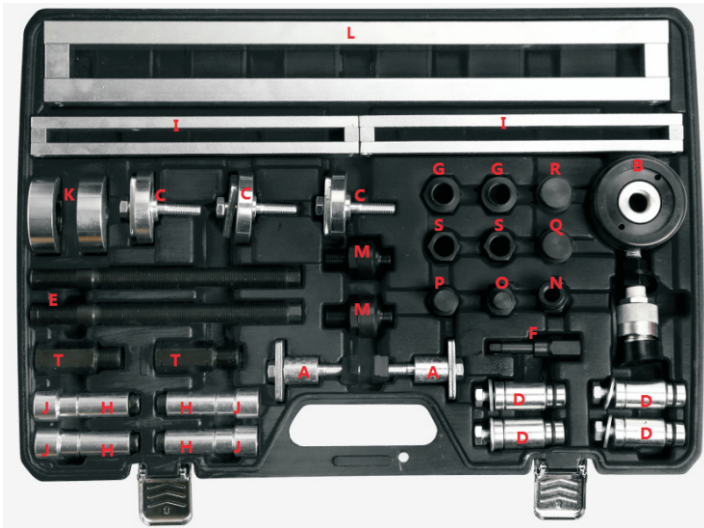




MASTER INJECTOR EXTRACTOR KIT WITH HYDRAULIC CYLINDER CT5507



CONTENTS

A	Centering Kit	K	Washer complete with bearing
B	10T Hydraulic Cylinder	L	Cross Head
C	Support Plate	M	M18 x 1.5 with Double Connection - Bosch
D	Adjustable Foot	N	Thread adaptor M14 x 1.5 Delphi
E	M18 x 1.5 x L200mm Screw	O	Thread adapter M16 X 1 Toyota
F	10mm Ex. Wrench	P	Thread adapter M20 x 1 Denso
G	M18 x 1.5, H30 Nut	Q	Thread adapter Ø30 M25 x 1 Siemens
H	Support Foot Extension Group	R	Thread adapter Ø32 M27 x 1 Siemens
I	Lower Support Group	S	M18 x 1.5 F-F Extension
J	Adjustable Foot Extension	T	M18 x 1.5 M-F Extension

UNIVERSAL TOOL FOR INJECTOR REMOVAL

Specific for disassembling very locked injectors.

Often, the injector is locked in its seat due to fouling caused by burning and can not be removed without a proper tool.

The injector is extracted both mechanically and hydraulically thanks to the universal extractor adaptable to different cylinder heads and to the special hydro mechanical cylinder.

The use of the cylinder and of the crosshead ensures / allows a calibrated extraction perpendicular to the injector.

INSTRUCTIONS FOR USE

UNIVERSAL TOOL FOR INJECTOR REMOVAL

METHOD OF PREPARATION:

- Example Bosch injectors
- Unscrew the solenoid valve (fig. 1)
- Unscrew the solenoid valve with a special wrench according to the type of injector.

⚠ Warning: when removing the solenoid valves, small parts can drop (springs + washers)!

REMOVAL OF FINS, AND SMALL PARTS

- Press down the fins of the valve with a screwdriver to remove the safety seals with a magnet. Then loosen with a special socket wrench **F** the polygonal bolt and remove the remaining parts with small dimensions.

SUPPLY TUBE CONNECTION REMOVAL

- Remove the connection of the high-pressure tube which supplies the injector (fig. 3).

SCREW THE ADAPTER PIN

- Screw the pin M17x1 to the thread limit stop, in the threaded adapter Bosch **M**, on the injector internal thread (fig. 4).

SCREW THE RING NUT

- Screw the ring nut M27x1 to the thread limit stop (fig. 5).

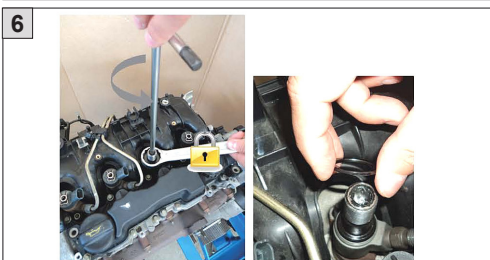
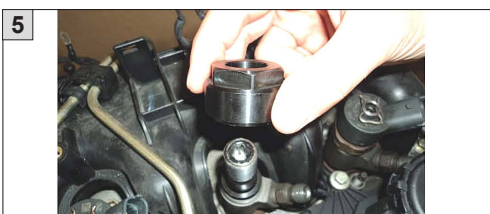
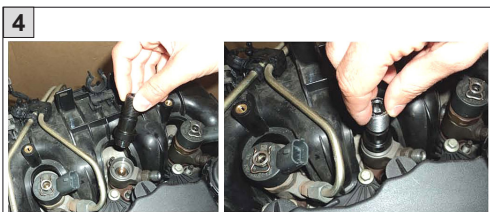
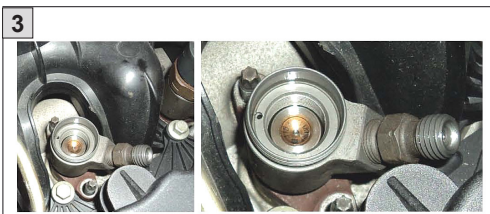
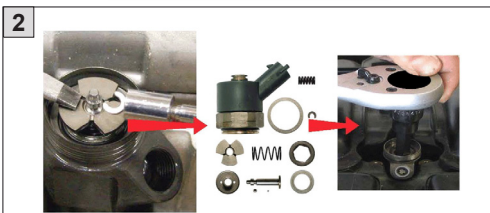
CHECK THE RING NUT CLEARANCE ON THE PIN

- Keep still the ring nut with and rotate the threaded pin M17x1 counterclockwise and check how many turns the pin can rotate until it stops (fig. 6).

⚠ If it does not rotate, lock the pin and ring nut together and proceed with the removal of the injector otherwise count the number of turns (counterclockwise) of the pin and add a shim every turn.

SHIMS INSERTION AND CLEARANCE REMOVAL

- According to the turns detected, insert 1 or 2 shims on the protruding stem of the adapter and tighten the ring nut up to the threading limit stop (fig. 7).



- Rotate the threaded bolt M17x1 clockwise (with 7 wrench) until it stops and tighten in turn the ring. **The purpose of this procedure is necessary to ensure that ring nut and the pin are in contact with each other without clearance so as to ensure a uniform grip on both threads of the injector during the extraction.**

OPTIONS FOR FASTENING THE STRUCTURE TO THE HEAD:

- *Option 1:*
Support with 4 feet, with lower unit + crosshead.
This option is used when there are no central screws on the head in line with the injectors.
The structure is supported on the head is made for example on the screws that fasten the covers of the of twin camshaft (see fig. 18 - 19).
- *Option 2:*
Support with 3 feet, with crosshead.
This option must be used when the fixing screws of the head are in line with the injectors. When possible, use this option because the structure is stiffer and faster to position.

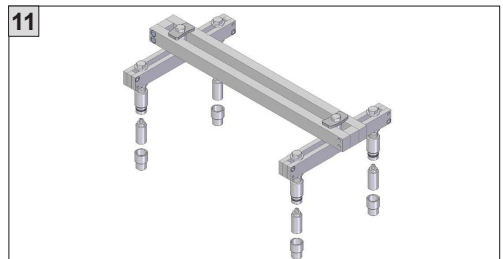
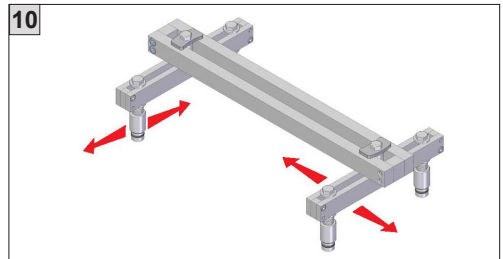
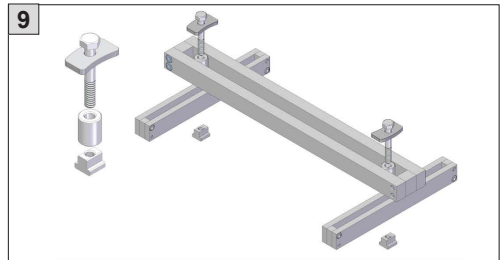
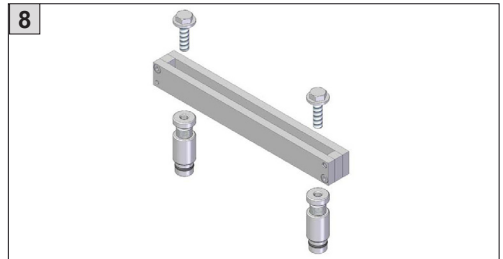
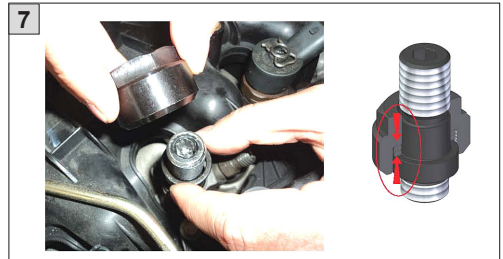
ASSEMBLY OPTION 1:

LOWER SUPPORT GROUP

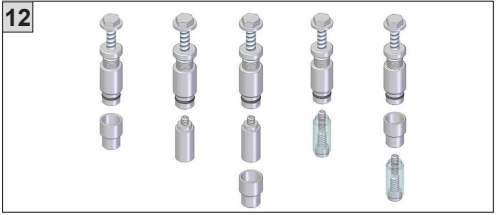
- Assemble the 2 support feet **D** (with adjustable height) to the lower support group **I** (fig. 8).

LOWER SUPPORT WITH 4 FEET AND CROSSHEAD

- Assemble the lower support group **I** with the sliding groups **A** to the crosshead **L** (fig. 9).
- Choose the support feet depending on the type of engine (the support is performed by placing the assembly feet on the screws located on the cylinder head).
- Position the crosshead already assembled with the sliding groups in correspondence of the screws on the head (fig. 10).
- In the case of large differences in height, it is possible to use the support foot extension group **H** or the extension for the adjustable foot **J** (fig. 11).

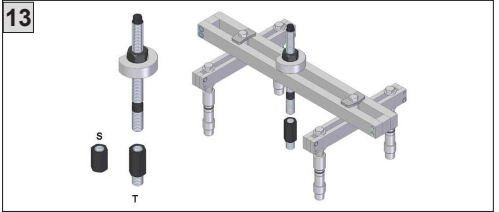


- Here at the side are shown the configurations which are possible using the feet **J** and **H** according to the type of screws (hexagonal or cylindrical head with hexagon socket) located on the engine head (fig. 12).
- Place the washer with bearing **K** on the crosshead **L**.
- Tighten the screw **E** and adjust its height using the nut **G** (fig. 13).



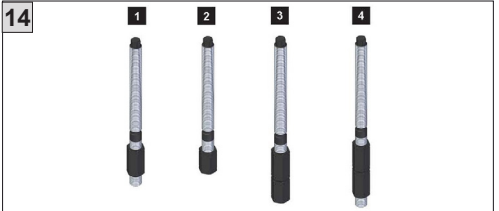
! For problems of height select the type of extension **S** or **T** depending on the type of adapter used.

- Here at the side are shown the configurations which are possible using the extension **S** or **T** (fig. 14).

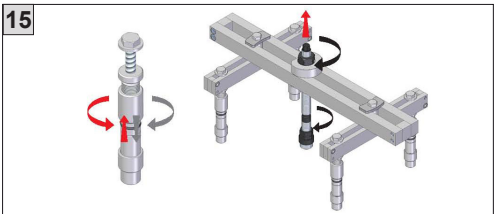


Configurations:

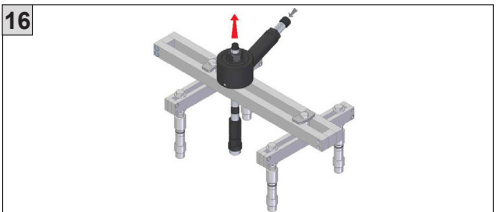
- 1** For adapters **N - O - P - Q - R**
- 2** For adapters **M**
- 3** For adapters **M** with deeper injectors.
- 4** For adapters **N - O - P - Q - R** with deeper injectors.



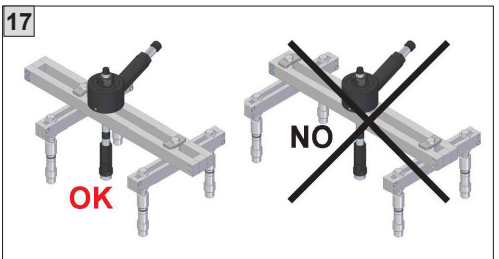
- Tighten the screw **E** (or extension if used) to the adapter already fastened to the injector and make sure that the plane of the crosshead **L** is perpendicular to the axis of the screw.
- By tightening the nut **G** the washer with bearing **K** must rest perfectly on the crosshead **L**, otherwise adjust the support feet on the cylinder head screws.
- The fine adjustment of height is performed by rotating the threaded part of the support foot **D**.
- After adjusting the structure and locked the 6 screws proceed with the extraction of the injector by screwing the nut **G** keeping locked the screw **E** (fig. 15).
- For the extraction of the injector it is possible to use the hydromechanical cylinder **B** instead of the washer with bearing **K**.



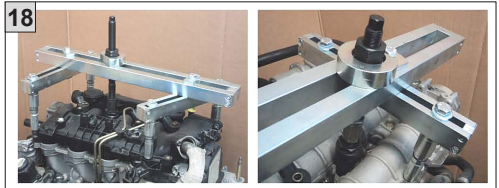
- Even in this case ensure that the base of the cylinder leans perfectly on the crosshead (fig. 16).



! Always place the lower supports **I** in the vicinity of the injector and never far away, so as to ensure more rigidity to the structure and maintain the concentricity during the extraction phase.



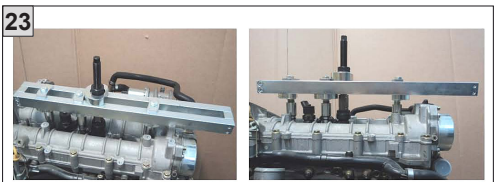
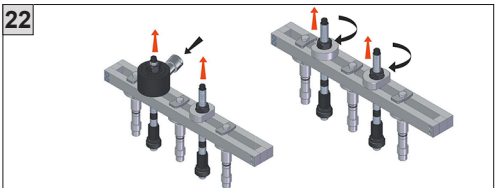
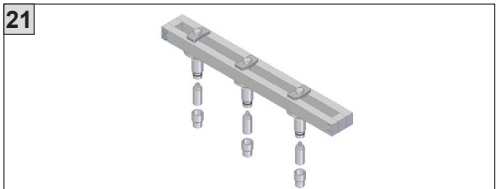
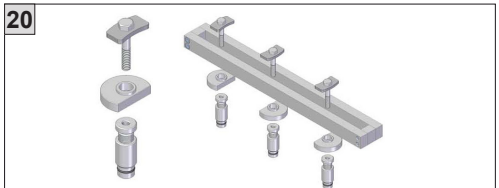
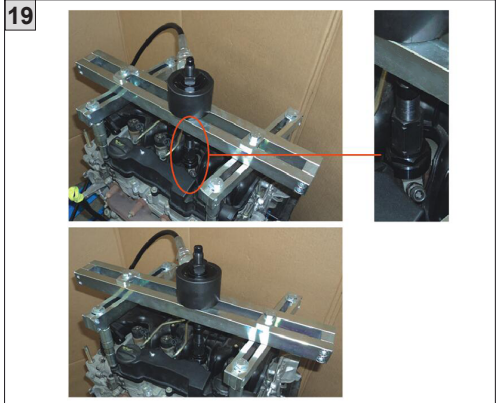
- Example of fastening to the head (4 feet) with mechanical extraction (fig. 18).
- Example of fastening to the head (4 feet) with hydraulic extraction (fig. 19).



ASSEMBLY OPTION 2:

SUPPORT WITH 3 FEET WITH A CROSSHEAD

- Connect 3 feet **D** to the crosshead **L** with screws and support plates **C** (fig. 20).
 - In the case of large differences in height, it is possible to use the support foot extension group **H** (fig. 21) or the extension for the adjustable foot **J**.
The fine adjustment of height is performed by rotating the threaded part of the support foot **D**.
 - Position and align the removal tool on the head. Place the washer with bearing **K** on the crosshead **L**.
 - Tighten the screw **E** and adjust its height using the nut **G**.
 - For problems of height select the type of extension **S** or **T** depending on the type of adapter used.
 - After adjusting the structure and locked the 3 screws proceed with the extraction of the injector by screwing the nut **G** keeping locked the screw **E**.
 - It is possible to place on the crosshead **L** both extraction screws **E** or use the hydromechanical cylinder **B** in place of the washer with bearing **K**.
- Example of fastening to the head (3 feet) with hydro and mechanical extraction (fig. 23).



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