



Power Plant (BFB Boiler 88MW, Steam 36kg/s, 115 bar, 525°C)

Category	Power Plant, Energy Supply
Product Code	VAK10790
Name	Power Plant (BFB Boiler 88MW, Steam 36kg/s, 115 bar, 525°C)

Technical data

Power Plant - Main Equipment

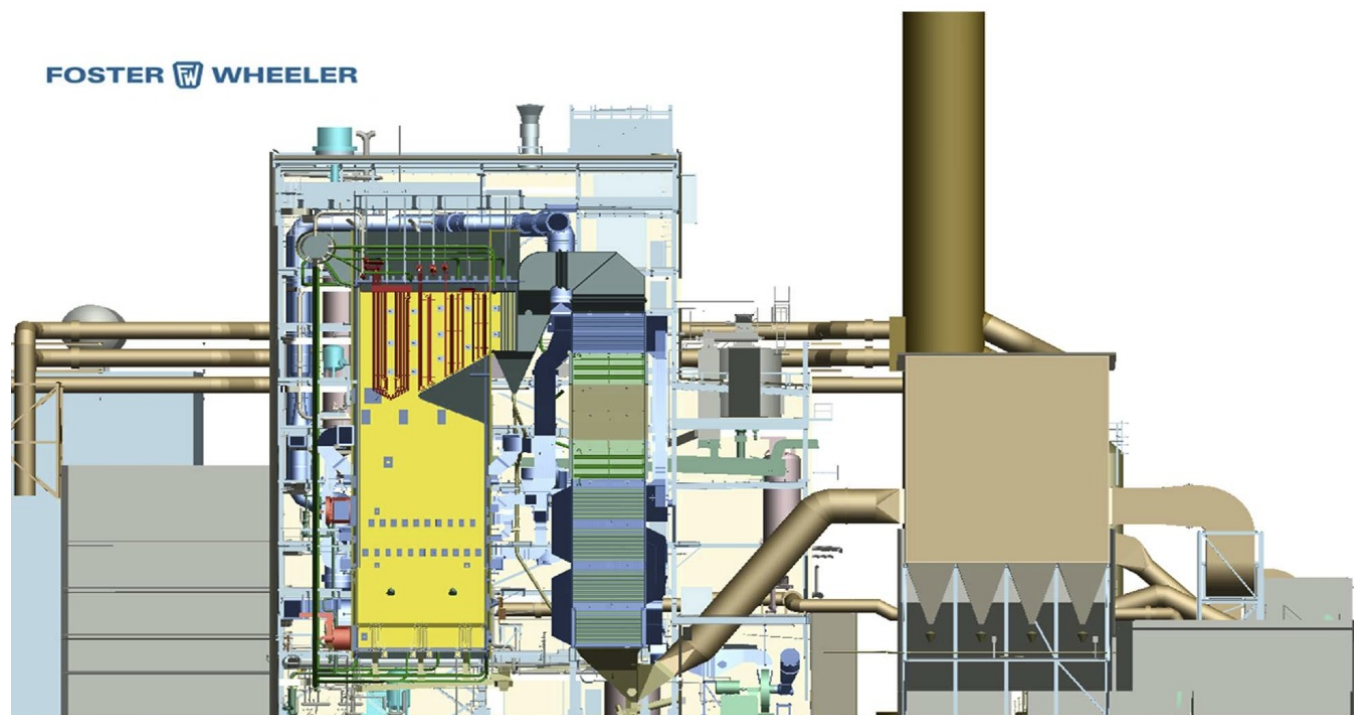
Main Steam Cycle

BFB boiler K7

Fuel Receiving Station and Transportation

Gas Boilers K6, K8&K9

Steam Turbines



BFB-Boiler K7

88 MWth

Foster Wheeler 2001

33,5 kg/s, 90 bar (36 kg/s, 115 bar), 525°C

Running time: 88 000 hour

Latest revision in 2009 (air preheater)

Maintenance revision annually

Operation manual in Finnish

Main machinery and key components for K7

Feed water pumps and motors (2 pcs)

High-pressure preheater, feed water heater

Feed water valves

Injection water system

Steam drum

Combustion chamber

Fuel drop funnel (4 pcs)

Start-up burners (2 pcs)

Load burners (2 pcs)

Waste oil burner, waste oil tank

Natural gas filters

Economiser

Air-preheater

Super heater

Exhaust system

Main steam valve

Safety valves

Dust removing system

Bed material system, bed sand silo

Bed sand preparing

Bed lime system, lime silo

Furnace ash system

Fly ash system, fly ash silo and screws

Primary air blower

Secondary air blower

Twist grip blower

Bag filter

Flue gas blowers (2 pcs)

Flue gas scrubbers, lye system, scrubbers sludge system

Safety locking system

Nitrogen preservation system

Chemicals dosage and chemical pumps

Sample system

Chimney

Solid fuel system for K7

Maintenance revision annually

Raumaster, built in 2001

Operation manual in Finnish

Bar conveyor

Crusher

Fuel batching screw, fuel receiving pocket

Scraper conveyor to screen hall

Screen system

Scraper conveyor to silos and scraper conveyor on the silo

Peat silo, fuel batching screw

Bio fuel silo, fuel batching screw

Fuel line from silos

Fuel line 1

Fuel line 2

Back-up fuel pocket and fuel batching screw

Fuel batching screw at the power plant

Robbery fuel batching screw

Batching bin 2x50m³

Scraper conveyor at the boiler (2 pcs)

Fuel batching pockets and fuel batching screw

Fuel feeder (4 pcs)

Fuel sample crusher

Extinguishing steam system

Sludge system for K7

Built in 2002

Compressor

Sludge pneumatic press

Sludge pipe cleaning system

Blowpipe to the power plant

Cyclone

Sludge silo and batching screw

Automation and electrical equipment, spare parts for K7

Alcont-control system

Field instruments (as it is on the field)

Motors

Frequency changers

Automatic valves etc. (as it is on the field)

Auxiliary devices (as it is on the field)

All available existing specific spare parts

Radioactive source Excluded!

Steam turbine VP4

Siemens back-pressure turbine

22,5 MW

26 MVA

In operation since 2009

Running time: 24 000 h

Operation manual in Finnish and English

Turbine

Gearbox

Turning gear

Generator

Generator cooler

Oil system

Siemens automation system

Automation and electrical equipment (as it is on the field)

Motors

Frequency changers

Valves

Auxiliary devices (as it is on the field)

All available existing specific spare parts

Boiler K6

Built in 1989

100 MWth

36 kg/s, 40 bar, 400° C

Operation manual in Finnish

Running time: 130 000 h

Feed water pumps and motors (2 pcs)

Feed water cooler

Feed water heater

Feed water valves

Economiser

Steam drum

Air preheater

Combustion chamber

Main steam valv

Burners (3 pc), control system

Injection water system

Exhaust system

Combustion air blowers

Natural gas system

Heavy fuel oil system, dosing tank, pumps

Replacement air system

Nitrogen preservation system, preservation pump

Auxiliary steam system

Chimney

Safety locking system

Safety valves

Sample system

Automation and electrical equipment (as it is on the field)

Motors

Frequency changers

Valves

Auxiliary devices (as it is on the field)

All available existing specific spare parts

Boiler K 8

Foster Wheeler 2001

45 MWth

12 bar, 250 C, 1-18kg/s

Running time: 17 000 h

Operation manual in Finnish

Feed water pumps, common with K9

Feed water valves

Economiser

Steam drum

Combustion chamber

Superheater

Main steam valve

Exhaust system, common with K9

Burners (2 pcs)

Combustion blowers (2 pcs)

Replacement air system, common with K9

Light fuel oil system, tank

Natural gas system

Nitrogen preservation system and preservation pump

Safety locking system

Safety valves

Automation and electrical equipment (as it is on the field)

Motors

Frequency changers

Valves

Auxiliary devices (as it is on the field)

All available existing specific spare parts

Boiler K9

Foster Wheeler 2001

45 MW MWth

12 bar, sat. 2-19 kg/s

Running time: 750 h

Operation manual in Finnish

Feed water valves

Economiser

Steam drum

Combustion chamber

Main steam valve

Burner

Combustion blower

Natural gas system

Nitrogen preservation system and preservation pump

Safety locking system

Safety valves

Automation and electrical equipment (as it is on the field)

Motors

Frequency changers

Valves

Auxiliary devices (as it is on the field)

All available existing specific spare parts

Steam turbine VP 2

De Laval back-pressure turbine

10 MWe

16 MVA

In operation since 1962

Latest revision in 2008

Running time 2001-2013 50 000 h

Operation manual in Finnish

Turbine

Generator

Turning gear

Lube oil system

Cooler system

Condensate chamber

Automation and electrical equipment (as it is on the field)

Motors

Frequency changers

Valves

Auxiliary devices (as it is on the field)

All available existing specific spare parts

Water treatment system at the power plant

(part of K 7 package, if not otherwise needed)

Built in 2006

YIT

Raw water purification and desalination

Operation manual in Finnish

Raw water purification

Max capacity: 146 m³/h

Capacity: 73m³/h

Min capacity: 11 m³/h

Pumps and compressors

Tanks

Flock-filtering system (2 pcs)

Preheater of raw water

Automation and electrical equipment (as it is on the field)

Motors

Frequency changers

Valves

Auxiliary devices (as it is on the field)

All available existing specific spare parts

Desalination

Net capacity: 2 x 72 m³/h

Cation exchangers (2 pcs)

A1/A2 exchangers (2 pcs)

MB exchangers (2 pcs)

Tanks

Pumps

Heat exchanger: dilution water of lye

Automation and electrical equipment (as it is on the field)

Valves

Motors

Frequency changers

Auxiliary devices (as it is on the field)

All available existing specific spare parts

Steam, condensate and feed water system

(part of K 7 package, if not otherwise needed)

Feed water tank

Condensation tank

Purification of condensation, precoat-system

Condensed steam pumps

Steam tanks

Steam condenser

Reduction valves

Steam-pressure accumulator

Cooling water system

Automation and electrical equipment (as it is on the field)

Valves

Motors

Frequency changers

Compressed air system

Keaser

Air compressor

Compressed air dryers

Tank

Common electrical equipment

Process central

Distribution transformers

400V 1,25MVA (1 pc)

690V 3,15MVA (2pcs)

Pictures

