AUTOMOBILES

**CITROËN**

AFTER-SALES TECHNICAL DIVISION

**INFORMATION BULLETIN**

**N° EXPORT XT 1 S**

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SM VEHICLES

(SB series SB)

ENGINE

Fuel supply

Carburation

Anti-pollution system

U.S., CANADIAN,

GERMAN and SWEDISH models

## ANTI-POLLUTION SYSTEM - U.S. AND CANADIAN MODELS

The anti-pollution system incorporated in U.S. models includes anti-pollution devices on the exhaust and the fuel supply.

### A. EXHAUST

#### 1) DESCRIPTION (see fig. 1)

- **An air pump** (1) which sucks in surrounding air, forces it into two distributors (2) placed in front of each of the two exhaust manifolds and, by means of the injectors, distributes it in the exhaust ducts of each cylinder head, above the exhaust valves, a non-return valve (3) is fitted on each distributor inlet.
- **A by-pass valve** (4) fitted on the air circuit feeding the exhaust. This valve is controlled by variations in the low pressure prevailing in the inlet manifold and, at certain moments, allows air to be sent into the latter.
- The valve consists of :
  - a perforated diaphragm forming a dashpot controlled by the lower pressure prevailing in the inlet manifold
  - a slide valve which either allows or prevents the passage of air.

  When the carburettor butterflies close the low pressure in the inlet manifold drops further, the diaphragm moves, pulling with it the slide valve and air is admitted into the inlet manifold, when the pressure on both sides of the diaphragm is equalised by air passing through the gap, the slide valve cuts off the air inlet.

**Note for U.S. models**

During workshop operations necessitating prolonged idling of the engine it is recommended that the air pump be disconnected to avoid overheating the exhaust manifolds.

#### 2) NEW COMPONENTS :

- air pump and bracket
- air distributors situated in front of the exhaust manifolds
- air injectors functioning above the exhaust valves, integral with the distributors and fixed in the exhaust manifold
- non-return valve fitted on the distributor air inlet
- brake harness protection screen
- steering bearing protection screen

P.T.O.

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- by-pass valve allowing air to be sent into inlet manifold when there is a deceleration.
- heat screen fixed to the lower part of the exhaust manifold and consisting of half-shells fitted with aluminium silicate fibre felt
- brake harness protection screen
- flexible connecting tubes
- belts

## 3) MODIFIED COMPONENTS

- **Inlet manifold** : with extra bores for the air inlet at the moment of deceleration

- **Exhaust manifold** : the outlet pipes, as well as the lower R.H. and L.H. outlets, have been modified

- **Carburettors**

| WEBER 42 DCNF 2/M CARBURETTOR | | |
|---|---|---|
| Item | Size | Quantity |
| Diffuser ..... | 32 | 2 |
| Mixture control valve..... | 3.5 | 2 |
| Main jet ..... | 1.25 | 2 |
| Emulsion tube ..... | F.25 | 2 |
| Air correction jet ..... | 1.80 | 2 |
| Idling jet ..... | 0.50 | 2 |
| Accelerator pump jet ..... | 0.40 | 1 |
| Choke jet ..... | F. 7/80 | 2 |
| Needle valve ..... | 1.75 | 1 |
| Pump re-circulation valve ..... | 1 | 1 |

**Adjusting the idle**

**Specifications :**
- **Oil temperature** : 60° C to 70° C (140° F to 158° F). Start the operations at 60° C (140° F) upwards.
- **Surrounding temperature** : 15° C to 30° C (59° F to 86° F)
- **Fuel used** : super or trade petrol (free from oil)
- **Vehicle in high position.**

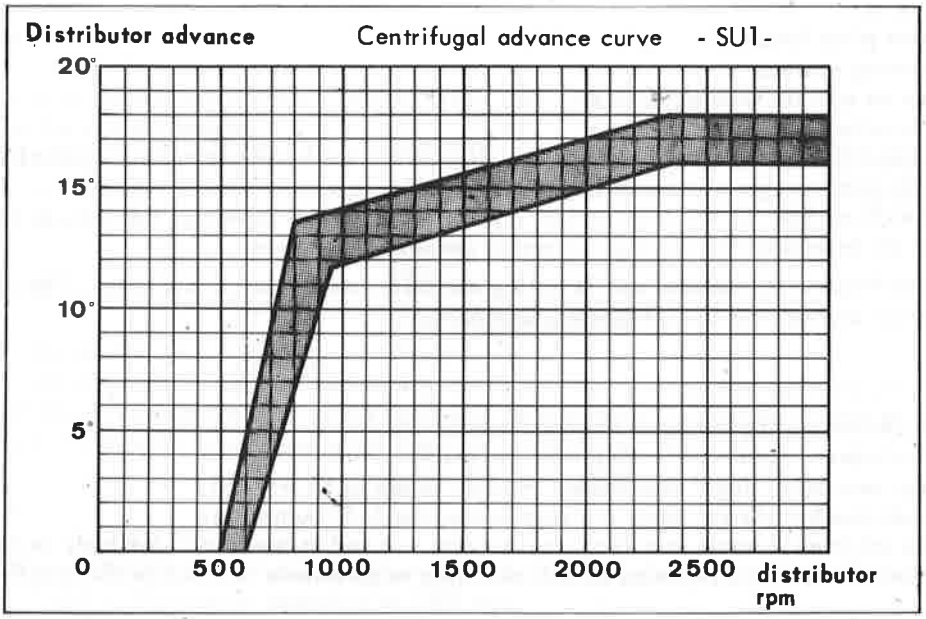
**Operations :**

1) **Pre-adjustment**
Tighten the mixture screws without forcing them, then slacken them 1 1/2 turns and bring the speed to $850^{+\,50}_{0}$ r.p.m.
2) **Disconnect** the air pump
3) Insert the gas level sensor in either of the two exhaust outlets.
4) Register the values of CO - $CO_2$ HC (hydrocarbons) (prescribed percentage CO - 2 to 2.5 %).
5) Modify, if necessary, the position of the mixture adjusting screws of each carburettor to obtain an idle satisfying the conditions in § 4.
6) **Re-connect** the air pump
7) **Adjusting the engine speed**
Without touching the mixture screw again, bring the engine speed to $900^{+\,200}_{0}$ r.p.m.
8) Register the new values of CO - CO - HC (hydrocarbons)

If the HC (hydrocarbons) are above 400 P.P.M. (parts per million)
a) Check the strobe setting of the distributor (27° ± 1° at 2000 engine r.p.m.)
b) Remove the spark plugs if necessary. Clean and then adjust the electrodes to 0.7 mm.

Vehicles which, with the air pump connected, show a percentage of CO equal to or less than 1.5 % and an amount of HC (hydrocarbons) equal to or less than 400 P.P.M. are considered as conforming to the norms established.

- **Distributor :**
The advance curve has been modified (see diagram below) the strobe setting of the ignition advance is 27 ± 1° at the flywheel, the engine turning at 2000 r.p.m.




- **Spark plugs :** original fitting : CHAMPION N 9 Y.
authorised alternative : GOLDEN LODGE H.L.

## B. FUEL SUPPLY (see fig. 2)

This system consists of :
- **A main reservoir (1),** made of sheet metal, whose filler is blocked with a sealing plug.
- **A cartridge containing active carbon (3)** which is self-replenishing. It is housed in the front L.H wing.
The petrol fumes, recovered in an auxiliary tank (2) which is used for decantation, are sucked by the engine between the air filter and the plastic container, after being passed through the cartridge of active carbon.

NOTE : The sucking tube and the gauge rheostat are new components.

## C. OTHER MODIFICATIONS SPECIFIC TO THE U.S. AND CANADIAN MODELS OF THE SM

**BRAKES :**
- New hydraulic harness : as a result of the fitting of "D" type leak detectors for the front circuit, and "G" type for the rear circuit (the detectors are fed by tubes of 3.5 mm diameter - the pedal outlet harness has been modified accordingly).
- The rubber lining fitted to the tubes of 3.5 mm diameter is different and marked with a band of green paint along the whole length of the lining and for a width of 1/4 to 1/2 of the external diameter.
- Brake tubes which are coated with rilsan from the flexible pipe to the brake unit, are fitted.

REPAIRS :
Bleeding the brakes :
Bleeding can be carried out in two ways
a) Either by gently depressing the brake pedal to obtain a slight flow of fluid without going as far as lighting up the warning lamp and therefore as far as closing the detector.
b) Or by depressing and releasing the brake pedal several times.

NOTE : These methods are equally valid for "D" vehicles fitted with this device.

**COMPRESSOR FOR AIR-CONDITIONING (YORK DA 209)**

147 c.c. instead of 98 c.c., "TREFLE" rubber coupling with lengthened control shaft.

**ELECTRICAL SYSTEM :**

- Sealed beam headlamps are fitted on U.S. models (no self-levelling and directional headlamp control).
- The parking lamps are of an amber colour.
- The sidelamps are fitted on the front and rear wings.
- The rear tail lamps are special (direction indicators in different position).
- The reversing lamps are white.
- The fitting of lateral number plate lamps.
- The fitting of a hazard warning system.
- The anti-theft incorporates an audible warning device.
- The speedo is graduated in miles.
- The warning cluster is marked "HAZARD", the choke control "CHOKE", the headlamp control "LIGHTS", the windscreen wiper and windscreen washer switch "WIPE" and "WASH".
- These vehicles are fitted with neither the fog-lamp option, nor the radio option. However, the coaxial cable and the loudspeakers are fitted on all models at the factory, the aerial remaining an option.

NOTE : Canadian models are fitted with standard self-levelling and directional control headlamps. The adaptation of sealed beam headlamps will be carried out by CITROEN - CANADA.

**BODY :**

- The front ledge is special (following the fitting of the headlamps).
- The door locking device includes a system of locking from the inside.
- The fitting of front and rear seat belts (legal requirement in USA) (made by KLIPPAN).
- The vehicle does not include number plates, these are supplied by the U.S. authorities.
- The plate showing that the vehicle conforms to safety requirements is fixed at the foot of the body on the front L.H. side. The plate showing that the vehicles conforms to anti-pollution requirements is fixed on the scuttle shelf under the bonnet.
- A label in the glove compartment indicates the characteristics and the tyre pressures.
- The maker's plate is located on the support for the electronic controls, to the left of the steering wheel.
- The customs label is stuck on the windscreen.
- The vehicle is delivered with a tool kit and a 250 gram tin of paint.
- The tyres bear a number.

**VARIOUS :**

The vehicle is delivered with - 30° C (-22° F) anti-freeze protection (15th October to 30th April) and - 5° C (+ 23° F) anti-freeze protection (1st May to 14th October).

NOTE : CANADIAN MODELS

- The front ledge is special
- There is no customs label on the windscreen

**ANTI-POLLUTION SYSTEM - GERMAN AND SWEDISH TYPE**

The German and Swedish anti-pollution system only concerns the exhaust.

However there are differences, details of which appear below.

- **Exhaust manifold :** this does not differ from that on French market models except in the provision of holes for the passage of the air injectors and in the fitting of tubes used in the analysis of the exhaust fumes.
- **Carburettors :**

| WEBER 42 DCNF 16 CARBURETTOR | | |
|---|---|---|
| Item | Size | Quantity |
| Diffuser | 32 | 2 |
| Mixture control valve | 3.5 | 2 |
| Main jet | 1.30 | 2 |
| Emulsion tube | F.25 | 2 |
| Air correction jet | 1.80 | 2 |
| Idling jet | 0.45 | 2 |
| Accelerator pump jet | 0.40 | 1 |
| Choke jet | F. 7/80 | 2 |
| Needle valve | 1.75 | 1 |
| Pump re-circulation valve | 1 | 1 |

**Adjusting the idle.**

**Specifications** : Identical to the specifications of the U.S CANADIAN type.

**Operations :**

1) Pre-adjustment.
   Tighten the mixture screws without forcing them, then slacken them 1 1/2 turns.
2) **Adjusting the engine speed**
   Using the common adjusting screw for the butturflies bring the speed to 850 ± 50 rpm.
3) Analyse cylinder by cylinder by means of the measurement tubes. Conditions to be adhered to :

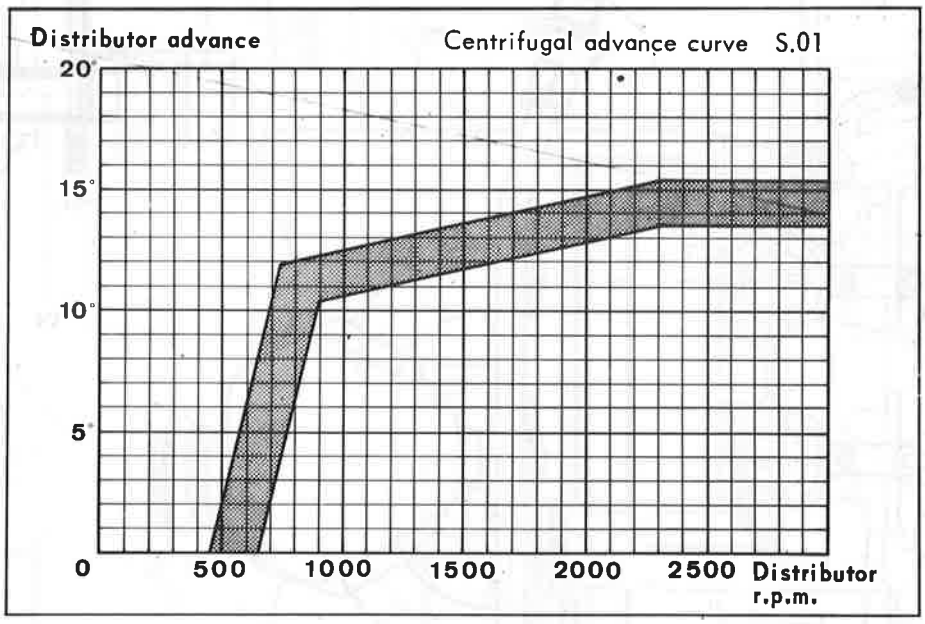
   CO : 1 to 1.5 %
   $CO_2$ : 11 to 13 %
   HC : 100 to 150 P.P.M. (hydrocarbons)

   **Air pump connected**

4) Register the values read.
5) If additional adjustments become necessary, check and try to obtain the same values of CO - $CO_2$ - HC (hydrocarbons) emission for each of the cylinders by operating the mixture screws of the carburettors.
6) If necessary, check the gap between the spark plug electrodes (0.7 mm).

**- Distributor :**

The stroboscopic setting of the ignition advance is identical to that of French market vehicles, 29° ± 1° at the flywheel (B.T.D.C.), the engine operating at 2000 rpm.
The distributor advance curve is also identical to that of French market vehicles.




**- Spark plugs**

Identical to those on French market vehicles.
Original fitting : BOSCH W 175 T 30. Authorised alternative : as for French market vehicles (see Technical Bulletin no. 37 GEN).

NOTE :
Sweden, Switzerland and Norway are now applying safety norms concerning brakes.
As a result these vehicles are fitted with leak detectors (see § C above.

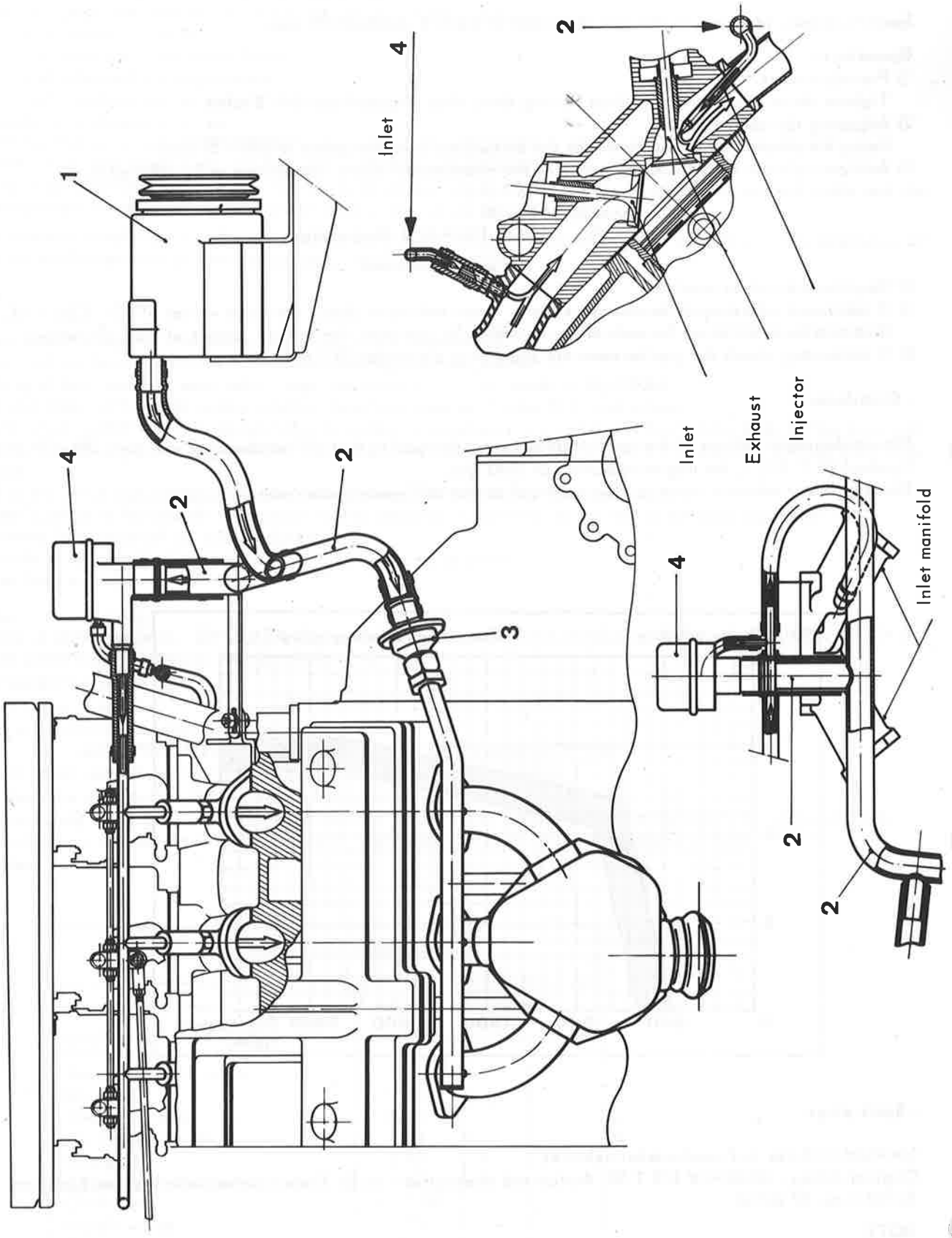



Fig. 1 : ANTI-POLLUTION - EXHAUST

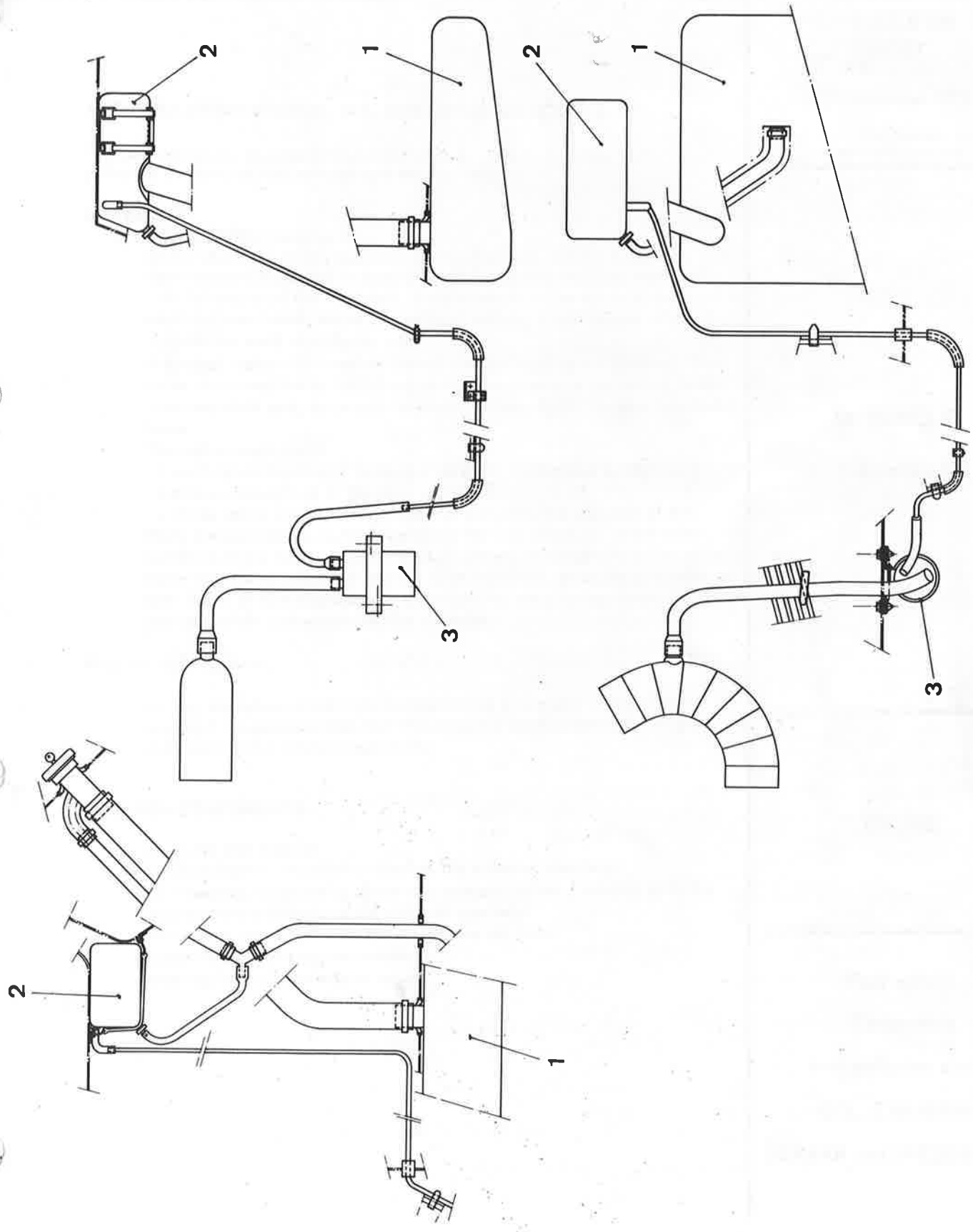



Fig. 2 : ANTI-POLLUTION - FUEL SUPPLY