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**PNEUMAC**



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**PROFESSIONAL TOOLS FOR THE MAINTENANCE  
OF O-RINGS, SEALS, HYDRAULICS AND PNEUMATICS,  
MICRO MECHANICAL PARTS**

*“the precision extensions of your hands”*



# O-RING TOOL KIT

code: K0091



*O - RING TOOL KIT is a concrete help for engineers that operate in hydraulics, pneumatic or precision micro mechanical parts, the kit is formed by five tools in stainless steel configured for the professional maintenance of O-rings and seals that have small dimension and thickness.*

*Two of the tools have double worked extremities to assure the maximum versatility. Tools are delivered into a five pocket envelope and all is contained in a plastic box with instructions sheet in five languages.*

*Statistically most of the problems related with O-ring and seals are due to bad installation and the O-RING TOOL KIT is sure the ideal solution to make the job in the best possible way. Use of the tools will become soon familiar and its help will be irreplaceable avoiding to work with improvised or inadequate tools.*

## DESCRIPTION & FUNCTION

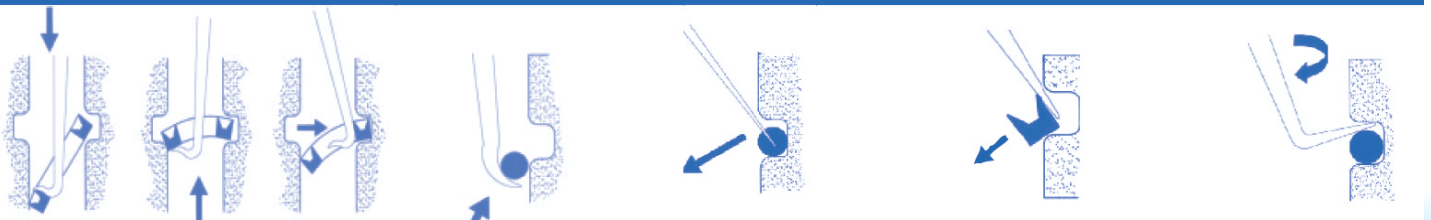
- **PIERCING TOOL:** Can be used for remove O-Rings and Seals from cavities or from recessed positions when the O-Ring can be destroyed and discarded.
- **TOOL WITH ANGLED LEVER:** Can be used for removing O-Rings from cavities or recessed positions by prying from the bottom of the groove inserting the tip as shown.
- **TOOL WITH FLAT FACE LEVER:** This tool can be used for removing or installing O-Rings as shown in the picture.
- **PUSHING PULLING TOOL:** This is the “jolly” tool of the kit, the particular tip configuration allows many uses: can hook up, positioning, push or pull O-Rings or pressing them into their seats pushing with the tool heel as shown.
- **TWEEZERS:** Is ideal for positioning the O-Rings or taking them out from difficult positions, can be used also to hold O Rings for dipping into lubricant fluids without touching with fingers
- **FLAT TIP TOOL:** Can be used for the installation or removal of O-Rings near the surface, is also usable as “back up” tool in combination with another tool.

**RACCOMANDATO DAI COSTRUTTORI DI GUARNIZIONI**

**WEAR SAFETY GOGGLES WHEN USING TOOLS**



## EXAMPLES OF USE



Push - Pulling tool

Flat face lever

Piercing tool

Flat Tip tool

Angled Lever tool

# SEAL TOOL KIT

code: K0092



The SEALS/-O-RING TOOL KIT is a great help for engineers that assemble or repair hydraulic, pneumatic equipment or precision micro - mechanic products, the kit is formed by five robust tools in stainless steel configured for the professional maintenance of seals and glands that can be rigid or with large thickness that require a stronger leverage/pushing efforts. Tools are delivered into a five pocket envelope and all is contained in a plastic box with instructions sheet in five languages.

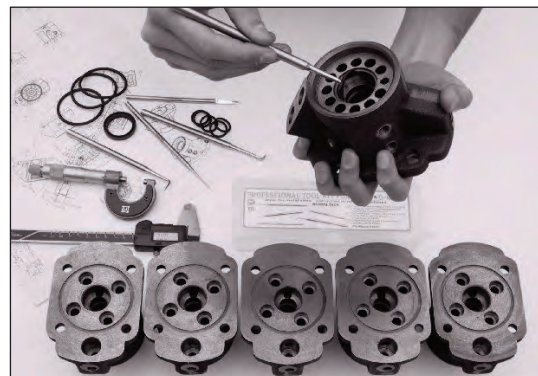
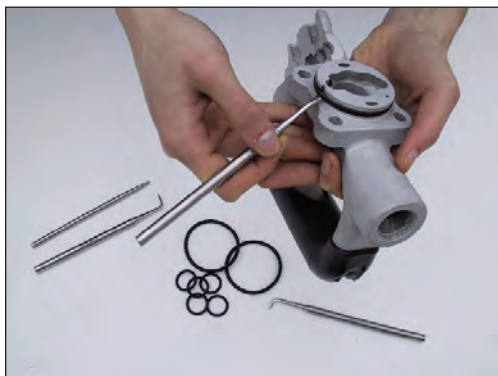
**Statistically most of the problems related with seals are due to bad installation and the SEAL TOOL KIT is sure the ideal solution to make the job in the best way.**

Use of the tools will become soon familiar and its help will be irreplaceable avoiding to work with improvised or inadequate tools.

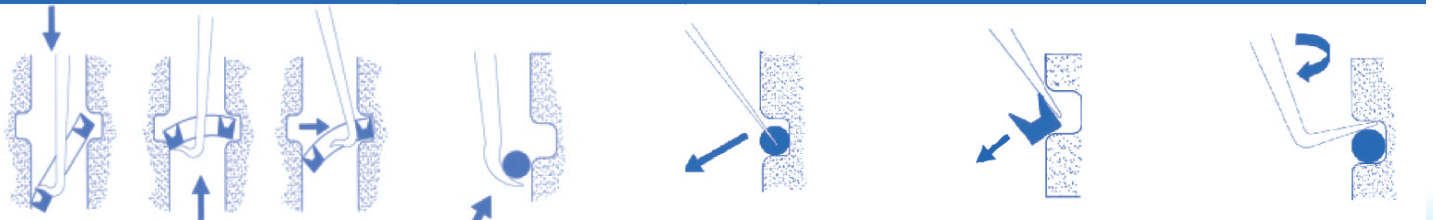
## DESCRIPTION & FUNCTION

- **PUSHING PULLING TOOL:** This is the “jolly” tool of the kit, the particular tip configuration allows many uses: can hook up, positioning, push or pull Seals or pressing them into their seats pushing with the tool heel as shown.
- **TOOL WITH FLAT FACE LEVER:** This tool can be used for removing or installing Seals and O-Rings as shown in the picture.
- **PIERCING TOOL:** Can be used for remove Seals/-O-Rings from cavities or from recessed positions when the Seal can be destroyed and discarded.
- **FLAT TIP TOOL:** Can be used for the installation or removal of Seals and O-Rings near the surface, is also usable as “back up” tool in combination with other tools.
- **TOOL WITH ANGLED LEVER:** Can be used for removing Seals or O-Rings from cavities or recessed positions by prying from the bottom of the groove inserting the tip as shown.

**WEAR SAFETY GOGGLES WHEN USING TOOLS**



## ESEMPI DI UTILIZZO



Push - Pulling tool

Flat face lever

Piercing tool

Flat Tip tool

Angled Lever tool



**RECOMMENDED BY THE MANUFACTURERS OF SEALS.**

**WEAR SAFETY GOGGLES WHEN USING TOOLS**



*The tool is a particular “plier” with pins that allow a easy installation of seals and rod wipers in recessed difficult positions or deep bores, the illustrations shows well the practicality and the advantages of the use of this exclusive tool. Statistically most of the problems related with seals are due to bad installation and to stress or cuts caused by forcing the seals on sharp edges of the seal groove, the tool is sure the ideal solution to make the job in the best way. For its configuration is ideal in the installation in deep bores or recessed position of a large dimensional range of seals, it avoids the use of improvised tools that could damage irreversibly the parts. Practical, quick and precise the tool guarantee the perfect quality of assembly, eliminating loss of time and inconvenients, once utilised will become soon familiar and will be difficult not using it again.*

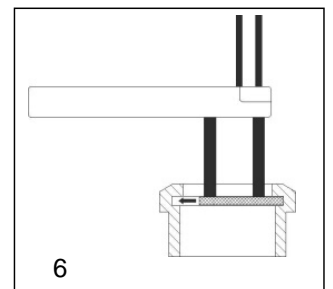
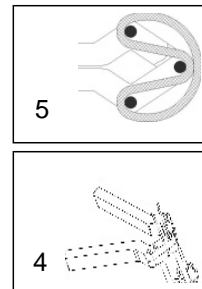
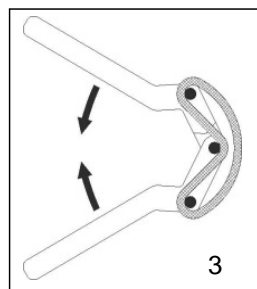
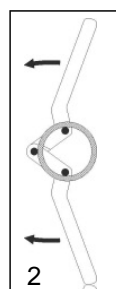
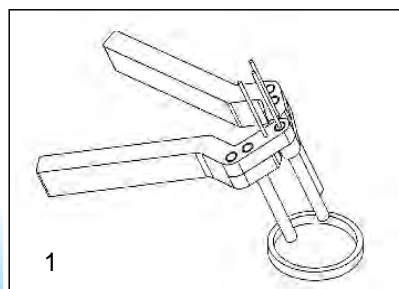
**THE SEALS MUST BE PLIABLE AND WITHOUT METAL INSERTS.**

- THE TOOL ALLOWS OPERATIONS ON SEALS WITH INTERNAL DIAMETER FROM mm 20 to mm 125 (7/8” - 5”) AND SECTION FROM mm 4 to mm 12 (1/8” - 0,5”)
- THE SEALS MUST BE PLIABLE AND WITHOUT METAL INSERTS

### SEAL INSTALLTION TOOL INSTRUCTIONS

*The tool features two pins that can be inserted in two different positions to be chosen according to the seal size before the installation make sure that the seals and grooves are clean and eventually spray the parts with a coating of seal lubricant ie: wd40 or crc.*

- Place the seal on a flat surface with the lips pointing in the correct direction
- After having selected the correct pins position on the tool, according to the seal dimension, open up handles and insert pins in the seal as shown in the illustrations, use the other hand to keep well flat the seal
- Close handles while bending the seal thus, shaping into a heart shape configuration note: the seal bent can be forced without risks of tearing when overlapping the two halves. this can help when the bore is small and will allow the seal insertion if the access is very narrow
- Properly align the seal on its seat and release the handles slowly while positioning the seal in place
- Proper installation of the seal requires that the seal must be well stretched in its natural position, without twisting or unnatural tensions



# ADVICES FOR THE SEALS INSTALLATION AND CARE

## IN GENERAL

Seals come in a very wide category of type and function, but can be divided into two main categories:

- **DYNAMIC SEALS**, that seals two moving parts , they are subject to a more demanding function and are subjected to wear and failure. Once disassembled it is a good practice to always replace the used dynamic seals with new seals, this to avoid ruptures, leaks and successive inevitable disassembling/ assembling of all parts
- **STATIC SEALS**, seal two fixed steady parts , these type of seals are less subject to ruptures and to wear and have longer operative life.

## THE ENEMIES OF THE SEAL ARE

Negative ratio speed/ pressure , poor filtration , contaminated oils, heat, incorrect coupling, wrong tolerances, sharp edges of grooves, rough moving parts - abrasive surfaces, torsions due to forcing seals in the seat , chemical compatibility between the seal compound and the fluid to seal, long exposure to solar UVA rays, long storages in hot dry places, and the aging and above all installation errors

## ADVICES

- Accurately clean the seals groove, the installation tools, and the seal itself before installation
- Lubricate with clean oil, grease, or with spray lubricant like WD40 or CRC the seals and the sliding surfaces before installation
- Pay attention to metal sharp edges and burrs of the groove that could cut seals during installation
- Make sure that seals and O-rings are well relaxed and do not have unnatural tensions or bending
- If the seal is rigid, place the seal in warm oil or water to make it more flexible and pliable to avoid over tensioning and stressing the seal compound during the insertion in grooves or onto shafts
- If a used seal must be reinstalled, make sure that it is not damaged, and it is without cracks from age and heat, without excessive wear and distortion.
- When disassembly note the seals position and the seal lips orientation to avoid incorrect installation
- Store the seals in dark packaging resistant to UVA rays , particularly the seals in NBR ( BUNA) which are sensitive to light exposure
- Some seals have a “shelf life” and are sensitive to excessive ageing that could make them unusable.

**The majority problems related with seals derives from bad installation!**

**“DOCTOR SEAL” IS THE SEALS BEST FRIEND !!**



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