

Thank you for purchasing a Sealey product. Manufactured to a high standard this product will, if used according to these instructions and properly maintained, give you years of trouble free performance.

**IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**

### 1. SAFETY INSTRUCTIONS



**DANGER! - BE AWARE, LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON IT IS VERY IMPORTANT TO READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY, EACH TIME YOU USE THE CONVERTER BOX AND ASSOCIATED EQUIPMENT**

Follow these instructions and those published by the battery manufacturer and the maker of any equipment you intend to use in the vicinity of the battery. Remember to review warning marks on all products and on engines.

#### 1.1. PERSONAL PRECAUTIONS

- ✓ Ensure there is another person within hearing range of your voice and close enough to come to your aid should a problem arise when working near a lead-acid battery.
- ✓ Wear safety eye protection and protective clothing. Avoid touching eyes while working near battery.
- ✓ Have fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
- ✓ Wash immediately with soap and water if battery acid contacts skin or clothing. If acid enters eye, flush eye immediately with cool, clean running water for at least 15 minutes and seek immediate medical attention.
- ✓ Remove personal metallic items such as rings, bracelets, necklaces and watches. A lead-acid battery can produce a short circuit current high enough to weld a ring or the like to metal and may cause severe burns.
- ✓ Ensure hands, clothing (especially belts) are clear of fan blades and other moving or hot parts of engine, remove ties and contain long hair.
- ✗ **DO NOT** smoke or allow a spark, or flame, in the vicinity of battery, engine or fuel injection pump.
- ✓ Remember that when used in conjunction with a timing light, the flashing from the light can 'freeze' rotating components. **DO NOT** be tempted to touch an apparently stationary component which is, in fact, rotating.
- ☐ **WARNING! When ignition is on DO NOT touch any ignition components - very high voltages are present.**



#### 1.2. GENERAL SAFETY INSTRUCTIONS

- ☐ **WARNING! When running an engine in an enclosed space ensure adequate ventilation or ducted exhaust. Exhaust gases kill.**
- ✓ Keep children and unauthorised persons away from the working area.
- ✓ Ensure vehicle transmission is in 'Neutral' (manual) or 'Park' (automatic) and the parking brake is applied.
- ✓ Ensure the ignition is switched off before attaching the power clamps to the battery.
- ✓ Keep tools and other items away from the engine and ensure that you can see the battery and working parts of engine clearly.
- ✓ If the battery terminals are corroded or dirty, clean them before attaching any clamps.
- ☐ **WARNING! DO NOT allow metal tools or equipment to accidentally touch battery terminals since this may produce sparks or a short circuit resulting in an explosion.**
- ✗ **DO NOT** cross-connect leads from the converter box to the battery. Ensure positive (+) (RED) is to positive and negative (-) BLACK is to negative. If the battery symbols cannot be distinguished, the negative terminal is normally the one directly connected to the vehicle bodywork (check vehicle hand-book).
- ✗ **DO NOT** allow inductive pick-up, or leads, to contact exhaust or other engine parts as the heat will cause damage.
- ✗ **DO NOT** pull the cable or clamps from the battery terminals.
- ✗ **DO NOT** use the converter box in damp, or wet locations.
- ✗ **DO NOT** operate within the vicinity of flammable liquids or gases.

- ✗ **DO NOT** use the converter box for a task for which it is not designed.
- ✓ When not in use, store the converter box in a safe, dry, childproof location.

### 2. INTRODUCTION & SPECIFICATIONS

Used to detect the pulse from the fuel pipes of diesel fuel injectors. Works on most direct injection diesel engines fitted with 6mm (1/4") to 10mm (3/8") external fuel pipes. Suitable for use with most timing lights, engine analysers and multimeters that have an inductive pick-up.

Model No: ..... **TL95**  
 Input Power: ..... 6V-30V DC  
 Trigger Point: ..... 15% of the highest pressure in the injector pipe.  
 Clamp Size: ..... 6mm (1/4") to 10mm (3/8")

#### System Component Identification:

1	Black battery clamp (NEG-)	6	Power Lead
2	Red battery clamp (POS+)	7	Black Clip (Sensor lead)
3	Pick-up loop	8	Yellow Clip (Sensor lead)
4	Indicator Light	9	Sensor lead
5	Piezo clamp (deisel sensor)		



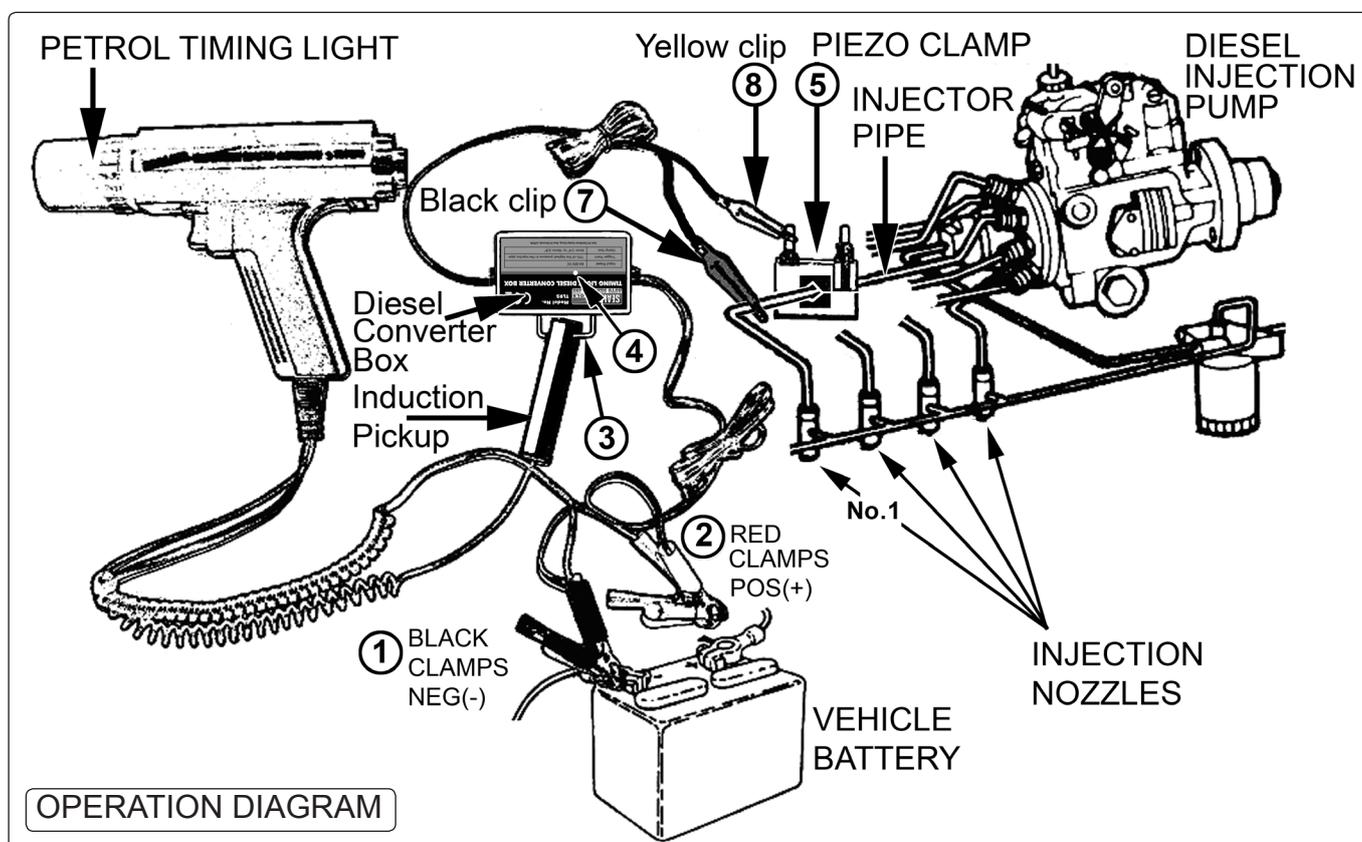
### 3. PARTS AVAILABILITY

Parts availability is limited to the following items:

Item:	Part No:	Description:
(5)	TL95.01	DIESEL SENSOR (Piezo clamp)
(6)	TL95.02	POWER LEAD (c/w Battery clamps 1 & 2)
(9)	TL95.03	SENSOR LEAD (c/w Crocodile clips 7 & 8)

## 4. SET-UP & OPERATION

- 4.1 You must use a monitoring device such as a timing light, engine analyser or multimeter in conjunction with the diesel converter box in order to be able to read RPM on the devices display. The most common use for this information will be for setting a constant engine speed for diesel engine smoke testing. Remember to set up your monitoring device for the correct number of cylinders.
  - 4.2 Ensure that the vehicle ignition is off. Locate the fuel pipes connecting the pump to the fuel injectors. For engine timing purposes the Piezo Clamp should be attached to the pipe going to the No.1 cylinder.
  - 4.3 Fix the Piezo Clamp (5) onto a straight section of the Injector fuel pipe for the No.1 cylinder as close to the pump as possible in order to get the strongest reading. The Piezo Clamp and fuel pipe should be clean and dry. Make sure that the Piezo Clamp is in full contact with the fuel pipe but **do not overtighten** as this could cause damage to the sensor within the clamp.
  - 4.4 Take the Sensor Lead and connect the YELLOW clip (8) to one of the adjustable fixings on the clamp and the BLACK clip (7) to the same Injector fuel pipe to which the clamp is connected.
- WARNING!** Ensure that the Black Sensor clip DOES NOT touch any of the Glow Plugs and associated mountings or wiring as this may cause a short circuit which could disable engine operation and may damage any connected monitoring device.
- 4.5 Take the Power Lead and connect the RED clamp (2) to the positive side of the vehicle battery and the BLACK clamp (1) to the negative of the battery. **Note:** The monitoring device used i.e. A Timing Light, Engine Analyzer or Digital Multimeter may also be powered from the vehicle's battery.
  - 4.6 Attach the inductive pickup from your chosen monitoring device e.g. a timing light, onto the Pickup Loop (3) on the converter box. If the timing light inductive pickup has an arrow mark, ensure that the mark is face up when attached to the Pickup Loop.
  - 4.7 Start the engine and allow it to reach operating temperature, then read the results from the timing light. The Indicator Light on the converter box (4) should flash consistently. If the indicator light does not flash, check all the connections or relocate the Piezo Clamp to another section of the fuel pipe. **Note:** Low vehicle battery, defective Injector Pump, or lack of fuel may prevent the Indicator Light from flashing.



**NOTE:** It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

**IMPORTANT:** No liability is accepted for incorrect use of this product.

**WARRANTY:** Guarantee is 12 months from purchase date, proof of which will be required for any claim.

**INFORMATION:** For a copy of our catalogue and latest promotions call us on 01284 757525 and leave your full name, address and postcode.



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