AIR.GO ASSISTANT 2.0

FIRE SAFETY REPORT

NOVEMBER 2024

MARCUS PEDERSEN

AIRPORT INNOVATION

VERSION CONTROL

Version	Date	Changes	Author(s)
1.0	19/09/24	Initial Creation	Luna Lethin & Laura Louise Frøjk
1.1	01/10/24	Updated data on fire-retardant materials	Philip Simonsen & Laura Louise Frøjk

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TABLE OF CONTENT

INTRODUCTION

The Air.Go Assistant 2.0 is a mobile workstation designed for use in airports. It is built to industrial standards and consists of a steel frame clad in aluminum, housing various electrical and electronic components. Inside the Air.Go Assistant 2.0, actuators allow for height adjustment of the working area. Above the workspace, a monitor (HMI) and a light source in the form of an LED strip are installed. Another light source in the form of an LED is located at the base.

The product is mobile, equipped with wheels and handles. Steel drawers are installed within the housing. The exterior of the product is made exclusively from non-combustible materials, including aluminum and steel panels, while the tabletop is crafted from fire-retardant MDF. Below is an illustration of the Air.Go Assistant 2.0.

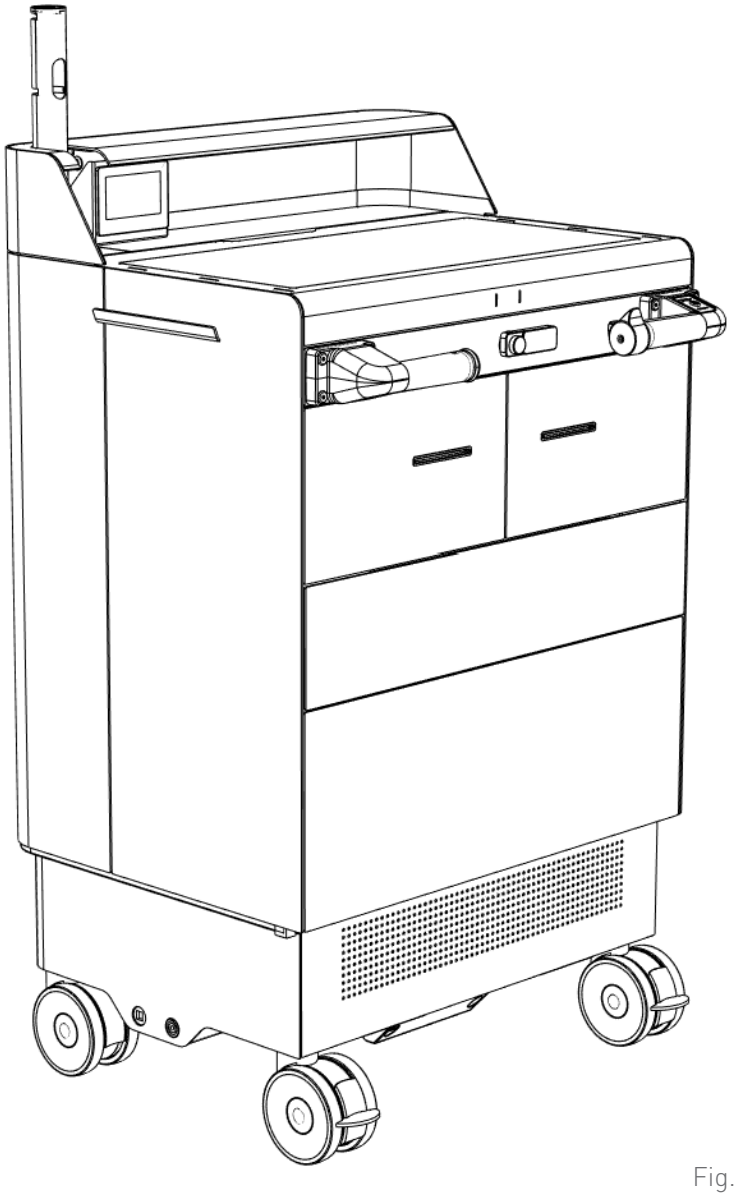


Fig. 1.

FIRE HAZARD

The Air.Go Assistant 2.0 is composed of non-combustible materials, with exterior cladding panels made of powder-coated aluminum and the internal frame and lower structure constructed from powder-coated steel. All openings and cutouts are smaller than 4 mm, except for the slots used for printing baggage tags and boarding passes, as well as ventilation openings with a diameter of 5 mm located in the base plate.

Fire Load/Smoke Behavior

High-quality industrial components and materials are used in the construction of the Air.Go Assistant 2.0. Most of the cables used are halogen-free. The fire risk associated with the device's external surface is described as follows:

- **Powder-coated frame and cladding:** These components are classified as non-combustible since powder-coated steel and aluminum are considered fire-resistant materials.
- **Wheels:** Made of polyamide, which is fire-resistant due to its high melting point.
- **Tabletop:** Composed of fire-retardant MDF with a fire-retardant HPL (High-Pressure Laminate) coating, making it fire-resistant.
- **Monitor:** The outer casing is made of polycarbonate, known for its low flammability and flame-retardant properties.
- **LED Workspace Strip:** The housing is made of polycarbonate, which provides low flammability and flame-retardant properties.
- **LED Base Strip:** Composed of copper and silicone, which are generally classified as non-combustible.

COMPONENTS

This section provides detailed descriptions of the individual parts of the Air.Go Assistant 2.0.

UPPER FRAME AND CLADDING

The upper frame is highlighted in blue in Figures 2 and 3.

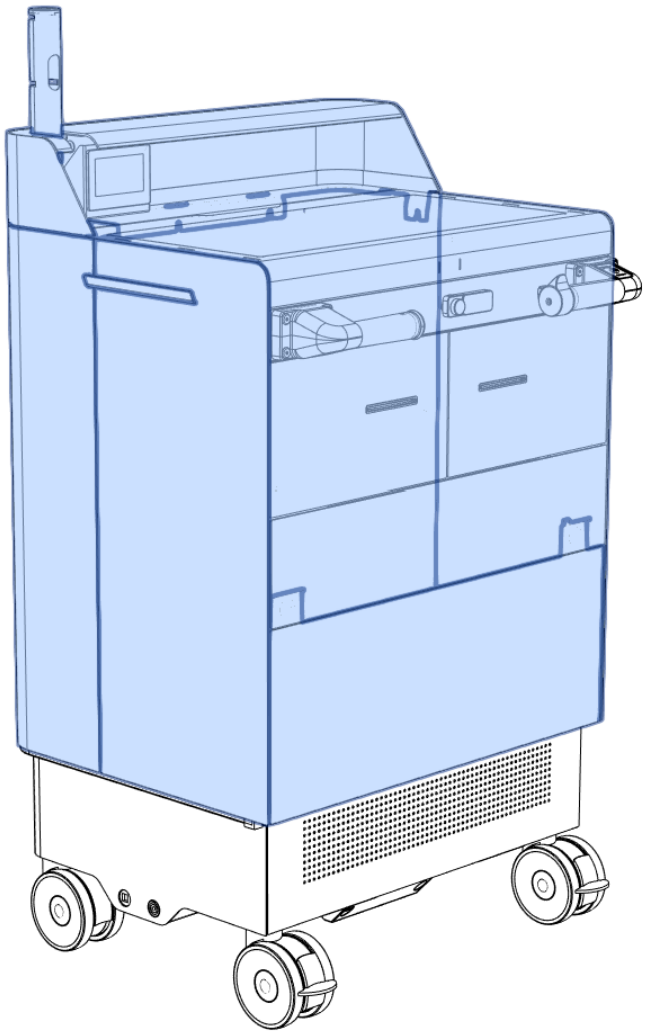


Fig. 2.

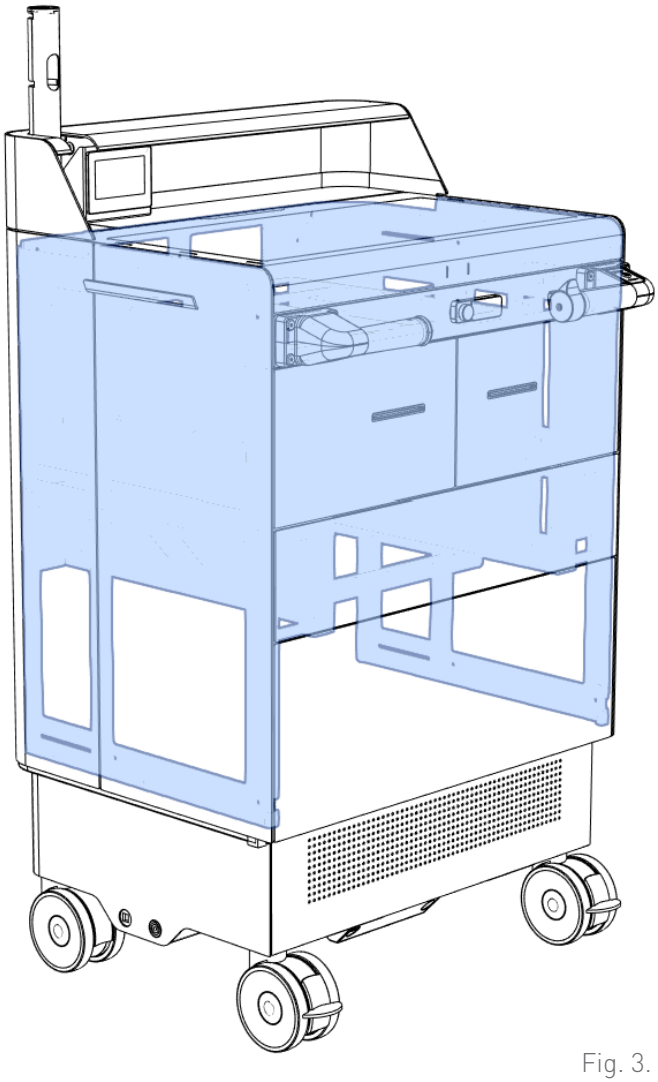


Fig. 3.

Notes

The notes regarding the upper frame with cladding are outlined in the table below.

Notes on the Upper Frame with Cladding	
Material	Aluminum (powder-coated) (Fig. 2) Steel (powder-coated) (Fig. 3)
Flammability	100 % non-flammable

LOWER FRAME AND CLADDING

The lower frame and cladding are highlighted in blue in Figures 4 and 5.

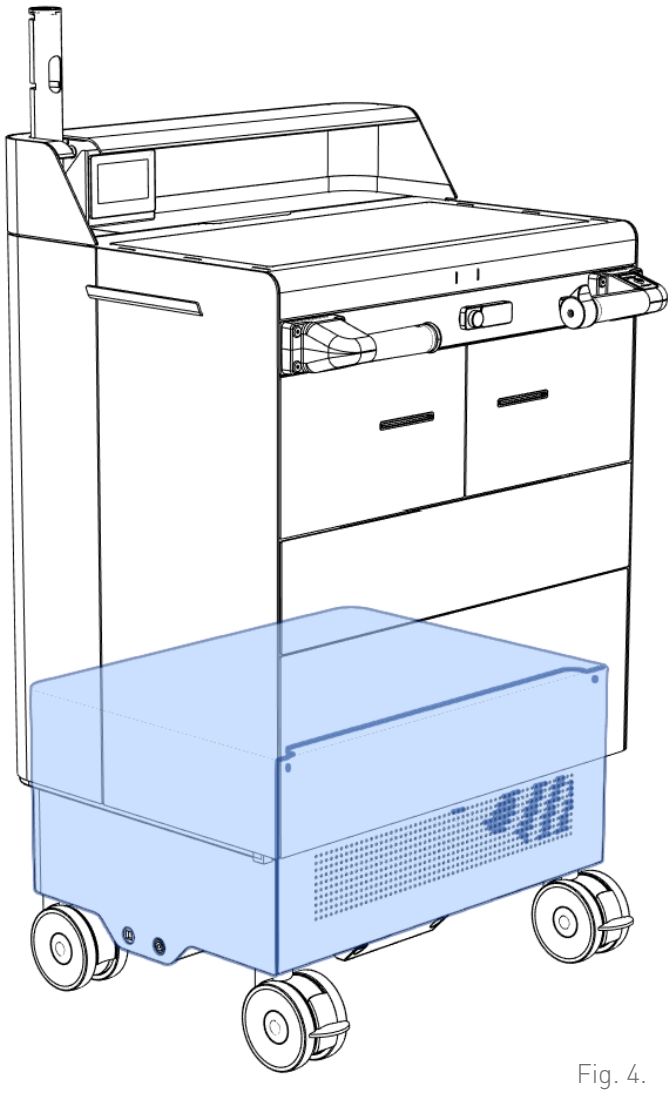


Fig. 4.

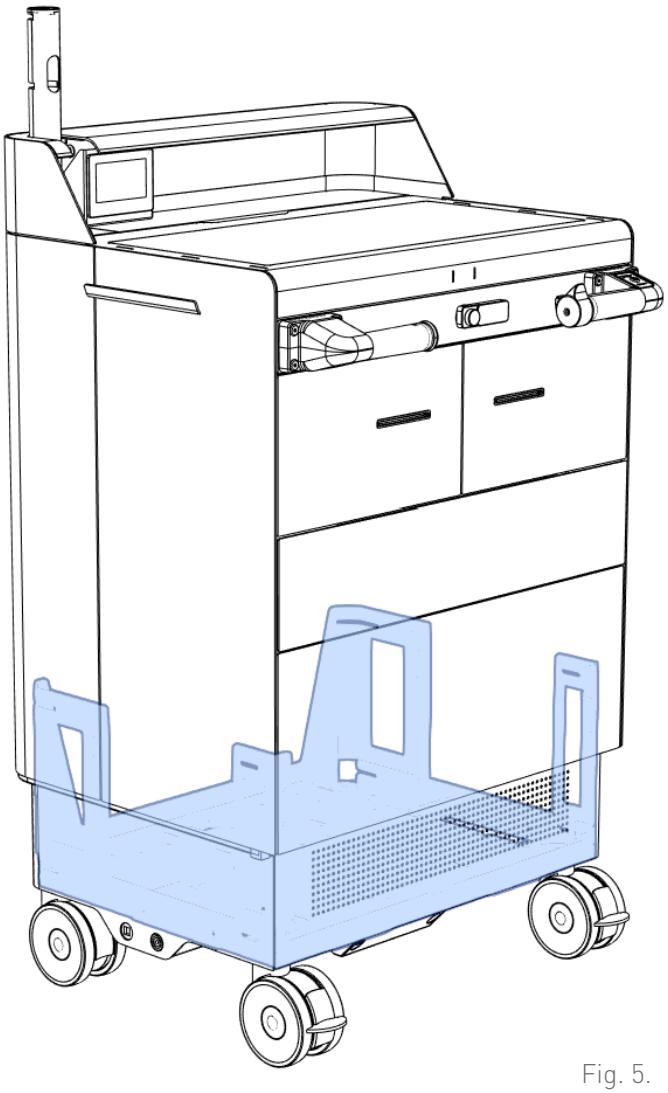


Fig. 5.

Notes

The notes regarding the lower frame with cladding are outlined in the table below.

Notes on the Lower Frame with Cladding	
Material	Stainless Steel (Fig. 4) Steel (powder-coated)) (Fig. 5)
Flammability	100 % non-flammable

TABLETOP

The tabletop is highlighted in blue in Figure 6.

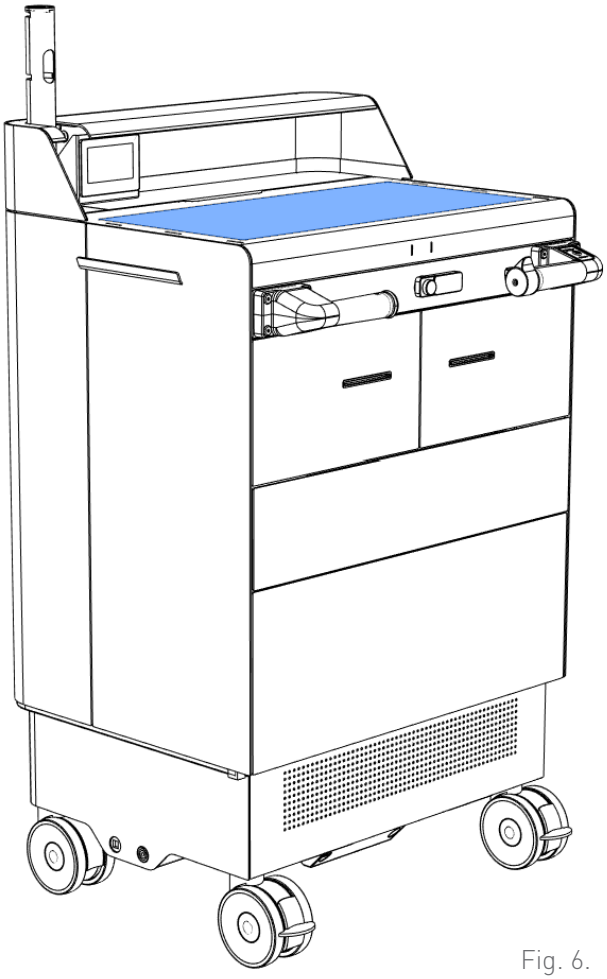


Fig. 6.

Notes

The notes regarding the Tabletop are outlined in the table below.

Notes on the Tabletop	
Material	MDF – 12 mm Fire resistance raiting: – B-s2,d0 – Norm EN 13501-1 (Page 20-22)
	HPL (High-Pressure Laminate) – 0,8 mm Fire resistance raiting – B-s1,d0 – Norm EN 13501-1 (Page 20-22)
Weight	MDF: 2,8 kg
	HPL: 0,3 kg
Flammability	Fire-resistant

TECHNICAL SPECIFICATIONS

Components

This section provides an overview of the components of the Air.Go Assistant 2.0.

ACTUATOR AND CONTROL BOX

The working area features an electric height adjustment function, enabling customization to the user's needs.

The position of the actuator and control box is highlighted in blue in Figure 7. The components are detailed as follows:

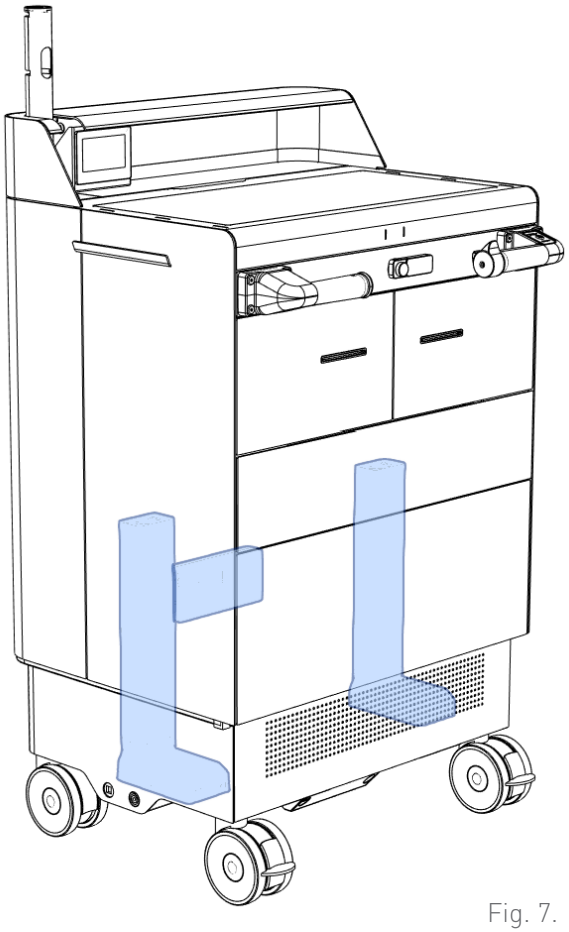


Fig. 7.

Actuator, Type: DL5
Black DL5001BN0300445

Contolbox, Type: CBD6S
CBD6SP00020A-009

DRIVE MOTOR, CONTROL BOX AND HANDLE

The Air.Go Assistant is equipped with handles made of fiberglass-reinforced polyamide. These are connected to the motorized assistance system to facilitate mobility.

The position of the drive motor, control box, and handle is highlighted in blue in Figure 8. The components are detailed as follows:

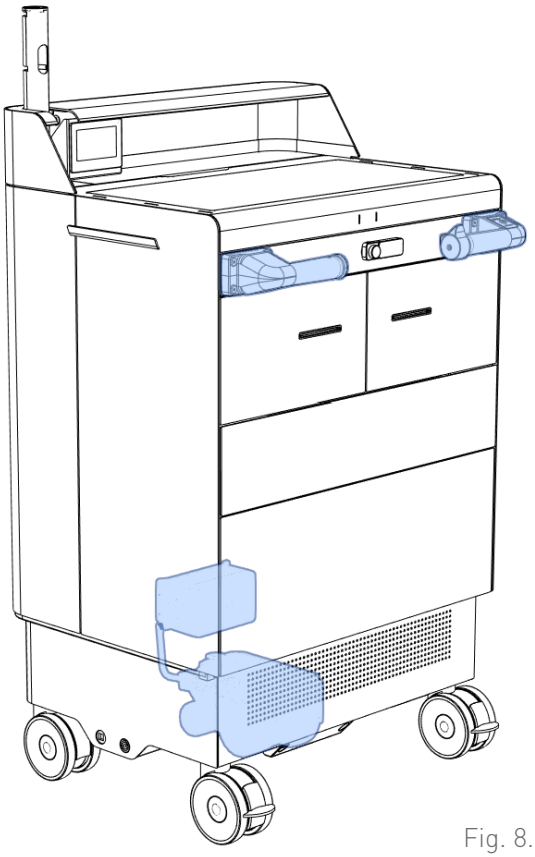
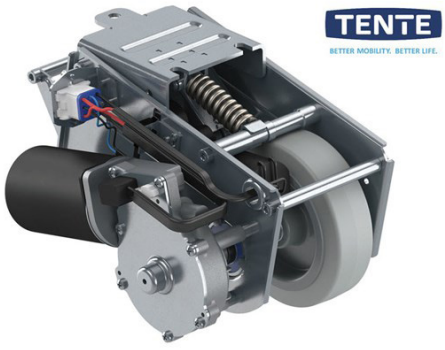
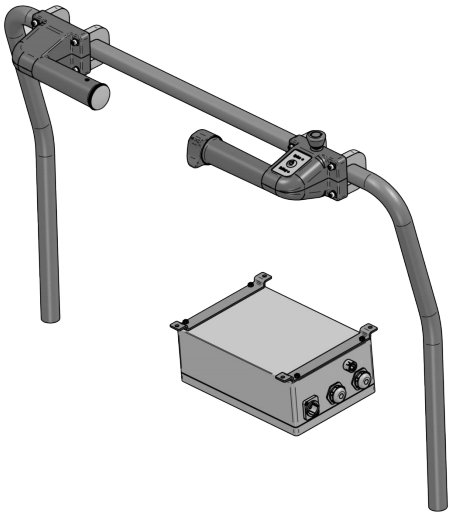


Fig. 8.

TENTE E-Drive
Complete system



TENTE E-Drive
Ultimate Twin Dual Control System



INVERTER AND CONVERTER

The position of the inverter and converter is highlighted in blue in Figure 9. The components are detailed as follows:

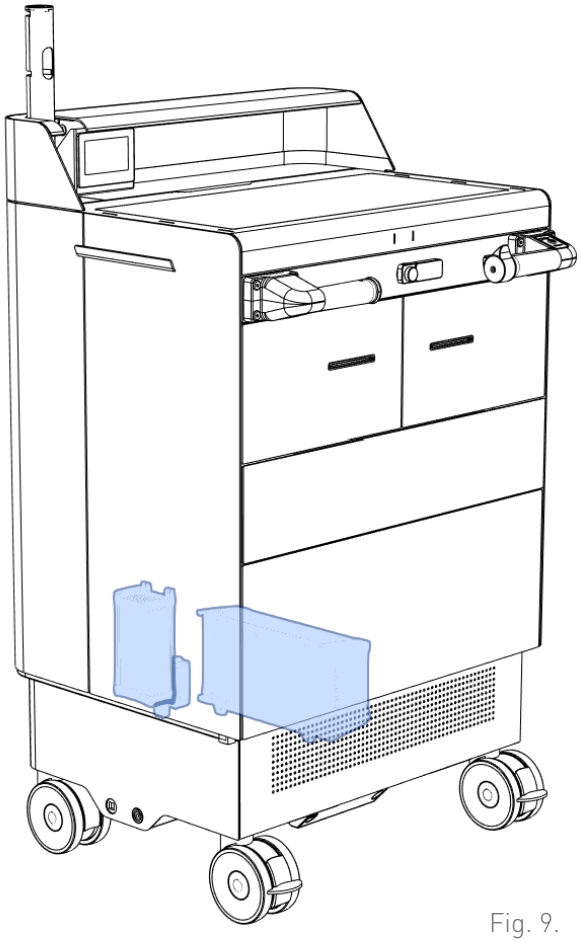


Fig. 9.

Inverter
MultiPlus 12/500/20-16 230 - VEP-MP121500000

Battery Shunt
SmartShunt 500A/50mV - VES-HU050150050

DC-Converter
Orion 12/24-20 DC-DC Converter IP20 - VEORI122420020

BATTERY

The position of the Deep Cycle GEL battery (a lead-acid battery) is highlighted in blue in Figure 10. The individual components are detailed below.

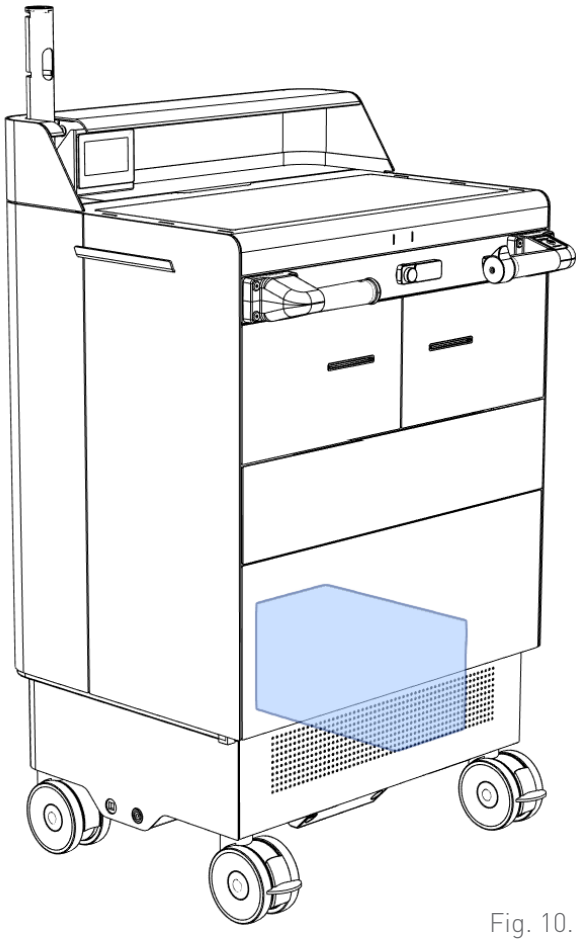


Fig. 10.

12 Volt Deep Cycle GEL
VEBAT412101104

CONTROL PANEL WITH PLC AND HMI

The position of the control panel with PLC and HMI is highlighted in blue in Figure 11. The components are detailed as follows:

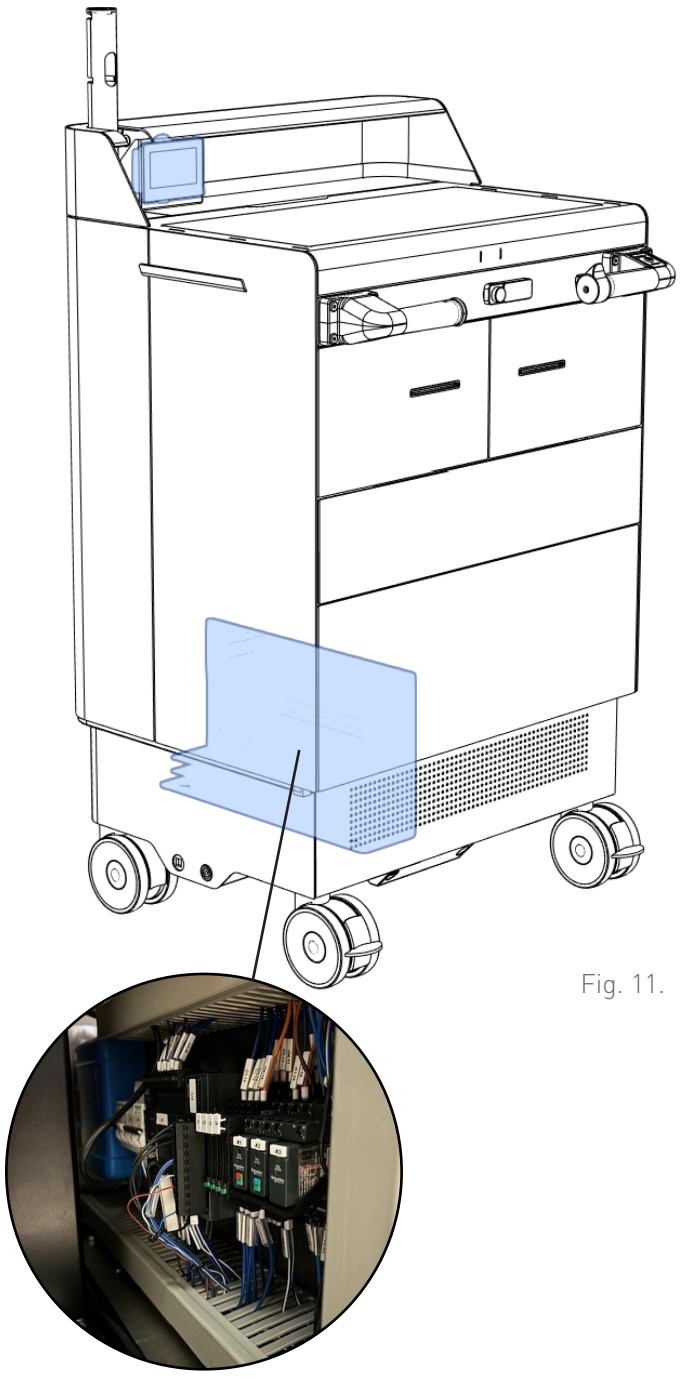


Fig. 11.

Kombiausleger acti9 iCV49N 1P+N 10A C SI 30mA
A9DF3610

acti9 iC60H MHB 1 POLE 10A
A9F06110

PLC-Controller m221 - 16 IO
TM221CE16T

HMI 4.3" WT-Color, Ethernet
Pro-Face – PFXGP4114T2D

LED WORKSPACE LIGHTING

The position of the LED workspace lighting is highlighted in blue in Figure 12. The components are detailed as follows:

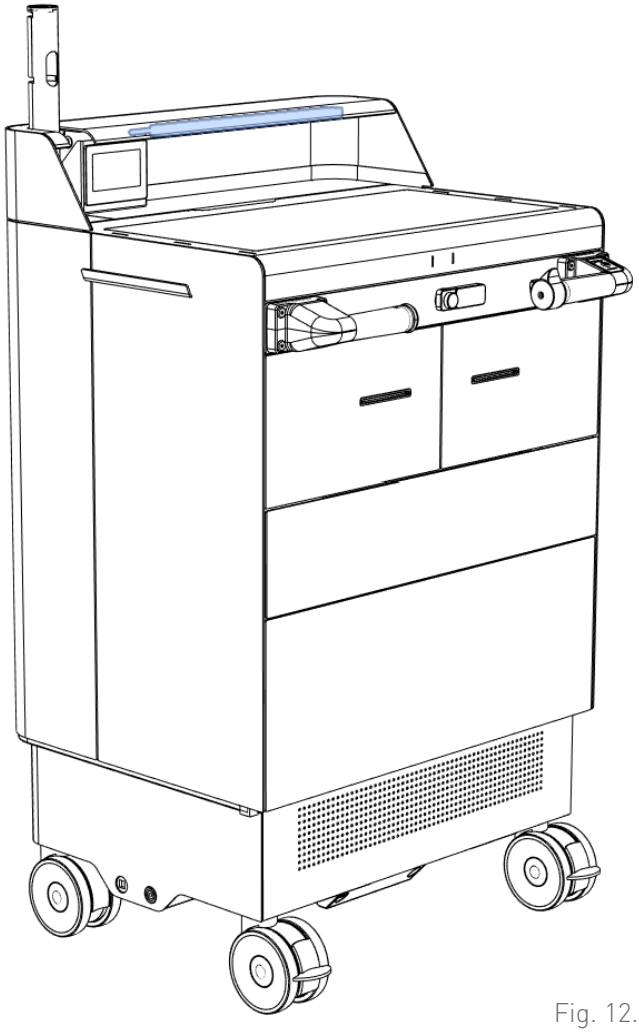


Fig. 12.

LED STRIP RX HD IP20 24V 4000K 5M
5457002009

ART PROFIL LOW 2M WHITE
5445625223

ART COVER OPAL 2M
5445625197

ART END CAP LOW WHITE 2 STK
5445625126

ART BRACKETS HIGH & LOW WHITE 2 STK
5445251969

LED BASE LIGHTING

The position of the LED is highlighted in blue in Figure 13. The individual components are detailed below.

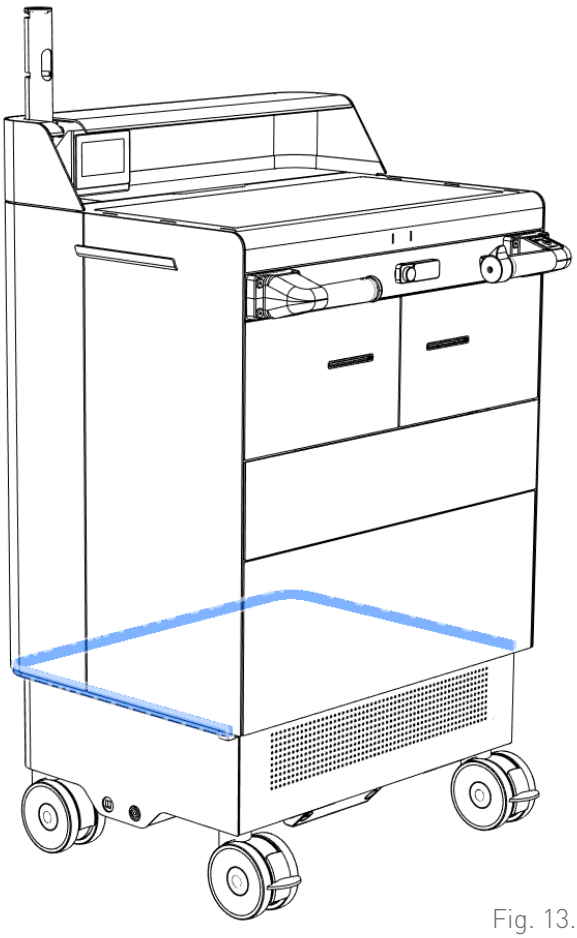


Fig. 13.

LEDstrip 24V Neon Top IP67

LOCK

The position of the lock is highlighted in blue in Figure 14. The individual components are detailed below.

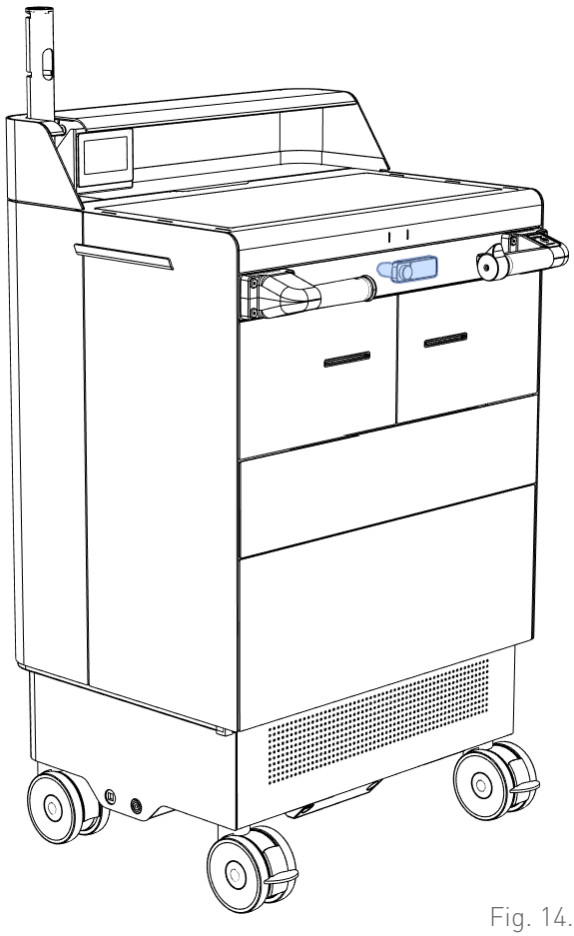


Fig. 14.

Südhaus Lock
3003601099

WHEELS

The position of the wheels is highlighted in blue in Figure 15. The wheel components consist of a polyamide fork and rim, with a polyurethane tread. Details include:

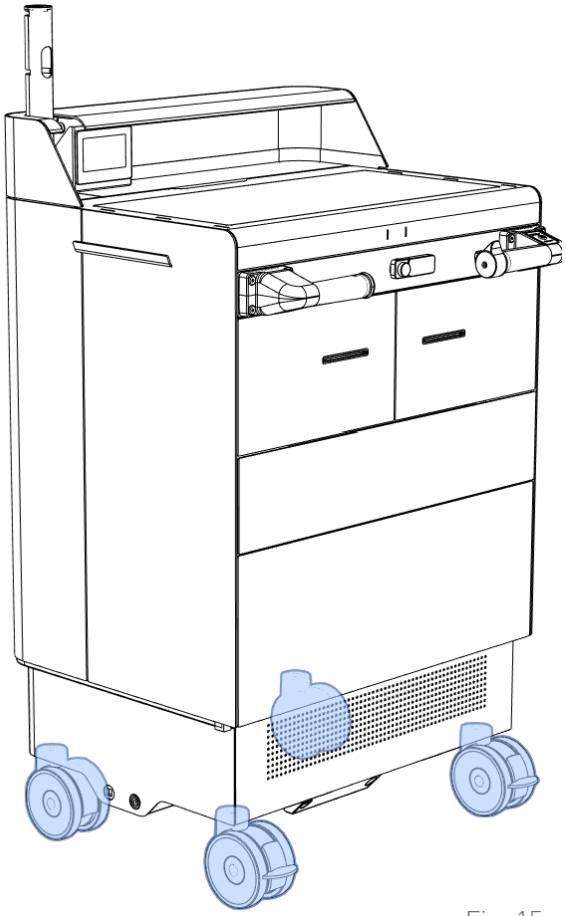


Fig. 15.

Wheel with Brakes
00774406 5947XSP125P30
13,0 LINEA Breaking Wheel, RAL9

Rad without Brakes
00774405 5940XSP125P30
13,0 LINEA Electric Turning Wheel

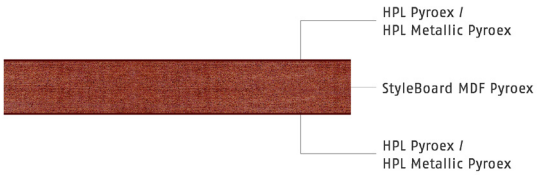
August 2014

Technical details

Duropal-Element MDF Pyroex

Flame resistant flat bonded element of a medium-density fibreboard core (MDF) with uniform structure and flame retardant properties, faced on both sides with Duropal-HPL Pyroex or Duropal-HPL Metallic Pyroex.

CE



Specification			Unit	Standard
Nominal thickness	**17.6**	**20.6**	**mm**	
Length	**2,800**	**2,800**	**mm**	
Width	**2,070**	**2,070**	**mm**	
Thickness tolerance	± 0.5		mm	ISO 13894-1
Length tolerance	± 5		mm	ISO 13894-1
Length tolerance (pre-cut panels)	± 2.5		mm	ISO 13894-1
Width tolerance	± 5		mm	ISO 13894-1
Width tolerance (pre-cut panels)	± 2.5		mm	ISO 13894-1
Flatness (length)	≤ 2 [1)]		mm/m	ISO 13894-1
Flatness (width)	≤ 2 [1)]		mm/m	ISO 13894-1
Edge defects	≤ 10		mm	EN 14323
Edge defects (pre-cut panels)	≤ 3		mm	EN 14323
Surface defects	≤ 1 [2)] ≤ 10 [3)]		mm²/m² mm/m²	EN 438-2
Gross density	780 [4)]		kg/m³	EN 323
Density range	± 10 [4)]		%	EN 323
Bending strength	≥ 20 [4)]		N/mm²	EN 310
Modulus of elasticity (bending stiffness)	≥ 2,200 [4)]		N/mm²	EN 310
Tensile strength	≥ 0.55 [4)]		N/mm²	EN 319
Resistance to fixings (face)	≥ 1,000		N	ISO 13894-1
Resistance to fixings (edge)	≥ 600		N	ISO 13894-1
Bonding strength	≥ 0.7		MPa	ISO 13894-1
Glue-line quality	4		rating	ISO 13894-1
Resistance to impact (small diameter ball)	≥ 15		N	ISO 13894-1
Resistance to impact (large diameter ball)	≥ 600		mm	ISO 13894-1
Initial wear point (IP)	≥ 50 [5)] ≥ 150 [6)]		U	EN 438-2
Wear restistance (WR)	≥ 150 [5)] ≥ 350 [6)]		U	EN 438-2

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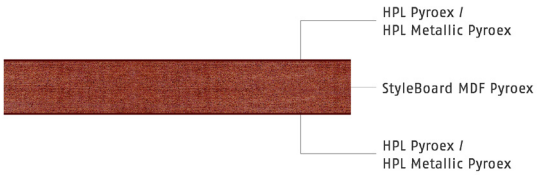

Specification			Unit	Standard
Nominal thickness	**17.6**	**20.6**	**mm**	
Length	**2,800**	**2,800**	**mm**	
Width	**2,070**	**2,070**	**mm**	
Resistance to surface wear	min. 2 [5)] min. 3 [6)]		class	EN 438-2
Resistance to scratching	min. 2 [5,7)] min. 3 [6)]		rating	EN 438-2
Stain resistance (groups 1 & 2)	min. 5 [8,7)]		rating	EN 438-2
Stain resistance (group 3)	min. 4 [8,7)]		rating	EN 438-2
Resistance to cigarette burns	min. 3 [8)]		rating	EN 438-2
Resistance to dry heat / 180 °C (smooth finishes)	min. 3 [8)]		rating	EN 438-2
Resistance to dry heat / 180 °C (textured finishes)	min. 4 [8)]		rating	EN 438-2
Resistance to wet heat / 100 °C (smooth finishes)	min. 3 [8)]		rating	EN 12721
Resistance to wet heat / 100 °C (textured finishes)	min. 4 [8)]		rating	EN 12721
Resistance to water vapour (smooth finishes)	min. 3 [8,7)]		rating	EN 438-2
Resistance to water vapour (textured finishes)	min. 3 [7)] min. 4 [8)]		rating	EN 438-2
Light fastness (xenon arc light)	min. 4		grey scale rating	EN 438-2
Thermal conductivity	≤ 0.13		W/(mK)	EN 12524
Calorific value	env. 18		MJ/kg	ISO 1716
Reaction to fire	fire-retardant			
Reaction to fire (Euroclass)	B-s2,d0			EN 13501-1
Field of application	1 - Dry area [4)]			DIN 1052
Formaldehyde emission class	E1			EN 120

[1)] If symmetrical construction
[2)] Dirt, spots and similar surface defects
[3)] Fibres, hairs and scratches
[4)] Core material
[5)] Classification VGF
[6)] Classification HGF
[7)] Duropal-HPL Metallic Pyroex
[8)] Duropal-HPL Pyroex

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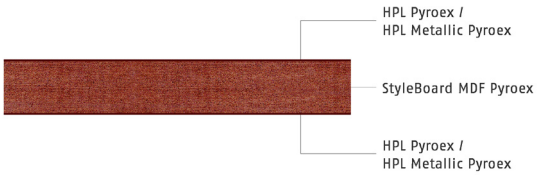

Additional Information

Product safety	• This product is following the REACH regulation EG 1907/2006 an article. Following Article 7 it needs not to be registered. • The surface is physiologically safe, and approved for direct contact with food.
Special	• Holohedral metallic desigs can show because of light refraction certain optical area effects which also can be directional and slightly higher differences in the colour connection in comparison to classic plain colours. • Please consider that metallic designs react more sensitive to scratching and abrasion as well as to humidity as normal printed designs. The sensitivity of the surface increases with growing metallic content. The surface values of the relevant product standard are therefore only limited fulfilled. • Duropal-HPL / Duropal HPL Pyroex / Duropal-HPL IMO: Classification HGP / HGF is achieved with the surface textures HS, MS, FG, VV, MP, TC, RU, RT, NH, AH, MO, CT, LI. Requirements of classification VGP / VGF are met by all surface textures. Please refer to our sales documentation, to check which textures are available for this product.
Special	• It is recommended to order overlay for horizontal, heavy used surfaces in combination with metallic designs. Slight visual difference to the surface is possible without the overlay.

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