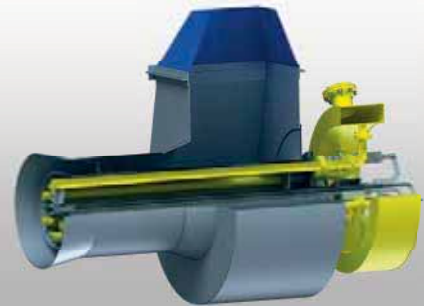


Oil and Gas Vortex Burner



High Combustion Efficiency
Low Emissions

Application	Refineries	Steel Plants	Power Plants
Fuel Type	Refinery gas Visbreaker residues Vacuum residues HSC-R H ₂	Blast furnace gas Coke oven gas Converter gas	Natural gas Light fuel oil Heavy fuel oil Bio fuel
Benefits	<ul style="list-style-type: none"> • Almost total burn-out • Minimization of organic residues • High burnout of fuel • Reliable solutions based on decades of experience 		
Technical Data	Capacity Gas: 0,6 – 100 MWth	Capacity Oil: 5 – 100 MWth (0,45 - 9 t/h)	
Scope of Supply	<ul style="list-style-type: none"> • Consultancy • Process engineering • CFD-simulations of boiler furnace and combustion system • Design of furnace • Design of burner • Supply of gas- and oil burners including all related components • Commissioning 		

Reference List Excerpt

Liquids and Gas Firing Systems

Scope	Client
Study for capacity increase of firing system, Coke-Oven Gas, 240 MWel, CHP Hamborn 5, Germany	RWE Service GmbH, Germany
Engineering and supply of oil atomiser lances and atomiser sprayer, Mainova, Germany	MAINOVA, Frankfurt, Germany
Engineering and supply for retrofit of burner level oil-to-gasfiring, 2x750 t/h, Refinery Residues and Heavy Fuel Oil, PCK Schwedt, Germany	PCK Raffinerie GmbH, Schwedt, Germany
Supply of oil control valve stations, Heavy Fuel Oil and Low-Pressure-Gas, Shell Wesseling, Germany	Shell Deutschland Oil GmbH, Wesseling, Germany
Supply, erection and commissioning of 12 optimised oil burner inserts, CHP West Unit 2, Germany	MAINOVA, Frankfurt, Germany
Oil atomizer lances for an ignition system for the heat power plant 2x200 MWel, Bituminous Coal, Tiefstack PS, Germany	Vattenfall Europe Hamburg AG, Germany
Study for capacity increase, coke gas firing system, 2x307 MWel, Huckingen PS, Germany	RWE AG, Essen, Germany
Engineering and supply of optimised oil lances, 340 MWel, Knepper PS, Germany	E.ON Engineering GmbH, Gelsenkirchen, Germany
Supervision of revamping at refinery steam generators, life extension and environmental upgrading, Germany	MIRO, Karlsruhe, Germany
Supply and implementation of a new oil and gas firing system at steam generator plus retrofit of a catalytic DeNO _x system, 200 t/h, Heavy Fuel Oil and Low-Pressure-Gas, Shell Wesseling, Germany	Shell Deutschland Oil GmbH, Wesseling, Germany
Basic Engineering and supply for gas connection installation, retrofit for additional natural gas firing system, Tiefstack PS, Germany	Vattenfall Europe Hamburg AG, Germany
Engineering for retrofit of a SCR-DeNO _x plant, 200 t/h, Heavy Fuel Oil and Low-Pressure-Gas, Shell Rheinland Refinery, Germany	Shell Deutschland Oil GmbH, Wesseling, Germany
Review of firing concept for BAO Steel, 1170 t/h, Blast Furnace Gas	Babcock Hitachi Europe GmbH, Oberhausen, Germany

Legend:

PS – Power Station
PF – Pulverized Fuel
CHP – Heat and power plant

SCR – Selective Catalytic Reduction
STP – Standard Temperature and Pressure
HRSG – Heat Recovery Steam Generator

FGD – Flue Gas Desulphurization
CFB – Circulating Fluidized Bed
ESP – Electrostatic Precipitator

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