

Revised 21 August 2008

Sabroe factory profile



About Johnson Controls

History

Solid financial record

Johnson Controls businesses

About Johnson Controls

1885 : Founded as Johnson Electric Service Company by **Warren S. Johnson** to manufacture, install and service automatic temperature regulation systems for buildings.

1974 : Renamed Johnson Controls



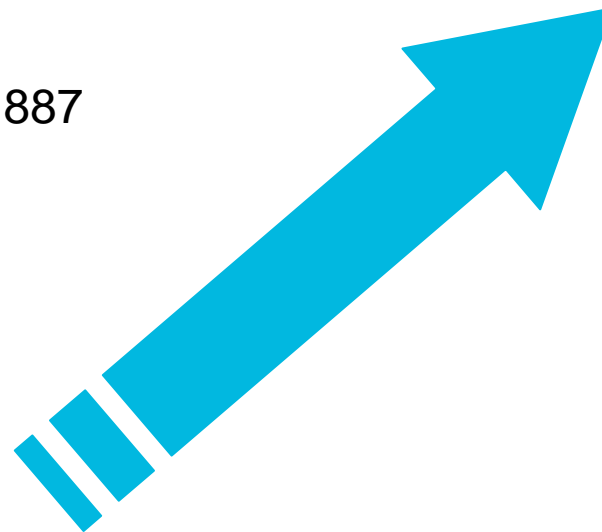
Today

- 140,000 employees worldwide
- Overall company sales 2007: USD 34.6 billion

Financial highlights

Years of increase

- Sales 61 consecutive years
- Earnings 17 consecutive years
- Dividends Paid consecutively since 1887



Global leadership in each of our businesses

Automotive Experience (Turnover USD 17,500 million)

Global leader in interior systems for light vehicles including passenger cars and light trucks. Systems supplied include seating, overhead, door, instrument panels, storage, and electronics.



Power Solutions (Turnover USD 4,300 million)

World's largest manufacturer of lead acid automotive batteries and developer of advanced battery chemistries. About 80 percent of batteries are sold through the automotive aftermarket and 20 percent are sold as original equipment.



Building Efficiency (Turnover USD 12,700 million)

Our products and services include HVAC&R equipment and control systems, industrial refrigeration, fire and security systems, and services for commercial, industrial and residential buildings. Our focus is to make buildings more comfortable, productive, safe and energy efficient.



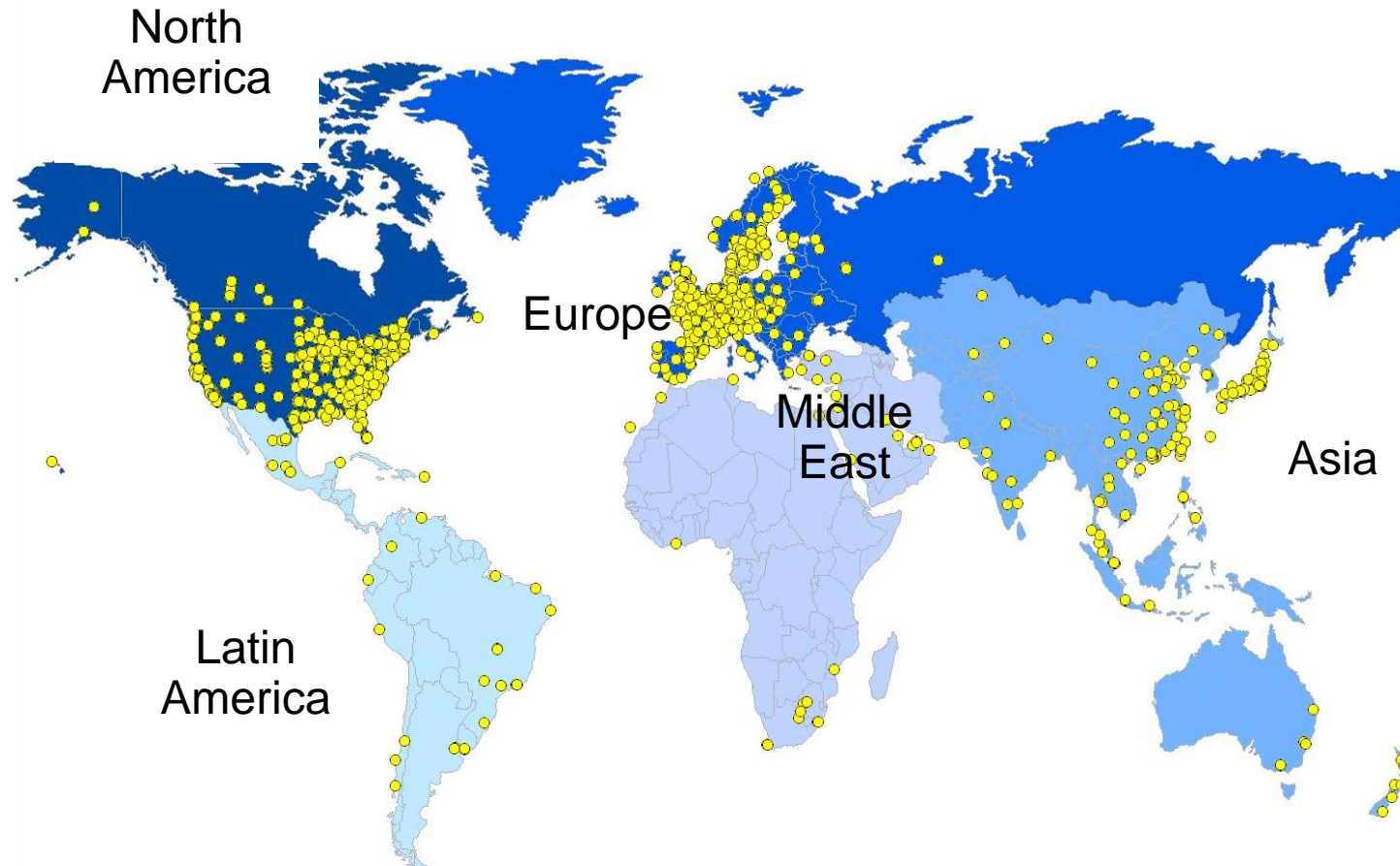
Building Efficiency

Business portfolio

Single source for all building environments

References

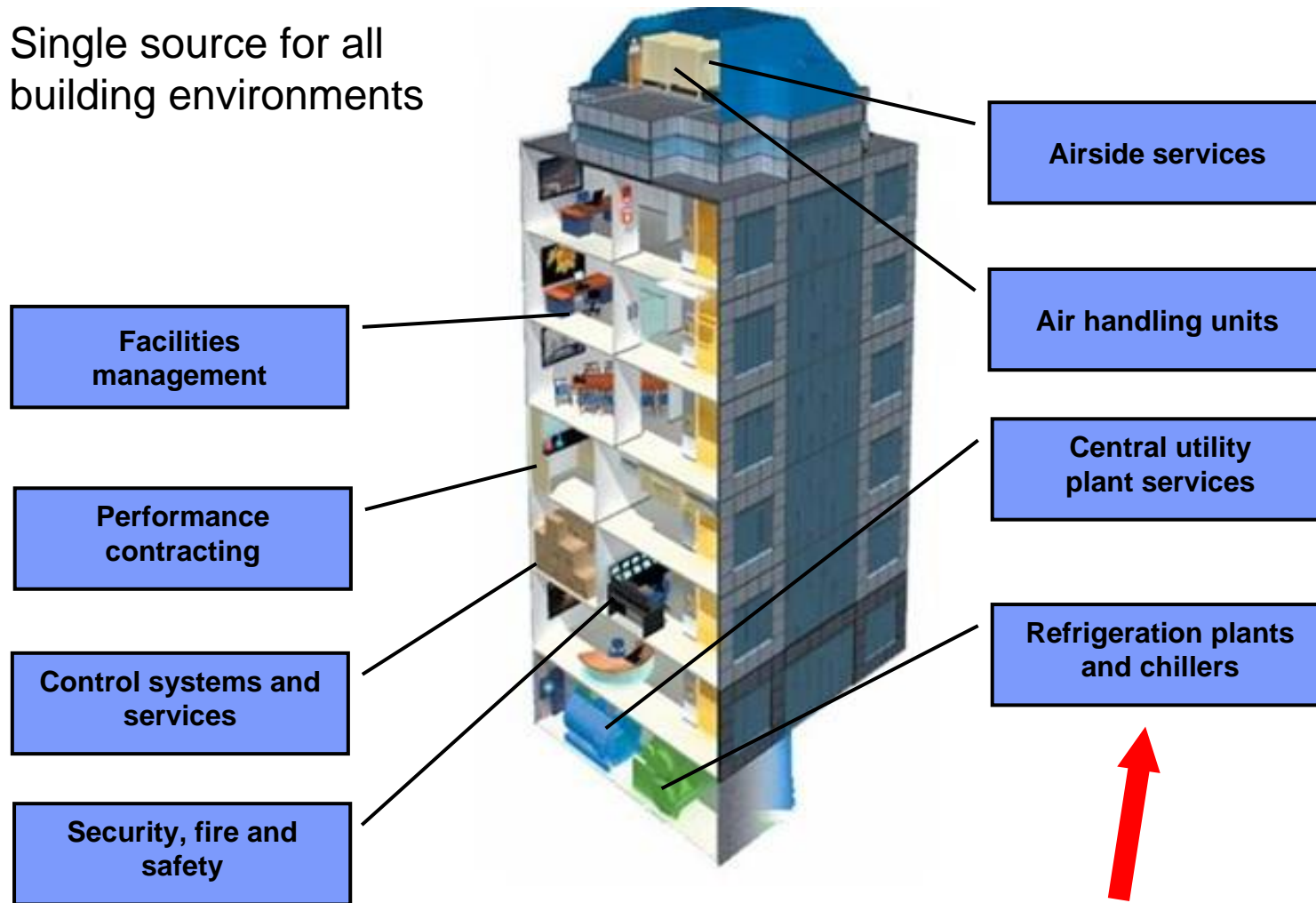
Building Efficiency overview – business portfolio



We have over 500 locations worldwide with a platform for growth in all global markets

Building Efficiency

Single source for all building environments



We serve a wide range of customers



Refrigeration

Refrigeration business areas

Application temperatures

Industrial refrigeration

Refrigeration business areas

Industrial refrigeration

- Efficient industrial refrigeration, freezing and air treatment systems

Commercial refrigeration

- Efficient temperature management

Snow

- Designs, builds and upgrades manual and fully automatic snowmaking solutions for all sizes of sport venues and ski areas.

Marine

- Reliable and economical refrigeration systems for the marine industry. Embedded controllers for refrigerated containers or complete provision plants, e.g. for cruise vessels and navy ships.

Worldwide service – 365 days – 24 hours



Industrial refrigeration



Meat & poultry industry

- Applications for meat processing
- Storage and transportation
- Extremely hygienic conditions
- Temperature-controlled environments



Food, beverage & breweries

- Applications for precision temperature
- Fermentation/germination processes
- Space cooling
- Storage



Dairy industry

- Applications for dairy processing
- Highly specialized storage phases
- Ice banks, chillers, climate units
- Air coolers and control systems



Leisure Snow-making & ice rinks

- Customized leisure applications
- Consistent monitoring
- Ice, bed, foundation calculations



Process industry

- Systems for manufacturing
- Petro-chemical applications
- Pigments, plastics and fibres
- Systems for oil and gas



Cold stores & distribution centres

- Storage methods and systems
- Screw / reciprocating compressors
- Gravity or pump circulation systems
- Automated monitoring



Environment simulation

- Applications for automobile industry and science
- Climate-testing laboratory
- Mini-sheds, VT-sheds



Marine

- Merchant vessels
- Cruise liners
- Control systems

Brands

Corporate brand

Product brands

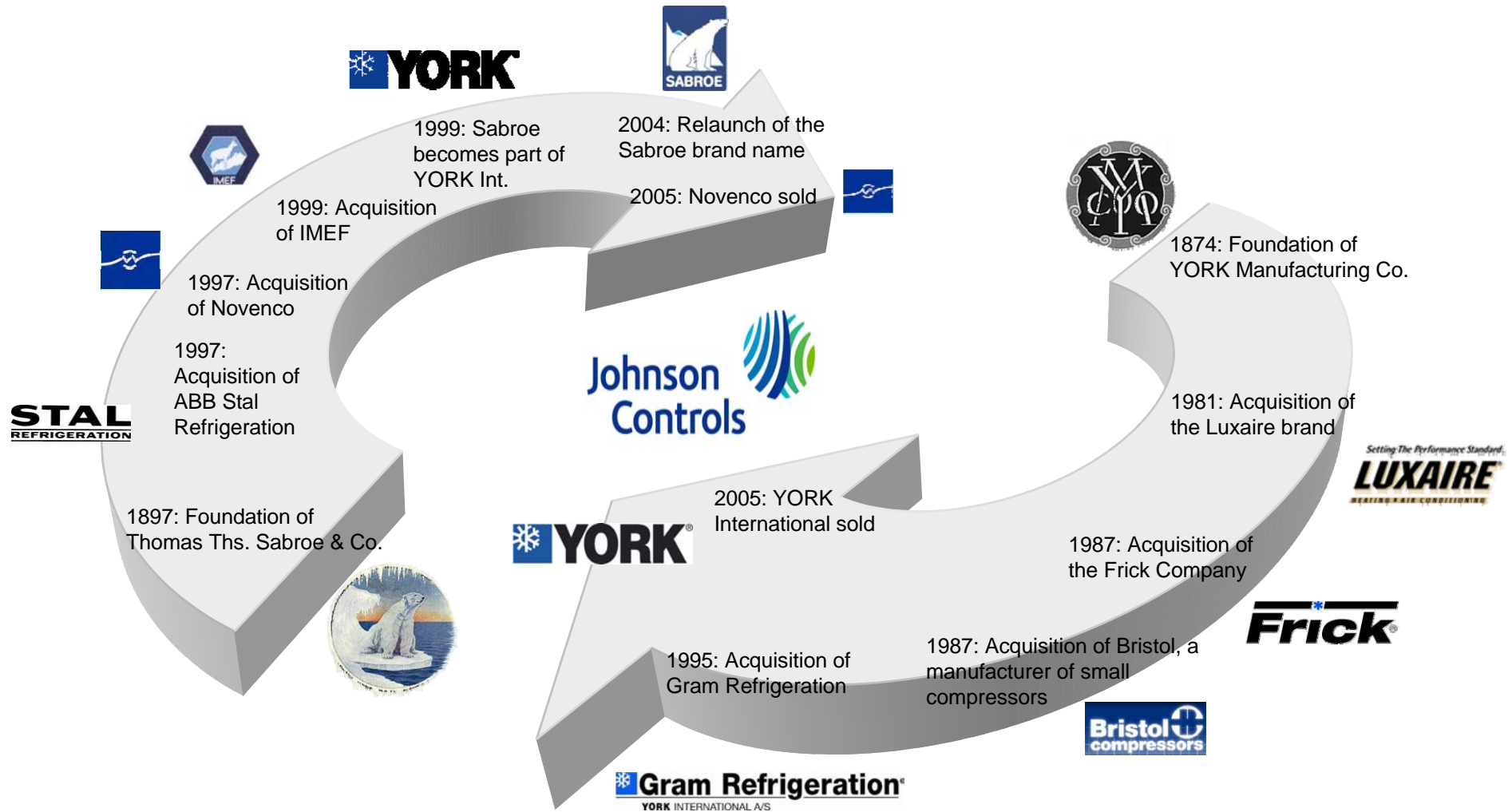
Sabroe products

Corporate brand: Johnson Controls

Product brands:



History: Sabroe – YORK – Johnson Controls



Sabroe factory

Get refrigeration right!

Sabroe factory

Number of employees in Denmark

Production and office area

Sabroe factory test lab

Get refrigeration right!

The Sabroe product brand is renowned for

- High-quality refrigeration equipment
- Unparalleled experience in getting refrigeration right
- Reliability
- Technological excellence
- Ability to meet the most demanding customer requirements



Sabroe factory in Denmark



Number of employees in Denmark, April 2008

| | |
|--|--------------|
| Sabroe factory | 406 |
| Sabroe Parts | 50 |
| Compressor Remanufacturing | 18 |
| Global Contracting | 21 |
| Shared Service Center & EMEA | 61 |
| YORK Marine | 162 |
| YORK Køleteknik, Hornslet | 201 |
| Johnson Controls Denmark ApS | 919 |
| GWS Denmark (Facility Management) | 217 |
| Total | 1,136 |

Production and office area



Production area: 34,354 m²



Office area: 8,285 m²

Sabroe factory test lab

| | |
|--------------------|---------------------|
| Test lab 1 | 720 m ² |
| Test lab 2 (R & D) | 1790 m ² |
| New test stand | 460 m ² |
| Sound enclosure | 390 m ² |



Total test lab facilities 3360 m²

Installed power:

High voltage, 400V-6000V, 0-100Hz, 1.6 MW

Low voltage, 400V / 50Hz, 1.8 MW

Sabroe products

Sabroe product history

Sabroe products overview

Screw compressors

Reciprocating compressors

Chillers

Controls

Natural refrigerants

Sabroe sales tools

Sabroe product history



1900

1950

2000



**Founded
1897**

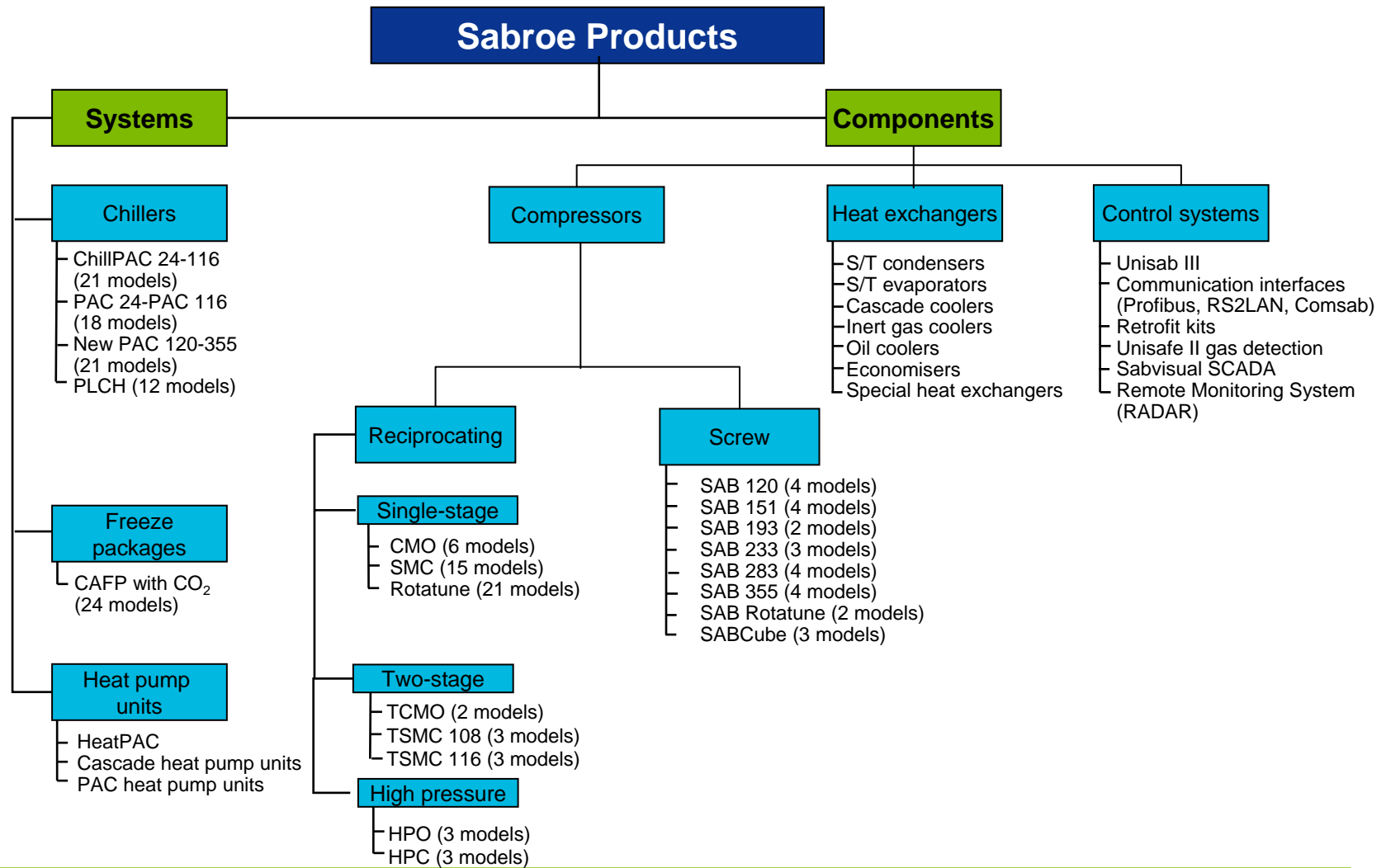
**SA models
1929**

**SMC models
1955**

**SAB 128
1981**



Sabroe products



Screw compressors

The Sabroe screw compressor programme comprises a completely new range of screw compressors covering swept volumes from 200–10,000 m³/h.

The latest compressor is the SABCube - a small screw compressor with variable-speed drive. It is 30% more efficient than traditional screw compressors. It is extremely compact, and the noise level is only 75 dbA.



SABCube 109



SAB 193

Reciprocating compressors

The Sabroe reciprocating compressor programme includes more than 20 different sizes of single-stage compressors. Some of them are also available in high-pressure versions. Two-stage solutions are offered for use in low temperature applications.

The latest development within reciprocating compressors is the Rotatune compressor with variable-speed drive to match output to demand and thus minimize the energy costs.



CMO 26 block



SMC 108 Rotatune

Chillers

The Sabroe chiller programme (PAC and ChillPAC) includes both a version based on the new SABCube screw compressor and a version with reciprocating compressor for remote condenser - and even a chiller with high-pressure compressors for heat pump operation.

PLCH: 100-1100 kW

ChillPAC recip: 200-1400 kW

PAC recip: 100-1400 kW

ChillPAC screw: 300-400 (1300) kW

PAC screw: 200-6000 kW



ChillPAC recip



PAC screw

Controls

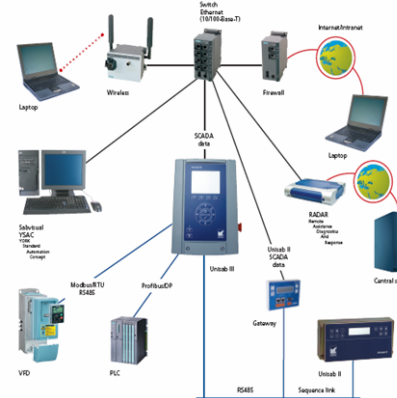
Product line

- Unisab III controller for recipcs, screw compressors and chillers
- Sabvisual SCADA packages (Graphical PC visualisation)
- RADAR, remote monitoring
- SABConnect, standard remote monitoring for Unisab/compressors



Unisab III

Unisab III compressor controller - ultimate connectivity



Connectivity

Natural refrigerants (ammonia, CO₂, hydrocarbon, water)

- World leader in the application of natural refrigerants
- Center of competence within the JCI organization
- Extensive line of products for natural refrigerants
- Comprehensive list of references
- End-of-line testing with refrigerants



CAFP in Danish Poultry

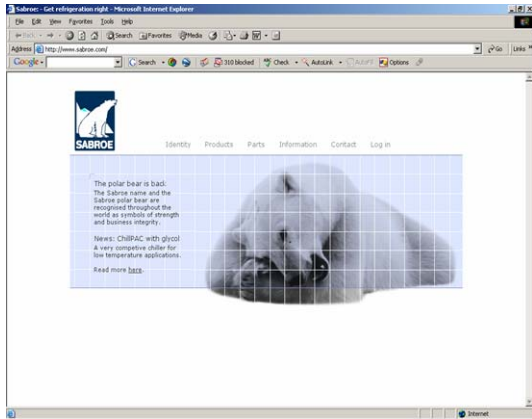


EOL testing facility

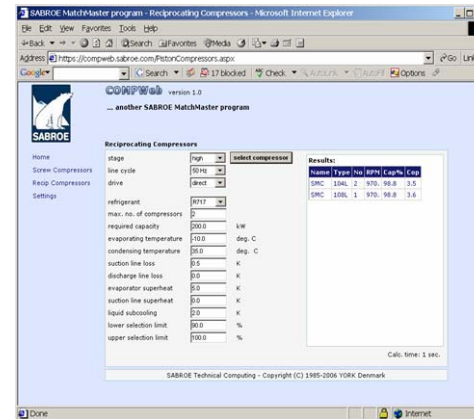
Sabroe sales tools

A number of sales tools (COMP1, COMPWeb and OrderSys) makes it easier to calculate a refrigeration product, find the relevant product information and order the product.

All product documentation can be found at www.sabroe.com



www.sabroe.com



COMPWeb

Sabroe website

www.sabroe.com

Public information on products

Link to Parts Centre and E-catalogue

- Articles
- Press releases
- News
- Case stories

