



# LASER®

## Diesel Injector Nozzle

Tests opening pressure and  
leakage spray pattern

Instructions

4708



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### Guarantee

If this product fails through faulty materials or workmanship, contact our service department direct on: **+44 (0) 1926 818186**. Normal wear & tear are excluded as are consumable items & abuse.



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# Diesel Injector Nozzle

## Tests opening pressure and leakage spray pattern

This product helps to test injection nozzles for opening pressure and leakage spray pattern. Complete with transparent plastic tank and filter and two connecting pipes M12 and M14.

Number	Parts
1	Calibrated Hand Pump with 3 ½" dial reading 0-600 Bar (0-8700 Lbs/Sqin)
2	Tank with filter
3	2 x connecting pipes to nozzle holder with union nuts M12 x 1.5 and M14 x 1.5

Nozzle testers help to test injection nozzles for opening pressure, leakage spray patterns, atomization, chatter characteristic tests plus leakage between nozzle needle and nozzle body.

For the inspection pure testing oil such as Shell 61 v 11 or pure diesel fuel must be used.

### Instructions

Mount the nozzle holder with the pressure line to the nozzle tester.

To check if the nozzle is mounted properly push down hard on the lever of the nozzle tester several times with the manometer turned off.

The result should be 6-8bar.

Normal conditions should show the nozzle needle sliding without problems. The nozzle will chatter (a high whistling sound)

If not, un-do the cap nut, turn the nozzle and tighten again.

### Opening Pressure

The opening pressure can be found in the engine manufacturer's instruction manual.

Slowly push down the hand lever until the nozzle sprays with a light chattering.

Read opening pressure from the manometer.

If the pressure is different from the specified pressure, exchange the (pressure) adjustment shims.

**NB Increase and decrease the pressure slowly if the manometer is open or damage may occur.**

### Leakage of the needle seat

Apply hand lever until the pressure is 20 bar below the specified opening pressure.

If no fuel is leaking after 10 secs there appears to be no leakage of the needle seat.

If the nozzle leaks, dismantle the nozzle, clean and re-assemble.

### Chattering

All nozzles chatter when slowly moving the hand lever to the rate of 1 per sec (approximately)

Turn off manometer for this test.

Apply hand lever at varying speeds

### Chatter Group I

Good chattering across all speeds.

Slowest speed will give sprays with high atomization.

Atomization will increase with faster hand speed.



### Chatter Group 2

Good chattering at fast and slow levels.

Chattering disappears with no atomization at mid level speeds.

Dissolved sprays with high atomization at low hand speed.

Atomization will increase with faster hand speeds.

### Chatter Group 3

Chattering at either slow or fast speeds.

Mid speeds chattering may disappear showing line sprays with poor atomization up to fast hand speeds.

### CARE

Do not spray near the skin. Penetration from the spray can cause blood poisoning.

### Atomization/Spray Pattern

The atomisation should be cone shaped with a fine spray.

Lines or coarse streaks are not acceptable.

### Leakage between nozzle needle and nozzle body

Only test if the Leakage of the needle seat was within tolerance.

Clean the nozzle holder assembly by closing the manometer stop valve and purging the system by pressing the lever 5 times.

Open the valve fully and move the lever to increase the opening pressure (PA)

Release the hand lever so that the pressure drops without external influence.

Measure the time between upper point of pressure decrease (PB) to lower point of pressure decrease (PC).