Brand of **NTN Group**

MAINTENANCE TOOLS

Experts & Tools



> To provide you with a complete solution of tools and services for your bearings, tailored to your application, size and means

Experts & Tools

Experts & Tools, at the service of our customers

Because the expectations in terms of bearing maintenance or assembly are specific to each trade, Experts & Tools offers you solutions that take into account your application and its challenge as well as your available resources.

Each application requires its own expertise. The maintenance of a wind turbine differs from that of a press or crusher. With nearly a century of theoretical and practical experience in industrial applications, we are able to provide you with the expertise and tools you need.

The importance and difficulty of your assembly or maintenance tasks guide our recommendations. We provide a personalized response in terms of tools or organization according to your situation.

▶ **NTN Europe**, with a workforce of more than 22,000 employees worldwide, develops and improves maintenance methods and tools on a daily basis.

Our goal is to bring you products and procedures that are safe and easy to use for your operators. Our tool design is designed to increase your efficiency.

From reducing the duration of your assembly, disassembly or maintenance operations, to optimizing the longevity of your bearings, our tools bring you real gains and safety of use, without damage to the mechanical components that receive them.

This catalog includes all SNR maintenance tools. Our range of greases, grease nipples and central lubrication systems is the subject of a specific catalogue.

▶ **What if you decided to outsource your maintenance operations?**

The teams of Experts & Tools can intervene on the basis of the agreed availability objectives for your equipment.

Experts & Tools offers you a range of services, customizable to meet the specificity of your expectations:

- **Theoretical or practical training** for your employees.
- **Expertise** of your damaged bearings (on your site or in our laboratories).
- **Supervision** of the disassembly and mounting of your critical bearings. Particularly interesting for large ones, we provide the appropriate tools including for their handling.
- **Rental** of maintenance tools: induction heaters, hydraulic nuts and pumps, etc.
- **Diagnosis** of your lubrication installations or study of your needs, with the creation and installation of standard or tailor-made equipment as the case may be.
- **Refurbishment** of dismantled bearings as part of preventive maintenance.







Main causes of bearing failures

▶ The monitoring of the millions of NTN and SNR bearings placed on the market has allowed us to establish very precise statistics as to the origin of the failures. This data collection highlights a key fact: it is rare for the bearing itself to be implicated in premature failure.

In 90% of cases, the causes are to be found in external elements that can be classified into 4 main families:

Inadequate lubrication

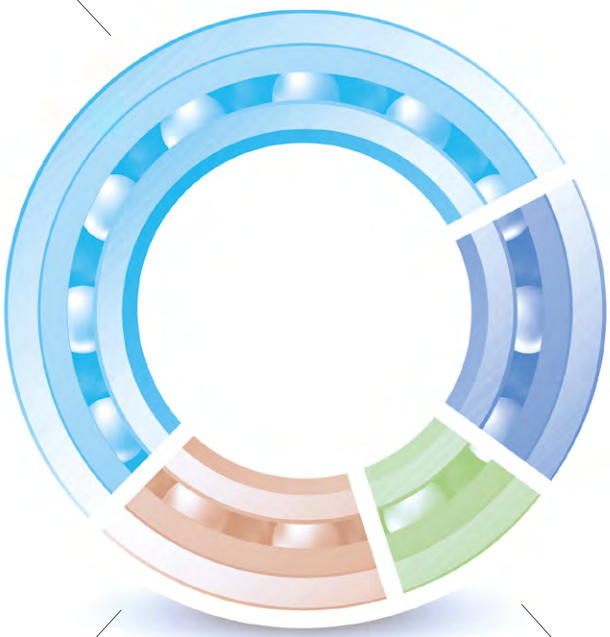
Improper or poor lubrication greatly reduces the service life of the bearing.

It is often overlooked due to the difficulty of accessing the bearings and the user's lack of knowledge of lubricants.

The choice of lubricant, the method, the amount to be introduced into the bearing (not too much, not too little) and the frequency of monitoring must be particularly considered.

We provide you with a specific service, and market a complete range of greases adapted to each type of application, as well as an automatic lubrication system.

55 %



Pollution

The environment in which bearings operate is often highly polluted. Indeed, dust, detergent liquids, (etc.) are elements that reduce strongly the service life of the bearings.

To deal with these problems, we have developed a very wide range of sealing systems and will advise you on the most suitable choice for your application.

18 %

17 %

Incorrect assembly

Mounting a bearing in a machine is a key step that determines its service life. Indeed, a bearing that is not installed correctly can deteriorate very quickly.

The main causes are as follows:

- insufficient or ill-adapted methods and means,
- pollution during assembly,
- abrupt implementation,
- Poor design of the receiving organs: shafts and housings out of tolerance, poor lubricant access, misalignment.

The deterioration may be manifested by abnormal noise. In the short term, it causes fatigue on the surfaces of the bearing. We can take care of the assembly and disassembly, or offer you the tools and devices that make these operations safer and easier.

10 %

Fatigue

Bearings are nerve points subject to fatigue. They are all the more stressed because they rarely operate in optimal conditions (machine overload, insufficient lubrication, etc.).

The stresses on the active surfaces of the bearings create surface degradation by spalling in the more or less long term.

Our monitoring methods and the support of our experts will allow you to act at the first signs of weakness, and to organize the appropriate maintenance operations.

SNR Brand of NTN Group


SNR PREMIER

GENERAL SUMMARY

Assembly & Disassembly 6

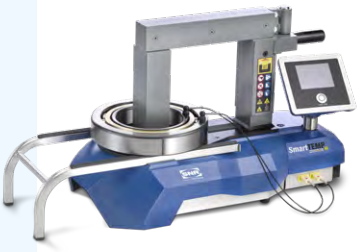
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ASSEMBLY & DISASSEMBLY

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Cold assembly & disassembly

Best practices for cold assembly

Cold mounting is the simplest practice, suitable for small and medium-sized bearings combined with normal adjustments.

Our recommendations:

The most frequently observed problems:

- Fits that are too tight or not tight enough.
- Excessive impact or shank forces that cause bushing failures and seals, or runway markings.
- Unintentional introductions of particles or liquids present into the assembly environment.

▶ The bearing must be clamped to the rotating element that it secures. See table opposite.

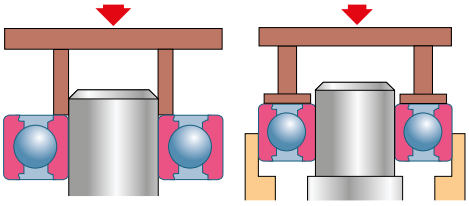
	Rotation analysis (frequency of cases)		Fastening principle
Fixed load relative to outer ring	Fixed housing and charging (95 %)  Rotating inner ring	Rotating housing and load (0,5 %)  Fixed inner ring	Tight inner ring on the shaft
Fixed load in relation to inner ring	Fixed shaft and load (3 %)  Rotating outer ring	Rotating shaft and load (1,5 %)  Fixed outer ring	Tight outer ring in housing

Our advice to follow:

- Check the identification of the bearing according to plans, specifications, procedures.
- Verify that the dimensions and accuracy of the shapes and positions of the bearing seats correspond to the plans and specifications.
- Prepare all the necessary equipment, parts and tools before starting assembly.
- Thoroughly clean and check all parts and components in the bearing environment.
- Take the bearing out of its packaging at the last minute, in a perfectly clean work area.
- Never wash it, except in exceptional cases specified. This is because the bearing is protected from oxidation by a light film of oil that is compatible with all lubricants.
- Install the bearing using the chosen method.
- Lubricate with a special bearing grease according to the instructions given.
- After assembly and before final start-up, carry out a check during operation, in order to detect any anomalies (noise, vibrations, temperature, abnormal play, etc.).

In practice:

▶ The shank is made by means of impact bushings resting on the bearing ring that has the tightest fit. This prevents stress on the rolling bodies and damage to the bearing.



▶ Special case of a long shaft for a mounting requiring longitudinal adjustment of the bearing: a mechanical sleeve with a tapered seat combined with a bearing with a tapered bore is preferred.



Experts' words:

To achieve easier installation and to avoid fretting corrosion of the shaft or housing, use the mounting paste systematically. This thick lubricant helps to maintain the surface quality of parts subjected to sliding forces. Without this paste, corrosion gradually degrades the fit between the bearing and the shaft (or housing), which ultimately leads to vibration and even premature deterioration of the bearing and mounting surfaces.

The assembly paste also avoids the introduction of pollutants during assembly (filings, liquid, etc.).



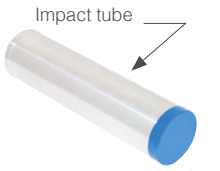
Cold mount case

The SNR tool kit allows for fast, accurate and safe mounting of bearings.

42









Punching socket



Anti-kickback mallet

Applications

The use of a suitable bushing, in combination with the impact tube, allows the bearing to be mounted to the desired fit. Simultaneous support on the outer and inner rings protects against the risk of damage to the tracks and rolling bodies. The kit is also suitable for mounting other components such as sealing rings, sprockets or pulleys.

Benefits

In a lightweight and durable package for workshop use, this case contains:

33 Punch Sockets:

- Very robust for a longer service life.
- Made of impact-resistant synthetic material to prevent metal-to-metal friction.
- Perfectly usable with a press.
- Calibrated for approximately 400 different bearings::
  - with bore diameters between 10 and 50 mm,
  - and with external diameters between 26 and 110 mm.
- Clearly and durably identified to facilitate selection.

3 firing pin tubes:

- Lightweight and very robust made of aluminum.
- Offering a good grip.

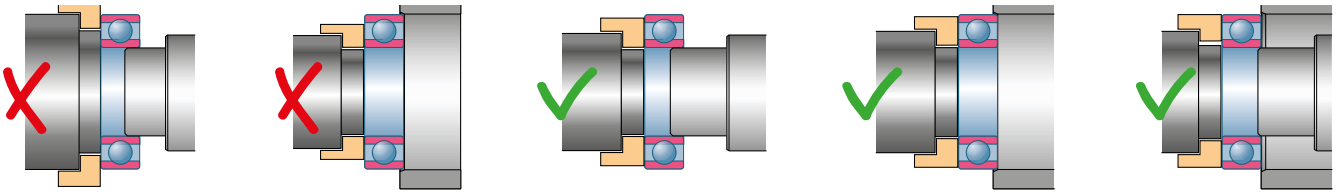
1 special anti-rebound mallet ensuring optimal impact.

Trade reference

TOOL IFT SET 33 / Industry Fitting Tool Set

Spare parts (on order)

- **TOOL IMPACT RING socket (tube (A,B,C), socket)**
  Example: TOOL IMPACT RING A 10-25
- **Anti-kickback mallet**
  TOOL IMPACT RING HAMMER
- **Impactor tube**
  TOOL IMPACT RING SLEEVE (tube A,B,C)
  Example: TOOL IMPACT RING SLEEVE A
- **Socket for firing pin tube**
  TOOL IMPACT RING LOOSE RING (tube A,B,C)
  Example: TOOL IMPACT RING LOOSE RING A



36 Located next to each product, this symbol indicates which page to refer to for technical specifications.

Technical data

Ref. Tubes	Ref. Tubes	Series 60 62 63 64 16 62/63/98	Series 622 623 630	Series 12 22 13 23	Series 72 73	Series 32 52 33 53	Series 213 222 223	Series 10 2 3 22 23	Series C22 C40	Series 42 43
										
A	10 / 26	629	63000	129						
		16100								
		6000								
	10 / 30	6200	62200	1200	7200	3200				4200
				2200		5200				
	10 / 35	6300	62300							
	12 / 28	6001	63001							
		16101								
	12 / 32	6201	62201	1201	7201	3201				4201
				2201		5201				
	12 / 37	6301	62301	1301	7301					4301
				2301						
	15 / 32	16002	63002							
		6002								
	15 / 35	6202	62202	1202	7202	3202		202		4202
				2203		5202				
	15 / 42	6302	62302	1302	7302	3302				
				2302		5302				
	17 / 35	16003	63003							
		6003								
	17 / 40	98203	62203	1203	7203	3203		203		4302
		6203		2203		5203		2203		4203
	17 / 47	6303	62303	1303	7303	3303		303		4303
				2303		5303				
B	20 / 42	16004	63004							
		98204								
		6004								
	20 / 47	6204	62204	1204	7204	3204		204		4204
				2204		5204		2204		
	20 / 52	6304	62304	1304	7304	3304	22205/20	304		4304
				2304		5306		2304		
	25 / 47	16005	63005					1005		
		6005								
		62/22								
	25 / 52	98205	62205	1205	7205	3205	22205	205	C2205	4205
		6205		2205		5205		2205		
		63/22								
	25 / 62	6305	62305	1305	7305	3305	21305	305		4305
		6403		2305		5305		2305		
	30 / 55	16006	63006							
		6006						1006	C6006	4206
		62/28								
	30 / 62	98206	62206	1206	7206	3206	22206	206	C2206	
		6206		2206		5206	BS2-2206	2206		
		63/28								
	30 / 72	6306	62306	1306	7306	3306	21306	306		4306
		6404		2306		5306	2306			
C	35 / 62	16007	63007					1007		
		6007								
	35 / 72	6207	62207	1207	7207	3207	22207	207	C2207	4207
				2207		5207	BS2-2207	2207		
	35 / 80	6307	62307	1307	7307	3307	21307	307		4307
		6405		2307		5307		2307		
	40 / 68	16008	63008					1008		
		6008								
	40 / 80	6208	62208	1208	7208	3208	22208	208	C2208	4208
				2208		5208	BS2-2208	2208		
	40 / 90	6308	62308	1308	7308	3308	21308	308		4308
		6406		1308		5308	22308	2308		
	45 / 75	16009	63009					1009		
		6009								
	45 / 85	6209	62209	1209	7209	3209	22209	209	C2209	4209
				2209		5209	BS2-2209	2209		
	45 / 100	6309	62309	1309	7309	3309	21309	309		4309
		6407		2309		5309	22309	2309		
	50 / 80	16010	63010					1010	C4010	
		6010		1210						
	50 / 90	6210	62210	2210	7210	3210	22210	210	C2210	4210
						5210	BS2-2210	2210		
				1310						
	50 / 110	6310	62310	2310	7310	3310	21310	310		4310
		6408				5310	22310	2310		

Mounting Paste

SNR Mounting Paste is specially designed to prevent fretting rust between 2 metal surfaces. Free of heavy metals, it is not harmful to the environment.

42





Applications

- Contact rust, also known as fretting corrosion, occurs on assemblies that are subject to vibration or very slight slippage or oscillation. It can lead to significant degradation in bearings and other machine components, making disassembly very difficult.

Benefits

- Allows slippage for in-game fixtures (wheel bearings, vibrating screens, etc.)
- Preserves surface quality and mechanical assembly adjustments by preventing fretting corrosion.
- Facilitates the mounting and disassembly of bearings, and components such as nuts, bolts, studs, flanges, couplings, spline shafts, etc.
- Water and wash resistant.
- Low density (0.910) which translates into reduced consumption and therefore lower production costs.
- Absence of heavy metals.
- Operating temperature range from -30 °C to +145 °C.

Commercial references

LUB MOUNTING PASTE / T 60G
LUB MOUNTING PASTE / B 500G

Adjustable hand wrenches

10 wrenches to tighten or loosen up to 30 nuts of different sizes!

42





Applications

- SNR adjustable hand wrenches allow for easy and safe tightening and loosening of KM, KML, KMK type nuts... and also the precision nuts B, TB, BR, TBR... They prevent any deterioration of the nut and shaft.

Benefits

- Made of special hardened steel, they are very robust.
- The joint equipped with a spring washer guarantees smooth and reliable operation.
- Laser-engraved designation makes them easily and durably identifiable.
- The hole on the handle makes them easy to store.
- Versatile, they cover nut diameters from 15 to 180 mm.

Available in 2 versions:

Lug for hole nuts



Slot for Notched Nuts



Commercial references

Tool PS (size) / Pin Spanner (lug) Tool
Tool HS (size) / Hook Spanner (slot)

KM Nut Sockets & Extensions

44

A compact solution for tightening and loosening KM nuts in tight spaces.

Applications

- KM nut sockets are designed for tightening and loosening KM nuts. They are used in the assembly, adjustment and locking of bearings.
- Extensions allow you to intervene when the KM nut is mounted in depth and the socket alone does not allow the nut to be reached correctly.



Benefits

- Torque transmission directly to the KM nut notches.
- Diameter close to that of the nut: +1 to 2 mm only!
- Suitable for areas with low clearance.
- Alternative to the more bulky «bell» type sockets with internal lugs.
- Made of hardened 35 HRC chrome-molybdenum steel, with burnished finish, for use in demanding industrial environments.



Our offer

- Sockets for KM1 to KM20 nuts
- Socket extensions for KM4 to KM14 nuts
- Socket case for KM4 to KM10 nuts

Commercial references

Sockets: TOOL KM NS(size)

Example: TOOL KM NS8

Extensions: TOOL KM NS(size) EXT

Example: TOOL KM NS8 EXT

Case: TOOL KM NS SET4-10



Hot assembly & disassembly

Disassembly practices for hot mounting

Hot mounting allows, by the rise in temperature of a rotating part, to expand the inner ring of a bearing or the bore of a pinion in order to install it effortlessly on its shaft.

- In the case of a tight fit on the outer ring, before the insertion of the bearing, the housing can be expanded by heating.
- The opposite principle is that a shaft can also be cooled with a liquefied gas to facilitate insertion into the inner ring of the bearing.

SNR induction heaters (SmartTEMP and Middle Frequency Heater) provide the best solution in terms of safety, efficiency and ease of use, compared to heating by oil bath, hot plate or oven.

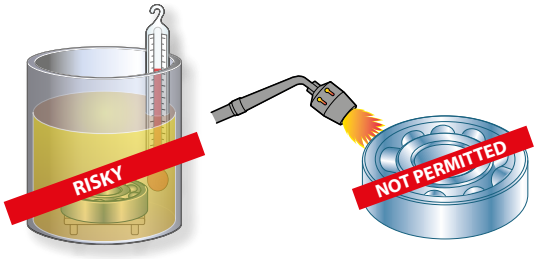
The method of heating with a blowtorch is to be avoided: it generates local temperatures that alter the hardness of the bearing and therefore its service life.

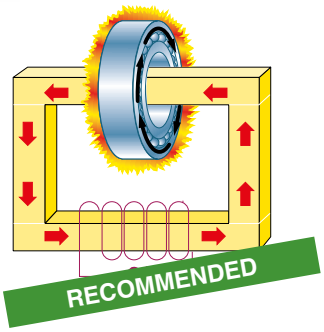
Induction heating consists of generating an electromagnetic field by means of a coil or inductor supplied with alternating current. This field induces currents in the metal part to be heated. This generates heat directly in the workpiece, effectively expanding components such as bearings, bushings, gears, housings, tubes or other metal parts.

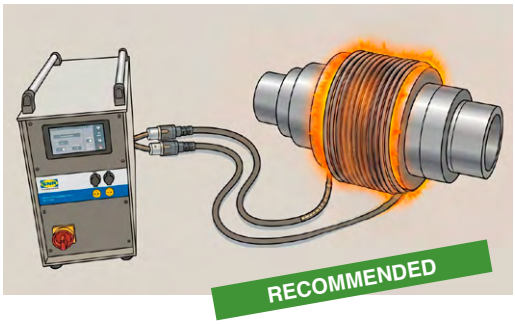
Depending on the application, this principle can be implemented either by means of a magnetic bar device, such as the SmartTEMP, which is particularly suitable for rotating parts such as bearings or pinions. A medium-frequency generator with fixed or flexible inductors, such as the Middle Frequency Heater, can also be used. It is particularly suitable for large parts, complex shapes, or less accessible assembly and disassembly configurations.

In both cases, induction heating allows for a fast, clean and controlled rise in temperature, while avoiding the disadvantages of traditional methods. It thus facilitates assembly, disassembly or preheating operations, while limiting mechanical stress and the risk of deterioration of components.

Depending on the technology used, induction heating may or may not generate residual magnetization of the room. For this reason, some devices, such as the SmartTEMP, incorporate automatic demagnetization at the end of the cycle, while the Middle Frequency Heater is designed to operate without residual magnetism.







Experts' words:

The temperature should not be too high, so as not to change the characteristics of the steel (maximum 130 °C) or the internal components of the bearing.

On the other hand, it must be sufficient to cause a suitable expansion allowing easy placement of the bearing by temporary reduction or cancellation of the tightening.

The heating temperature depends on the one hand on the ambient temperature, and on the other hand on the fit and material of the range.

Fitting a part on an axis or housing requires agility to align them. The use of mounting paste facilitates insertion and protects the shaft and housing from fretting corrosion.

Thermally insulated gloves are essential for safe and easy handling of heated rooms.

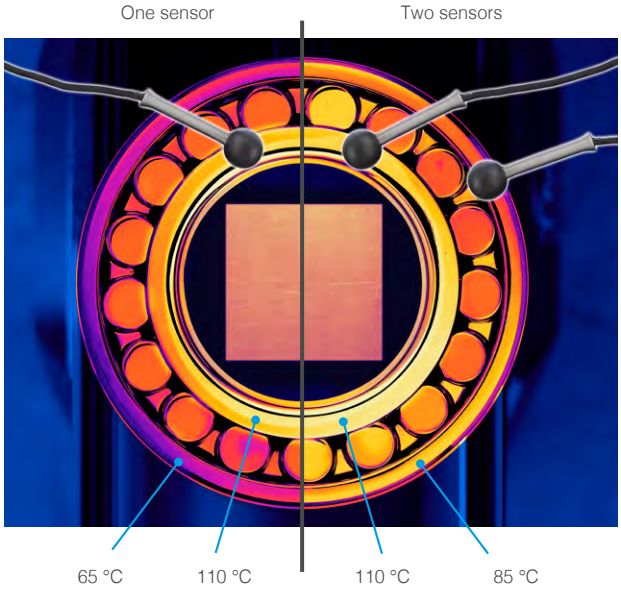
In the case of dismantling of heavy parts, medium-frequency heating devices may be preferred, which facilitate handling.

Sensitive bearings:

Heating too quickly and too hard can alter the properties of the material and thus significantly reduce the life of the bearing.

On the other hand, by expanding the inner ring too quickly in relation to the outer ring, the rolling bodies can be subjected to significant stresses that can lead to their deterioration or that of the path.

A function such as the Temperature mode with 2 probes of the SmartTEMP devices allows you to control the temperature delta between the rings. The Middle Frequency Heater also offers precise control of the temperature delta thanks to its ΔT monitoring function integrating two probes.





Parts sensitive to temperature rise (sprockets):

Some parts such as sprockets are extremely sensitive to sudden temperature variations.

For a pinion, the teeth are subject to significant mechanical stress (see opposite). Heterogeneous heating in this area can lead to mechanical deformations, and later to tooth failure under stress.

Linear, homogeneous and controlled heating of sensitive parts avoids these risks. The devices in the SmartTEMP range, thanks to the Ramp mode, as well as the Middle Frequency Heaters, through the monitoring of the temperature delta (Δ T) with two probes, ensure precise control of the temperature rise, guaranteeing uniform thermal distribution.

The right questions to ask yourself when selecting your heating appliance

- Type of part to be heated (pinion, bearing, etc.) and its sensitivity.
- What are the geometric dimensions of the rooms to be heated? (Max. Outer Diameter, Max. Width, Min. and Max. Bore)
- What are the minimum and maximum weights of the parts?
- What is the temperature to be reached?
- What electrical powers and voltages are available in the workshop?

SmartTemp heaters

The strengths of the SmartTEMP range:

Unique heating management

From simple to extremely sensitive parts, from bearings to pinions, the SNR range offers the most suitable solution with real-time heating analysis and control.

Depending on the type of room to be heated, 4 heating modes are available:

- Probe-based temperature mode for non-sensitive rooms.
- A Timer mode that allows you to adjust only the heating time.
- A Ramp mode for a linear and controlled temperature rise dedicated to sprockets and other parts sensitive to temperature gradients.
- A Temperature mode with 2 probes to control the temperature delta between the inner and outer diameters. Particularly suitable for sensitive bearings.



Easy to use

Hot mounting becomes a breeze with easy setup, management, and data retrieval via an innovative touchscreen.

- Simple instructions available in multiple languages.
- Temperature vs. time graph.
- Data extraction via USB stick.
- Automatic probe detection.
- Simplified maintenance by self-diagnosis at each start-up.



Efficient

SmartTEMP induction heaters adapt to any type of room, ensuring uninterrupted operation with reduced energy consumption.

- The first device to be able to heat a bearing or solid part of the same weight.
- Improved efficiency in the market thanks to a new state-of-the-art processor (30% time savings compared to standard machines).
- Self-regulation of energy consumption depending on the room to be heated.
- Heat-resistant electronics and materials that can ensure intensive and continuous use.



Control and security

- Optimal control of the heating cycle by microprocessor and magnetic temperature probe.
- Industrial screen resistant to splashes and shocks.
- Thermal insulation of the magnetic probe.
- By default, the device selects a recommended temperature of 110 °C.
- Maximum heating temperature: +240 °C.
- Maintaining the final temperature when it is reached.
- Automatic demagnetization at the end of the cycle.
- Only the part to be heated is subject to a temperature rise (easy handling, no risk of burns).
- No smoke emanation.
- Compliance with UNECE legislative standards.
- Rugged industrial design



SmartTEMP S

45

Portable induction heater.
Packs all the features of the SmartTEMP range into a compact device.
Lightweight and easy to use, which can heat a room up to 50 kg.



Benefits

- Small, lightweight device: weighs only 21 kg. Power supply 230V/13A.
- Performance: designed for any bearing or revolving parts with a bore diameter greater than 10 mm, a maximum external diameter of 400 mm and a maximum weight of 50 kg.
- Safe: 4 heating modes: Timer, Ramp, Temperature (1 probe), Temperature (2 probes). Second optional probe.
- Easy to use: interactive touch screen for precise control of the device (settings and heating graphs). Multiple languages available.
- Extraction of heating data (USB).

Comes standard with 1 rung, a pair of gloves and a probe. (Optional carrying case).

Trade reference

TOOL SMART TEMP S / 1Y induc heater

SmartTEMP M

45

Induction heater with swivel arm, best-seller in maintenance or production workshops, which can heat a bearing up to 100 kg.



Benefits

- Used in a fixed position. Power supply 230V/16A.
- Compact: it weighs only 40 kg and can be easily moved thanks to its 2 side handles.
- Performance: designed for any bearing or revolving parts with a bore diameter greater than 10 mm, a maximum outer diameter of 500 mm and a maximum weight of 100 kg.
- Safe: 4 heating modes: Timer, Ramp, Temperature (1 probe), Temperature (2 probes). Second optional probe.
- Easy to use: interactive touch screen for precise control of the device (settings and heating graphs). Multiple languages available.
- Extraction of heating data (USB).
- Ergonomic with its standard swivel arm that makes it easy to load the parts to be heated.

Supplied as standard with a probe and a bar for bore diameters greater than or equal to 70 mm. Other bar sizes are available as an option and can be ordered depending on the application.

Trade reference

TOOL SMART TEMP M / induction heater

SmartTEMP L

45

Compact induction heater with high heating performance for rooms up to 200 kg.



Benefits

- 400V/20A power supply.
- Performance: designed for any bearing or revolving parts with a bore diameter greater than 20 mm, a maximum outer diameter of 600 mm and a maximum weight of 200 kg in the horizontal position.
- Safe: 4 heating modes: Timer, Ramp, Temperature (1 probe), Temperature (2 probes).
- Easy to use: interactive touch screen for precise control of the device (settings and heating graphs). Multiple languages available.
- Extraction of heating data (USB).
- Ergonomic with its standard swivel arm that makes it easy to load the parts to be heated.

Supplied as standard with 2 probes, a pair of gloves and a bar for bores with a diameter greater than or equal to 100 mm. Other bar sizes are available as an option and can be ordered depending on the application.

Trade reference

TOOL SMART TEMP L / induction heater

SmartTEMP XL / XL PIVOT

45

Powerful induction heater for rooms up to 400 kg.





Benefits

- 400V/32A power supply.
- Performance: designed for any bearing or revolving parts with a bore diameter greater than 30 mm, a maximum outer diameter of 1000 mm and a maximum weight of 400 kg in a horizontal position.
- Ergonomic: available in two versions, with or without swivel arm. The swivel arm makes the unit more suitable for loading medium-sized workpieces, while the standard version is particularly suitable for large workpieces.
- Safe: 4 heating modes: Timer, Ramp, Temperature (1 probe), Temperature (2 probes).
- Easy to use: interactive touch screen for precise control of the device (settings and heating graphs). Multiple languages available.
- Extraction of heating data (USB).

Available in swivel horizontal arm or standard versions with movable vertical rung. Possibility to make the device mobile thanks to an optional trolley.

Supplied as standard with 2 probes, a pair of gloves and a bar for bores with a diameter greater than or equal to 115 mm. Other bar sizes are available as an option and can be ordered depending on the application.

Trade reference

TOOL SMART TEMP XL (/ XL Pivot) / induction heater

SmartTEMP XXL

46

Very powerful induction heater for parts weighing up to 800 kg, typically intended for heavy machinery workshops (steel, paper mill, gear manufacturing, shipyard, etc.).



Benefits

- 400V/63A power supply.
- Performance: designed for any bearing or revolving parts with a bore diameter greater than 40 mm, a maximum outer diameter of 1500 mm and a maximum weight of 800 kg in the horizontal position.
- Safe: 4 heating modes: Timer, Ramp, Temperature (1 probe), Temperature (2 probes).
- Easy to use: interactive touch screen for precise control of the device (settings and heating graphs). Multiple languages available.
- Extraction of heating data (USB).
- Ergonomic: the rungs are positioned vertically and equipped with a lifting eye.

An optional bar winching device simplifies handling. Possibility to make the device mobile thanks to an optional trolley.

Supplied as standard with 2 probes, a pair of gloves, a bar for bore with a diameter greater than or equal to 145 mm. Other bar sizes are available as an option and can be ordered depending on the application.

Trade reference

TOOL SMART TEMP XXL / induction heater

SmartTEMP XXXL

46

Extremely powerful induction heater for rooms weighing up to 1600 kg. Essential in the mechanical workshops of steel mills, paper mills and in the railway or wind sectors.



Benefits

- 400V/100A power supply.
- Performance: designed for any bearing or revolving parts with a bore diameter greater than 85 mm, a maximum outer diameter of 2000 mm and a maximum weight of 1600 kg in the horizontal position.
- Safe: 4 heating modes: Timer, Ramp, Temperature (1 probe), Temperature (2 probes).
- Easy to use: interactive touch screen for precise control of the device (settings and heating graphs). Multiple languages available
- Extraction of heating data (USB).
- Ergonomic: the rungs are positioned vertically and equipped with a lifting eye. An optional bar winching device simplifies handling.

Supplied as standard with 2 probes, a pair of gloves and a bar for bores with a diameter greater than or equal to 215 mm.

Other bar sizes are available as an option and can be ordered depending on the application.

Trade reference

TOOL SMART TEMP XXXL / induction heater

Accessories

A carrying case specially adapted for the SmartTEMP S.



Optionally supplied with the device, it is very efficient and safe for transporting the SmartTEMP S in the best possible conditions.

Trade reference

TOOL ST/S CARRYING CASE

A trolley can be used to make the SmartTEMP XL, XL Pivot mobile.



Adapted to each model and delivered as an option. Trade reference

Trade reference

TOOL ST/(Device size) **TROLLEY**, e.g. TOOL ST/XL TROLLEY

Bars and bar extensions are available to meet the specific needs related to the diameters of the part to be heated.

47

For each SmartTEMP model, a suitable set of rungs and rungs extensions is available as an option.



Trade reference

Bars: **TOOL ST/** (Device Size) **YOKE** (Bore), e.g. TOOL ST/XXL YOKE 60
Sung Extensions: **TOOL ST/** (Device Size) **EXTENSION YOKE** (Extension Height),
e.g. TOOL ST/L EXTENSION YOKE 150

Middle Frequency Heater

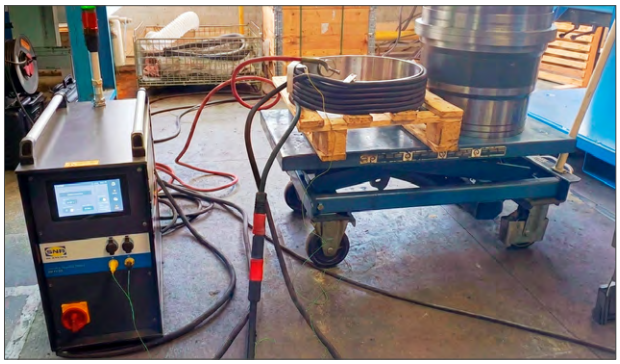
The strengths of the range:

Designed to meet your most demanding maintenance challenges, the Middle Frequency Heater reduces your intervention times, preserves the integrity of your components and secures your operators every time you use it.

A powerful induction heating solution suitable for complex rooms

The Middle Frequency Heater range is specially designed for the assembly, disassembly and preheating of large, complex or difficult-to-access metal components.

Unlike rod devices, the Middle Frequency Heater uses a flexible or fixed inductor that can be positioned around or inside the room, providing maximum flexibility anywhere in the workshop.



Wide power band for demanding applications

Available in 3.5, 10, 22 and 44 kW, the Middle Frequency Heater range covers a very wide spectrum of applications, from mobile maintenance interventions to heavy industrial operations.

Thermal stress control with Δ T monitoring

The Middle Frequency Heaters incorporate a temperature delta (Δ T) monitoring function via two probes, allowing temperature to be measured at two separate points in the room.

This function ensures that the set maximum thermal deviation is never exceeded:

More homogeneous heating | **Gradual rise in T°** | **Preserved material integrity**

Safety, reliability and cost reduction.

- Drastic reduction in your machine downtime.
- Preservation of your expensive equipment.
- Fewer human hours mobilized.
- Intervention time reduced by 50%.
- Very limited risk of burning: No open flame – No magnetism.
- No special expertise required.
- Adaptable to a very large number of applications.



SNR
Brand of NTN Group

The Middle Frequency Heater Range

Middle Frequency Heater G2 – 3,5 kW

49

The compact and mobile solution

Designed for on-site service and light maintenance applications, the MF G2 – 3.5 kW offers an excellent compromise between portability, precision and control. Its compact size and low weight make it an ideal tool for field technicians. Can be used with the flexible 180 °C inductor.



Benefits:

- Lightweight and easily transportable device.
- Flameless induction heating.
- Δ T monitoring with 2 probes.
- Programmable heating curve.
- Heating log and USB export.

Trade reference:

TOOL MFG2 230V 3.5kW

Application example







The 3.5 kW Middle Frequency Heater with a flexible cable allows the bushing to be dismantled tightly on a shaft quickly and easily. The ring is heated locally to cause thermal expansion, which reduces the clamping force on the shaft and facilitates its removal without mechanical shock. This method limits the risk of damage to parts and is particularly suitable for maintenance operations requiring clean, safe and efficient intervention.

G1: standard version

48



- Compact design with 3.5-inch screen.
- Easy-to-use touchscreen control.
- Intelligent electronics ensure optimal operational frequency.
- Adjustable power control.
- Dual temperature measurement (ΔT monitoring).
- Choice of fixed or flexible inductors.

Trade reference:

TOOL MFG1 (voltage)V (power)kW

Example: TOOL MFG1 400V 10kW

G2: Advanced version

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- Compact design with 7-inch screen.
- Easy-to-use touchscreen control.
- Intelligent electronics ensure optimal operational frequency.
- Adjustable power control.
- Dual temperature measurement (ΔT monitoring).
- Choice of fixed or flexible inductors.
- Can heat up according to the preset temperature/ time curve.
- The heating process is displayed as a clear graph.
- Log function to save data or export it via USB port.

Trade reference:

TOOL MFG2 (voltage)V (power)kW

Example: TOOL MFG2 400V 10kW



Accessories

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Flexible Inductors

Flexible inductors can be placed inside or around a room to be heated. This makes them ideal for a wide variety of parts, from large internal rings to very large components such as gears and housings.

- Different cable lengths and various temperature and power levels are available. Thanks to their flexibility, a wide range of applications is possible.
- They are used to wind a number of windings around a shaft or into a bore.
- Flexible inductors are intended for use in conjunction with medium-frequency SNR generators. Care must be taken to ensure that the capacitance of the inductor matches that of the generator.



Flexible inductor 180 °C



Flexible inductor 300 °C

Trade reference:

TOOL MF/FLEX-INDU3.5KW_10m_ d12

TOOL MF/FLEX-INDU10/22KW_(length)m_ d(diameter)
Example: TOOL MF/FLEX-INDU10/22KW_15m_ d12

TOOL MF/FLEX-INDU44KW_(length)m_ d(diameter)
Example: TOOL MF/FLEX-INDU44KW_15m_ d19



Connection Kit



Fixed Inductor

Labyrinth Inductors

Fixed Inductors

This inductor is typically used to heat identical rooms repeatedly. It is also often used for relatively small rooms for which a flexible inductor is not suitable. The versions can vary from an inductor that heats the part from the inside of a bore to a variant that heats the part from the outside.

Fixed inductors are custom-made and designed in principle for a type of workpiece.

Contact us for any further information or to study your product needs.

Flexible cage inductor

In this case, a flexible inductor is wrapped in a cage. The result is a lightweight construction that allows series heating of a repetitive size. This solution is often a lighter alternative to a comparable fixed inductor.



Flexible cage inductor



Magnetic holders

Magnetic holders

Magnetic brackets for attaching flexible inductors are optional.

Trade reference: **TOOL MF/MAG HOLDERS10/22/44kW**

Mechanical assembly and disassembly

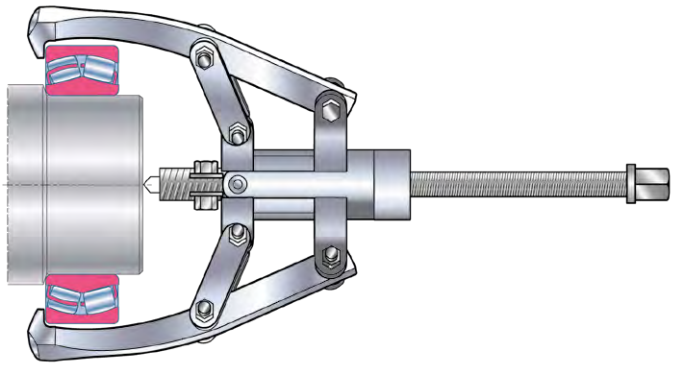
Best practices for mechanical disassembly

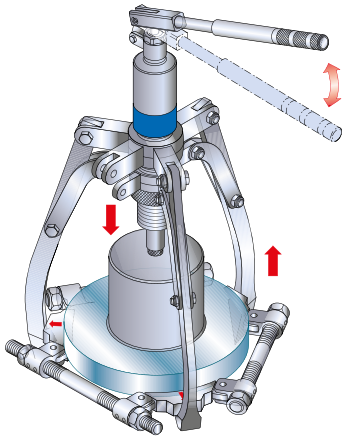
Disassemble cleanly: preserve your equipment and save time, in complete safety.

Be careful, the disassembly of bearings is a delicate operation for operators as well as for adjacent mechanical components! While installation requires a lot of know-how, the risks during disassembly should not be ignored, even if the bearing is scrapped.
By using the right methods and tools, you can reduce the risk of personal injury and damage to parts (shaft, housing, or even the bearing if reused).
The 2 main methods of disassembly are: mechanical and hydraulic.

Our advice for mechanical disassembly

Whenever possible, the bearing should be removed by applying the extraction force to the interference-fitted ring.
There are many types of pullers depending on the nature of the grips offered by the bearing, their accessibility and the extraction force required.
Extractors equipped with hydraulic pumps and cylinders allow an operator to develop very high extraction forces from their muscular strength. They are easily implemented thanks to the self-centering of their arms.





The right questions to ask yourself

- How do I grip the workpiece?
  Selection of the type of socket: outdoor, indoor or special.
- What is the diameter of the part to be extracted?
  Allows you to set the necessary range, spacing, and force.
- How should the part be pulled?
  Choice of support point: on the central axis, outside the workpiece or with the help of extraction accessories

Bore Extractor Kits

Extractor kits with internal grip per bore. For quick and easy disassembly of bearings mounted tightly in a housing.

51



BP Set 5-44



BP Set 45-100

Applications

Ideal collection of resistant extractors with their tie rods adapted for bore extraction:

- bearings with an outer ring that has a tight fit in its housing,
- Outer rings or rings of strongly blocked gaskets.

Benefits

Practical information

- The BP Set 5-44 has a force screw with a handle for easy grip, as well as a flywheel.
- Each kit contains multiple extractors that fit each of your applications.
- The small bearing cabinet combines a modular counter-support and an inertia mass giving you the choice of extraction mode.

Reliable and safe

- The unique design of the modular bridges allows for successful disassembly in complete safety, without the risk of slipping and without effort.
- Each piece is made of high-quality steel, which is robust and impact-resistant, ensuring the longevity of the product.

Flexible

- The BP Set 5-44 includes 7 extractors for extractions with bore diameters ranging from 5 to 44 mm.
- The BP Set 45-100 includes 3 extractors for extractions with bore diameters ranging from 45 to 100 mm.

Trade reference

TOOL BP Set 5-44 / Bore puller set
TOOL BP Set 45-100 / Bore puller set

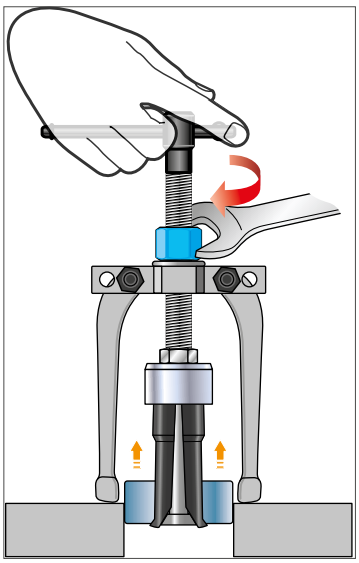


Inertia weight
for BP Set 5-44



Clamp





Deep groove ball bearing puller kit

For quick and easy extraction of your deep groove ball bearings from blind bearings.

52



BBPS 10-100



Claw



Extraction ring

Applications

This puller kit is specially adapted to carry out, without dismantling your machine, bearing extractions that are difficult to access, such as:

- bearings housed in blind bearings,
- shaft-mounted bearings,
- Bearings with a tight fit on the outer or inner rings.

Benefits

Convenient and easy

- The kit contains 3 O-rings to make it easy to assemble your tool.
- The marking of the parts coupled with the included selection table, allows a quick choice of accessories to be used.
- Visual user guide promotes the correct implementation of the tool.

Reliable and safe

- The design of the tools allows for successful disassembly safely and effortlessly.
- Each component is made of high-quality, robust and impact-resistant steel, ensuring the longevity of the product.

Flexible

- The case includes 3 different shaft sizes and 28 extraction claws offering a very wide range of applications.
- The kit allows for bearing extractions from 10 to 100 mm bore.

Trade reference

TOOL BBPS 10-100 / Ball bearing puller set





Extractor

Combined self-centering manual extractors with 2 or 3 claws

A range of simple, robust and efficient tools for easy and safe disassembly of small and medium-sized bearings.

53



SCMP - 3 claws



SCMP - 2 claws



Applications

Also suitable for removing pulleys, cogwheels, handwheels, etc. fixed on a shaft.

Benefits

Practical information

- Self-centering mechanism ensures simultaneous positioning of the puller claws on the bearing.
- Compact, ergonomic, it can be used in all positions by a single person.

Safe

- A locking device prevents the claws from bending or deflecting.
- The higher the extraction force, the tighter the claws around the workpiece.
- Robust, made of hardened steel for maximum strength.

Versatile

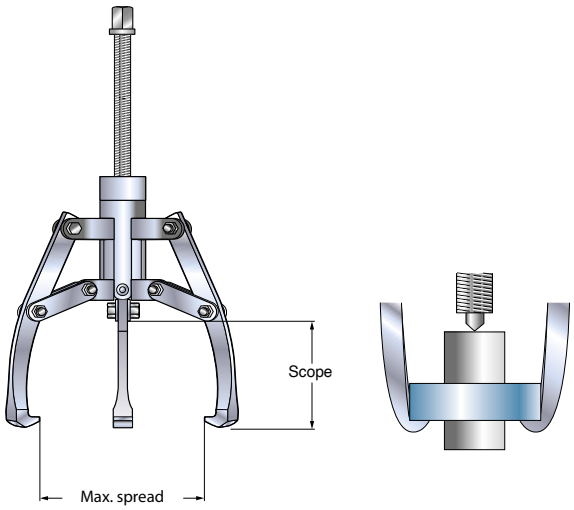
- Quickly convertible into 3 or 2 claws depending on the space available.
- 3 models available to select according to the outer diameter of the parts to be extracted and the required reach.

Maximum Spacing (mm)	Maximum Reach (mm)	Capacity (tonnes)
120	80	2
180	120	3
270	160	5

Trade reference

Tool SCMP 2/3-120 / Self-center mech puller
Tool SCMP 2/3-180 / Self-center mech puller
Tool SCMP 2/3-270 / Self-center mech puller





Combined self-centering hydraulic pullers with 2 or 3 claws

A range of powerful tools for very easy and safe disassembly of large bearings and press fitted parts such as pulleys and gears.

53



Applications

The self-centering device makes it easy to set up and anchor around the bearing. The power developed by the hydraulic system allows the workpiece to be removed safely with very little effort.

Benefits

Practical information

- Comes ready to use in a durable case. It is not necessary to assemble the claws beforehand.
- Compact: the hydraulic pump is integrated. No need for separate pumps, hoses or cylinders.
- Ergonomic: 360° swivel pumping handle that allows the extractor to be used in the most comfortable position. Telescopic, it ensures optimal transmission of effort.
- Easy centering of the piston on the shaft thanks to its integrated, retractable tip.
- A piston extension is provided in case of a distant support face.
- A piston return device makes it immediately ready for later use.
- The long stroke of the cylinders allows for disassembly in a single operation in most cases.

Versatile

- Possibility to convert it into 2 or 3 claws depending on the accessibility of the bearing.
- Available in 4 versions depending on the power and size required: 4, 12, 20 and 30 tonnes.



SCHP 4T - 3 claws



SCHP 4T - 2 claws

Capacity (tonnes)	Maximum Gap (mm)	Maximum Reach (mm)	Cylinder stroke (mm)
4	315	190	60
12	515	300	85
20	520	325	111
30	620	415	111

- For 4 and 12 tonne capacities, an accessory kit consisting of a deck, tie rods and a set of strippers, increases versatility and ease of removal.

Safe

- A safety valve prevents any risk of overloading and limits the force applied to the maximum capacity of the device.
- A protective cover protects the user from the possible projection of bearing fragments. Made of transparent material, it offers good visibility for extraction control.
- The 20 and 30 tonne model is equipped with an innovative two-stage pump that makes actuation easier and therefore safer.

Trade reference

Tool SCHP 4 Tonnes / Self-center hyd puller
Tool SCHP 12 Tonnes / Self-center hyd puller
Tool SCHP 20 Tonnes / Self-center hyd puller
Tool SCHP 30 Tonnes / Self-center hyd puller





Accessory cases for the SCHP 4 Tonne and 12 Tonne

A heavy-duty grip for safe and easy disassembly.

54



AS-SCHP 12T

Applications

The stripper is the complementary tool to the claw puller when the latter does not have sufficient grip. The perfect grip of the workpieces from the back thanks to the beveled blades reduces the force required for disassembly and prevents damage to the shaft reach.

Benefits

- Robust design ensuring longevity of the peeling blades.
- After detachment by clamping the 2 blades, turning the stripper allows the application of very high forces without deformation of the blades for the complete extraction of the bearing.
- Extensions are included to compensate for the distance from the support face.
- Easy centering of the piston on the shaft thanks to its integrated tip.
- Two versions are available depending on the power required: 4 and 12 tonnes.



AS-SCHP 4T

Trade reference

Tool AS-SCHP 4T / acc set hyd puller
Tool AS-SCHP 12T / acc set hyd puller

3-blade extraction plates, universal

A robust grip for safe and efficient disassembly by mechanical or hydraulic extractor.

54



Applications

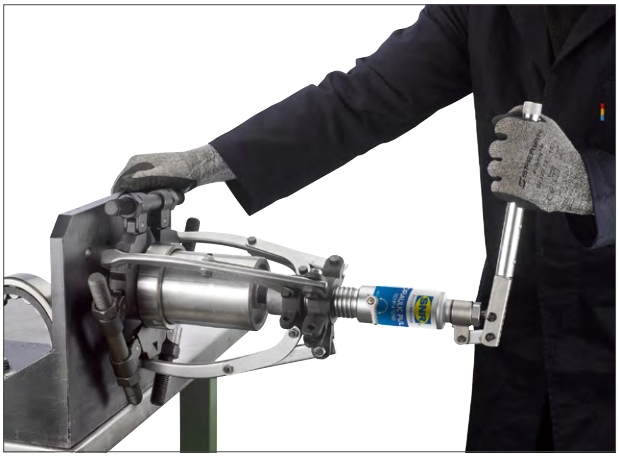
The 3-blade extraction plate is the complementary tool to the 3-claw extractor when it does not have a sufficient grip. Universal, it fits both the SCHP hydraulic puller and the SCMP mechanical model.

Benefits

- The blades are placed behind the bearing, where the extraction force is most efficient.
- The application of forces to the inner ring minimizes the risk of bearing damage by preserving the rolling bodies and the outer ring.
- The 3 blades provide an ideal distribution of forces for delamination and prevent any blockage on the shaft.

Trade reference

Tool BP3S 26-160 / Tri-section back puller
Tool BP3S 50-210 / Tri-section back puller
Tool BP3S 90-340 / Tri-section back puller
Tool BP3S 140-495 / Tri-section back puller



Extractor-Peeler Kit

For easy and risk-free removal of complete shaft-mounted bushings or bearings that are difficult to grip.
Modular claws, provided in the kit, also allow extractions by internal or external socket.

55









Applications

Allows you to extract any parts that are firmly pressed on a shaft such as pulleys, flywheels or sprockets.

In order to adapt to your different applications, the modular claws will also allow you to dismantle:

- bearings or bushings mounted on a shaft (external socket),
- Bearings or rings stuck in a housing (internal socket).

Benefits

2-in-1 tool

- Each case includes a bridge that allows the tool to be mounted for take-offs and extractions.
- Removable claws allow you to perform extractions by internal or external socket.
- A stripper for your shaft-mounted parts, as well as a set of removable claws for internal or external grip, all contained in a single case.

Powerful and reliable

- The stripper is equipped with bevelled blades that ensure an excellent grip and thus avoid blockage.
- With a power of 100 kN, the BPES guarantees you safe extractions without deterioration of your environment.
- The stripper and extractor are made of very high quality steel, ensuring strength and longevity to your kit.

Practical information

- Thanks to its unique design, the BPES 10-105 covers a wide range of applications.
- Kit contains 2 extension cords for applications requiring a long reach.

Trade reference

TOOL BPES 10-105/Back puller extract set



Extraction with stripper



External Tap Extraction

Hydraulic puller for assembly and disassembly

A convenient and safe 3-in-1 tool for mounting and dismounting bearings and sleeves by internal or external socket.

55



Applications

Ideal tool for mounting and disassembling a wide variety of press-fit parts, including bushings, bearings, wheels, gears and pulleys.

The kit comes in a metal box that includes:

- an extractor by internal socket,
- a double-acting hydraulic cylinder: 8 tonnes for thrusting and 12 tonnes for extraction,
- 3 claws and 3 extensions.

Benefits

Fast and convenient

- 3-in-1 tool for reduced set-up time: same tool used for mounting and dismounting bearings.
- A single double-acting cylinder ensures both an 8-tonne thrust force and a 12-tonne pull-out force.
- Included extensions can be used to achieve a greater reach.

Longevity

- A built-in safety valve allows the tool to operate under the nominal pressure to preserve it over time.

Security

- Built-in safety valve prevents the user from injury and damage to the working environment.
- Self-centering design avoids the risk of arm slippage during the internal grip extraction operation.

Trade reference

TOOL PUSH/PULLER 8/12 Tonnes



Internal Socket



Extraction



Push

Hydraulic assembly and disassembly

Best practices for hydraulic assembly and disassembly

Hydraulic mounting

The installation of large bearings with tapered bores requires considerable forces that are difficult to achieve by mechanical screw clamping. The use of hydraulic technology is necessary in such cases.

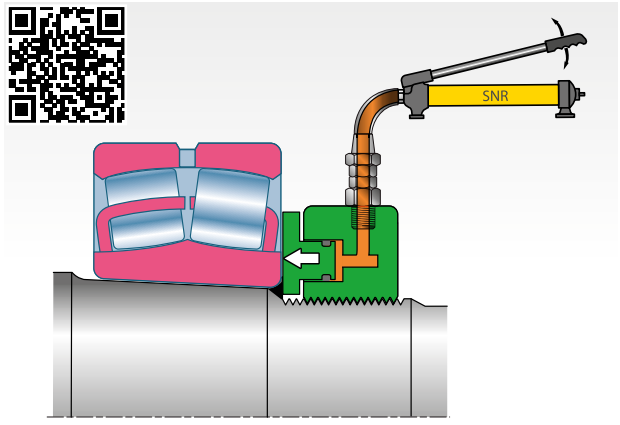
A first solution is to inject a film of oil over the entire contact surface between the shaft and the inner ring: this reduces the friction generated by the shank and facilitates axial movement.

Another solution is to use a hydraulic nut that develops the thrust needed for the press.

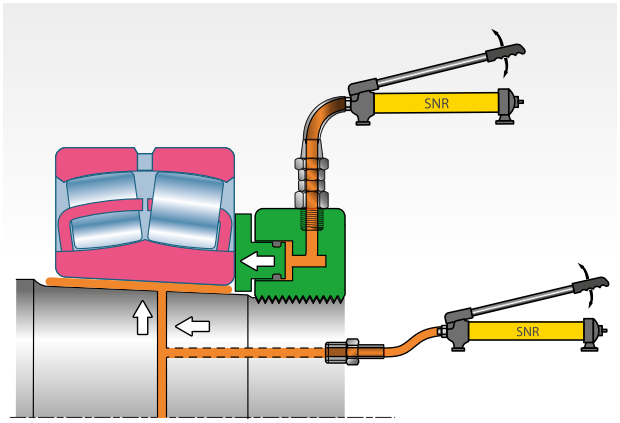
Both principles can also be implemented simultaneously to facilitate assembly. The residual clearance is checked using thickness shims or a comparator that measures the displacement of the bearing on the tapered seat.

2 types of assembly lend themselves to this method:

Tapered Shafts

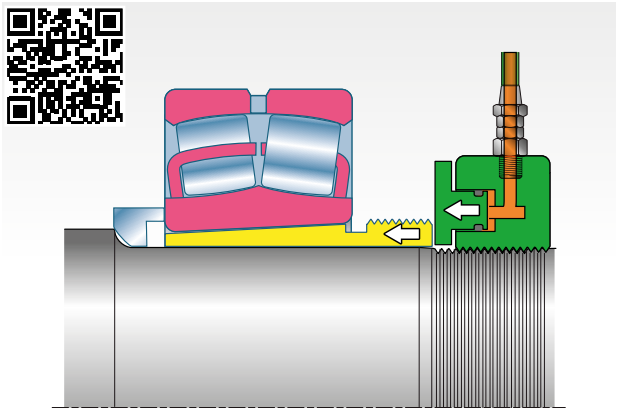


Use hydraulic nut only

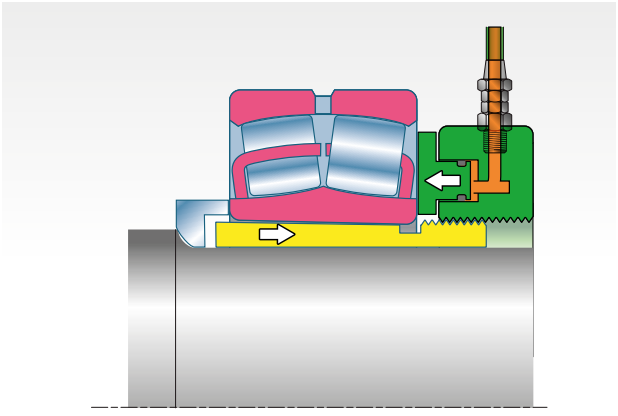


Hydraulic nut + oil film injection

Cylindrical shafts in combination with sleeve



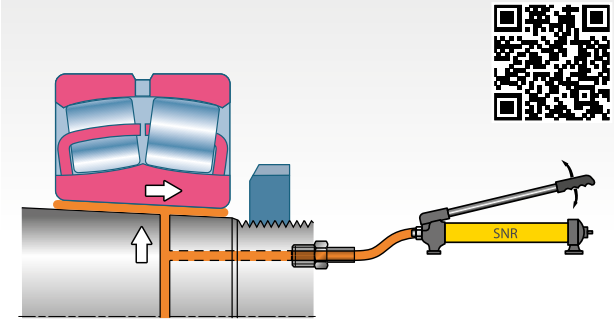
Disassembly sleeve



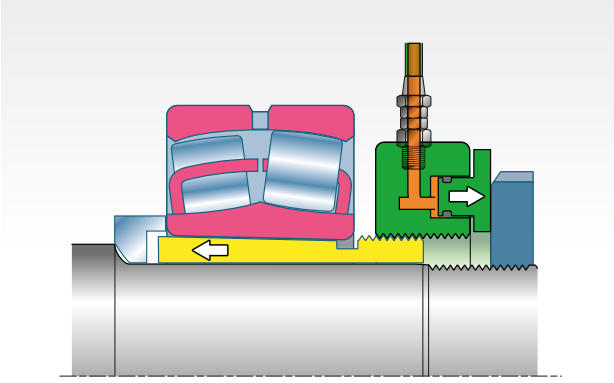
Clamping sleeve

Hydraulic disassembly

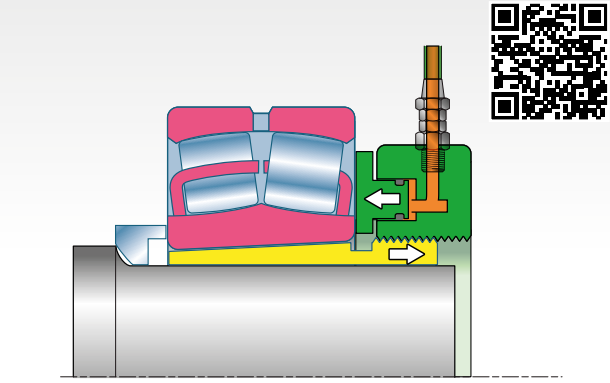
- If a clamping or disassembly sleeve has been used during assembly, the hydraulic nut can be used for quick and effortless disassembly.
- If hydraulic channels are provided in the shaft as standard, the injection of an oil film into the contact surface between the shaft and the inner ring eliminates any disassembly effort.



Tapered shaft



Clamping sleeve



Disassembly sleeve



Pulling out the clamping sleeve via the hydraulic nut



Extraction of the disassembly sleeve by the hydraulic nut

Hydraulic nuts

Precise and effortless mounting of your large bearings with a tool that is always ready for use.

56



Applications

Above a certain shaft diameter, the installation or disassembly of a bearing on a tapered seat requires hydraulic assistance.

The hydraulic nut ensures perfect control of the fit during assembly while reducing manual effort and reducing the duration of the operation.

Benefits

In addition to its hydraulic principle, the «Back and Forth» nut provides unique comfort wit the automatic return of the thrust plate to its initial position (design patented by NTN Europe).

«No need to manually retract the piston, which is often tedious and prone to oil leaks, the SNR nut is automatically ready for new use.»



- Wide size range: for shafts from 50 mm to 1000 mm in diameter.
- Range also available in HMVC series inch rib from 1.967 to 37.410 inches.
- Special dimensions on request.
- Spare piston seal set supplied as standard.
- The hydraulic nut is equipped with:
  - 2 hydraulic connection points, with countersinking for a perfect seal,
  - 1 quick-coupling coupling (male part) which can be positioned on the front side; or on the outer diameter depending on the ease of access (High pressure 150 bar, it offers maximum safety thanks to a stop lock),
  - 1 ball shutter 1500 bar,
  - 3 holes on the front panel allowing the positioning of the displacement comparator (not included).
- The surface treatment of the nuts provides excellent corrosion protection and ensures a long service life.
- Easier handling and screwing of nuts thanks to:
  - the knurling of the outer surface,
  - the supply of a bar and the installation of 4 holes on the outer diameter (For sizes ≥ HMV 50 EBF).
- Easy handling thanks to the supply of lifting rings for nuts in size ≥ HMV 60 EBF.

Trade reference

TOOL HMV (size) EBF / Hydraulic nut (metric)

TOOL HMVC (size) EBF / Hydraulic nut (inches)

Tool Dial gauge 50



Tool Dial extension set

Optional Accessories

Comparator for a piston displacement measurement of 5 to 10 mm

Trade reference

TOOL DIAL GAUGE 50
TOOL DIAL GAUGE 100

Adapter kit for the comparator

Trade reference

TOOL DIAL EXTENSION SET

Manual Hydraulic Pump Kits

An ultra-light high-pressure 700 bar (70 MPa), 0.3 L and 0.9 L 2-stage hand pump.

60



TOOL PUMP SETY 700B

Applications

These high-pressure pumps are designed for use with self-retracting hydraulic nuts or for mounting and dismounting bearings on oil film.

The pumps are supplied as standard with the following accessories sized for 700 bar:

- 1 pressure gauge that minimizes the risk of overloading,
- 1 quality hose (1.5 m on a 700 bar pump with a 0.3 litre tank, 3 m on a 700 bar pump with a 0.9 litre tank),
- 1 quick coupling coupling (female part) adapted to the SNR hydraulic nut,
- They are delivered filled with hydraulic oil.

Benefits

- Ultra lightweight and compact design.
- Robust tank made of composite materials.
- Ergonomic: lever lock for easy transport.
- Robust: pump guaranteed for life under normal use.
- Efficient: saves time and effort thanks to the 2 stages that reduce the number of pump strokes by 80% compared to 1-stage pumps!
- User safety: electrically insulated lever and safety valve.
- Versatile: 2 tank volumes available:
  - 0.3 liters for ≤ HMV 54 EBF nuts,
  - 0.9 liters for nuts ≤ HMV 92 EBF,
  - For sizes > to HMV 92 EBF, please contact us.



TOOL HYDRAULIC OIL 1L

Included accessories for the 700 bar pump

- Pressure gauge adapter for 750b 0.3L and 0.9L pumps
- Pressure gauge (0-700 bar)
  - filled with liquid to protect against any sudden drop in pressure,
  - double graduation bar / Psi,
  - Equipped with a burst protection device.
- Flexible 700 bar
  - very robust in thermoplastic reinforced with steel braided plies and wires,
  - polyurethane casing for extreme abrasion resistance,
  - equipped with a rubber «handle» protection.
- 1500 bar quick-coupling coupling (female part), which offers maximum safety thanks to its stop lock and optimal sealing with its flat-faced flap.

Technical characteristics of hydraulic oil

It contains corrosion inhibitors that do not attack sealing materials such as Nitrile.

Relative density at 15 °C: 0,870 kg/dm³ **Viscosity at 40 °C: 31 cSt** **cSt Viscosity Index: 102**	**Flash Point:** 230 °C **Freezing Point:** -36 °C

Trade reference

TOOL PUMP SETY 700B - (Tank capacity) L / Pump with accessories
Tool HYDRAULIC OIL 1 L

SAFETY & MEASUREMENT

SAFETY & MEASUREMENT

Safety instrument 38

Heat-resistant gloves 38

Measuring instruments 38

Calibrated feeler gauge set 38

LASER TEMP 301 Infrared Laser Thermometer 39

Safety instrument

Heat-resistant gloves

Protective gloves for safe handling of oily and hot parts up to +350 °C.

62



Benefits

- Made of KEVLAR, they are extremely resistant to tears, abrasion and cuts.
- Non-flammable: they offer a high level of protection against contact and convection heat.
- They are tested and certified for mechanical (EN 388) and thermal (EN 407) hazards.
- Lint-free, they prevent bearing pollution.
- Very comfortable, they offer great ease in all your maintenance work.
- One size fits all: 10.5

Trade reference

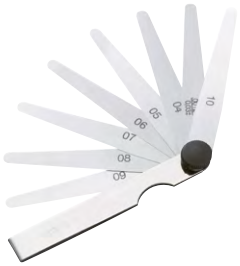
TOOL GLOVE HEAT RESISTANT

Measuring instruments

Calibrated feeler gauge set

A simple and accurate tool for measuring clearance between 2 parts

62



Applications

This set of feeler gauges enables quick and highly accurate measurement of radial internal clearance, especially for spherical roller bearings and cylindrical roller bearings. It includes 17 blades.

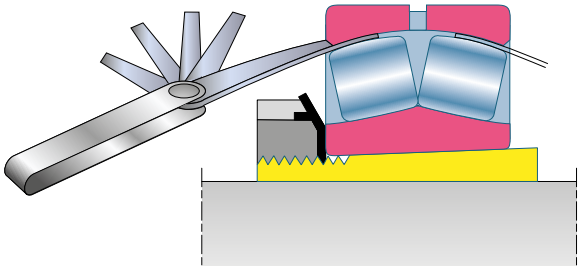
Three versions of the feeler gauge set are available, with blade lengths of 100 mm, 150 mm, and 300 mm.

Benefits

- Sets of 17 round-tipped blades.
- Comes with a spare set of the thinnest blades.
- Available in 100mm, 150mm and 300mm.
- Protected by a steel frame.
- Calibrated to 1/100th.

Trade reference

TOOL FEELER GAUGES (blade length)



LASER TEMP 301
Infrared Laser Thermometer

Establish an initial diagnosis of the operation of the machines thanks to a precise measurement of the temperature in complete 63 remote or in-contact security.

63



Applications

The LASER TEMP 301 thermometer combines safety and accuracy.

- Remote infrared measurement security for burning, moving, or hard-to-reach objects.
- Accuracy of measurement thanks to its contact probe.
  Its elaborate optical system allows for easy and accurate measurement of small, distant targets.

Benefits

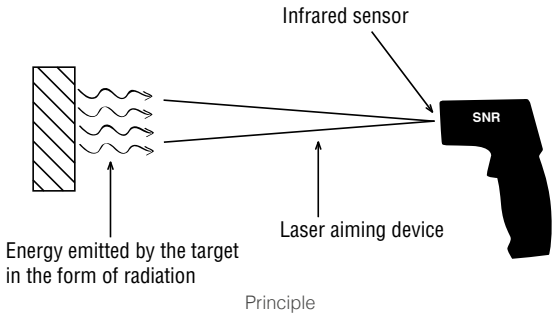
- Wide measuring range in infrared mode: -50 °C to +850 °C.
- High accuracy, achieved through:
  - laser sighting,
  - the excellent distance-to-target ratio of 30:1,
  - the adjustable emissivity between 0.1 and 1,
  - the type K thermocouple wire probe.
- Very fast measurement: response time less than 1 second.
- Internal memory that can store up to 20 measurements.
- Equipped with the following features:
  - high/low, visual and audible alarms, adjustable,
  - automatic shut-off that optimizes the lifespan,
  - maximum measurement, minimum, difference, average.
- Lightweight and ergonomic with its pistol shape.
- Easy to use, it can be easily set in °C or °F.
- Backlit display for easy reading.

Comes with:

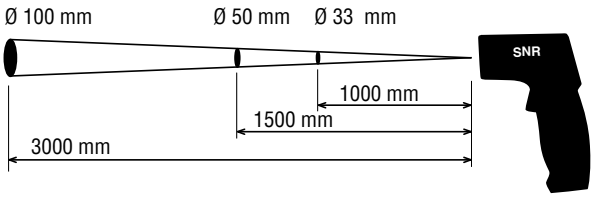
- Type K thermocouple probe (range: -50 °C to +440 °C, length: 1 m),
- Protective case – user manual.

Trade reference

Tool LaserTemp 301 / IR Thermometer



Principle



Distance / Target

TECHNICAL DATA

TECHNICAL DATA

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SNR Brand of NTN Group

Cold mount case

9

Reference	TOOL IFT SET 33 / Industry Fitting Tool Set
Description	Mounting Tool Kit
Application	Cold mounting of bearings: Ø bore: 10 to 50 mm Ø outside: 26 to 110 mm
Contents	33 Impact Sockets 3 Impactor Tubes 1 Anti-rebound mallet (weight 0.7 kg)
Material	Socket made of resistant material machined from the mass
Case size	430 x 320 x 100 mm
Kit weight, incl. case	4.8 kg

Mounting Paste B 500G / T 60G

11

Reference	LUB MOUNTING PASTE
Density	0,910
Color	Brown
Texture	Smooth
Nature of the thickener	Complex Aluminum
Consistance NLGI	1,5
Operating temperature range	-30 °C to +145 °C
Dropping point DIN ISO 2176	> 240 °C
Packaging	60 g tube – 500 g box

Adjustable hand wrenches

11

Reference	TOOL PS (size) / Pin Spanner	
Description	Articulated lug hand wrench	
Material	Chrome vanadium steel, forged, tempered Satin chrome finish	
Hardness Lug	40 HRC	
Usage	Hole nuts (e.g. precision: TB, TBR, TBP, TBPR, etc.)	
References	Clamping nut diameter (mm)	Lug diameter (mm)
TOOL PS 15-35	15-35	3
TOOL PS 35-50	35-50	4
TOOL PS 50-80	50-80	5
TOOL PS 80-120	80-120	6
TOOL PS 120-180	120-180	8

Reference	TOOL HS (size) / Hook Spanner	
Description	Slotted Articulating Hand Wrench	
Material	Chrome vanadium steel, forged, tempered Satin chrome finish	
Usage	Notched nuts (e.g.: KM, KML, ..., B, BR, BP...)	
References	Clamping nut diameter (mm)	
TOOL HS 35-50	35-50	
TOOL HS 50-80	50-80	
TOOL HS 80-120	80-120	
TOOL HS 120-180	120-180	

Precision nut / lug and slot wrench matching

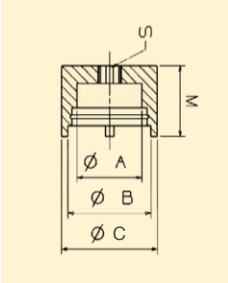
	Spanner 15-35 (mm)		Spanner 35-50 (mm)		Spanner 50-80 (mm)		Spanner 80-120 (mm)		Spanner 120-180 (mm)	
	Hook	Pin	Hook	Pin	Hook	Pin	Hook	Pin	Hook	Pin
B and TB nuts	B 20/1	B 20/1	B 25	TB 25	B 35	TB 35	B 60	TB 60	B 90	TB 90
	TB 90	B 20/1.5	B 30	TB 30	B 40	TB 40	B 65	TB 65	B 95	TB 95
	-	-	-	-	B 45	TB 45	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	-	-
	-	-	-	-	-	-	B 90	TB 90	-	-
LP and TBP 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	T BP 50	-	-	BP 95	TBP 95
	-	-	-	-	-	-	-	-	BP 100	TBP 100
BR and TBR 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	-	-
	-	-	-	-	-	-	BR 90	TBR 90	-	-
BPR and TBPR 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 nut / slot wrench matching

Wrench 15-35 (mm)	Wrench 35-50 (mm)	Wrench 50-80 (mm)	Wrench 80-120 (mm)	Wrench 120-180 (mm)
TOOL HS 15-35	TOOL HS 35-50	TOOL HS 50-80	TOOL HS 80-120	TOOL HS 120-180
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
-	-	-	-	KML 27
-	-	-	-	KML 28
-	-	-	-	KML 28
-	-	-	-	

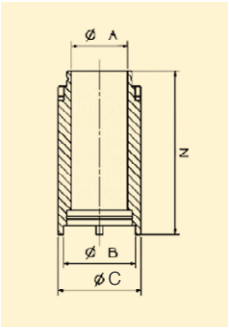
KM Locknut Socket

KM	ØA	ØB	ØC	M	S	KN	By N.m	
1	12 mm	18 mm	22 mm	30 mm	Hex16	11,8	8	0,10 kg
2	12 mm	21 mm	25 mm	35 mm	Hex20	-	10	0,10 kg
3	18 mm	25 mm	28 mm	40 mm	1/2"	-	12	0,10 kg
4	18 mm	28,5 mm	34 mm	40 mm	1/2"	24,0	20	0,18 kg
5	24 mm	34,5 mm	40 mm	40 mm	1/2"	31,5	25	0,22 kg
6	31 mm	42 mm	47 mm	40 mm	1/2"	36,5	32	0,29 kg
7	36 mm	49 mm	54 mm	40 mm	1/2"	50,0	40	0,37 kg
8	42 mm	54 mm	60 mm	40 mm	1/2"	62,0	55	0,43 kg
9	47 mm	58 mm	67 mm	40 mm	1/2"	78,0	65	0,54 kg
10	52 mm	65 mm	72 mm	50 mm	1/2"	91,5	85	0,60 kg
11	57 mm	70,5 mm	77 mm	50 mm	3/4"	93,0	95	0,81 kg
12	62 mm	76 mm	82 mm	50 mm	3/4"	95,0	100	0,88 kg
13	67 mm	80 mm	87 mm	50 mm	3/4"	108,0	120	1,25 kg
14	74 mm	86 mm	94 mm	50 mm	3/4"	118,0	130	1,45 kg
15	80 mm	89 mm	102 mm	80 mm	1"	134,0	150	2,50 kg
16	87 mm	98 mm	109 mm	80 mm	1"	179,0	160	2,75 kg
17	92 mm	104 mm	114 mm	80 mm	1"	190,0	190	3,00 kg
18	102 mm	114 mm	126 mm	80 mm	1"	216,0	200	3,50 kg
19	107 mm	119 mm	129 mm	80 mm	1"	236,0	220	3,75 kg
20	112 mm	121 mm	136 mm	80 mm	1"	254,0	250	4,20 kg



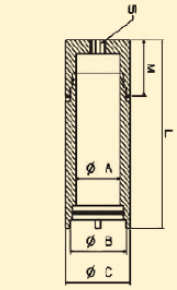
KM Locknut Extension

KM	ØA	ØB	ØC	N	
4	18 mm	28,5 mm	34 mm	100	0,44 kg
5	24 mm	35 mm	40 mm	100	0,53 kg
6	31 mm	42 mm	47 mm	100	0,65 kg
7	36 mm	49 mm	56 mm	100	0,93 kg
8	42 mm	54 mm	60 mm	100	1,06 kg
9	47 mm	58 mm	67 mm	110	1,32 kg
10	52 mm	65 mm	72 mm	110	1,60 kg
11	57 mm	70,5 mm	77 mm	110	1,70 kg
12	62 mm	76 mm	82 mm	110	1,78 kg
13	67 mm	80 mm	87 mm	110	1,95 kg
14	74 mm	86 mm	94 mm	110	2,15 kg



Complete KM Locknut Socket

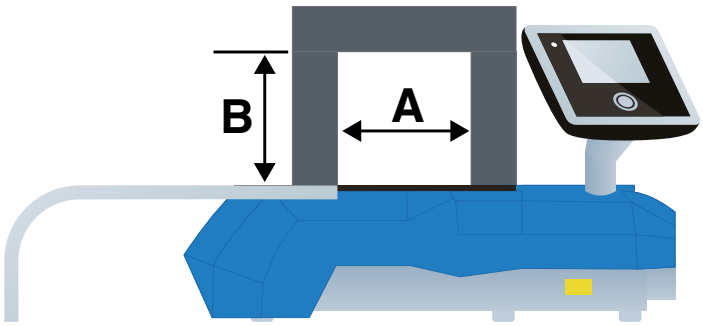
KM	ØA	ØB	ØC	L	M	N	S	ØKM	
4	18 mm	28,5 mm	34 mm	124	40 mm	100	1/2"	32	0,62 kg
5	24 mm	35 mm	40 mm	124	40 mm	100	1/2"	38	0,75 kg
6	31 mm	42 mm	47 mm	134	40 mm	100	1/2"	45	0,85 kg
7	36 mm	49 mm	56 mm	134	40 mm	100	1/2"	52	1,30 kg
8	42 mm	54 mm	60 mm	134	40 mm	100	1/2"	58	1,49 kg
9	47 mm	58 mm	67 mm	144	40 mm	110	1/2"	65	1,75 kg
10	52 mm	65 mm	72 mm	144	40 mm	110	1/2"	70	2,10 kg
11	57 mm	70,5 mm	77 mm	144	50 mm	110	3/4"	75	2,50 kg
12	62 mm	76 mm	82 mm	144	50 mm	110	3/4"	80	2,70 kg
13	67 mm	80 mm	87 mm	153	50 mm	120	3/4"	85	3,30 kg
14	74 mm	86 mm	94 mm	153	50 mm	120	3/4"	92	3,60 kg



Heating equipment - tool SmartTEMP (size) / induction heater

Technical data	SmartTEMP S	SmartTEMP M	SmartTEMP L	SmartTEMP XL / XL Pivot
ELECTRICITY				
Maximum Power Consumption	3 kVA	3,7 kVA	8 kVA	12,8 kVA
Maximum voltage/current	230 V / 13 A	230 V / 16 A	400 V / 20 A	400 V / 32 A
Frequency	50 Hz	50 Hz	50 Hz	50 Hz
Other voltages on request	110 V - 240 V	110 V - 240 V	480 V - 575 V	480 V - 575 V
Other frequency on request	60 Hz	60 Hz	60 Hz	60 Hz
CONTROL				
Temperature control	+40 °C to +240 °C (+400 °C opt.)	+40 °C to +240 °C (+400 °C opt.)	+40 °C to +240 °C (+400 °C opt.)	+40 °C to +240 °C (+400 °C opt.)
Setting heating time **Maximum temperature** **Δ Temperature**	0-99 hours +240 °C 20-50 °C	0-99 hours +240 °C 20-50 °C	0-99 hours +240 °C 20-50 °C	0-99 hours +240 °C 20-50 °C
Temperature Probe **Reference: Tool**	1 (2 optional) TEMP PROBE 400*	1 (2 optional) TEMP PROBE 1000*	2 TEMP PROBE 1000*	2 TEMP PROBE 1000*
Heating functions **- Timer - Ramp** **- Temp. with 1 probe - Temp. with 2 probes**	•	•	•	•
Precision Temperature Control	+/-2 °C	+/-2 °C	+/-2 °C	+/-2 °C
End-of-cycle temperature maintenance	•	•	•	•
Demagnetization	Automatic	Automatic	Automatic	Automatic
Residual Magnetism	< 2 A / cm	< 2 A / cm	< 2 A / cm	< 2 A / cm
Audible signal	•	•	•	•
DEVICE DESIGN				
Dimensions (L x W x H) (mm)	450 x 210 x 275	540 x 275 x 365	695 x 330 x 475	850 x 410 x 1050
Pivot Spacing A x B (1)	120 x 145 mm	180 x 180 mm	210 x 215 mm	300 x 324 mm / 330 x 300 mm (XL Pivot)
Weight (without yoke)	21 kg	40 kg	85 kg	157 kg
Swivel arm	not	•	•	• (XL Pivot)
Trolley (optional)	not	not	not	•
ROOMS TO BE HEATED				
Maximum Mass	50 kg	100 kg	200 kg	400 kg
Minimum bore diameter with bar min. size	10 mm	10 mm	20 mm	30 mm
Maximum Outside Diameter	400 mm	500 mm	600 mm	1000 mm
Maximum width	140 mm	180 mm	210 mm	315 mm / 320 mm (XL Pivot)

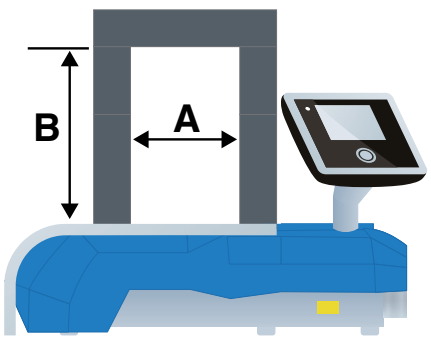
* Probe wire length (e.g. 400:400 mm)



Heating equipment - tool SmartTEMP (size) / induction heater

Technical data	SmartTEMP XXL	SmartTEMP XXXL
ELECTRICITY		
Maximum Power Consumption	25,2 kVA	40 kVA
Maximum voltage/current	400 V / 63 A	400 V / 100 A
Frequency	50 Hz	50 Hz
Other voltages on request	480 V - 575 V	480 V - 575 V
Other frequency on request	60 Hz	60 Hz
CONTROL		
Temperature control	+40 °C to +240 °C (+400 °C opt.)	+40 °C to +240 °C (+400 °C opt.)
Setting heating time **Maximum temperature** **Δ Temperature**	0-99 hours +240 °C 20-50 °C	0-99 hours +240 °C 20-50 °C
Temperature Probe **Reference: Tool**	2 TEMP PROBE 1000*	2 TEMP PROBE 1500*
Heating functions **- Timer - Ramp** **- Temp. with 1 probe - Temp. with 2 probes**	•	•
Precision Temperature Control	+/-2 °C	+/-2 °C
End-of-cycle temperature maintenance	•	•
Demagnetization	Automatic	Automatic
Residual Magnetism	< 2 A / cm	< 2 A / cm
Audible signal	•	•
DEVICE DESIGN		
Dimensions (L x l x h) (mm)	1080 x 500 x 1350	1500 x 800 x 1600
Pivot Spacing A x B (1)	435 x 495 mm	685 x 705 mm
Weight (without yoke)	280 kg	650 kg
Swivel arm	non	non
Trolley (optional)	•	•
ROOMS TO BE HEATED		
Maximum Mass	800 kg	1600 kg
Minimum bore diameter with bar min. size	40 mm	85 mm
Maximum Outside Diameter	1500 mm	2000 mm
Maximum width	485 mm	695 mm

* Probe wire length (e.g. 400:400 mm)



Optional bars and equipment

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Technical data	SmartTEMP S	SmartTEMP M	SmartTEMP L	SmartTEMP XL / XL Pivot	SmartTEMP XXL	SmartTEMP XXXL
DIMENSIONS (MM) STANDARD (•) AND OPTIONAL (◦) BARS SWIVEL						
Ø bore workpiece to be heated	**Part Numbers: TOOL ST/ (Device Size) YOKE (Bore), e.g. TOOL ST/S YOKE 10**					
10 mm	◦ ST/S YOKE 10 7x7x200	◦ ST/M YOKE 10 7x7x280				
15 mm	◦ ST/S YOKE 15 10x10x200	◦ ST/M YOKE 15 10x10x280				
20 mm	◦ ST/S YOKE 20 14x14x200	◦ ST/M YOKE 20 14x14x280	◦ ST/L YOKE 20 14x14x350			
30 mm			◦ ST/L YOKE 30 20x20x350	◦ ST/XL (/XL-P) YOKE 30 £20x20x490		
35 mm	◦ ST/S YOKE 35 25x24x200	◦ ST/M YOKE 35 25x24x280				
40 mm						
45 mm	◦ ST/S YOKE 45 30x26x200	◦ ST/M YOKE 45 30x26x280	◦ ST/L YOKE 45 30x26x350	◦ ST/XL (/XL-P) YOKE 45 30x26x490	◦ ST/XXL YOKE 45 30x26x750	
60 mm	• ST/S YOKE 60 40x38x200	◦ ST/M YOKE 60 40x38x280	◦ ST/L YOKE 60 40x38x350	◦ ST/XL (XL/P) YOKE 60 40x38x490	◦ ST/XXL YOKE 60 40x38x750	
70 mm		• ST/M YOKE 70 50x48x280	◦ ST/L YOKE 70 50x48x350	◦ ST/XL (/XL-P) YOKE 70 50x48x490	◦ ST/XXL YOKE 70 50x48x750	
85 mm			◦ ST/L YOKE 85 60x60x350	◦ ST/XL (/XL-P) YOKE 85 60x60x490	◦ ST/XXL YOKE 85 60x60x750	◦ ST/XXXL YOKE 85 60x60x1080
100 mm			• ST/L YOKE 100 70x70x350	◦ ST/XL (/XL-P) YOKE 100 70x70x490	◦ ST/XXL YOKE 100 70x70x750	
115 mm				• ST/XL (/XL-P) YOKE 115 80x80x490	◦ ST/XXL YOKE 115 80x80x750	◦ ST/XXXL YOKE 115 80x80x1080
130 mm					◦ ST/XXL YOKE 130 90x90x750	
145 mm					• ST/XXL YOKE 145 100x100x750	◦ ST/XXXL YOKE 145 100x100x1080
215 mm						• ST/XXXL YOKE 215 150x150x1080
OPTIONAL EXTENSION BARS						
Dimensions (L x W x H) (mm	**Part Numbers: TOOL ST/ (Device Size) YOKE EXTENSION (Extension Height)**					
40 x 50 x 75	ST/S EXTENSION YOKE 75					
50 x 62 x 120		ST/M EXTENSION YOKE 120				
70 x 82 x 150			ST/L EXTENSION YOKE 150			
80 x 80 x 150				ST/XL-P EXTENSION YOKE 150		
80 x 80 x 200				ST/XL-P EXTENSION YOKE 200		
OPTIONAL EQUIPMENT						
Transport case	ST/S CARRYING CASE					
Trolley				ST/XL (/XL-P) TROLLEY		

Heating equipment – Middle Frequency Heater G1

21





Type	Middle Frequency Heater G1 - 10kW	Middle Frequency Heater G1 - 22kW	Middle Frequency Heater G1 - 44kW
Forced air cooling	Yes	Yes	Yes
Power	10kW	22kW	44kW
Frequency Range	10-25 kHz	10-25 kHz	10-25 kHz
Voltage/Amperage	3 ~ 400V /16 A 3 ~ 450 V/14 A 3 ~ 500 V/12 A 3 ~ 600 V/10 A	3 ~ 400 V/32 A 3 ~ 450 V/30 A 3 ~ 500 V/28 A 3 ~ 600 V/23 A	3 ~ 400 V/63 A 3 ~ 450 V/59 A 3 ~ 500 V/55 A 3 ~ 600 V/45 A
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Temperature measurement	For type K thermocouple	For type K thermocouple	For type K thermocouple
Max. temperature °C	300 °C	300 °C	300 °C
Accuracy	± 3,5 °C	± 3,5 °C	± 3,5 °C
Inducer recognition	Yes	Yes	Yes
Temperature probe (2 pieces)	Yes, for up to 300 °C.	Yes, for up to 300 °C.	Yes, for up to 300 °C.
Additional Thermocouple Input	Yes	Yes	Yes
Generator dimensions L x W x H	600 x 300 x 600 mm	600 x 300 x 600 mm	600 x 650 x 580 mm
Generator Weight	46 kg	46 kg	78 kg
Order			
Screen Dimensions	3,5"	3,5"	3,5"
Heating curve on screen	No	No	No
Delta T (ΔT)	Yes	Yes	Yes
Power set point	By touch screen	By touch screen	By touch screen
Temperature set point	By touch screen	By touch screen	By touch screen
Temperature curve set point	No	No	No
Timer set point	By touch screen	By touch screen	By touch screen
Selecting the operating mode	By touch screen	By touch screen	By touch screen
Digital temperature reading	Touchscreen set point and current value	Touchscreen set point and current value	Touchscreen set point and current value
Digital Reading Time	Touchscreen set point and current value	Touchscreen set point and current value	Touchscreen set point and current value
Power Digital Readout	Current value per touchscreen	Current value per touchscreen	Current value per touchscreen
Digital frequency reading	Current value per touchscreen	Current value per touchscreen	Current value per touchscreen
USB connection	No	No	No
Network connection	No	No	No
Heating log	No	No	No
Signalling by			
Installation in the operational state	Flashing green light	Flashing green light	Flashing green light
Error message	Solid red light / beep	Solid red light / beep	Solid red light / beep
End of heating cycle	Solid red light / beep	Continuous green indicator / Audible signal	Solid red light / beep
Signage Stand	Optional	Optional	Optional

Subject to technical changes.

Heating equipment – Middle Frequency Heater G2






Type	Middle Frequency Heater G2 - 3.5kW	Middle Frequency Heater G2 - 10kW	Middle Frequency Heater G2 - 22kW	Middle Frequency Heater G2 - 44kW
Forced air cooling	Yes	Yes	Yes	Yes
Power	3,0kW* / 3,5kW**	10kW	22kW	44kW
Frequency Range	10-50 kHZ	10-25 kHz	10-25 kHz	10-25 kHz
Voltage/Amperage	230V / 13A* 230V / 16A**	3 ~ 400 V / 16 A 3 ~ 450 V / 14 A 3 ~ 500 V / 12 A 3 ~ 600 V / 10 A	3 ~ 400 V / 32 A 3 ~ 450 V / 30 A 3 ~ 500 V / 28 A 3 ~ 600 V / 23 A	3 ~ 400 V / 63 A 3 ~ 450 V / 59 A 3 ~ 500 V / 55 A 3 ~ 600 V / 45 A
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Temperature measurement	For type K thermocouple	For type K thermocouple	For type K thermocouple	For type K thermocouple
Max. temperature °C	240 °C	300 °C	300 °C	300 °C
Accuracy	± 3,5 °C	± 3,5 °C	± 3,5 °C	± 3,5 °C
Inducer recognition	No	Yes	Yes	Yes
Temperature probe (2 pieces)	Yes, for up to 300 °C.	Yes, for up to 300 °C.	Yes, for up to 300 °C.	Yes, for up to 300 °C.
Additional Thermocouple Input	Yes	Yes	Yes	Yes
Generator dimensions L x W x H	320 x 350 x 150 mm	600 x 300 x 600 mm	600 x 300 x 600 mm	600 x 650 x 580 mm
Generator Weight	7,85 kg	46 kg	46 kg	78 kg
Order				
Screen Dimensions	4,3”	7”	7”	7”
Heating curve on screen	Yes	Yes	Yes	Yes
Delta T (ΔT)	Yes	Yes	Yes	Yes
Power set point	No	By touch screen	By touch screen	By touch screen
Temperature set point	By touch screen	By touch screen	By touch screen	By touch screen
Temperature curve set point	By touch screen	By touch screen	By touch screen	By touch screen
Timer set point	By touch screen	By touch screen	By touch screen	By touch screen
Selecting the operating mode	By touch screen	By touch screen	By touch screen	By touch screen
Digital temperature reading	Touchscreen set point and current value	Touchscreen set point and current value	Touchscreen set point and current value	Touchscreen set point and current value
Digital Reading Time	Touchscreen set point and current value	Touchscreen set point and current value	Touchscreen set point and current value	Touchscreen set point and current value
Power Digital Readout	No	Current value per touchscreen	Current value per touchscreen	Current value per touchscreen
Digital frequency reading	No	Current value per touchscreen	Current value per touchscreen	Current value per touchscreen
USB connection	Yes	Yes	Yes	Yes
Network connection	No	Yes	Yes	Yes
Heating log	Yes	Yes	Yes	Yes
Signalling by				
Installation in the operational state	LED on the front	By touch screen	By touch screen	By touch screen
Error message	Audible signal	Audible signal	Audible signal	Audible signal
End of heating cycle	Audible signal	Audible signal	Audible signal	Audible signal
Signage Stand		Optional	Optional	Optional

*UKCA Model Specifications
**CE Model Specifications

Heaters – Middle Frequency Heater - Flexible Inductor Accessories

22

Type	Length (m)	Max. temperature	Cable diameter Ø (mm)	Min. winding diameter(mm)
3.5 kW	5, 7,5, 10	180 °C	12	approx. 90
10 kW*	15, 20, 25, 30	180 °C	12	approx. 75
10 kW	15, 20, 25, 30, 35	180 °C	15	approx. 100
10 kW	15, 20, 25, 30	300 °C	20	approx. 120
22 kW*	15, 20, 25, 30	180 °C	12	approx. 75
22 kW	15, 20, 25, 30, 35	180 °C	15	approx. 100
22 kW	15, 20, 25, 30	300 °C	20	approx. 120
44 kW	15, 20, 25, 30, 35	180 °C	19	approx. 140
44 kW	15, 20, 25, 30	300 °C	28	approx. 220

*Short-term use

Bore Extractor Kits (Internal Grip)

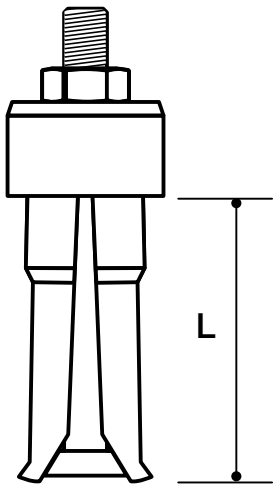
Reference	TOOL BP Set (size) / Bore Puller	
Contents	BP Set 5-44 7 Clamps 1 modular counter support 1 inertial mass	BP Set 45-100 3 Clamps 1 modular counter support
Bore Ø (mm)	5 to 44	45 to 100
Cabinet Dimension (mm)	405 x 345 x 100	490 x 500 x 130
Weight of the box (kg)	5	12
Capacity (5 tonnes)	50 kN	50 kN

Description of the components of the BP Set 5-44

Extractor	For bore bearings		Threading	Length (L - mm)	Weight (g)
	Min.	Max.			
BP 5-7	5	7	M8	27	60
BP 8-11	8	11	M8	40	40
BP 12-15	12	15	M8	53	120
BP 16-19	16	19	M8	53	140
BP 20-26	20	26	M8	55	260
BP 28-34	28	34	M8	60	320
BP 35-44	35	44	M8	78	410

Description of the components of the BP 45-100 enclosure

Extractor	For bore bearings		Threading	Length (L - mm)	Weight (g)
	Min.	Max.			
BP 45-58	45	58	M10	91	860
BP 56-75	56	75	M10	115	2040
BP 74-100	74	100	M10	125	3140



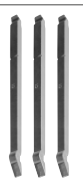
Deep groove ball bearing puller kit

25

Reference	**TOOL BBPS 10-100 / Ball bearing puller set**
Contents	3 shafts, 28 claws, 22 metal rings, 3 O-rings, 1 crank, 1 centering pad
Bore Ø	For the extraction of bearings from 10 to 100 mm
Box size	490 x 500 x 130 mm
Weight of the box	8,4 kg
Capacity	70 kN (7 tonnes)

Extractor	For bore bearings		Dimensions (mm)			Weight (g)
	Min.	Max.	A	C	L	
BBPSA	10	25	A1/A2 - 140 A3 - 160	5 6	A1/A2 - 160 A3 - 180	260 - 420
BBPSB	20	60	170	8	196	550 - 820
BBPSC	17	100	200	10	237	1260 - 1800





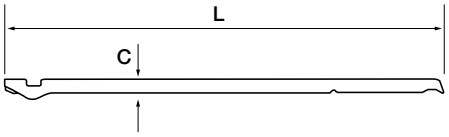


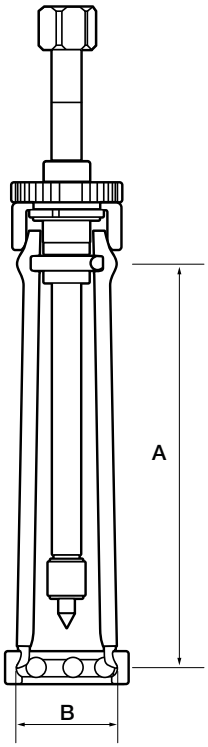
O-ring



BBPS A	A1(1)	28 x 3.00	6000* 6001* 6002* 6003*	6200*			16002* 16003* 16100* 16101*
	A2(1)		6004 6005 6006	6201* 6202 6203	6300		
	A3(1)			6204 6205	6301 6302 6303		62/22
BBPS B	B1(1)	50 x 3.00	6007* 6008* 6009* 6010*				16011*
	B2(1)		6011* 6012*	6206 6207	6304 6305 6306		62/28*
BBPS C	C1(1)	85 x 3.00	6014* 6015*	6208 6209 6210	6307	6403	63/28*
	C2(1)		6018* 6019* 6020*	6211* 6212 6213*	6308 6309 6310 6311	6404 6405 6406	

*Bearing does not require an extraction ring.
(1) - Our recommendations may change depending on the brand of bearing.

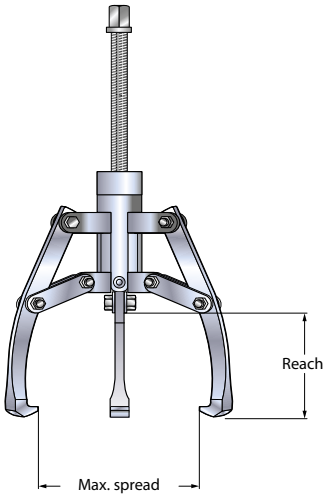


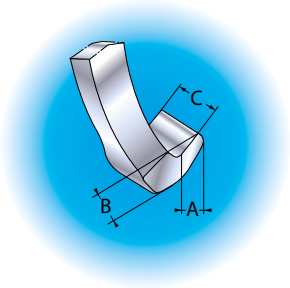


Self-centering manual pullers (combined with 2/3 claws)

26

Reference	TOOL SCMP 2/3-(maximum spacing) / Self-Center Mech Puller							
Type	Capacity (tonnes)	Max. reach (mm)	Gap		Gauge Claw Dimension			Weight (kg)
			Min. (mm)	Max. (mm)	A (mm)	B (mm)	C (mm)	
SCMP 2/3-120	2	80	45	120	8	6	15	1,6
SCMP 2/3-180	3	120	95	180	6	7	15	2,3
SCMP 2/3-270	5	160	60	270	11	10	25	4,3

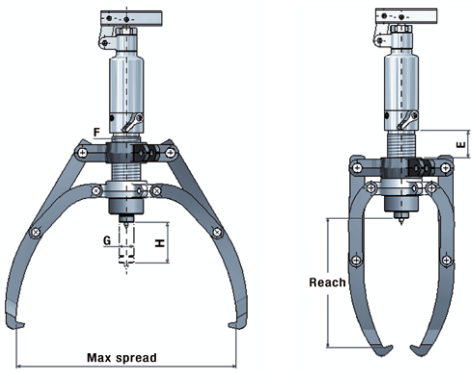


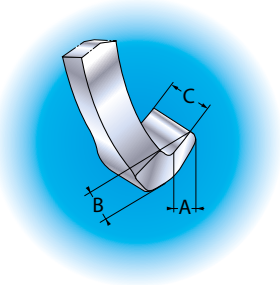


Self-centering hydraulic pullers (combined with 2 or 3 claws)

27

Reference	TOOL SCHP (Capacity) Tonnes / Self-Center Hyd Puller											
Type	Capacity (tonnes)	Max. reach (mm)	Cylinder stroke H (mm)	Gap (mm)		Dimensions (mm)						Weight (kg)
				Min.	Max.	A	B	C	E	F	G	
SCHP 4 Tonnes	4	190	60	83	315	13	10	22	42	22	40	8
SCHP 12 Tonnes	12	300	85	120	515	15	16.5	29	60	28	70	15
SCHP 20 Tonnes	20	325	111	160	520	18	20	33	80	40	62	26
SCHP 30 Tonnes	30	415	111	190	620	18	20	38	98	50	85	36





Hydraulic Puller Accessory Case

28

Reference	TOOL AS-SCHP (Capacity Extractor hydraulique) T / acc set hyd puller		
Contents	1 pull jib crane, 2 tie rods, 1 stripper, 2 blades with 2 threaded rods		
Reference	Max. reach (mm)	Gap Min./Max. (mm)	Weight including packaging (kg)
AS-SCHP 4 T	250	15 - 110	7
AS-SCHP 12 T	380	45 - 290	22

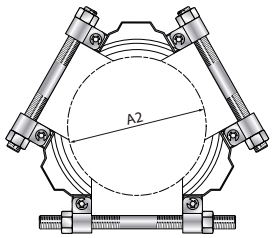


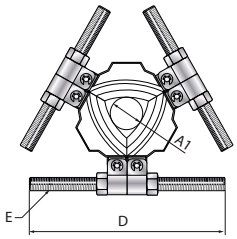
3-blade extraction plates

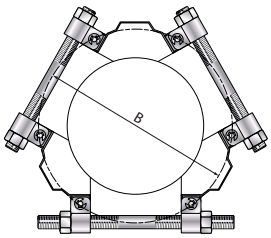
29

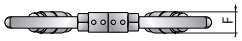
Reference	TOOL BP3S 50-210 / Tri-Section Back Puller
Material	Forged Alloy Steel

Dimensions (mm)							
Shaft Diameter Min. (A1) / Max. (A2) (mm)		Capacity (tonne)	Maximum spacing. B (mm)	Length D (mm)	Threading E	Thickness F (mm)	Weight (kg)
26	160	6	216	240	5/8" – 11 UNC	8	3,5
50	210	8	280	285	3/4" – 16 UNF	10	5,5
90	340	20	460	430	7/8'' – 16 UNF	14	18
140	495	30	660	600	1'' – 14 UNF	20	45









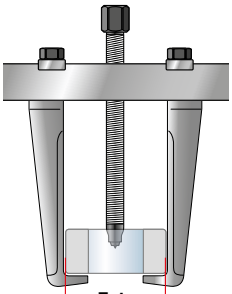
Extractor - Stripper Kit

30

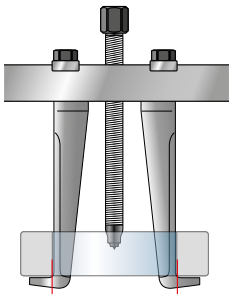
Reference	**TOOL BPES 10-105**
Contents	1 modular deck, 1 bar stripper, 2 removable extraction claws, 2 extensions, 1 tip protector, 2 coupling nuts
Box size	490 x 500 x 130 mm
Weight of the box	11 kg
Capacity	100 kN (10 tonnes)

Description of the components of the BPES 10-105 enclosure

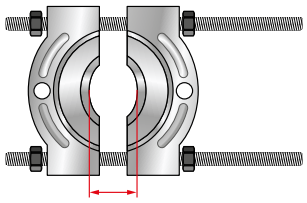
	Shaft Ø (mm)	Bore Ø (mm)	Exterior Ø (mm)	Max. reach (mm)
Peeler	10-105	-	175 (max.)	150
Internal Plug Extractor	-	159-222	-	160
External Plug Extractor	-	-	30-155	160



Min. 30 - Max. 155
Reach max. : 160mm



Min. 159 - Max. 222
Reach max. : 160mm

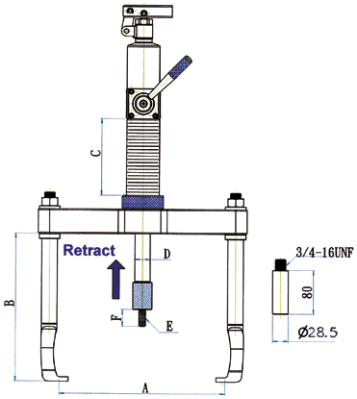


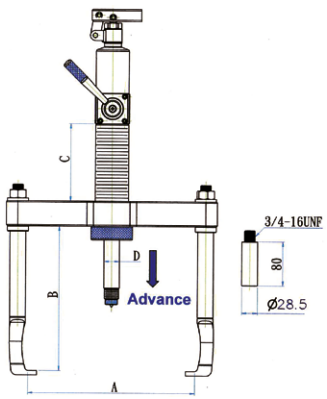
Min. 10 - Max. 105
Reach max. : 150mm

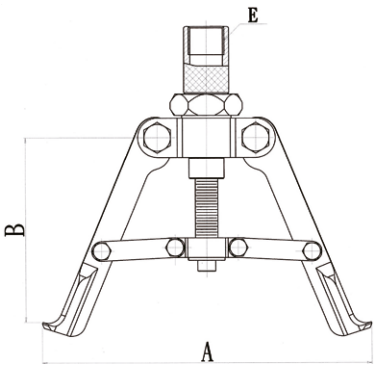
Hydraulic puller for assembly and disassembly

31

Reference	TOOL PUSH/PULLER 8/12 Tonnes									
Contents	1 double-acting hydraulic cylinder, 3 claws, 3 extensions, 1 puller per internal socket									
Type	Capacity (tonnes)	Range (max.)	Gauge - A		Dimensions (mm)					Weight (kg)
			Min.	Max.	B	C	D	E	F	
Push	8	270	44	280	270	140	28	M12-P1.75	30	19,5
External Socket Extraction	12	260	85	300	260	140	28	-	-	
Internal Socket Extraction	8	130	110	245	130-150	-	-	1"-12UNF	-	





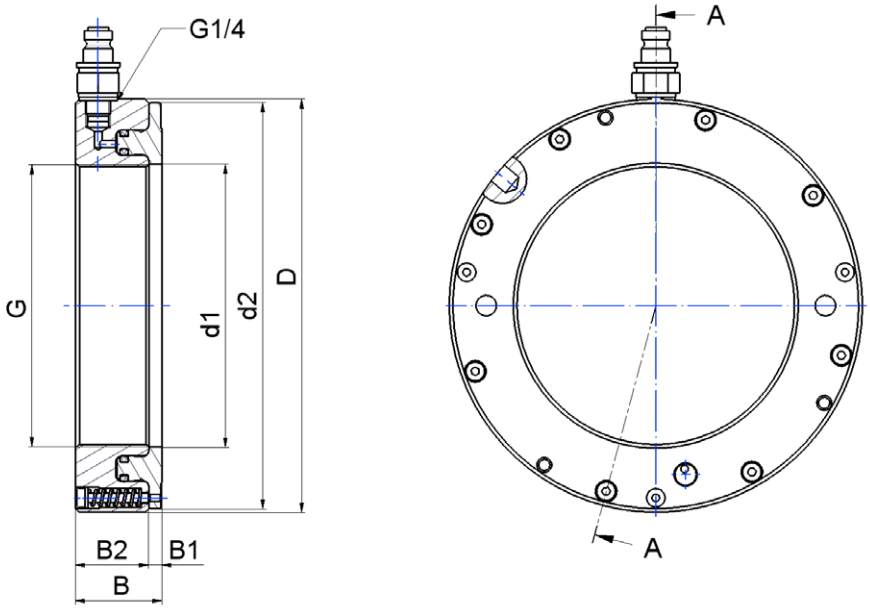


Hydraulic nuts (equipped with automatic piston return device)

34

References	**TOOL HMV (size) EBF / Hydraulic Nut (metric)** **TOOL HMVC (size) EBF / Hydraulic Nut (inches)**
MATERIALS	
HMV 10 EBF – HMV 40 EBF	Fine metric thread according to ISO 965-1998 Class 6H tolerance
HMV 41 EBF – HMV 200 EBF	Trapezoidal thread according to ISO 2901-1993 Class 7H tolerance
Nuts **Sizes ≤ HMV 54 EBF** **Sizes ≤ HMV 92 EBF** **Sizes ≤ HMV 200 EBF**	Recommended pump references:: Pump 700b-0,3L / Pump 700b-0,9L Pump 700b-0,9L Consult us
COMPONENT NUMBER - HYDRAULIC NUTS	
O-ring set	Reference of the nut followed by / Piston Seals Example: TOOL HMV 15 / Piston Seals
Ball Shutter	1500 bar Reference: TOOL HMV BALL PLUG 1/4
Quick coupling, male part	1500 bar, male part Reference: TOOL HMV NIPPLE 1/4 Dimensions: see page 50

A-A (1 : 2)



Dimensions (mm) and mass (kg) of hydraulic nuts (metric)

Size	Threading	Diameter Outer (mm)	Width Diameter (mm)	Piston Diameter (mm)	Permissible stroke of the piston (mm)	Flange width (mm)	Body width (mm)	Diameter (mm)	Surface of the piston (mm2)	Weight (kg)
HMV ... EBF	G	D	B	max. d2		B1	B2	d1		
10	M50x1,5	114	43	110	5	5	38	50,5	2850	2,9
11	M55x2	120	43	116	5	5	38	55,5	3050	3
12	M60x2	125	43	121	5	5	38	60,5	3250	3
13	M65x2	130	43	126	5	5	38	65,5	3500	3,2
14	M70x2	135	43	131	5	5	38	70,5	3650	3,4
15	M75x2	140	43	136	5	5	38	75,5	3850	3,6
16	M80x2	146	43	142	5	5	38	80,5	4150	3,9
17	M85x2	150	43	146	5	5	38	85,5	4300	4
18	M90x2	156	43	152	5	5	38	90,5	4850	4,2
19	M95x2	162	43	158	5	5	38	95,5	5050	4,5
20	M100x2	166	44	162	5	6	38	100,5	5100	4,6
21	M105x2	172	44	168	5	6	38	105,5	5200	4,9
22	M110x2	178	44	174	5	6	38	110,5	5400	5,2
23	M115x2	182	44	178	5	6	38	115,5	5800	5,2
24	M120x2	188	44	184	5	6	38	120,5	5950	5,5
25	M125x2	192	44	188	5	6	38	125,5	6350	5,6
26	M130x2	198	44	194	5	6	38	130,5	6450	5,9
27	M135x2	204	44	200	5	6	38	135,5	6900	6,1
28	M140x2	208	45	204	5	7	38	140,5	7250	6,2
29	M145x2	214	46	210	5	7	39	145,5	7400	6,7
30	M150x2	220	46	216	5	7	39	150,5	7600	6,8
31	M155x3	226	46	222	5	7	39	155,5	8450	7,2
32	M160x3	232	47	228	6	7	40	160,5	8650	7,8
33	M165x3	238	47	234	6	7	40	165,5	8750	8,1
34	M170x3	244	48	240	6	7	41	170,5	9800	8,6
36	M180x3	256	48	252	6	7	41	180,5	11250	9,4
38	M190x3	270	50	266	7	8	42	191	11800	10,7
40	M200x3	282	51	278	8	8	43	201	12100	11,7
41	Tr205x4	288	51	284	8	8	43	207	13050	12,2
42	Tr210x4	294	52	290	9	8	44	212	13400	12,7
43	Tr215x4	300	52	296	9	8	44	217	14050	13,2
44	Tr220x4	306	52	302	9	8	44	222	14800	13,7
45	Tr225x4	312	53	308	9	8	45	227	15150	14,7
46	Tr230x4	318	53	314	9	8	45	232	15450	14,7
47	Tr235x4	326	54	322	10	8	46	237	16600	16,2
48	Tr240x4	330	55	326	10	9	46	242	17250	16,2
50	Tr250x4	342	55	338	10	9	46	252	17550	17,7
52	Tr260x4	356	56	352	11	9	47	262	19150	19,2
54	Tr270x4	368	57	364	12	9	48	272	20350	20,7
56	Tr280x4	380	58	376	12	9	49	282	21050	22,2
58	Tr290x4	390	58	386	13	9	49	292	22350	22,7
60	Tr300x4	404	61	400	14	10	51	302	23600	25,7

SNR Brand of NTN Group

Dimensions (mm) and mass (kg) of hydraulic nuts (metric)

Size	Threading	Diameter Outer (mm)	Width Diameter (mm)	Piston Diameter (mm)	Permissible stroke of the piston (mm)	Flange width (mm)	Body width (mm)	Diameter (mm)	Surface of the piston (mm2)	Weight (kg)
HMV ... EBF	G	D	B	max. d2		B1	B2	d1		
62	Tr310x5	416	62	412	14	10	52	312	24850	27,2
64	Tr320x5	428	63	424	14	10	53	322	26250	29,7
66	Tr330x5	438	63	434	14	10	53	332	27500	30,2
68	Tr340x5	450	64	446	14	10	54	342	27750	31,7
69	Tr345x5	456	64	452	14	10	54	347	29350	32,7
70	Tr350x5	464	66	460	14	10	56	352	29800	35,2
72	Tr360x5	472	66	468	15	10	56	362	31250	35,7
73	Tr365x5	482	68	478	15	11	57	367	31600	38,7
74	Tr370x5	486	68	482	16	11	57	372	33300	39,2
76	Tr380x5	498	69	494	16	11	58	382	33500	40,7
77	Tr385x5	504	69	500	16	11	58	387	34050	41,2
80	Tr400x5	522	71	518	17	11	60	402	36600	45,7
82	Tr410x5	534	72	530	17	11	61	412	38200	48,2
84	Tr420x5	546	72	542	17	11	61	422	39900	50,2
86	Tr430x5	556	73	552	17	11	62	432	40750	52,7
88	Tr440x5	566	74	562	17	12	62	442	42400	54,2
90	Tr450x5	580	76	576	17	12	64	452	44100	57,7
92	Tr460x5	590	76	586	17	12	64	462	45100	60,2
94	Tr470x5	602	77	598	18	12	65	472	46800	62,2
96	Tr480x5	612	77	608	19	12	65	482	48600	63,2
98	Tr490x5	624	78	620	19	12	66	492	49500	66,2
100	Tr500x5	636	79	630	19	12	67	502	49950	70,2
102	Tr510x6	648	80	642	20	12	68	512	53300	74,2
104	Tr520x6	658	81	652	20	13	68	522	54250	75,2
106	Tr530x6	670	82	664	21	13	69	532	56150	79,2
108	Tr540x6	682	82	676	21	13	69	542	58200	81,2
110	Tr550x6	693	83	687	21	13	70	552	59150	84,2
112	Tr560x6	704	84	698	22	13	71	562	61150	88,2
114	Tr570x6	716	85	710	23	13	72	572	63200	91,2
116	Tr580x6	726	85	720	23	13	72	582	64200	94,2
120	Tr600x6	748	86	742	23	13	73	602	67400	100,2
126	Tr630x6	782	88	776	23	14	74	632	72850	110,2
130	Tr650x6	804	89	798	23	14	75	652	76100	115,2
134	Tr670x6	826	90	820	24	14	76	672	79450	120,2
138	Tr690x6	848	91	842	25	14	77	692	84200	127,2
142	Tr710x7	870	93	864	25	15	78	712	87700	135,2
150	Tr750x7	912	94	906	25	15	79	752	95050	146,2
160	Tr800x7	965	96	959	25	16	80	802	103800	161,2
170	Tr850x7	1020	99	1014	26	16	83	852	114450	181,2
180	Tr900x7	1075	103	1069	30	17	86	902	123950	205,2
190	Tr950x8	1126	103	1120	30	17	86	952	135450	218,2
200	Tr1000x8	1180	105	1174	34	17	88	1002	145700	239,2

Dimension (in.) and mass (lbs) of hydraulic nuts (inch sides)

Size	Threading	Number of threads per inch	Diameter Outer (in.)	Width Diameter (in.)	Piston Diameter (in.)	Permissible stroke of the piston (in.)	Flange width (in.)	Body width (in.)	Body width (in.)	Surface of the piston (in.2)	Weight (lb)
HMVC ... EBF	G		D	B	max. d2		B1	B2	d1		
10	1,967	18	4,5	1,7	4,4	0,20	0,20	1,5	2,0	4,4	6,3
11	2,157	18	4,7	1,7	4,6	0,20	0,20	1,5	2,2	4,8	6,8
12	2,360	18	4,9	1,7	4,8	0,20	0,20	1,5	2,4	5,1	7,2
13	2,548	18	5,1	1,7	5,0	0,20	0,20	1,5	2,6	5,4	7,6
14	2,751	18	5,3	1,7	5,2	0,20	0,20	1,5	2,8	5,8	7,9
15	2,933	12	5,5	1,7	5,4	0,20	0,20	1,5	3,0	6,1	8,3
16	3,137	12	5,7	1,7	5,6	0,20	0,20	1,5	3,2	6,4	8,7
17	3,340	12	5,9	1,7	5,8	0,20	0,20	1,5	3,4	6,7	9,1
18	3,527	12	6,1	1,7	6,0	0,20	0,20	1,5	3,6	6,8	9,5
19	3,730	12	6,4	1,7	6,2	0,20	0,20	1,5	3,8	7,5	10,0
20	3,918	12	6,5	1,7	6,4	0,20	0,24	1,5	4,0	7,5	10,4
21	4,122	12	6,8	1,7	6,6	0,20	0,24	1,5	4,2	8,1	11,0
22	4,325	12	7,0	1,7	6,9	0,20	0,24	1,5	4,4	8,8	11,6
24	4,716	12	7,4	1,7	7,2	0,20	0,24	1,5	4,8	9,4	12,4
26	5,106	12	7,8	1,7	7,6	0,20	0,24	1,5	5,2	10,1	13,2
28	5,497	12	8,2	1,8	8,0	0,20	0,28	1,5	5,6	10,7	14,3
30	5,888	12	8,7	1,8	8,5	0,20	0,28	1,5	6,0	12,3	16,0
32	6,284	8	9,1	1,9	9,0	0,24	0,28	1,6	6,4	14,0	18,0
34	6,659	8	9,6	1,9	9,4	0,24	0,28	1,6	6,8	15,8	19,9
36	7,066	8	10,1	1,9	9,9	0,24	0,28	1,6	7,2	17,7	21,5
38	7,472	8	10,6	2,0	10,5	0,28	0,31	1,7	7,6	18,5	24,9
40	7,847	8	11,1	2,0	10,9	0,31	0,31	1,7	8,0	19,4	27,3
44	8,628	8	12,0	2,0	11,9	0,31	0,31	1,7	8,8	21,1	31,9
46	9,125	8	12,5	2,1	12,4	0,31	0,31	1,8	9,2	21,9	34,7
48	9,442	6	13,0	2,2	12,8	0,35	0,35	1,8	9,6	25,4	37,8
52	10,192	6	14,0	2,2	13,9	0,35	0,35	1,9	10,4	27,2	44,4
56	11,004	6	15,0	2,3	14,8	0,39	0,35	1,9	11,2	30,7	51,4
60	11,785	6	16,1	2,4	16,0	0,39	0,39	2,0	12,0	37,0	64,4
64	12,562	6	16,9	2,5	16,8	0,43	0,39	2,1	12,8	39,2	70,8
68	13,339	5	17,7	2,5	17,6	0,47	0,39	2,1	13,5	41,4	75,7
72	14,170	5	18,9	2,6	18,7	0,51	0,39	2,2	14,3	51,8	89,7
76	14,957	5	19,7	2,7	19,5	0,55	0,43	2,3	15,1	54,4	98,2
80	15,745	5	20,9	2,8	20,7	0,55	0,43	2,4	15,9	54,8	116,4
84	16,532	5	21,9	2,8	21,7	0,55	0,43	2,4	16,7	60,8	127,7
88	17,319	5	22,6	2,9	22,5	0,55	0,43	2,4	17,5	63,4	134,1
92	18,107	5	23,6	3,0	23,5	0,59	0,47	2,5	18,3	71,3	150,6
96	18,894	5	24,4	3,0	24,3	0,63	0,47	2,6	19,1	78,2	158,0
100	19,682	5	25,6	3,1	25,4	0,63	0,47	2,6	19,8	85,7	181,6
106	20,867	4	26,8	3,2	26,6	0,67	0,51	2,7	21,0	85,89	199,4
112	22,048	4	28,1	3,3	28,0	0,71	0,51	2,8	22,2	87,0	221,1
120	23,623	4	29,9	3,4	29,8	0,75	0,51	2,9	23,8	101,0	249,2
126	24,804	4	31,1	3,5	30,9	0,75	0,55	2,9	25,0	105,6	266,4
134	26,379	4	33,1	3,5	32,9	0,87	0,55	3,0	26,5	125,3	307,8
142	27,961	3	34,6	3,7	34,5	0,91	0,59	3,1	28,1	132,1	337,1
150	29,536	3	36,2	3,7	36,1	0,91	0,59	3,1	29,7	138,9	358,1
160	31,504	3	38,2	3,8	38,0	0,98	0,63	3,1	31,7	147,4	387,1
170	33,473	3	40,6	3,9	40,4	1,02	0,63	3,3	33,6	179,2	448,0
180	35,441	3	43,3	4,1	43,1	1,10	0,67	3,4	35,6	238,6	545,6
190	37,410	3	45,3	4,1	45,1	1,10	0,67	3,4	37,6	250,8	575,3

Manual Hydraulic Pump Kits

35

References	TOOL PUMP Sets 700B (Tank capacity) L / Pump with accessories	
Contents	Pump Sets 700b-0,3 L	Pump Sets 700b-0,9 L
Ⓐ 1 2-stage hand pump	Pump 700 bar, with 0.3 litre tank	Pump 700 bar, with 0.9 litre tank
Ⓑ 1 Pressure Gauge Adapter	Male 1/4", female 3/8"	Male 3/8", female 3/8"
Ⓒ 1 pressure gauge	700 bar	700 bar
Ⓓ 1 flexible	700 bar, Length 1,5 m	700 bar, Length 3 m
Ⓔ 1 quick coupling coupling (female part)	G ¼ (1500 bar)	G ¼ (1500 bar)

Description of the components of the manual hydraulic pump kit

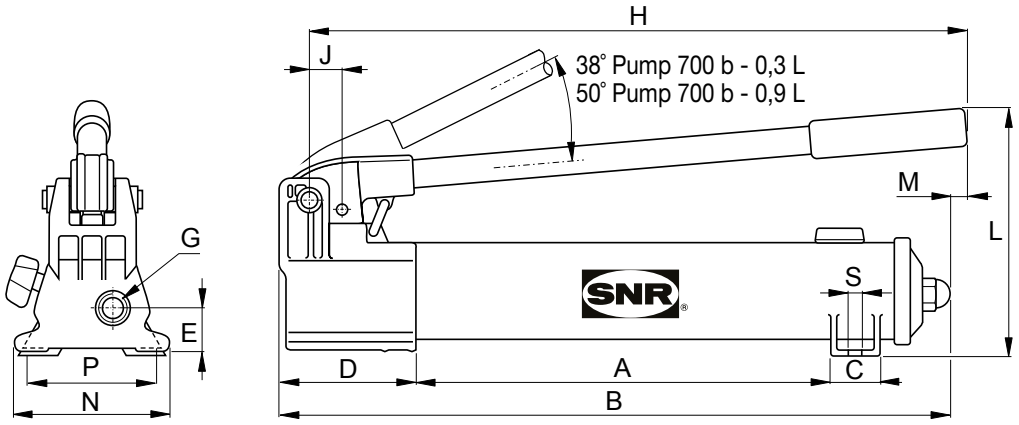
Ⓐ Ultra-light manual pump (two-stage)

35

Reference	TOOL PUMP 700b - (Tank capacity) L
Material	Tank made of glass-fibre-reinforced composite materials

Reference TOOL +	Pressure Rating 1st floor (bar)	Pressure Rating 2nd floor (bar)	Volume/travel 1st floor (cm^3)	Volume/course 2nd floor (cm^3)	Tank capacity (cm^3)	Weight (bare pump) (kg)
PUMP 700b-0,3L	13	700	3,6	0,9	320	2,4
PUMP 700b-0,9L	13	700	11,3	2,5	900	4,1

Reference TOOL +	Dimensions (mm)												
	A	B	C	D	E	G	H	J	L	M	N	P	S
PUMP 700b-0,3L	185	336	28	85	28	1/4" - 18 NPTF	319	19	143	-	95	80	7
PUMP 700b-0,9L	344	533	36	99	33	3/8" - 18 NPTF	522	30	177	16	120	-	-



DIMENSIONS TOOL PUMP 700B

Ⓑ Pressure gauge adapter depending on pump

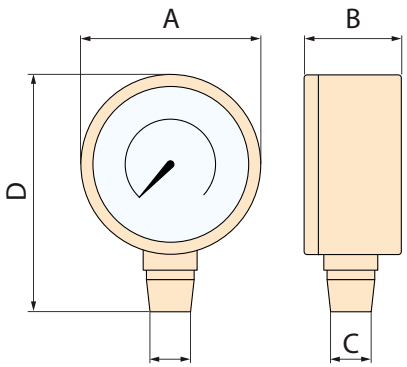
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Reference	TOOL gauge adaptor (Tank capacity) L		
Reference TOOL+	Pressure gauge port	Male end	Female end
GAUGE ADAPTER 0,3L	NPTF 1/2"	NPTF 1/4"	NPTF 3/8"
GAUGE ADAPTER 0,9L		NPTF 3/8"	

Ⓒ Pressure gauge

35

Reference	TOOL PUMP GAUGE 700
Permissible pressures	700 bar (10 000 psi)
Accuracy (% full scale)	+/-1,0 (-1,5%)
Graduation	Bar
Scale	Bar
Large graduations	100
Fine graduations	20
Threading connection C	1/2 NPTF
Diameter A	100 mm
Height D	130 mm
Thickness B	35 mm



Ⓓ High Pressure Hose

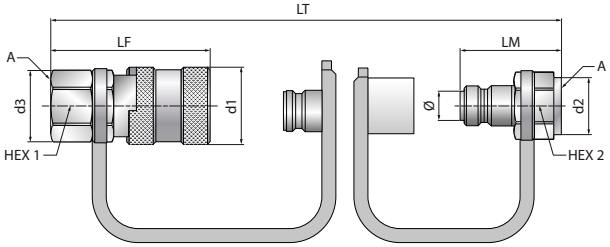
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Reference	TOOL HYDRAULIC HOSE (Length in mm)					
Material	Thermoplastic reinforced with steel battens and braided wires Polyurethane casing					
References	Max. working pressure (bar)	Inner Diameter (mm)	Length (mm)	Weight (kg)	End Fitting 1	End Fitting 2 (Male)
TOOL HYDRAULIC HOSE 1500	700	6.4	1,500	0.8	3/8" - 18 NPTF	G ¼ 750 bar
TOOL HYDRAULIC HOSE 3000	700	6.4	3,000	1.5	3/8" - 18 NPTF	G ¼ 750 bar

Ⓔ Quick coupling coupling, female part (end fitting 2)

35

Reference	TOOL PUMP COUPLING 1/4
Material	High-strength steel. Black zinc plating
Valve Type	Flat-faced for minimum fluid discharge when disconnecting C min.
Maximum working pressure	1500 bar



Note - The sealing washer and fitting included in HMV NIPPLE 1/4 are not shown in the diagram.

Threading A BSPP	d1 (mm)	d3 (mm)	Hex1 Nut (mm)	LF (mm)	d2 (mm)	Hex2 Nut (mm)	LM (mm)	LT (mm)	Ø (mm)	Reference Female part TOOL +	Weight (g)	Reference Male Part TOOL +	Weight (g)
G ¼	28,2	26,8	24	59,5	24,5	22	38	79,5	14,9	PUMP COUPLING 1/4	192	HMV NIPPLE 1/4	69

Heat-resistant gloves

38

Reference	TOOL GLOVE HEAT RESISTANT
Material	KEVLAR
Inner lining	Cotton
One size fits all	10,5
Maximum temperature	350°C
Quantity per pack	1

Calibrated thickness feeler gauge sets

38

Reference	FEELER GAUGE TOOL (gauge length)				
	Number of blades	Measuring range (mm)	Thickness of the planks (1/100 of a mm)	Length (mm)	Weight (g)
TOOL FEELER GAUGES 100	17	0,02 – 0,5	0,02 0,15 0,03 0,20 0,04 0,25 0,05 0,30 0,06 0,35 0,07 0,40 0,08 0,45 0,09 0,50 0,10	100	65
TOOL FEELER GAUGES 150				150	85
TOOL FEELER GAUGES 300				300	175

Infrared Laser Thermometer

Reference	TOOL LaserTemp 301 / IR thermometer
DEVICE FEATURES	
Spectral Response	8 - 14 mm
Optics	D.S: 30:1 (50 mm to 1500 mm)
Response time	Less than a second
Temperature Range	-50 to +850 °C
Accuracy**	-50 to -20 °C: ±5 °C -20 to +200 °C: ±1,5 % of reading ±2 °C +200 to +538 °C: ±2 % of reading ±2 °C +538 to +850 °C: ±3,5 % of reading ±5 °C
Display Resolution	0,1 °C
Emissivity	Adjustable from 0,10 to 1,00 (pre-set to 0,95)
Overrange indication	Display indication: “-0L” for negative exceedance “0L” for positive exceedance
Laser Sight	Wavelength: 630-670 nm Output less than 1mW, Classe 2 (II)
Positive or negative temperature indication	Automatic (no indication for positive temperature) Sign (-) for negative temperature
Display	4 ½ digits with LCD backlit display
Auto-extinction	Automatic after 7 seconds of inactivity
High/Low Alarm	Flashing signal on the display and audible signal with adjustable thresholds
Power	9V Alkaline Battery
Autonomy	38 h (laser and backlight inactive) 15 h (laser and backlight active)
Operating temperature	0 to +50 °C
Storage temperature	-20 °C to +60 °C
Relative humidity	10% to 90%RH in operation and below 80%RH in storage
Dimensions	175 x 110 x 45 mm
Weight	230 g (including batteries)
Memory	20 temperature values with unit of measurement (°C or °F)
** Accuracy given for ambient temperature of 18 to 28°C (with relative humidity below 80% RH)*	
FEATURES OF THE K THERMOCOUPLE PROBE	
Temperature Range	-40 to +400 °C
Display Range	-50 to +1370 °C
Resolution	0,1 °C
Accuracies	±1.5% of ±3°C reading
Cable length	1 m

CE The devices comply with the following standard:
EN 50081-1: 1992, electromagnetic emissions
EN 50082-1: 1992, electromagnetic susceptibilities

GLOSSARY

Descriptions	References	Catalog pages	Technical Data P
Cold mount case	TOOL IFT SET 33 / Industry Fitting Tool Set	P 09	P 42
Anti-"contact rust" mounting paste	LUB MOUNTING PASTE (Packaging)	P 11	P 42
Articulated lug hand wrench	TOOL PS (size min. – size max.) / Pin Spanner	P 11	P 42
Slotted Articulating Hand Wrench	TOOL HS (size min. – size max.) / Hook Spanner	P 11	P 42
KM Locknut Sockets	TOOL KM NS(size)	P 12	P 44
KM Locknut Sockets & Extensions	TOOL KM NS(size) EXT	P 12	P 44
Socket case	TOOL KM NS SET4-10	P 12	P 44
Induction heater	TOOL SmartTEMP (Size) / Induction Heater	P 15-18	P 45-46
Bar only for induction heater / Bar lifter heater	TOOL ST/ (device size) – YOKE (Bore)	P 15-18	P 47
Carrying case	TOOL ST/S CARRYING CASE	P 18	P 47
Middle Frequency Heater 3.5kW	TOOL MFG2 230V 3.5kW	P 20	P 48
Middle Frequency Heater G1	TOOL MFG1 (voltage)V (Power)kW	P 21	P 48
Middle Frequency Heater G2	TOOL MFG2 (voltage)V (Power)kW	P 21	P 49
Flexible Inductors	TOOL MF/FLEX-INDU (generator power)KW_(Length)m_ d(diameter)	P 22	P 50
Magnetic holders	TOOL MF/MAG HOLDERS10/22/44kW	P 22	P 50
Inner Grip Bore Puller Kit Deep Groove	TOOL BP SET (size min. – size max.)/ Bore Puller	P 24	P 51
Ball Bearing Puller Kit	TOOL BBPS 10-100/ball bearing / Puller set	P 25	P 52
Self-centering manual extractor	TOOL SCMP 2/3 - (maximum spread) / Self-Center Mech Puller	P 26	P 53
Self-centering hydraulic puller	TOOL SCHP (Capacity) TONS /Self-Center Hyd Puller	P 27	P 53
Accessories for Self-Centering Hydraulic Puller	TOOL AS-SCHP (Capacity) T / Acc. Set Hyd Puller	P 28	P 54
3-blade extraction plate	TOOL BP3S (dia. min. - dia. max.) / Tri-Section Back Puller	P 29	P 54
Extractor-stripper kit with mechanical force screw	TOOL BPES 10-105 / Back Puller extract set	P 30	P 55
Hydraulic extractor for assembly and disassembly	TOOL PUSH/PULLER 8/12 Tonnes	P 31	P 55
1/4 gas ball shutter	TOOL HMV BALL PLUG 1/4	P 34	P 56
O-ring set for hydraulic nut	TOOL HMV (size) / Piston Seals	P 34	P 56
Hydraulic nut with metric thread and piston return device	TOOL HMV (size) EBF / Hydraulic Nut	P 34	P 56-59
Manual hydraulic pump kit	TOOL PUMP Sets 700B (Tank capacity) L / Pump with accessories	P 35	P 60
Pump Oil 700b	TOOL HYDRAULIC OIL 1L	P 35	P 60
Pressure gauge for 700 bar pump	TOOL PUMP GAUGE 700	P 35	P 61
Quick coupling coupling, 1/4 gas (female part)	TOOL PUMP COUPLING 1/4	P 35	P 61
Pressure gauge adapter depending on pump	TOOL gauge ADAPTOR (Tank capacity)	P 35	P 61
High-pressure hose with quick-coupling coupling (female part)	TOOL HYDRAULIC HOSE (Length mm)	P 35	P 61
Quick-coupling coupling, 1/4 gas (male part)	TOOL HMV NIPPLE ¼	P 35	P 61
Thermo-insulating gloves	TOOL GLOVE HEAT RESISTANT	P 38	P 62
Thickness shim set	TOOL FEELER GAUGES (Length)	P 38	P 62
Infrared Thermometer with Laser Sight 30:1 Sight Ratio	TOOL LASERTEMP 301 / IR Thermometer	P 39	P 63

NOTES



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