

## Nozzle Set-up, Direct Injection Two Stage

### *Digital Injector Calibration and Balancing.*



Digital pressure sensing is used to read and record the injector data. The 2 Stagemaster HH720 is used in conjunction with the Testmaster HH701 injector tester. The 2 Stagemaster features an LCD display and automatic controls to determine the second stage opening pressure (NOP2). The first opening pressure (NOP1), spray pattern, back leakage and front leakage are checked using the Testmaster HH701.

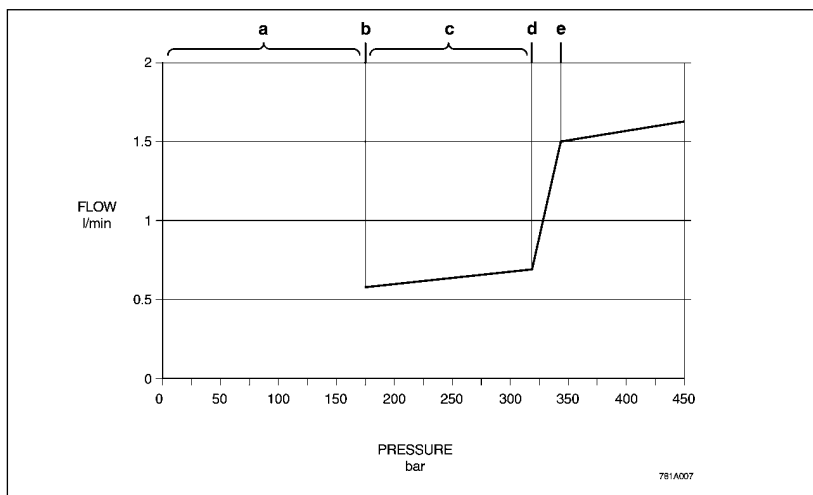
The pressure sensor permits accuracy of NOP2 to +/- 5 Bar and a pressure range expanded to over 500 Bar.

### *Digital Flow Validation*

Using the 2 Stagemaster's flow mapping ability we are able to map the flow characteristics of each nozzle prior to fitting in the injector. This test is performed on the nozzles prior to installation to insure that every

nozzle performs exactly to specification. We are able to evaluate delivery rate, peak delivery volume as well as flow through the flow range. The correct injector test plan is called from memory or loaded manually and an automatic test sequence can be carried out using the Hartridge 2 Stagemaster. The results can be printed on completion.

We are able to map injector performance using comparative injector testing with that of a new injector or we can use the information that is obtained from the mapping sequence to compare every critical aspect of the nozzle and injector performance.



The nominated points on the injector map are:

- The increasing pressure prior to NOP1
- The point of NOP1 (flow commences)
- The area of 1<sup>st</sup> stage flow
- NOP2
- Full lift