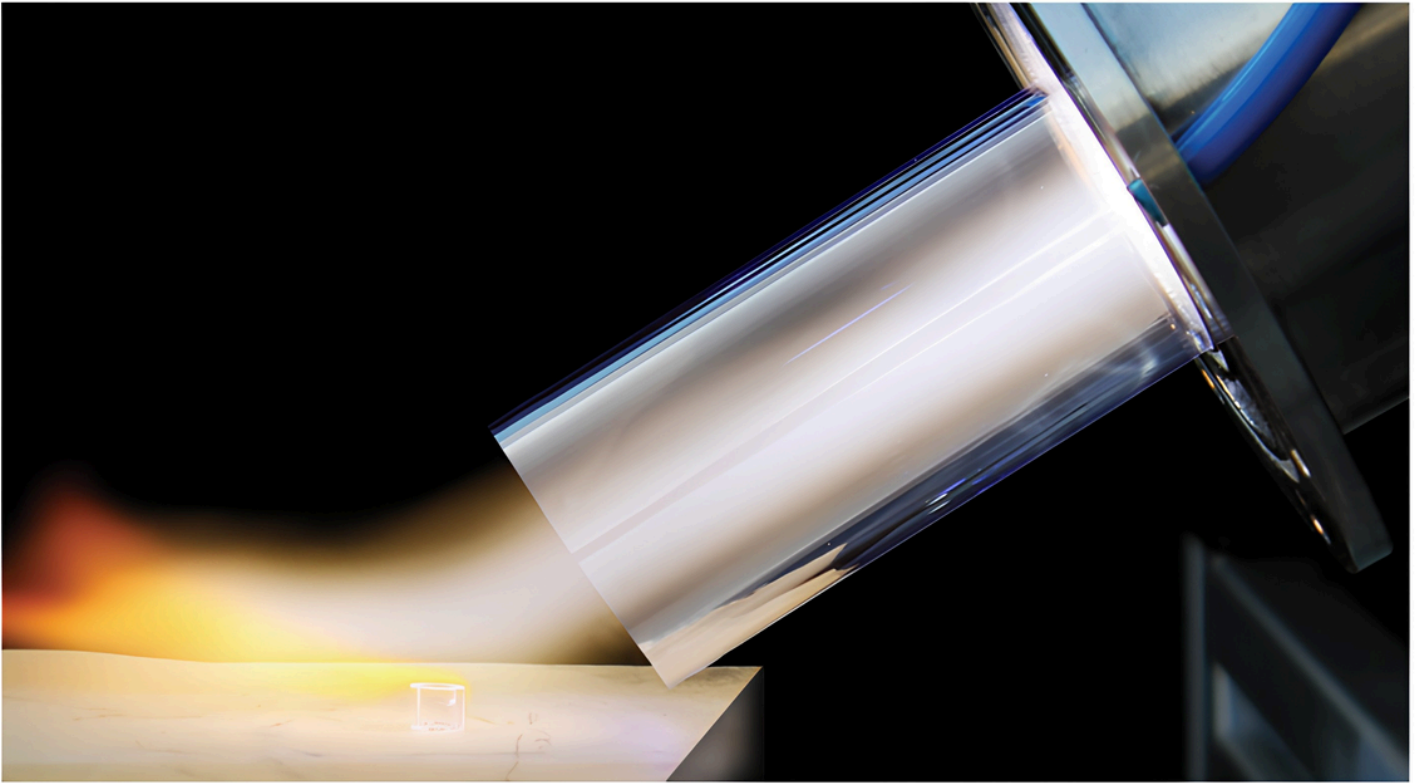




GENERAL INFORMATION

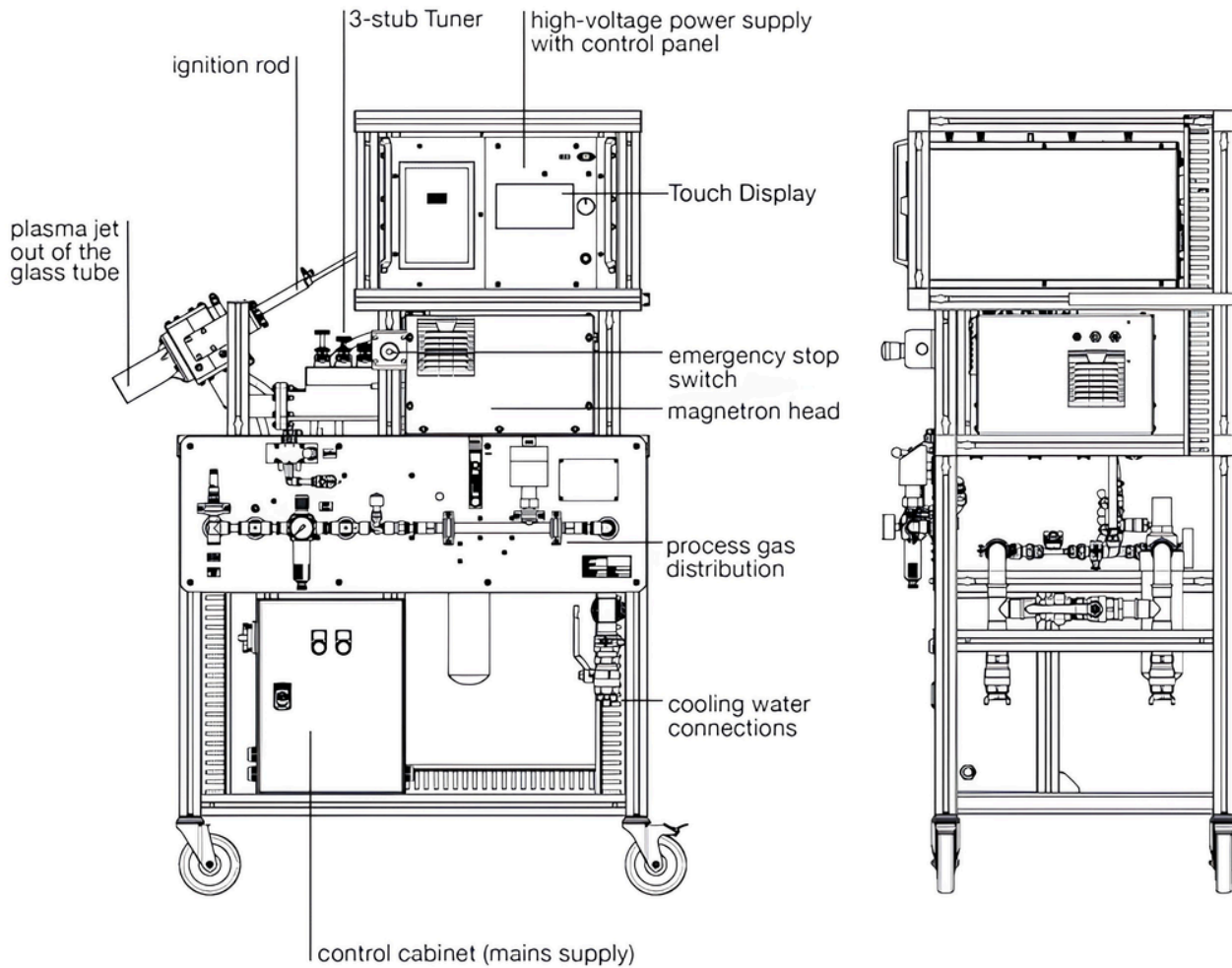
In a microwave plasma reactor natural gas is directly converted to pure carbon and hydrogen. This is also the main benefit of the dry methane reforming reaction in a microwave plasma reactor over for example conventional steam methane reforming: no carbon dioxide is formed in the process. While steam methane reforming comes with the disadvantage of carbon dioxide emissions and needs expensive carbon capture and storage technologies, this extra step can be spared with a microwave plasma reactor. Additionally, the pure carbon adds value to the process as an extra revenue, since this chemical is desired for e.g. tire manufacturing, gaskets or simply for shoe soles.

KEY FEATURES I TECHNICAL DETAILS

- Atmospheric plasma
- Compact plasma source device
- 99% energy coupling in the microwave plasma reactor (incl. 3-Stub-Tuner)
- Intuitive operation via touchscreen

POTENTIAL APPLICATIONS

- Research at universities and industrial labs
- Rapid heating (alternative to melting processes)
- Methane pyrolysis
- CO2 consumption
- Surface treatment



SPECIFICATION

Plasma Components and Condition

Type of Gas	Air, Ar, N ₂ , He, H ₂ , CO ₂ , CH ₄ 3-5 Bar
Gas Pressure	3 - 5 Bar
Gas Flow	minimum 130 l/min for max power
Type of tube	Quartz
Tube diameter	30 - 50 mm
Tube thickness	2 mm
Tube length	More than 200 mm
External dimension	Max. 730 X 1300 X 1610 mm (W x D x H)
Torch Length	Up to 250 mm

Technical Data of Magnetron

Frequency	2450 MHz +/-15 MHz
Output power	10 kW
Line input	3 phase 400 V _{AC}
Line frequency	50/60 Hz
Input Power	16.7 kVA @ 400 V _{AC}
Interface	HMI or Profinet

Cooling Water Quality

Water Flow	Min 15 l/min
Temperature	17 °C - 28 °C
Water pressure	3.5 - 5 Bar