



Individual dimensions and design requests possible according to your wishes
Request a noncommittal offer

Give us a call: We would be happy to advise you personally to prepare your offer
according to your requirements

Work place inert gas glove box system

- InerTec GloveBox system for work under N₂ / or Ar atmosphere
- With this system, the inert gas circuit is continuously circulated through the integrated gas cleaning system with absorption filter
- The O₂ / and H₂O particles entering through diffusion are continuously absorbed, resulting in a residual contamination of <1 ppm range
- The consumption of inert gas can practically be neglected

Typical applications

Universities and R&D centers (research and development centers), chemistry, pharmaceuticals etc. suitable for:

- Assembly
- Sampling
- welding work
- Semiconductor manufacturing
- Basic research
- Lithium battery production / OLED
- General handling for all O₂ and H₂O sensitive materials

Particularities

- The systems of the ITS series are the result of years of optimization work. Due to the consistent use of high quality components and the proven control, the interesting price-performance ratio could be realized
- The constructive design of the basic housing made of stainless steel allows practically unlimited expansion options
- The gas-tight welded construction guarantees maximum tightness and stability
- The front frame system with quick-release system on a defined fixed stop, allows easy disassembly and reattachment of the front screen in a few minutes
- Optionally with hinges
- The front frame seal guarantees the best values with regard to tightness in the overpressure and in the vacuum working area

This service-friendly concept is, among other things, to be regarded as a decisive criterion compared to other systems

- The ITS Glove Box has proven, maintenance-free and user-friendly controls. The ergonomic and space-saving design allows the GloveBox to be easily integrated into a laboratory. All pipes and cabling are compact
- GloveBox is delivered fully operational and tested. This eliminates additional, often not insignificant, assembly costs.

Service

- • The box is designed so that it can be set up on a normal work table. For the commissioning only the connections for the gassing of the box and the lock are necessary
- • The front unit, which is angled 100 degrees upwards at the rear, allows ergonomic work in both standing and sitting positions
- • The individual bushings can be integrated in the rear wall, on the side wall or on the box roof, if requested by the customer

Cleaning

- Due to the radii drawn up in the corners, the working chamber is very easy to clean (dead space free)

Basic box

- Description of housing:
- Gas-tight welded housing made of rustproof stainless steel, box bottom with radii and externally firmly integrated reinforcement frame, e.g. B. hang on vibration damper
- Surfaces inside and outside bright rolled, or powder coated
- Butt joints smoothed K 220,
- Surface treatments (see options)
- Material thickness: 2.0 mm
- Dimension: according to customer requirements

Insulator housing design

- Welded stainless steel housing
- Smooth surfaces in the work area
- Housing with ball corners on request for optimal cleaning
- Laminated safety glass pane
- Folding front windscreen with stainless steel window frame
- Disc secured by lock
- Oval gloves and EPDM gloves (optional)
- Disc seal made of EPDM for dead space-free sealing of the slide
- Automatic vacuum control
- HEPA filter in the gas inlet and outlet
- HEPA push-push double filter
- Pressure display

Lighting

- System workstation light 38 watts, in removable housing, (powder-coated, ultramarine-blue)
- Ensures optimal illumination of the workplace

Front unit

- Folding front windscreen with stainless steel window frame (optional)
- Safety laminated glass pane (10mm) with detachable, two-part, screwed glove feedthroughs made of hard-metalized aluminum for best chemical resistance
- Front frame design with quick release frame on a defined fixed stop allows the front screen to be dismantled and reassembled in just a few minutes
- The static hose seal allows an excellent seal in both negative and positive pressure

Gloves (pair)

- Size M butyl gloves
- L = 850 mm, \varnothing 196 mm or oval according to customer requirements, material thickness 0.6 mm
- Also optionally available in neoprene, hypalon, viton or latex, in sizes S and L

Side wall media feedthroughs

- Gas connection for N₂ / Ar with shut-off ball valve and hose nozzle DN 06, thread 1/4 “
- Heat / cool the thermostat to the reactor
- Cool the cryostat to the cooler
- Vacuum connection
- Water connection
- Electrical / power connection (e.g. agitator, magnetic stirrer, scale)
- PT-100 connection Lemo
- Dosing lines
- **Or media implementation according to customer requirements**

Transfer vacuum lock

- Allows material transfer without affecting the inert atmosphere
- Made of sturdy stainless steel including two DN 6 mm ball valves for gassing and vacuum, pressure display
- Easily operated interior and exterior swing doors
- Stainless steel isolator lock
- Manually or electrically locked swing doors inside and outside
- Doors made of transparent plastic, stainless steel or powder-coated sheet steel
- The transfer device works in constant negative pressure to the environment

- When the outer door is open, there is an air flow into the transfer device
- When the inner door is open, there is an air flow towards the insulator
- Air flow secured by filter
- Further vacuum locks made of acrylic glass, as well as various service doors on request

Vacuum pump

- Membrane vacuum pumps (with filter protection) for evacuating the airlock and regulating the pressure in the working chamber, including oil mist filter.

Technical specifications:

- Flow rate 15/18 m³ / 60 Hz
- Final pressure 3×10^{-2} mbar
- Motor power 370 W.
- Oil filling: 850 ml
- Weight 22 kg
- The DN 25 outlet connection is recommended to be connected to an exhaust system

Gas cleaning

- Radial blower 230/240 V, for 22 air changes
- Circulation lines made of stainless steel
- KF-40 input and output flange connections
- O-ring seals connected
- The input particle ultrafilter (EU 13) is a non-regenerable fine dust or particulate filter made of compressed air and gases
- The filter is mounted inside the glove box and can easily be replaced contamination-free from the outside using the gloves
- 1 adsorber unit (filling volume 8.6 kg) to remove O₂ and H₂O

PLC control unit based on Siemens S7

- Touch screen control panel with color display
- Process control for pressure regulation
- Digital input of the upper and lower limit values of the desired working range in positive or negative pressure. Permanent status display
- The working pressure of the GloveBox is controlled via the integrated automatic pressure control
- The working pressure is freely selectable

Automatic locks

- Automatic rinsing and evacuation process, guarantees “clean” material transfer to the working chamber
- The factory default setting is 3 cycles
- The rinsing and evacuation process is signaled by an indicator light
- Power supply for all components included in the scope of delivery
- Solenoid valves, 24 V, DC, easily accessible next to the adsorber unit
- Regeneration (adsorber): The automatic regeneration (3-step program) is started with a push button
- The regeneration process is signaled by an indicator light

O₂ measuring device: Type IT-TOS 1.0

- Digital display in PPM / V
- The maintenance-free trace oxygen analyzer with miniaturized amperometric limit current sensor has been specially developed for measuring low oxygen partial pressures. The use of TZP (polycrystalline

tetragonal zirconium dioxide) as a solid oxygen ion conductor with improved electro-chemical and thermomechanical properties guarantees excellent measured values

- The device does not need a reference electrode that would be used up over time
- No increase in water vapor pressure due to the measurement
- The sensor is selective for oxygen and requires no maintenance
- Feed-through probe in KF 40 flange
- Large format (25 mm) LCD display of the O₂ partial pressure in ppm
- Display range: <0.1 ppm - 200 ppm or 1 ppm - 2000 ppm

H₂O analyzer: (optional)

- Al₂O₃ dew point transmitter, with which a reliable measurement of the moisture content is guaranteed
- Using this device eliminates the rigid, time-controlled regeneration cycles of the adsorbers
- The extremely large dynamic measuring range of the aluminum oxide sensor is characterized by the shortest response times and long-term stability
- The microprocessor-supported device electronics deliver measured values without delay
- LCD display in °C or ppm
- Input data using membrane keys
- Measuring range: 0.1 - 23,000 ppm
- Temperature range: -100°C to + 700°C
- Interface: RS-232
- Feed-through probe in KF 40 flange

Base

- Robust mobile base (welded construction) made of stainless steel with swivel castors and leveling feet. Allows easy insertion and alignment in the laboratory

Optional

- Flush control with pressure control
- Flush control with pressure control and with data logger
- Gas cleaning with 1 adsorber
- Gas cleaning with 2 adsorber: second adsorber for continuous operation during regeneration
- Solvent adsorber can be activated via bypass, activated carbon filter to remove solvent vapors. With DN 40 clamp screw connection including by-pass locking. The activated carbon cartridge can be exchanged very easily. Volume of activated carbon approx. 250 g (other volume sizes on request)
- Recommended reserve feedthrough positions can be determined by the customer KF-40 blind flange gas ball valve DN 6 with hose nozzle on both sides for hose I Ø 8 mm
- Mini Transfer Vacuum Lock allows material transfer without affecting the inert atmosphere. Made of sturdy stainless steel tube, inside ∅ 150 mm, length 400 mm, including two ball valves DN 6 mm for gassing and vacuum, vacuum manometer. inside and outside door with integrated seal.
- Power feed-through: gas-tight, screwed, power feed-through with double-sided plug connection, 3-pin, 230V / 50 / 60Hz.
- Mobile storage rack with 2 trays, dimensions 700 x 300 mm, with 12 mm edge. Distance supports: height 200 mm each, with PTFE sliding feet.
- Inner cover, for changing gloves
- Outer cover, for closing the glove openings. (To be used when the system is not used for a long time in order to maintain the interior atmosphere). Prevents diffusion through the gloves
- For further options, see "Glovbox stainless steel accessories"



Do not hesitate to contact us, should you have any questions, your
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