

The level-road consumption of Model 190 has been officially tested as on all our other models. To make allowance for inevitable differences in test conditions, all measuring tests should be based on a + 5% tolerance.

Under these conditions, the measured level-road consumption of Model 190 is 8.9 liters/100 km.

In practice it is almost impossible to fulfill the conditions laid down for measuring level-road consumption.

II. Fuel Consumption According to German Standard DIN 70 030

In order to adapt fuel consumption tests to present conditions and to developments in automotive engineering, a revised edition of the DIN Standard 70 030 was issued in August 1956.

As compared with the previous edition of the Standard for determining level-road consumption of motor vehicles (April 1952), the new edition contains the following changes:

- a) The title was changed from "Kraftstoffnormverbrauch" (level-road consumption) to "Kraftstoffverbrauch nach DIN 70 030" (fuel consumption according to DIN 70 030).
- b) The load during the test run was decreased to half the difference in weight between the permissible total weight and the curb weight (in the case of Model 190 = 225 kg) instead of the permissible total weight.
- c) The test distance was shortened from 20 km to 10 km.
- d) The speed was fixed at $\frac{3}{4}$ instead of $\frac{2}{3}$ of the maximum speed as determined in accordance with DIN 70 030. The maximum permissible test speed was increased from 80 km/h to 110 km/h.

A comparatively large number of test runs is necessary in order to determine accurately the value of fuel consumption according to DIN 70 030. The accurate figure for the fuel consumption according to DIN 70 030 of Model 190 will be announced as soon as the official tests have been concluded.

In practice it is hardly ever possible to fulfill in every detail the conditions laid down for measuring level-road consumption and fuel consumption according to DIN 70 030. It is much more convenient therefore to measure partial load consumption (see Section III) or overall consumption (see Section IV).

III. Fuel Consumption Curve (Partial Load Fuel Consumption)

For obvious reasons, not only the level-road consumption of a car but also its fuel consumption at other speeds is of great interest. For this reason we give in addition to the level-road consumption figure a fuel consumption curve, the so-called partial load consumption curve (Fig. 00 — 4/1). The values plotted in the graph are derived from measurements.

At the various test speeds, fuel consumption is determined by running the vehicle over a 1 km stretch of level freeway in opposite directions. As a rule it is sufficient to take measurements at speed intervals of 20 km/h.

The partial load consumption curve is determined on runs made with two persons in the car and with a full fuel tank. When checking the partial load consumption, which is the most reliable indication of the car's actual consumption, the following conditions must be observed:

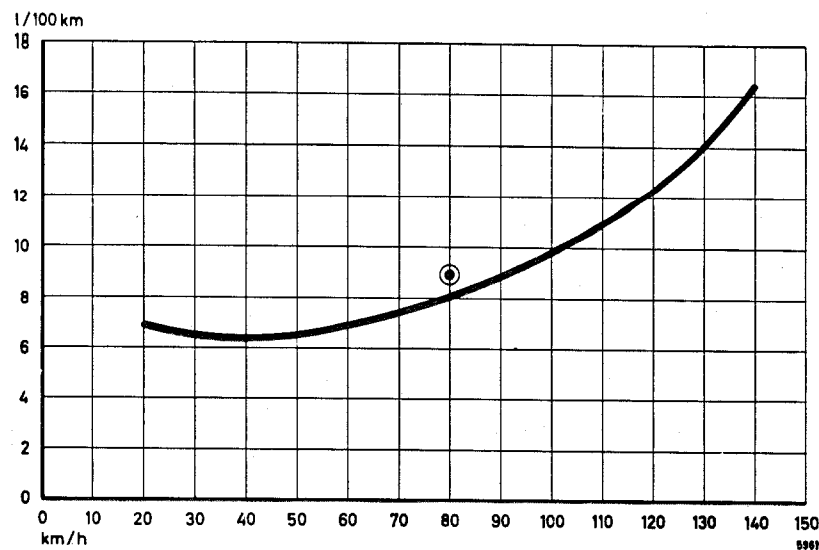


Fig. 00 — 4/1

- a) The test route must have been accurately measured. In selecting the test route it is advisable to contact the competent authorities in order to select a suitable route since the distance between milestones very often is not accurate enough. The best method is to measure the route by means of a measuring tape.
- b) Test runs should only be made on a dry road. On wet roads considerable discrepancies are inevitable.
Test runs should not be made at an outside temperature below -5°C .
- c) Besides the driver a second person is necessary to take the measurements. This must be a reliable and experienced automotive mechanic.
- d) Before carrying out a test run it is advisable to check the compression, the ignition timing, the carburetor setting, and the tappet clearance.
- e) Tire pressure must be in accordance with our specifications (front 1.7 atm., rear 1.8 atm. with tires cold).
- f) At the beginning of the test run the engine must be at operating temperature (water and oil temperature approx. 80°C); transmission and rear axle must have warmed up.
- g) Measurements must be made at all test speeds in 4th gear.
- h) Measurements should be made in such a way that the speed at which fuel consumption is to be determined is reached 200 to 300 meters before the beginning of the test route and should be maintained over the whole stretch (1 km). The speed should be maintained according to the 20, 40, 60, 80, etc. km/h marks on the speedometer dial.

The actual speed of the car is determined by recording the time required to cover the test route (calibration of the speedometer), and fuel consumption is measured by switching on the fuel-mileage tester during the period of the test.

Note: At speeds above 60 km/h, the car should be timed with an accuracy of $\frac{2}{10}$ sec. The consumption curve in Fig. 00 — 4/1 is plotted without a percentage increase for unfavorable conditions. As in the case of level-road consumption a tolerance of $+10\%$ is permissible. The above values can only be obtained if the car is in good working order.