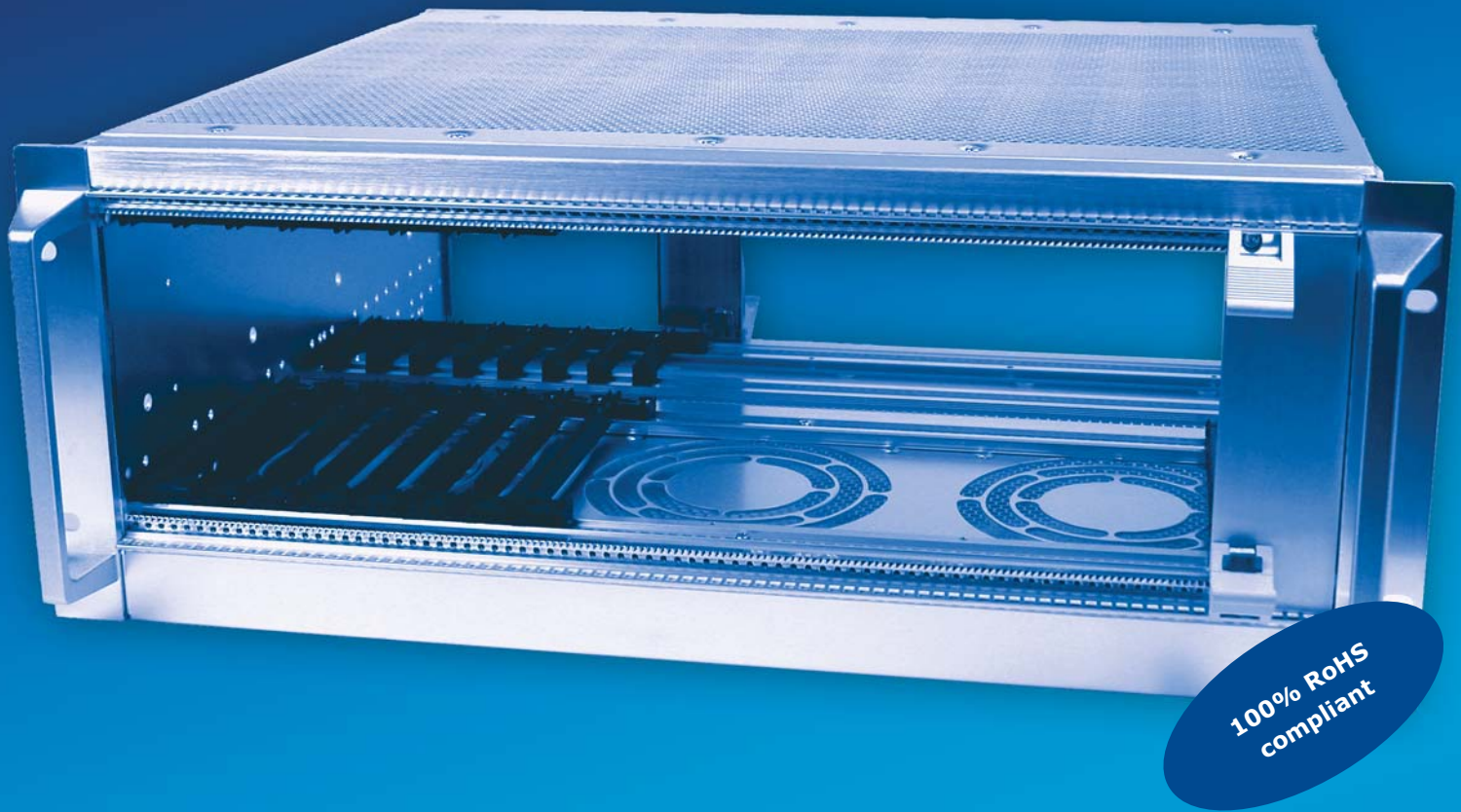
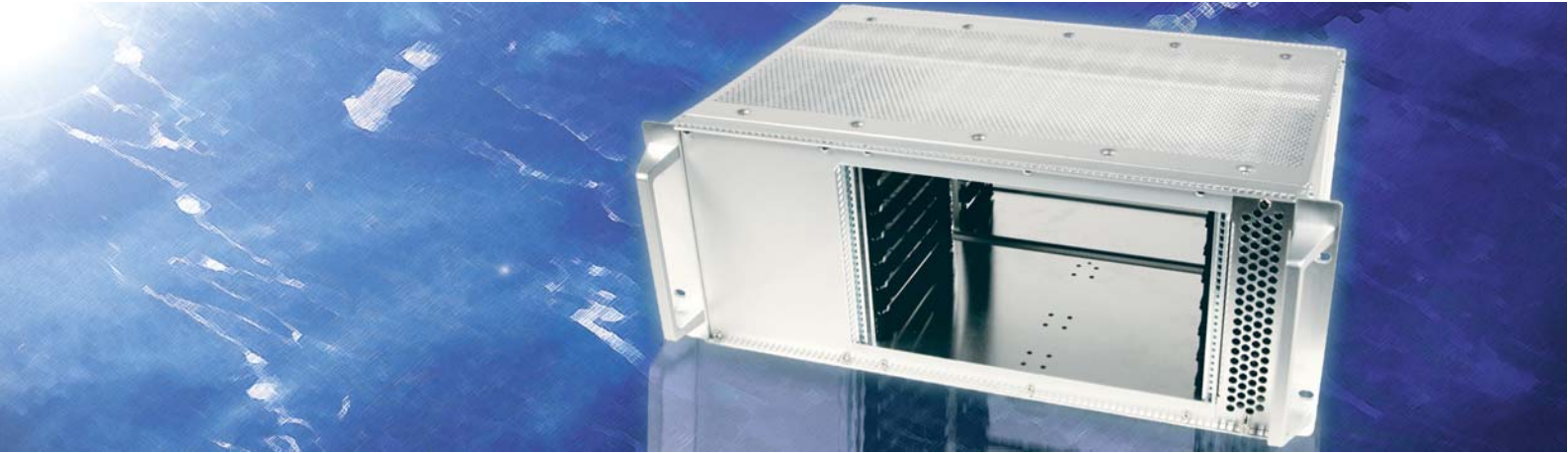




Enclosures & Components **Systemkit 12K**

Modern designed EMC sub rack with a large selection of assembly options



Introduction

Elma is a global manufacturer of products for housing electronic systems. The company provides everything from components such as modular enclosures, cabinets and backplanes up to complete standard or custom system platforms. Elma also manufactures precision rotary switches. The company offers fast, flexible response to customer needs and extensive practical knowledge in tailoring solutions to specific applications.

Founded in 1960, Elma is an industry innovator in the design and manufacture of electronic enclosures and passive electronic components. Elma enjoys a leading position in the VME/VME64x, VXI, VXS, PXI, cPCI, ATCA and Rugged COTS packaging markets. Elma's component products consist of switches, knobs, and LED arrays. Headquartered in Switzerland, with partners in 22 countries, Elma has the ability to respond rapidly, with superior solutions to the requirements of its customers. Elma has a broad base of customers in diverse industries such as telecommunications, industrial control, medical electronics, military and defense.

Elma strives to provide products superior in quality, reliability, performance, and consistently presents new, innovative designs to the market. Elma's product line encompasses well over 16,000 parts, including enclosures, cabinets, high quality switches, LED arrays, knobs and much more. Elma also offers design and integration services backed by responsive and knowledgeable technical support.

Elma's leading quality level is reached through training of all employees and following of systematic procedures per ISO 9001 standards to which Elma has been registered.



Switzerland



United States



Germany



France



United Kingdom



Israel



China



Romania

Why choose Elma?

Flexibility: Elma tailors solutions to individual applications to ensure fast and cost-effective results.

Experience: extensive practical experience in packaging electronic systems is used to minimise the time taken to develop new customised solutions without compromising system performance or reliability.

Compatibility: because the two key electromechanical components - enclosures and backplanes - are made in-house, Elma guarantees compatibility, consistency and reliability.

Global resources: with manufacturing in Europe and the USA customers benefit from local service backed by global resources.

Custom Solutions



Elma offers a wide range of services to assist our customers with new product introduction (NPI). From custom design and verification testing through agency certification, Elma has the experience to function as an extension of your company's design and compliance engineering team. Combined with Elma's level 4/5 integration capability for both embedded systems and switches. Elma provides a single solution to your outsourcing needs. This allows Elma to take your latest product from prototype to production quickly, cost effectively and with reduced risk.

Custom

Customisation is the standard at Elma. With an extensive offering of modular products as a foundation, Elma is able to leverage existing solutions and proven design concepts to meet any custom application. This approach ensures that Elma will provide quality, compliant solutions with significantly reduced lead time, cost and risk.



Custom Enclosures & Components

- Modified standards for ATCA, cPCI, VME/VME64x systems
- IP protection classes
- EMC security



Custom Backplanes

- Modified standards for ATCA, cPCI, VXS VME/VME64x, VXI, PXI, and Switched Fabric
- NSC (non standard-based custom) design
- High-speed LVDS design
- Simulation/Backplane characterisation - HSPIICE, S-Parameters



Custom System Platforms

- VME/VME64x, cPCI, ATCA and Rugged
- Design to specification
- 20+ years design experience
- NEBS, ETSI



Custom Switches, Knobs & LEDs

- Modifiable Switches & LEDs
- Integration of Switches, Panels and Other Components
- Custom Switch Bracket Fabrication

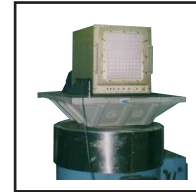
Technical Capabilities

Elma uses the most advanced software and testing equipment to ensure our products comply with military and commercial standards. Elma has the capability to perform environmental testing, thermal testing and EMC testing to meet the desired specifications.



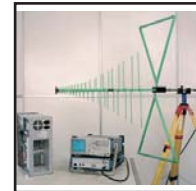
Agency Certification

- UL, CSA, CE
- FCC Class A, B
- CE
- NEBS



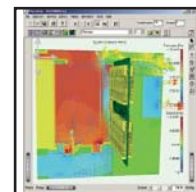
Verification Testing

- Environmental per MIL STD 810D
- Shock/Vibration Facilities



EMC Testing

- MIL STD 461
- FCC Class A, B
- CE
- NEBS



Thermal Testing

- Flowtherm Simulation
- Load card testing
- CFM/LFM Verification

Systemkit 12K Step by step to your own solution

Systemkit 12K Introduction	4
Systemkit 12K 3-D overview	8
Systemkit 12K Assembly overview	9
Systemkit 12K Basic set-up overview	10
Systemkit 12K Example Assembly Possibilities	12
Systemkit 12K Step A: Applications	13
A.1 CPCI Applications (IEEE1101.10/IEEE1101.11)	13
A.2 VME64x Applications (IEEE1101.10/IEEE1101.11)	13
A.3 VME Applications (IEC60297)	13
A.4 Internal extrusions for insulated backplane mounting	14
A.5 Internal extrusions for non-insulated backplane mounting	14
A.6 Double extrusion for insulated backplane mounting	14
A.7 Double extrusion for non-insulated backplane mounting	14
Systemkit 12K Step B: Application range	15
B.1 Height extrusions for 19" version	15
B.2 Height extrusions for 19" version (for telescopic rails)	16
Systemkit 12K Step C: Assembly options	17
C.1 Reduction kit $\frac{1}{3}$ U + $\frac{2}{3}$ U for front mounting, solid	17
C.2 Reduction kit $\frac{1}{3}$ U + $\frac{2}{3}$ U for 60 mm recessed mounting	17
C.3 Reduction kit $\frac{1}{2}$ U + $\frac{1}{2}$ U for front mounting	18
C.4 Reduction kit $\frac{1}{2}$ U + $\frac{1}{2}$ U for 60 mm recessed mounting	18
C.5 Bottom/top panel solid	18
C.6 Bottom/top panel perforated	19
Systemkit 12K Step D: Assembly accessories	19
D.1 Rear I/O card mounting	19
D.2 EMC front subdivision horizontal for 84 HP system	19
D.3 Front subdivision vertical for 6 U system or 6 U assembly	20
D.4 Horizontal card mounting kit for double eurocards (6 U) (for VME)	20
D.5 EMC horizontal card mounting kit for double eurocards (6 U)	21
D.6 EMC horizontal card mounting for 80/160 mm rear I/O double eurocards (6 U)	21
D.7 Drive module 3 $\frac{1}{2}$ " (plug in)	22
D.8 Drive modules 5 $\frac{1}{4}$ " (plug in)	22
D.9 EMC drive modules 5 $\frac{1}{4}$ " (plug in, advanced EMC-level)	23
D.10 Blind cover for drive modules 5 $\frac{1}{4}$ "	23
D.11 Reduction frame from 5 $\frac{1}{4}$ " to 3 $\frac{1}{2}$ "	23
Systemkit 12K Step E: EMC shielding	24
E.1 EMC-set for bottom/top panel, depth (advanced EMC-level)	24
E.2 EMC-set for bottom/top panel, width (advanced EMC-level)	24
E.3 Extrusion for recessed EMC mounting (advanced EMC-level)	24
E.4 EMC-gasket for height extrusion, front panel (advanced EMC-level)	25
E.5 EMC contact strips (advanced EMC-level)	25
Systemkit 12K Step F: General accessories	26
F.1 Mounting chassis, rugged design (aluminium, 2 mm)	26
F.2 Card guides for VME (IEC 60297)	26
F.3 Card guides for CPCI, VME64x (IEEE 1101.10/.11)	26
F.4 Card guides for CPCI, VME64x (IEEE 1101.10/.11)	27
F.5 ESD clips	27
F.6 ESD spring	27
F.7 Coding pins	27
F.8 EMC front panel for plug-in units, for VME (advanced EMC-level)	28
F.9 EMC front panel for plug-in units, CPCI and VME64x (advanced EMC-level)	28
F.10 EMC filler panel flat (advanced EMC-level)	29
F.11 EMC front panel 84HP, flat, solid (advanced EMC-level)	29

Systemkit 12K Step by step to your own solution

F.12 EMC front panel 84HP, flat, perforated (advanced EMC-level)	30
F.13 EMC front panel flat without EMC-gasket (basic EMC-level)	30
F.14 Spacer for EMC front panel flat (F.13).	31
F.15 Front panel, flat.	31
F.16 Telescopic rails, set (load capacity up to 60 kg/pair)	32
F.17 Rugged telescopic rails, set (load capacity up to 90 kg/pair)	32
F.18 Milled edge screw Torx/recessed M2.5 with screw retainer	33
F.19 Screw Torx/recessed M2.5 x 11.3/12.7.	33
F.20 Screw Torx/(cross-) recessed M2.5 x 11.3/12.7 with press-fit bush	33
F.21 Front panel screws M2.5 x 8	34
Systemkit 12K Step G: Injector/ejector Handles	35
G.1 IEEE injector/ejector handle Ergonomic.	35
G.2 IEEE injector/ejector handle Ergonomic Hot Swap	35
G.3 IEEE injector/ejector handle Ergonomic Hot Swap, Offset	35
G.4 VME injector/ejector handle complete for plug-in units	36
Systemkit 12K Step H: Extrusions	37
H.1 Front extrusion, VME.	37
H.2 Front extrusion, CPCI/VME64x	37
H.3 Internal extrusion for use of insulating strip	37
H.4 Internal extrusion without use of insulating strip	38
H.5 Internal extrusion for card guides	38
H.6 Double extrusion for use of insulating strip	38
H.7 Double extrusion without use of insulating strip	39
H.8 Edge connector extrusion	39
H.9 Assembly material for extrusions	39
H.10 Height extrusions 19"	40
H.11 Height extrusions	40
H.12 Height extrusions with cut-out for telescopic rails	40
Systemkit 12K Appendix 1: Part number Index	42
Systemkit 12K Appendix 2: Configuration aid	44
Systemkit 12K Appendix 3: Notes	49

Systemkit 12K Introduction

• What is "Systemkit"

The origin of the Systemkit 12K is our highly successful type 12. The Systemkit has several new advantages, already in the standard version:

- Choose between a VME, a VME64x or a CPCI application
- Possibility for Rear I/O card mounting
- A basic EMC level is attained with the basic version (without additional EMC parts)
- Choose from the most common case heights and depths as standard version
- New sets have been created to facilitate the order of complementary parts

and last but not least:

- The new type 12K gives the ideal platform basis for modified standards and **customised products**

• Use of catalogue and configuration

As ordering all needed parts for a 12K is **quite complex** we have created a **configuration aid** for you. This document (starting from page 44) shows you which parts you have to order next, **guiding you from step to step**. It helps you to find all necessary parts and never lose track of where you can find them in the catalogue.

On page 10 + 11 we have created a table to show you which **combinations are possible** in appropriate height/depth. For examples **how to assemble your system** refer to page 12. There all - as standard - available **assembly possibilities** are shown detailed for a 7 U / 291 mm case.

Details for each part number can be found in the catalogue. Whenever the assembly material is included in the part-no. it is mentioned under "scope of delivery". If the material has to be ordered separately the part-no. is listed right below or you are guided to the corresponding step (e. g.: "• assembly material see step D.10.1")

For most parts you have the possibility to order **"optional assembly material"**. Order these screws if you wish to assemble your system with cross recessed screws. Assembly material included in the standard part numbers are Torx screws.

• CPCI/VME/VME64X

The first step when ordering your system is to choose the application. This can be either CPCI, VME64x or VME. Some of the parts shown in this catalogue are for CPCI, VME64x or for VME only. Whenever there is **no indication** on neither CPCI, VME64x or VME the part can be **used for all applications**.

• Torx and cross recessed screws

All Systemkit products (12K...) have by default Torx round head screws as assembly material included. In this case you have the possibility to order **"optional assembly material"**. Order these screws if you wish to assemble your system with cross recessed screws.

• General accessories

Steps F to H cover **accessories** such as card guides, front panels, telescopic rails etc. We have also mentioned some IEEE handles, screws and extrusions. For **more accessories** please refer to our **Elmaset** catalogue.

• Modified standards

Examples for **possible modifications** are:

- Other dimensions for mounting different card depth
- Combination of rear I/O and recessed mounting
- Other materials and/or colours
- etc.
- For more information contact our sales support

Systemkit 12K Introduction

• EMC

"Electromagnetic compatibility is the ability of a system to operate in the intended environment without causing or suffering unacceptable degradation of performance due to unintentional electromagnetic radiation or response." The EMC characteristics of a system therefore consist of an appropriate immunity from interference (noise immunity) and a limited emission of interference (noise emission).

Elma's EMC concept describes three levels of electromagnetic shielding performance (Performance Level). The attenuation levels will simplify the selection of subracks for the user.

Test-set-up: The first measurement E1 will be without the enclosure. The next measurement E2 will be made with the transmitting antenna installed inside the enclosure. The difference between the received signal without and with the enclosure represents the shielding effectiveness in dB.

Performance Level	30-230 MHz	230-1000 MHz	1000-2000 MHz
1 / Elma: Basic level	20 dB	10 dB	0 dB
2 / Elma: Advanced level	40 dB	30 dB	20 dB
3 / Elma: Superior level	60 dB	50 dB	40 dB

The standard configuration will provide you with a basic EMC level. If you require an advanced EMC level for your system, you need to order **additional EMC parts**. Throughout the catalogue we have put these EMC parts **in a yellow table**.

• RoHS - the Systemkit 12K is 100% RoHS compliant

"Restriction of the use of certain hazardous substances in electrical and electronic equipment"

Elma Electronic AG is fully aware of its responsibilities towards its customers and the environment and therefore started a corresponding project already some time ago.

The new sub rack family Systemkit 12K fulfils the directive 2002/95/EG (RoHS)!

After our present knowledge all parts found in this catalogue do not contain materials, whose placing on the market is forbidden in accordance with RoHS.

So it is specially mentioned that for the optimisation of the corrosion and wear protection as well as the improvement of the electrical conductivity as basis of an optimal EMC protection of the electronics the metal surfaces are electro-plated.

In co-operation with proven specialised experts we have analysed different RoHS conformal procedures which fulfils our high requirements concerning quality, EMC, corrosion protection and optics.

The procedure for the RoHS compliant surface treatment, selected by us, obtained outstanding results with all tests and examinations. It is particularly worth mentioning that with the climatic test in accordance with IEC 61587-1 the highest requirement (Performance level C3 and A3) were successfully fulfilled by our products.

Substantial results of the surface treatment:

- Optically identical surfaces to the past procedure (colourless)
- High EMC protection
- Optimal adhesion for coloured surface coatings
- Fulfils the highest performance level (C3, A3) of climatic tests in accordance to IEC 61587-1 (*)

Systemkit 12K Introduction

(*) acc. to IEC 61587-1:

Performance Level: C3 (Cold, dry heat and damp heat, cyclic)

- Example of use: Extreme climatic impact (eg. outdoor, tropical environment) with temperature between -40°C and +85°C, relative humidity of 20% to 95%, no condensation

Performance Level: A3 (Industrial atmosphere)

- Example of use: strong concentration of toxic substances and exposure through maritime climate at the same time (eg. off-shore chemical engineering , oil platform) with concentration of acc. to IEC 60654-4:
 - SO₂ at average: 5 cm³/m³, max. 15 cm³/m³
 - H₂S at average: 10 cm³/m³, max. 50cm³/m³

• Climatic and mechanical Tests

The Systemkit 12K fulfils the following test according to:

- | | |
|---------------------|---------------|
| • Vibration | EN 60068-2-6 |
| • Shock | EN 60068-2-27 |
| • Dry Heat | EN 60068-2-2 |
| • Damp heat, cyclic | EN 60068-2-30 |
| • Cold | EN 60068-2-1 |
| • Salt Spray test | DIN 50021 |

The functionality of the sub rack was ensured during all tests.



Systemkit 12K Introduction

Detail information to climatic and mechanical tests:

- **Vibration** EN 60068-2-6

Resonance search:

Frequency: 3 Hz to 100Hz, Sweep rate: 1 Oct/min.

1 Cycle / Axle (X, Y, Z)

Resonance stay: (Z: 50.7 Hz, Y = 89.5Hz, X = 70.9Hz)

10 m/s² 15min.

30 m/s² 2min.

- **Shock** EN 60068-2-27

Shockform: Halfsinus Acceleration: 50m/s²

Duration: 11ms

Number of Shocks: 3 per Axle

Total: 18 Shocks

- **Dry heat** EN 60068-2-2

Temperature: +85°C

Duration: 16h

- **Damp heat, cyclic** EN 60068-2-30

Upper temperature: +55°C

Duration: 9h

Damp: 95% r.H.

Lower temperature: +25°C

Duration: 9h

Damp: 95% r.H.

Ramp: In 3h from +25°C to +55°C and in 3 h back again.

Number of cycles: 2

Time: 24h

Total time: 48h

- **Cold** EN 60068-2-1

Temperature: -40°C

Duration: 16h

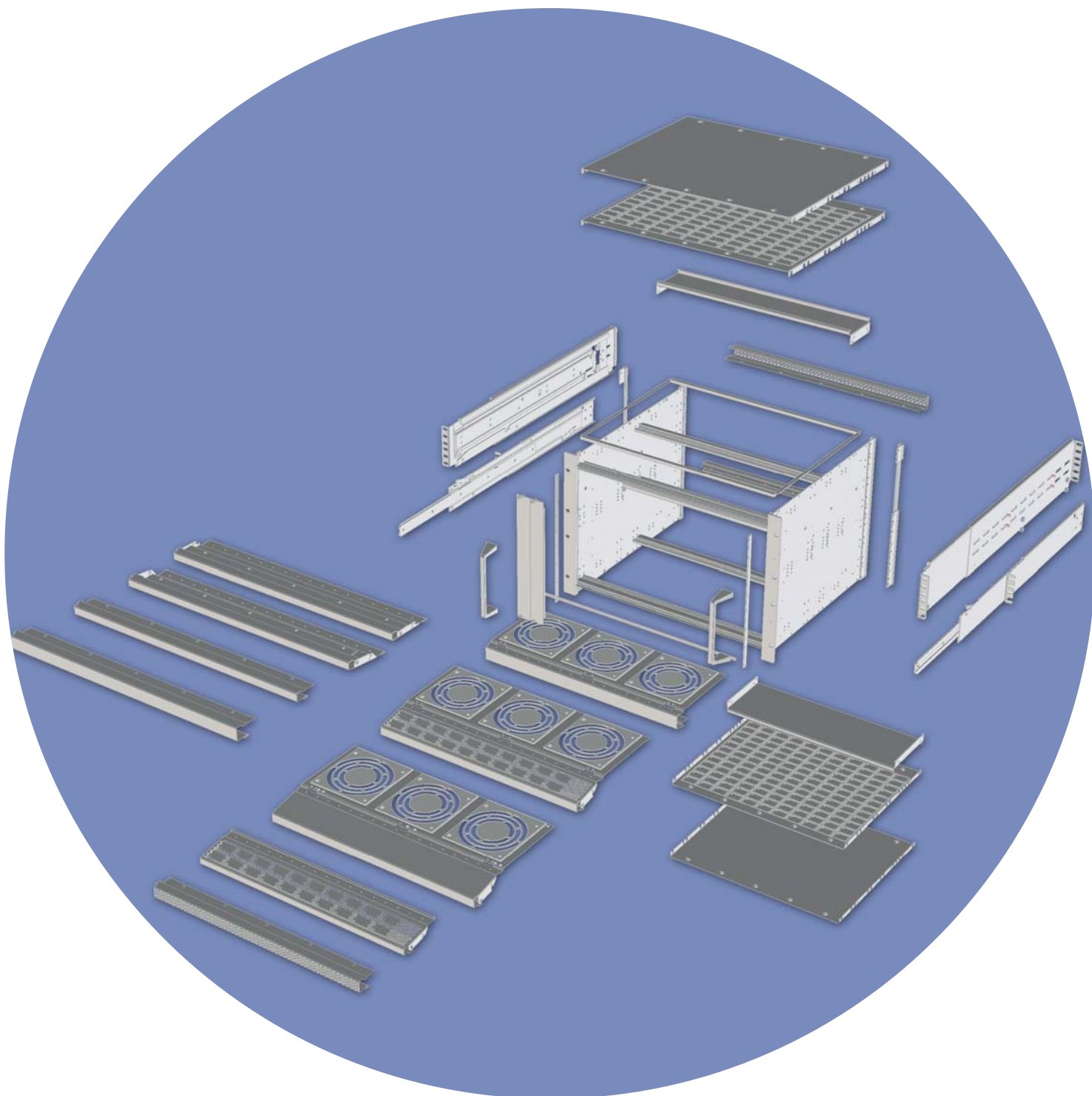
- **Salt Spray test** DIN 50021

Salt concentration: 50g/l

Duration: 16h

Temperature: +35°C

Systemkit 12K 3-D overview



Systemkit 12K Assembly overview



Systemkit 12K Basic set-up overview

CPCI (IEEE1101.10/IEEE1101.11) Standard configurations**

Height	3 U		4 U			
Depth	289 mm	400 mm	289 mm	400 mm	500 mm	289 mm
Width	19"	19"	19"	19"	19"	19"
part-no.	12K001	12K041	12K002	12K003	12K004	12K008
For card size	3 U	3 U	3 U	3 U	3 U	3 U / 6 U
For card depth	160 mm	160 mm 220 mm	160 mm	160 mm 220 mm	160 mm 220 mm	160 mm
Rear I/O card depth*	80 mm	-	80 mm	80 mm	80 mm	80 mm
Max. Slot	21	21	21	21	21	21
Front mounting	possible	possible	possible	possible	possible	possible
Recessed mounting	-	-	possible	possible	possible	possible (3 U)
Height reduction	-	-	possible	possible	possible	possible (3 U)
Base material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
Surface treatment	conductive	conductive	conductive	conductive	conductive	conductive
Possible EMC level	advanced	advanced	advanced	advanced	advanced	advanced

VME64x (IEEE1101.10/IEEE1101.11) Standard configurations**

Height	3 U		4 U				
Depth	291 mm	400 mm	291 mm	371 mm	400 mm	500 mm	291 mm
Width	19"	19"	19"	19"	19"	19"	19"
part-no.	12K023	12K024	12K025	12K026	12K027	12K028	12K029
For card size	3 U	3 U	3 U	3 U	3 U	3 U	3 U / 6 U
For card depth	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm
Rear I/O card depth*	-	-	-	160 mm	160 mm	160 mm	-
Max. Slot	21	21	21	21	21	21	21
Front mounting	possible	possible	possible	possible	possible	possible	possible
Recessed mounting	-	-	possible	-	possible	possible	possible (3 U)
Height reduction	-	-	possible	possible	possible	possible	possible (3 U)
Base material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
Surface treatment	conductive	conductive	conductive	conductive	conductive	conductive	conductive
Possible EMC level	advanced	advanced	advanced	advanced	advanced	advanced	advanced

VME (IEC 60297) Standard configurations**

Height	3 U		4 U				
Depth	291 mm	400 mm	291 mm	371 mm	400 mm	500 mm	291 mm
Width	19"	19"	19"	19"	19"	19"	19"
part-no.	12K019	12K020	12K038	12K005	12K006	12K007	12K039
For card size	3 U	3 U	3 U	3 U	3 U	3 U	3 U / 6 U
For card depth	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm
Rear I/O card depth*	-	-	-	160 mm	160 mm	160 mm	-
Max. Slot	21	21	21	21	21	21	21
Front mounting	possible	possible	possible	possible	possible	possible	possible
Recessed mounting	-	-	possible	-	possible	possible	possible (3 U)
Height reduction	-	-	possible	possible	possible	possible	possible (3 U)
Base material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
Surface treatment	conductive	conductive	conductive	conductive	conductive	conductive	conductive
Possible EMC level	advanced	advanced	advanced	advanced	advanced	advanced	advanced

*Rear I/O possible, when front cards 160 mm, only. No recessed mounting possible in combination with rear I/O

6 U		7 U			9 U	
400 mm	500 mm	289 mm	400 mm	500 mm	400 mm	500 mm
19"	19"	19"	19"	19"	19"	19"
12K042	12K043	12K011	12K012	12K013	12K021	12K022
3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U
160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm
220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm
-	-	80 mm	80 mm	80 mm	80 mm	80 mm
21	21	21	21	21	21	21
possible	possible	possible	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	possible	possible	possible	possible
aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
conductive	conductive	conductive	conductive	conductive	conductive	conductive
advanced	advanced	advanced	advanced	advanced	advanced	advanced

6 U		7 U				9 U	
400 mm	500 mm	291 mm	371 mm	400 mm	500 mm	400 mm	500 mm
19"	19"	19"	19"	19"	19"	19"	19"
12K030	12K031	12K032	12K033	12K034	12K035	12K036	12K037
3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U
160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm
220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm
-	-	-	160 mm	160 mm	160 mm	160 mm	160 mm
21	21	21	21	21	21	21	21
possible	possible	possible	possible	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	-	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	possible	possible	possible	possible	possible
aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
conductive	conductive	conductive	conductive	conductive	conductive	conductive	conductive
advanced	advanced	advanced	advanced	advanced	advanced	advanced	advanced

6 U		7 U				9 U	
400 mm	500 mm	291 mm	371 mm	400 mm	500 mm	400 mm	500 mm
19"	19"	19"	19"	19"	19"	19"	19"
12K009	12K010	12K040	12K014	12K015	12K016	12K017	12K018
3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U
160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm
220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm
-	-	-	160 mm	160 mm	160 mm	160 mm	160 mm
21	21	21	21	21	21	21	21
possible	possible	possible	possible	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	-	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	possible	possible	possible	possible	possible
aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
conductive	conductive	conductive	conductive	conductive	conductive	conductive	conductive
advanced	advanced	advanced	advanced	advanced	advanced	advanced	advanced

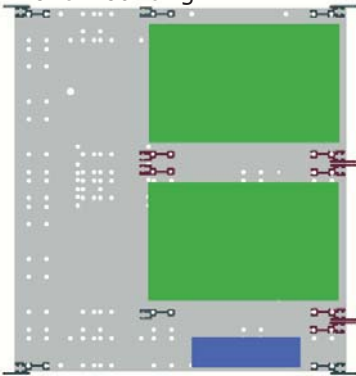
**Other configurations on request as modified standard, please contact our sales support

Systemkit 12K Example Assembly Possibilities

Possibilities (example for a 7U/84HP system, depth: 291mm), **side view**

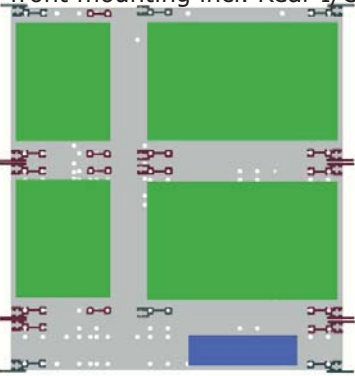
Version 1:

position: 3U+3U+1U
front mounting



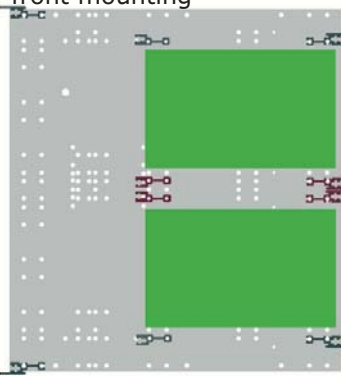
Version 2:

position: 3U+3U+1U
front mounting incl. Rear I/O



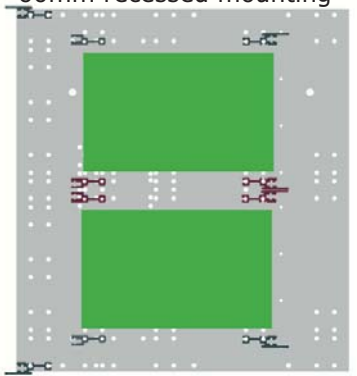
Version 3:

position: 1/2U+3U+3U+1/2U
front mounting



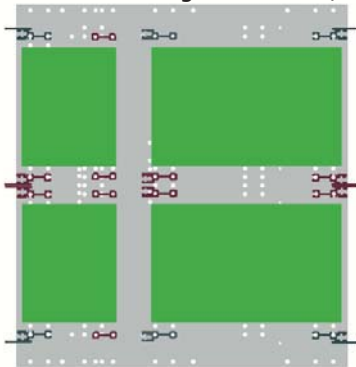
Version 4:

position: 1/2U+3U+3U+1/2U
60mm recessed mounting



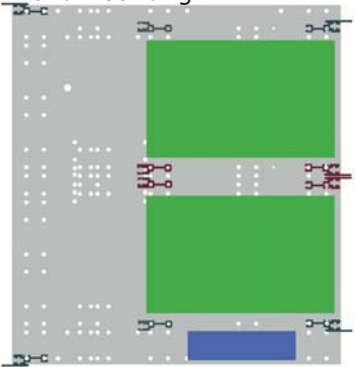
Version 5:

position: 1/2U+3U+3U+1/2U
front mounting incl. Rear I/O



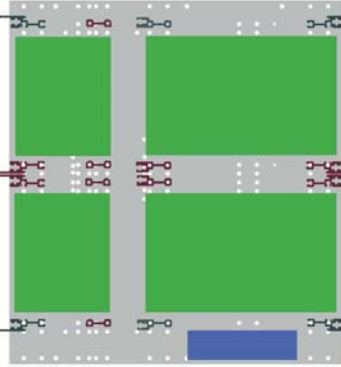
Version 6:

position: 1/3U+3U+3U+2/3U
front mounting



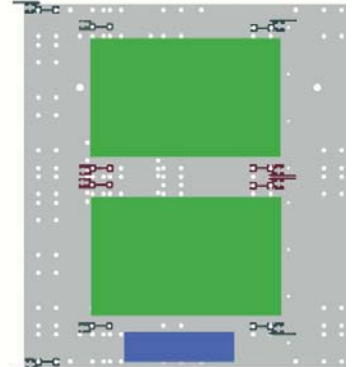
Version 7:

position: 1/3U+3U+3U+2/3U
front mounting incl. Rear I/O



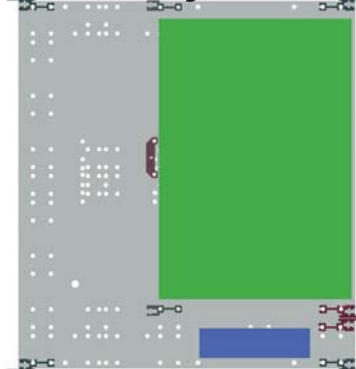
Version 8:

position: 1/3U+3U+3U+2/3U
60mm recessed mounting



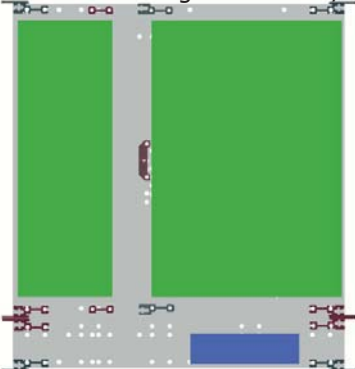
Version 9:

position: 6U+1U
front mounting



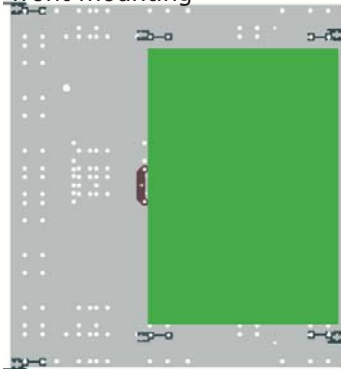
Version 10:

position: 6U + 1U
front mounting incl. Rear I/O



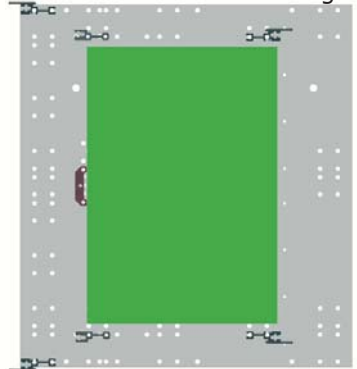
Version 11:

position: 1/2U+6U+1/2U
front mounting



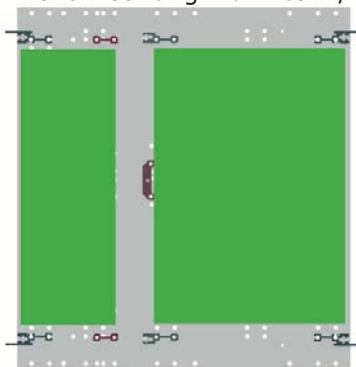
Version 12:

position: 1/2U+6U+1/2U
60mm recessed mounting



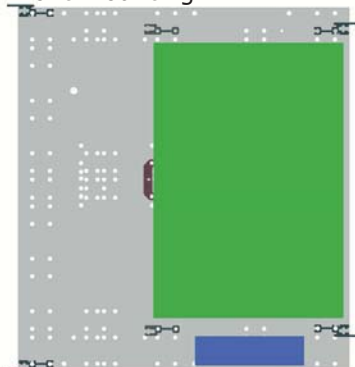
Version 13:

position: 1/2U+6U+1/2U
front mounting incl. Rear I/O



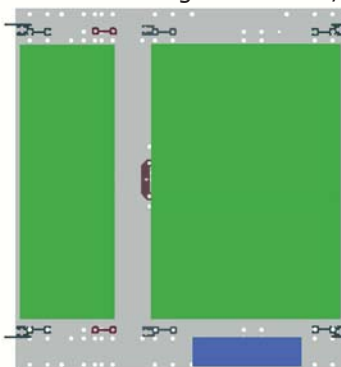
Version 14:

position: 1/3U+6U+2/3U
front mounting



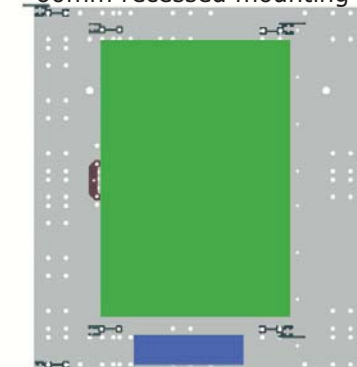
Version 15:

position: 1/3U+6U+2/3U
front mounting incl. Rear I/O



Version 16:

position: 1/3U+6U+2/3U
60mm recessed mounting



Fan



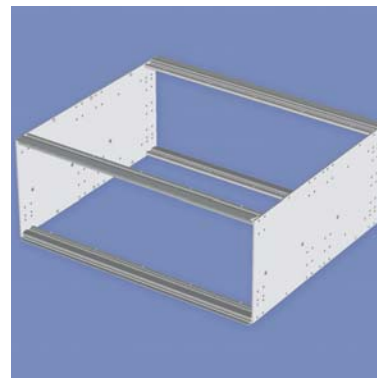
Eurocard/Double eurocard/Rear I/O card

Systemkit 12K Step A: Applications

Step A: CPCI, VME, VME64x 19" basic set

Material and scope of delivery:

- 2 pcs. side panels
- 4 pcs. front extrusions
- 4 pcs. tapped strips
- 1 set assembly material



Assembly instruction

Please keep in mind to order your free-of-charge assembly instruction for the Systemkit 12K

1 Assembly instruction	12K900
------------------------	--------

A.1 CPCI Applications (IEEE1101.10/IEEE1101.11)

depth:	3 U (132.5 mm)	4 U (177.0 mm)	6 U (265.9 mm)	7 U (310.3 mm)	9 U (399.2 mm)
289 mm	12K001	12K002	12K008	12K011	
400 mm	12K041	12K003	12K042	12K012	12K021
500 mm		12K004	12K043	12K013	12K022

A.2 VME64x Applications (IEEE1101.10/IEEE1101.11)

depth:	3 U (132.5 mm)	4 U (177.0 mm)	6 U (265.9 mm)	7 U (310.3 mm)	9 U (399.2 mm)
291 mm	12K023	12K025	12K029	12K032	
371 mm		12K026		12K033	
400 mm	12K024	12K027	12K030	12K034	12K036
500 mm		12K028	12K031	12K035	12K037

A.3 VME Applications (IEC60297)

depth:	3 U (132.5 mm)	4 U (177.0 mm)	6 U (265.9 mm)	7 U (310.3 mm)	9 U (399.2 mm)
291 mm	12K019	12K038	12K039	12K040	
371 mm		12K005		12K014	
400 mm	12K020	12K006	12K009	12K015	12K017
500 mm		12K007	12K010	12K016	12K018

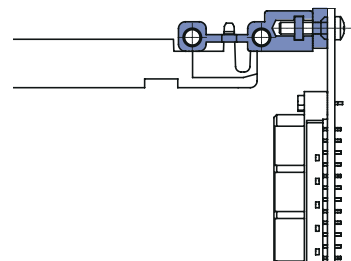
A.1.1 + A.2.1 + A.3.1: Optional cross recessed screws for basic systems (Torx round head screws as standard included)

quantity	part-no.
1 set (16 screws)	63-109

Systemkit 12K Step A: Applications

A.4 Internal extrusions for insulated backplane mounting

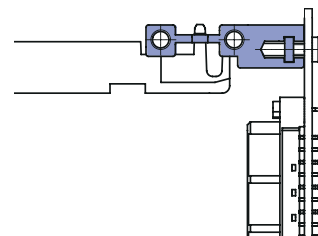
- **scope of delivery:**
 - 2 pcs. internal extrusions
 - 2 tapped strips
 - 2 pcs. insulating strips
 - assembly material
- optional cross recessed screws see step A.4.1



description	part-no.
insulated mounting of backplane	12K506

A.5 Internal extrusions for non-insulated backplane mounting

- **scope of delivery:**
 - 2 pcs. internal extrusions
 - 2 tapped strips
 - assembly material
- optional cross recessed screws see step A.5.1



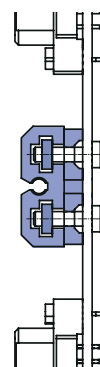
description	part-no.
non-insulated mounting of backplane	12K507

A.4.1 + A.5.1: Optional cross recessed screws for internal extrusions (Torx round head screws as standard included)

quantity	part-no.
1 set (8 screws)	63-204

A.6 Double extrusion for insulated backplane mounting

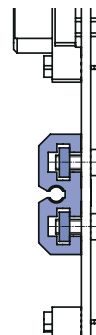
- for 6 U cards only
- stiffener for VME Monolithic
- fixing for J1 and J2 Backplanes
- **scope of delivery:**
 - 1 pc. double extrusion
 - 2 pcs. tapped strips
 - 2 pcs. insulating strips
 - assembly material
- optional cross recessed screws see step A.6.1



description	part-no.
1 set double extrusion for insulated backplane mounting	12K508

A.7 Double extrusion for non-insulated backplane mounting

- for 6 U cards only
- stiffener for VME Monolithic
- fixing for J1 and J2 Backplanes
- **scope of delivery:**
 - 1 pc. double extrusion
 - 2 pcs. tapped strips
 - assembly material (8 x M4 x 6, 2 x M3 x 10, 2 x adapter)



description	part-no.
1 set double extrusion for non-insulated backplane mounting	12K509

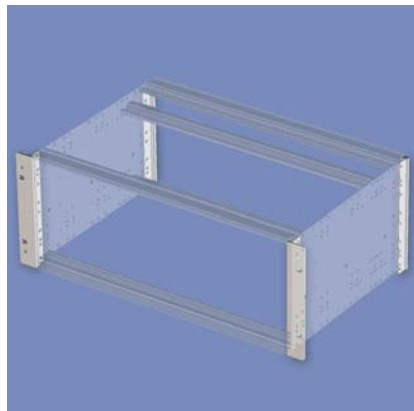
A.6.1 + A.7.1: Optional cross recessed screws for double extrusions (Torx round head screws as standard included)

quantity	part-no.
1 set	63-175

Systemkit 12K Step B: Application range

B.1 Height extrusions for 19" version

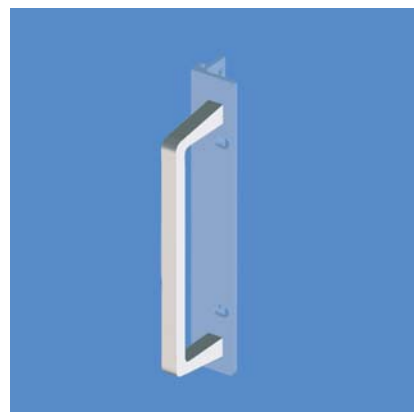
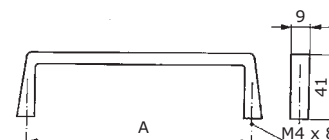
- not suitable for telescopic rail mounting (see B.3)
- **scope of delivery:**
 - 2 pcs. 19" height extrusions
 - 2 pcs. height extrusions
- handles, see step B.1.1/B.1.2
- EMC-gaskets step E.4



height:	3 U	4 U	6 U	7 U	9 U
part-no. :	12K200	12K201	12K202	12K203	12K204

B.1.1 Aluminium handle 9 mm (anodised)

- **scope of delivery:**
 - 1 pc. handle for height extrusion step B.1
 - assembly material



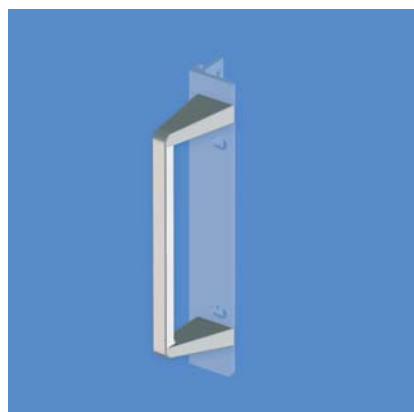
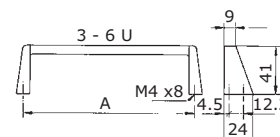
case size:	3 U	4 U	6 U	7 U	9 U
handle size (A):	3 U (88.9 mm)	4 U (133.4 mm)	6 U (222.3 mm)	4 U (133.4 mm)	6 U (222.3 mm)
part-no.:	60-573	60-574	60-576	60-574	60-576

B.1.1.2: Optional cross recessed screws for handles (Torx round head screws as standard included)

quantity	part-no.
1 set (2 screws)	63-325

B.1.2 Die cast aluminium handle (wet painted RAL 9006)

- **scope of delivery:**
 - 1 pc. handle for height extrusion step B.1
 - assembly material



case size:	3 U	4 U	6 U	7 U	9 U
handle size (A):	3 U (88.9 mm)	4 U (133.4 mm)	6 U (222.3 mm)	4 U (133.4 mm)	6 U (222.3 mm)
part-no.:	60-563	60-564	60-566	60-564	60-566

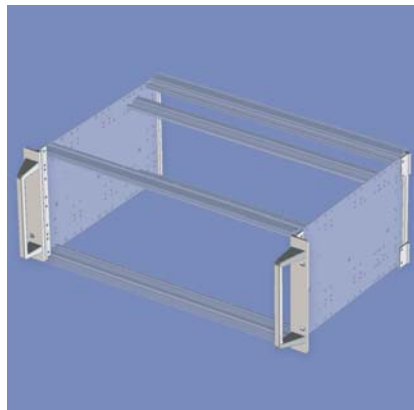
B.1.2.1: Optional cross recessed screws for handles (Torx round head screws as standard included)

quantity	part-no.
1 set (2 screws)	63-325

Systemkit 12K Step B: Application range

B.2 Height extrusions for 19" version (for telescopic rails)

- suitable for telescopic rail mounting
- **scope of delivery:**
 - 2 pcs. 19" height extrusions (front), 2 pcs. height extrusions (rear)
 - 2 pcs. die cast aluminium handles
 - assembly material
- telescopic rails, see step B.2.2/B.2.3
- EMC-gaskets step E.4



height:	3 U	4 U	6 U	7 U	9 U
part-no.:	12K400	12K401	12K402	12K403	12K404

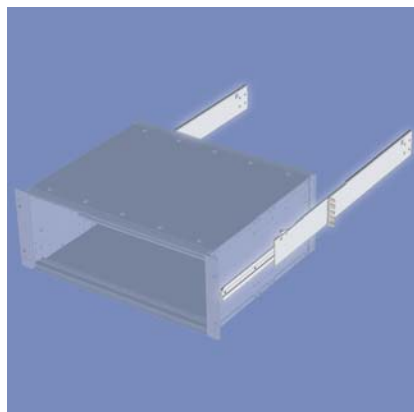
B.2.1 Optional cross recessed screws for 19" version (handles) (Torx round head screws as standard included)

quantity	part-no.
1 set (2 screws)	63-325

- ! Order one set for each 19" height extrusion
- The additional assembly material for the height extrusions is included in the basic set

B.2.2 Telescopic rails, set (load capacity up to 60 kg/pair)

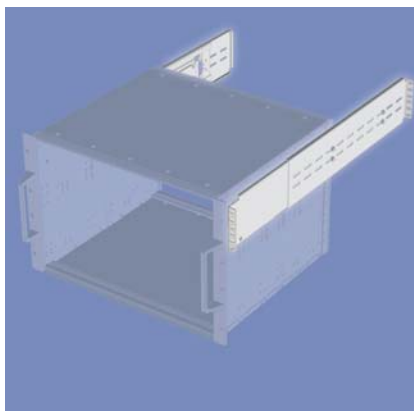
- telescopic rails, suitable for all heights
- **scope of delivery:**
 - 2 pcs. telescopic rails
 - mounting bracket and assembly material for mounting into cabinet and on module



max. withdraw	usable depth		part-no.
	min.	max.	
511.2 mm	463 mm	681.8 mm	65-051
596.4 mm	564.6 mm	783.4 mm	65-052
719.6 mm	666.2 mm	885.0 mm	65-053

B.2.3 Rugged telescopic rails, set (load capacity up to 90 kg/pair)

- telescopic rails, **for 6, 7 + 9 U only**
- **scope of delivery:**
 - 2 pcs. telescopic rails
 - mounting bracket
- assembly material step B.2.3.1



max. withdraw	usable depth		part-no.
	min.	max.	
566.5 mm	581.8 mm	801.3 mm	65-152-05

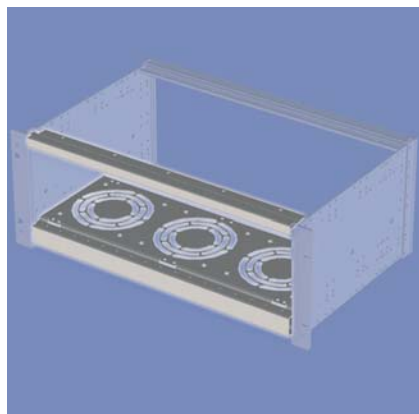
B.2.3.1 Assembly material for rugged telescopic rails

scope of delivery	range	part-no.
1 set	mounting into cabinet	63-765
1 set	mounting on module	63-763

Systemkit 12K Step C: Assembly options

C.1 Reduction kit $\frac{1}{3}$ U + $\frac{2}{3}$ U for front mounting, solid

- material: Aluminium 1.5 mm, conductive, depth independent (to be used in conjunction with the bottom/top panel)
- for 160 mm card depth, for 4 U case (eurocard) / for 7 U case (double eurocard)
- scope of delivery:**
 - 1 pc. adapter top ($\frac{1}{3}$ U), 1 pc. adapter bottom ($\frac{2}{3}$ U)
 - 1 set assembly material



description	part-no.
Reduction kit solid incl. fan panel	12K732
Reduction kit solid without fan panel	12K738

C.1.1 Optional cross recessed screws for reduction kit $\frac{1}{3}$ U + $\frac{2}{3}$ U (Torx round head screws as standard included)

quantity	part-no.
1 set (2 screws)	63-612

C.1.2 Additional fan plate

- for easy access and maintenance of the fans
- for Reduction kit with fan panel only

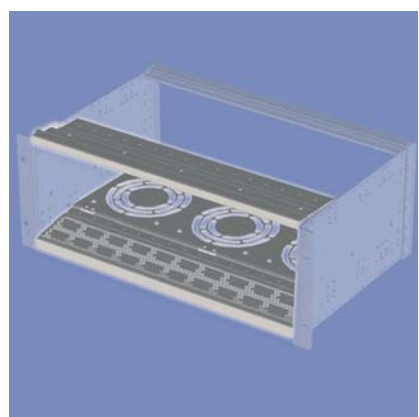
description	part-no.
Additional fan plate incl. 1 set assembly material	12K737

C.1.2.1 Optional cross recessed screws for additional fan plate (Torx round head screws as standard included)

quantity	part-no.
1 set (8 screws)	63-613

C.2 Reduction kit $\frac{1}{3}$ U + $\frac{2}{3}$ U for 60 mm recessed mounting

- material: Aluminium 1.5 mm, conductive, depth independent (to be used in conjunction with the bottom/top panel)
- for 60 mm recessed only, for 160 mm card depth, for 4 U case (eurocard) / for 7 U case (double eurocard)
- scope of delivery:**
 - 1 pc. adapter top ($\frac{1}{3}$ U), 1 pc. adapter bottom ($\frac{2}{3}$ U)
 - 1 set assembly material



part-no. perforated*	part-no. solid
12K500	12K501

* only bottom part ($\frac{2}{3}$ U) is perforated

C.2.1 Optional cross recessed screws for reduction kit $\frac{1}{3}$ U + $\frac{2}{3}$ U (Torx round head screws as standard included)

quantity	part-no.
1 set	63-612

C.2.2 Additional fan plate

- for easy access and maintenance of the fans
- for Reduction kit with fan panel only

description	part-no.
Additional fan plate incl. 1 set assembly material	12K737

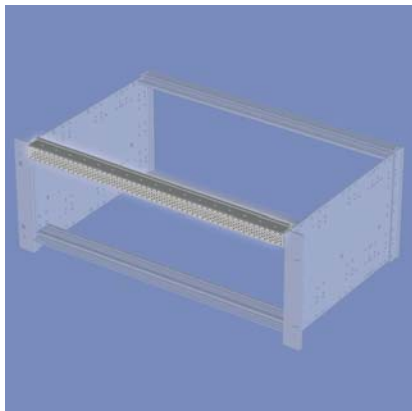
C.2.2.1 Optional cross recessed screws for additional fan plate (Torx round head screws as standard included)

quantity	part-no.
1 set (8 screws)	63-613

Systemkit 12K Step C: Assembly options

C.3 Reduction kit $\frac{1}{2}$ U + $\frac{1}{2}$ U for front mounting

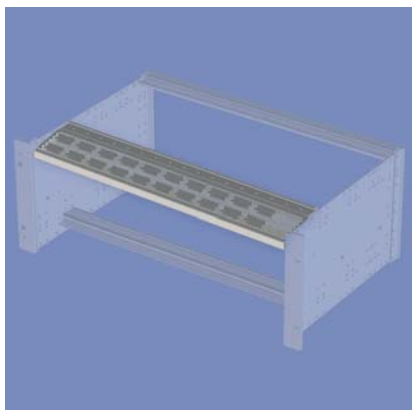
- material: Aluminium 1.5 mm, conductive, depth independent (to be used in conjunction with the bottom/top panel)
- for 4 U case (eurocard) / for 7 U case (double eurocard)
- scope of delivery:**
 - 1 pc. adapter ($\frac{1}{2}$ U)
 - no assembly material needed
- per sub rack 2 pcs. (4 pcs. with Rear I/O) have to be used (ordered)



part-no. perforated	part-no. solid
12K711	12K710

C.4 Reduction kit $\frac{1}{2}$ U + $\frac{1}{2}$ U for 60 mm recessed mounting

- material: Aluminium 1.5 mm, conductive, depth independent (to be used in conjunction with the bottom/top panel)
- for 4 U case (eurocard) / for 7 U case (double eurocard)
- scope of delivery:**
 - 1 pc. adapter ($\frac{1}{2}$ U)
 - 1 set assembly material
- per sub rack 2 pcs. have to be used (ordered)
- ! the depth independent $\frac{1}{2}$ U adapter are to be used in conjunction with the bottom/top panel



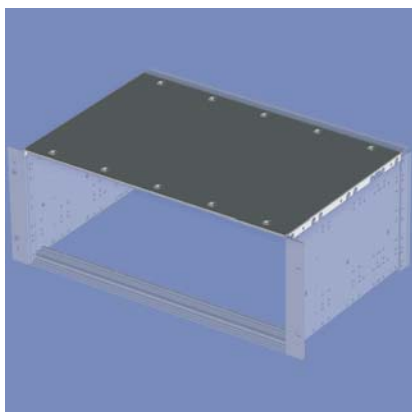
part-no. perforated	part-no. solid
12K731	12K730

C.4.1 Optional cross recessed screws for reduction kit $\frac{1}{2}$ U + $\frac{1}{2}$ U (Torx round head screws as standard included)

quantity	part-no.
1 set (2 screws)	63-606

C.5 Bottom/top panel solid

- material: Aluminium 1.5 mm, conductive
- EMC-level: basic (for an advanced EMC-level use EMC-sets E.1 - E.4)
- scope of delivery:**
 - 1 pc. bottom/top panel solid
 - 1 set assembly material



depth:	289 mm	291 mm	371 mm	400 mm	500 mm
part-no.:	12K746	12K720	12K722	12K723	12K724

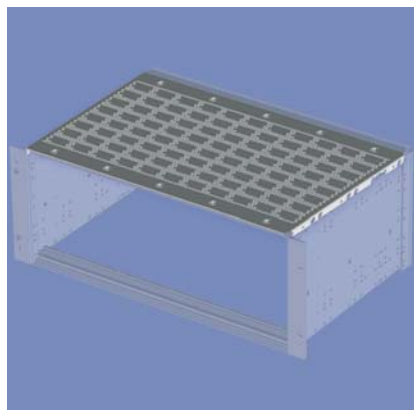
C.5.1 Optional cross recessed screws for bottom/top panel (Torx round head screws as standard included)

quantity	part-no.
1 set (18 screws)	63-171

Systemkit 12K Step D: Assembly accessories

C.6 Bottom/top panel perforated

- material: Aluminium 1.5 mm, conductive
- EMC-level: basic (for an advanced EMC-level use EMC-sets E.1 - E.4)
- scope of delivery:**
 - 1 pc. bottom/top panel perforated
 - 1 set assembly material



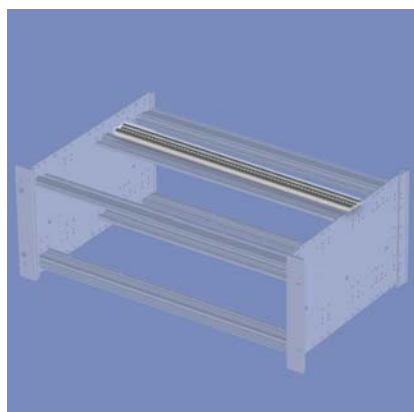
depth:	289 mm	291 mm	371 mm	400 mm	500 mm
part-no.:	12K749	12K725	12K727	12K728	12K729

C.6.1 Optional cross recessed screws for bottom/top panel (Torx round head screws as standard included)

quantity	part-no.
1 set (18 screws)	63-171

D.1 Rear I/O card mounting

- for 80 mm card depth (CPCI), for 160 mm card depth (VME & VME64x)
- scope of delivery:**
 - 2 pcs. internal extrusions for rear I/O card mounting
 - assembly material



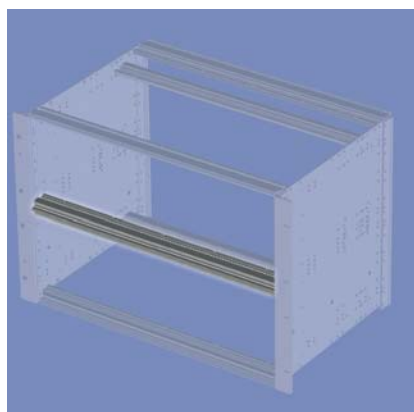
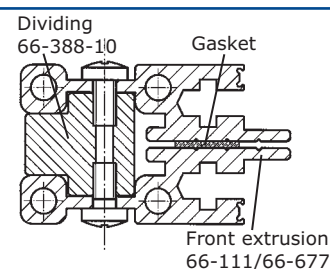
description	part-no.
Internal extrusions for rear I/O card mounting	12K504

D.1.1 Optional cross recessed screws for rear I/O card mounting (Torx round head screws as standard included)

quantity	part-no.
1 set (8 screws)	63-204

D.2 EMC front subdivision horizontal for 84 HP system

- advanced EMC-level
- scope of delivery:**
 - 2 pcs. front extrusions
 - 1 pc. EMC-gasket
 - 3 pcs. dividings
 - 1 set assembly material
 - 2 pcs. tapped strips



part-no. VME	part-no. CPCI/VME64x
63K837-84	63K837-85

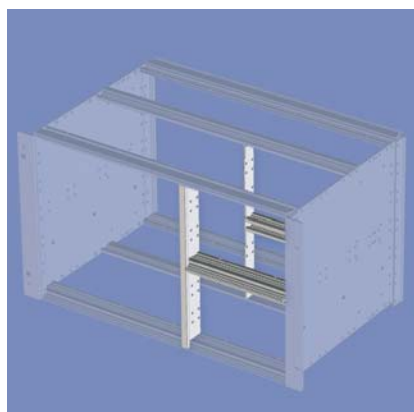
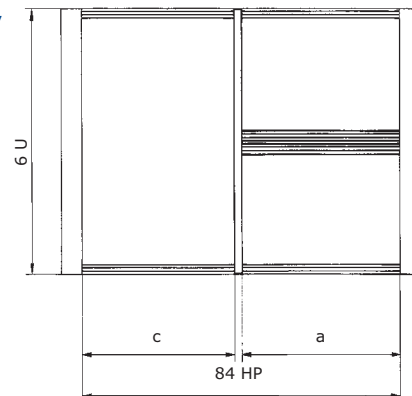
D.2.1 Optional cross recessed screws for EMC-front subdivision horizontal (Torx round head screws as standard included)

quantity	part-no.
1 set (8 screws)	63-204

Systemkit 12K Step D: Assembly accessories

D.3 Front subdivision vertical for 6 U system or 6 U assembly

- **scope of delivery:**
 - 1 pc. divider extrusion front
 - 1 pc. divider extrusion rear
 - 2 pcs. front extrusion
 - 2 pcs. internal extrusion
 - 1 set assembly material
- tapped strips for front extrusion see step D.3.2



nominal width 6 U (c)	nominal width 2 x 3 U (a)	part-no. IEC60297	part-no. IEEE1101.10
50 HP	32HP	12K959-2	12K959-3
40 HP	42HP	12K949-2	12K949-3

D.3.1 Optional cross recessed screws for front subdivision vertical (Torx round head screws as standard included)

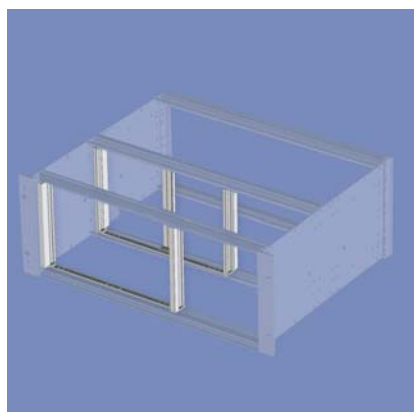
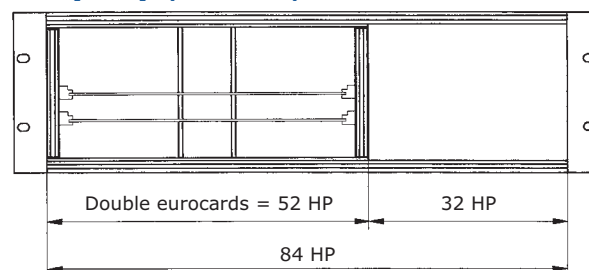
quantity	part-no.
1 set	63-209

D.3.2 Tapped strips for front extrusion

scope of delivery	description	part-no.
1 pc. tapped strip	M2,5 32 HP = 162.56 mm	61-463
10 pcs. tapped strips		63-190
1 pc. tapped strip	M2,5 42 HP = 213.36 mm	61-464
10 pcs. tapped strips		63-057

D.4 Horizontal card mounting kit for double eurocards (6 U) (for VME)

- card depth independent
- installation width: 52 HP
- **scope of delivery:**
 - 1 complete set incl. assembly material
- assembly material for cover plates see step F.18 - F.21*



height/nominal width	part-no.	part-no. for cover plate top*	part-no. for cover plate bottom*
3 U - 20 HP	14K971-60	21N602-90	21N602-90
4 U - 28 HP	14K981-60	21N602-90	21N603-90
6 U - 48 HP	14K991-60	21N606-90	21N607-90

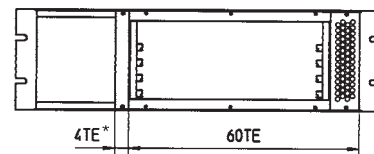
D.4.1 Optional cross recessed screws for horizontal card mounting set (Torx round head screws as standard included)

quantity	part-no.
1 set	63-766

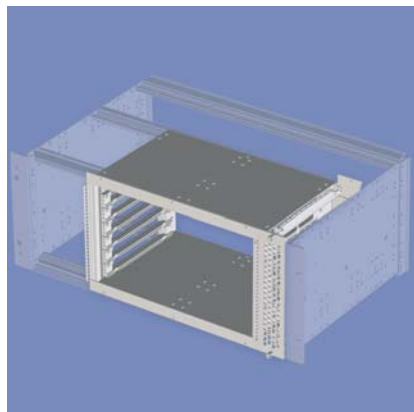
Systemkit 12K Step D: Assembly accessories

D.5 EMC horizontal card mounting kit for double eurocards (6 U)

- for 160 mm card depth
 - for backplane mounting
 - **scope of delivery:**
 - card mounting kit incl. fan tray and connector
 - assembly material included
- ! fan module has to be on the right side of the horizontal card mounting kit



*This space is necessary for the air flow.
Assemble blind panel or monitoring module



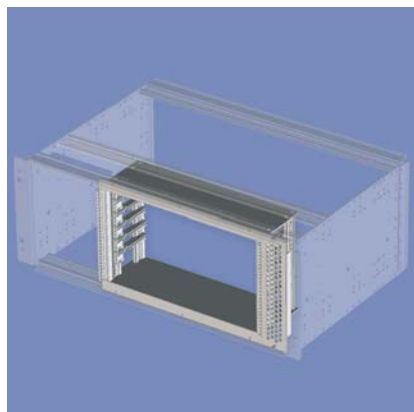
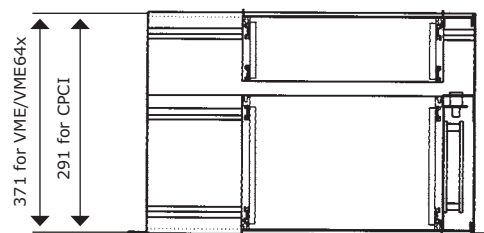
U	nominal height	part-no. CPCI	part-no. VME	part-no. VME64x
4	28 HP	14K987-60	14K986-60	14K988-60

D.5.1 Optional cross recessed screws for horizontal card mounting kit (Torx round head screws as standard included)

quantity	part-no.
1 set	63-768

D.6 EMC horizontal card mounting for 80/160 mm rear I/O double eurocards (6 U)

- for 160 mm card depth (VME + VME64x)
- for 80 mm card depth (CPCI)
- for backplane mounting
- **scope of delivery:**
 - 1 complete set incl. assembly material and cover on side



U	nominal height	part-no. CPCI	part-no. VME	part-no. VME64x
4	28 HP	14K988-10	14K989-10	14K990-10

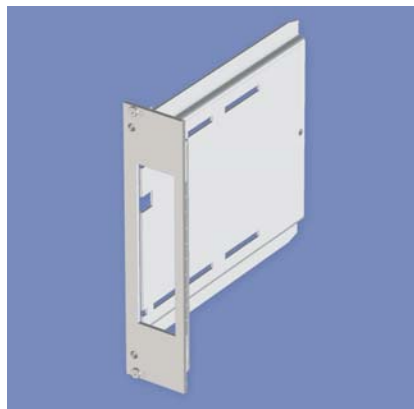
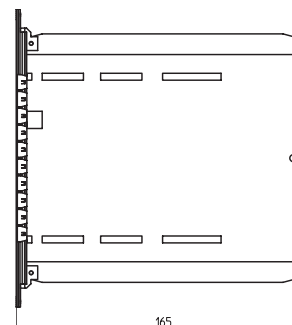
D.6.1 Optional cross recessed screws for horizontal card mounting kit (Torx round head screws as standard included)

quantity	part-no.
1 set	63-768

Systemkit 12K Step D: Assembly accessories

D.7 Drive module 3 1/2" (plug in)

- drive module incl. assembly material
- screws see step F.18 - F.21



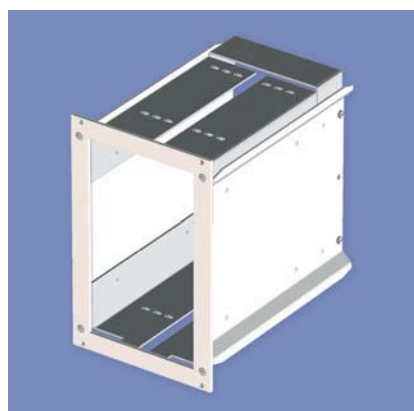
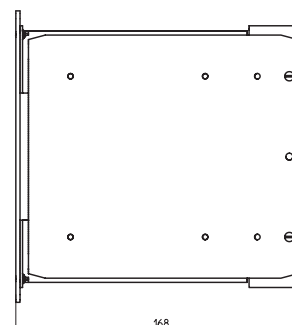
description	U	HP	part-no.
cut out: 26 x 102 mm	3	8	27K308-41
	4	8	27K408-41
	6	8	27K608-51

D.7.1 Optional cross recessed screws for drive module (Torx round head screws as standard included)

height	quantity	part-no.
3 U/4 U	1 set	63-801
6 U	1 set	63-803

D.8 Drive modules 5 1/4" (plug in)

- drive module incl. assembly material
- screws see step F.18 -F.21



description	U	HP	part-no.
cut out: 84.8 x 147 mm	3	32	27K332-31
	4	22	27K422-21
cut out: 2 x 84.8 x 147 mm	6	32	27K632-71

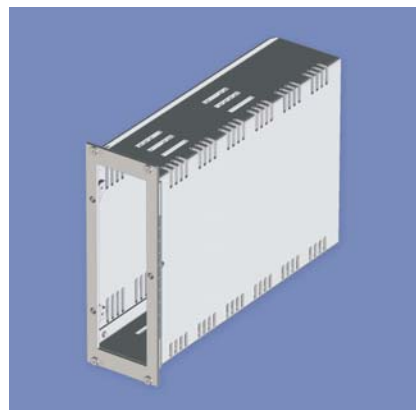
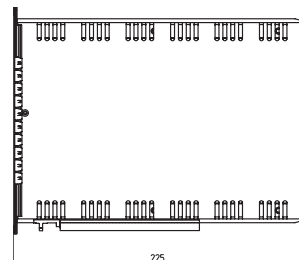
D.8.1 Optional cross recessed screws for drive module (Torx round head screws as standard included)

height	quantity	part-no.
3 U/4 U	1 set	63-800
6 U	1 set	63-802

Systemkit 12K Step D: Assembly accessories

D.9 EMC drive modules 5 1/4" (plug in, advanced EMC-level)

- drive module incl. assembly material
- screws see step F.18 -F.21



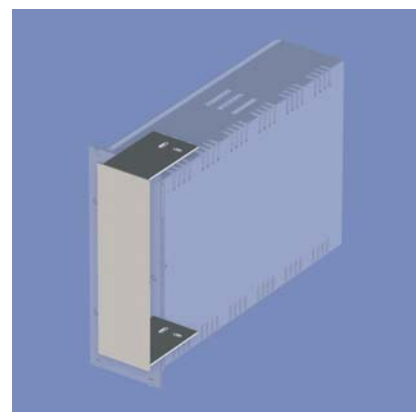
description	U	HP	part-no.
cut out: 46.2 x 147 mm	4	12	27C413-11
	6	12	27C613-11

D.9.1 Optional cross recessed screws for EMC drive module (Torx round head screws as standard included)

quantity	part-no.
1 set	63-801-04

D.10 Blind cover for drive modules 5 1/4"

- blind cover incl. assembly material
- half height, clear anodised



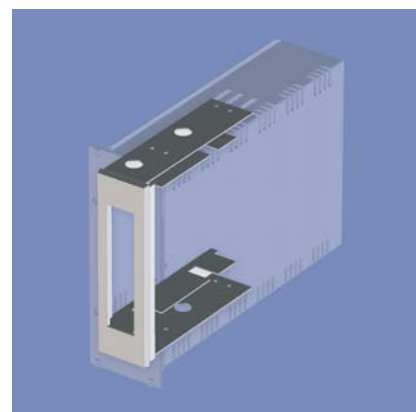
description	part-no.
blind cover for 5 1/4" drive modules	27K340

D.10.1 Optional cross recessed screws for blind cover (Torx round head screws as standard included)

quantity	part-no.
1 set	63-801-04

D.11 Reduction frame from 5 1/4" to 3 1/2"

- reduction frame incl. assembly material (cross recessed screws)
- for hard disk 3 1/2"

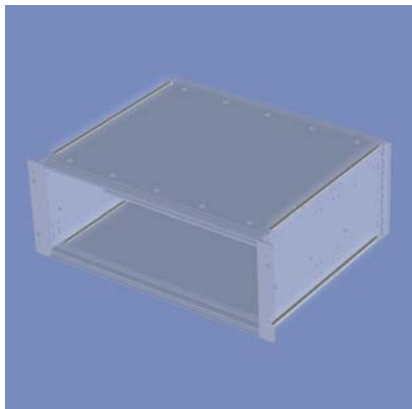


description	part-no.
reduction frame from 5 1/4" to 3 1/2"	70-506

Systemkit 12K Step E: EMC shielding

E.1 EMC-set for bottom/top panel, depth (advanced EMC-level)

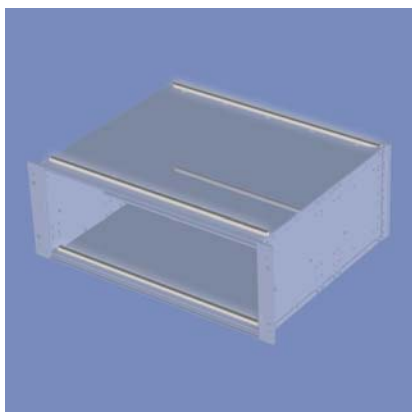
- 4 pcs. EMC-gasket for depth
- use in conjunction with step E.2



depth	part-no.
291 mm	63K836-15
371 mm	63K836-16
400 mm	63K836-04
500 mm	63K836-05

E.2 EMC-set for bottom/top panel, width (advanced EMC-level)

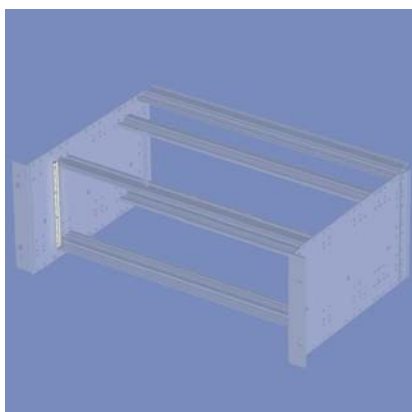
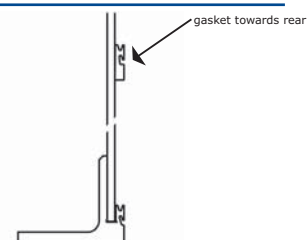
- 4 pcs. EMC-gasket for width
- use in conjunction with step E.1



description	part-no.
4 gaskets, 4 mm x 7 mm x 84 HP, when using height reduction kits (C.1 - C.3) at front and rear	63K836-01
4 gaskets, 6 mm x 7 mm x 84 HP, use without height reduction kits (only extrusions)	63K836-02
2 gaskets, 6 mm x 7 mm x 84 HP and 2 gaskets 4 mm x 7 mm x 84 HP, when using only one height reduction kit (C.1 - C.3) at front or rear	63K836-03

E.3 Extrusion for recessed EMC mounting (advanced EMC-level)

- 2 pcs. EMC-extrusions incl. assembly material
 - interior fitting: extrusion bolts with side panel
 - application: recessed installation of front panel
- ! can be used in conjunction with EMC sets E.1 + E.2 and gasket (E.4) to achieve advanced EMC level

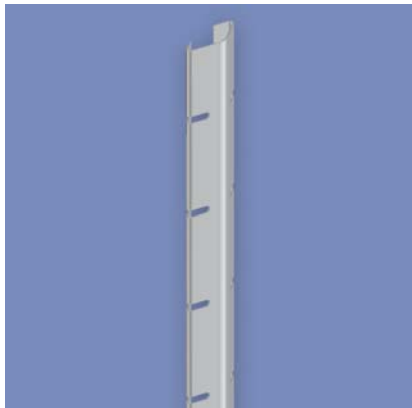


system height	extrusion height	in mm	part-no.
4 U	~3 U	140 mm	63K608
7 U	~6 U	280 mm	63K609

Systemkit 12K Step E: EMC shielding

E.4 EMC-gasket for height extrusion, front panel (advanced EMC-level)

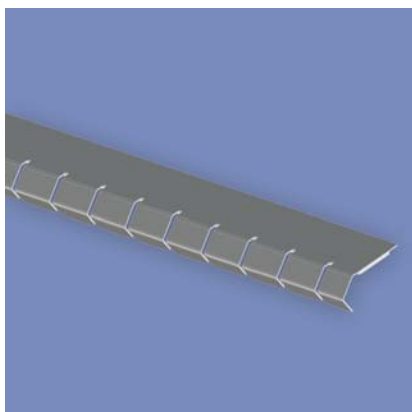
- front/rear recessed mounting
- front panels; 1. slot
- application: height extrusion front/rear, front panel
- the gasket is installed onto the extrusion
- use the EMC-gasket in card height whenever used in addition with cards
- when a height reduction is used, choose height between reductions
- ! can be used in conjunction with EMC sets (step E.1 - E.3) to achieve advanced EMC level



U	in mm	1 pc.	10 pcs.	100 pcs.
3	101.60 mm	81-062-03	81-062-03-1	81-062-03-2
4	146.05 mm	81-062-04	81-062-04-1	81-062-04-2
6	234.95 mm	81-062-06	81-062-06-1	81-062-06-2
7	279.40 mm	81-062-07	81-062-07-1	81-062-07-2
9	368.30 mm	81-062-09	81-062-09-1	81-062-09-2

E.5 EMC contact strips (advanced EMC-level)

- 2 pcs. contact strips
- for front panels, fixing on extrusion
- self adhesive



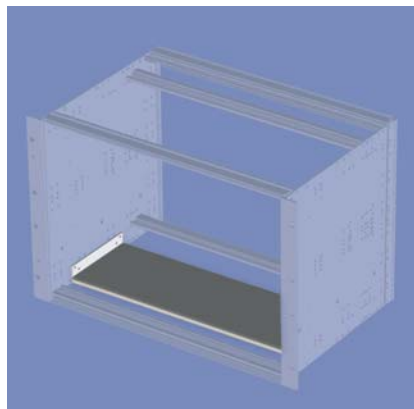
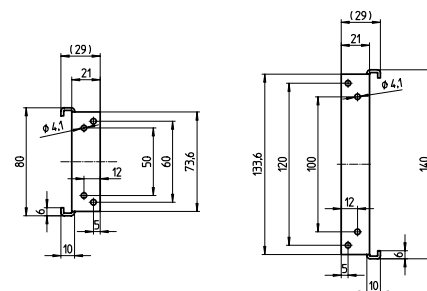
HP	length	part-no.
42	212.1 mm = 8.48"	63-836-67
84	424.2 mm = 16.97"	63-836-70

- Further EMC-parts such as front panels etc. are in step F, General accessories

Systemkit 12K Step F: General accessories

F.1 Mounting chassis, rugged design (aluminium, 2 mm)

- mounting chassis 85 HP (431.8 mm)
- assembly material included
- earthing set see step F.1.2



description	part-no.
depth: 80mm	14K832-50
depth: 140mm	14K836-50

F.1.1 Optional cross recessed screws for mounting chassis (Torx round head screws as standard included)

quantity	part-no.
1 set	63-861

F.1.2 Earthing set for mounting chassis, acc. to EN, VDE/SEV specifications

quantity	part-no.
1 set	63-174

F.2 Card guides for VME (IEC 60297)

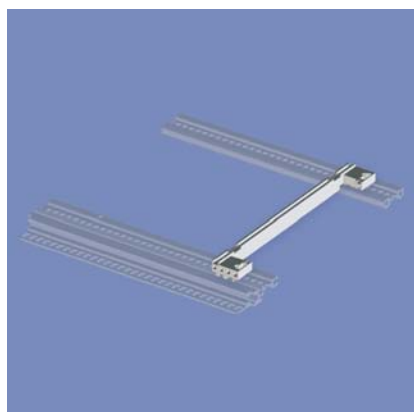
- card guides black
- for 1.6 mm card thickness
- Polyamid, UL94:V0



scope of delivery	part-no. 160 mm	part-no. 220 mm
1 pc. card guide	61-044	
10 pcs. card guides	63-028	63-103
100 pcs. card guides	63-029	63-104

F.3 Card guides for CPCI, VME64x (IEEE 1101.10/.11)

- for 1.6 mm card thickness
- card guides 220 mm see step F.4
- Polyamid, UL94:V0



scope of delivery	colour	part-no. 80 mm	part-no. 160 mm
5 pairs card guides	black	61-949-01-1	
50 pairs card guides	black	61-949-01-2	
10 pcs. card guides	black		61-950-01-1
100 pcs. card guides	black		61-950-01-2
10 pcs. card guides	red		61-950-03-1
100 pcs. card guides	red		61-950-03-2

Systemkit 12K Step F: General accessories

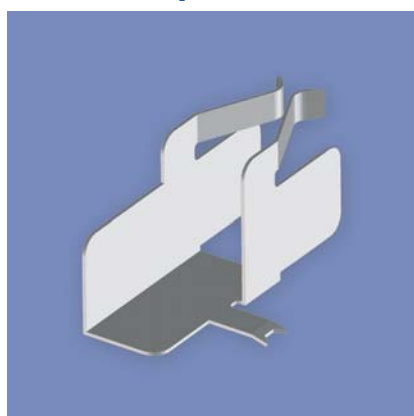
F.4 Card guides for CPCI, VME64x (IEEE 1101.10/.11)

- card guides black (end foot offset is pearlwhite), 3 parts
- for 1.6 mm and 2.0 mm card thickness
- card guide extrusion aluminium, end foot plastic (UL94V-0)



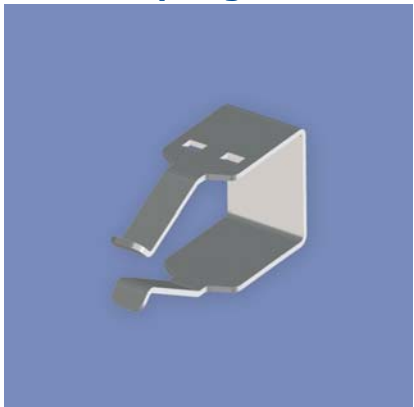
scope of delivery	part-no. 160 mm	part-no. 220 mm
10 pcs. card guide extrusions	66-452-20-1	66-452-25-1
100 pcs. card guide extrusions	66-452-20-2	66-452-25-2
5 pairs end foot	61-955-01-1	61-955-01-1
50 pairs end foot	61-955-01-2	61-955-01-2
5 pairs end foot offset (pearlwhite)	61-961-01-1	61-961-01-1
50 pairs end foot offset (pearlwhite)	61-961-01-2	61-961-01-2

F.5 ESD clips



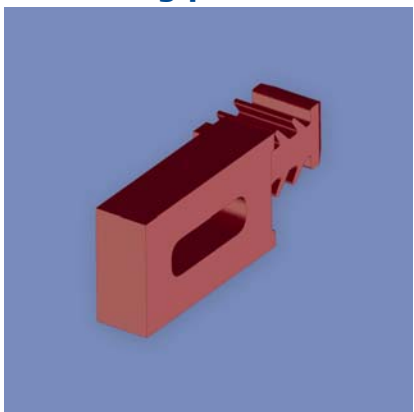
scope of delivery	description	part-no.
10 pcs. ESD clips	front bottom / rear top	63-863
100 pcs. ESD clips		63-864
10 pcs. ESD clips	front top / rear bottom	63-865
100 pcs. ESD clips		63-866

F.6 ESD spring



scope of delivery	description	part-no.
10 pcs. ESD springs	ESD clip front bottom/rear top	61-420-1
100 pcs. ESD springs	ESD clip front bottom/rear top	61-420-2

F.7 Coding pins

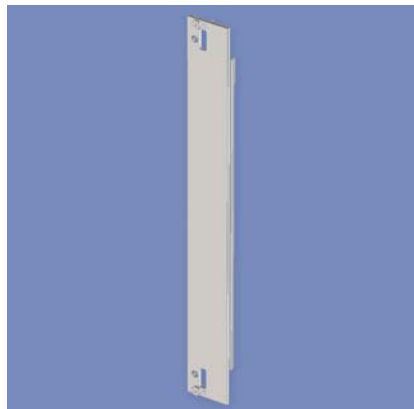
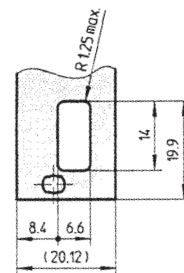


scope of delivery	description	part-no.
100 pcs. coding pins	Coding pins grey	81-054-02-2
	Coding pins dark red	81-054-06-2
	Coding pins black	81-054-04-2

Systemkit 12K Step F: General accessories

F.8 EMC front panel for plug-in units, for VME (advanced EMC-level)

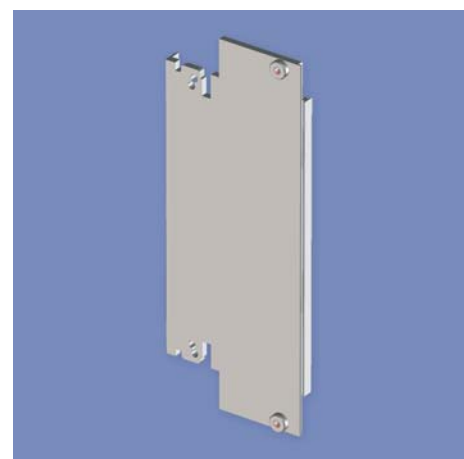
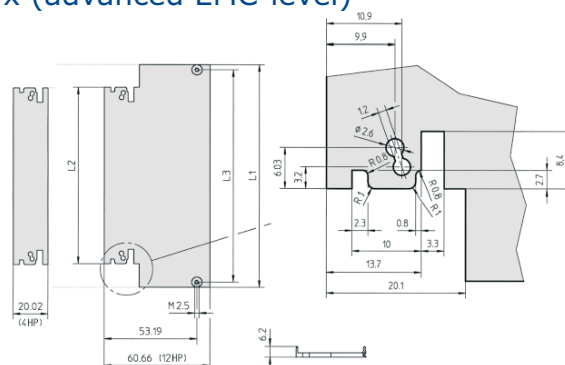
- front & rear conductive
- **scope of delivery:**
 - 1 front panel incl. EMC-gasket
 - assembly material
- handles step G.4



HP	part-no. 3 U	part-no. 6 U
4	26E304	26E604
6	26E306	26E606
8	26E308	26E608

F.9 EMC front panel for plug-in units, CPCI and VME64x (advanced EMC-level)

- for injector/ejector handle (G.1 - G.3)
- EMC shielding
- front anodised, rear conductive
- **scope of delivery:**
 - 1 front panel
- assembly material see step F.9.1 (needed only for 10 + 12 HP)
- EMC-gasket see step F.9.2
- handles step G.1 - G.3



HP	part-no. 3 U	part-no. 6 U
4	66-514-23	66-514-26
8	66-518-23	66-518-26
10	66-520-23*	66-520-26*
12	66-522-23*	66-522-26*

*F.9.1 Assembly material for 10 + 12 HP (not necessary for 4 + 8 HP)

description	part-no.
2 pcs. cross recessed round head screws M2.5 x 12.7	61-287-4
2 pcs. torx screws M2.5 x 11.3	63K482

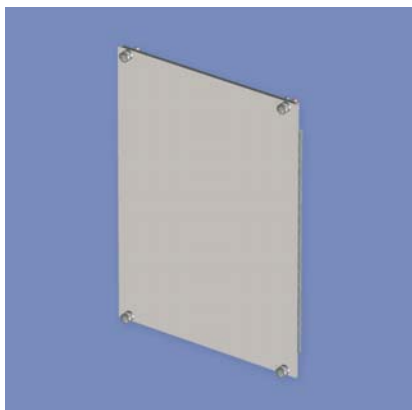
F.9.2 EMC-gasket (stainless steel)

scope of delivery	description	part-no. 3 U	part-no. 6 U
1 pc. EMC-gasket	advanced EMC level	81-062-03	81-062-06

Systemkit 12K Step F: General accessories

F.10 EMC filler panel flat (advanced EMC-level)

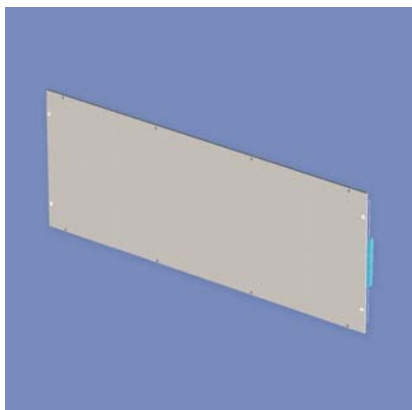
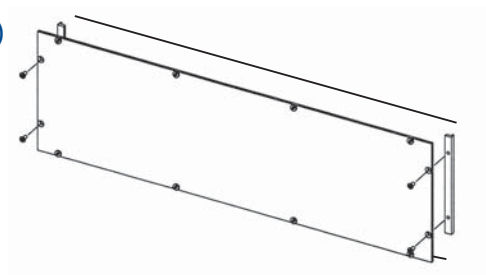
- front anodised, rear conductive
- **scope of delivery:**
 - 1 front panel incl. EMC-gasket
 - assembly material



HP	part-no. 4 U	part-no. 6 U
20	21D420-50	
24	21D424-50	
48		21D648-50
56		21D656-50
64		21D664-50

F.11 EMC front panel 84HP, flat, solid (advanced EMC-level)

- front anodised, rear conductive
- advanced EMC-level
- **scope of delivery:**
 - 1 front panel incl. EMC-gasket
- assembly material see step F.11.1



part-no. 3 U	part-no. 4 U	part-no. 6 U
21K384	21K484	21K684

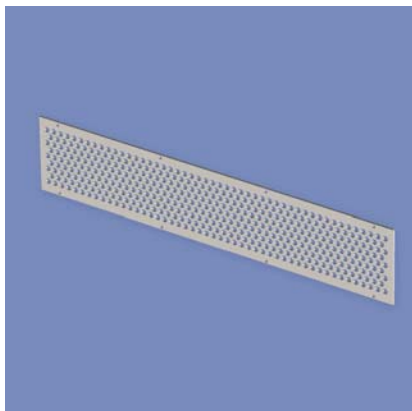
F.11.1 Assembly material

description	part-no.
10 pcs. round head screws, cross recessed M2.5 x 12.7 incl. press-fit bush	63-480
10 pcs. torx screws M2.5 x 11.3 incl. press-fit bush	63K480

Systemkit 12K Step F: General accessories

F.12 EMC front panel 84HP, flat, perforated (advanced EMC-level)

- front anodised
- rear conductive
- **scope of delivery:**
 - 1 front panel, standard perforated
- assembly material step F.12.1



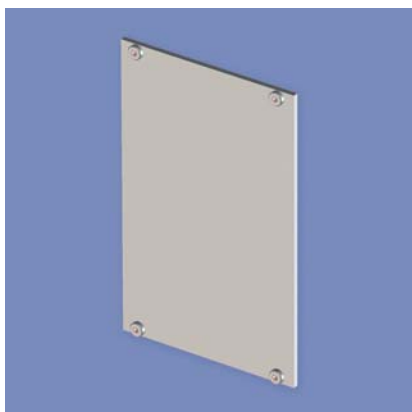
height	perforation	part-no.
1 U	41 cm ²	21C184-01
2 U	123 cm ²	21C284-01

F.12.1 Assembly material

description	part-no.
10 pcs. round head screws, cross recessed M2.5 x 12.7 incl. press-fit bush	63-480
10 pcs. Torx screws M2.5 x 11.3 incl. press-fit bush	63K480

F.13 EMC front panel flat without EMC-gasket (basic EMC-level)

- front panel standard, solid
- front clear anodised
- rear conductive
- **scope of delivery:**
 - 1 front panel incl. press-fit bush M2.5
- assembly material see step F.13.1, spacer see step F.14



HP	part-no. 3 U	part-no. 4 U	part-no. 6 U
4	21B304		
10	21B310		
12	21B312		
16	21B316		
21	21B321		
42	21B342	21B442	
63	21B363		
84	21B384	21B484	21B684

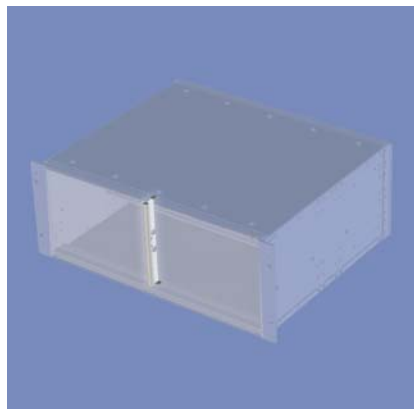
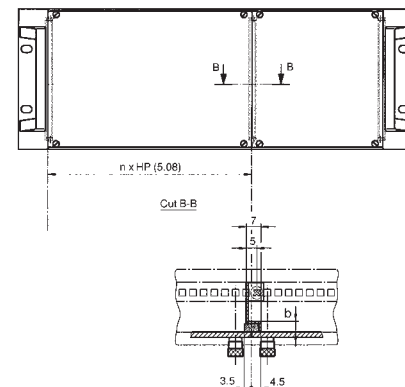
F.13.1 Assembly material

description	part-no.
100 pcs. round head screws, cross recessed M2.5 x 12.7	1904-41
100 pcs. Torx screws M2.5 x 11.3	1904K41

Systemkit 12K Step F: General accessories

F.14 Spacer for EMC front panel flat (F.13)

- EMC-level: advanced
- **scope of delivery:**
 - 1 spacer incl. gasket
 - assembly material



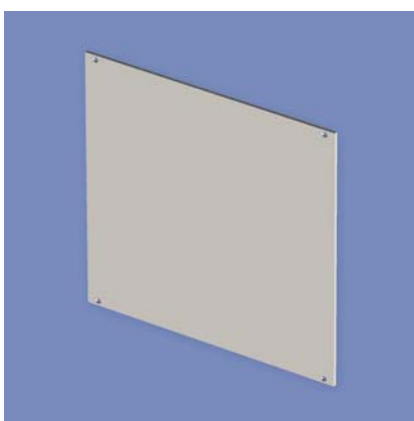
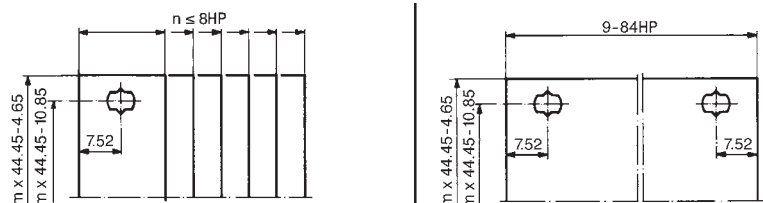
U	part-no.
3	81K023
4	81K024
6	81K026
7	81K027

F.14.1 Optional cross recessed screws for spacer (Torx round head screws as standard included)

quantity	part-no.
1 set	63-607

F.15 Front panel, flat

- clear anodised, non conductive
- no EMC-shielding
- **scope of delivery:**
 - 1 front panel
- assembly material see step F.15.1



HP	part-no. 3 U	part-no. 4 U	part-no. 6 U
4	21N304	21N404	21N604
8	21N308	21N408	21N608
12	21N312	21N412	21N612
16	21N316	21N416	21N616
20	21N320	21N420	21N620
32	21N332	21N432	21N632
52	21N352	21N452	21N652
63	21N363	21N463	21N663

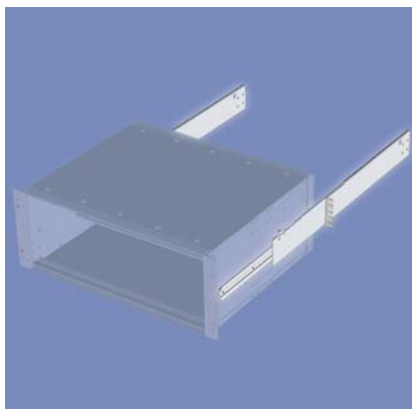
F.15.1 Assembly material

description	part-no.
10 pcs. round head screw cross recessed, M2.5 x 11.3 incl. screw retainer	63-159
10 pcs. round head screw cross recessed M2.5 x 12.7 incl. press-fit bush	63-480
10 pcs. Torx screws M2.5 x 11.3 incl. press-fit bush	63K480

Systemkit 12K Step F: General accessories

F.16 Telescopic rails, set (load capacity up to 60 kg/pair)

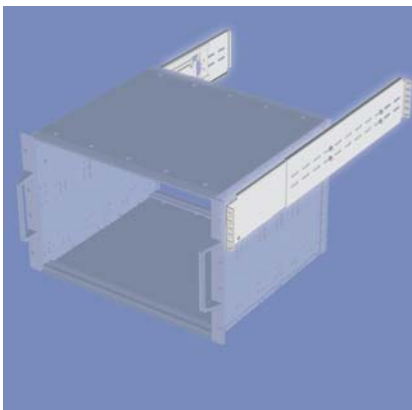
- telescopic rails, suitable for all heights
- scope of delivery:**
 - 2 telescopic rails
 - mounting bracket
 - assembly material for mounting into cabinet and on module



max. withdraw	usable depth		part-no.
	min.	max.	
511.2 mm	463 mm	681.8 mm	65-051
596.4 mm	564.6 mm	783.4 mm	65-052
719.6 mm	666.2 mm	885.0 mm	65-053

F.17 Rugged telescopic rails, set (load capacity up to 90 kg/pair)

- telescopic rails, **for 6, 7 + 9 U only**
- scope of delivery:**
 - 2 pcs. telescopic rails
 - mounting bracket
- assembly material step F.17.1



max. withdraw	usable depth		part-no.
	min.	max.	
566.5 mm	581.8 mm	801.3 mm	65-152-05

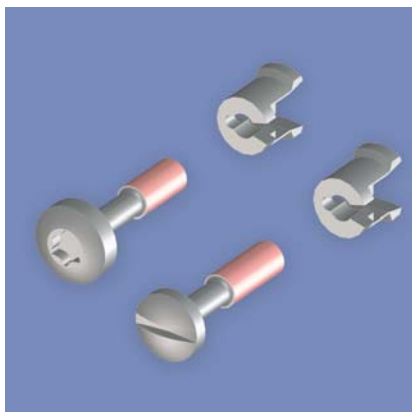
F.17.1 Assembly material for rugged telescopic rails

scope of delivery	range	part-no.
1 set	mounting into cabinet	63-765
1 set	mounting on module	63-763

Systemkit 12K Step F: General accessories

F.18 Milled edge screw Torx/recessed M2.5 with screw retainer

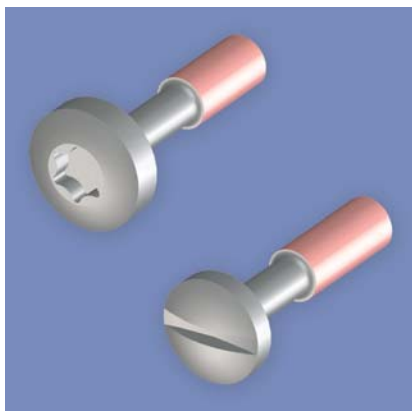
- set of 10 screws, M2.5
- with screw retainer



description	part-no.
Torx screws, size T8	63K159
Milled edge screws recessed	63-159

F.19 Screw Torx/recessed M2.5 x 11.3/12.7

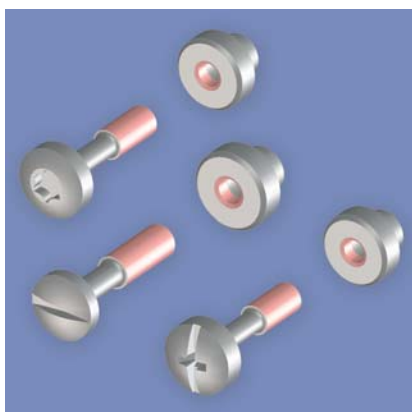
- set of 100 screws, M2.5



description	part-no.
Torx screws, M2.5 x 11.3, size T8	1904K41
Screws recessed M2.5 x 12.7	1904-41

F.20 Screw Torx/(cross-) recessed M2.5 x 11.3/12.7 with press-fit bush

- set of 10 screws, M2.5
- incl. press-fit bush

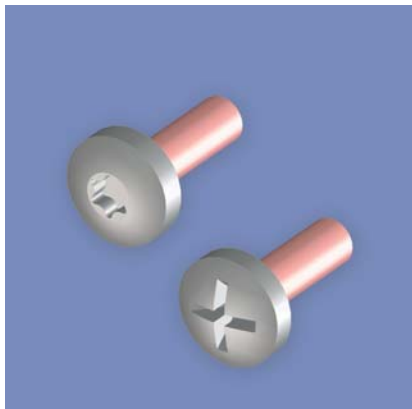


description	part-no.
Torx screws M2.5 x 11.3, size T8	63K480
Screws recessed M2.5 x 11.3	63-444
Screws cross recessed M2.5 x 12.7	63-480

Systemkit 12K Step F: General accessories

F.21 Front panel screws M2.5 x 8

- set of 10 screws, M2.5 x 8



description	part-no.
Torx screws, size T8	63K481
Screws cross recessed	63-481

Systemkit 12K Step G: Injector/ejector Handles

G.1 IEEE injector/ejector handle Ergonomic

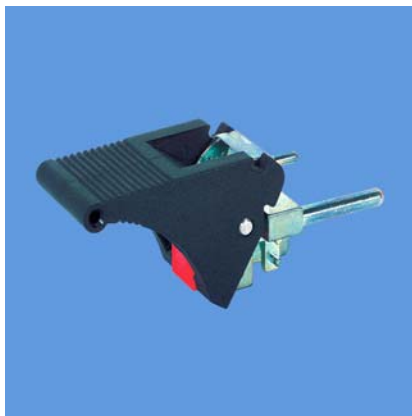
- 1 pc. IEEE handle incl. assembly material
- colour black



description	part-no.
top, with ESD-pin	81-075
bottom, with ESD-pin	81-076
top, without ESD-pin	81-075-01
bottom, without ESD-pin	81-076-01

G.2 IEEE injector/ejector handle Ergonomic Hot Swap

- 1 pc. IEEE handle incl. assembly material
- colour black
- microswitch: part-no. 81-088-1 (10 pcs.), order separately



description	part-no.
top, with ESD-pin	81-095
bottom, with ESD-pin	81-096
top, without ESD-pin	81-095-01
bottom, without ESD-pin	81-096-01

G.3 IEEE injector/ejector handle Ergonomic Hot Swap, Offset

- 1 pc. IEEE handle incl. assembly material
- colour black
- microswitch: part-no. 81-088-1 (10 pcs.), order separately

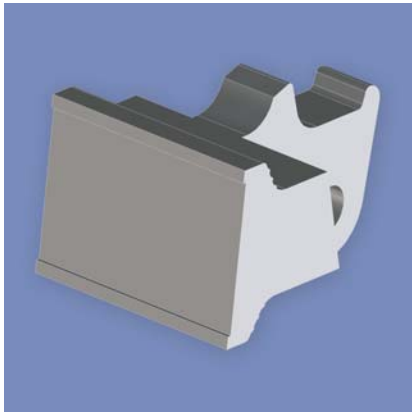


description	part-no.
top, with ESD-pin	81-184
bottom, with ESD-pin	81-185

Systemkit 12K Step G: Injector/ejector Handles

G.4 VME injector/ejector handle complete for plug-in units

- handle incl. assembly material (1 pc. for 3 U, 2 pcs. for 6 U)
- with stop



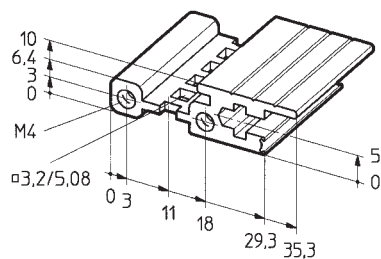
description	part-no.
Handle complete, 3 U	63-358
Handle complete, 6 U	63-359

- For more handles refer to the Elmaset catalogue

Systemkit 12K Step H: Extrusions

H.1 Front extrusion, VME

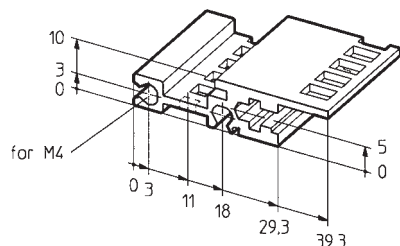
- 1 pc. front extrusion without assembly material
- use tapped strip no. 61-568 (1 pc.) or 61-568-1 (10 pcs.), (85 HP)



description	part-no.
for 84 HP, length: 431.8 mm	66-111-153

H.2 Front extrusion, CPCI/VME64x

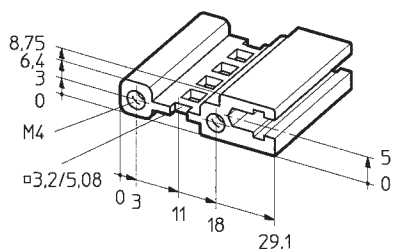
- 1 pc. front extrusion without assembly material
- use tapped strip no. 61-568 (1 pc.) or 61-568-1 (10 pcs.), (85 HP)



description	part-no.
for 84 HP, length: 431.8 mm	66-677-33

H.3 Internal extrusion for use of insulating strip

- 1 pc. internal extrusion without assembly material
- use tapped strip no. 61-473 (1 pc.) or 63-083 (10 pcs.), (81 HP)
- use insulating strip no. 66-901-22

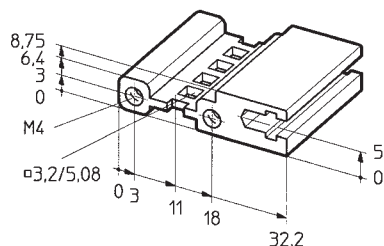


description	part-no.
for 84 HP, length: 431.8 mm	66-193-23

Systemkit 12K Step H: Extrusions

H.4 Internal extrusion without use of insulating strip

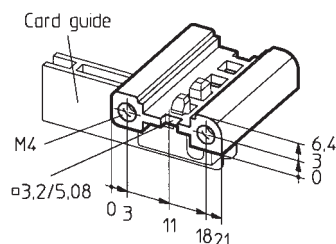
- 1 pc. internal extrusion without assembly material
- use tapped strip no. 61-473 (1 pc.) or 63-083 (10 pcs.), (81 HP)



description	part-no.
for 84 HP, length: 431.8 mm	66-194-23

H.5 Internal extrusion for card guides

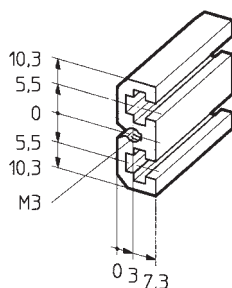
- 1 pc. internal extrusion for mounting of card guides
- tapped strip not required



description	part-no.
for 84 HP, length: 431.8 mm for mounting card guides	66-138-23

H.6 Double extrusion for use of insulating strip

- 1 pc. double extrusion without assembly material
- use tapped strip no. 61-467 (1 pc.) or 63-088 (10 pcs.), (81 HP)
- use insulating strip no. 66-901-22
- assembly material with adapter: 63-175

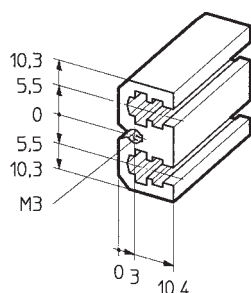


description	part-no.
for 84 HP, length: 426.7 mm	66-192-23

Systemkit 12K Step H: Extrusions

H.7 Double extrusion without use of insulating strip

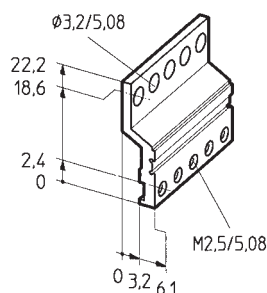
- 1 pc. double extrusion without assembly material
- use tapped strip no. 61-467 (1 pc.) or 63-088 (10 pcs.), (81 HP)
- assembly material with adapter: 63-175



description	part-no.
for 84 HP, length: 426.7 mm	66-195-23

H.8 Edge connector extrusion

- supplementary edge connector extrusion for DIN 41612 (IEC 60603-2)
- matches 66-193-23



description	for HP	Length	part-no.
clear passivation	8	40.6 mm	66-147-40
	18	91.4 mm	66-147-41
	28	142.2 mm	66-147-42
	42	213.4 mm	66-147-63
	63	320.0 mm	66-147-65
	81	411.5 mm	66-147-22
	84	426.7 mm	66-147-52

H.9 Assembly material for extrusions

scope of delivery	description	part-no.
100 pcs. screws	Torx screws M4 x 10, size T20	5443-01-2
1'000 pcs. screws	Torx screws M4 x 10, size T20	5443-01-3
100 pcs. screws	Screws cross recessed M4 x 10	1904-12
1'000 pcs. screws	Screws cross recessed M4 x 10	61-260-3
100 pcs. screws	Philips countersunk cross recessed M4 x 10	1906-24
100 pcs. screws	Philips countersunk Torx recessed M4 x 10	5470-26-2

Systemkit 12K Step H: Extrusions

H.10 Height extrusions 19"

- aluminium, surface treatment: conductive
- rounded edges
- shape to direct mounting of the EMC-gasket (see Step E.4)



Height	part-no.
3 U	66-275-33
4 U	66-275-34
6 U	66-275-36
7 U	66-275-37
9 U	66-275-39

H.11 Height extrusions

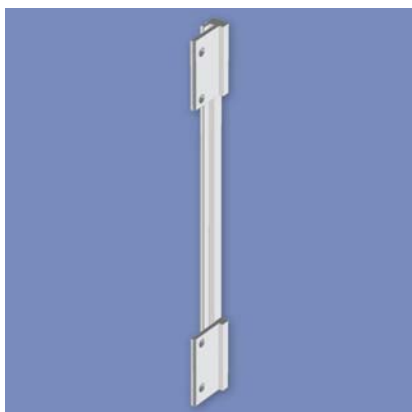
- aluminium, surface treatment: conductive
- shape to direct mounting of the EMC-gasket (see Step E.4)



Height	part-no.
3 U	66-274-23
4 U	66-274-24
6 U	66-274-26
7 U	66-274-27
9 U	66-274-29

H.12 Height extrusions with cut-out for telescopic rails

- aluminium, surface treatment: conductive
- cut-out for telescopic rails
- shape to direct mounting of the EMC-gasket (see Step E.4)



Height	part-no. left	part-no. right
3 U	66-274-63	
4 U	66-274-64	
6 U	66-274-66	66-274-76
7 U	66-274-67	66-274-77
9 U	66-274-69	66-274-79

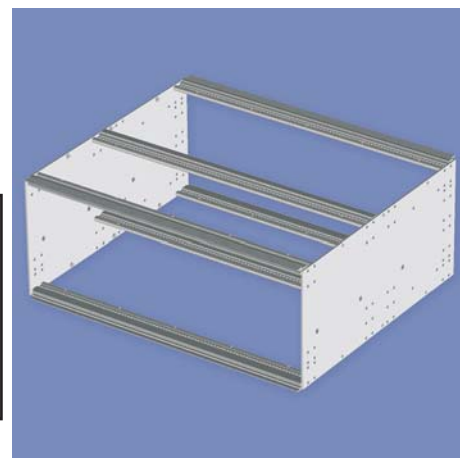
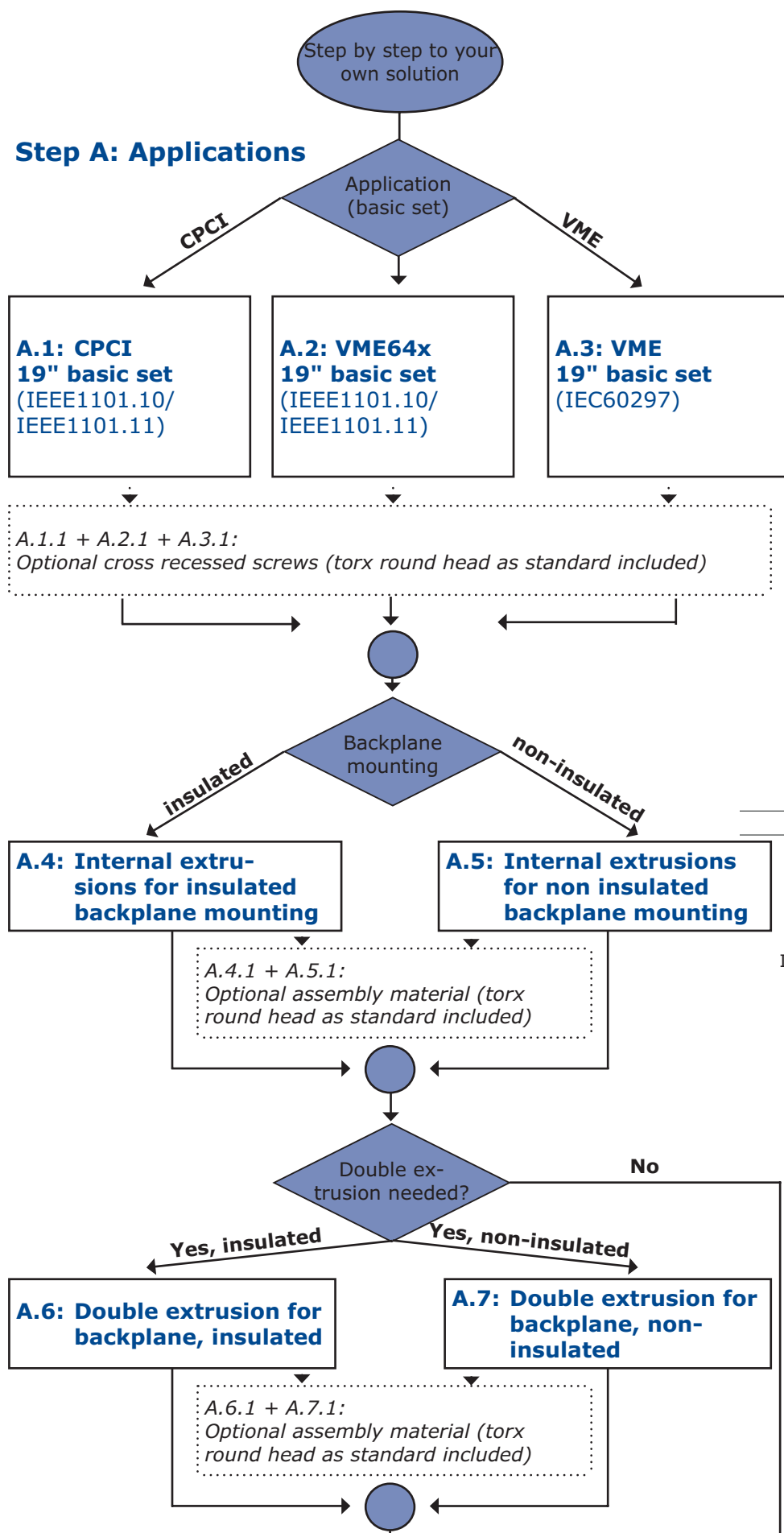
Systemkit 12K Appendix 1: Part number Index

12K001	13	12K724	18	21N420	31
12K002	13	12K725	19	21N432	31
12K003	13	12K727	19	21N452	31
12K004	13	12K728	19	21N463	31
12K005	13	12K729	19	21N602-90	20
12K006	13	12K730	18	21N603-90	20
12K007	13	12K731	18	21N604	31
12K008	13	12K732	17	21N606-90	20
12K009	13	12K737	17	21N607-90	20
12K010	13	12K738	17	21N608	31
12K011	13	12K900	13	21N612	31
12K012	13	12K949-2	20	21N616	31
12K013	13	12K949-3	20	21N620	31
12K014	13	12K959-2	20	21N632	31
12K015	13	12K959-3	20	21N652	31
12K016	13	14K832-50	26	21N663	31
12K017	13	14K836-50	26	26E304	28
12K018	13	14K971-60	20	26E306	28
12K019	13	14K981-60	20	26E308	28
12K020	13	14K986-60	21	26E604	28
12K021	13	14K987-60	21	26E606	28
12K022	13	14K988-10	21	26E608	28
12K023	13	14K988-60	21	27C413-11	23
12K024	13	14K989-10	21	27C613-11	23
12K025	13	14K990-10	21	27K308-41	22
12K026	13	14K991-60	20	27K332-31	22
12K027	13	1904-12	39	27K340	23
12K028	13	1904-41	30	27K408-41	22
12K029	13	1904-41	33	27K422-21	22
12K030	13	1904K41	30	27K608-51	22
12K031	13	1904K41	33	27K632-71	22
12K032	13	1906-24	39	5443-01-2	39
12K033	13	21B304	30	5443-01-3	39
12K034	13	21B310	30	5470-26-2	39
12K035	13	21B312	30	60-563	15
12K036	13	21B316	30	60-564	15
12K037	13	21B321	30	60-566	15
12K038	13	21B342	30	60-573	15
12K039	13	21B363	30	60-574	15
12K040	13	21B384	30	60-576	15
12K041	13	21B442	30	61-044	26
12K042	13	21B484	30	61-260-3	39
12K043	13	21B684	30	61-287-4	28
12K200	15	21C184-01	30	61-420-1	27
12K201	15	21C284-01	30	61-420-2	27
12K202	15	21D420-50	29	61-463	20
12K203	15	21D424-50	29	61-464	20
12K204	15	21D648-50	29	61-949-01-1	26
12K400	16	21D656-50	29	61-949-01-2	26
12K401	16	21D664-50	29	61-950-01-1	26
12K402	16	21K384	29	61-950-01-2	26
12K403	16	21K484	29	61-950-03-1	26
12K404	16	21K684	29	61-950-03-2	26
12K500	17	21N304	31	61-955-01-1	27
12K501	17	21N308	31	61-955-01-1	27
12K504	19	21N312	31	61-955-01-2	27
12K506	14	21N316	31	61-955-01-2	27
12K507	14	21N320	31	61-961-01-1	27
12K508	14	21N332	31	61-961-01-1	27
12K509	14	21N352	31	61-961-01-2	27
12K710	18	21N363	31	61-961-01-2	27
12K711	18	21N404	31	63-028	26
12K720	18	21N408	31	63-029	26
12K722	18	21N412	31	63-057	20
12K723	18	21N416	31	63-103	26

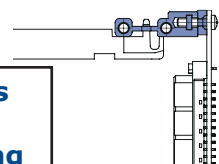
Systemkit 12K Appendix 1: Part number Index

63-104	26	65-053	16	81-062-07-2	25
63-109	13	65-053	32	81-062-09	25
63-159	31	65-152-05	16	81-062-09-1	25
63-159	33	65-152-05	32	81-062-09-2	25
63-171	18	66-111-153	37	81-075	35
63-174	26	66-138-23	38	81-075-01	35
63-175	14	66-147-22	39	81-076	35
63-190	20	66-147-40	39	81-076-01	35
63-204	14	66-147-41	39	81-095	35
63-204	19	66-147-42	39	81-095-01	35
63-209	20	66-147-52	39	81-096	35
63-325	15	66-147-63	39	81-096-01	35
63-325	16	66-147-65	39	81-184	35
63-358	36	66-192-23	38	81-185	35
63-359	36	66-193-23	37	81K023	31
63-444	33	66-194-23	38	81K024	31
63-480	29	66-195-23	39	81K026	31
63-480	30	66-274-23	40	81K027	31
63-480	31	66-274-24	40		
63-480	33	66-274-26	40		
63-481	34	66-274-27	40		
63-606	18	66-274-29	40		
63-612	17	66-274-63	40		
63-613	17	66-274-64	40		
63-763	16	66-274-66	40		
63-763	32	66-274-67	40		
63-765	16	66-274-69	40		
63-765	32	66-274-76	40		
63-766	20	66-274-77	40		
63-768	21	66-274-79	40		
63-768	21	66-275-33	40		
63-800	22	66-275-34	40		
63-801	22	66-275-36	40		
63-801-04	23	66-275-37	40		
63-802	22	66-275-39	40		
63-803	22	66-452-20-1	27		
63-836-67	25	66-452-20-2	27		
63-836-70	25	66-452-25-1	27		
63-861	26	66-452-25-2	27		
63-863	27	66-514-23	28		
63-864	27	66-514-26	28		
63-865	27	66-518-23	28		
63-866	27	66-518-26	28		
63K159	33	66-520-23	28		
63K480	29	66-520-26	28		
63K480	30	66-522-23	28		
63K480	31	66-522-26	28		
63K480	33	66-677-33	37		
63K481	34	70-506	23		
63K482	28	81-054-02-2	27		
63K608	24	81-054-04-2	27		
63K609	24	81-054-06-2	27		
63K836-01	24	81-062-03	25		
63K836-02	24	81-062-03	28		
63K836-03	24	81-062-03-1	25		
63K836-04	24	81-062-03-2	25		
63K836-05	24	81-062-04	25		
63K836-15	24	81-062-04-1	25		
63K836-16	24	81-062-04-2	25		
63K837-84	19	81-062-06	25		
63K837-85	19	81-062-06	28		
65-051	16	81-062-06-1	25		
65-051	32	81-062-06-2	25		
65-052	16	81-062-07	25		
65-052	32	81-062-07-1	25		

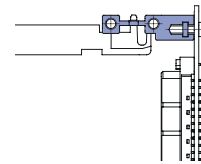
Systemkit 12K Appendix 2: Configuration aid



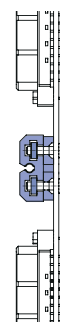
basis for 19" system



Internal extrusion for insulated backplane mounting



Internal extrusion for non-insulated backplane mounting



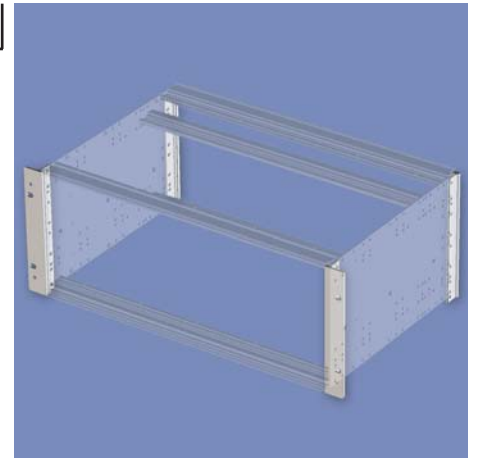
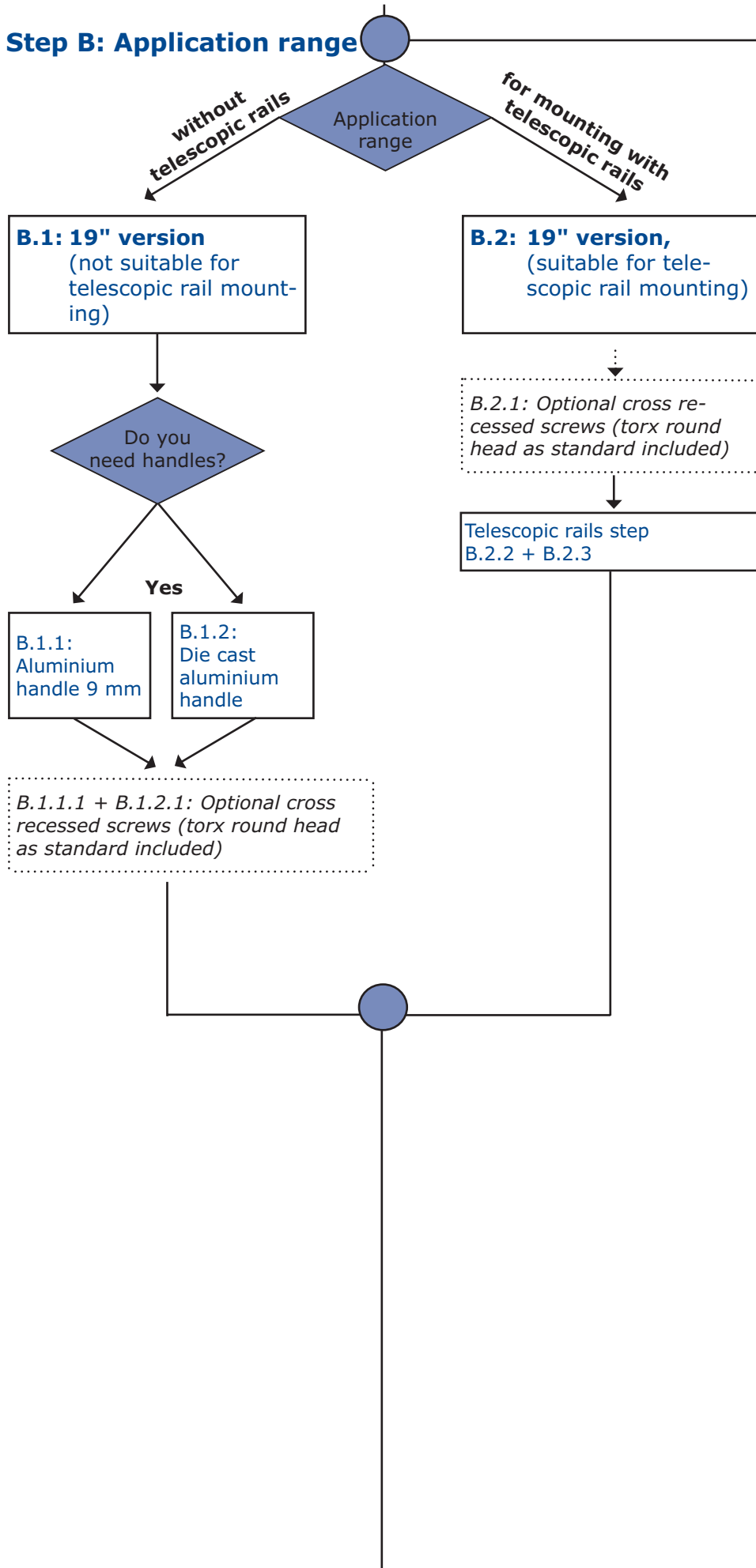
double extrusion for insulated backplane mounting



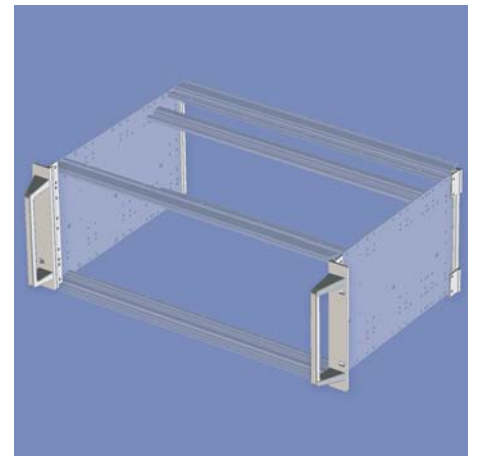
double extrusion for non-insulated backplane mounting

Systemkit 12K Appendix 2: Configuration aid

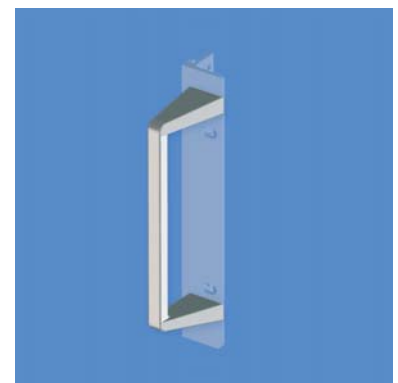
Step B: Application range



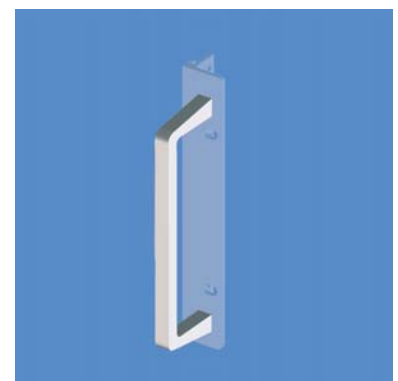
19" case



19" case for telescopic rails



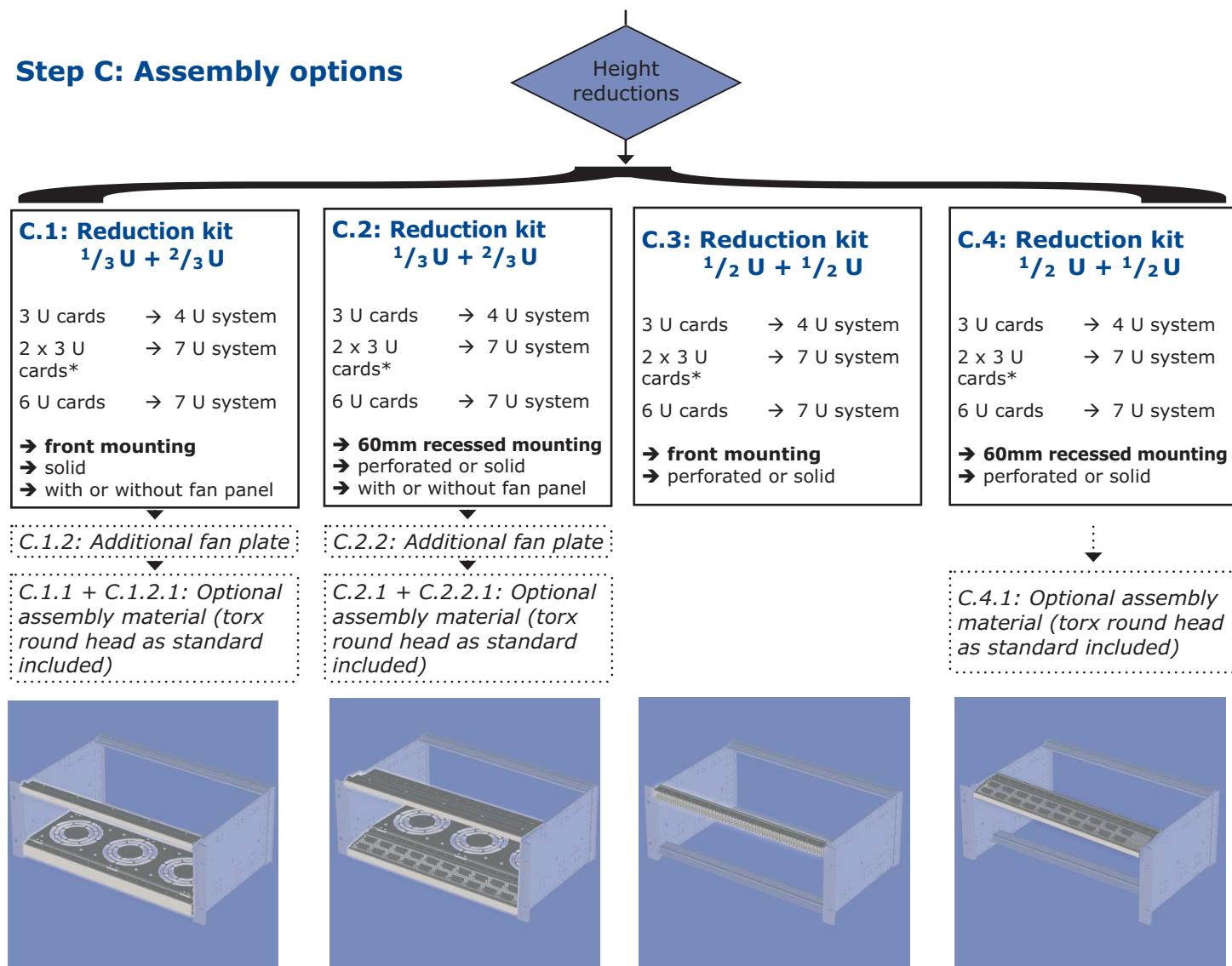
Die cast aluminium handle



9 mm aluminium handle

Systemkit 12K Appendix 2: Configuration aid

Step C: Assembly options



*2 x 3 U cards

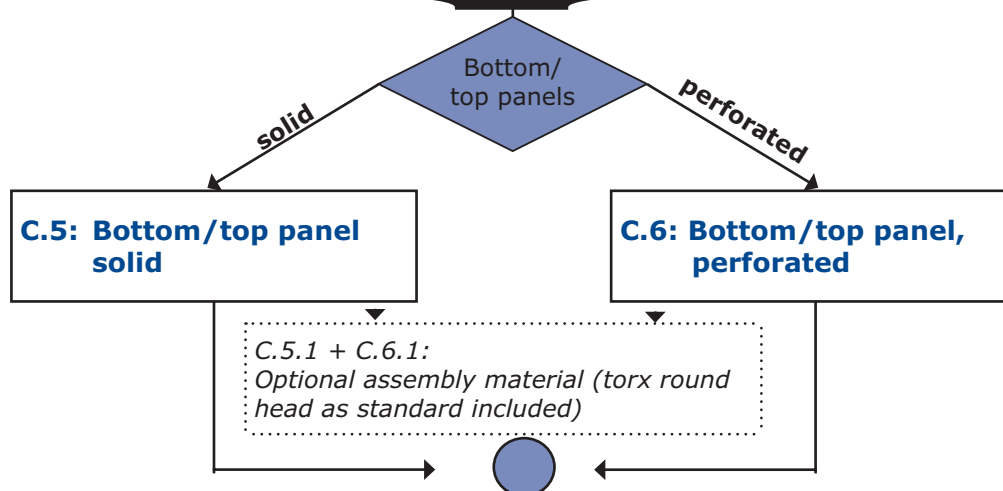
To mount two 3 U cards with two 3 U backplanes you have to order additional internal extrusions, step A.4 (insulated) or A.5 (non insulated)

To mount two 3 U cards with a 6 U (monolit) backplane, use set 12K504, step D.1

Recessed mounting without height reduction

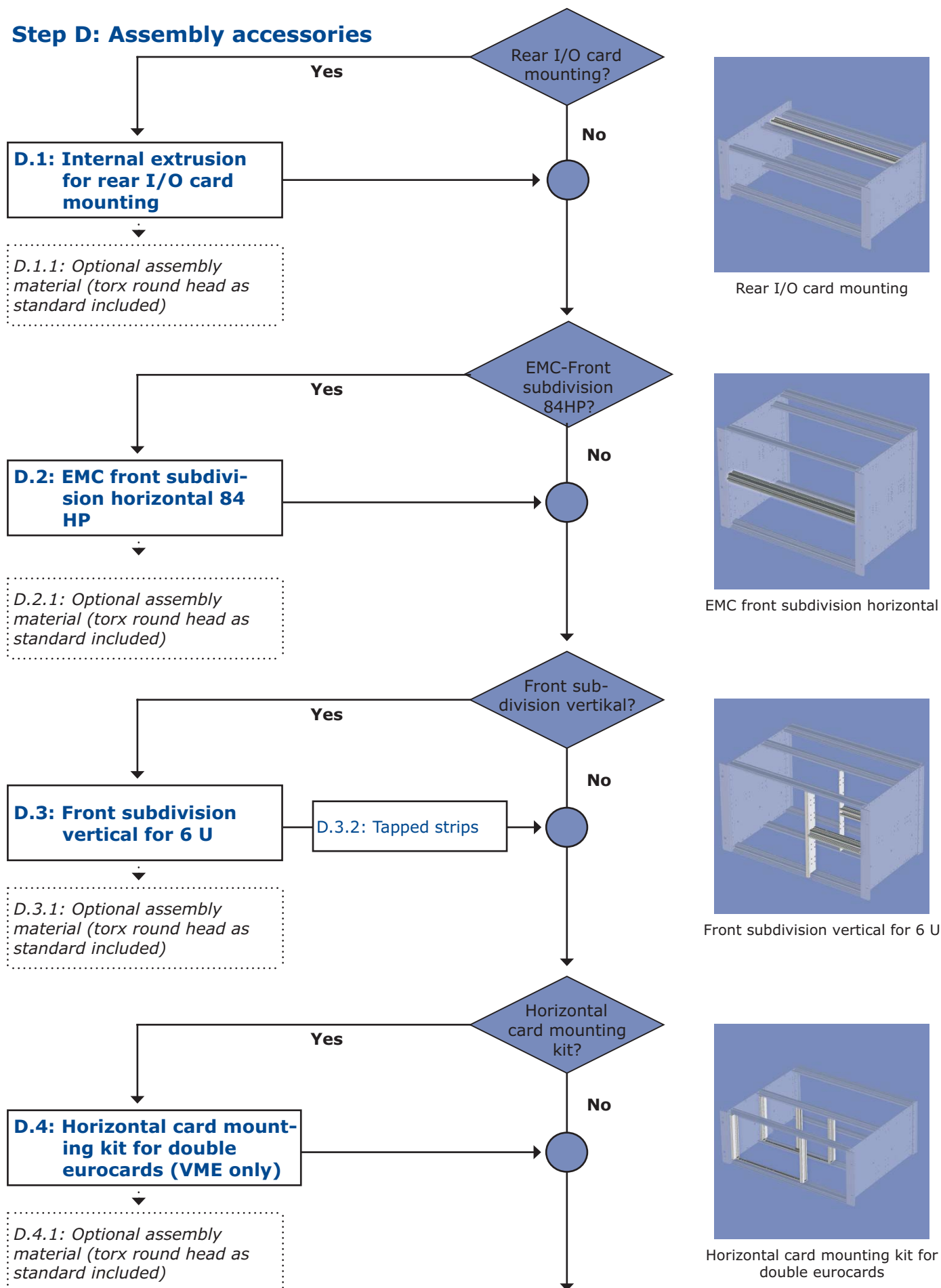
For recessed mounting in 3 U or 6 U applications you have to order additional internal extrusions, step A.4 (insulated) or A.5 (non insulated)

! note: with this combination it isn't possible to mount front panels

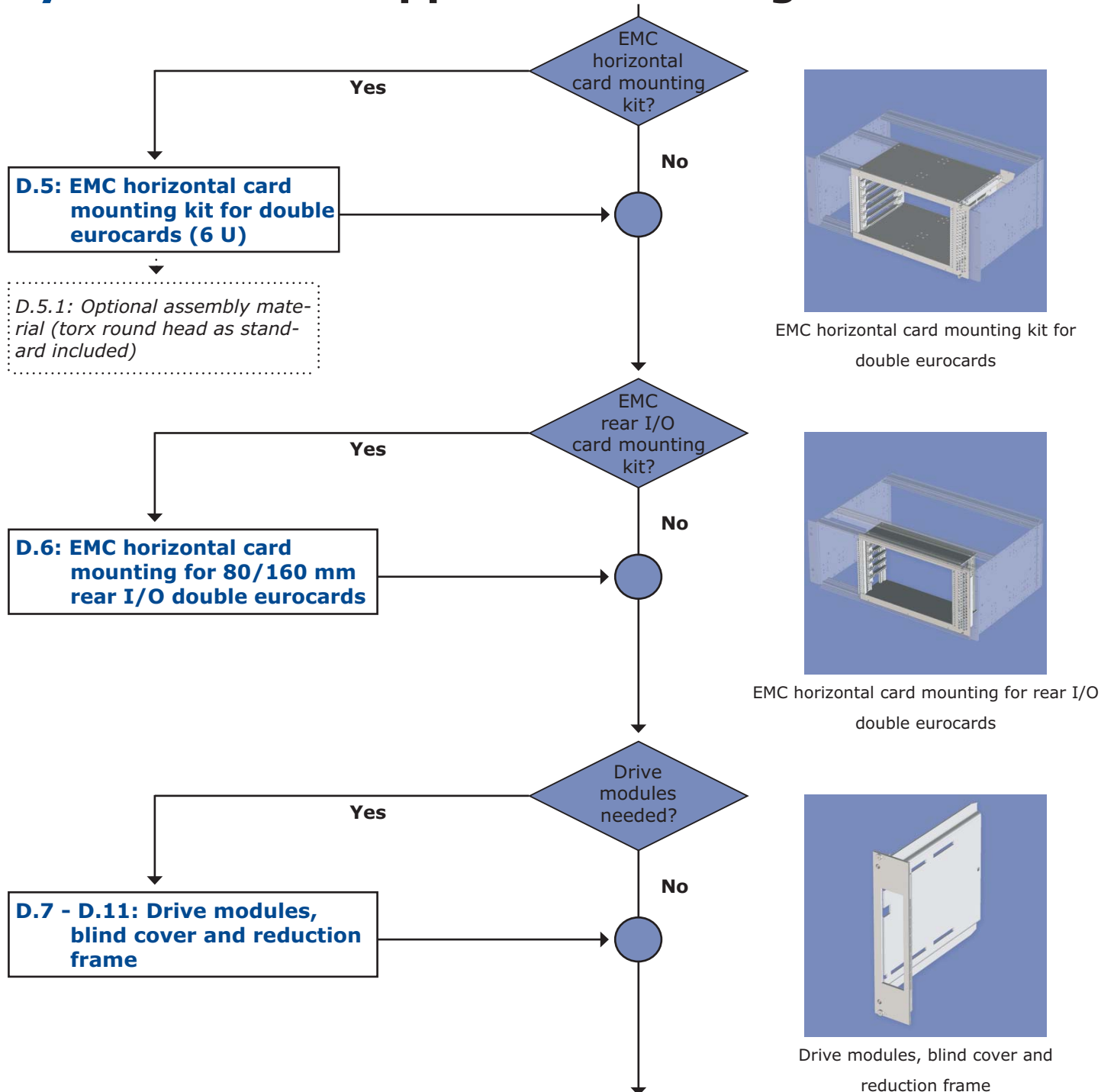


System Kit 12K Appendix 2: Configuration aid

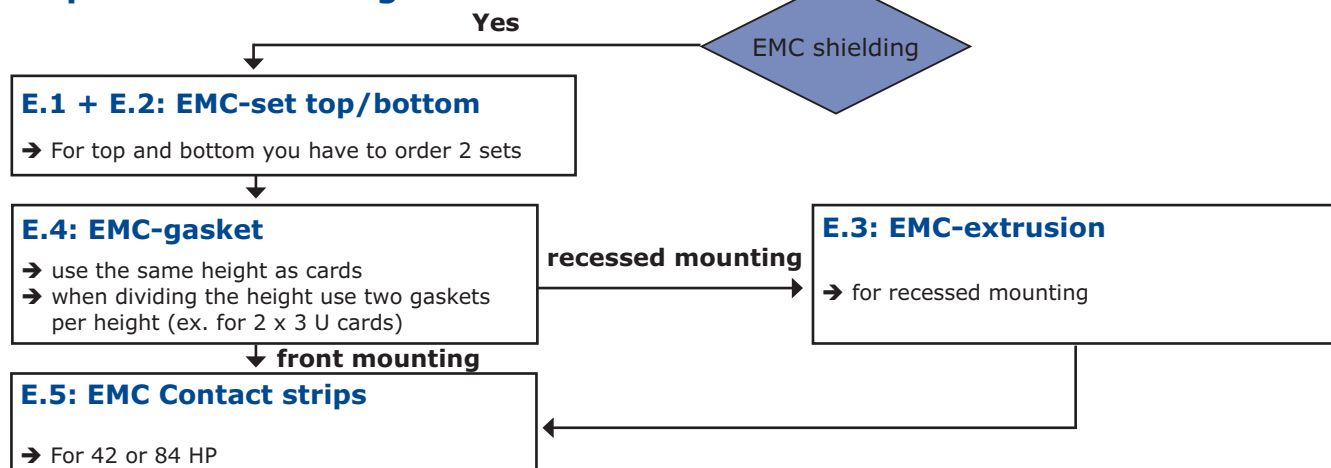
Step D: Assembly accessories



Systemkit 12K Appendix 2: Configuration aid



Step E: EMC-shielding



Enclosures & Components Product Overview

About

Elma is a global manufacturer of products for housing electronic systems. Take advantage of the know-how of our development and applications engineers that create products which are more than mere packaging of your electronics.

The latest equipment for development, production and logistics provides the preconditions to satisfy your high quality standards.



Products

- Sub racks
- Enclosures
- Cabinets
- Front panels
- Injector/Ejector Handles
- Accessories
- Extrusions
- Custom

Applications

- Railway Rolling Stock
- Telecom Equipment
- Test and Measurement Equipment
- Industrial Automation
- Medical Equipment
- Security Systems



Custom

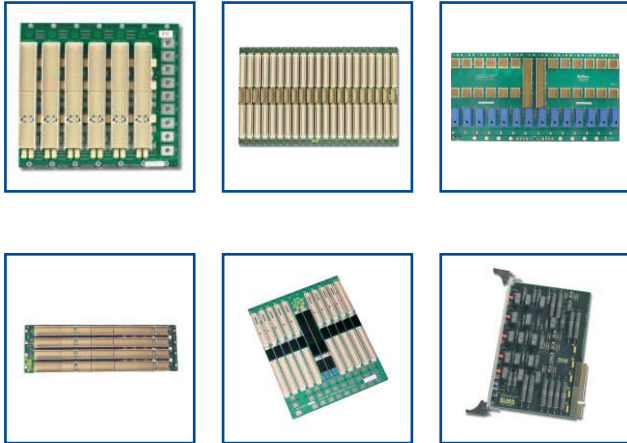
Your needs together with the experience and ideas of the Elma Electronic Packaging Team give you the advantage to create solutions to every specific application. Our worldwide team, and state-of-the-art CAD system, are ready to develop solutions to meet your next project challenge.

Backplanes Product Overview

About

Elma is the leader in high-performance backplane solutions. Our standard product portfolio includes VME/VME64x, cPCI, VXI, PXI, VXS, ATCA, and Switched Fabrics. Our application engineers also develop custom backplanes to meet your specifications, from initial concept to finished product.

System Accessories are also an important part of the Elma product portfolio. These include creative and innovative designs for cPCI-Bridges test extender boards, voltage/system monitors, load boards and more.



Products

- cPCI
- ATCA
- Switched Fabrics
- VME/VME64x
- VME320
- VXS
- VXI
- PXI
- Accessories
- Custom Solutions

Applications

- Aerospace
- Military/Homeland Security
- Industrial Automation
- Transportation
- Telecommunications
- Medical
- High-performance Computers



Custom

As switched serial interconnects place higher performance demands on backplanes, you need a design team that is up to the challenge. Elma Bus-tronic and Elma TreNew, Elma's backplane divisions, have been leaders and innovators in high-speed custom backplane design. Our signal integrity analysis and simulation/characterization tools (HSPICE, IConnect, etc.), ensure that we supply you with an efficient cost-effective design solution that works superbly the first time, every time. And we continue to expand our technical resources with new high-speed measurement technology, interconnect model extraction, and software to support measurement driven design.

System Platforms Product Overview

About

Superior solutions require a solid foundation. Elma VME/VME64x, cPCI, VXI, PXI, VXS, ATCA, and Switched Fabric enclosure systems provide an optimal platform on which to build your application.

A wide range of products and a modular approach to design allows Elma to meet the requirements of the most demanding applications. Based on quality Swiss components and proven design concepts, Elma's systems are used as the critical building blocks for many successful applications.



Products

- cPCI
- ATCA
- Switched Fabrics
- VME/VME64x
- Rugged COTS
- VXI
- IPC
- Accessories
- Custom Solutions

Applications

- Aerospace
- Military/Homeland Security
- Industrial Automation
- Transportation
- Telecommunications
- Medical
- High-performance Computers



Custom

Elma has been designing custom chassis solutions for the embedded systems market for over 20 years. Our highly experienced team of engineers have expertise in mechanical and electrical enclosure design with emphases on thermal management, EMC, shock/vibration, system monitoring, reliability and maintainability.

Switches, Knobs & LEDs Product Overview

About

Elma's precision switches, encoders and LED arrays set the standard for quality, ruggedness and flexibility. In every market we serve, our reputation for innovation has made Elma the choice of product engineering professionals. Our 6-Sigma designs have earned Elma the "Preferred Vendor" status year after year by the world's finest portable radio manufacturers.



Products

- Coded Switches
- Encoders
- Rotary Switches
- Keylock Switches
- Audio Switches
- Collet Knobs, Push-on Knobs & Accessories
- LED Arrays
- SMD Compatible Components
- Custom Solutions

Applications

- Two-Way Radios
- Test and Measurement
- Medical Equipment
- Radio Guidance for Crane Systems
- Robotics
- CNC and Industrial Controls
- Audio/Video Systems



Custom

Our system of easily modifiable shafts, bushings, torques and switching schemes enables Elma to have the right switch or encoder for your product, even in small quantities. We secure superior quality for product we make.



● Elma Companies

 Switzerland

Elma Electronic AG

Hofstrasse 93

Postfach

8620 Wetzikon

Phone ++41 44 933 41 11

Fax CH ++41 44 933 42 15

Fax internat. ++41 44 932 38 12

sales@elma.ch

 Germany

Elma Trenow Electronic GmbH

Stuttgarter Strasse 11

75179 Pforzheim

Phone ++49 7231 97 340

Fax ++49 7231 97 3497

info@elma.de

 Israel

Elma Electronic Israel Ltd.

9, Ben Zion Galis St.

I.Z. Sgula

Petach-Tikva 49277

Phone ++972 3 930 5025

Fax ++972 3 931 3134

sales@elma.co.il

 France

Elma Electronic France SASU

ZA du Buisson Rond

38460 Villemairie

Phone ++33 4 37 06 21 10

Fax ++33 4 37 06 21 19

sales@elma-electronic.fr

 United Kingdom

Elma Electronic UK Ltd.

Premier Business Centre

Speedfields Park

Fareham

Hampshire

PO14 1TY

Phone ++44 1329 289 100

Fax ++44 1329 289 101

sales@elma-electronic.co.uk

Mektron Systems Limited

Unit 8, Bedford Business Centre

Mile Road

Bedford MK42 9TW

Phone ++44 1234 272 677

Fax ++44 1234 761 335

sales@mektron.co.uk

 Rumania

Elma Electronic Romania SRL

Str. Maltopol Nr. 16

011048 Bucharest

Phone ++4021 310 79 98

++4021 310 79 94

Fax ++4021 310 79 92

info@elma.ro

Elma Electronic Romania SRL

Calea Buziasului Nr. 11 A

1900 Timisoara

 China

Elma (Shanghai) Co., Ltd

Suite 605, Building 4

258 Jin Zang Road

20106 Shanghai

Phone ++86 21 503 18 717

Fax ++86 21 503 18 731

sales@elmachina.com

 USA

Elma Electronic Inc.

44350 Grimmer Blvd.

Fremont, CA 94538

Phone ++1 510 656 3400

Fax ++1 510 656 3783

sales@elma.com

Elma Electronic Inc.

P.O. Box 600

416 North Solomons Island Rd

Prince Frederick

MD 20678-0600

Phone ++1 410 414 9762

Fax ++1 410 414 9763

sales@elma.com

Elma Electronic Inc.

N. 7 Technology Drive

Chelmsford, MA 01863

Phone ++1 978 441 3838

Fax ++1 978 441 9272

sales@elma.com

Elma Electronic Inc.

17700 Shideler Parkway

Lathrop, CA 95330

Elma Bustronic Corp.

44350 Grimmer Blvd.

Fremont, CA 94538

Phone ++1 510 490 7388

Fax ++1 510 490 1853

sales@bustronic.com

Optima EPS Corp.

2166 Mountain Industrial Blvd.

Tucker, GA 30084

Phone ++1 770 496 4000

Fax ++1 770 496 4041

sales@optimaeps.com

Your local solution partner: