

# ET1908

## UNIVERSAL INJECTOR REMOVER TOOL



This kit is designed to remove stuck injectors from most diesel vehicles

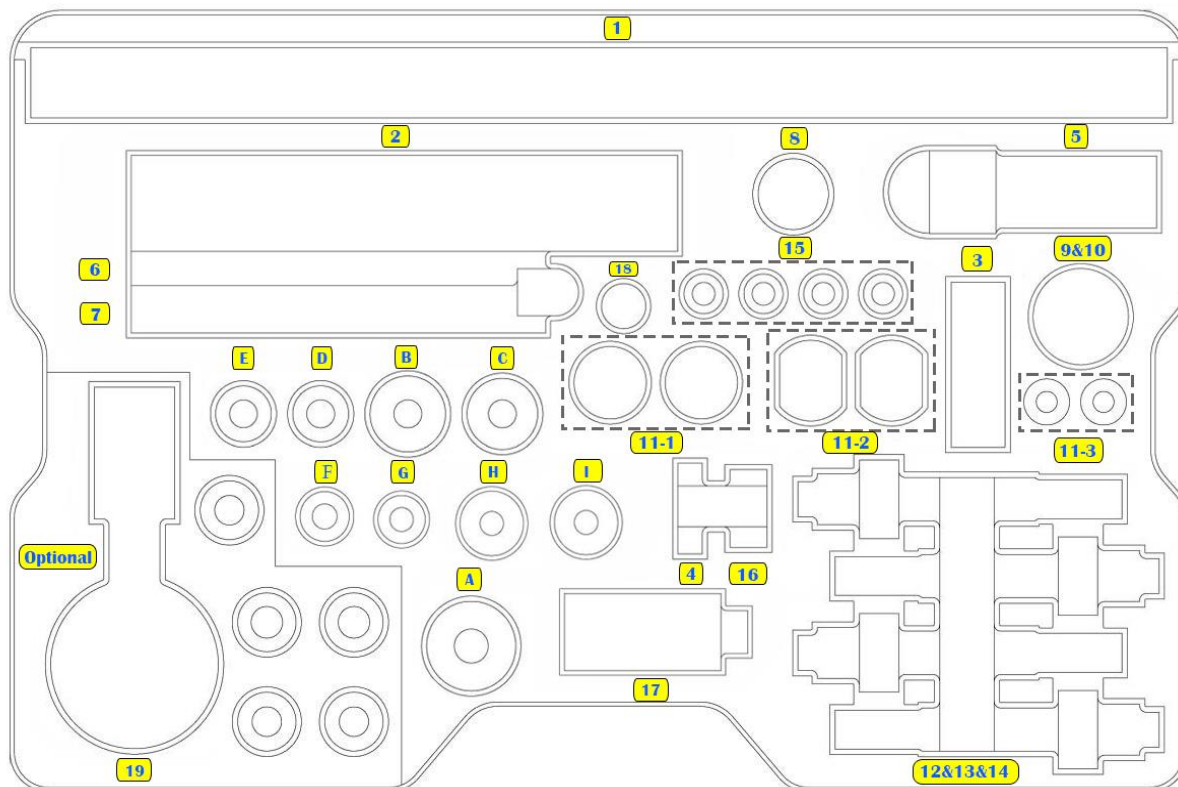
(No need to remove the electric part)

### INJECTOR TYPE:

M18X1.5 BOSCH, M27X1 SIEMENS, M25X1 SIEMENS, M14X1.5 DELPHI , M20X1 DENSO, M16X1 DENSO, M16X1.5 DENSO, M25X0.5 DENSO, M25X0.75 DENSO

### Application:

BMW, BENZ, VW, KIA, HYUNDAI, TOYOTA etc. Hyundai Models Starex, Lativa, Matrix, Trajet, Terracan, Santa Fe (sm), Libero, Avante XD, Grandeur XD, Getz, Tucson, NF Sonata, 06 Accent, Porter 4044



## CAUTION

### 1. When Removing or Installing the Common Rail Fuel Injection System

- ✓ Common Rail Fuel Injection System is subject to extremely high pressure (Approximately 1600 bar). So never perform any work on injection system with engine running 30 seconds after the engine stops.
- ✓ Ensure the absolute cleanliness about the removed parts related with the common fuel injection system (Injectors, Common Rail, High Pressure Fuel Pipes, etc.)
- ✓ When installing the high pressure fuel pipe, tighten it several times in accordance with the specified tightening torque.
- ✓ When installing the injector
  - Clean it and replace the gasket with a new one.
  - Not to damage the injector by impact etc, insert the injector into the cylinder head vertically.
  - Insert the injector in the cylinder head after pasting Diesel oil to the gasket.

### 2. When using the injector remover

- ✓ Have thorough knowledge of this User Manual before using this tool.
- ✓ Remove the part in engine interfering in this tool before installing this tool.
- ✓ Confirm again whether the tool is installed correctly before removing the injector.
- ✓ When removing the injector, do not exceed the maximum tightening torque. Otherwise the cylinder head and the cylinder head cover will be damaged.

#### ● Max. Tightening torques

- ✧ A, D, U, S-Engine: 10 Kgf · m
- ✧ J-Engine: 25Kgf · m

## HOW TO USE

### 1. REMOVAL OF THE INJECTOR OF A, D AND U-ENGINE

- ✓ Disconnect the battery negative (-) terminal from the battery.
- ✓ Remove the engine cover, and then disconnect the injector connector.
- ✓ Remove the high pressure fuel pipe and then disconnect the return hose or tube from the injector.
- ✓ Remove the injector fixing clip.
- ✓ Assemble the Main Bar (Part 1) and the Cross Bar (Part 2) temporarily using the Bar Holder Assembly [Photo 01]
- ✓ Install the Sub Supporter-A (Part 15) in the Main Supporter (Part 14) [Photo 02]
- ✓ Install the Main Supporter (Part 14) on the Cross Bar (Part 2) temporarily by using the four Supporter Mounting Bolts (Part 13).
- ✓ After inserting the Injector Holder-A (Part 1) toward the injector connector, place it on the groove at the lower end of the injector [Photo 05].
- ✓ Place the Injector Holder-B (Part 9) on the groove at the lower end of the injector [Photo 07].
- ✓ Install the Injector Holder Cover (Part 10) [Photo 08].
- ✓ Tighten the Injector Holder Mounting Bolt (Part 11) on the Injector Holder Cover (Part 10) with a 3mm L-Wrench [Photo 09].
- ✓ Install the assembled tool [Photo 09] on the four fixing bolts of the cylinder head cover [Photo 10].

#### ! CAUTION

- When installing the Main Bar Assembly, be careful not to damage the other parts.
  - Also confirm that the tightening torque of the cylinder head cover bolts (0.8~1.0Kgf · m)
- ✓ Assemble the Bar Holder Assembly (Part 12) and the supporter Mounting bolt (Part 13) with an 8mm L-Wrench [Photo 11].
    - **Standard of the L-Wrench**
      - For the Supporter Mounting Bolt (Part 13) and the Holder Bar Assembly (Part 12): 8mm
  - ✓ Install the Main Bolt Holder (Part 3) [Photo 12].
    - ! CAUTION
      - Fix the protrusion of the Main Bolt Holder (Part 3) in the hole on the Main Bolt (Part 6).
  - ✓ Install the Ball Bearing (Part 4) [Photo 13].
    - ! CAUTION
      - Make the bearing roller face upward.
  - ✓ Install the Main Nut (Part 5) [Photo 14].
  - ✓ Install a socket (32mm) to the injector and then remove the injector with turning the socket clockwise by using a torque wrench [Photo 15: D-Engine] [Photo 16:

A-Engine] [Photo 17: U-Engine]

! CAUTION

- Not to damage the cylinder head and the cylinder head cover. Do not exceed the maximum tightening torque.
- Max. Tightening : 10 Kgf · M

## 2. REMOVAL OF THE INJECTOR OF J-ENGINE

- ✓ Disconnect the battery negative (-) terminal from the battery.
- ✓ Remove the engine cover, and then disconnect the injector connector.
- ✓ Remove the high pressure fuel pipe and then disconnect the return hose or tube from the injector.
- ✓ Remove the injector fixing clip.
- ✓ Assemble the Main Bar (Part 1) and the Cross Br(Part 2) temporarily using the Bar Holder Assembly [Photo 01]
- ✓ Install the Sub Supporter-A (Part 15) in the Main Supporter (Part 14) [Photo 02]
- ✓ Install the Main Supporter (Part 14) on the Cross Bar (Part 2) temporarily by using the four Supporter Mounting Bolts (Part 13).
- ✓ Temporarily install the Main Bolt-B (Part 7) to the injector to the end of the helix [Photo 05].

! CAUTION

- To assemble the Main Bolt Holder (Part 4) and the Main Bolt-B, screw the bolt temporarily.
- Apply the grease on the thread of main bolt- B before installation.
- ✓ Install the assembled tool [Photo 04] on the four fixing bolts of the cylinder head cover [Photo 06].

! CAUTION

- When installing the Main Bar Assembly. Be careful not to damage the other parts.
- Also confirm that the tightening torque of the cylinder head cover bolts (0.9~1.1Kgf · m)
- The tool should be located on the designated place to use (Please refer to the 18 page for details).
- ✓ Tighten the Supporter Mounting Bolt (Part 13) with an 8mm L-Wrench [Photo 07].
  - **Standard of the L-Wrench**
    - For the Supporter Mounting Bolt (Part 13) and the Holder Bar Assembly (Part 12) : 8mm

- ✓ Install the Main Bolt Holder (Part 3) [Photo 08].

! CAUTION

- Fix the protrusion of the Main Bolt Holder (Part 3) in the hole on the Main Bolt (Part 6).
- A position when assembled tool [Photo-04] is installed on engine head cover

bolt.

- ✓ Install the Ball Bearing (Part 4) [Photo 09].
- ✓ Install the Main Nut (Part 5) [Photo 10].
- ✓ Install a socket (32mm) to the injector, and then remove the injector with turning the socket clockwise by using a torque wrench. [Photo 11].

! CAUTION

- Not to damage the cylinder head and the cylinder head cover. Do not exceed the maximum tightening torque.
- Max. Tightening Torque : 25 Kgf · M

### 3. REMOVAL OF THE INJECTOR OF S-ENGINE

- ✓ Disconnect the battery negative (-) terminal from the battery.
- ✓ Remove the engine cover, and then disconnect the injector connector.
- ✓ Remove the high pressure fuel pipe and then disconnect the return hose or tube from the injector.
- ✓ Remove the injector fixing clip.
- ✓ Assemble the Main Bar(Part 1) and the Cross Br(Part 2) temporarily using the Bar Holder Assembly [Photo 01]
- ✓ Install the Sub Supporter-A (Part 16) in the Main Supporter (Part 14) [Photo 02]
- ✓ Install the Main Supporter (Part 14) on the Cross Bar (Part 2) temporarily by using the four Supporter Mounting Bolts (Part 13).
- ✓ Temporarily install the Main Bolt-A (Part 6) to the injector to the end of the helix [Photo 05].

! CAUTION

- To assemble the Main Bolt Holder (Part 4) and the Main Bolt-B, screw the bolt temporarily.
- ✓ Install the assembled tool [Photo 09] on the four fixing bolts of the cylinder head cover [Photo 06].

! CAUTION

- When installing the Main Bar Assembly. Be careful not to damage the other parts.
- Also confirm that the tightening torque of the cylinder head cover bolts (0.9~1.1Kgf · m)
- ✓ Photo 07 illustrates the assembled tool on the head of the bolts.
- ✓ Tighten the Supporter Mounting Bolt (Part 13) with an 8mm L-Wrench [Photo 08].
  - Standard of the L-Wrench
    - For the Supporter Mounting Bolt (Part 13) and the Holder Bar Assembly (Part 12) : 8mm
- ✓ Install the Main Bolt Holder (Part 3) [Photo 09].

! CAUTION

- Fix the protrusion of the Main Bolt Holder (Part 3) in the hole on the Main Bolt

(Part 6).

- ✓ Install the Ball Bearing (Part 4) [Photo 10].
- ✓ Install the Main Nut (Part 5) [Photo 11].
- ✓ Install a socket (32mm) to the injector, and then remove the injector with turning the socket clockwise by using a torque wrench. [Photo 12].

! CAUTION

- Not to damage the cylinder head and the cylinder head cover. Do not exceed the maximum tightening torque.
- Max. Tightening Torque : 10 kgf · m