Chapter 10

TYPE III TEST - DETAILS FOR STANDARDS FOR EMISSIONS OF CRANK-CASE EMISSIONS FROM PETROL ENGINES

1 INTRODUCTION:

This Annexure describes the procedure for the Type III test.

2 GENERAL PROVISIONS:

2.1 Type III Test is carried out on the vehicle fitted with petrol engine subjected to the type I and the type II test.

2.2 The engines tested must include leak-proof engines other than those so designed that even a slight leak may cause unacceptable operating faults (such as flat-twin engines).

3 TEST CONDITIONS:

3.1 Idling must be regulated in conformity with the manufacturer's recommendations.

3.2 The measurement are performed in the following three sets of conditions of engine operation:

Condition No.	Vehicle Speed (km/h)
1	Idling
2	50 ± 2 (in 3rd gear or "drive")
3	50 ± 2 (in 3rd gear or "drive")
Condition No.	Power absorbed by brake
1	Nil
2	That corresponding to the settings for type I tests
3	That for conditions No.2 multiplied by a factor of 1.7

4 TEST METHOD:

4.1 For the operation conditions as listed in 3.2 reliable function of the crankcase ventilation system must be checked.

5 METHOD OF VERIFICATION OF THE CRANKCASE VENTILATION SYSTEM: (Refer also to Figure 1)

5.1 The engine's apertures must be left as found.

5.2 The pressure in the crankcase is measured at an appropriate location. It is measured at the dipstick hole with an inclined tube manometer.

5.3 The vehicle is deemed satisfactory if, in every condition of measurement defined in 3.2, the pressure measured in the crankcase does not exceed the atmospheric pressure prevailing at the time of measurement.

5.4 For the test by the method described above, the pressure in the intake manifold is measured to within ± 1kPa.

5.5 The vehicle speed as indicated at the dynamometer is measured to within ± 2 km/h.

5.6 The pressure measured in the crankcase is measured to within ± 0.01 kPa.

5.7 If in one of the conditions of measurement defined in 3.2 the pressure measured in the crankcase exceeds the atmospheric pressure, an additional test as defined in Para 6 is performed if so requested by the manufacturer.

6 ADDITIONAL TEST METHOD:

6.1 The engine's apertures must be left as found.

6.2 A flexible bag impervious to crankcase gases and having a capacity of approximately five liters is connected to the dip stick hole. The bag must be empty before each measurement.

6.3 The bag must be closed before each measurement. It must be opened to the crankcase for five minutes for each condition of measurement prescribed in 3.2

6.4 The vehicle is deemed satisfactory if in every condition of measurement defined in 3.2 no visible inflation of the bag occurs.

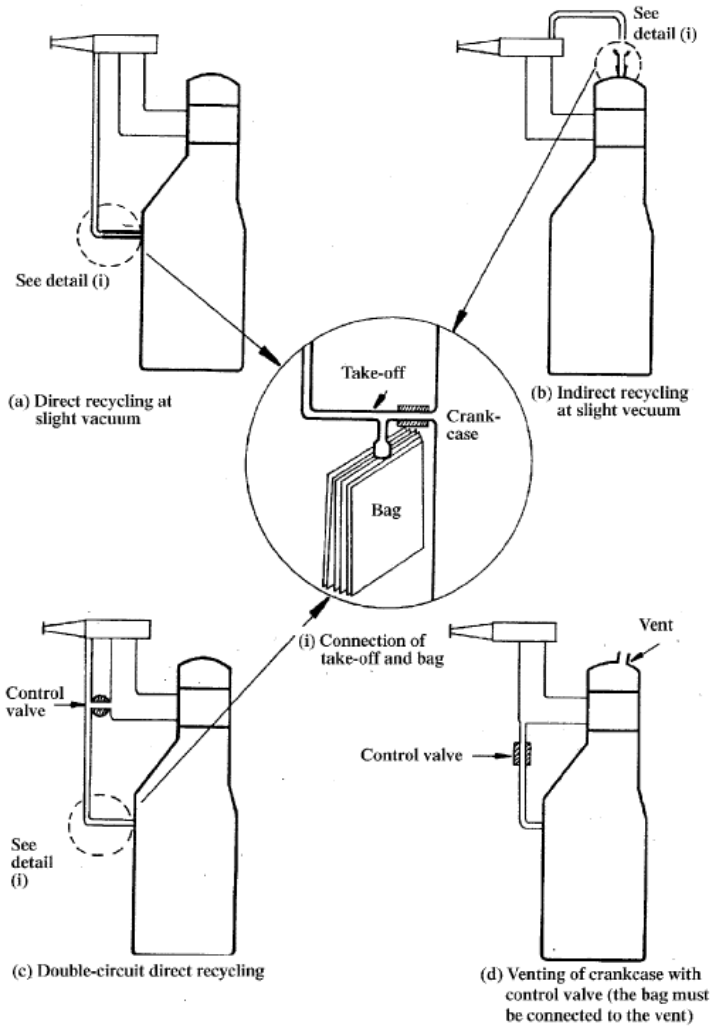
6.5 Remark:

6.5.1 If the structural layout of the engine is such that the test cannot be performed by the methods described in Para 6.1 - the measurements must be effected by that method modified as follows:

6.5.2 Before the test, all apertures other than that required for the recovery of the gases are closed.

6.5.3 The bag is placed on a suitable take-off which does not introduce any additional loss of pressure and is installed on the recycling circuit of the device directly at the engine-connection aperture.

Figure 1.


See detail (i)
See detail (i)
(a) Direct recycling at slight vacuum
(b) Indirect recycling at slight vecuum
Take-off
Crank-case
Bag
(i) Connection of take-off and bag
Control valve
See detail (i)
(c) Double-circuit direct recycling
Vent
Control valve
(d) Venting of crankcase with control valve (the bag must be connected to the vent)