



HögforsSahala

A cool way to manage heat and pressure



HögforsSahala Oy

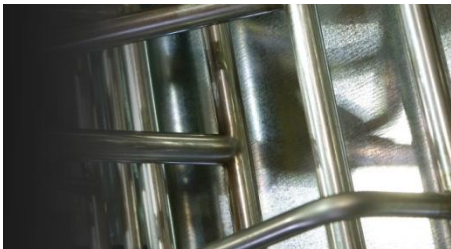
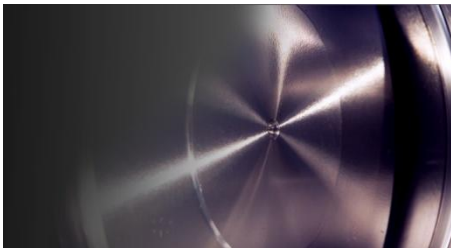
Content



- Högfors Group
- New HögforsSahala
- Strong combination
- Brief history
- Wide product palette
- Pulp and paper industry
- Power production
- Petrochemical and chemical industry
- Delivery process
- Flexible production
- Global quality
- Summary



Högfors Group



- Högfors - focus on heat and energy
 - 120 million euros, 700 employees
- HögforsSahala
 - Heat exchangers and pressure vessels for process industry and power generation
- HögforsValves
 - Valves for process industry and power generation
- HögforsGST
 - Home and building district heating systems
- HögforsSteka
 - Manufacture and installation of power boiler structures and pressure parts as well as pressure vessels



New HögforsSahala

- Established in 2007
 - Sahala Works, Varkaus
 - Högfors Heinola plant
- Key facts
 - Workshops in Varkaus and Heinola
 - Personnel 230
 - Turnover 36 million euros
- Main products
 - Heat exchangers
 - Pressure vessels
 - Evaporators



Strong combination

- Over 50 years experience of heat and pressure
- Versatile expertise
- Extensive resources
- Capacity to invest in the very latest technology
- Wide product palette
- Flexibility



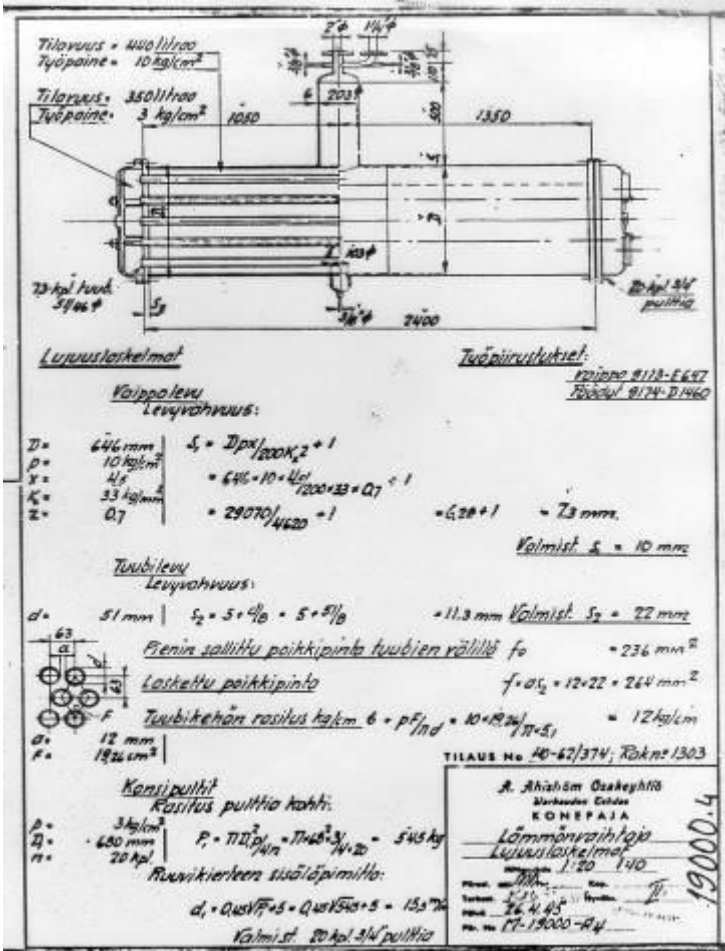
Brief history of Högfors



- 1820 Karkkila iron works
- 1842 Karkkila engineering works
- 1903 Radiator and boiler production in Karkkila
- 1927 Salo foundry
- 1952 Heinola engineering works
- 1970 Kymmene
- 1987 Sento
- 2007 HögforsSahala



Brief history of Sahala Works



- 1815 Gustav Wrede: blast furnace
- 1852 Paul Wahl: engineering works
- 1920 Ahlström
- 1945 Heat exchanger production
- 1982 New facilities at Päivärinne
- 2000 Andritz-Ahlstrom
- 2001 Andritz
- 2004 Sahala Works
- 2007 HögforsSahala



Wide product palette

- Heat exchangers
- Steam accumulators
- Feed water tanks
- Evaporators
- Other pressure vessels
- Debarking and drying drums



Pulp and paper industry

- Demanding process environment
 - Liquors
 - Foul condensates
 - Viscosity variations
- Products
 - Heat exchangers
 - Steam accumulators
 - Feed water tanks
 - Evaporators
 - Continuous and batch digesters
 - Debarking drums



Power production

- Conventional, nuclear and bio energy
- Production requirements
 - Optimal thermodynamics in all conditions
 - Corrosion and erosion resistant solutions
- Products
 - Condensers
 - High and low pressure heaters
 - District heaters
 - Water-water heat exchangers
 - Coolers
 - Feed water tanks
 - Steam accumulators

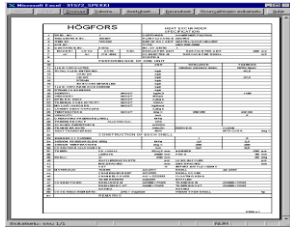


Petrochemical and chemical industry

- Demanding environment
 - New demanding processes
 - New challenging chemicals
 - Rising raw oil process requirements
- Products
 - Heat exchangers
 - Condensers
 - Reactors
 - Columns
 - Steam accumulators
 - Feed water tanks
 - Pressure vessels



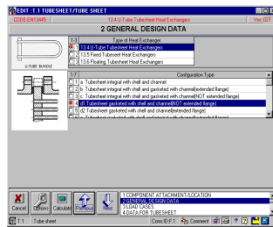
Delivery process



Thermal calculations



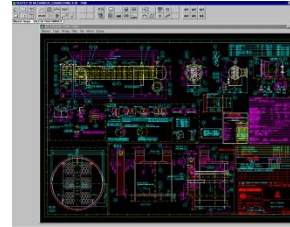
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Stress calculations



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Drawings



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Manufacturing



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Installation



Client / Option

Client

Högfors

Högfors

Högfors

Client / Option

Client

Client

Högfors

Högfors

Client / Option

Client

Client

Client

Högfors

Client / Option



Flexible production

Varkaus

- Hall space: 2 x 3600 sqm
- Hoisting capacity: 120 t
- Maximum transportation size:
 - D 12.5 m, L 40 m, W 400 t
- Capacity: 150 000 h/a

Heinola

- Hall space: 6140 sq m
- Hoisting capacity: 120 t
- Maximum transportation size:
 - D 6 m, L 30 m, W 170 t
- Capacity: 120 000 h/a



Global quality

- International and local standards
 - ISO 9001:2000
 - EN ISO 3834-2
 - ASME
 - NB
 - TÜV
 - Manufacture License of Special Equipment (China)



Summary

- Heat transfer experience and know-how
- Pressure vessel experience and know-how
- Flexibility and cost effectiveness
- Impeccable quality
- Individual service

