



Installation & removal

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Installation & removal



Two crucial points in the life of the bearing

An intervention fraught with consequences

Bearing installation is an essential process which will determine the bearing's service life and ensure correct operation of your equipment.

In fact, incorrectly installed bearings will undergo rapid damage and affect your production facilities.

As a general rule for installation or removal, the bearing must be press-fitted on the turning element (the shaft or the bearing housing, depending on which one is turning).

Nothing must "contaminate" the rolling elements

Cleanliness must also be a permanent concern. Any foreign body infiltration, either during installation, removal or storage, will cause rapid damage to the bearing.

Precautionary steps must also be taken when installing sealing elements. It is mandatory to lubricate the seal mating surfaces when fitting. A grease bead applied at the seal lip and at shaft feedthrough will help to improve the efficiency of the seal and limit the risks of damage.

INSTALLATION PRINCIPLES:

- *Check the bearing part number versus the drawings, specifications, procedures.*
- *Check that the dimensions and geometry of the mating surfaces and bearing journal positions correspond to the SNR drawings and specifications.*
- *Prepare all necessary equipment, parts, tools before beginning the installation process. Check their cleanliness.*
- *Carefully clean and check all parts and components in the bearing environment.*
- *Remove the bearing from its packing at the last moment, in a perfectly clean work zone.*
- *Never wash the bearing, unless otherwise specified. In fact, the bearing is protected against oxidation by a thin film of oil, compatible with all the lubricants used.*
- *Carry out bearing installation in accordance with the chosen method.*
- *Lubricate with special bearing grease, according to the instructions.*
- *After fitting and before final start-up, operate equipment without external loads applied and check correct operation in order to detect possible anomalies (noise, vibrations, overheating, abnormal axial or radial play, ...).*

Installation kit



Bearing installation is a critical operation, requiring suitable tools.

For correct fitting, force must always be applied to the bearing ring being fitted, on the shaft, or in the bearing housing, depending on the installation type.

The SNR installation tools will allow you to maintain the quality of the bearing races, seals and cages, by preventing damage due to the use of improperly sized fittings.

Applications

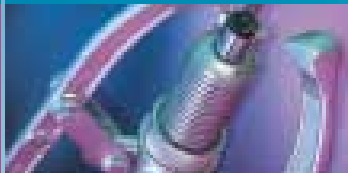
- Bearing installation (bore diameter of 10-55 mm),
- Spacer ring installation,
- Pulley installation,
- Seal installation.

Technical characteristics

The kit includes:

- **3 impact tubes**, well adapted for hand operation,
 - **1 set of 33 impact rings**, very hard wearing, covering an extensive range of dimensions,
 - **1 special hammer**, anti-bounce, shot-loaded, to ensure maximum impact.
-
- A practical kit, easily transportable.

Cold installation



Installation kit

Tube P/Ns	Rings P/Ns	Matching bearing series and symbols							
		60 - 62 63 - 64	12 - 22 13 - 23	72 B 73 B	32 33	222-213 223	NU - NJ N	302 322	313 323
A 100199	10 - 26	6000	129						
	10 - 30	6200	1200 2200	-	3200	-	-	-	-
	10 - 35	6300	1300						
	12 - 28	6001							
	12 - 32	6201	1201 2201	-	3201	-	-	-	-
	12 - 37	6301	1301 2301						
	15 - 32	6002							
	15 - 35	6202	1202 2202	7202 B	3202				
	15 - 42	6302	1302 2302		3302	-	-	30302	-
17 - 35	6003								
17 - 40	6203	1203 2203	7203 B	3203			30203		
17 - 47	6303	1303 2303	7303 B	3303	-	-	30303	-	
B 100299	20 - 42	6004							
	20 - 47	6204	1204 2204	7204 B	3204		204		
	20 - 52	6304 6403	1304 2304	7304 B	3304	21304	304	30304	32304
	25 - 47	6005							
	25 - 52	6205	1205 2205	7205 B	3205	22205	205	30205	
	25 - 62	6305 6404	1305 2305	7305 B	3305	21305	305	30305	31305 32305
	30 - 55	6006							
	30 - 62	6206	1206 2206	7206 B	3206	22206	206	30206 32206	
	30 - 72	6306 6405	1306 2306	7306 B	3306	21306	306 405	30306	31306 32306
C 100399	35 - 62	6007							
	35 - 72	6207	1207 2207	7207 B	3207	22207	207	30207 32207	
	35 - 80	6307 6406	1307 2307	7307 B	3307	21307	307 406	30307	31307 32307
	40 - 68	6008							
	40 - 80	6208	1208 2208	7208 B	3208	22208	208	30208 32208	
	40 - 90	6308 6407	1308 2308	7308 B	3308	21308 22308	308 407	30308	31308 32308
	45 - 75	6009							
	45 - 85	6209	1209 2209	7209 B	3209	22209	209	30209 32209	
	45 - 100	6309 6408	1309 2309	7309 B	3309	21309 22309	309 408	30309	31309 32309
	50 - 80	6010							
	50 - 90	6210	1210 2210	7210 B	3210	22210	210	30210 32210	
	50 - 110	6310 6409	1310 2310	7310 B	3310	21310 22310	310 409	30310	31310 32310
For bearing installation into a housing (without shaft)									
C 100399	50 - 90	6011 6012	-	-	-	-	-	-	-
	45 - 100	6013 6211	1211 2211	7211 B	3211	22211	211	-	-
	50 - 110	6014	1212	7212 B	3212	22212	212		
		6015	1213	7213 B	3213	22213	213		
		6212	2212	7311 B	3311	21311	311		
		6213	2213			22311	410		
6311	1311								
6410	2311								

Spanner wrenches



Solid, safe and simple to use, the 5 dimensions of SNR spanner wrenches available from the catalog can replace three times as many fixed conventional wrench models.

They facilitate tightening and removal operations for standard and precision nuts, while reducing the number of part numbers to be controlled and stored.

Technical characteristics

- Size range: 15 to 180mm,
- Two types of wrenches available:
 - Castellated wrench, to tighten nuts with straight lots (or castellated nuts)
 - Pin wrench to tighten drilled nuts (e.g. precision nuts).
Pins are heat-treated to 40 HRC Rockwell hardness.
- 5 sizes of castellated wrenches and/or pin wrenches in catalog:
 - 15 - 35 mm
 - 35 - 50 mm
 - 50 - 80 mm
 - 80 - 120 mm
 - 120 - 180 mm
- The hinge joint, incorporates a spring-washer that ensures smooth, reliable operation. Damage to the nut and the shaft is avoided.

Cold installation



Spanner wrenches

SNR precision nuts and slot wrench / pin wrench arrangement										
	Wrench 15-35mm		Wrench 35-50mm		Wrench 50-80mm		Wrench 80-120mm		Wrench 120-180mm	
	Slot	Pin	Slot	Pin	Slot	Pin	Slot	Pin	Slot	Pin
B and TB type nuts	B 20/1	TB 20/1	B 25	TB 25	B 35	TB 35	B 60	TB 60	B 90	TB 90
	B 20/1,5	TB 20/1,5	B 30	TB 30	B 40	TB 40	B 65	TB 65	B 95	TB 95
	-	-	-	-	B 45	TB 45	B 70	TB 70	B 100	TB 100
	-	-	-	-	B 50	TB 50	B 75	TB 75	-	-
	-	-	-	-	B 55	TB 55	B 80	TB 80	-	-
	-	-	-	-	B 60	TB 60	B 85	TB 85	-	-
BP and TBP type nuts	-	-	BP 20/1	TBP 20/1	BP 30	TBP 30	BP 55	TBP 55	BP 75	TBP 75
	-	-	BP 20/1,5	TBP 20/1,5	BP 35	TBP 35	BP 60	TBP 60	BP 80	TBP 80
	-	-	BP 25	TBP 25	BP 40	TBP 40	BP 65	TBP 65	BP 85	TBP 85
	-	-	-	-	BP 45	TBP 45	BP 70	TBP 70	BP 90	TBP 90
	-	-	-	-	BP 50	TBP 50	-	-	BP 95	TBP 95
	-	-	-	-	-	-	-	-	BP 100	TBP 100
BR and TBR type nuts	-	-	BR 25	TBR 25	BR 35	TBR 35	BR 60	TBR 60	BR 90	TBR 90
	-	-	BR 30	TBR 30	BR 40	TBR 40	BR 65	TBR 65	BR 95	TBR 95
	-	-	-	-	BR 45	TBR 45	BR 70	TBR 70	BR 100	TBR 100
	-	-	-	-	BR 50	TBR 50	BR 75	TBR 75	-	-
	-	-	-	-	BR 55	TBR 55	BR 80	TBR 80	-	-
	-	-	-	-	BR 60	TBR 60	BR 85	TBR 85	-	-
BPR and TBPR type nuts	-	-	BPR 20/1	TBPR 20/1	BPR 30	TBPR 30	BPR 55	TBPR 55	BPR 75	TBPR 75
	-	-	BPR 20/1,5	TBPR 20/1,5	BPR 35	TBPR 35	BPR 60	TBPR 60	BPR 80	TBPR 80
	-	-	BPR 25	TBPR 25	BPR 40	TBPR 40	BPR 65	TBPR 65	BPR 85	TBPR 85
	-	-	-	-	BPR 45	TBPR 45	BPR 70	TBPR 70	BPR 90	TBPR 90
	-	-	-	-	BPR 50	TBPR 50	-	-	BPR 95	TBPR 95
	-	-	-	-	-	-	-	-	BPR 100	TBPR 100

KM lock nut and slot wrench arrangement				
Wrench 15-35mm	Wrench 35-50mm	Wrench 50-80mm	Wrench 80-120mm	Wrench 120-180mm
KM 0	KM 5	KM 7	KM 12	KM 18
KM 1	KM 6	KM 8	KM 13	KM 19
KM 2	-	KM 9	KM 14	KM 20
KM 3	-	KM 10	KM 15	KM 21
KM 4	-	KM 11	KM 16	KM 22
-	-	KM 12	KM 17	KM 23
-	-	-	KM 18	KML 24
-	-	-	-	KM 24
-	-	-	-	KM 25
-	-	-	-	KML 26
-	-	-	-	KM 26
-	-	-	-	KM 27
-	-	-	-	KML 28
-	-	-	-	KM 28
-	-	-	-	KML 30

Adapter and withdrawal sleeves, hydraulic sleeve



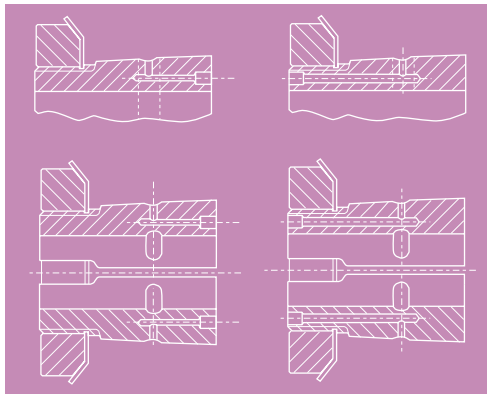
Adapter sleeves produce an interference fit between bearing and rotating shaft by pressing the bearing onto the sleeve. Withdrawal sleeves allow easy removal by simply screwing in the extraction nut (pushing the sleeve into the bearing bore). To facilitate large-size bearing installation and removal, SNR has also developed a range of hydraulic sleeves.

Applications

• Average size bearings:

- Sleeves permit tight fitting of taper bore bearings onto cylindrical shafts allowing larger shaft diameter tolerances. Bearing bore taper is generally 1/12. It is 1/30 for spherical roller bearings of Series 240.. and 241...
- Tolerances on shafts receiving sleeves:
 - Diameter tolerances: ISO quality 9 minimum.
 - Shape tolerances: ISO quality 5 minimum.

• Large size bearings:



The SNR product range now includes hydraulic sleeves with distribution channels and slots permitting pressurized oil injection between bearing and sleeve, and between sleeve and shaft.

Oil reduces friction and avoids damage to the contact surfaces.

While considerably reducing bearing installation/removal times, this method also reduces equipment downtime.

Cold installation



Adapter and withdrawal sleeves, hydraulic sleeve

Range of installation/withdrawal sleeves, nuts, washers, taper bore bearings (suffix K) and associated wrenches

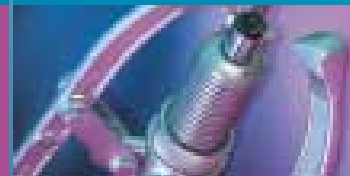
BRG: Taper bore bearing (suffix K)
 WRE: Corresponding spanner wrench (see description, p. 35-36)
 S: Sleeve
 N: Nut
 W: Washer

Shaft	BRG	WRE	S				N				W				BRG										
			S	N	W	BRG	S	N	W	BRG	S	N	W	BRG	S	N	W	BRG							
17	20	15/35	H204	KM4	MB4		H304	KM4	MB4		2204														
20	25	35/50	H205	KM5	MB5	1205	H305	KM5	MB5	1305	2205	21305	22205	H2305	KM5		MB5	2305							
25	30	35/50	H206	KM6	MB6	1206	H306	KM6	MB6	1306	2206	21306	22206	H2306	KM6		MB6	2306							
30	35	50/80	H207	KM7	MB7	1207	H307	KM7	MB7	1307	2207	21307	22207	H2307	KM7		MB7	2307							
35	40	50/80	H208	KM8	MB8	1208	H308	KM8	MB8	1308	2208	21308	22208	H2308	KM8		MB8	2308 22308							
40	45	50/80	H209	KM9	MB9	1209	H309	KM9	MB9	1309	2209	21309	22209	H2309	KM9		MB9	2309 22309							
45	50	50/80	H210	KM10	MB10	1210	H310	KM10	MB10	1310	2210	21310	22210	H2310	KM10		MB10	2310 22310							
50	55	50/80	H211	KM11	MB11	1211	H311	KM11	MB11	1311	2211	21311	22211	H2311	KM11		MB11	2311 22311							
55	60	50/80	H212	KM12	MB12	1212	H312	KM12	MB12	1312	2212	21312	22212	H2312	KM12		MB12	2312 22312							
60	65	80/120	H213	KM13	MB13	1213	H313	KM13	MB13		2213	21313	22213	H2313	KM13		MB13	2313 22313							
60	70	80/120	H214	KM14	MB14	1214	H314	KM14	MB14		21314	22214	H2314	KM14		MB14	22314								
65	75	80/120	H215	KM15	MB15	1215	H315	KM15	MB15	1315	2215	21315	22215	H2315	KM15		MB15	2315 22315							
70	80	80/120	H216	KM16	MB16	1216	H316	KM16	MB16		2216	21316	22216	H2316	KM16		MB16	22316							
75	85	80/120	H217	KM17	MB17	1217	H317	KM17	MB17	1317		21317	22217	H2317	KM17		MB17	22317							
80	90	120/180	H218	KM18	MB18	1218	H318	KM18	MB18		2218	21318	22218	H2318	KM18		MB18	2318 22318							
85	95	120/180	H219	KM19	MB19	1219	H319	KM19	MB19			22219	H2319	KM19		MB19	22319								
90	100	120/180	H220	KM20	MB20	1220	H320	KM20	MB20	1320	2220		22220	H2320	KM20		MB20	22320 23220							
100	110	120/180	H222	KM22	MB22	1222	H322	KM22	MB22			22222	23022	H2322	KM22		MB22	22322 23222							
110	120	120/180												H2324	KM24		MB24	22324 23224							
115	130	120/180												H2326	KM26		MB26	22326 23226							
125	140	120/180												H2328	KM28		MB28	22328 23228							
135	150	120/180												H2330	KM30		MB30	22330 23230							
140	160													H2332	KM32		MB32	22332 23232							
150	170													H2334	KM34		MB34	22334 23234							
160	180													H2336	KM36		MB36	22336 23236							
170	190													H2338	KM38		MB38	22338 23238							
180	200													H2340	KM40		MB40	22340 23240							
200	220													H2344H	HM44T		MB44	22344 23244							
220	240													H2348H	HM48T		MB48	22348 23248							
240	260													H2352H	HM52T		MB52	23252							
260	280													H2356H	HM56T		MB56	22356 23256							
280	300													H3060H	HM3060	MS3060	23060	H3160H	HM3160	MS3160	23160	H3260H	HM3160	MS3160	23260
300	320													H3064H	HM3064	MS3064	23064	H3164H	HM3164	MS3164	23164				
320	340													H3068H	HM3068	MS3068	23068	H3168H	HM3168	MS3168	23168				
340	360													H3072H	HM3072	MS3072	23072	H3172H	HM3172	MS3172	23172				
360	380													H3076H	HM3076	MS3076	23076								
380	400													H3080H	HM3080	MS3080	23080								

INSTALLATION



Cold installation



Adapter and withdrawal sleeves, hydraulic sleeve

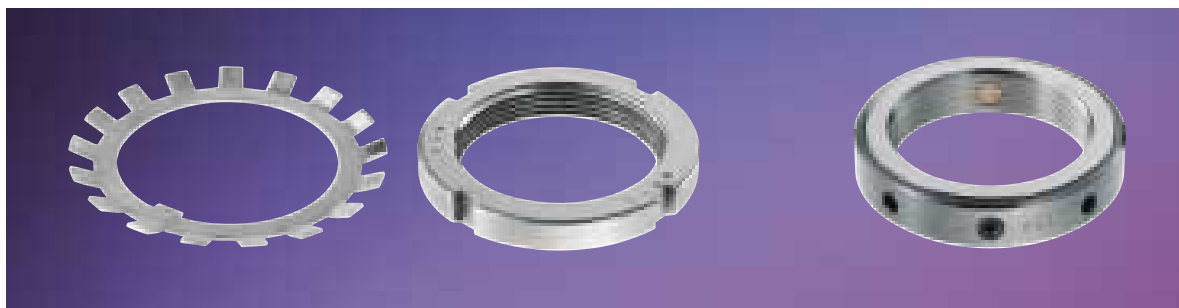
BRG: Taper bore bearing (suffix K)
 WRE: Corresponding spanner wrench (see description, p. 35-36)
 S: Sleeve
 N: Nut
 W: Washer

REMOVAL	Shaft	BRG	WRE	S	N	BRG		S	N	BRG		S	N	BRG		S	N	BRG		S	N	BRG		S	N	BRG					
	35	40	50/80	AH308	KM9	21308	22208			AH2308	KM9	22308																			
	40	45	50/80	AH309	KM10	21309	22209			AH2309	KM10	22309																			
	45	50	50/80	AHX310	KM11	21310	22210			AHX2310	KM11	22310																			
	50	55	50/80	AHX311	KM12	21311	22211			AHX2311	KM12	22311																			
	55	60	50/80	AHX312	KM13	21312	22212			AHX2312	KM13	22312																			
	60	65	80/120	AH313G	KM14	21313	22213			AH2313G	KM14	22313																			
	65	70	80/120	AH314G	KM15	21314	22214			AHX2314G	KM15	22314																			
	70	75	80/120	AH315	KM17	21315	22215			AHX2315G	KM16	22315																			
	75	80	80/120	AH316	KM18	21316	22216			AHX2316	KM18	22316																			
	80	85	80/120	AHX317	KM19	21317	22217			AHX2317	KM19	22317																			
	85	90	120/180	AHX318	KM20	21318	22218			AHX2318	KM20	22318											AHX3218	KM20	23218						
	90	95	120/180	AHX319	KM21		22219			AHX2319	KM21	22319																			
	95	100	120/180	AHX320	KM22		22220			AHX2320	KM22	22320			AHX3120	KM22	23120						AHX3220	KM22	23220						
	105	110	120/180							AHX2322G	KM24	22322			AHX3122	KM22	22222	23122					AHX3222G	KM24	23222		AH24122	KM23			
	115	120	120/180							AHX2324G	KM26	22324	AHX3024	KM26	23024	AHX3124	KM24	22224	23124				AHX3224G	KM26	23224	AH24024	KM25	24024	AH24124	KM26	24124
	125	130	120/180							AHX2326G	KM28	22326	AHX3026	KM28	23026	AHX3126	KM26	22226	23126				AHX3226G	KM28	23226	AH24026	KM27	24026	AH24126	KM28	24126
	135	140	120/180							AHX2328G	KM30	22328	AHX3028	KM30	23028	AHX3128	KM28	22228	23128				AHX3228G	KM30	23228	AH24028	KM29	24028	AH24128	KM30	24128
	145	150	120/180							AHX2330G	KM32	22330	AHX3030	KM32	23030	AHX3130G	KM30	22230	23130				AHX3230G	KM32	23230	AH24030	KM31	24030	AH24130	KM32	24130
	150	160								AH2332G	KM34	22332	AH3032	KM34	23032	AH3132G	KM32	22232	23132				AH3232G	KM34	23232	AH24032	KM34	24032	AH24132	KM34	24132
	160	170								AH2334G	KM36	22334	AH3034	KM36	23034	AH3134G	KM34	22234	23134				AH3234G	KM36	23234	AH24034	KM36		AH24134	KM36	24134
	170	180				AH2236G	KM38	22236		AH2336G	KM38	22336	AH3036	KM38	23036	AH3136G	KM36	23136				AH3236G	KM38	23236	AH24036	KM38	24036	AH24136	KM38		
	180	190				AH2238G	KM40	22238		AH2338G	KM40	22338	AH3038G	KM40	23038	AH3138G	KM38	23138				AH3238G	KM40	23238	AH24038	KM40	24038	AH24138	KM40	24138	
	190	200				AH2240	HM44T	22240		AH2340	HM48T	22340	AH3040G	HM42T	23040	AH3140	KM40	23140				AH3240	HM44T	23240	AH24040	HM42T		AH24140	HM42T	24140	
	200	220				AOH2244	HM48T	22244		AOH2344	HM52T	22344	23244	AOH3044G	HM46T	23044	AOH3144	HM48T	23144					AOH24044	HM46T	24044	AOH24144	HM46T	24144		
	220	240								AOH2348	HM56T		23248	AOH3048	HM52T	23048	AOH3148	HM52T	23148					AOH24048	HM50T	24048	AOH24148	HM52T	24148		
	240	260								AOH2352G	HM3160		23252	AOH3052	HM56T	23052	AOH3152G	HM56T	23152					AOH24052G	HM56T		AOH24152	HM56T	24152		
	260	280								AOH2356G	HM3164		23256	AOH3056	HM3060	23056	AOH3156G	HM3160	23156					AOH24056G	HM3160		AOH24156	HM3160			
	280	300												AOH3060	HM3064	23060	AOH3160G	HM3164	23160				AOH3260G	HM3164	23260	AOH24060G	HM3164	24060	AOH24160	HM3164	
	300	320												AOH3064G	HM3068	23064	AOH3164G	HM3168	23164									AOH24164	HM3168		
	320	340												AOH3068G	HM3072	23068	AOH3168G	HM3172	23168									AOH24168	HM3172		
	340	360												AOH3072G	HM3076	23072	AOH3172	HM3176	23172									AOH24172	HM3176		
	360	380												AOH3076G	HM3080	23076															
	380	400												AOH3080G	HM3084	23080															

Cold installation



Standard and precision nuts



For bearing installation with sleeves, SNR proposes a full range of lock-nuts and lockwashers covering the market's needs.

Standard nuts and lockwashers

See table on pages 38 to 41.

Applications

For precision nuts:

- Installing high precision or standard angular contact ball bearings,
- Installing tapered bearings,
- Installing combined needle bearings.

Applications:

- To establish and maintain preload of a set of bearings.
- Cases of high precision bearing installation requiring the use of accessories to maintain the precision level of the assembly.
- To establish and maintain the axial position of a set of bearings, even if not preloaded, and more particularly in the case of high axial load applications.

Technical characteristics

For precision nuts:

- Self-locking nut.
- The threads and the flat face of the nut (abutting the bearing) are machined concurrently. Therefore, high run-out precision is obtained: 0.005mm tolerance.
- Metric threads are used (as per ISO R/724 standard) with 5H tolerance (as per ISO 965/1 standard).



Standard and precision nuts

Precision nut range

• Nuts type B and TB

Threads	P/N		Weight	Dimensions				Locking screw	Nuts		
	D2	–		–	D1	L1	D3		M	Mbl	Far
–	–	–	kg	mm	mm	mm	mm	N.m	kN	N.m	N.m
M20 x 1	B 20/1	TB 20/1	0,04	32	10	28	M5	4-5	140	18	39
M20 x 1,5	B 20/1,5	TB 20/1,5	0,04	32	10	28	M5	4-5	126	18	39
M25 x 1,5	B 25	TB 25	0,06	38	12	33	M5	4-5	198	25	56
M30 x 1,5	B 30	TB 30	0,08	45	12	40	M5	4-5	240	32	63
M35 x 1,5	B 35	TB 35	0,11	52	12	47	M5	4-5	263	40	72
M40 x 1,5	B 40	TB 40	0,15	58	14	52	M6	8-10	290	55	97
M45 x 1,5	B 45	TB 45	0,18	65	14	59	M6	8-10	322	65	115
M50 x 1,5	B 50	TB 50	0,20	70	14	64	M6	8-10	351	85	132
M55 x 2	B 55	TB 55	0,25	75	16	68	M8	16-18	378	95	148
M60 x 2	B 60	TB 60	0,27	80	16	73	M8	16-18	405	100	186
M65 x 2	B 65	TB 65	0,28	85	16	78	M8	16-18	431	120	196
M70 x 2	B 70	TB 70	0,38	92	18	85	M8	16-18	468	130	228
M75 x 2	B 75	TB 75	0,42	98	18	90	M8	16-18	497	150	255
M80 x 2	B 80	TB 80	0,49	105	18	95	M8	16-18	527	160	291
M85 x 2	B 85	TB 85	0,52	110	18	100	M8	16-18	558	190	315
M90 x 2	B 90	TB 90	0,75	120	20	110	M8	16-18	603	200	369
M95 x 2	B 95	TB 95	0,78	125	20	115	M8	16-18	637	220	391
M100 x 2	B 100	TB 100	0,82	130	20	120	M8	16-18	688	250	432

Far: Breaking axial load / Ma: Tightening couple / Md: Unlocking couple corresponding to the Ma indicated

Mbl: Max tightening couple recommended for screws / D1: Outer diameter / D3: Support face diameter / L1: Width

• Nuts type BP and TBP

Threads	P/N		Weight	Dimensions				Locking screw	Nuts		
	D2	–		–	D1	L1	D3		M	Mbl	Far
–	–	–	kg	mm	mm	mm	mm	N.m	kN	N.m	N.m
M20 x 1	BP 20/1	TBP 20/1	0,12	38	20	28	M5	4-5	255	18	39
M20 x 1,5	BP 20/1,5	TBP 20/1,5	0,12	38	20	28	M5	4-5	225	18	39
M25 x 1,5	BP 25	TBP 25	0,17	45	20	33	M6	8-10	405	25	56
M30 x 1,5	BP 30	TBP 30	0,24	52	22	40	M6	8-10	491	32	63
M35 x 1,5	BP 35	TBP 35	0,28	58	22	47	M6	8-10	560	40	72
M40 x 1,5	BP 40	TBP 40	0,29	62	22	52	M8	16-18	585	55	97
M45 x 1,5	BP 45	TBP 45	0,37	68	24	59	M8	16-18	641	65	115
M50 x 1,5	BP 50	TBP 50	0,46	75	25	64	M8	16-18	706	85	132
M55 x 2	BP 55	TBP 55	0,92	88	32	68	M8	16-18	940	95	148
M60 x 2	BP 60	TBP 60	1,14	98	32	73	M8	16-18	1 070	100	186
M65 x 2	BP 65	TBP 65	1,29	105	32	78	M8	16-18	1 155	120	196
M70 x 2	BP 70	TBP 70	1,49	110	35	85	M8	16-18	1 230	130	228
M75 x 2	BP 75	TBP 75	2,25	125	38	90	M10	30-32	1 300	150	255
M80 x 2	BP 80	TBP 80	2,97	140	38	95	M10	30-32	1 420	160	291
M85 x 2	BP 85	TBP 85	3,44	150	38	100	M10	30-32	1 510	190	315
M90 x 2	BP 90	TBP 90	3,59	155	38	110	M10	30-32	1 596	200	369
M95 x 2	BP 95	TBP 95	3,73	160	38	115	M10	30-32	1 656	220	391
M100 x 2	BP 100	TBP 100	3,70	160	40	120	M10	30-32	1 780	250	432

Far: Breaking axial load / Ma: Tightening couple / Md: Unlocking couple corresponding to the Ma indicated

Mbl: Max tightening couple recommended for screws / D1: Outer diameter / D3: Support face diameter / L1: Width

Cold installation



Standard and precision nuts

• Nuts type BR and TBR

Threads	P/N		Weight	Dimensions				Locking screw	Nuts		
				D1	L1	D3	M		Far	Ma	Md
D2	-	-	-	D1	L1	D3	M	Mbl	Far	Ma	Md
-	-	-	kg	mm	mm	mm	mm	N.m	kN	N.m	N.m
M25 x 1,5	BR 25	TBR 25	0,06	38	12	33	M5	3-4	198	25	85
M30 x 1,5	BR 30	TBR 30	0,08	45	12	40	M5	3-4	240	32	96
M35 x 1,5	BR 35	TBR 35	0,11	52	12	47	M5	3-4	263	40	107
M40 x 1,5	BR 40	TBR 40	0,15	58	14	52	M6	6-8	290	55	127
M45 x 1,5	BR 45	TBR 45	0,18	65	14	59	M6	6-8	322	65	149
M50 x 1,5	BR 50	TBR 50	0,20	70	14	64	M6	6-8	351	85	180
M55 x 2	BR 55	TBR 55	0,25	75	16	68	M8	12-14	378	95	206
M60 x 2	BR 60	TBR 60	0,27	80	16	73	M8	12-14	405	100	255
M65 x 2	BR 65	TBR 65	0,28	85	16	78	M8	12-14	431	120	277
M70 x 2	BR 70	TBR 70	0,38	92	18	85	M8	12-14	468	130	304
M75 x 2	BR 75	TBR 75	0,42	98	18	90	M8	12-14	497	150	357
M80 x 2	BR 80	TBR 80	0,49	105	18	95	M8	12-14	527	160	396
M85 x 2	BR 85	TBR 85	0,52	110	18	100	M8	12-14	558	190	444
M90 x 2	BR 90	TBR 90	0,75	120	20	110	M8	12-14	603	200	501
M95 x 2	BR 95	TBR 95	0,78	125	20	115	M8	12-14	637	220	550
M100 x 2	BR 100	TBR 100	0,82	130	20	120	M8	12-14	688	250	603

Far: Breaking axial load / Ma: Tightening couple / Md: Unlocking couple corresponding to the Ma indicated
Mbl: Max tightening couple recommended for screws / D1: Outer diameter / D3: Support face diameter / L1: Widht

• Nuts type BPR and TBPR

Threads	P/N		Weight	Dimensions				Locking screw	Nuts		
				D1	L1	D3	M		Far	Ma	Md
D2	-	-	-	D1	L1	D3	M	Mbl	Far	Ma	Md
-	-	-	kg	mm	mm	mm	mm	N.m	kN	N.m	N.m
M20 x 1	BPR 20/1	TBPR 20/1	0,12	38	20	28	M5	3-4	255	18	56
M20 x 1,5	BPR 20/1,5	TBPR 20/1,5	0,12	38	20	28	M5	3-4	225	18	56
M25 x 1,5	BPR 25	TBPR 25	0,17	45	20	33	M6	6-8	405	25	85
M30 x 1,5	BPR 30	TBPR 30	0,24	52	22	40	M6	6-8	491	32	96
M35 x 1,5	BPR 35	TBPR 35	0,28	58	22	47	M6	6-8	560	40	107
M40 x 1,5	BPR 40	TBPR 40	0,29	62	22	52	M8	12-14	585	55	127
M45 x 1,5	BPR 45	TBPR 45	0,37	68	24	59	M8	12-14	641	65	149
M50 x 1,5	BPR 50	TBPR 50	0,46	75	25	64	M8	12-14	706	85	180
M55 x 2	BPR 55	TBPR 55	0,92	88	32	68	M8	12-14	940	95	206
M60 x 2	BPR 60	TBPR 60	1,14	98	32	73	M8	12-14	1 070	100	255
M65 x 2	BPR 65	TBPR 65	1,29	105	32	78	M8	12-14	1 155	120	277
M70 x 2	BPR 70	TBPR 70	1,49	110	35	85	M8	12-14	1 230	130	304
M75 x 2	BPR 75	TBPR 75	2,25	125	38	90	M10	24-26	1 300	150	357
M80 x 2	BPR 80	TBPR 80	2,97	140	38	95	M10	24-26	1 420	160	396
M85 x 2	BPR 85	TBPR 85	3,44	150	38	100	M10	24-26	1 510	190	444
M90 x 2	BPR 90	TBPR 90	3,59	155	38	110	M10	24-26	1 596	200	501
M95 x 2	BPR 95	TBPR 95	3,73	160	38	115	M10	24-26	1 656	220	550
M100 x 2	BPR 100	TBPR 100	3,70	160	40	120	M10	24-26	1 780	250	603

Far: Breaking axial load / Ma: Tightening couple / Md: Unlocking couple corresponding to the Ma indicated
Mbl: Max tightening couple recommended for screws / D1: Outer diameter / D3: Support face diameter / L1: Widht

Hydraulic extractor



Above a given bearing size, the use of a mechanical extractor for bearing removal is no longer suitable. SNR proposes a 10-metric ton hydraulic extractor. Therefore, with its integrated hydraulic pump, bearing removal is made much easier.

Applications

- Removal of bearing assemblies (pulleys, gear bearings, etc.) or of tight-fitted inner rings,
- Removal of bearings either by the bore or by the outer diameter, by reversing the jaws.

Technical characteristics

- Extractor, with a set of 2 or 3 interchangeable jaws,
- Heat-treated to provide heavy duty mechanical strength,
- Jaw extractor, offering 182mm range. Piston stroke: 55mm,
- Extraction force: 10 metric tons,
- Maximum jaw opening: 55 to 280mm (suitable for bearings and other parts of 55-280mm outer diameter),
- Light weight.

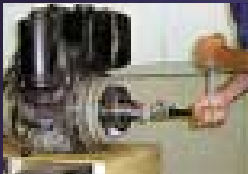
Removal



Hydraulic extractor

Advantages

- Very simple to use, due to the integral hydraulic pump: can be handled by one single operator,
- Durable pump,
- No energy losses,
- Removal safety: extractor equipped with EC standardized cover, to avoid any injury,
- Easily convertible between a 2- or 3-jaw extractor,
- Delivered in a rigid transport case (no risk of damage, easy transport),
- The extractor does not turn during bearing removal (an important feature, as a manual extractor requires a considerable torque in order to pull the bearing out).



The spindle of the mechanical extractor must turn, requiring the operator to apply a very high torque to pull out the part.



With the SNR hydraulic extractor, the operator only needs to actuate a pump. High power is obtained very simply.

Operating tips

- Always position the protection cover over the jaws when using the extractor.
- Take care not to damage the shaft or the bearing housing during the operation.