



DIBS 20

Sune Rørbæk | 28. January 2020

Our Mission

One Team Around the World



Providing leading-edge vacuum and overpressure technology worldwide

- › We seek prosperity and growth by creating the highest value for our customers
- › We employ the best people and challenge them
- › We constantly evaluate our activities in order to maintain the highest standards

MG-IB Len S2 11/2016 6.2 16.9 ©Bosch Group

Built on Reliability

Sustainable Business Development Since 1963

Busch – a family business

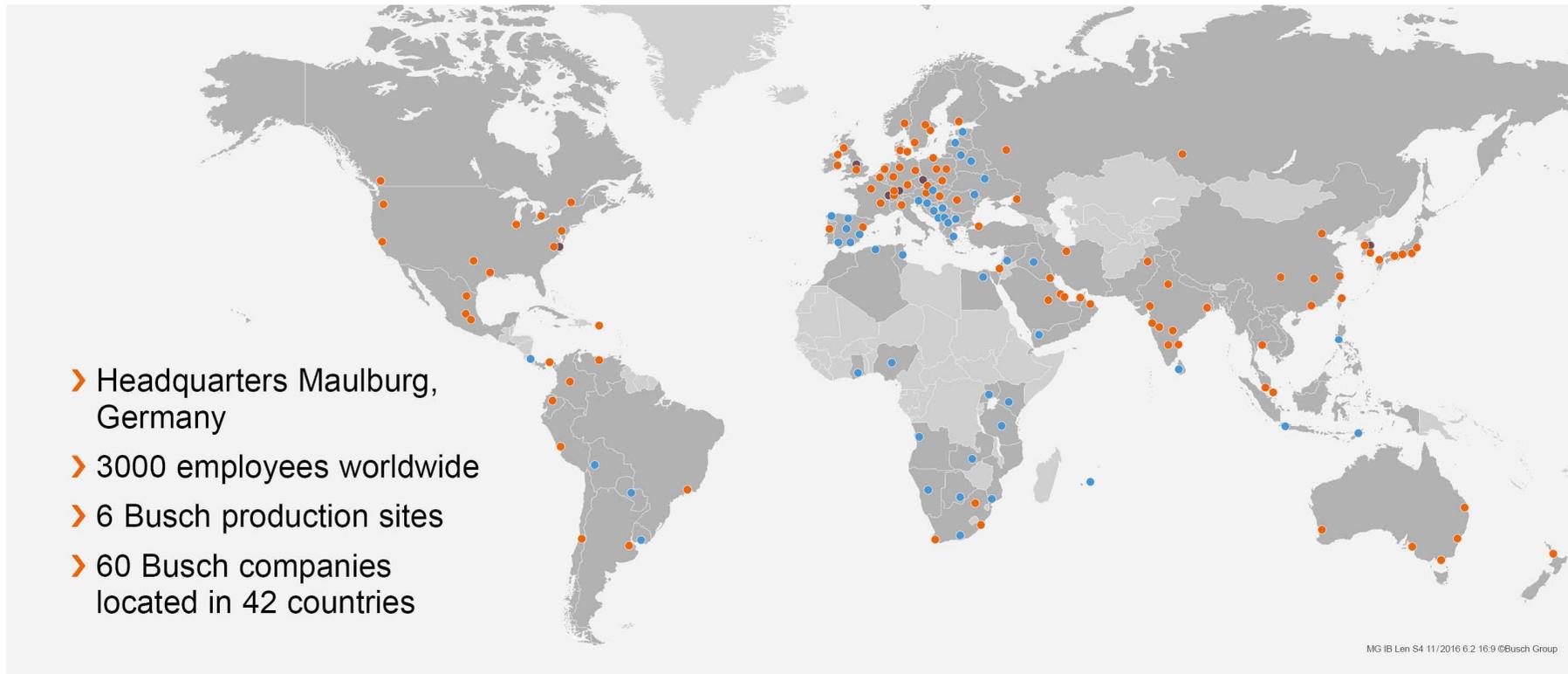
- › Long-term customer relationships
- › Committed to customer satisfaction
- › Management continuity
- › Long-term business perspective
- › Long-term employee commitment



MG-IB Len S3 11/2016 6.2 16.9 ©Busch Group

Global and Always Near You

Benefit from Our Global Network



Busch Headquarters Maulburg, Germany

- › Busch SE

Coordination of the global Busch companies

- › Busch Dienste GmbH

Provision of global services

- › Busch Produktions GmbH

Production, research and development

- › Dr.-Ing. K. Busch GmbH

German sales organization



MG JB Len SS 11/2016 6.2 16.9 ©Busch Group

All over the World in Industry

Busch in Denmark

› Busch Vakuumenteknik A/S
Parallelvej 11
8680 Ry
+45 (0)87 88 07 77
info@busch.dk
www.busch.dk

› Service centre Ry
Parallelvej 11
8680 Ry
+45 (0)87 88 07 77
info@busch.dk

› Service centre Slagelse
Rugvænget 5D
4200 Slagelse
+45 (0)40 22 56 61
email@busch.dk



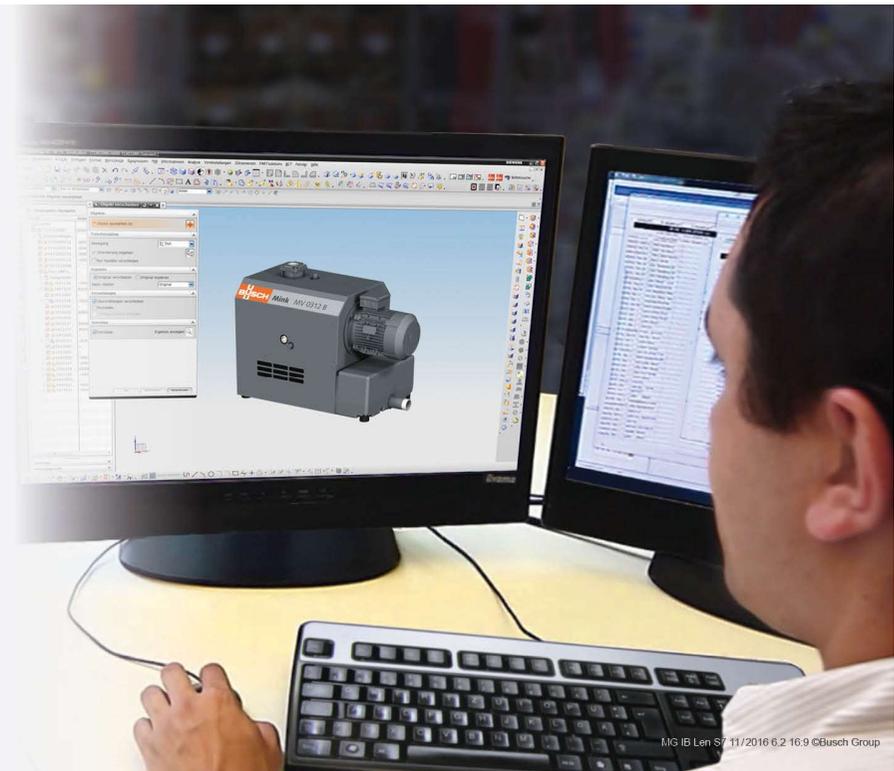
MG CB DKda S0 04/2017 6.7 16.9 ©Busch Group

Dedicated to Quality

Benefit from Vacuum and Overpressure Experience

For your needs, worldwide

- › More than 100 development engineers
- › More than 500 vacuum and overpressure project engineers
- › From tailored development to standardized industry solutions



All Over the World in Industry

Benefit from Broad Experience



Chemical



Ceramics and Glass



Electrical Engineering



Electronics



Environmental



Lifting and Handling



Medical and Hospitals



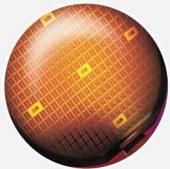
Metallurgy



Oil and Gas



Packaging



Semiconductor and Flat Panel



Solar



Vacuum Packaging



Wood



Waste Management

Others:

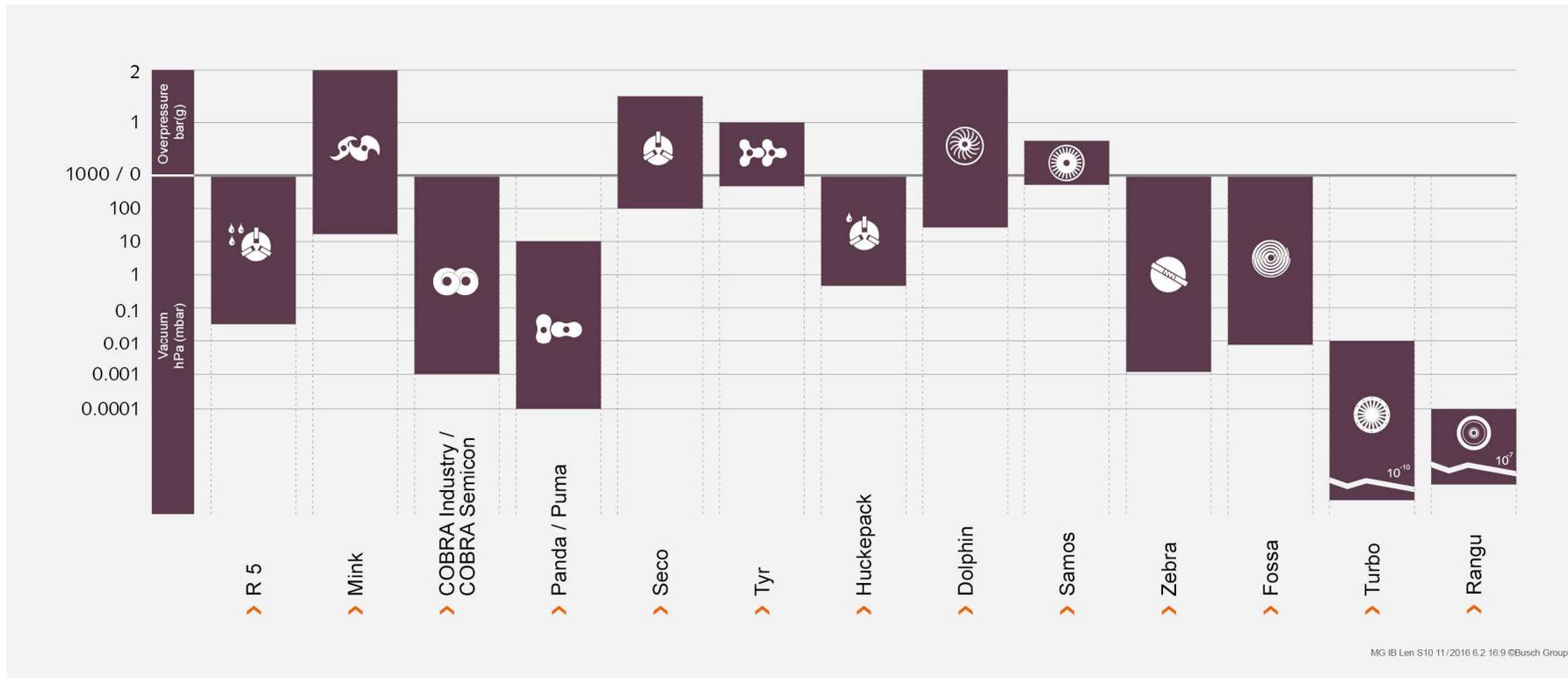
Analytics and Laboratory,
Automotive and Transport,
Construction and Mining,
Food and Beverage,
Machine Building,
Pharmaceuticals,
Plastics and Rubber,
Pneumatic Conveying,
Printing,
Surface Technology,
Wind Energy, ...

... and many more!

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Flexibility for Any Application

Benefit from a Large Range of Solutions



Meeting All Your Needs

Vacuum Pumps, Blowers and Compressors

R5

- Oil-Lubricated Rotary Vane Vacuum Pumps

Ultimate pressure: 0.05–20 hPa (mbar)
Nominal pumping speed 50 Hz: 4–1,600 m³/h
Nominal pumping speed 60 Hz: 4.8–1,800 m³/h



Mink

- Dry Claw Vacuum Pumps and Compressors

Ultimate pressure: 20–250 hPa (mbar)
Overpressure: 2 bar(g)
Nominal pumping speed 50 Hz: 40–950 m³/h
Nominal pumping speed 60 Hz: 40–1,150 m³/h



COBRA Industry

- Dry Screw Vacuum Pumps

Ultimate pressure: 0.01–1 hPa (mbar)
Nominal pumping speed 50 Hz: 110–2,000 m³/h
Nominal pumping speed 60 Hz: 130–2,500 m³/h



COBRA Semicon

- Dry Screw Vacuum Pumps

Ultimate pressure: 0.001–0.01 hPa (mbar)
Nominal pumping speed 50 Hz: 85–7,200 m³/h
Nominal pumping speed 60 Hz: 105–7,200 m³/h



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Meeting All Your Needs

Vacuum Pumps, Blowers and Compressors

Panda / Puma

> Vacuum Boosters

Pressure differential: Δp max. 80 hPa (mbar)
Nominal pumping speed 50 Hz: 230–9,535 m³/h
Nominal pumping speed 60 Hz: 280–11,600 m³/h



Seco

> Dry-Running Rotary Vane Vacuum Pumps and Compressors

Ultimate pressure: 120–150 hPa (mbar)
Overpressure: 0.6–1 bar(g)
Nominal pumping speed 50 Hz: 3–40 m³/h
Nominal pumping speed 60 Hz: 3.6–48 m³/h



Tyr

> Rotary Lobe Blowers

Pressure differential: Δp max.
Vacuum: -500 hPa (mbar)
Overpressure: +1,000 hPa (mbar)
Volume flow: 150–4,380 m³/h



Huckepack

> Once-Through Oil-Lubricated Rotary Vane Vacuum Pumps

Ultimate pressure: 0.5 hPa (mbar)
Nominal pumping speed 50 Hz: 160–630 m³/h
Nominal pumping speed 60 Hz: 190–760 m³/h



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Meeting All Your Needs

Vacuum Pumps, Blowers and Compressors

Dolphin

- › Liquid Ring Vacuum Pumps and Compressors

Ultimate pressure: 33–130 hPa (mbar)

Overpressure: 2 bar(g)

Nominal pumping speed 50 Hz: 25–10,900 m³/h

Nominal pumping speed 60 Hz: 31–10,400 m³/h



Samos

- › Side Channel Blowers

Pressure differential: Δp max.

Vacuum: -500 hPa (mbar)

Overpressure: +600 hPa (mbar)

Volume flow: 40–2,640 m³/h



Zebra

- › Two-Stage Oil-Lubricated Rotary Vane Vacuum Pumps

Ultimate pressure: $6.7 \cdot 10^{-3}$ hPa (mbar)

Nominal pumping speed 50 Hz: 2.9–90 m³/h

Nominal pumping speed 60 Hz: 3.5–108 m³/h



Fossa

- › Scroll Vacuum Pumps

Ultimate pressure: 0.01–0.025 hPa (mbar)

Nominal pumping speed 50 Hz: 15–35 m³/h

Nominal pumping speed 60 Hz: 18–42 m³/h



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Meeting All Your Needs

Vacuum Pumps, Blowers and Compressors

Turbo

› Turbomolecular Vacuum Pumps

Ultimate pressure: $< 1 \cdot 10^{-10} - 1 \cdot 10^{-8}$ hPa (mbar)

Nominal pumping speed N_2 : 1.080–2.200 l/s



Rangu

› Diffusion Vacuum Pumps

Ultimate pressure: $< 7 \cdot 10^{-7}$ hPa (mbar)

Nominal pumping speed: 10.000–28.000 l/s



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Vacuum Systems Solutions

Benefit from Systems Building Experience

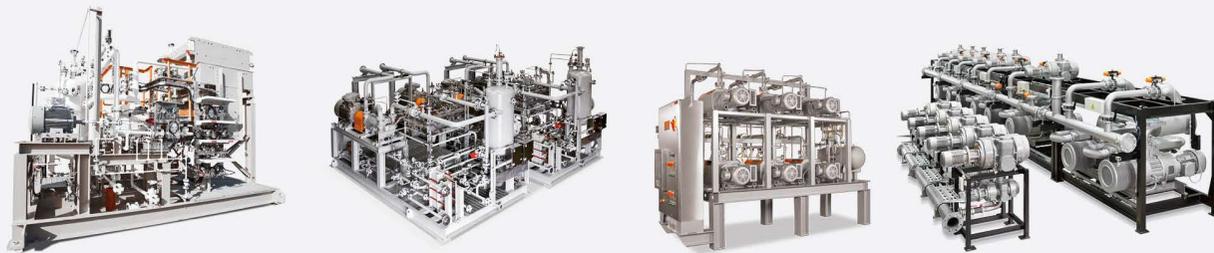


Vacuum Systems Solutions

Benefit from Customized Solutions

Tailored to your needs

- › Complete vacuum systems, ready for operation (including installation and start-up service)
- › Accumulated knowledge from over 50 years' experience of thousands of installations in diverse applications
- › Custom solutions designed to meet the latest technical standards and process developments



Vacuum Systems Solutions

Benefit from Standardized Systems Solutions

Standard vacuum systems

- › Variety of options adaptable to specific requirements
- › Economical and time-saving alternative to custom-built solutions
- › Oil-lubricated and dry vacuum technologies
- › Large selection of sizes
- › Maintenance optimized through the use of standard components



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Reliable Vacuum That Meets all Requirements



Reliable Vacuum That Meets all Requirements

Busch Vakuumtechnik

- › More than 55 years of experience
- › Worldwide Company
- › More than 100 engineers
- › Global supplier to the Semicon industry
- › Factories in USA, Asia & Europe



Reliable Vacuum

That Meets all Requirements

- › Aluminiumsraderng
- › PECVD-nitrating
- › BPSG
- › Epitaxy
- › Thin film production
- › Interconnecting
- › implanting
- › LPCVD-nitrating
- › TEOs PECVD
- › MOCVD Coating
- › Si-radarng
- › CVD
- › Sputtering
- › Metrology
- › Crystal casting
- › Manufacturing of polysilicon
- › Metallization
- › Lamination
- › Plasma cleaning
- › PVD Coating
- › Manny more..



BUSCH

Reliable Vacuum

That Meets all Requirements

Suitable Busch products for the Big Science industry

Zebra – Rotary Vane Vacuum Pumps

- › R 5 RU – Rotary Vane Vacuum Pumps
- › Fossa – Scroll Vacuum Pumps
- › Cobra – Screw Vacuum Pumps
- › VacTest – Vacuum Measurement Equipment

Reliable Vacuum That Meets all Requirements

Zebra Rotary Vane Vacuum Pumps

- › Two-stage oil-lubricated rotary vane vacuum pumps
- › Specially designed to suit the requirements of general applications in research laboratories
- › Delivering reliable medium vacuum
- › Worldwide market standard for most analytics and R&D applications like leak detection, glove boxes or vacuum drying



Reliable Vacuum

That Meets all Requirements

R 5 RU Rotary Vane Vacuum Pumps

- › Oil-lubricated rotary vane vacuum pumps
- › Proven technology
- › Specially designed for LC-MS, ICP-MS and other analytical applications
- › Quiet and reliable vacuum generation
- › Intelligent control via variable speed drive



Reliable Vacuum

That Meets all Requirements

Fossa Scroll Vacuum Pumps

- › Scroll vacuum pumps
- › Latest single-sided scroll technology
- › Dry compression and fully hermetic construction
- › Perfect choice for gas recovery and recirculation
- › Available in an electronic-free version for reliable operation in hot zones
- › Variable speed drive ensures a worldwide performance.



Reliable Vacuum

That Meets all Requirements

COBRA Screw Vacuum Pumps

- › Dry screw vacuum pumps
- › Oil- and contact-free operating principle
- › Incomparable long maintenance intervals and uptime
- › Low cost of ownership
- › For demanding applications like drying, sterilization and on mass spectrometers
- › Available with a variable speed drive and in an electronic-free version for high reliability in hot zones



BUSCH

Reliable Vacuum

That Meets all Requirements

VacTest Vacuum Measurement Equipment

- › New shape of vacuum measurement equipment
- › Designed to combine the latest advances in vacuum metrology with exceptional manufacturing quality
- › Innovative and comprehensive portfolio of active vacuum gauges and controllers
- › Robust construction, reliability and measurement accuracy
- › Ideal choice to monitor and control your vacuum process



Reliable Vacuum

That Meets all Requirements

Applications

> Analytical instruments and surface physics > Research

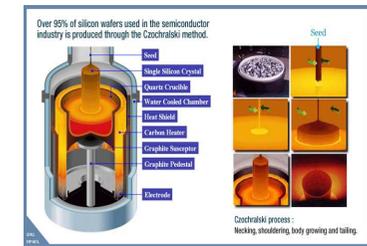
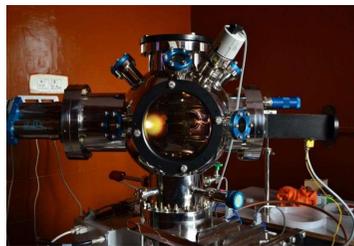
- > Electron microscopy
- > Gas analysis systems
- > Mass spectrometry
- > ESCA, SIMS, AES, XPS
- > Application in MBE systems
- > Particle accelerators
- > Beam guidance systems
- > Cyclotron
- > Fusion experiments
- > Space simulation chamber

> Semiconductor technology

- > CVD
- > Plasma etching etc.
- > Transfer chambers

> System control / pressure control

- > Vacuum measurement and control in the low to ultra high vacuum range
- > Valve control, pressure dependent systems control



Vacuum Systems Solutions

International Starch institute

2 Busch vacuum system

Consisting of:

- 3 Liquid ring vacuum pumps
- DOLPHIN LA 2408 A

Application:

Extraction of starch in potato production



Vacuum Systems Solutions

Billund Aquakultur service

2 Busch vacuum system

Consisting of:

- 1 Oil lubricated vacuum pump
- R5 RA 0305 D

Application:

System for transportation of deadfish
in fish farming



Vacuum Systems Solutions

Danmarks Tekniske Universitet

Busch vacuum system

Consisting of:

- 1 Scroll Vacuum pump
- FOSSA FO 0035 A ATEX Version

Application:

Various laboratory related experiments



Vacuum Systems Solutions Danish Company.....

Busch vacuum system

Consisting of:

- 1 Dry Screw Vacuum pump
- COBRA DS 600 E

Application:

Helium Cooling systems

