Options and Spare Parts for Gloveboxes

INERTGAS TECHNOLOGY

Antechambers

Part number	Name	Description
		Main antechambers
1500205	MB-SCH-390-1T-L LM/MOD	Main antechamber left LM/MOD (390 mm diam. 600 mm length)
1500206	MB-SCH-390-1T-R LM/MOD	Main antechamber right LM/MOD (390 mm diam. 600 mm length)
1500207	MB-SCH-390-1T-L LS/UL	Main antechamber left LS/UL (390 mm diam. 600 mm length)
1500208	MB-SCH-390-1T-R LS/UL	Main antechamber right LS/UL (390 mm diam. 600 mm length)
		Mini antechambers
1500250	MB-MINI-AC-150-R	Mini antechamber right (150 mm diam. 400 mm length)
1500251	MB-MINI-AC-150-L	Mini antechamber left (150 mm diam. 400 mm length)
1500255	MB-MINI-AC-150-300-R	Mini antechamber (150 mm diam. 300 mm length)
1500256	MB-MINI-AC-150-300-L	Mini antechamber (150 mm diam. 300 mm length)
1500197	MB-BOTTOM-AC-150-400	Mini antechmber (150 mm diam. 400 mm length) mounted vertically
		T-shaped antechambers
1500209	MB-SCH-T-390-600-CYL	T-shaped antechamber (390 mm diameter, 600 mm length)
1500210	MB-SCH-T-390-800-CYL	T-shaped antechamber (390 mm diameter, 800 mm length)
1500211	MB-SCH-T-300-SQ	T-shaped square antechamber (300mm x 300mm, 600mm length)
		L-shaped antechambers
1500212	MB-SCH-L-300-SQ	L-shaped antechamber (300mm x 300 mm x 400)
		Square antechambers
1500213	MB-SCH-300-SQ	Square antechamber (300mm x 300mm, 400mm length)
1500214	MB-SCH-200-SQ	Square antechamber (200mm x 200mm, 400mm length)

Mini antechamber

Mini and main antechamber

Mini and main antechamber

Specific antechambers available on request:

L-shape box junction

T-shaped main and mini antechambers

Large volume vacuum antechamber

Antechambers control options

For Labstar / UNIlab

Part number	Name	Description
		Mini antechamber option
1500252	MB-AAC-MINI-AC	Time controlled evacuation / refill - No. of cycles for evacuation and refill - Evacuation (time controlled) - Intermediate refill (time controlled) - Refill to final pressure (time controlled)
		Main antechamber options
1500291	MB-AUTO-AC-TC-UNILAB	Time controlled evacuation / refill - No. of cycles for evacuation and refill - Evacuation (time controlled) - Intermediate refill (time controlled) - Refill to final pressure (time controlled)
1502051	MB-AC-VENT	The connected main antechamber is vented by fresh fresh gas from the gas supply instead of refilling with gas from the glovebox.
1502053	MB-AC-PURGE	The connected main antechamber can be purged in overpressure with inert gas instead of using the standard vacuum process.
1500283	MB-SCH-PLC	Pressure controlled evacuation / refill, inlc. 2 sensors (1 for atm. pressure, 1 for high vacuum pressure). Leak test function included. Programable antechamber cycles: - no. of cycles - intermediate vacuum for refill - ultimate vacuum

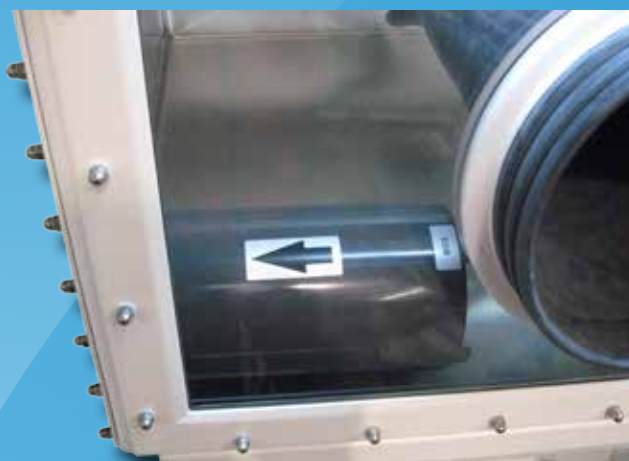## *For LABmaster and G Series purification units*

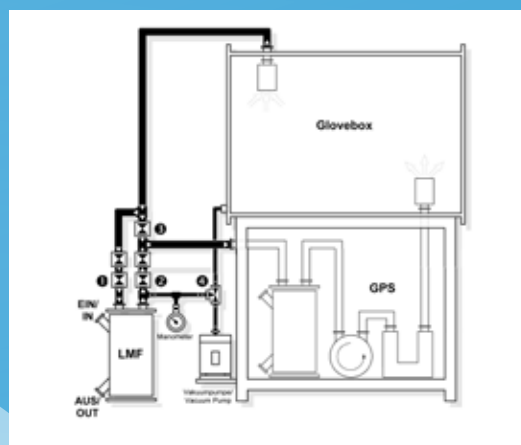| Part number	Name	Description
		Mini antechamber option
1500252	MB-AAC-MINI-AC	Time controlled evacuation / refill - No. of cycles for evacuation and refill - Evacuation (time controlled) - Intermediate refill (time controlled) - Refill to final pressure (time controlled)
1500253	MB-AAC-LOCK-MINI-AC	Automatic Mini-antechamber controlls with door locks. PLC-controled antechamber control unit including sensors and software. Ante chamber control, 2 doors including mechanical interlock for the antechamber or the oven to avoid failure of operation.
		Main antechamber options
1502051	MB-AC-VENT	The connected main antechamber is vented by fresh fresh gas from the gas supply instead of refilling with gas from the glovebox.
1502053	MB-AC-PURGE	The connected main antechamber can be purged in overpressure with inert gas instead of using the standard vacuum process.
1500283	MB-SCH-PLC	Pressure controlled evacuation / refill, inlc. 2 sensors (1 for atm. pressure, 1 for high vacuum pressure). Leak test function included. Programable antechamber cycles: - no. of cycles - intermediate vacuum for refill - ultimate vacuum
1500284	MB-SCH-PLC-2-DV	Antechamber control (1500283) + 2 doors including mechanical interlock for the antechamber or the oven to avoid failure of operation
1500285	MB-SCH-PLC-3-DV	Antechamber control (1500283) + 3 doors including mechanical interlock for the antechamber or the oven to avoid failure of operation
1500286	MB-SCH-PLC-2-DV-1PD	Antechamber control and interlock (1500284) + Automatic lifting mechanism for 1 door
1500287	MB-SCH-PLC-2DV-2PD	Antechamber control and interlock (1500284) + Automatic lifting mechanism for 2 doors
1500288	MB-SCH-PLC-3DV-2PD	Antechamber control and interlock (1500285) + Automatic lifting mechanism for 2 doors

Solvent traps

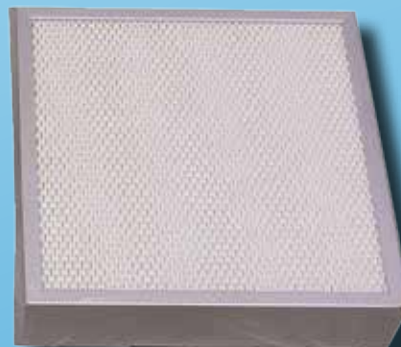| Part number	Name	Description
9004451	MB-BF-BO1	Integrated into the glovebox, instead of the outlet dust filters: - Loading: Charcoal - Easy exchange of loading - Capacity*: 100 g solvent vapour - Integrated dust filter HEPA H13
1500326	MB-LMF	Integrated into the purifier unit or stand-alone: - Easy exchange of loading with bypass hand valves linked to the vacuum pump - Loading: Charcoal - Capacity*: 500 g solvent vapour
1500327	MB-LMF-REG	Integrated into the purifier unit: - Operation through the Touch panel - No need to change the load when saturated - Regeneration programm PLC-operated - Loading: Molecular sieve - Capacity*: about 810 g solvent vapour
1500320	MB-LMF-2/40-REG STAND ALONE	Standalone unit: - Regeneration programm PLC-operated - Loading: Molecular sieve - Capacity*: about 810 g solvent vapour - Could be added to existing system

**Solvent filter
MB-BF-01**

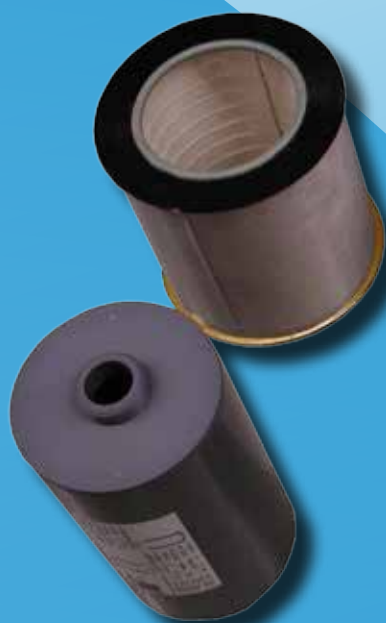**Solvent trap
LMF**

Dust filters

Part number	Name	Description
9004513	MB-BF-L-03	Standard dustfilter for KF40 HEPA H13; type: cylindrical For gas inlet and outlet of M.Braun gloveboxes
2137001	MB-BF-L-04	Dustfilter according class HEPA H13; type: cylindrical For gas inlet and outlet of M.Braun gloveboxes
3240077	MB-BF-L-01	Square large dustfilter U15 HEPATEX H13; LUWA Ultrafilter Type CR-T, 305 x 305 x 70 mm (WxDxH)
7007292	Ultra-Filter JK15	LUWA Ultra-Filter JK15 (Filter cartridge)
3240399	Ultra-Filter JK19/20	ELUWA Ultrafilter JK19/20; HEPA filter Hepatex H13; D190x200 Type JK
9004451	MB-BF-BO1	Integrated into the glovebox, instead of the outlet dust filters: - Loading: Charcoal - Easy exchange of loading - Capacity*: 100 g solvent vapour - Integrated dust filter HEPA H13

Ultra-Filter JK19/20   **Ultra-Filter JK15**   **MB-BF-L-01**

MB-BF-B01   **MB-BF-L-04**   **MB-BF-L-03**

Analyzers

Part number	Name	Description
1500685	MB-MO-SE1-PLC	Moisture probe, PLC-controlled, measuring range: 0-500ppm, transducer, 0-10V output, 5m cable included
1500686	MB-OX-SE1-PLC	Oxygen probe, PLC-controlled, measuring range: 0-1000ppm, transducer, solid state device, 0-10V output, 5m cable included
1500687	MB-OX-SE3-PLC	Oxygen probe, PLC-controlled, measuring range: 0,5-25%, transducer, solid state device, 0-10V output, 5m cable included
1500716	MB-OX-EC-PLC	Electrochemical Oxygen analyzer Range: 1 to 1000 ppm Sensivity: 10 mV / ppm (range 1) Accuracy: 2% of displayed value, +/- 1 ppm up to 1000 ppm Integrated in Gas circulation piping To be used when atmosphere is not dry or when a lot of solvent vapours are present

Special analyzers

Part number	Name	Description
1500273	MB-UGP-CO2, 0-100%	Integrated analyzer, PLC-controlled, data display on PLC operation panel. CO2-analyzer with PLC-interface. Range: 0,1% to 100% in argon
1500274	MB-UGP-He in Ar, 0-30%	Integrated analyzer, PLC-controlled, data display on PLC operation panel. He-analyzer with PLC-interface. Range: 0,1% to 30% in argon
1500800	MB-UGP-He in N2, 0-20%	Oxygen probe, PLC-controlled, measuring range: 0,5-25%, transducer, solid state device, 0-10V output, 5m cable included
1500804	MB-H2-Ar, 0-1,5%	Working gas in the glove box: Argon The non-safety related sensor is intended to be used in combination with a MB BS-200 box purging function and a MB-OX-EC oxygen sensor. Automated box purging will start if the Hydrogen concentration exceed 1.5 % or the oxygen concentration exceeds 2 %. For a regular check of the sensor is a test gas connection available.
1500805	MB-H2-N2, 0-2,5%	Working gas in the glove box: Nitrogen The non-safety related sensor can be used only in combination with an MB BS-200 purging system and an MB-OX-EC oxygen sensor. Automated box purging will start if the Hydrogen concentration exceed 2,5 % or the oxygen concentration exceeds 2%. For a regular check of the sensor is a test gas connection available
6000256	MB-UGP-solvent sensor	for the monitoring of the proper function of solvent filters in M. Braun Systems. Main components: - universal pumping system (diaphragm pump) - gas-specific printed circuit sensor board - housing Calibration: 0-1000 ppm Hexane in Nitrogen (optional: 0-4000 ppm Toluene in Nitrogen) Detection limit: <1% of full scale Measurement principle: NDIR (nondispersive infrared, dual wavelength, single beam, wave length 3.5 µm) Display on Touch Panel: Voltage [V] (Standard value: 0 V; increase of the voltage indicates the exhaustion of the solvent filter)

Analyzers options

We integrate our analyzers to our PLC for our new systems, but for existing systems or your existing equipment, you can use our analyzers in combination with our MB-DISPLAY and our Gas Sampling Unit (GSU).

Part number	Name	Description
1500668	MB-DISPLAY	Digital read out for OX-SE1 / MO -SE1, power supply and interface for SSD sensors. - Alarms settings on the fron tpanel - 25-pin SUB-D interface
1500664	MB-GSU	Gas Sampling Unit, two channels, supplies SSD probes with "to be measured gas" out of non-flowing gas volumes, for systems without circulation unit.

MB-DISPLAY

MB-GSU

Freezer

Part number	Name	Description
1500334	MB-GS-35 DIN R	Freezer (box integrated) from +10°C to min. -35°C Door hinge right Position: left sidewall Volume: 18 liters incl. 3 pcs. of shelves
1500335	MB-GS-35 DIN L	Freezer (box integrated) from +10°C to min. -35°C Door hinge left Position: right sidewall Volume: 18 liters incl. 3 pcs. of shelves
1500336	MB-GS-35 DIN RW	Freezer (box integrated) from +10°C to min. -35°C Door hinge left or right according to system spec. Position: rear wall Volume: 18 liters incl. 3 pcs. of shelves

Atmosphere cooling units

Part number	Name	Description
1500900	MB-RCC 1000	Recirculation chiller for M.Braun systems Temperature range +5 bis +30°C (Setting range); Accuracy +/-1K Cooling capacity: 1000 W @ 30°C (ambient temperature) Flow rate (cooling fluid) up to 12 l/min Dimensions: 375x500x570 mm (WxDxH)
1500152	Heat exchanger for Unilab	For the integration in the gas pipework to the UNILAB glovebox inside the gas purifier unit. The working gas will be cooled effectively through this device; thus the temperature inside the glovebox remains comfortable for the operator. Required water flow rate: 3-5 l/min; Rated cooling power: approx. 800 W
	Box cooling	
1500328	MB-RKI-80	Cooling unit for tempering the box atmosphere Mounted at box ceiling Capacity: 0,95 kW Control unit integrated in PLC of gas purifier Available in standalone version for Labstar and UNIlab (1500350)
1500329	MB-RKI-200	Cooling unit for tempering the box atmosphere Mounted at box ceiling Capacity: 2,30 kW Control unit integrated in PLC of gas purifier. (please note: requires glovebox with minimum width of 1500 mm) Available in standalone version for Labstar and UNIlab (1500351)

Recirculation
chiller

Box cooling
MB-RKI-200

Purge box units

Part number	Name	Description
1500306	MB-BS-200	Unit for inerting (purging) of the workspace with inertgas Operation: via operation panel of the gas purifier. Valves PLC-controlled Flow rate: max. 200 l/min; incl. manual regulation valve for reduction of the gas flow Functions: - Purging ON / OFF
1500307	MB-BS-500	Unit for inerting (purging) of the workspace with inertgas Operation: via operation panel of the gas purifier. Valves PLC-controlled Flow rate: max. 500 l/min; incl. manual regulation valve for reduction of the gas flow Functions: - Purging ON / OFF
1500309	MB-BS-200-PLC	Automatic box purging system. The purging system starts if a max. level (adjustable between 10 and 100ppm) is achieved. After a reduction of the O2 level below the set point the circulation of the gas purifier will be restarted. If no O2-% sensor is used, the inertisation (purging) during start up is not monitored. Reaching an O2-level below 100ppm the circulation of the gas purifier will be started automatically. An optional O2-% sensor allows a fully monitored inertisation. Flow rate: max. 200 l/min; incl. manual regulation valve for reduction of the gas flow Functions: - Purging ON / OFF - automatic purge start at defined O2 level
1500310	MB-BS-500-PLC	Automatic box purging system. The purging system starts if a max. level (adjustable between 10 and 100ppm) is achieved. After a reduction of the O2 level below the set point the circulation of the gas purifier will be restarted. If no O2-% sensor is used, the inertisation (purging) during start up is not monitored. Reaching an O2-level below 100ppm the circulation of the gas purifier will be started automatically. An optional O2-% sensor allows a fully monitored inertisation. Flow rate: max. 500 l/min; incl. manual regulation valve for reduction of the gas flow Functions: - Purging ON / OFF - automatic purge start at defined O2 level

Vacuum pumps

Part number	Name	Description
		Included into Standard workstations and gas purifier units
2403022		Vacuum-rotary pump, RV 12, 110 - 240 V complete with oil mist trap, gas ballast, cabel
		Upgrade for scroll vacuum pumps
1502003		MB-Upgrade scroll vacuum pump: Additional charge for Dry Scroll vacuumpump for all M.Braun system with standard oil-sealed vacuum pump RV12

EDWARDS RV12

**Optional:
AGILENT PTS310**

**Optional:
EDWARDS nXDS10i**

Windows upgrades

Our systems are build as a standard with polycarbonate window(s) with SAPHIR hard coating
(resistant to many chemicals and scratches)

Part number	Name	Description
		Upgrade for safety glass windows
1502040	MB-upgrade window (1250)	ONLY valid for new systems, up to width of 1250 mm Upgrade for system with polycarbonate window replaced by laminated safety glass
1502041	MB-upgrade window (1500)	ONLY valid for new systems, up to width of 1500 mm Upgrade for system with polycarbonate window replaced by laminated safety glass
1502042	MB-upgrade window (2000)	ONLY valid for new systems, up to width of 2000 mm Upgrade for system with polycarbonate window replaced by laminated safety glass
		Upgrade for UV-cut windows
1502030	MB-upgrade UV-cut (1250)	ONLY valid for new systems, up to width of 1250 mm Upgrade for UV-cut on glovebox window, UV-cut @ 360nm > 99%
1502031	MB-upgrade UV-cut (1500)	ONLY valid for new systems, up to width of 1500 mm Upgrade for UV-cut on glovebox window, UV-cut @ 360nm > 99%
1502032	MB-upgrade UV-cut (2000)	ONLY valid for new systems, up to width of 2000 mm Upgrade for UV-cut on glovebox window, UV-cut @ 360nm > 99%
		Upgrade for antistatic windows
1502035	MB-upgrade AS-window (1250)	ONLY valid for new systems, up to width of 1250 mm Upgrade for antistatic window, Material: Polycarbonate
1502036	MB-upgrade AS-window (1500)	ONLY valid for new systems, up to width of 1500 mm Upgrade for antistatic window, Material: Polycarbonate
1502037	MB-upgrade AS-window (2000)	ONLY valid for new systems, up to width of 2000 mm Upgrade for antistatic window, Material: Polycarbonate
		Upgrade for quick-release windows
1500338	MB-QC-1250	Windowframe with QC-quick connectors (quick-release). For standard windows up to 1250 mm length. Only available for Labmaster and MOD-Glovebox Systems.
1500338	MB-QC-1500	Windowframe with QC-quick connectors (quick-release). For standard windows up to 1500 mm length. Only available for Labmaster and MOD-Glovebox Systems.
1500340	MB-QC-1800	Windowframe with QC-quick connectors (quick-release). For standard windows up to 1800 mm length. Only available for Labmaster and MOD-Glovebox Systems.
1500341	MB-QC-2000	Windowframe with QC-quick connectors (quick-release). For standard windows up to 2000 mm length. Only available for Labmaster and MOD-Glovebox Systems.

UV-cut window with quick connectors

Standard ovens

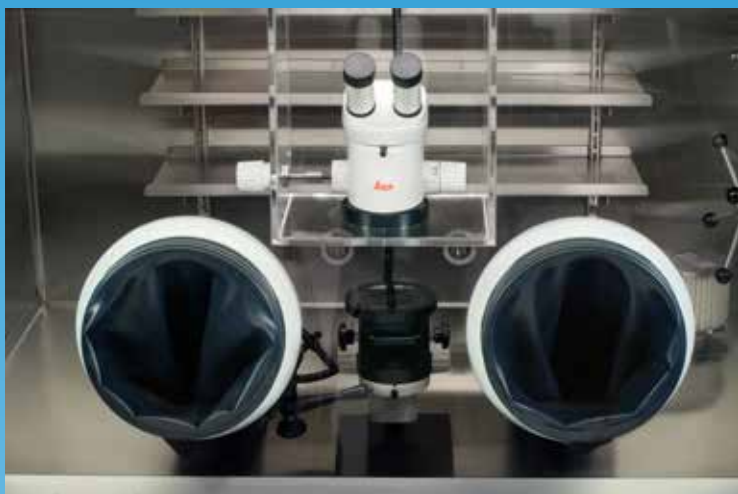| Part number	Name	Description
		150°C Vacuum ovens
1500235	MB-OR-H-V-150°-390	Vacuum furnace, temperature range up to 150°C, cylindrical, dia. = 390 mm, incl. temperature controller. Horizontal, box panel right side. Temperature profiles, -ramps: no. Additional cooling: no. Operation: through a separate control unit.
1500236	MB-OL-H-V-150°-390	Vacuum furnace, temperature range up to 150°C, cylindrical, dia. = 390 mm, incl. temperature controller. Horizontal, box panel left side. Temperature profiles, -ramps: no. Additional cooling: no. Operation: through a separate control unit.
	MB-VOH-MINI	Available as both standalone and glovebox integrated versions Maximum temperature of 150° C. Maximum vacuum level 5 x 10-2 mbar. External heating jacket
		250°C Vacuum ovens
1500233	MB-OR-H-V-250°-390-W	Vacuum furnace, temperature range up to 250°C, cylindrical, dia. = 390 mm, PLC-controlled, incl. temperature controller. Horizontal, box panel right side. Power Supply: 400 V / 3 Ph / 5.5 kW. Cooling water must be supplied by customer. Inclusive vacuum pump: RV-12, oil-sealed
1500234	MB-OL-H-V-250°-390-W	Vacuum furnace, temperature range up to 250°C, cylindrical, dia. = 390 mm, PLC-controlled, incl. temperature controller. Horizontal, box panel left side. Power Supply: 400 V / 3 Ph / 5.5 kW. Cooling water must be supplied by customer. Inclusive vacuum pump: RV-12, oil-sealed
		600°C Vacuum ovens
1500221	MB-OR-H-V-600°-390-W	Vacuum furnace, temperature range up to 600°C, cylindrical, dia. = 390 mm, PLC-controlled, incl. temperature controller, horizontal, box panel right side. Power Supply: 400 V / 3 Ph / 4.5 kW. Cooling water must be supplied by customer. Inclusive vacuum pump: RV-12, oil-sealed
1500222	MB-OL-H-V-600°-390-W	Vacuum furnace, temperature range up to 600°C, cylindrical, dia. = 390 mm, PLC-controlled, incl. temperature controller, horizontal, box panel left side. Power Supply: 400 V / 3 Ph / 4.5 kW. Cooling water must be supplied by customer. Inclusive vacuum pump: RV-12, oil-sealed
		Miscellaneous ovens
1504600	MB-Vakuumofen VC 20	Laboratory vacuum oven for the use in M.Braun gloveboxes. Inside dimensions: 250x250x320 mm (BxHxT) Outside dimensions: 545x375x425 mm (BxHxT) Max. temp. 200°C. Usable volume: 20 liter Vacuum supply through M.Braun gas purfier (only if installed; otherwise a dedicated vacuum pump is requested but not included in this item) Please add the part 1504601 for its integration
1500240	MB-LABoven	400°C Oven, Glovebox Integrated Designed for integration to MBraun glovebox Max temperature up to 400° C, with water cooled flange Can be mounted to side or back wall. Low particle design with smooth internal walls for easy cleaning. Digital temperature PID controller (1°C accuracy) Used shelves space: 150x150x150 mm (W*H*D)

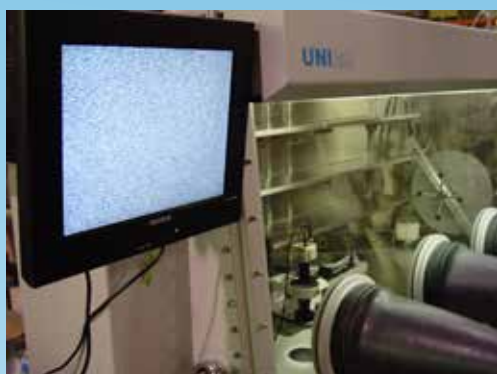**Mini vacuum oven 150°C**

Vacuum oven 250°C

Vacuum oven 600°C

Microscopes

Part number	Name	Description
1500375	Microscope Leica S4E	Complete Stereo microscope S4E for the integration in M.Braun gloveboxes / windows.
1500376	Microscope Leica M60	Complete Stereo microscope M60 for the integration in M.Braun gloveboxes / windows.
1580380	MB-MSK-IC80HD	Compact, integrated high-definition stereo microscope camera for professional visualisation and documentation.

High-definition camera

Examples of microscopes integration with display:

Cold well

for cooling with liquid nitrogen (LN2)

Part number	Name	Description
1500584	MB-cold well	incl. dewar Diameter inner cylinder: 150 mm Height inner cylinder: 180 mm incl. holding clamps for dewar incl. internal cover

MB-cold-well
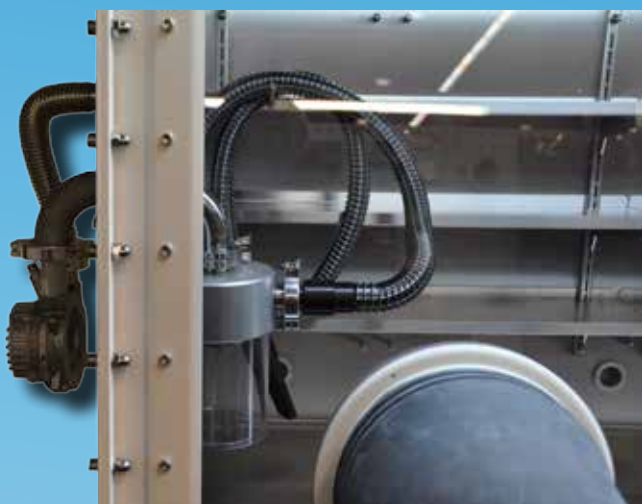

Specific sizes and shapes are available

Partition walls

Part number	Name	Description
		Partition walls
1502010	Partition wall 780-390	Partition wall for seperation of 2 boxes with depth of 780 mm; incl. door, diameter 390 mm
1502011	Partition wall 1000-390	Partition wall for seperation of 2 boxes with depth of 1000 mm; incl. door, diameter 390 mm
1502012	Partition wall 1200-390	Partition wall for seperation of 2 boxes with depth of 1200 mm; incl. door, diameter 390 mm
	Partition wall options only available with option 1502004	
		Piping for partition walls
1502004	MB-2 box piping AND/OR	Special circulation piping for supply of 2 gloveboxes with one gas purification system Operation: a) B1 and B2 in common gas circulation („AND") b) B1 or B2 in alternate gas circulation („OR") Gas inlet and outlet with electro-pneumatic valves Complete PLC-controll / operation on touch panel

Dust cleaners

Part number	Name	Description
1500596	MB-Easyclean-BL08	Dust cleaner for cleaning of MB-Gloveboxes and removal of particles / dust Filter unit will be mounted inside the glove box Blower (gas tight) for suction of the particles with a through put of about 22m³/h; HEPA filter in a container; Flexible hose with cleaning jet Stand alone version not integrated in PLC
1500597	MB-Easyclean-BL01	Dust cleaner for cleaning of MB-Gloveboxes and removal of particles / dust Filter unit will be mounted inside the glovebox Main components: Blower (gas tight) for suction of the particles with a through put of about 88m³/h; HEPA filter in container; Flexible hose with cleaning jet Stand alone version not integrated in PLC
1500598	MB-Easyclean-BL01_ext	Dust cleaner for cleaning of MB-Gloveboxes and removal of particles / dust Filter unit will be mounted outside the glovebox Valves for filter exchange: isolation of filter housing from glovebox and inertisation of filter housing after exchange. Main components: Blower (gas tight) for suction of the particles with a through put of about 84 m³/h HEPA filter in gas tight container; Hand valves for closing the pipes during filter exchange; Flexible hose with cleaning jet System is integrated in the PLC of the glovebox system.

MB-Easyclean-BL08

MB-Easyclean-BL01_ext

Safety accessories

Light barrier

Overpressure valve

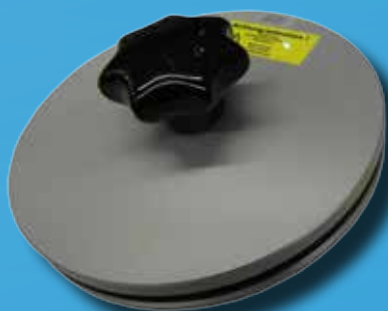**Please contact M. Braun for more information on safety accessories**

Gloves and ports

Part number	Description
2600593	Gloves, Butyl, 0,4 mm, size L, 186 diam., anatomical
2600598	Gloves, Butyl, 0.4 mm, size L, 186 diam., ambidextrous
3000047	Gloves, Butyl, 0.4 mm, size L, 220 diam., anatomical
3240567	Gloves, Butyl, 0.4 mm, size L, 220 diam., ambidextrous
3000018	Gloves, Butyl, 0.4 mm, size M, 220 diam., anatomical
3240568	Gloves, Butyl, 0.8 mm, size L, 220 diam., ambidextrous
3000019	Gloves, Butyl, 0.8 mm, size M, 220 diam., anatomical
3005009	Gloves, Hypalon, 0.4 mm, size L, 220 diam., ambidextrous
3005008	Gloves, Butyl, 0.4 mm, size L, oval, ambidextrous
2600147	Gloves, Hypalon, 0.8 mm, size L, 220 diam., anatomical
9002371	Internal gloveport cover, diam. 220 mm
7019882	External gloveport cover, diam. 220 mm
7070842	Gloveport feedthrough, diam. 220 mm
7057616	Gloveport feedthrough, diam. 220 mm; Aluminum
7041044	Gloveport feedthrough, oval

Pair of gloves, Butyl

**Gloveport feedhtrough,
round and oval**

Internal gloveport cover

External gloveport cover

Feedthroughs

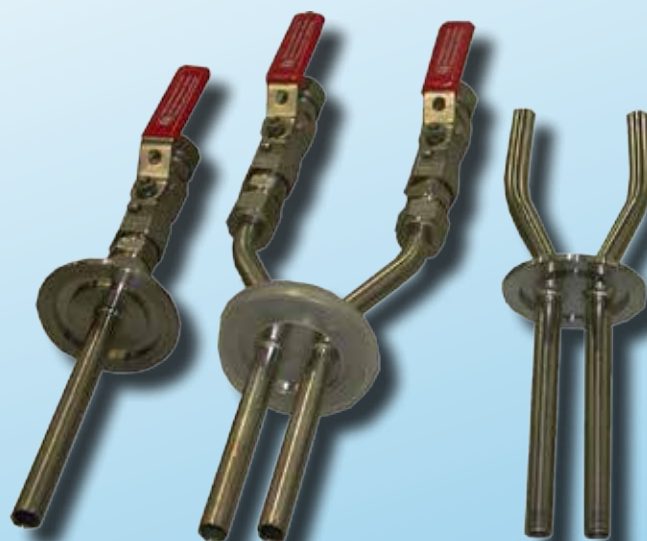| Part number	Name	Description
		Liquid / vacuum feedthroughs
7005115	MB-MD-S8	Single feedthrough DN8 (10x1 tube), for DN40 flange; Stainless Steel
7005111	MB-MD-D8	Double feedthrough DN8 (10x1 tube), for DN40 flange; Stainless steel
9006033	MB-MDK-S8	Single feedthrough DN8 (10x1 tube) with manual ball valve, for DN 40 flange; Stainless Steel
9006031	MB-MDK-D8	Double feedthrough DN8 (10x1 tube) with manual ball valve, for DN 40 flange; Stainless Steel
		Bulkhead feedthrough (no DN40 flange required)
7021456	MB-BULKHEAD-DN2	Bulkhead Feethrough stainless steel outside diameter 4mm (DN2)
7002254	MB-BULKHEAD-DN4	Bulkhead Feethrough stainless steel outside diameter 6mm (DN4)
7022769	MB-BULKHEAD-DN6	Bulkhead Feethrough stainless steel outside diameter 8mm (DN6)
9002482	MB-BULKHEAD-DN8	Bulkhead Feethrough stainless steel outside diameter 10mm (DN8)
7011154	MB-BULKHEAD-DN10	Bulkhead Feethrough stainless steel outside diameter 12mm (DN10)
7106821	MB-BULKHEAD-3/8"	Bulkhead Feethrough stainless steel outside diameter 3/8"
		Electrical feedthrough
1500439	MB-ED-220(115)/1Ph/16	Power feedthrough, 230V(115V)/1ph/16A; Outside 3,5m, inside 1,5m; Sockets not included
1500440	MB-ED-400/16/3Ph	400V, 3 ph, 16A, moulded cable for DN40 flange, 3.5 m length
1500441	MB-ED-400/25/3Ph	400V, 3 ph, 25A, moulded cable for DN40 flange, 3.5 m length
1500442	MB-ED-115/24/1Ph	115V, 1 ph, 24A, moulded cable for DN40 flange, 3.5 m length
1500443	MB-ED-208/20/3Ph	208V, 3 ph, 20A, moulded cable for DN40 flange, 3.5 m length
1500438	MB-sealing cable	Customized molded cable, max. 5 wires
		Cable feedthroughs
1500432	MB-Cable feedthrough_4 pole	Low voltage feedthrough, 0-10V, moulded cable for DN40 flange, 3.5 m length
1500433	MB-Cable feedthrough_12 pole	Low current feedthrough, 0-20mA, moulded cable for DN40 flange, 3.5 m length
1500434	MB-Cable feedthrough_36 pole	Low current feedthrough, 0-20mA, moulded cable for DN40 flange, 3.5 m length
		Signal feedthrough
1500465	BNC/12 pin/ double sided/50 Ohm	BNC feedthrough, 12 pin, double sided, for ISOK 100 flange
1500695	BANANA/1pin/ double sided	BANANA feedthrough, 1 pin, double sided, for mounting through box wall
1500460	BNC/4 pin/ double sided/DN40	BNC feedthrough, 4 pin, double sided, for DN40 flange, Frequency range: up to 10 MHz
1500461	BNC/2 pin/ double sided/DN40	BNC feedthrough, 2 pin, double sided, for DN40 flange, Frequency range: up to 10 MHz
1500437	BANANA/2 pin/ double sided/DN40	BANANA feedthrough, 2 pin, double sided, for DN40 flange
1500696	BANANA/4 pin/ double sided/DN40	BANANA feedthrough, 4 pin, double sided, for DN40 flange
1500462	BNC/4 pin/double sided/ DN40/50 Ohm	BNC feedthrough, 4 pin, double sided, for DN40 flange, 50 Ohm for HF application
1500463	BNC/2 pin/double sided/ DN40/50 Ohm	BNC feedthrough, 2 pin, double sided, for DN40 flange, 50 Ohm for HF application
1500464	BNC/4 pin/double sided/ DN40/75 Ohm	BNC feedthrough, 4 pin, double sided, for DN40 flange, 50 Ohm for HF application
		Special cable feedthroughs
1500444	MB-USB feedthrough	USB cable feedthrough, 1.8 m (inside plug: standard B-male, Outside plug: standard A-male)
1500445	MB-USB feedthrough	USB cable feedthrough, 5 m (inside plug: standard A-female, Outside plug: standard A-male)
1500450	RS232/feedthrough	RS 232 feedthrough, 2m
1500438	Sealing of costumer supplied cables	MB-sealing cable
1500452	Ethernet feedthrough, 2 x socket RJ45	Ethernet feedthrough, 2 x socket RJ45

1500443

1500439

1500444

9006033   **9006031**   **7005111**

1500460   **1500461**

Sub-D 9 feedthrough   **1500696**

Examples of specific feedhroughs also available:

**Media feedthroughs
with specific length**

**Sub-D 25 mounted
on ISO-CF Flanges**

**Copper bars
for high-current devices**

**Glovebox rear wall
with flanges and windows**

**Pneumatic feedthroughs and DN40
flanges mounted on a removable plate**

Flanges

Part number	Description
	Single-sided KF flanges
1501300	DN40 KF, Aluminium
1501301	DN40 KF, Stainless Steel
1501302	DN50 KF, Stainless Steel
1501303	DN40 KF , Filter Flange Stainless Steel
1501304	DN40 KF , Filter Flange Aluminium
	Double-sided KF flanges
1501305	DN16 KF, Stainless Steel
1501306	DN25 KF, Stainless Steel
1501307	DN40 KF, Aluminium
1501308	DN40 KF, Stainless Steel
1501309	DN50 KF, Stainless Steel
	ISO-K and ISO-CF flanges (single-sided, welded in box)
1500724	DN100 ISO-K, Stainless Steel
1500726	DN200 ISO-CF, Stainless Steel
1500727	DN100 ISO-CF, Stainless Steel
1500721	DN160 ISO-K, Stainless Steel
1500722	DN63 ISO-K, Stainless Steel
1500723	DN160 ISO-CF, Stainless Steel
1500728	DN63 ISO-CF, Stainless Steel
	KF accessories
7015946	DN40 KF Kit ; Stainless Steel
7012170	DN40 KF Kit ; Aluminium
7002425	DN40 KF; blind cover; Stainless Steel
7000607	DN40 KF; blind cover; Aluminium
7015978	DN25 KF Kit ; Stainless Steel
7010982	DN25 KF; blind cover; Stainless Steel

1501300

1501307

1501302

1501301

1501309

1501308

1501306

1501305

Filters loadings and main spare parts

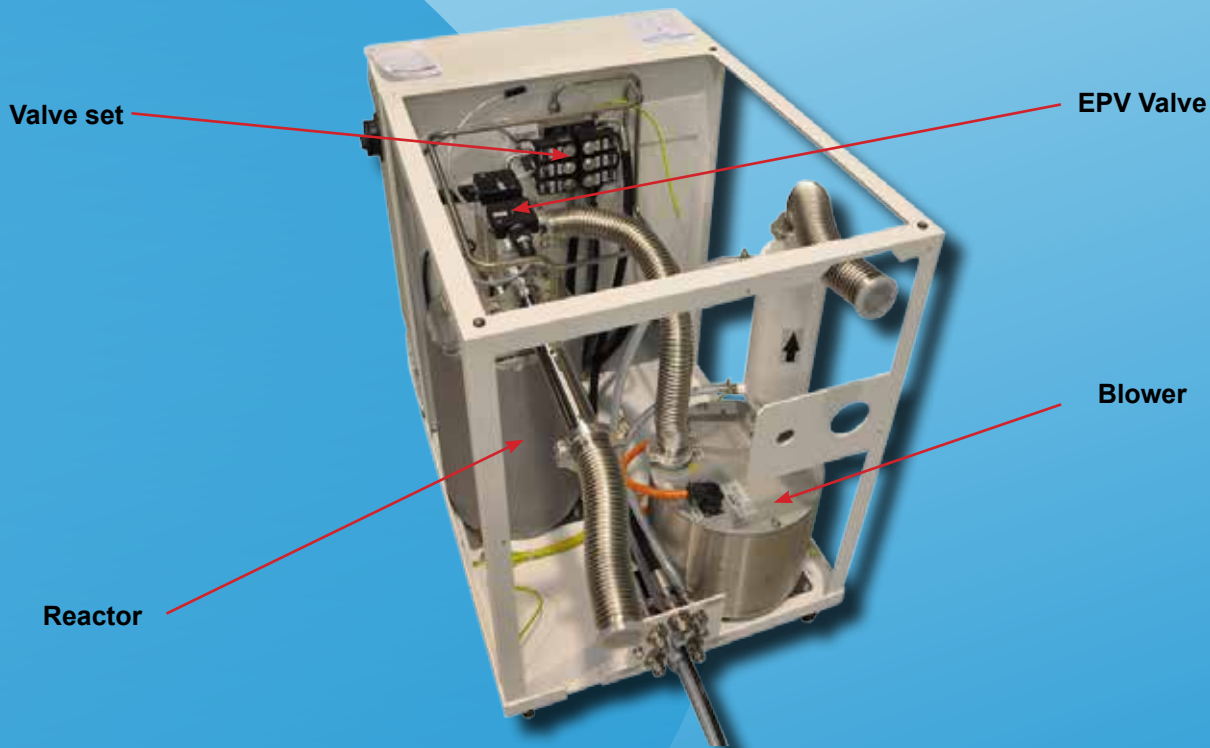| Part number	Description
2600839	Cu-Catalyst for purifier loading
3240262	Molecular sieve for purifier loading and regenerable solvent filter
2604519	Activated carbon for solvent filter

Cu-Catalyst   **Molecular sieve**   **Activated carbon**

Part number	Description
2600793	Valve-set
9002531-K	Valve EPV40 high vacuum, angle, Alu
9002043	Reactor with molecular sieve and copper catalysts
9002832	Blower MB-BL-01

Valve set   EPV Valve

Blower

Reactor

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