

Chapter 02 Technical data

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It is imperative to follow the safety instructions given in the chapter “Safety” and to implement them throughout the entire life cycle of the system as specified in this chapter.



Supplementary to this operator manual the following must also be complied with unconditionally:

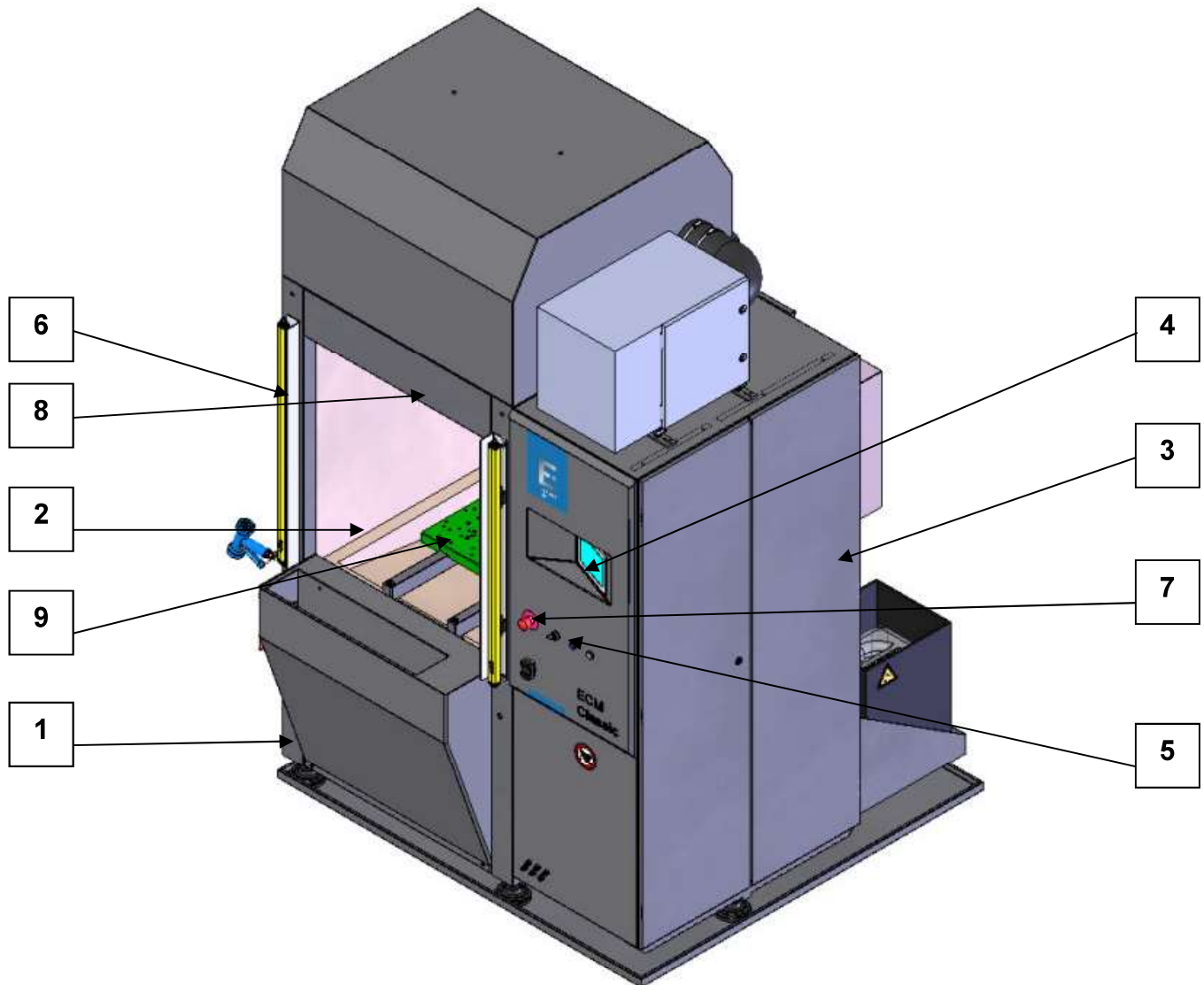
- *the statutory provisions for the prevention of accidents*
- *the specific documentation for the individual components/machines*
- *the applicable laws and acts*
- *the prohibition, warning and instruction labels together with the warning notices*



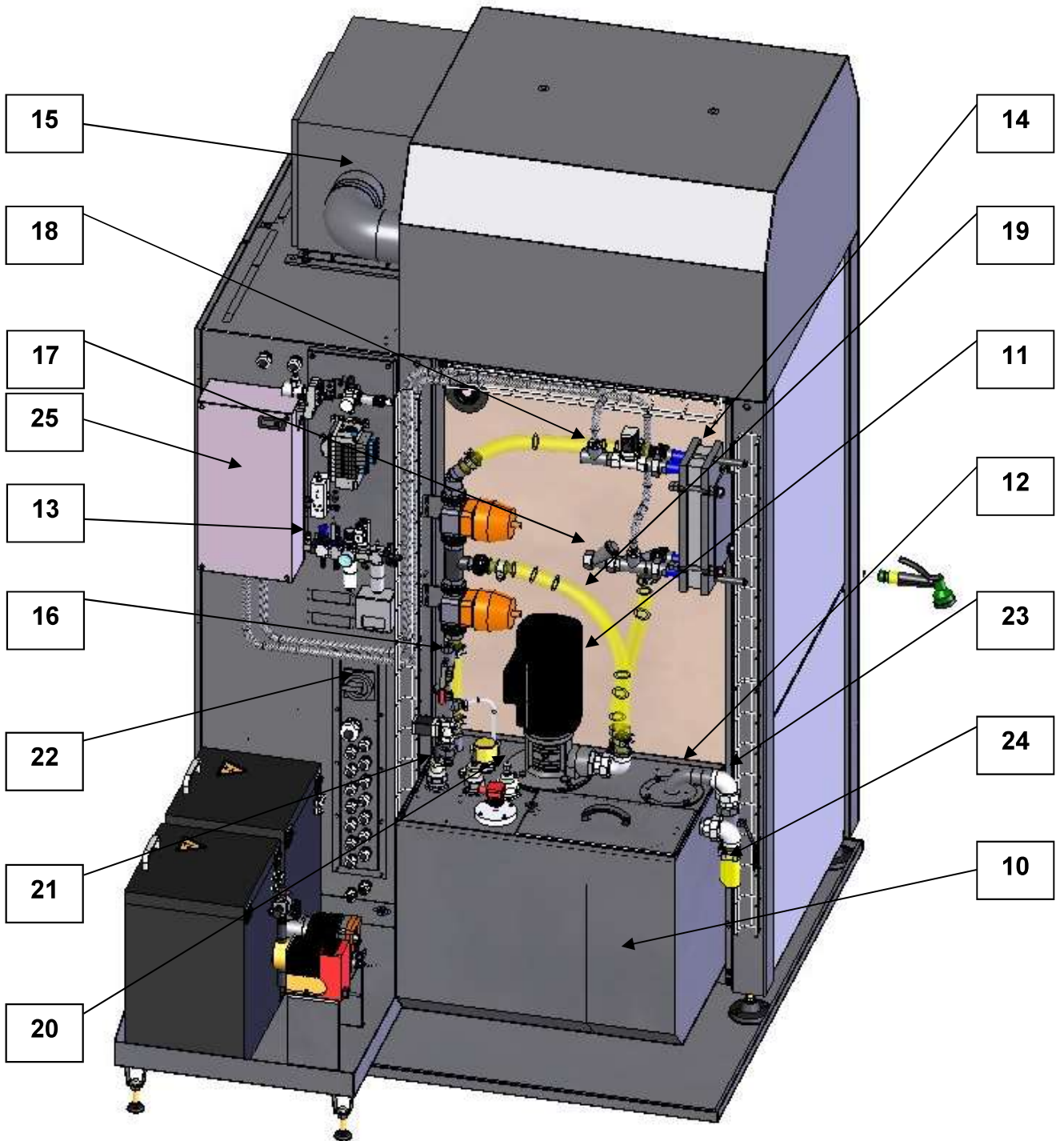
Attention

- *In order to ensure a smooth and timely commissioning of the system, make sure that the installation work in the factory is completed before the arrival of the service engineer and that all consumable materials are on hand in the required quantities.*
- *In cases of doubt contact the manufacturer in good time.*

2.1 Layout of the components



#	Bezeichnung
1	Base frame
2	Work area
3	Switch gear cabinet
4	Display
5	Start button
6	Safety device (light curtain)
7	E-stop button
8	Clamping unit
9	Machine base plate





#	Description
10	Electrolyte tank
11	Electrolyte pump
12	Filter press suction
13	Compressed air supply
14	Heat exchanger
15	Discharge air filter
16	Freshwater feed
17	Cooling water feed
18	Cooling water discharge
19	Electrolyte feed
20	Conductivity measuring probe
21	pH value measurement
22	Main Switch
23	Chamber filter press feed
24	Chamber filter press discharge
25	Switch gear cabinet cooling

2.2 Technical data EC-Line



Refer to the floor plan at the end of the chapter for the dimensions of the complete equipment.

Dimensions	
	EC-Classic
Width	1680mm
Depth	2205mm
Height	2670mm
Net weight	1800 kg
Tank capacity	660l
Total space requirement for the system	The dimensions of the complete installation can be found in the sanctioned layout received as approval.
Transport dimensions	
	EC-Classic
Number of pieces of packaging	1
Weight	1900kg
Type of packaging	Not packed – packaging only with separate agreement!
Required lifting capacity	3t
Type of transport	Fork lift or pallet truck

Electrical connections	
Power supply	3P / N/ PE 400 V AC , other supply voltages in accordance with the order acknowledgement
Voltage tolerance	+ / - 5 %
Connection cable entry point	see floor plan
Mains frequency	50 Hz standard, other frequencies in accordance with the order acknowledgement
Installed power	See Table 1
Supply line fusing	See Table 1



Compressed air Connection	
EC-Classic	
Connection	3/8"
Mains pressure	< 6 bar
Consumption	< 5 m ³ / h

Freshwater feed	
EC-Classic	
Connection	1/2" screw connector
Mains pressure	> 4.5 bar
Consumption	< 50 l /day
Water quality	Chlorine-free industrial water

Cooling water feed	
EC-Classic	
Connection	5/4" screw connector
Max. permissible entry temperature	12-18°C (min. 5°C below operating temperature.)
Cooling water consumption	Closed circuit
Mains feed pressure	< 4.5bar
Pressure drop	-/-

Cooling water return line	
EC-Classic	
Connection	5/4" screw connector
Max. permissible entry temperature	12-18°C (min. 5°C below operating temperature.)
Cooling water consumption	Closed circuit
Mains feed pressure	< 4.5bar
Pressure drop	> 1 bar

2.3 Optional equipment



Check the order acknowledgement to see what equipment and number of items is included in the scope of delivery.

Chamber filter press	
	KFP 19
Length	1500
Width	800
Height :	1400
Weight net/gross	800 kg/950 kg
Electrical supply power	N.A
Feed connection	1 ¼"
Return line connection	1 ¼"
Transport dimensions	
	KFP 19
Number of packing pieces	1
Weight	950 kg
Type of packaging	not packed, screwed onto wooden trusses
Required lifting capacity	2 t
Type of transport	Fork lift or pallet truck



The dimensions of other optional equipment (automation, pre/post-process treatment, chiller, etc.) can be found in the approval layout sent as a release!



CAUTION!

Please note that each electrically-operated external consumer requires its own supply cable!



2.4 Installation environment

Electrical power

Connection power	see Table 1
Pre-fuse	see Table 1
Supply voltage	230/400 V AC, 50 Hz,
Connection cable	5-core

(Table 1)

Working current	Pre-fuse	Connection power
up to 400 A	50 A	35 kVA

2.5 Operating medium for the initial fill



Please note that the provision of the operating medium is the responsibility of the operator!

2.5.1 Electrolyte salts



Sodium nitrate (NaNO₃) electrolytes require sodium nitrate or nitratine salts for the initial fill

Sodium chloride (NaCl) electrolytes require common salt for the initial fill!


2.5.1.1 Sodium nitrate/nitratine


Designation	Sodium nitrate/Nitratine
Chemical formula	NaNO ₃
CAS No.	7631 – 99 - 4
Quality	Technically pure
Trading unit size	25 kg
Number of trading units required	10 pieces
Disposal/disposal code	060314

2.5.1.2 Common salt/table salt

Designation	Common salt/table salt
Chemical formula	NaCl
CAS No.	7647 – 14 - 5
Quality	Technically pure
Trading unit size	25 kg
Number of trading units required	10 pieces

2.5.2 Acid/alkaline solution

	<p>Sodium nitrate (NaNO₃) electrolytes require nitric acid as a neutraliser</p> <p>Sodium chloride (NaCl) electrolytes require hydrochloric acid as a neutraliser</p>
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	<p>CAUTION :</p> <p><i>Alkaline solutions and acids are used in the ECM process!</i></p> <p><i>When handling these products compliance with the operating instructions in the operator manual in accordance with § 20 Hazardous Materials Regulations is mandatory!</i></p>
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2.5.2.1 Nitric acid



Designation	Nitric acid
Chemical formula	HNO ₃
CAS No.	7697 – 37 – 2
Quality	Technically pure
Trading unit size	20 litres
Concentration	20 %
Tank connection	No. 61
Number of trading units required	1 piece

2.5.2.2 Hydrochloric acid

Designation	Hydrochloric acid
Chemical formula	HCl
CAS No.	7647 – 01 – 0
Quality	Technically pure
Trading unit size	20 litres
Concentration	20 %
Trading unit connection	No. 61
Number of trading units required	1 piece

2.5.2.3 Caustic soda

Designation	Caustic soda
Chemical formula	NaOH
CAS No.	1310 – 73 – 2
Quality	Technically pure
Trading unit size	20 litres
Concentration	20 %
Trading unit connection	No. 61
Number of trading units required	1 piece

2.5.2.4 Iron sulphate

Designation	Iron sulphate
Chemical formula	FeSO ₄
CAS No.	7720-78-7
Quality	Technically pure
Trading unit size	25 kg
Concentration	200 g/l
Trading unit connection	No. 61
Number of trading units required	1 piece

2.6 Floor plan

