



Methanol dissociation gas generator type MET

**Constant and reproducible gas
quality and composition.**

Applications:

- bright hardening of carbon steel
- carburizing
- carbonitriding

**Very effective carburizing gas.
High operating efficiency.
Flexible in use.**

The methanol (methyl alcohol) is externally stored and injected into the generator through valve and flowmeter circuit.

Methanol dissociation produces a gas of perfectly stable composition, ideal for protection of metals from oxidation and for carburizing.

This atmosphere is used for carburizing with propane addition (C_3H_8 or other C_mH_n) and for carbonitriding with ammonia addition.

The carbon potential can be precisely controlled and maintained at the required value.



Fig. 1

Generator type MET 25/2

Technical data:

TYPE			MET 17	MET 25	MET 32	MET 52
Max. gas output	m ³ /h		2	5	18	35
Power rating	Kw		4,5	10,5	25	54
Overall size	width	mm	1200	1300	1600	1900
	depth	mm	600	800	800	1100
	height	mm	1660	1700	2300	2400
Weight	kg		450	900	1200	2000

Specifications may be changed without notice

Methanol (methyl alcohol)

Earlier produced by wood distillation, this alcohol is today obtained by catalytic oxidation of natural gas or the catalytic monoxide reaction of carbon-hydrogen. In a typical analysis, its purity may reach 99,98%.

Data

Formula: CH₃ OH
Molecular weight: 32,04
Density (20°C): 0,792 kg/l
Boiling temperature at 1 bar pressure: 64,7°C
Vapour pressure at 20°C:
96 Torr.

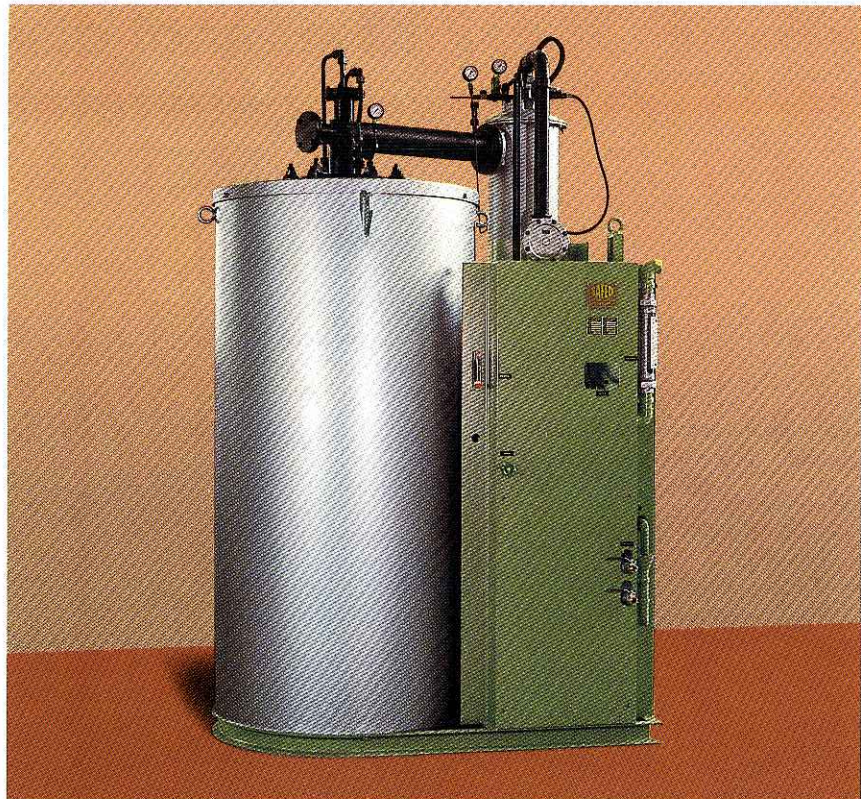


Fig. 2

Generator type MET 52

Dissociation:

$\text{CH}_3 \text{OH} \rightarrow \text{CO} + 2\text{H}_2$
1 kg of methanol (= 1,2 l)
produces 2000 litres of gas.
1 litre of methanol produces
1700 litres of gas.

Gas analysis:
CO = 32,5%; H₂ = 65%
CO₂ = 0,8%; CH₄ = 0,5%
H₂O = 1,2%

Gas outlet pressure: 300 mbar.

The specific carbon potential of
the furnace atmosphere at
850°C is 0,8 at 1,0% C.

Atmosphere control

The generator type MET produces a perfectly stable gas. No permanent regulation is required. However, when necessary the carbon potential can be measured by any standard methods.

Drying of gas

For specific heat treatments requiring a very dry gas, the generator type MET can be equipped with two drying towers (type MET .../2), reducing the gas dew point to -25°C.



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The use and storage of methanol are subject to safety regulations. Relevant detailed information is provided by the suppliers.