



Humidity chamber HCP
with TwinDISPLAY
AtmoCONTROL software

Model sizes: 50 / 105 / 150 / 240
+18 °C to +90 °C
Humidity 20 to 95% rh

HUMIDITY CHAMBER HCP with active humidity control from 20 % to 95 % rh and unsurpassed real temperature-humidity homogeneity over the entire interior, this nearly condensation-free climate chamber offers the full range of comfort, reliability and safety. It is ideally suited for environmental tests, accelerated life tests, stress tests of drug substance according to ICH Q1A and 85/85 tests to IEC 60068-2-67 and IEC 60068-2-78. It is also used in building physics and biological research.





Optimum homogeneity of humidity and temperature

Active humidity control guarantees ideal homogeneity of temperature and humidity as well as short recovery times after opening the door. In addition, in combination with heating on all six sides, including the heated inner glass door, it minimises vaporisation in the interior and thus the risk of condensed water dripping onto the test object. An aluminium thermal conduction layer supports the optimal temperature distribution and serves as a heat accumulator if there is a temporary power failure.

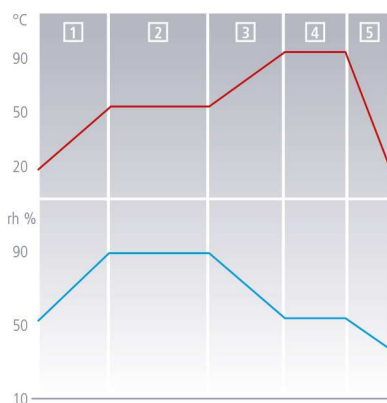
Comfortable equipment for accelerated service life tests

Service life tests such as 85/85 tests run over 1,000 hours and more. The humidity chamber HCP offers a wide range of comfort functions: Standard entry ports at the back, battery-buffered ControlCOCKPIT (option), with SetpointWAIT function process time does not start until the set temperature is reached, alarm messages can be sent via e-mail or SMS (option) and much more.

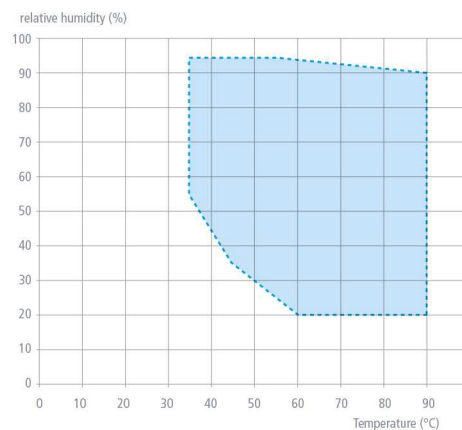
Ramp programming

Essential for the exact simulation of environmental conditions in research: intuitive and fast ramp programming. Thanks to the AtmoCONTROL software, different set values of temperature and humidity can be combined on time ramps.

Ramp programming



Temperature-humidity working range



Note: Within the respective temperature-humidity range, permanent operation is possible (at an ambient temperature of $22\text{ °C} \pm 3\text{ K}$; relative humidity $< 50\%$). Condensation may occur in the threshold range. To which extent depends on the humidity content of the chamber load and the ambient conditions.

HUMIDITY CHAMBERS HCP

according to DIN 12880:2007-05, EN 61010-1 (IEC 61010-1), EN 61010-2-010

Standard units are safety-approved and bear the test marks:



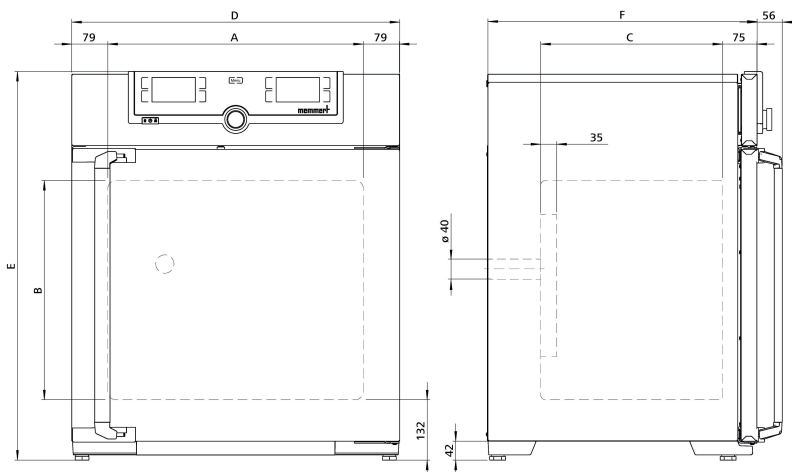
Interior: Stainless steel, material 1.4301 (ASTM 304), deep-drawn, seamlessly welded

Housing: Textured stainless steel, rear zinc-plated steel, intuitively operated TwinDISPLAY (TFT colour display) with touchscreen; fully insulated stainless steel door and heated inner glass door

Connection: Mains cable with plug (German type)

Installation: 4 adjustable feet

Interfaces:

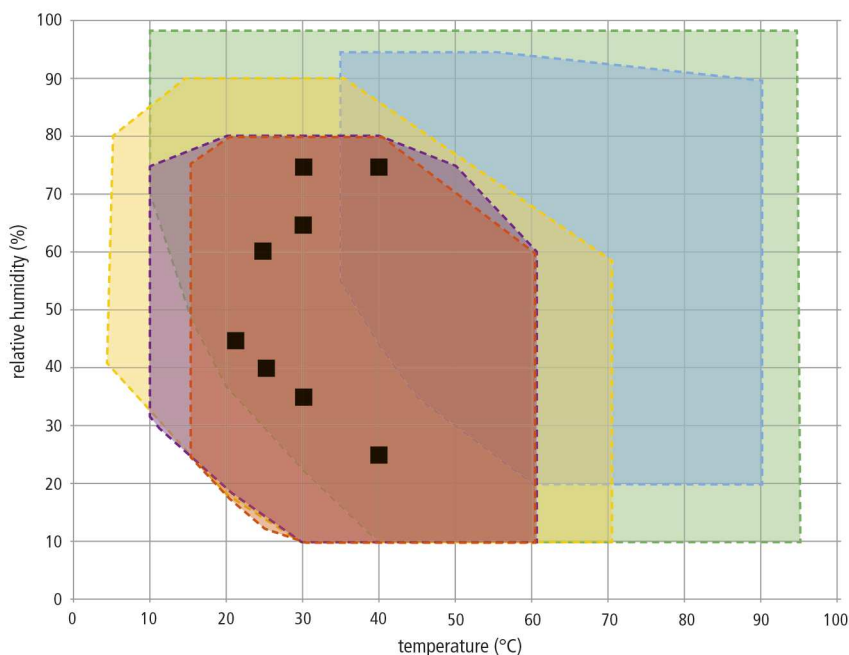


| Model sizes/Description | | | 50 | 105 | 150 | 240 |
|-----------------------------------|--|------------|--|--------|--------|--------|
| Stainless steel interior | Volume | approx. l | 56 | 107 | 156 | 241 |
| | Width | (A) mm | 400 | 560 | | 600 |
| | Height | (B) mm | 425 | 480 | 700 | 810 |
| | Depth (less 35 mm for fan) | (C) mm | 330 | 400 | | 500 |
| | Max. number of grids/shelves | number | 5 | 6 | 10 | 12 |
| | Max. loading per grid/shelf | kg | 15 | | | |
| | Max. loading of chamber | kg | 75 | 90 | 120 | 140 |
| Textured stainless steel exterior | Width | (D) mm | 559 | 719 | | 759 |
| | Height (variable through adjustable feet) | (E) mm | 795 | 850 | 1070 | 1180 |
| | Depth (without door handle, depth of handle +56 mm) | (F) mm | 521 | 591 | | 691 |
| | Fully insulated heated stainless steel door | | ● | | | |
| | Additional heated inner glass door | | ● | | | |
| Standard equipment | Stainless steel shelves, perforated | number | 1 | 2 | | |
| | Entry port (silicone), 40 mm clear diameter, moisture tight, can be closed by silicone stopper, at the back, centre left | | ● | | | |
| | Door-open-recognition incl. alarm, shuts down fan | | ● | | | |
| | Standard works calibration certificate (measuring point chamber center) | | +60 °C with 75 % rh | | | |
| Temperature | Working temperature range | °C | at least 7 above ambient temperature up to +90 | | | |
| | Setting temperature range | °C | +18 to +90 | | | |
| | Setting accuracy | °C | 0.1 | | | |
| Humidity | Capacitive humidity sensor for measuring and displaying the relative humidity | | ● | | | |
| | Active microprocessor control for humidifying and dehumidifying (20 – 95 % rh), incl. digital indication and auto-diagnostic system ensures even more rapid reaching of set humidity and very short recovery times. Humidity supply with water (only for demineralised water with a conductivity of 5 to 10 µS/cm and a pH value between 5 and 7; from an external tank) by a self-priming pump; integral bacteria block by generating hot steam, dehumidifying via sterile filter | | ● | | | |
| | Setting range active humidity control | % rh | 20 to 95 and rh-Off | | | |
| | Setting accuracy | % rh | 0.5 | | | |
| | | | | | | |
| Further data | Electrical load at 230/115 V, 50/60 Hz | approx. W | 1520 | 1720 | 1800 | 1840 |
| Packing data | Net weight | approx. kg | 55 | 75 | 90 | 110 |
| | Gross weight (packed in carton) | approx. kg | 74 | 100 | 116 | 145 |
| | Width | approx. mm | 730 | 800 | | 840 |
| | Height | approx. mm | 950 | 1030 | 1250 | 1360 |
| | Depth | approx. mm | 640 | 800 | | 900 |
| Order No. Humidity Chambers | | | HCP50 | HCP105 | HCP150 | HCP240 |

| Options | 50 | 105 | 150 | 240 |
|--|---|-----|--------|-----|
| Voltage 115 V, 50/60 Hz | | | X2 | |
| Battery-buffered ControlCOCKPIT: uninterrupted supply for the entire display unit (ControlCOCKPIT) and therefore complete documentation of all parameters even when there is a power failure | | | C2 | |
| Entry port, 23 mm clear diameter, at the side | left centre/top | | F1 | |
| | right centre/top | | F3 | |
| 4 - 20 mA current loop interface | Temperature controller, actual value (0 to +100 °C = 4 - 20 mA) | | V3 | |
| | Humidity controller, actual value (0 to 100 % rh = 4 - 20 mA) | | V7 | |
| Works calibration certificate for one (freely selectable) temperature and humidity value according to customer specification | | | D00105 | |
| Potential-free contact for combination error message (e.g. supply failure, sensor fault, fuse) | | | H6 | |
| MobileALERT, notification by SMS in case of any error or alarm of the device (requires option H6) | | | C3 | |
| MobileALERT for 2 alarm notifications; notification by SMS. temperature and humidity alarm | | | C4 | |
| Door with lock and key (safety lock) | | | B6 | |

| Accessories | 50 | 105 | 150 | 240 |
|--|--------|---------|-----|--------|
| Perforated stainless steel shelf | E35160 | E37418 | | E35158 |
| Stainless steel grid, electropolished | E20164 | E20165 | | E43118 |
| Subframe (622 mm high) adjustable in height (sizes 150/240: should not be used for 2 stacked units) | B33504 | B33505 | | B33506 |
| Subframe (130 mm high); sizes 150/240: only in combination with the corresponding stacking sets for stacked appliances | B33507 | B33508 | | B33509 |
| Subframe, on castors (height 120 mm; stainless steel, material 1.4301) | | - | | B43598 |
| Central water supply with filter cartridges for connection to the domestic water supply. Product information on demand | | ZWVR6 | | |
| Central water supply without filter cartridges for connection to the domestic water supply (only for demineralised water with a conductivity of 5 to 10 µS/cm and a pH value between 5 and 7). Product information on demand | | ZWVR7 | | |
| Guarantee extension by 1 year | | GA3Q5 | | |
| USB-Ethernet adapter | | E06192 | | |
| Ethernet connection cable 5 m for computer interface | | E06189 | | |
| USB User-ID stick (with User-ID licence): Oven-linked authorisation licence (User-ID-programme) on Memory-stick, prevents undesired manipulation by unauthorised third parties. When reordering please specify serial number | | B33170 | | |
| Stacking set (4 pcs) for stacking of appliances of same size | B29744 | | - | |
| Stacking set (consisting of stacking corners, one connecting plate for the rear, two wall brackets) for stacking of two units of same size | - | B42114 | - | |
| Stacking set (consisting of stacking corners, one connecting plate for the rear, two wall brackets) for stacking of two units of same size (only in connection with subframe B33509 or B43598) | - | | | B48129 |
| FDA conforming software AtmoCONTROL (FDA edition). Meets the requirements for the use of electronically stored data sets and electronic signatures as laid down in Regulation 21 CFR Part 11 of the US Food and Drug Administration (FDA). Base licence for the control of one unit. Respective IQ/OQ documents available in German and English language (without surcharge) | | FDAQ1 | | |
| Integration of additional units (up to max. 31 units) into an already existent FDA-software licence | | FDAQ2 | | |
| External measuring instrument with additional measuring head for temperature and humidity measurement. Product information on demand | | B04714 | | |
| DAkkS calibration for one (freely selectable) temperature and humidity value according to method C (DKD-R 5-7) | | E48847 | | |
| DAkkS calibration for further temperature and humidity values according to method C (DKD-R 5-7) | | E48848 | | |
| IQ document with device-specific works test data, OQ/PQ check list as support for validation by customer | | D00124 | | |
| IQ/OQ document with device-specific works test data for one free-selectable temperature and humidity value, incl. temperature distribution survey at Memmert for 27 measuring points to DIN 12880:2007-05, PQ check list as support for validation by customer. 475 € for further temperature and humidity values | | D00136 | | |
| On-site IQ/OQ for a freely selectable temperature and humidity value, including temperature distribution survey for 27 measuring points to DIN 12880: 2007-05 (excluding travel costs, not subject to discount, GER, AT, FR only) | | DLQ101 | | |
| Extension of DLQ101 by an additional freely selectable temperature and humidity value (not subject to discount) | | DLQ101A | | |
| Individual on-site Performance Qualification (PQ) | | DLQ200 | | |
| Maintenance HCP - carrying out and documentation according to Memmert maintenance plan (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00313 | | |
| Maintenance contract HCP - carrying out and documentation according to Memmert maintenance plan, minimum duration 3 years (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00313J | | |
| Calibration of one freely selectable temperature value (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00205 | | |
| Calibration of an additional temperature value (not subject to discount) | | S00215 | | |
| Calibration of one freely selectable temperature and humidity value (excluding travel costs, not subject to discount, GER, AT, FR only) | | S00207 | | |
| Calibration of an additional temperature and humidity value (not subject to discount) | | S00216 | | |

DECISION AID FOR PRODUCTS WITH HUMIDITY CONTROL



Explanation of diagram:

Within the respective temperature-humidity range, condensation-free permanent operation is possible. To which extent condensation may occur in the threshold range depends on the humidity content of the chamber load and the ambient conditions.

- ICHeco/ICH
- HPP110eco-HPP1060eco
- HPP1400eco/2200eco
- HCP
- CTC
- Climate testing points according to ICH guidelines

Model selection

| Model size in litres (= dm ³) | ICHeco/ICH | HPPeco | | HCP | CTC |
|--|--|--------------------------|---------------------------|--------------------------|----------------|
| 56 | | | | HCP50 | |
| 107 | | | | HCP105 | |
| 108 | ICH110eco/ICH110 | HPP110eco | | | |
| 156 | | | | HCP150 | |
| 241 | | | | HCP240 | |
| 256 | ICH260eco/ICH260 | HPP260eco | | | CTC256 |
| 384 | | HPP410eco | | | |
| 749 | ICH750eco/ICH750 | HPP750eco | | | |
| 1060 | | HPP1060eco | | | |
| 1360 | | | HPP1400eco | | |
| 2140 | | | HPP2200eco | | |
| Temp. with hum. | +10 to +60 °C | 5 ² to +70 °C | 15 ³ to +60 °C | 7 ¹ to +90 °C | +10 to +95 °C |
| Temp. w/o hum. | -10 to +60 °C | 0 ² to +70 °C | 15 ³ to +60 °C | 7 ¹ to +90 °C | -42 to +190 °C |
| Humidity range | 10 to 80 % rh | 10 to 90 % rh | 10 to 80 % rh | 20 to 95 % rh | 10 to 98 % rh |
| Ambient conditions | +19 to +25 °C, max 50 % rh according to Memmert works standard | | | | |

¹ above ambient temperature

² at least 20 °C below ambient temperature

³ at least 10 °C below ambient temperature

Important notes concerning working ranges

If the temperature-humidity values exceed the specific limits (working range), the superheated steam introduced will immediately condense at the coldest point in the appliance, due to the dew point.

If the temperature-humidity values fall below the specific limits (working range), the effective range is heavily dependent on the humidity content of the chamber load.

The higher the humidity content of the chamber load, the more steam is generated inside the chamber. This may influence the maintenance of the constant humidity. If you need constant stable operation at the edges or the chamber load is very humid, we recommend dehumidifying with compressed air. We also have other technical solutions for special needs that guarantee stable operation. Send us your inquiry!

To support you in choosing the right appliance, the Memmert TechLab MPTC is always available for tests under realistic conditions. Your customer service representative will gladly establish contact.

MODEL VARIANTS

| SingleDISPLAY ControlCOCKPIT with one TFT display | TwinDISPLAY ControlCOCKPIT with two TFT displays |
|--|---|
| AVAILABLE APPLIANCES UN / UF / IN / IF / IPPeco / IPP / UNm / UFm / INm / IFm / SN / SF / IFbw | AVAILABLE APPLIANCES HPPeco / ICHeco / ICH / HCP / UNplus / UFplus / UF TS / UNpa / VO / INplus / IFplus / ICO / IPPecoplus / IPPplus / ICPeco / ICP / UNmplus / UFmplus / INmplus / IFmplus / SNplus / SFplus / ICOfmed |
| One high-resolution TFT colour display with touch-sensitive buttons for selection of functions | Two high-resolution TFT colour displays with touch-sensitive buttons for selection of functions |
| Available parameters on the ControlCOCKPIT: Temperature (Celsius or Fahrenheit), fan speed, exhaust air flap position, programme time | Available parameters on the Control COCKPIT: All parameters of the SingleDISPLAY and device-specific parameters like relative humidity, illumination and CO ₂ |
| One temperature sensor Pt100 DIN class A in a 4-wire circuit | Two Pt100 sensors DIN class A in a 4-wire circuit for mutual monitoring, taking over functions in case of an error |
| | HeatBALANCE function for application specific adjustment of heat output distribution (balance) between the upper and lower heating groups in an adjustment range between -50 % and +50 % (not valid for models 30, HPP110eco, IPP110ecoplus, ICPeco, ICP, ICHeco, ICH) |
| AtmoCONTROL software ¹⁾ for reading out, managing and organising the data logger via Ethernet interface (temporary trial version can be downloaded). USB stick with AtmoCONTROL software available as accessory (on demand) | AtmoCONTROL software ¹⁾ on a USB stick for programming, managing and transferring programmes via Ethernet interface or USB port |
| | ControlCOCKPIT with USB port for uploading programmes, reading out protocol logs, activating the User-ID function |
| | Displaying of already logged protocol data on the ControlCOCKPIT (max 10,000 values correspond to approx. 1 week) |
| Ethernet interface on the rear of the appliance for reading out the protocol log and for online logging | Ethernet interface on the rear of the appliance for reading out the protocol log and for uploading programmes and for online logging |
| Double overtemperature protection: Electronic temperature monitoring with freely adjustable monitoring temperature, for models U, I, S with option A6 TWW/TWB (protection class 3.1 or 2), mechanical temperature limiter TB acc. to DIN 12880 | Multiple overtemperature protection: Electronic temperature monitoring TWW/TWB (protection class 3.1 or 2 resp. 3.3 for units with active cooling) and mechanical temperature limiter TB (protection class 1) acc. to DIN 12880, AutoSAFETY automatically adjusts to the set value within a freely adjustable tolerance range. Setting individual MIN / MAX values for over/undertemperature and also for all other parameters such as relative humidity, CO ₂ |
| PID microprocessor control with integrated auto-diagnostic system | |
| Structured stainless steel housing, scratch-resistant, robust and durable; rear of zinc-plated steel | |
| High-temperature connectors on the rear of the appliance for single-phase power connection according to country specific systems and IEC standards | |
| Internal data logger with a storage capacity of at least 10 years | |
| German, English, French, Spanish, Polish, Czech, Hungarian language settings available on the ControlCOCKPIT | |
| Digital backwards counter with target time setting, adjustable from 1 minute to 99 days | |
| The SetpointWAIT function guarantees that the process time does not start until the set temperature is reached at all measuring points – optional for temperature values recorded by the freely positionable Pt100 sensors inside the chamber | |
| Adjustment of three calibration values for temperature and additional appliance specific parameters directly at the ControlCOCKPIT | |

¹⁾ As a manufacturer, Memmert GmbH + Co. KG clearly labels its devices, which are medical devices in the sense of the European legislation. The AtmoCONTROL software is not a medical device. All Memmert medical devices can be used for their purpose without the software AtmoCONTROL. AtmoCONTROL is only intended for reading the data logging in conjunction with Memmert GmbH + Co. KG medical devices.

SOFTWARE AtmoCONTROL

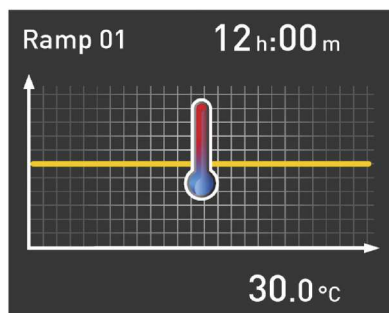
AtmoCONTROL

The innovative control and logging software

Parameters such as temperature and humidity as well as the process time can be set directly at the ControlCOCKPIT. Ramp programming is done via the control and logging software AtmoCONTROL.

Drag, drop & go!

Numerical and graphic programming of complex processes is a thing of the past. Today, programming is done via AtmoCONTROL by means of the mouse or touchpad on your notebook. Even the most complex ramp programmes are created within minutes. Simply drag & drop the graphical symbols for the desired parameters to the input field and change the values according to your wishes with a mouse click.

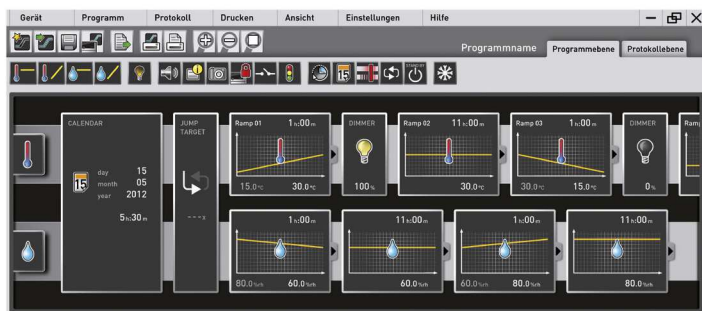


Programme functions for appliances with SingleDISPLAY and TwinDISPLAY

- Reading out, managing and organising the data logger
- Saving the log memory in various formats
- Online monitoring of up to 32 connected appliances
- Optical alarms when the alarm limits individually set at the ControlCOCKPIT are exceeded
- Automatic alarm to one or several e-mail addresses

Additional functions for appliances with TwinDISPLAY

- Intuitive programming and archiving of ramps and programme sequences
- Synchronous visualisation of the created programme sequence during programming
- Application-specific repeat functions (loops) can be inserted within a temperature control programme in any place
- Simple creation of repeating weekly programmes
- Programming, managing and transferring programmes via Ethernet interface or USB port



24 HOURS AT YOUR SERVICE

www.memmert.com

Here you can find the latest news concerning our company and products, as well as detailed descriptions of every single product. Additional information on the technologies used will support your sales arguments. In addition to this, data sheets, certificates, operating instructions and brochures are available for download. Service notifications can be submitted to our service team using the corresponding form.

Dedicated login area for our trading partners

- Technical information:
Service instructions, software download, wiring diagrams, maintenance schedules etc.
- Marketing/sales information:
Press releases, product photos, image photos, videos, order form for advertising material etc.
- Download of price list and customisation department price list
- Dates and registration form for sales and service trainings

Our tip:

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Please consider the Memmert customer information, which we regularly send exclusively to our trading partners. We inform you about campaigns, upcoming product launches, service offers and new application reports!

Device Modifications - Proven and Good

The perfect extension for your Memmert appliance

Our mission at Memmert is to provide you with the best possible solution for your individual application. With the increasing complexity of customer processes, a custom-fit modification of our appliances has many advantages for your application. Through modifications, process and set-up times can be significantly reduced or errors in the application can be completely ruled out by monitoring devices. Even small measures, such as individually adapted accessories, have a noticeable influence on the ergonomics and user-friendliness in the operation of the appliance.

You as a customer have the best ideas - and often already have a specific idea of how our products can be better used in your working environment.

Tell us about your thoughts and let us create an individual solution together with you! Please contact us and call us at +49 9122-925-0 or send us an email to sonderbau@memmert.com.

The Memmert customisation department team is looking forward to hearing from you!

Versatile modifications for our standard appliances



Mechanics

- Customised interior fittings
- Individual entry ports in all sizes and shapes
- Telescopic slide pull-outs for ergonomic loading



Electronics

- Extended parameter monitoring e.g. by means of additional measuring sensors
- Optical and acoustic process monitoring e.g. by means of a traffic light system



Software

- Additional interfaces for data evaluation
- Individual temperature, humidity and CO₂ parameters



Accessories

- Tailor-made subframe and stacking options
- Modified grids and shelves
- Individual air filters

CUSTOMER SPECIFIC SOLUTIONS

Customised solutions for your requirements

Our expertise as a development partner in plant and project business

The Memmert customisation department has been active in the project business for over 20 years now and has proven itself in countless projects as a strong and reliable partner. The experts in customisation benefit from two aspects: Access to the complete capacities of an ultra-modern and specialised production line, as well as the entire technical know-how of the Memmert company in designing climate and temperature control appliances. Combined with the experience of our project managers, the Memmert customisation department is also able to find a solution for the most complex requirements.

Special sizes

Does your product not fit into a standard unit? We build appliances to measure! Whether you need more volume in the interior or there is not enough space for installation at the installation location, we have the expertise to design your appliance individually. Ask us!

Process and plant integration

Integrate our technology seamlessly into your plant or your work organisation. We will find the right solution together for your process integration:

- Preparation for integration into your plant
- Integration of your processes into our appliances
- Inclusion of customer-specific installations
- Interface for semi-automatic assembly

Project business

Are you a project developer with ideas for innovative products and looking for a strategic cooperation? Take advantage of our know-how and manufacturing capacities for your project. Our customisation department will be pleased to hear from you!

