



# ***K-Jetronic Maintenance and Calibration***

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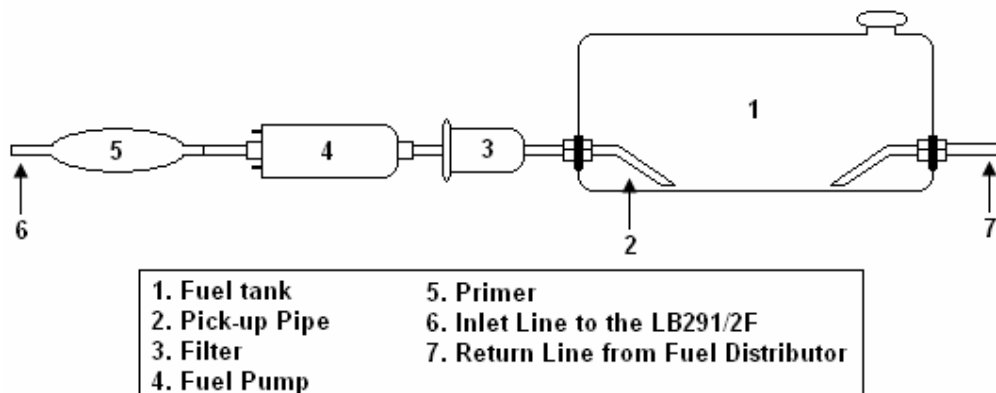
## **K-Jetronic Servicing**

With any servicing, the engine must be in good mechanical order. If it is not, you will only cover up faults and get yourself into trouble. Before commencing the service check the following.

- a. Fuel tank is at least ½ full
- b. If the vehicle has an automatic transmission, put into NEUTRAL
- c. Turn off Air Conditioning if fitted

The average system pressure on all K-Jetronic fuel systems should be 520 kpa. The only vehicle that runs a higher pressure than this is the Porsche Turbo Carrara models from 1975 to 1979 which have a system pressure of 600 kpa.

The system pressure of the K-Jetronic can not be reduced like an EFI system when cleaning with our LB291/2F Flow Meter. You need to make up your own fuel system with the following additional equipment shown below:



With the above items you can clean the fuel system with the LB291/2F Flow Meter. Once we are ready to hook the LB291/2F into the fuel system, we disable the vehicles fuel pump from running and run the engine on the auxiliary tank, filter and pump as shown above.

It is a good practice to insert a marine hand primer (5) in the output line going to the LB291/2F. This allows you to make sure that the fuel pump and filter is fully primed before starting the pump. On all marine primers replace those stupid hose clips on the primer with a good quality stainless steel EFI hose clip.

The return from the LB291/2F to the auxiliary tank (2A page 4) is to regulate the system pressure at 500 kpa during the cleaning process with the Machine Cleaner product.

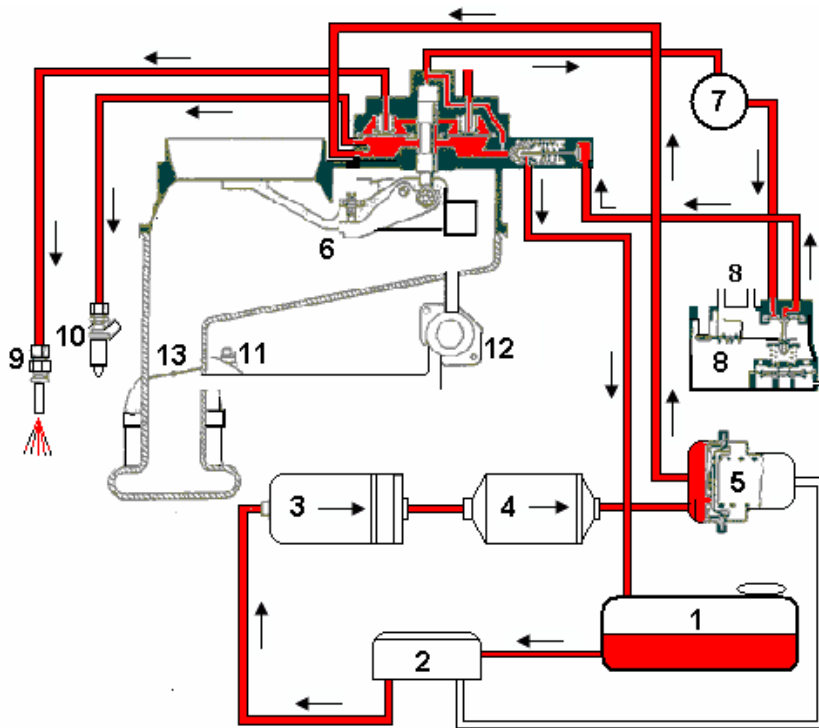
## **Inter-Ject K-Jetronic Servicing and Cleaning Procedure**

1. Hook-up the LB291/2F as shown on **Page 4**.
2. Start the engine and bring up to normal running temperature.
3. Check the system pressure and flow with the LB291/2F.
4. Take a fuel sample by opening Valve (F).
5. Depressurise the fuel system by opening Valve (G).
6. Remove the pressure Canister and fill with 250 mls of Yellow Fuel System Conditioner.
7. Close Divertor Valves and work the starter motor to pump the Yellow Conditioner chemical back to the fuel Tank. Avoid the motor running as we do not want the chemical to flow to the injectors.
8. Once the entire yellow chemical has gone out of the System Flow Glass, start the engine. Watch the System Flow Glass for a colour change. After 30 to 60 seconds take another fuel sample from Valve (F) and compare to the first sample for signs of contamination.
9. Continue to run the engine for 3 to 5 minutes to condition the fuel system.

10. Stop the engine and de-pressurise the flow meter. Hook-up the Auxiliary Fuel Tank and fittings as shown on Page (4).
11. Disconnect the Return line from the Distributor Head (6A), and connect a hose from the Distributor Head outlet to the bottom of the Auxiliary Fuel Tank (2A).
12. Connect the return line hose to the LB291/2F outlet above the bottom Divertor Valve (G) and place into auxiliary Fuel Tank (2A).
13. Disconnect the vehicle fuel pump from running.
14. Fill the Auxiliary fuel tank (2A) with ONE LITRE of BLUE MACHINE CLEANER and ONE LITRE of PETROL. This mixture of Machine Cleaner and Petrol applies to ALL K-Jetronic engines regardless of engine size.
15. Prime the hand pump until you see Blue Machine Cleaner in the System Flow Glass.
16. Connect the Auxiliary Fuel Pump (3A) to 12 volts and start the engine.
17. Run the engine at idle until the entire chemical, petrol mixture is used.
18. At idle the system pressure should be approximately 500 kpa. If during the cleaning process the pressure increases above this, regulate the system pressure by slightly opening Divertor Valve (G) to keep a constant pressure of 500 kpa.
19. If the engine has a cold start injector it should be cleaned during the cleaning procedure. Please refer to our instruction manual on cleaning Cold Start Injectors with the Pulse Generator.

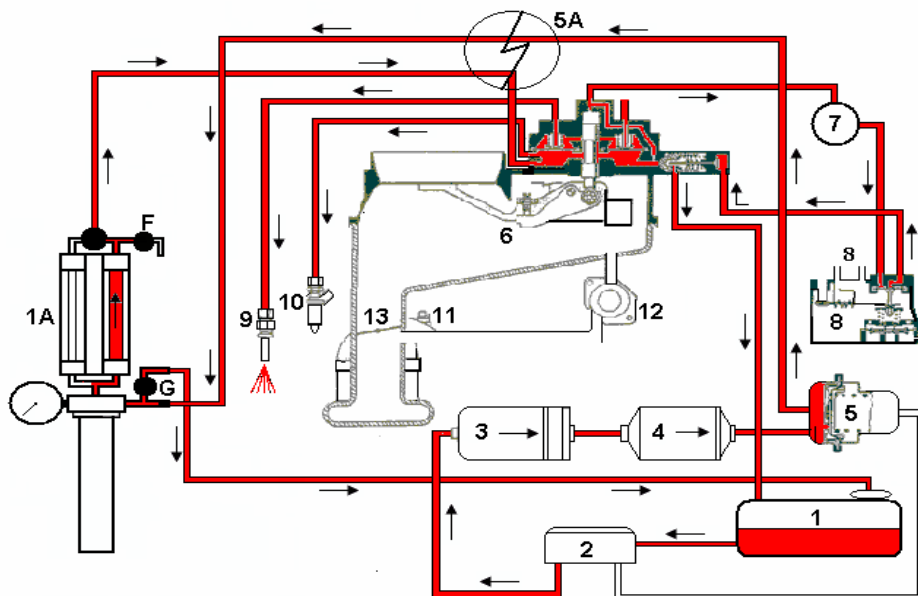
### **K-Jetronic (CIS) Fuel System Diagram**

Shown below is a schematic diagram of fuel lines in a K-Jetronic as a whole with Noise damper and Drain Line at the Fuel Accumulator.



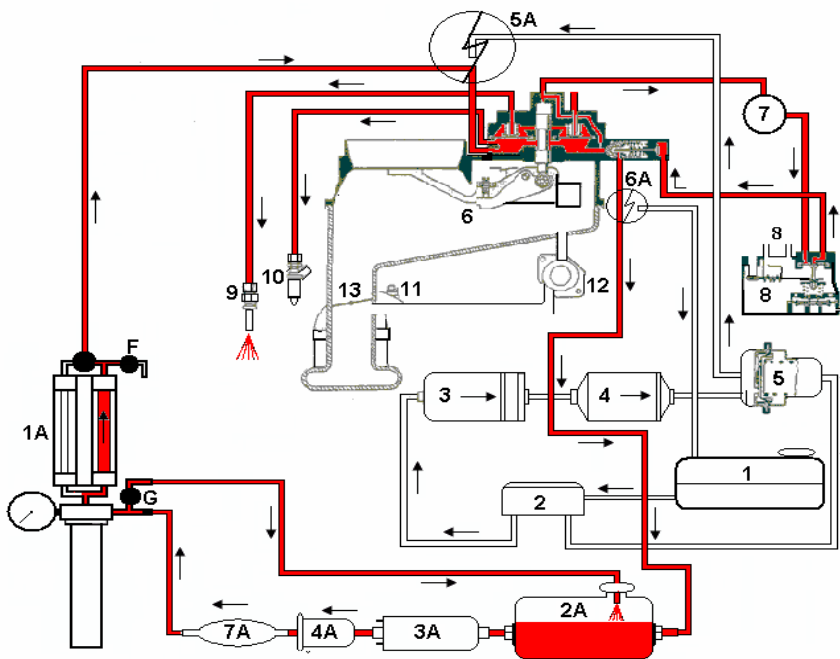
- |                        |                         |                          |
|------------------------|-------------------------|--------------------------|
| 1. Fuel Tank           | 6. Mixture Control Unit | 11. Thermo Time Switch   |
| 2. Intake Noise Damper | 7. Diaphragm Damper     | 12. Auxiliary Air Device |
| 3. Fuel Pump           | 8. Warm-Up Regulator    | 13. Throttle Plate       |
| 4. Fuel Filter         | 9. Fuel Injector        |                          |
| 5. Fuel Accumulator    | 10. Cold Start Injector |                          |

## K-Jetronic (CIS) System Flow and Pressure Tests



- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1. Fuel Tank</li> <li>2. Intake Noise Damper</li> <li>3. Fuel Pump</li> <li>4. Fuel Filter</li> <li>5. Fuel Accumulator</li> <li>6. Mixture Control Unit</li> <li>7. Diaphragm Damper</li> <li>8. Warm-Up Regulator</li> <li>9. Fuel Injector</li> </ul> | <ul style="list-style-type: none"> <li>10. Cold Start Injector</li> <li>11. Thermo Time Switch</li> <li>12. Auxiliary Air Device</li> <li>13. Throttle Plate</li> <li>1A. LB291/2F Flow Meter Unit</li> <li>5A. LB291/2F Connection Point</li> <li>F. Top Divertor Valve</li> <li>G. Bottom Divertor Valve</li> </ul> |
|---|---|

## Hook-Up for K-Jetronic (CIS) Cleaning



- |  |  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li>1A LB291/2F Flow Meter</li> <li>2A Auxiliary Fuel Tank</li> <li>3A Auxiliary Fuel Pump</li> </ul> | <ul style="list-style-type: none"> <li>4A Auxiliary Filter</li> <li>5A Connection Point</li> <li>6A Return Line Disconnection</li> </ul> | <ul style="list-style-type: none"> <li>7A Hand Primer</li> </ul> |
|--|--|--|

## K-Jetronic System Pressure Testing

Vehicle	System Pressure (kpa)	Warm Control Pressure (kpa)	Rest Pressure (kpa)	Injector Opening Pressure (kpa)
Audi Fox				
1975 - 77	450 - 520	340 - 380	160	250 - 350
1978 - 79	450 - 520	340 - 380	160	320 - 380
Audi 100	450 - 520	340 - 380	160	250 - 350
Audi 4000 Series	450 - 520	340 - 380	160	290 - 410
Audi 5000 Series				
1978 - 79	450 - 520	340 - 380	160	270 - 370
1980 - 85 Non Turbo	470 - 570	340 - 380	240	270 - 370
1982 - 85 Turbo	520 - 580	340 - 380	240	270 - 370
BMW 320i	450 - 520	270 - 310	150	250 - 360
Mercedes Benz 6.9	520 - 580	340 - 380	280	300 - 410
Mercedes Benz 280				
Federal	520 - 580	340 - 380	280	300 - 410
Calif	520 - 580	300 - 340	280	300 - 410
1977 Fed HI Alt	520 - 580	360 - 400	280	300 - 410
Mercedes Benz 380, 450, 500				
Fed & Calif	520 - 580	340 - 380	280	300 - 410
1977 Fed HI Alt	520 - 580	360 - 400	280	300 - 410
Peugeot	450 - 510	340 - 380	150	250 - 360
Porsche 911				
1973 - 74	450 - 520	Idle 280 - 300 Part 340 - 380 Full 260 - 300	110	250 - 360
1975	450 - 520	270 - 310	110	250 - 360
1976	450 - 520	270 - 310	110	250 - 360
1977	450 - 520	270 - 310	110	250 - 360
1978 - 79	450 - 520	270 - 310	110	250 - 360
1980 - 83	450 - 520	340 - 380	150	250 - 360
Porsche 924	450 - 520	340 - 380	150	250 - 360
Porsche 928	450 - 520	340 - 380	150	250 - 360
Porsche Turbo Carrera				
1975 - 77	600 - 670	260 - 300	150	210 - 320
1978 - 79	600 - 670	340 - 380	150	210 - 320
Saab 99 & 900				
1975 - 77	450 - 510	340 - 380	100	250 - 360
1978 - 85	450 - 510	340 - 380	150	250 - 360
Volkswagen Dasher				
1976 - 79	450 - 520	340 - 380	160	320 - 380
1980	470 - 540	340 - 380	240	320 - 380
Volkswagen Jetta, Rabbit				
Rabbit Pickup, Scirocco to 1979	450 - 520	340 - 380	160	320 - 380
1980 & later	470 - 540	340 - 380	240	320 - 380
Volvo 140	450 - 520	350 - 390	170	260 - 360
Volvo 4 Cyl				
1976 - 77	450 - 530	350 - 390	100	260 - 360
1978 - 85	450 - 530	350 - 390	170	260 - 360
Volvo 6 Cyl	450 - 530	370 - 410	170	260 - 360

**Please Note: Refer to colour code as shown above**

270 - 310 KPA with Vacuum Hose disconnected
340 - 380 kpa at idle with Vacuum Hose connected
280 - 320 kpa with vacuum Hose disconnected
300 - 340 kpa with Vacuum Hose disconnected

320 - 360 kpa with Vacuum Hose disconnected
340 - 380 with test vacuum of 15.4 - 16.1 in Hg
340 - 380 kpa @1800 rpm with Vacuum Hose connected
320 - 360 kpa at idle with Vacuum Hose connected
270 - 310 kpa with boost pressure above 32 kpa
350 - 350 kpa with Injector no 725 or B00
520 - 580 kpa on 760 GLE/4 Cyl Turbo
280 kpa on 760 GLE and 4 Cyl Turbo
310 - 350 kpa with Vacuum Hose disconnected

### **K-Jetronic Diagnostic Preliminary Tests and Specs**

1. Check Engine Mechanicals:
  - (a) Compression
  - (b) Vacuum
  - (c) Valve Timing
2. Battery and Charging System
3. Ignition System, total test including the following:
  - (a) Primary Voltage
  - (b) Dwell period
  - (c) Ignition timing
  - (d) HT output, maximum burn time and rotor gap
4. Check Induction System
  - (a) Restricted air intake
  - (b) External induction leaks such as manifold, bellows, and injector seals EGR etc.
  - (c) Internal induction leaks such as brake booster, EGR, ventilation system, vacuum sources to any internally leaking component, carbon canister purge system etc.
5. Leaking, restricted or incorrect exhaust system
6. Fuel System:
  - (a) External leakage
  - (b) System running Pressure
  - (c) System running flow
  - (d) System rest pressure
  - (e) Maximum pump output, beware restricted return lines. Excess pressure will damage fuel distributor.
7. Most lift pumps should delivery between 2 – 3 litres per minute
8. Most system pressure should be approximately 500 kpa
9. System flow should be minimum of 90 litres per hour
10. Rest pressure after 20 minutes should be a minimum of 100 kpa
11. Minimum pump output 650 kpa
12. Average main pump current draw will be 6.5 – 8.5 amps
13. System pressure adjustment: 0.10 mm shim = 6 kpa. Pressure alterations will affect flow rates.
14. Causes of rest pressure loss:
  - (a) External leaks
  - (b) System pressure regulator
  - (c) Warm-up regulator
  - (d) Pump non return valve
  - (e) Accumulator
  - (f) Cold start injector
  - (g) Control plunger

# K-Jetronic Fuel System Flow Chart Checks

