



ENDURING STRENGTH
PROVIDING A WIDE CHOICE FOR PROCESS SOLUTIONS

INDUSTRIES WE SERVE

CHEMICAL
 PHARMACEUTICAL
 AGROCHEMICAL
 PETROCHEMICAL
 FINE CHEMICALS
 AUTOMOTIVE
 AEROSPACE
 FRAGRANCE & FLAVOUR
 FOOD



BIOTECHNOLOGY
 SEMI CONDUCTOR
 COSMETICS
 LABORATORIES
 KILO LABS
 PILOT PLANTS
 MANUFACTURING
 R&D CENTRES
 INSTITUTES

ABOUT US

For more than 20 years, Sanbij Impex / Sawant Pumps has been a leader in providing process solutions through highly reliable equipment to a diverse set of industries. We are wholly committed towards helping our clients achieve excellence by setting up processes that meet their research, production, testing, and quality standards.

Set up in 1995 by a young and determined entrepreneur, Sandeep Sawant was charged with the dream of providing world class equipment to various industries like pharmaceutical, chemical, agro-chemical, automotive, aerospace, fragrance and flavour, etc. all over India.

Today, the world knows us as SAWANT PROCESS SOLUTIONS. The Company's growing vision and commitment is not only to provide quality in terms of equipment, but also after sales service, prompt service support and most importantly to be established as the preferred supplier in the industry.

Partnering with the leading brands like VACUUBRAND, GENSER, DIEHM, PREMEX, LAUDA, VTA and ESCO-LABOR, SAWANT PROCESS SOLUTIONS re-affirms its commitment to quality, leadership and support.

At SAWANT PROCESS SOLUTIONS, we have a strong propensity for action, we hold ourselves responsible for achieving total customer satisfaction. Constantly improving and challenging the status quo, we welcome change and push boundaries every time.

Our team of experienced sales professionals and highly trained service engineers constantly strive to ensure that all our clients have the absolute best solutions which will enable them to have the competitive edge they desire.

OUR SERVICES

Whether it is a routine check or a technical difficulty, our technical support service is second to none. With more than 20 years of experience in the scientific and laboratory equipment supplies industry, at SAWANT PROCESS SOLUTIONS you can have your equipment servicing needs fulfilled in no time.

We have continued to meet the growing needs of Indian customers backed by after-sales support to customer's utmost satisfaction. Our qualified and experienced service engineers and technicians are readily available throughout India. They are specially trained by our principals in Germany and Switzerland. Further qualified professionals from our principals visit our service centre in Mumbai to provide hands on training to our Service Team.

Services we offer:

- Installation and commissioning of equipment, backed by strong service support
- All products are backed by 12 months warranty from date of installation, while in certain cases extensions on customer request might be available
- We recommend an "Annual maintenance contract" after the warranty period has ended to ensure efficient and trouble-free operation of the equipment

"Prompt and professional response is our objective"

OUR PRINCIPAL COMPANIES



VACUUBRAND

Vacuubrand offers laboratory users equipment that meets the highest quality standards. “Intelligent pumps” make work easier in laboratories, permitting chemists and technicians to concentrate on their real work.

They engineer and produce almost all pump and controller components in their own facility in Wertheim, Germany. This enables Vacuubrand to quickly respond to the wide variety of demands from different customers and also ensures a consistent approach to the quality of their design and manufacturing processes.

Relying on state-of-the-art technology and machine tools, they produce rotary vane and diaphragm pumps, chemistry pumping units, chemistry vacuum systems, vacuum gauges and controllers, valves and components of the innovative VACUU•LAN® local vacuum network.

APPLICATIONS

- Filtration and solid phase extraction
- Lyophilization (freeze drying)
- Fluid aspiration
- Vacuum concentrators
- Kilo lab and pilot plant
- Gel drying
- Rotary evaporators
- Vacuum drying ovens
- Schlenk line

Product Range



Chemistry Diaphragm Pumps

Flow rate	0.7 m ³ /h to 20 m ³ /h
Ultimate Vacuum (abs.)	100 mbar to 0.6 mbar



Basic pumps

Offers a compact, high performance and easy-to-use solution for single filtrations.

ME 1C
0.7 m³/h, 100 mbar

MZ 2C NT
2.0 m³/h, 7 mbar



Vacuum systems with solvent recovery

Has a wide range of applications and enables near-100-percent solvent recovery.

MZ 2C NT+AK SYNCHRO+EK
2.0 m³/h, 7 mbar

MD 4C NT +AK +EK
3.4 m³/h, 1.5 mbar



Pumping units with integrated vacuum control and solvent recovery

All-in-one chemistry pumping unit with ultimate combination of speed controlled pumping and intuitive application-based control with latest vacuum controller VACUU-SELECT®.

PC 3012 VARIO-SELECT
15.0 m³/h, 1.5 mbar

PC 3001 VARIO-SELECT
15.0 m³/h, 1.5 mbar

- High chemical resistance
- High performance, even at low vacuum levels
- Low maintenance and long diaphragm life
- Models available in a wide range of capacities
- Ultimate vacuum and pumping speed for all laboratory and process applications in rough vacuum

VACUU•PURE® 10 C

Flow rate	9 m ³ /h
Ultimate Vacuum	5 x 10 ⁻³ mbar

- Reliably delivers the benefits of oil-free vacuum technology in the pressure range of 10⁻³ mbar
- Three important benefits for the user : 100% oil-free, chemically resistant and no wear parts
- Can be used across the entire pressure range from atmospheric pressure to its ultimate vacuum
- The special design with 2 cantilevered spindles and a magnetic gear allows fully oil-free operation
- High chemical resistance
- The unique design given an exceptionally high condensate compatibility, making a gas ballast unnecessary even at high vapor loads



- Depth of vacuum and control
- Prevention of reciprocal interference
- Modularity and flexibility of the system
- Reduced maintenance, energy and operating costs
- Active environmental protection and safe operation



Chemistry-HYBRID Pumps

Flow rate	5.9 m ³ /h
Ultimate Vacuum	2 x 10 ⁻³ mbar

Combination of a two-stage rotary vane pump and a two-stage chemistry diaphragm pump for optimized corrosion resistance.

- Active corrosion protection
- High volume flow rates, even when close to ultimate vacuum
- Ease of maintenance due to telescopic design
- Models available in a wide range of ultimate vacuum and pumping speed for all laboratory and process applications in fine vacuum



- Compact design with integrated sensors
- Chemically resistant, heavy duty vacuum sensors
- Long-term stability and accuracy
- Easy to use



VACUU•LAN®

Vacuum networks make it possible to supply several different applications with one vacuum pump. This is a money and space saving solution when a lot of users are working with vacuum in one laboratory and avoids the numerous drawbacks of a central vacuum supply.



Gauges

Vacuubrand gauges offer a technically and economically perfect solution for almost every application in the laboratory

Product	Lower measuring limit in mbar
DVR2pro	1
Vacuu View	0.1
Vacuu View extended	1 x 10 ⁻³



Controllers

VACUU•SELECT® is an application-based controller with a touch screen display for all of your lab scale vacuum processes.

Product	Lower measuring limit in mbar
Vacuu Select	0.1
Vacuu Select + Vacuu View extended	1 x 10 ⁻³



- Compact design with integrated sensors
- Chemically resistant, heavy duty vacuum sensors
- Long-term stability and accuracy
- Easy to use

LAUDA

From water baths to high-performance process thermostats: LAUDA thermostats are characterized by their excellent handling, highly ergonomic design and intuitive operation and provide a working temperature range from -100 to 320°C

Lauda Wins over with: Products safety and service – and peace of mind

Large selection

Whether it's for routine tasks, professional and economical temperature control, high cooling outputs and high cooling rates or lightning-fast temperature changes – LAUDA has the right solution for almost every requirement.

Exemplary safety concepts

All products meet the most stringent safety requirements and provide peace of mind in every application, thanks to the intelligent technologies and sophisticated safety concepts.

First-class advice – internationally

LAUDA provides friendly, fair, and expert advice and help customers to configure application-optimized systems

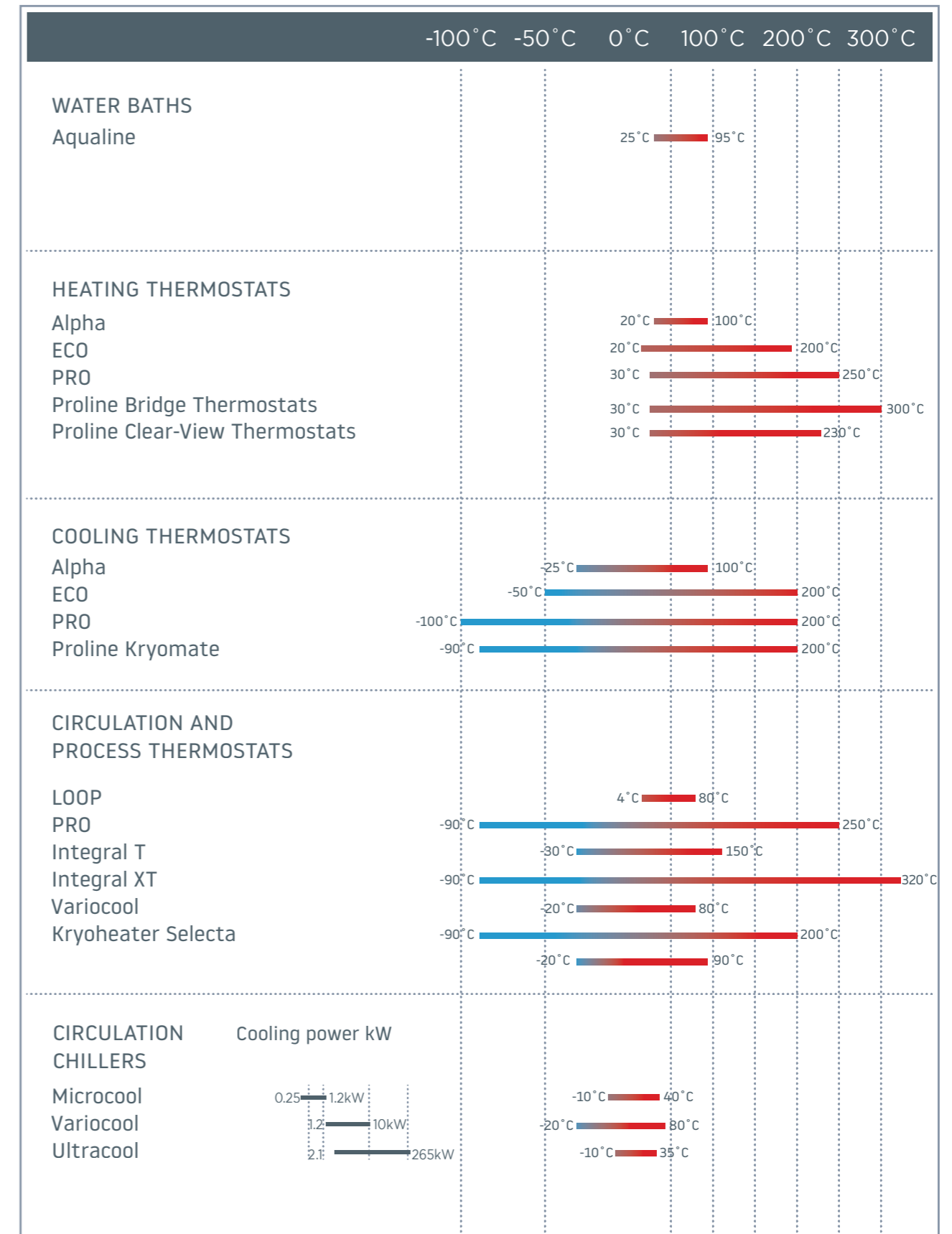
Proverbial quality

For more than 60 years, LAUDA has been developing, designing and producing high-quality constant temperature equipment to the highest standards in quality and safety – confirming time and again the durability and longevity that LAUDA has become known for.

Reliable service

Robust LAUDA devices are known for their durability. If you still need additional support, the customer will have quick access to comprehensive services – for greater flexibility and cost-efficiency.

Product Range



Heating and cooling thermostats, Open / Half-open systems



Alpha
-25°C to +100°C



Eco
-50°C to +200°C



Pro
-100°C to +200°C

Circulation and process thermostats, Closed systems



Pro
-90°C to +200°C



Integral IN T
-30°C to +150°C



Integral IN XT
-90°C to +220°C



Kryoheater selecta
-90°C to +200°C

Circulation Chillers



Microcool
-10°C to +40°C

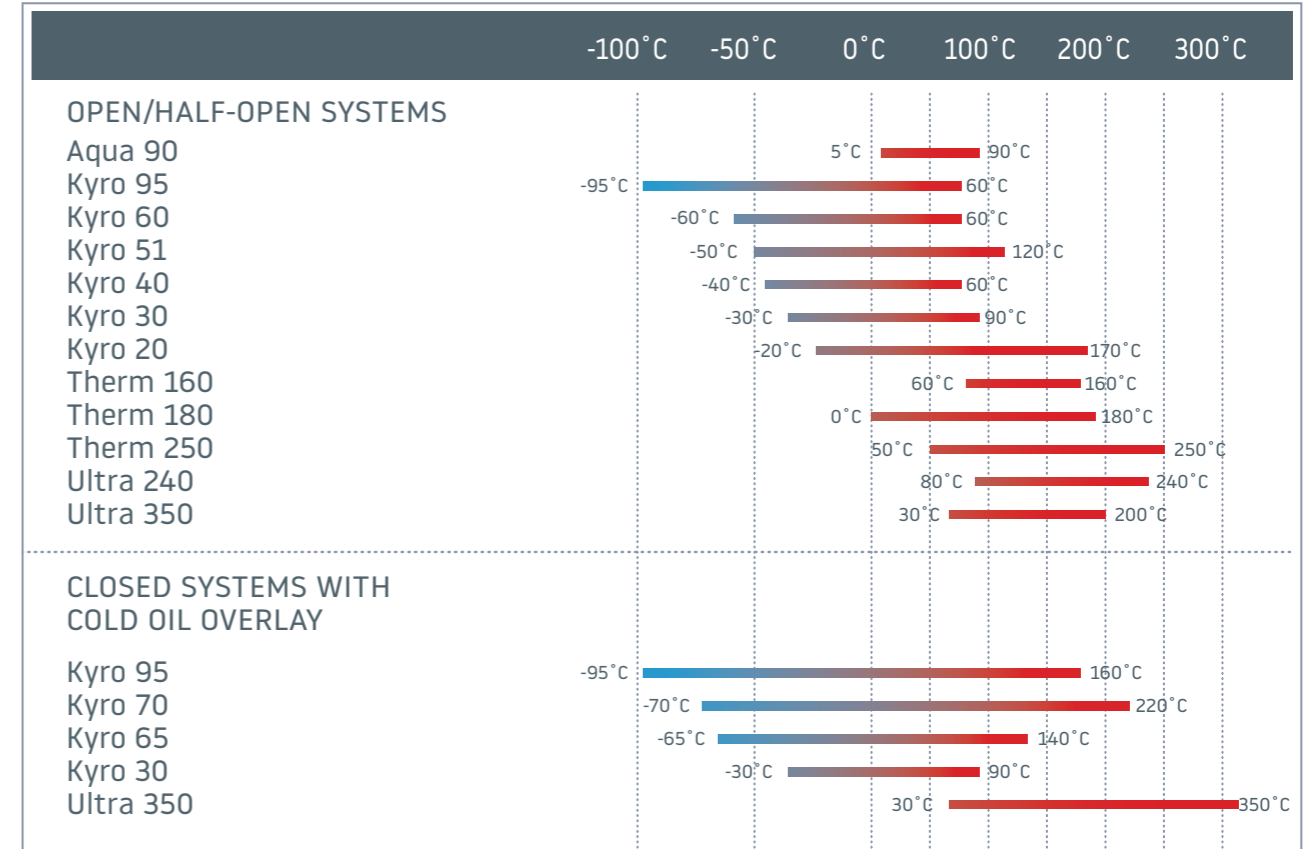


Variocool
-20°C to +80°C



Ultracool
-10°C to +35°C

Heat Transfer Oils



APPLICATIONS

- Research and Development Laboratories
Sample preparation
Quality Assurance
Research Laboratory
- Semiconductor Industry
Process cooling
Component testing
- Aerospace
Material testing
Temperature stimulation
- Medical Technology
Medical Laboratory
Medical Device
- Pharmaceutical Industry
Reactor temperature control
Process Engineering
- Automotive
Test Bench applications
Material testing
- Chemistry
Test Bench applications
Material testing
- Biotechnology
Bioreactors
Sample preparation

DIEHM

Diehm offers plain and jacketed glass reaction systems with capacities from 250 ml up to 50 litres with up to DN400 technical flanges. Plain and jacketed vessels in either flat or round bottom designs are offered with a comprehensive range of accessories.

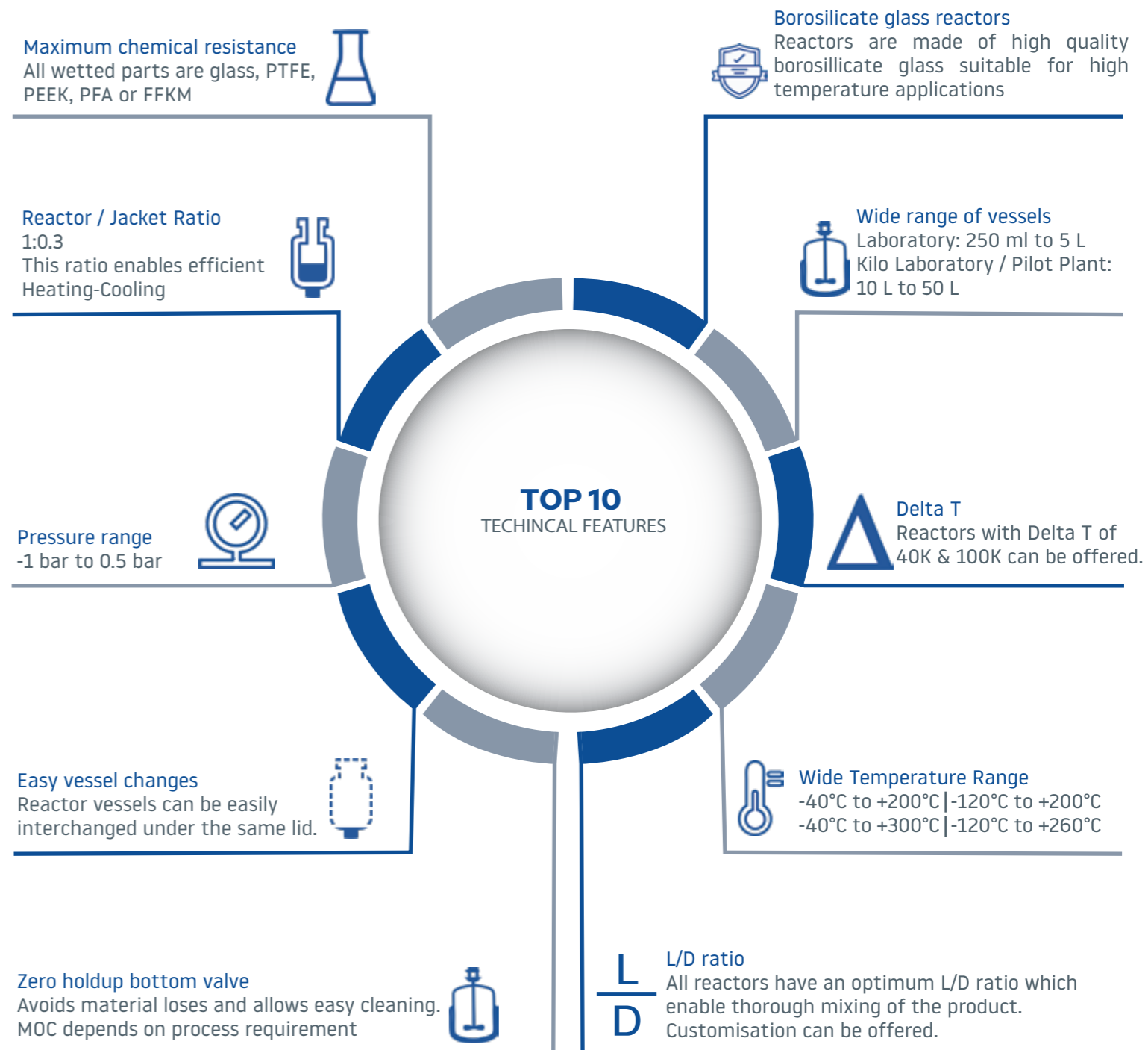
Reactors are supplied with graduations as standard and zero dead space bottom outlet valves can be specified from a number of different designs and materials. Bottom valves are available for pneumatic operation and with integral Pt100 if required.

Diehm provides a wide range of accessories in glass, stainless steel, PTFE and other materials and, in addition to standard products. Diehm welcomes enquiries for bespoke manufacturing to customer designs and specifications. Diehm provides complete systems including automation, temperature control, stirring and vacuum using many leading brands.

PRODUCT RANGE

Standard glass reactor units	250ml to 50L
Glass reactor units with distillation setup	500ml to 50L
Solvent recovery systems with hollow column. (Option of structured and unstructured packing)	5L to 50L
Fractional distillation set up with jacketed RB flask, loaded with packed column	500 ml to 5 L
Fractional distillation set up with jacketed Reactor, loaded with packed column	1 L, 2 L, 5 L, 10 L
Glass filter reactors	250 ml to 50 L
Glass scrubber	1 L to 20 L

Technical Features of DIEHM Reactors






ACCESSORIES

Diehm reactors are easy to customize to your exact requirements; simply choose from a range of vessels sizes and types, baffles, temperature sensors, stirrers, stirrer motors, and other glassware accessories.

JACKETED REACTORS

Choose from a wide range of high quality glass jacketed and vacuum jacketed reaction vessels.

	Jacketed	0.25L, 0.5L, 1L, 2L, 3L, 5L, 10L, 15L, 20L, 30L, 50L
	Vacuum Jacketed	0.25L, 0.5L, 1L, 2L, 3L, 5L, 10L, 15L, 20L, 30L, 50L
	Custom Reactors	Also available

LIDS

Lids are available in borosilicate glass in sizes DN100, DN120, DN150, DN200, DN300 and DN400. Number of ports on the lid can be customised.

TEMPERATURE SENSORS







Temperature sensors offered provide minimum sensing volume for the selected vessel. Flame-proof temperature sensors can be offered on request.

BAFFLES

Glass or stainless steel baffles can be offered on request

STIRRERS

A wide range of stirrers are available in different material such as stainless steel coated with PFA/PTFE, stainless steel and borosilicate glass.

	Anchor		Impeller
	Pitch Blade		Hydrofoil
	Propeller		Custom Stirrers

STIRRER MOTORS

Powerful CAT Scientific or Heidolph stirrer motors with digital indication of rpm and torque are available. Atex and Pneumatic stirrer motors can be offered on request.

DISTILLATION SETS

Accessories such as liquid divider / reflux divider, phase separator and vacuum manifold can be offered

SECONDARY BOTTOM VALVE

Can be offered on request

LAB STANDARD REACTOR SYSTEM



LAB REACTOR SYSTEM WITH DISTILLATION SET



KILO LAB REACTOR WITH DISTILLATION SET



KILO LAB REACTOR WITH DISTILLATION SET AND ATEX MOTOR



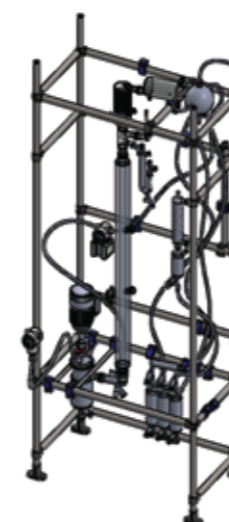
FILTER REACTOR SYSTEM



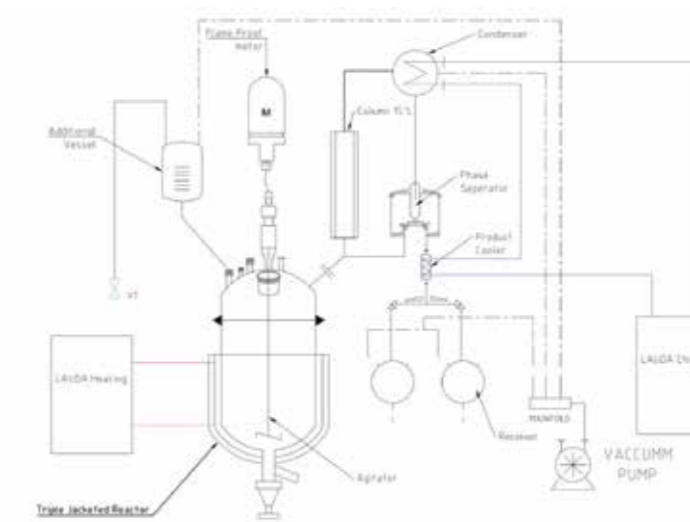
GLASS SCRUBBER



FRACTIONAL DISTILLATION SYSTEM WITH JACKETED REACTOR



SOLVENT RECOVERY SYSTEM WITH HOLLOW COLUMN



VTA

VTA Verfahrenstechnische Anlagen GmbH & Co. KG, based in Niederwinkling, is a wholly-owned subsidiary of MAX STREICHER GmbH & Co. KG aA and specialised in the field of thermal process engineering.

The main focus of production is on wiped film and short path distillation plants at laboratory, pilot and industrial scale as well as the manufacturing of related components.

These distillation plants are operated for purification, concentration, removal of low boilers, colour improvement and drying of products in various industries.

Highly qualified and responsible professionals ensure the highest quality standards. They are the foundation of the sustainable development of VTA.

From process development, via trials to the finished plant or the execution of toll distillation, everything comes from one single source at VTA.

The close coordination of process development, design and manufacturing enables VTA to quickly respond to customer requests even during the manufacturing phase. Thus, the best possible solution even for complex problems is achieved for customers. VTA is a problem solver Company.

Distillation methods offered:

- Wiped Film Distillation • Short Path Distillation
- Horizontal Thin Film Evaporators • Agitated Thin Film Dryers

FEATURES	LABORATORY UNITS	PILOT PLANTS
Typical feed rates	20 g/h up to approx. 12 kg/h	5 kg/h up to approx. 50 kg/h
Material main components	Borosilicate glass	Stainless steel or special material
Max. heating temperature	350° C	350° C (hot oil) For temp. >350° C inductive & electrical heating possible
Evaporator size	0.01 up to 0.30 m ²	0.06 up to 0.50 m ²
Achievable pressure in wiped film evaporator	<0.1 mbar	0.1 mbar
Achievable pressure in short path evaporator	<0.001 mbar	< 0.001 mbar

Product Range

Laboratory - Standard Sizes

With Laboratory units, reliable conclusions about the feasibility of a separation process can be made by only using small product amounts.

Size of VTA wiped film evaporators

Type	Evaporator Surface (m ²)	Feed Rate (kg/h)
VDL 70-4	0.04	0.1-1.5
VDL 70-5	0.05	0.1-1.5
VDL 70-7	0.07	0.2-2.0
VDL 125-15	0.15	0.3-5.0



VDL 70-4 (FDRR)

Size of VTA short path evaporators

Type	Evaporator Surface (m ²)	Feed Rate (kg/h)
VKL 38-1	0.01	0.02-0.3
VKL 70-4	0.04	0.10-1.2
VKL 70-5	0.05	0.10-1.5
VKL 125-15	0.15	0.30-5.0



VKL 70-4 (FDRR)



VKL 70-4 (Standard)



VKL 70-5 FDRR



Glass Horizontal Wiped Film Evaporator

Pilot Plants - Standard Sizes

With pilot wiped film and short path distillation units, proper and reliable tests can be performed with only 30kg of crude material.

Size of VTA wiped film evaporators

Type	Evaporator Surface (m ²)	Feed Rate (kg/h)
VD 83-6	0.06	5.0-12.0
VD 125-20	0.20	15.0-40.0
VD 200-50	0.50	40.0-100.0



Wiped Film Evaporator

Size of VTA short path evaporators

Type	Evaporator Surface (m ²)	Feed Rate (kg/h)
VK 83-6	0.06	3.0-10.0
VK 100-10	0.10	3.0-15.0
VK 125-15	0.15	8.0-30.0
VK 200-40	0.40	25.0-80.0
VK 260-80	0.80	80.0-120.0



Short Path Evaporator



Two Stage Short Path Evaporator with degasser



Multistage Unit with One Wiped Film Evaporator, Two Short Path Evaporator and degasser

Agitated Thin Film Dryer (ATFD)

Agitated thin film dryers are used for isolating dry powders from product solutions or slurries and are suitable for amorphous and crystalline products. VTA provides thin film dryers from laboratory to production scale in sizes ranging from 0.2 to 50 m² and for operating temperatures up to 400 °C. The material for the product wetted evaporator parts will be selected depending on the corrosiveness and the reactivity of the processed products.



Size of VTA agitated thin film dryers

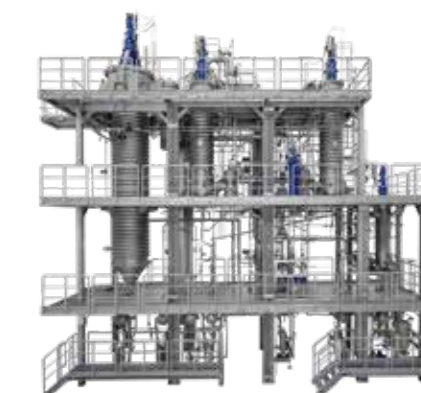
Evaporator Surface (m ²)	Feed Rate (kg/h)
0.20	5.0-20.0
0.50	20.0-50.0

*Larger capacities available on request

Industrial Plants

VTA provides industrial scale systems as package units. Package units are skid mounted, pre-assembled systems for wiped film and short path distillation, rectification and thin film drying.

Evaporator Size up to 80m²



APPLICATIONS

- Fine Chemistry & Agro Chemistry
- Food
- Fish Oil
- Polymers
- Oils & Fats
- Fragrances and Flavors
- Recycling
- Pharmaceuticals
- Petrochemical

GENSER

Genser rotary evaporators set new standards for safety, efficiency and ease of use for a variety of applications.

These rotary evaporators offer excellent distilling solutions for a range of demanding tasks. Based on their experience and knowledge they offer tailor-made solutions to cover a wide range of distinct needs and achieve highest convenience.

Genser systems are patented pendulum system rotary evaporators with excellent performance and function

APPLICATIONS

- Excellent for solvent recovery
- Vacuum distillation under inert conditions
- Quality improvement of common solvents
- Especially designed for high boiling solvents
- Drying of powders
- Concentration of extracts
- Distillation of large quantities of solvents
- Concentration of fractions from the preparative HPLC

Product Range

PILOTVAP®

- The floating rotating flask reduces mechanical stresses, which results in a safe and powerful distillation process
- Patented hydraulic damping system for the rotating flask and the motor unit, to absorb mechanical pulses if e. g. powders are to be dried
- Draining of the distillate vessel without aerating the complete evaporator (distillation continues)
- Special surface treated glass flanges for best vacuum stability
- High performance sealing system
 - PTFE-GLASS process contact
 - Life expectancy approx. 20.000 (twenty thousand) running hours
 - Warranted for 3 years
 - Final vacuum 0.1 hPa (system empty)
 - Leakage rate < 5 hPa/h (system empty)
 - Leakage rate < 2 hPa/h (with high performance PTFE-sealings / option)
- Excellent solvent recovery thanks to the leak proof sealing system
- Vapor temperature control, to automatically switch off the heating bath
- Automatic vacuum control system
- Implosion protection hood for the rotating flask
- GMP and ATEX offered as options

PILOTVAP®



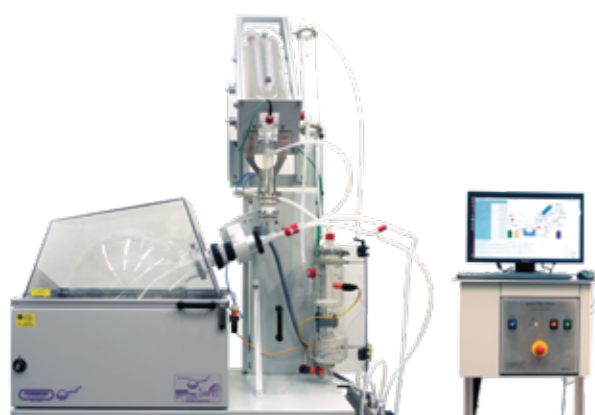
PILOTVAP® ATEX



POWERVAP®

- Filling and draining of the rotating flask automatically.
- Pumping out the distillate automatically.
- Producing a pre-determined product concentration is possible.
- Close control of the distillation process. Temperature, vacuum and other process variables are closely controlled allowing processing of foaming product.
- Vapor temperature monitoring, to automatically control the heating bath.
- Automatic vacuum control (vacuum analysis in real time)
- Pulse dosing, in order to reduce foaming
- Computer controlled reflux for standby functionality
- Trend of system variables in real-time
- Generation of plots at the push of a button
- Creation and execution of complex control tasks, by means of our own script language called (“recipe”)
- Generation of ramps
- Remote servicing of the process computer by VNC/NX/X2Go
- Special surface treated glass flanges for best vacuum stability.
- The pendulum system makes the rotating flask float in the water bath, to achieve maximum performance and reliability.
- The rotating flask, freely floating in the heating bath, reduces mechanical stresses, which results in a safe and powerful distillation process.
- Excellent solvent recovery thanks to the leak proof sealing system.
- New graphic interface PVGui with 10” monitor (optional: touchscreen)
- GMP and ATEX offered as options

POWERVAP®



POWERVAP® ATEX



Technical data PILOTVAP®

	PILOTVAP® - 6	PILOTVAP® -10/20	PILOTVAP® - 50	PILOTVAP® - 100
Installable rotating flasks	50 ml ... 6 l	1, 2, 3, 4, 5, 6, 10, 20 l	6, 10, 20, 50 l	20, 50, 100 l
Process control of vacuum, heating bath temp. , speed of rotating flask	✓	✓	✓	✓
Interface RS 232 / USB	✓	✓	✓	✓
Distillation performance of water at 60°C heating bath temperature	approx. 2 l/h	approx. 4.5 l/h (20 l rotating flask)	approx. 6.5 l/h	approx. 8.5 l/h
Leakage rate	< 5 hPa/h	< 5 hPa/h	< 5 hPa/h	< 5 hPa/h
Final vacuum	0.1 hPa	0.1 hPa	0.1 hPa	0.1 hPa
Dimensions of rotary evaporator (LxWxH) with trolley (option)	approx. 95x70x195 cm	approx. 125x80x215 cm	approx. 130x90x225 cm	approx. 150x100x230 cm
Reflux	✓	✓	✓	✓
EEx execution according to ATEX	(option) ✓	(option) ✓	(option) ✓	(option) ✓

Technical data POWERVAP®

	POWERVAP® - 6	POWERVAP® -10/20	POWERVAP® - 50	POWERVAP® - 100
Process control of the fully automated distillation	✓	✓	✓	✓
Rotating flasks	6 l	10, 20 l	50 l	100 l
Distillation performance of water at a heating bath temperature of 60°C	approx. 2 l/h	approx. 4.5 l/h (20 l rotating flask)	approx. 6.5 l/h	approx. 8.5 l/h
Average distillation performance/day at fully automated distillation (heating bath temperature of 60°C)	Methanol approx. 115 l Dichloromethane approx. 230 l	Methanol approx. 260 l Dichloromethane approx. 530 l	Methanol approx. 360 l Dichloromethane approx. 750 l	Methanol approx. 460 l Dichloromethane approx. 960 l
Dimensions of rotary evaporator (LxWxH) with trolley (option)	approx. 115x75x195 cm	approx. 135x85x215 cm	approx. 150x90x225 cm	approx. 175x100x230 cm
Dimensions Process controller (LxWxH) with trolley (option)	approx. 50x75x145 cm	approx. 50x75x145 cm	approx. 50x75x145 cm	approx. 50x75x145 cm
Final vacuum	0.1 hPa	0.1 hPa	0.1 hPa	0.1 hPa
Leakage rate	< 5 hPa/h < 0.1 hPa/h *	< 5 hPa/h < 0.1 hPa/h *	< 5 hPa/h < 0.1 hPa/h *	< 5 hPa/h < 0.1 hPa/h *
EEx execution according to ATEX	(option) ✓	(option) ✓	(option) ✓	(option) ✓

* (Option computer-controlled sealing system STACONSEAL)

PREMEX

Premex high-pressure reactors are distinguished by their high quality workmanship for all construction components and by their outstanding ease of operation. They are constructed on a modular basis and are available in stainless steel or specialty steels. In volumes from 60 ml to 100 Lt for use at 6 bar to 700 bar and a maximum of 350°C.

High-pressure reactors by Premex means Swiss precision in pure design aesthetics and functionality. In addition to their standard program they develop, design, and produce a wide variety of magnetic stirrer head types and magnetic stirrer drives for you.

To control and regulate their high-pressure reactors they can provide everything – from simple control devices right through to complex, software-regulated process controls – that you need or desire for a complete installation or a customer-specific application.

APPLICATIONS

- Polymer Chemistry
- Pharmaceutical
- Fine Chemicals
- Petrochemicals
- Refining
- Corrosion & Erosion
- Fuel Testing
- Green Fuels
- CO₂ Capture and Sequestration
- Automotive Catalysis
- Membranes & Absorbents

Product Range

Small autoclave reactors and parallel reactor unit

Series Varioso

Varioso high pressure reactor unit is a compact small autoclave system.

Technical specifications:

- Capacity: 60 ml and 100 ml | Pressure: 300 and 700 bar | Temperature: 200 °C
- Offered material standards: SS 316, HC 22
- 1 Sitec 3-Way valve in Mat. No. 1.4571 with metering shaft
- 1 Manometer 0-400 bar or 800 bar in Mat. No. 1.4571
- 1 Bursting disc retainer with bursting disc 300 bar or 700 bar
- 1 Immersion pipe for temperature sensor, Dia. 3 mm
- 1 Heating block with insulation jacket and cooling water supply
- Ordino series controllers are offered with every autoclave



Series Apart

Apart high pressure reactor unit is designed for running small scale reactions.

Technical specifications:

- Capacity: 60 ml | Pressure: 300 and 700 bar | Temperature: 200 °C
- Offered material standards: SS 316, HC 22
- 1 Gas supply valve
- 1 Pressure release valve
- 1 Valve with submerged tube for sampling
- 1 Pressure gauge (manometer) 0-400 bar
- 1 Safety bursting disk
- Two heating options: Electrical heating using heating block or Oil heating system (jacketed vessel).
- Ordino series controllers are offered with every autoclave



Series Avalon and Avalon Plus

Avalon and Avalon Plus are designed for running small scale parallel reactions which help researchers to speed up the discovery and save time for optimization of process conditions, catalyst screening and more

Technical specifications:

- Capacity: 60 ml and 100 ml
- Pressure: 100 and 350 bar | Temperature: 300 °C
- Reactors: 4+ independent reactor units
- Offered material standards: SS 316, HC 22
- Option of overhead stirring or using magnetic bar
- Rapid and controlled electrical heating to 300°C
- Can be operated in high and low pressure range
- Built in safety features and ex proof versions on demand
- Option of complete automation with PLC and visualization PC



Laboratory autoclave reactor units

Series Beluga

Beluga autoclave is offered in combination with a Lauda thermostat and a control unit. The copper adapter that permits the thermal flow to the reactor vessel without direct contact with the heat transfer oil.

Technical specifications:

- Capacity: 60, 100 and 200 ml | Pressure: 200 bar | Temperature: 250 °C
- Offered material standards: SS 316, HC 22
- Immersion pipe with temperature sensor
- Gas supply valve and Pressure relief valve
- Valve to take samples or draining
- Spring-operated safety valve and Pressure gauge



Series Twister

Twister is a bench top model that sets a fine example of innovation, amazing flexibility and operation ease; meeting global acclaim in design.

Technical specifications:

- Capacity: 70 to 1200 ml | Pressure: 80 to 700 bar | Temperature: 250 °C and 350 °C
- Offered material standards: SS 316, HC 22 and other special materials and alloys on request
- Easy removal of Magnetic stirrer head and other fittings together with autoclave cover
- Coolant supply and return
- Choice of electrical heating and Thermal oil
- Option of complete automation with PLC and visualization PC



Series Cobalt : Glass and Stainless steel combination autoclave

Cobalt offers the benefit of both, processing in a glass reactor from -1 to +6 bar as well as at 60 bar in the double-wall steel container. The reaction vessel can be easily removed from the quick change device and replaced without any tools.

Technical specifications:

- Capacity: 1000 ml and 1500 ml
- Pressure: -1 to +6 bar or 60 bar | Temperature: -20 to +200 °C
- Magnetic stirrer drive series “funrun” 60 Ncm or 90 Ncm
- Dip tube with 4-wire Pt100 temperature sensor
- Valve for gas supply
- Valve for pressure relief
- Valve for sampling
- Spring loaded pressure safety valve
- Pressure gauge



Product	Design Volume	Design Pressure	Design Temperature
Series Vivor	60 ml and 100 ml	300 bar and 700 bar	Up to 200 °C max
Series Varioso	60 ml and 100 ml	300 bar and 700 bar	Up to 200 °C max
Series Andorra	60 ml and 100 ml	300 bar and 700 bar	Up to 200 °C max
Series Apart	60 ml and 100 ml	300 bar and 700 bar	Up to 200 °C max
Series Avalon	60 ml and 100 ml	100 bar and 350 bar	300 °C (up to 500 °C depending on material)
Series Avalon Plus	60 ml and 100 ml	100 bar and 350 bar	300 °C (up to 500 °C depending on material)
Series Twister	70 ml to 1200 ml	80 bar to 700 bar	250 °C and 350 °C
Series Beluga	60 ml to 380 ml	up to 200 bar	Up to 250 °C max
Series Pollux	100 ml to 1000 ml	up to 700 bar	Up to 350 °C max
Series Pinto	100 ml to 1000 ml	up to 325 bar	Up to 300 °C max
Series Kartago	380 ml	up to 200 bar	Up to 200 °C max
Series Cobalt	1000 ml and 1500 ml	<ul style="list-style-type: none"> • Glass reactor: -1 bar (full vacuum) or up to +6 bar • Double-wall steel reactor: up to 60 bar 	-20 °C to +200 °C
Series Prator	2 Lt to 10 Lt	up to 700 bar	Up to 350 °C max
Series Pyron	15 Lt to 100 Lt	up to 700 bar	Up to 350 °C max
Series Hyper	100 Lt (other volumes on request)	up to 200 bar	Up to 300 °C max

ESCO – LABOR

For thirty five years ESCO-Labor has developed and produced processing plants for use in Laboratory and Production. Offering a useful volume from 1 to 400 litres, their processing plants mix liquid and pasty products guaranteeing an absolute homogeneous final product. In addition to a good mixing result, they set high values for money-performance-ratio, a simple operation and easy and thorough cleaning.

ESCO processing plants are available with jacketed stainless steel vessels to enable heating and cooling. Glass jacketed vessels are also available in their smaller mixer range. All processing plants are suitable for vacuum and constructed to meet the highest pharmaceutical standards (e.g. FDA). Additionally, the processing plants can be equipped to provide information for process software.

APPLICATIONS

- Pharmaceutical
- Cosmetic
- Chemical
- Colours and Lacquers
- Food

Products Range

EL 1-pm

The redesigned and improved mixer EL1 and is now available under the name EL1-pm. The new developed control panel with "folientastatur" is much easier to handle. A computer interface for data-logging is standard. Also the heating and pressure control system is integrated in every mixer. The mixer itself was improved regarding the pressure characteristics. The homogenizer motor is now smaller and much calmer than before. The new lid is designed according to the GMP guidelines. All parts can be removed easily and the whole lid is dead space free. Additionally, the lid can be adapted now much better to the individual requirements of the customer because of a optimized arrangement of all components. The EL 1 - pm enables absolute homogenous mixing result and a easy cleaning process.

Technical Data for EL 1-pm	
Total volume	1300 ml
Net volume	1000 ml
Material	1.4435, glass
Double jacket vessel	Yes
Temperature control	Yes
Vacuum control	Yes
Scraper	300 RPM
Power	90 Watt
Homogenizer	20,000 RPM
Motor of homogenizer	Fremdbeluftet
Power	500 Watt
Voltage	230
Dimension in cm	110 x 70 x 35
Weight in kg	30 kg
Interface	RS-232
Seals	Viton, others on request
Connections on lid	Tri-Clamp



Total Product range

Model	Capacity
EL-1, EL-2, EL-3, EL-6, EL-10	1 to 20 Lt
EL-200	50 to 400 Lt

- Sizes: 1 to 400 Litres
- Absolute homogenous final product
- For liquid and pasty products
- Execution in steel or glass
- With heating, cooling and vacuum system
- PC controlled available
- FDA-approved





Your partner for process solutions

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