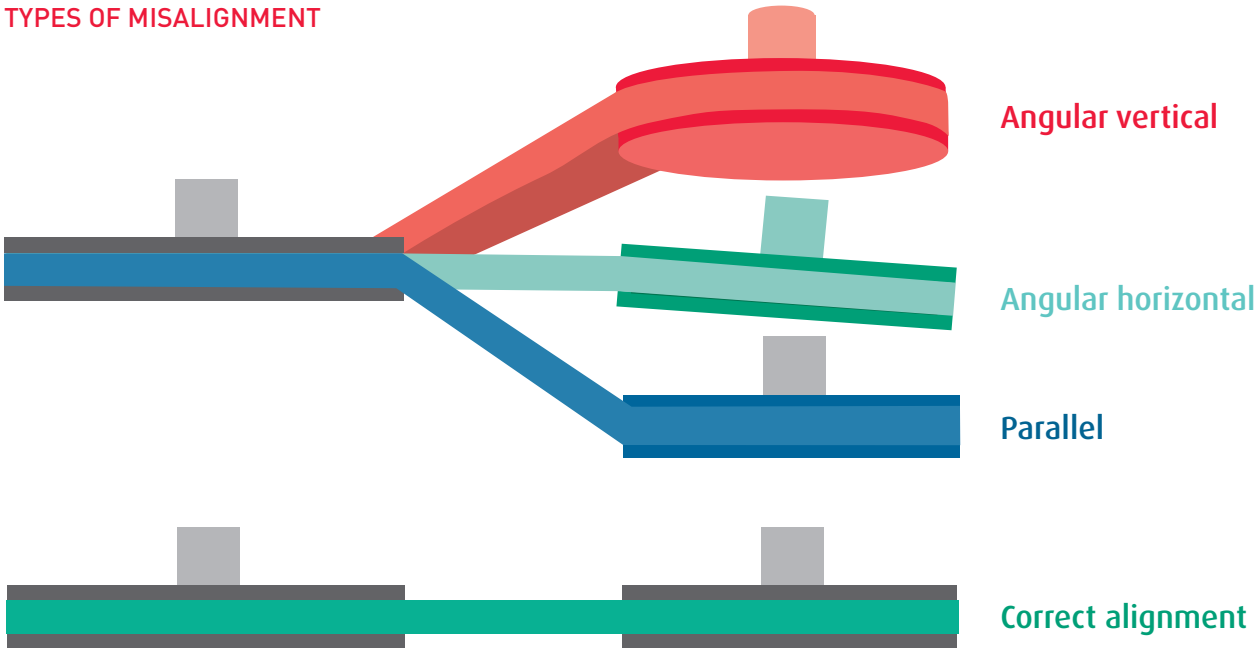
BELT ALIGNMENT: LAB-SET

Correct alignment of belt drives is increasingly important in an environment where machine performance and maintenance costs are key considerations. Pulley misalignment can result in unnecessary forces being applied to the machinery leading to increased wear and vibration causing premature bearing failure and costly machine downtime.

TRADITIONAL BELT ALIGNMENT METHODS

Typically this involves the use of a straight edge or even string placed on the pulley side. However, this is limited by the length of the straight edge and assumes that the pulley side is clean, rust free and parallel to the pulley V-grooves. This method usually does not result in an accurate alignment.

TYPES OF MISALIGNMENT



LAB-SET: THE SOLUTION TO ALL YOUR BELT ALIGNMENT NEEDS

NSK´s Laser alignment tool for belts (LAB-Set) enables truly accurate alignment as the laser heads are fitted directly into the pulley V-grooves. The LAB-Set is very easy to use and allows adjustment with the belt in place. With the LAB-Set, you are never in doubt whether your belt transmissions are aligned or not. By using the V-grooves as reference, you will achieve precise alignment which reduces belt wear, bearing failures and vibration.

BENEFITS OF LAB-SET

- Increased bearing lifetime
- Increased machinery uptime, efficiency and productivity
- Reduced wear of pulleys and belts
- Reduced unplanned downtime
- Reduced costs for component replacement
- Reduced friction and energy consumption
- Reduced vibration and noise

BELT ALIGNMENT: LAB-SET (CONT)

TWO TRANSMITTERS WITH VISIBLE RED LASER LINE

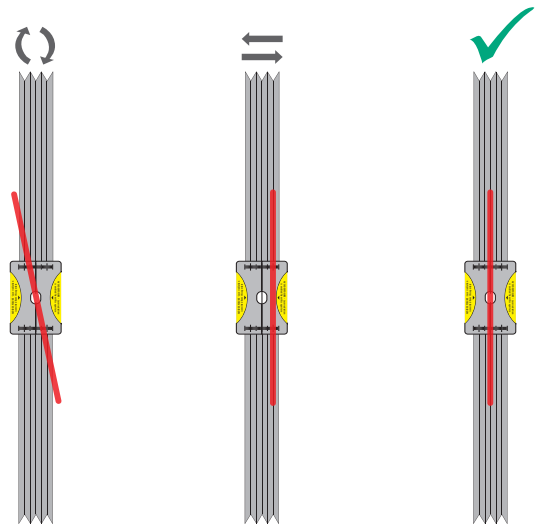
The LAB-Set comes with two line laser transmitters, each equipped with two spring loaded guides which fit into the pulley grooves. The use of two laser transmitters with integrated targets makes it very easy to find out what kind of alignment is required. Parallel offset, angular error and twist are instantly visible to the operator. Within a few minutes the operator can determine if the machine requires alignment or not. This is far more accurate than single laser head types.

MOUNTING OF THE TRANSMITTERS

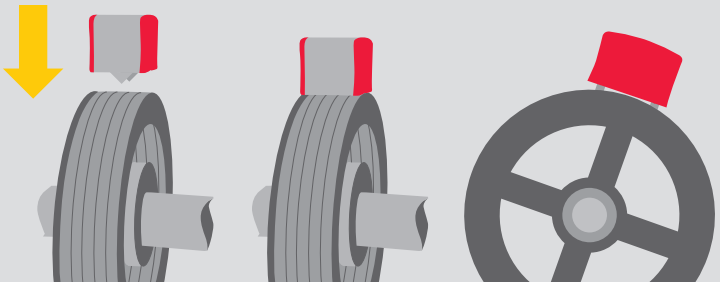
The LAB-Set units are very easily mounted on the pulleys, regardless of the condition of the pulley side faces. The spring action probe finds the center of the belt groove. The built-in industrial magnets snap the units to the pulley with a perfect fit. The LAB-Set is equipped with various sized removable guides to fit standard groove profiles sizes A-E (6 – 40 mm). Additional guides for alignment of timing belts are available as accessories.

THE ALIGNMENT PROCESS WITH THE LAB-SET

The visible red laser line makes it easy to determine the position of your belt driven machines. The alignment process is as easy as the mounting. Just turn on the lasers and look at the opposite mounted unit. The laser shows as a line on the target label as in the illustration to the right. If necessary, adjust your machine position until the laser lines are aligned with the center mark. This is done for both units which ensures accurate alignment at a distance up to 6m.



The LAB-Set units are very easily mounted on the pulleys. The spring action probe finds the center of the belt groove. The built-in industrial magnets snap the units to the pulley in a perfect fit. Optional equipment makes it possible to align timing belt driven machines.



TECHNICAL DATA: LAB-SET

MEASURING UNITS	
HOUSING MATERIAL	Extruded aluminum (molded ABS cover)
OPERATING TEMPERATURE	0 to 40°C
RELATIVE HUMIDITY	10 – 90%
WEIGHT	300g
DIMENSIONS	61 x 77 x 61mm
LASER	600 – 650 nm class II diode laser
LASER LINE FAN ANGLE	90°
LASER POWER	< 1mW
MEASUREMENT DISTANCE	50 – 6000mm
MEASUREMENT ACCURACY	Better than 0.5mm or 0.2 degrees
PULLEY DIAMETER RANGE	From 75mm and larger (standard)
PULLEY BELT GROOVE WIDTH	6 – 40mm (standard)
POWER SUPPLY (BATTERY)	2 pcs of LR03 (AAA) 1.5V per unit
OPERATING TIME	20 hours of continuous operation
LASER SAFETY	See yellow label on unit

COMPLETE SYSTEM	
WEIGHT (INCL. ALL STANDARD PARTS)	1.6 kg
STORAGE TEMPERATURE	-20 to 70° C

CASE	
MATERIAL	Double Walled Polypropylene
DIMENSIONS	300 x 275 x 110 mm

VIBRATION MEASUREMENT TOOLS
VST-100KIT: VIBROSTORE 100

THE EASY WAY TO DETECT THE MOST COMMON MACHINE FAULTS EARLY

The VIBROSTORE 100 is the ideal, cost-efficient, and easy-to-use tool device that measures vibration levels and bearing wear at the push of a button.

Critical machinery is usually equipped with an online protection system to avoid catastrophic failure. But how about semi-critical or so-called balance-of-plant machines? Installing an online monitoring system on all of them can be costly, but that doesn't mean they aren't important. A lack of monitoring could lead to sudden failures and unexpected downtime, negatively impacting productivity and profitability. Early detection means you can properly plan necessary maintenance.

Brüel & Kjær Vibro lightweight handheld empowers anyone to accurately and quickly assess a machine's overall vibration condition. A traffic-light-coded display immediately indicates the severity of the vibration based on the built-in ISO 20816 levels (velocity in mm/s or inches/s). The main screen shows the bearing condition in BDU (Bearing Damage Units). The display of the vibration level in frequency ranges indicates the most common machine faults like imbalance, misalignment, or looseness. It also provides spectra with up to 800 lines with zoom and cursor for a more detailed analysis.

The VIBROSTORE 100 comes equipped with a convenient carrying case, including a removable protective rubber sleeve and a docking cradle with a belt and a USB Mini connector for data transfer to a PC. It comes Bluetooth-ready to connect with headphones to listen to bearing noises. Additionally, the VIBROSTORE 100 can be equipped with a strobe to measure the running speed if it's unavailable.

The VIBROSTORE 100 is packaged with the unique, very powerful, and highly functional Report & Route Manager software to provide quick, reliable, and cost-efficient machine health monitoring. The Report & Route Manager makes it easy to upload a route to the VIBROSTORE 100 and download the results to a PC after the route is complete. The data can be displayed in various different ways, including vibration frequency spectra, bearing noise, trend plots and waterfall diagrams. You can even manually or automatically generate reports.

REPORT & ROUTE MANAGER BENEFITS AT A GLANCE

- Superior reporting functionality
- Modular design
- Optimized workflow
- Advanced navigation in measurement analysis and diagnosis tools
- Fast and efficient measurement reporting

VIBROSTORE 100 AT A GLANCE

VIBROSTORE 100 is the perfect combination of high Brüel & Kjær Vibro quality and extremely competitive pricing. Start monitoring your machines with VIBROSTORE 100 today and benefit from valuable machine data at your fingertips.

The VST-100KIT includes the following accesssories:

- Handheld device
- Carrying bag
- Docking cradle
- Protective boot
- Mounting magnet
- Spiral cable
- Acceleration sensor

SPECIFICATION	SCOPE OF DELIVERY
SIZE	200mm x 60mm x 26mm
WEIGHT	ca. 280 g (VST-100E: ca. 420 g)
ENVIRONMENTAL - DEGREE OF PROTECTION - OPERATING	 IP67 0°C to +50°C (32°F to 122°F)
POWER SUPPLY	2 x AA batteries
FREQUENCY RANGE	2/10 Hz to 1 kHz (ISO) 1 kHz to 10 kHz (BDU) 10Hz to 1kHz (Vibration bands)
MAX FREQUENCY RESOLUTION	1.25 Hz @ 800 lines FFT setting Acceleration in g Velocity in mm/s (or inch/s) Bearing noise in BDU (bearing damage units) Displacement (mm, microns, mils)
BLUETOOTH CONNECTIVITY	For headphones (VST-100 only) and data communications
DISPLAYED FREQUENCY UNITS	Hertz (Hz), RPM or CPM
INPUT RANGE VIBRATION ANALYSIS DIAGNOSTICS BANDS (RPM = RUN SPEED)	User selectable with accelerometer sensitivity Unbalance 1x RPM Alignment 2x RPM Looseness 3x RPM
ACCURACY	+/-5 % (acceleration: +/- 10% below 20Hz)
DATA STORAGE	Up to 1000 measurements/machines (with a maximum of 10 measurements per machine)
LANGUAGES IN INSTRUMENT	German / English / French / Italian / Spanish / Portuguese / Dutch / Chinese / Korean / Japanese / Russian / Czech
OPTIONAL ACCESSORIES	AC-7315 strobe attachment (VST-100 only) AC-172 magnet for flat surfaces
HAZARDOUS AREA APPROVALS	ATEX Ex II 2G Ex ib IIC T4 Gb (-20°C ≤ Ta ≤ +40°C) IECEx Ex ib IIC T4 Gb (-20°C ≤ Ta ≤ +40°C) UL hazardloc area Class I, Zone I, IIC Class I, Division, groups A-D (-20°C ≤ Ta ≤ +40°C)

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