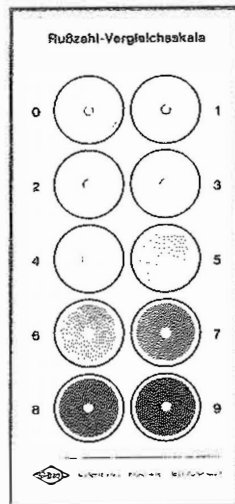
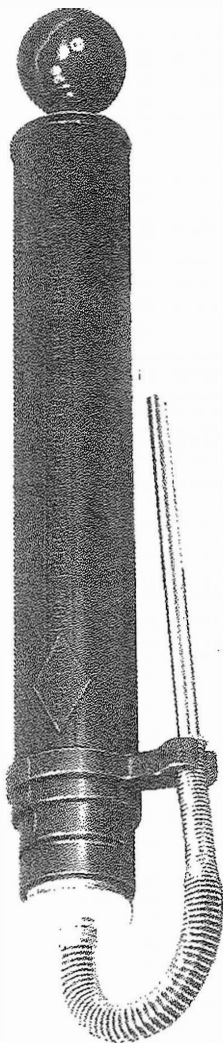


BRIGON-Smoke-Tester NAW

to determine Smoke Number

The best indicator of incomplete combustion for oil burners is smoke, as heavy smoking will usually occur before high CO concentrations are present.



Aside from bringing on the possibility of air pollution, smoking also causes soot deposition on heat exchange surfaces and thus results in considerable fuel waste due to decrease of combustion efficiency. Soot is an excellent insulator and even a relatively thin layer can greatly reduce the thermal conductivity of the heat exchanger.

Heavy smoking beyond BRIGON No. 1 spot for light oils is an obvious symptom of significant incomplete combustion. A variety of reasons, not seldom also a combination of factors, can be responsible for this: Too little excess air, insufficient draft or overfiring, mismatched oil and spray patterns or poorly designed combustion equipment, dirty or fouled nozzle, improper or lopsided oil spray pattern, misadjusted oil pressure or combustion chamber problems.

Testing Device

BRIGON-Smoke Tester NAW
BRIGON-Filter-Paper
BRIGON-Smoke-Scale

Principle of Operation

A certain amount of flue gas is drawn from the measuring point in the flue pipe by drawing and pushing the piston rod ten times. On its way from the metal sampling tube to the pump cylinder the gas sample is passed through the BRIGON-Filter-Paper.

The resulting smoke stain on the BRIGON-Filter-Papier is then compared with the BRIGON-Smoke-Scale to determine Smoke-Number.

Measurement

BRIGON-Smoke-Tester NAW should be at or close to room temperature to ensure a high degree of accuracy. Insert BRIGON-Filter-Paper in head of BRIGON-Smoke-Tester and screw firm gently. Insert metal tube of BRIGON-Smoke-Tester into the flue by using the same point for sampling as described in other chapters. The gas sample to be tested is drawn through BRIGON-Filter-Paper by pumping steadily ten times. A check valve fitted in the Smoke-Tester prevents the gas flow from being reversed and hence any loss of soot already deposited on BRIGON-Filter-Paper. Also for this smoke test a cone is recommended.

After 10th stroke take out Filter-Paper, place BRIGON-Filter-Paper under holes of BRIGON-Smoke-Scale and over the white background. Compare the soot stain on BRIGON-Filter-Paper with the different shades of black on BRIGON-Smoke-Scale to determine the matching Smoke-Number. Determined Smoke-Number must not be greater than No. 1.

Maintenance

The high degree of accuracy guaranteed for BRIGON-Smoke-Tester NAW can only be achieved if all manufacturer's instructions are observed and maintenance is carried out as follows:

1. Clean Cylinder, Piston, Piston Rod, and complete Sampling Tube after approximately 30 tests; if necessary lubricate Piston slightly with BRIGON-Lubricant-Oil.
2. Clean Valve and Valve seat with alcohol if leakage has been detected. Also clean Nylon Insert.
3. Check air-tightness by sealing hole of Metal Sampling Tube with finger and pulling Piston Rod back. An air-tight Valve does not give way more than 50 mm (2 inches).
4. Use only BRIGON-Filter-Paper and BRIGON-Smoke-Scale for Tests.