



**Data Sheet/Quotation**  
**SePhys IB 11 Injection Burner**  
**Long slender flame directed vertically upwards**

**Fuels: Extra light (# 2) heating oil and fatty acid methyl ester (FAME, aka biodiesel)**

Oil nozzle outer diameter (hence IB 11) .....	11 mm
Maximum throughput (design value for standard air duct) .....	100 l/h
Maximum thermal power output $P_{max}$ (design value for standard air duct) .....	1.0 MW
Turndown ratio ( $P_{max}/P_{min}$ ).....	2.5 : 1
Load control .....	fuel-flow valve
Fuel fed into burner by .....	gravity
Atomizing medium.....	air or steam
Working pressure (constant over whole load range).....	1.8 bar
Air consumption (minimum compressor intake) .....	695 l/min
Steam consumption .....	33.5 kg/h
Position.....	vertical
Height.....	170 mm
Maximum diameter.....	48 mm
Material.....	100% stainless steel
Burner lance* .....	CHF 6435.00 plus VAT
IB/ZB 11 Burner mount* .....	CHF 1030.00 plus VAT
Superheater element* .....	CHF 1175.00 plus VAT
Standard air duct* .....	CHF 7625.00 plus VAT

\* Quantity rebates upon request.

**Emissions (# 2 heating oil)**

Test boiler .....	2-10-0 steam locomotive # 52 8055
Use as .....	pilot burner (atomizing medium: steam)
Draught.....	natural draught (blower turned off)
Throughput.....	maximum throughput without smoke
Boiler pressure gain rate.....	from 14.0 to 14.5 bar in 240 s
CO .....	36 mg/m <sup>3</sup> (at 3 % O <sub>2</sub> )
NO <sub>2</sub> .....	163 mg/m <sup>3</sup> (at 3 % O <sub>2</sub> )
HC <sub>propane</sub> ** .....	≤ 13 mg/m <sup>3</sup> (at 3 % O <sub>2</sub> )

\*\* HC-emissions only during load changes, otherwise below the detection threshold.

Quoted prices valid in 2018. Certain firebox geometries preclude the use of the standard air duct. Development and manufacture of special air ducts available at extra charge.

## **System advantages**

- For both heating oil (# 2) and FAME (liquid biofuel).
- Low fuel consumption due to excellent combustion.
- No fuel pump.
- Simple controls – NO electronics.
- No external steam necessary for boiler start-up – pilot burner uses compressed air until boiler is in steam.
- Identical constant working pressure for air and steam.
- No moving parts.
- 100% stainless steel.
- Maintenance-free.
- No brick lining in firebox necessary.
- Very low emission values.
- Very good price/performance ratio.

Engineering support is available to offer a complete solution to any application problem (at extra charge).

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