



## Contamination Test Module – Extraction Box CTM-EB

### Description

The Contamination Test Module CTM is a modular system designed to analyze the technical cleanliness of components. The particle contamination is washed off the surface of the component and transferred to a membrane for subsequent analysis.

The CTM-EB extraction module is used for spray extraction in conjunction with the CTM-SC.

### Applications

- Automotive and supplier industry
- Gearbox and engine builders
- Mobile hydraulics
- Manufacture of hydraulic and lubrication system components
- Aircraft industry

### Advantages

- Cost reductions as a result of fewer production failures
- Identification and elimination of weak points in processes
- Reduction in start-up breakdowns
- Optimization of internal and external processes
- Documentation of the technical cleanliness of components
- Working height adjustable

### Technical details

<b>General data</b>	
Dimensions of CTM (Height x width x depth)	see page 83
Housing material/coating	S235JR powder coated
Ambient temperature	15 to 28°C
Working height adjustment	electrical
Weight when empty	CTM-EB 121x: ~200 kg CTM-EB 141x: ~240 kg CTM-EB 161x: ~220 kg CTM-EB 181x: ~220 kg CTM-EB 201x: ~260 kg CTM-EB 461x: ~280 kg
Hydraulic connection	Quick release coupling
Filtration of analysis fluid	Very fine filtration to ISO4406 min. ISO 12/9
Filter size	3x MRF1-E/1, 1 µm filtration rating
<b>Extraction cabinet (clean box)</b>	
Dimensions	see page 83
Material	polished stainless steel 1.4301
Maximum load capacity	EB121x: 100 kg* EB141x: 150 kg* EB161x: 150 kg* EB181x: 150 kg* EB201x: 150 kg* EB461x: 150 kg* *) for evenly distributed load, no point load.
Glass panel lifter (opening/closing)	electrical
Height adjustment (lifting/lowering)	Electrical
Filter membrane holder	for Ø 47 mm filter membranes
<b>Electrical data</b>	
Supply voltage	according to order
Power consumption	400 W
Protection class to DIN 40050	IP 54

## Model code

CTM EB 12 1 0 - M - Z - Z / -

### Type

CTM = Contamination Test Module

### Module

EB = Extraction Box

### Dimensions of extraction cabinet (clean box)

see drawing on page 83

### Load design

1 = heavy load

### Analysis fluid

0 = solvent A III class (flash point > 60 °C, lower explosive limit > 0.6 Vol.%)

1 = water with surfactants, permitted ph-values 6 ... 10, no deionized water

### Supply voltage

K = 120 V AC / 60 Hz / 1 phase USA / Canada

M = 230 V AC / 50 Hz / 1 phase Europe

N = 240 V AC / 50 Hz / 1 phase UK

O = 240 V AC / 50 Hz / 1 phase Australia

P = 100 V AC / 50 Hz / 1 phase Japan

### Extraction method

Z = spray, medium pressure

### Supplementary details

Z = standard

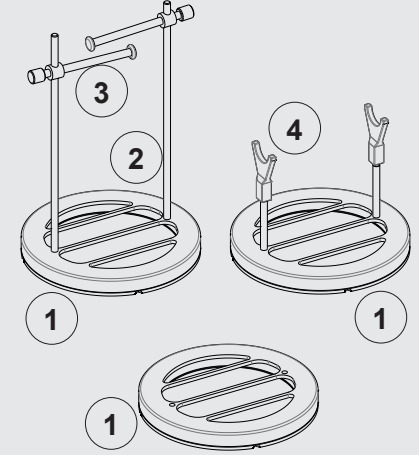
### Modifications

- = without modifications

## Items supplied

- CTM-EB
- Operating and maintenance manual

## Accessory - CTM-EB Disk



Item	Description
1	Disk
2	Guide rod (available in various lengths)
3	Pressure piece (available in various lengths)
4	Y-shaped bracket

## Blank values

All data is dependent on the ambient conditions

CTM-EB	Clean room	Laboratory	Separate sampling room	Factory building
12xx	0.4 ... 0.6 mg	0.6 ... 1.0 mg	0.6 ... 1.2 mg	1.0 ... 1.4 mg
14xx	0.4 ... 0.6 mg	0.4 ... 0.6 mg	0.6 ... 1.2 mg	1.0 ... 1.4 mg
16xx	0.4 ... 0.6 mg	0.4 ... 0.6 mg	0.6 ... 1.2 mg	1.0 ... 1.4 mg
18xx	0.6 ... 0.8 mg	0.6 ... 1.0 mg	0.8 ... 1.4 mg	1.0 ... 1.6 mg
20xx	0.6 ... 0.8 mg	0.6 ... 1.0 mg	0.8 ... 1.4 mg	1.0 ... 1.6 mg
46xx	0.6 ... 0.8 mg	0.6 ... 1.0 mg	0.8 ... 1.4 mg	1.0 ... 1.6 mg

### CTM-EB 12xx / CTM-EB 14xx / CTM-EB 16xx / CTM-EB 19xx

Max. particle size (µm)	Time and effort	Cleaning time [h] after brief shutdown (≤ 24 h)	Cleaning time [h] after extended shutdown (≥ 24 h)
150 µm*	high	1 ... 4	3 ... 8
250 µm*	medium	1 ... 3	2 ... 6
500 µm*	low	1 ... 2	1 ... 3

\* applies to a maximum membrane load of 0.8 mg

### CTM-EB 18xx

Max. particle size (µm) (metallic)	Time and effort	Cleaning time [h] after brief shutdown (≤ 24 h)	Cleaning time [h] after extended shutdown (≥ 24 h)
150 µm*	high	1 ... 4	3 ... 8
250 µm*	medium	1 ... 3	2 ... 6
500 µm*	low	1 ... 2	1 ... 3

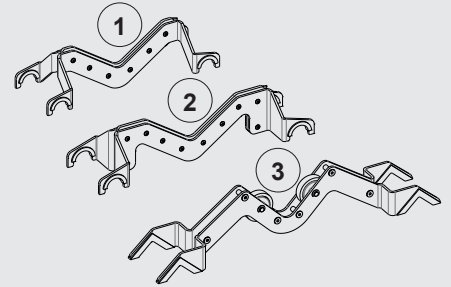
\* applies to a maximum membrane load of 0.8 mg

### CTM-EB 20xx / 46xx

Max. particle size (µm) (metallic)	Time and effort	Cleaning time [h] after brief shutdown (≤ 24 h)	Cleaning time [h] after extended shutdown (≥ 24 h)
150 µm*	high	2 ... 5	4 ... 10
250 µm*	medium	1 ... 4	3 ... 8
500 µm*	low	1 ... 3	2 ... 6

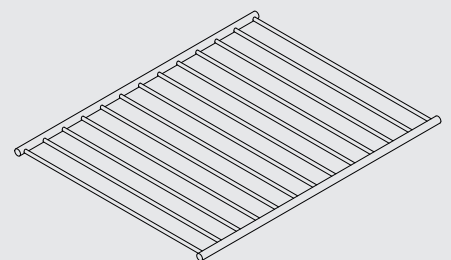
\* applies to a maximum membrane load of 0.8 mg

## Accessory - Angled bracket



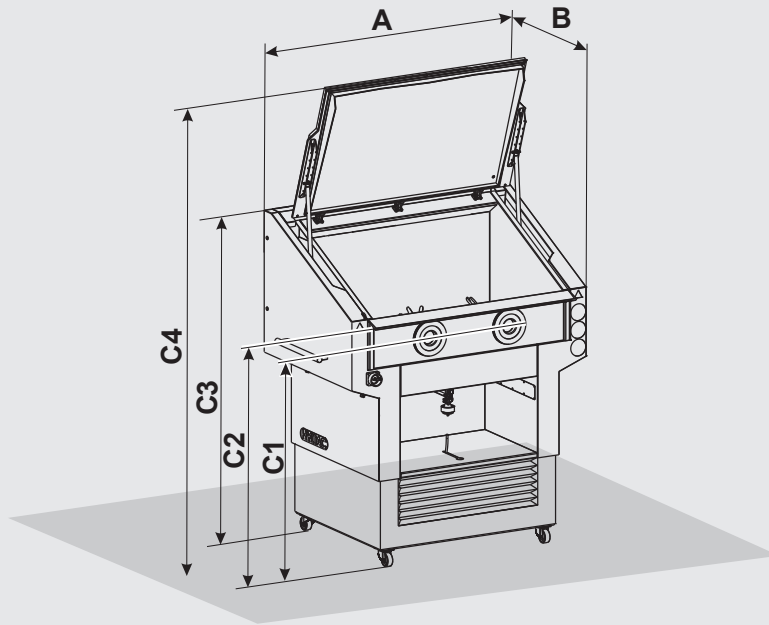
Item	Description
1	Angled bracket – light duty
2	Angled bracket – medium duty
3	Angled bracket – heavy duty

## Accessory - Polished rack



Supplied with the CTM-EB 1200.

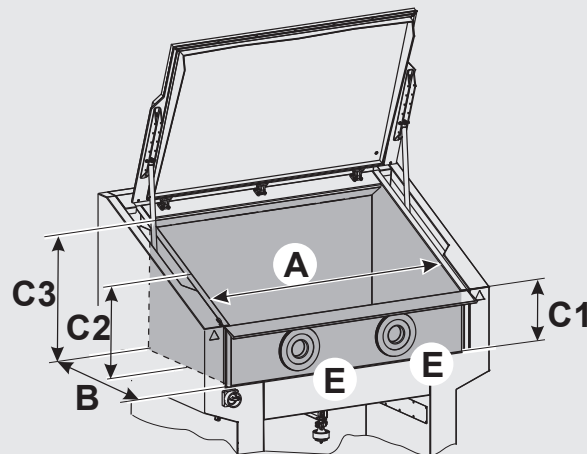
## Overall dimensions



CTM-EB	A	B	C1	C2	C3	C4
12xx	1110	920	985 ... 1235	1195 ... 1395	1510 ... 1760	2150 ... 2400
14xx	1830	920	955 ... 1205	1145 ... 1395	1510 ... 1760	1800 ... 2050
16xx	1110	920	1020 ... 1270	1270 ... 1520	1560 ... 1810	2150 ... 2400
18xx	1630	1070	1020 ... 1270	1150 ... 1400	1590 ... 1840	2375 ... 2625
20xx	1400	1150	1000 ... 1340	1235 ... 1485	1080 ... 1930	2450 ... 2700
46xx	2300	920	990 ... 1240	1180 ... 1430	1500 ... 1750	2200 ... 2450

All dimensions in mm.

## Dimensions of extraction cabinet (clean box)



CTM-EB	A	B	C1	C2	C3	E
12xx	770	650	280	470	545	2 x Ø 180
14xx	1400	400	280	400	435	3 x Ø 180
16xx	670	620	595	700	765	2 x Ø 230
18xx	1200	780	270	450	605	2 x Ø 180
20xx	900	895	680	800	960	2 x Ø 230
46xx	1770	650	360	570	615	4 x Ø 230

All dimensions in mm.

## NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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