moduversa-Series



modul technik
medical supply systems and equipment

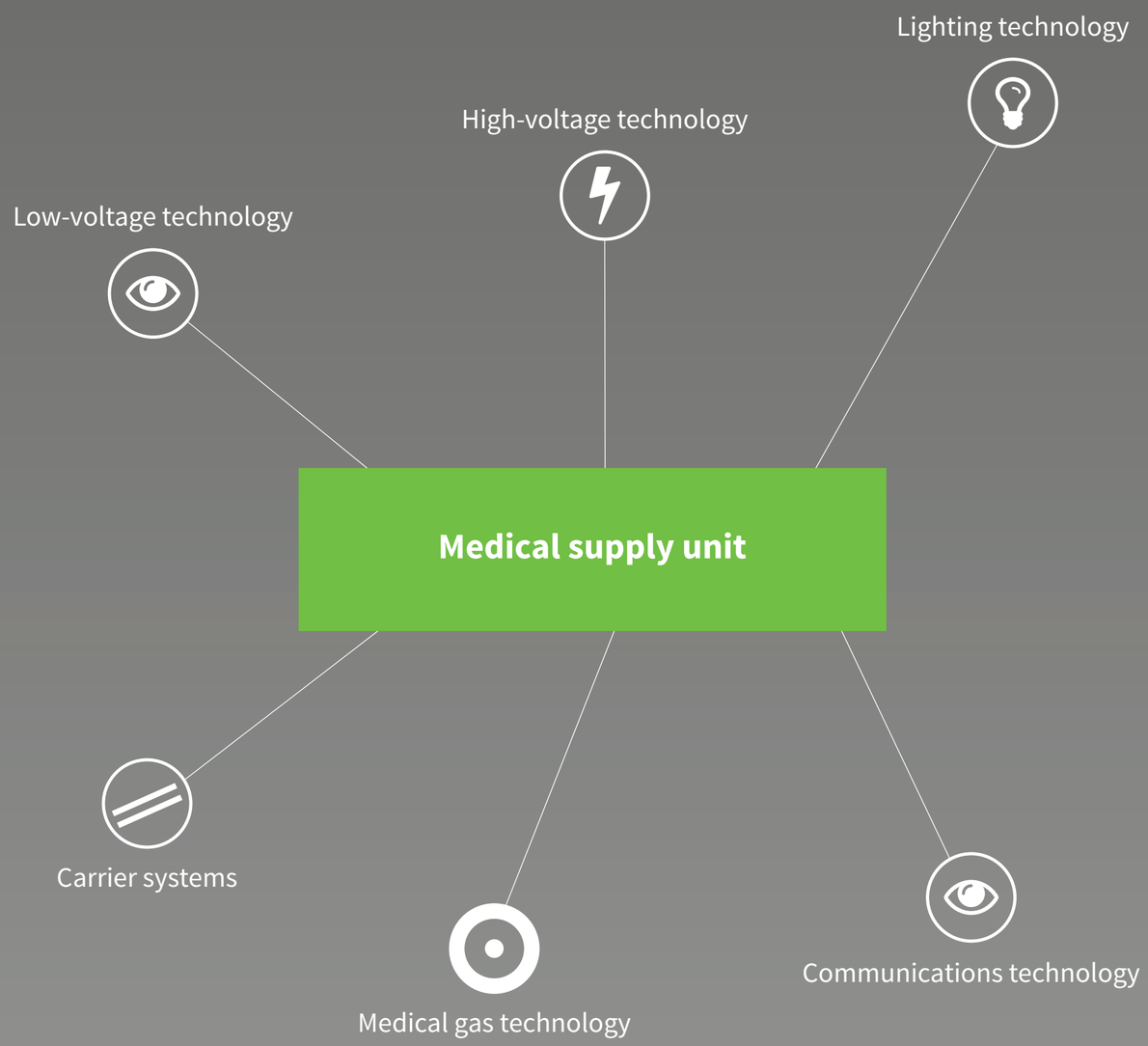


fig. 001 | Chart Medical Supply System

OUR MEDICAL SUPPLY UNITS

OUR MODULAR CONCEPT: FLEXIBLE COMBINATIONS AND TOTALLY CUSTOMISABLE!

What makes the medical supply units from **modul technik** so special? Actually everything! This is because our Class B medical products are modular in their design and can be easily and cost-effectively adjusted through combinations and customisations to the most diverse areas of application.

This is how we meet all the essential requirements for the optimum supply of the patient place with low and high voltage current, data and communications technologies and medical gases, and thereby enable the adaptation of diverse medical apparatus. Our individual design options as regards the colour, material and image motifs applied make each unit that we deliver a unique, connection-ready device.

Our ideal scenario is when we can work closely with you early in the planning phase of your facility. Then we can give architects and planners valuable and project-specific advice and assistance, saving you both time and effort.

All our basic modules are made from high-quality aluminium with its inherent long durability and ease of use. The powder coatings of all extruded aluminium profiles take specific hospital hygiene requirements into account and can be supplied in any colour you want from the RAL or NCS colour scale.

For those areas where particular comfort is to be provided, we also use wood décor and decorative graphics to transform a technical assistance device into an elegant piece of furniture. You can choose from our standard range or choose whatever you want. Whether you want atmospheric photos, artistic graphics, paintings or image-text combinations, we create all graphics in high-resolution, brilliant quality digital printing.

It goes without saying that all our products meet the “Essential Requirements” of EU Directive 93/42/EEC and are manufactured according to DIN EN ISO 11197. Our products only leave our premises after rigorous final testing for functionality and workmanship quality. This is also guaranteed by our quality management system that is certified according to DIN EN ISO 9001 and DIN EN ISO 13485.

STANDARD DESIGN

You do not have any customisation requirements and simply want to install proven and well-tested systems. Then we recommend our standard units to you which are described in more detail in an information box on many product pages. We can offer you these standard products at special conditions.

GENERAL EQUIPMENT FEATURES

GENERAL EQUIPMENT FEATURES

GENERAL EQUIPMENT HIGH-VOLTAGE TECHNOLOGY

The medical supply unit can be equipped with both earthed sockets (230 V/16 A with control light) and with CEE sockets (230 V/16 A 3 pole or 400 V/16 A 5-pole). The brand, number and electric circuit types of the installation elements and the voltage type of the supply voltage are specified depending on the project. Potential equalisation sockets can also be specified in accordance with the number of sockets.

As a preference PEHA COMPACTA safety sockets are installed.

Custom installation of additional elements is also possible. The electrical connecting terminal block is factory-installed and wired to the electrical equipment.

GENERAL EQUIPMENT MEDICAL GAS TECHNOLOGY

The medical supply unit is connected to the on-site medical gas supply at the central feed-in point. Current is usually supplied to the media either laterally, at the back or from the top directly into the respective media-specific channels or ceiling columns. The copper pipes installed inside the supply unit meet the quality requirements for medical gases according to DIN EN ISO 7396-1.

If required, the system is delivered ready for use with integrated tapping points according to DIN EN ISO 9170-1 and DIN EN ISO 9170-2. Market-available brands such as DRÄGER, GREGGERSEN, HEYER, MEDAP or other country-specific brands can be installed. Based on the specific project, the specialist planners will decide whether single or dual-circuit systems are to be used.

GENERAL EQUIPMENT MONITORING AND COMMUNICATIONS TECHNOLOGY

The connection sockets for monitors and patient monitoring devices are usually provided by the operator. In other cases we can arrange for delivery in consultation with the planners. Whereas specialist companies connect the monitor systems, we of course install all connector systems, sockets and IT inputs in accordance with manufacturer specifications. This is the best possible preparation for a fast and smooth apparatus connection after the installation of the supply unit.

GENERAL EQUIPMENT APPARATUS CARRIER SYSTEM G 1000

The apparatus carrier system (25x10 mm) is used to attach medical accessories such as flowmeters, catheter baskets, examination lights and much more. Consult our comprehensive Accessories Catalogue for a wide range of equipment options.

GENERAL EQUIPMENT LIGHTING TECHNOLOGY

There are many different lighting technology options available for the optimum lighting of the workplace and for the patient environment.

These include lamps for indirect general lighting, reading and examination lighting and lamps to provide lighting orientation. All technical data and lighting options can be found in the table on the respective product page.

Lighting modules meet the standards listed in DIN 5035 “Interior room lighting by artificial light” - Part 3, lighting in hospitals and in DIN EN ISO 11197. The lighting modules used in 2E user group rooms are generally equipped with low-stray field ballasts and are subjected to an EMC test.

Furthermore, many units can also be equipped with the bio-dynamically effective Visual Timing Light. More information on this can be found in the next chapter.

ASSEMBLY, CLEANING, MAINTENANCE AND REPAIR

ASSEMBLY

The medical supply unit can be assembled and fixed to both solid and lightweight construction walls. For lightweight construction walls an additional supporting structure is required on-site. For ceiling-suspended supply units, supporting structures are used based on the specific project.

CLEANING

The supply unit can be cleaned with standard cleaning agents and disinfected with alcohol-free disinfectants.
A high-quality electrostatic powder coating has been applied to the surface. Blank parts are made of anodised aluminium or stainless steel. The plastic components are cleaning and disinfectant-resistant.

MAINTENANCE AND REPAIR

The system must be maintained for the first time after 5 years and then after every 2 years. A contractual service agreement can be concluded for the maintenance work if required. More information can be found in the respective operating instructions.

ACCESSORIES

Our comprehensive range of accessories means you can set up your work area exactly as you want it. Consult our Accessories Catalogue to find out about the wide range of options available to you.

moduversa

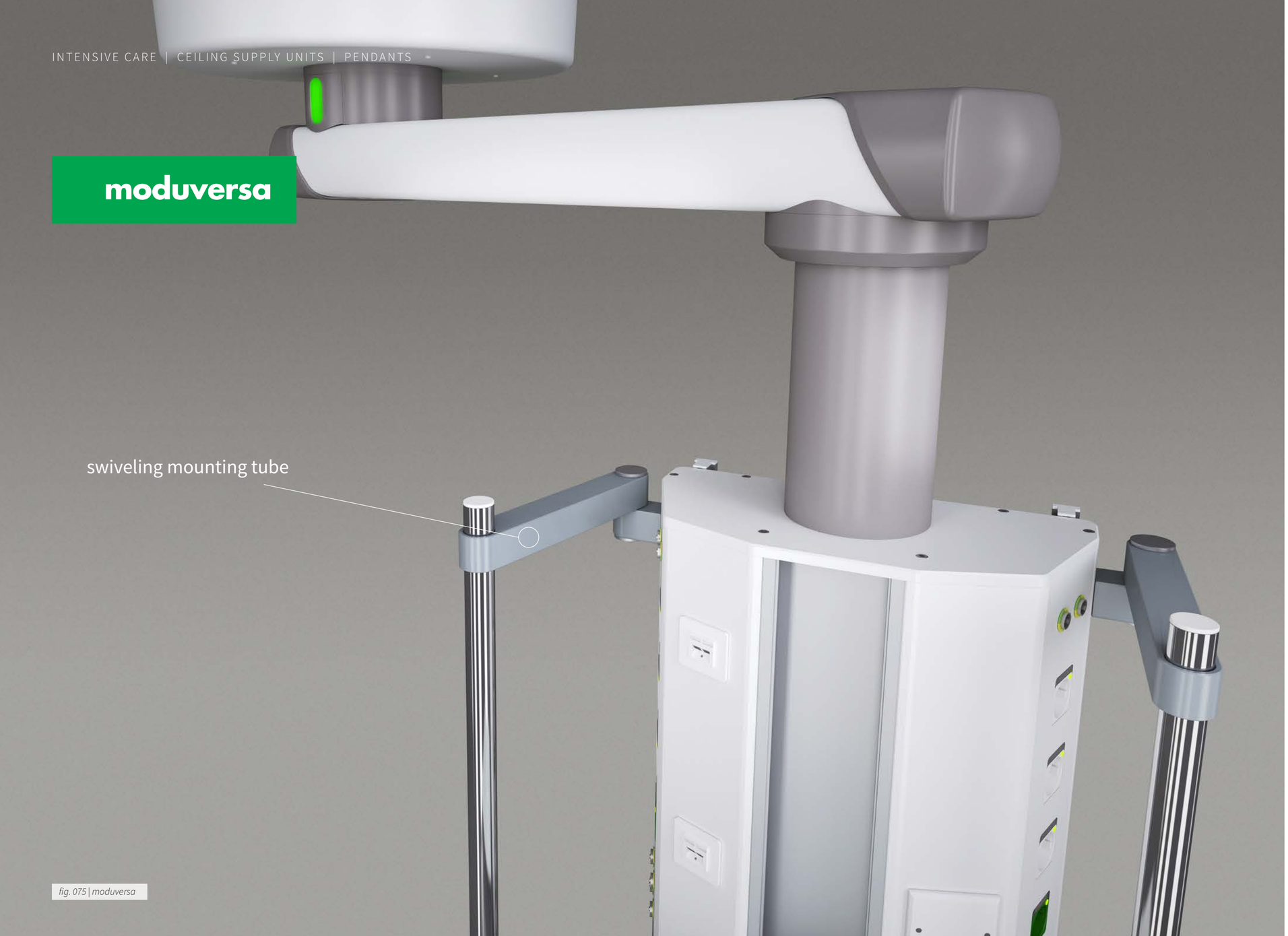


fig. 075 | moduversa

TURN AND TILT IT JUST AS YOU WISH

So you can provide the best possible care for your intensive care patients in every situation, we have developed the flexible ceiling-mounted **moduversa** supply system for heavy loads.

Through its sophisticated bearing and mounting, **moduversa** can be moved into every desired position with little effort and its maintenance-free electromagnetic braking system ensures a long service life and low operating costs.

Based on your requirements we manufacture your **moduversa** as a single or tandem system. You can choose the colour of the supply heads from the RAL/NCS colour scales. Arms can be ordered in either RAL 9010 or 9002. Furthermore, with an arm length of 800 mm or more, **moduversa** can be equipped with LED lighting in the arm. A wide range of accessories such as retractable keyboards, drawers and work surfaces complete the system.

moduversa can be designed as a single or tandem system.

moduversa

TURN AND TILT IT JUST AS YOU WISH

BSP 2500

BSP 2500 can be horizontal or vertical in design. BSP 2500 is used under moduflex nova as the horizontally movable supply trolley.

In combination with our support arm system, the ceiling supply units of the moduversa range are created.

BSP 2500 incorporates all the connections for full low voltage and high voltage current, data and communications technologies and medical gases. Every medical accessory can be adapted through the optional tubes and the front-integrated rails.

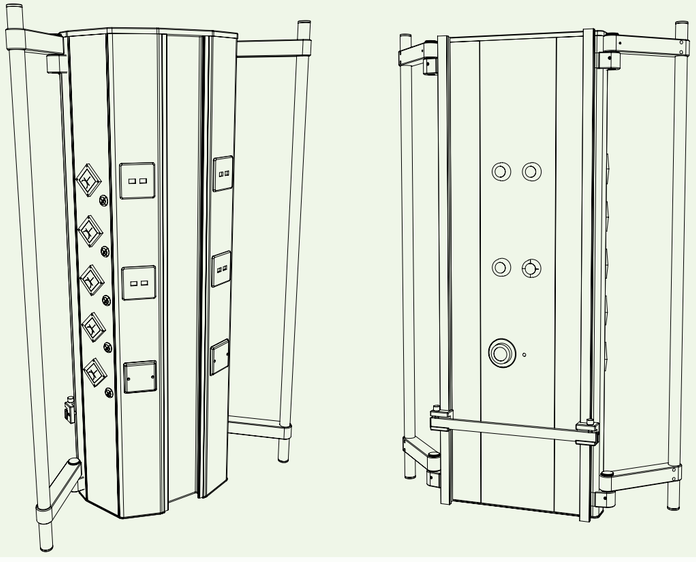


fig. 076

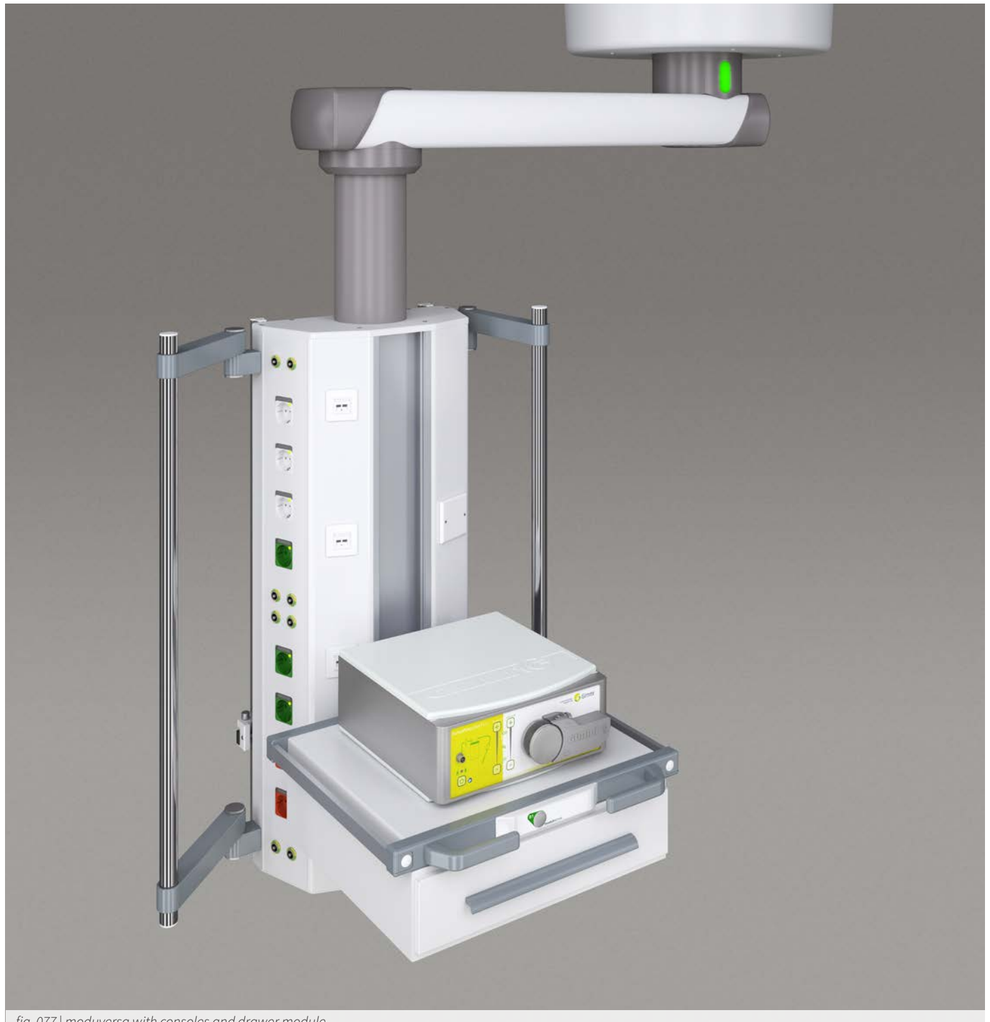


fig. 077 | moduversa with consoles and drawer module

moduversa

TURN AND TILT IT JUST AS YOU WISH

TECHNICAL DATA

(country-specific differences possible)
Further technical data and design options on request

Electric specifications
Nominal voltage: 115 V - 240 V / 50-60 Hz - continuous operation
Protection class: I
Protection type: IP 20

Lighting technology indirect RGB lighting
Nominal voltage: DC 12 V
Available design option: From 800 mm arm length

Operating pressure of medical gas technology
Oxygen: 5 bar
Compressed air: 5 bar
Vacuum: - 0,8 bar
AGSS: 5 bar

Support arm length	max. additional load support arm
600 mm	640 kg / 1000 kg*
800 mm	470 kg / 820 kg*
1000 mm	370 kg / 650 kg*
1200 mm	300 kg / 540 kg*

* Max. additional load XL-variants (optional)

General information
Media current feed: From the top in the support arm
Braking system: Electromagnetic (optional compressed air)
Comfort option: Braking system with BrakeGuide* (optical feedback)
Total additional load of supply unit: Project-related

* BrakeGuide cannot be combined with compressed air brake

tab. 029



fig. 078 | moduversa, back view



fig. 079 | moduversa/moduversa plus, tandem version

moduversa plus

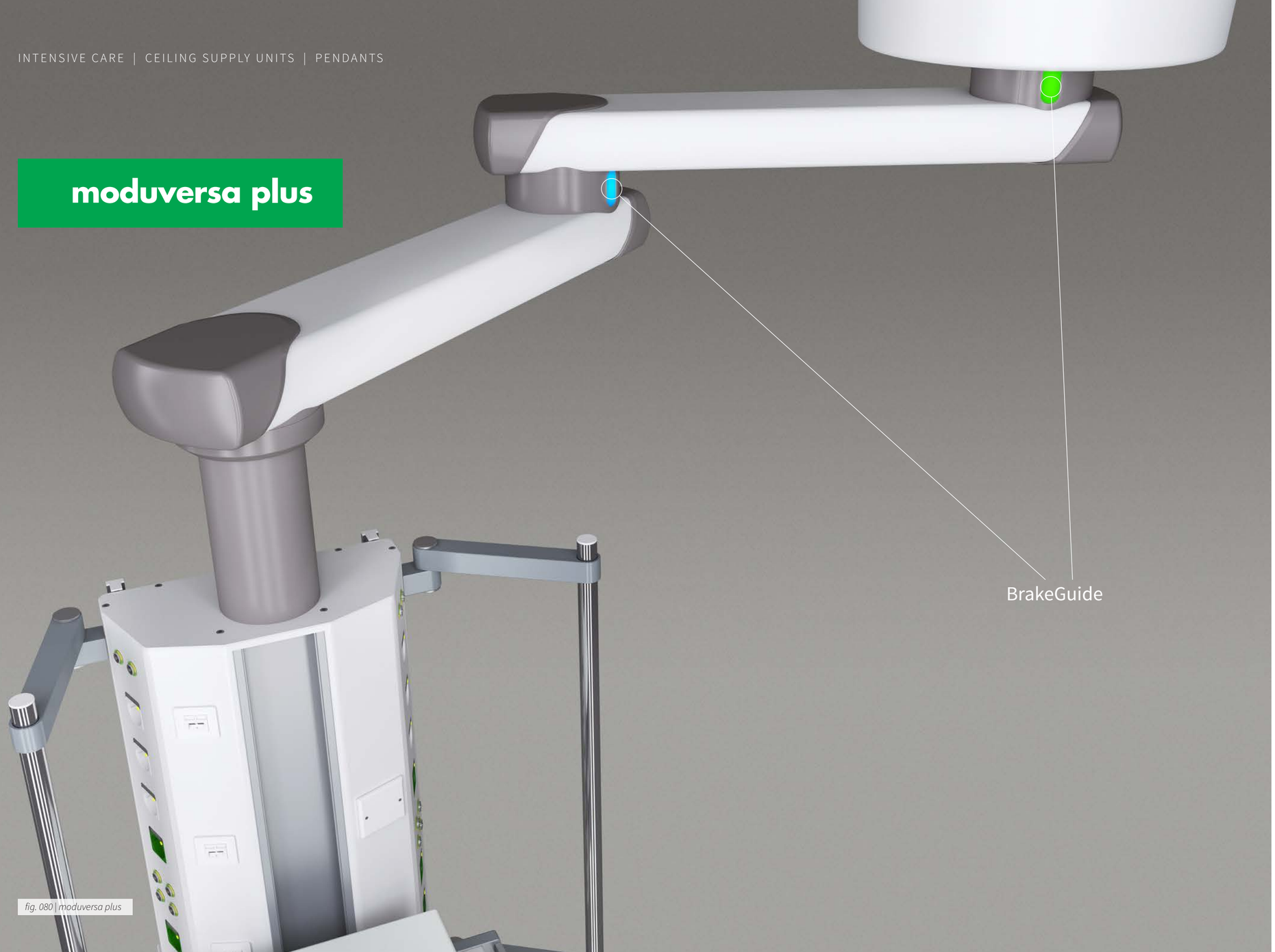


fig. 080 | moduversa plus

MORE FREEDOM OF MOVEMENT THROUGH TWO ARMS

A modern, streamlined design and high carry loads for attaching a wide range of medical apparatus are the distinguishing features of all **moduversa** models. The additional benefit of **moduversa plus** is an additional swivel and a second arm which is used to move the supply head even more flexibly into position. With its possible operating radius of over two metres, any point can be reached with precision.

The inner values are the same as for the **moduversa**, namely extremely light and accurate positioning through a sophisticated bearing and electromagnetic braking system; high attachment capacity for media feeds on the supply head and a carry load which can withstand additional medical apparatus, retractable keyboards and drawer systems without any loss to its mobility.

We comply with your requests as far as the colour scheme of the **BSP 2500** is concerned since the electrostatic powder coating can be supplied in all colours from the RAL/NCS scales. Arms can be designed in either RAL 9010 or 9002.

moduversa can be designed as a single or tandem system.

moduversa plus

MORE FREEDOM OF MOVEMENT THROUGH TWO ARMS

TECHNICAL DATA

(country-specific differences possible)
Further technical data and design options on request

Electric specifications
Nominal voltage: 115 V - 240 V / 50-60 Hz - continuous operation
Protection class: I
Protection type: IP 20

Lighting technology indirect RGB lighting
Nominal voltage: DC 12 V
Available design option: From 800 mm arm length

Operating pressure of medical gas technology

Oxygen: 5 bar	Compressed air: 5 bar
Vacuum: - 0,8 bar	AGSS: 5 bar

Support arm length	max. additional load support arm
600 mm / 600 mm	300 kg / 530 kg*
600 mm / 800 mm	260 kg / 470 kg*
800 mm / 800 mm	220 kg / 390 kg*
800 mm / 1000 mm	190 kg / 330 kg*
1000 mm / 1000 mm	170 kg / 300 kg*
1200 mm / 1000 mm**	150 kg / 270 kg*
1200 mm / 1200 mm**	130 kg / 240 kg*
1400 mm / 1100 mm**	240 kg*
1400 mm / 1200 mm**	200 kg*
1600 mm / 1000 mm**	200 kg*

* Max. additional load with XL-extension arm (optional)
** Not available with compressed air brake

General information
Media current feed: From the top in the support arm
Braking system: Electromagnetic (optional compressed air)
Comfort option: Braking system with BrakeGuide *(optical feedback)
Total additional load of supply unit: Project-related
* BrakeGuide cannot be combined with compressed air brake

tab. 030



fig. 081 | moduversa plus, back view



fig. 082 | moduversa plus with swiveling mounting tubes

moduversa-Series

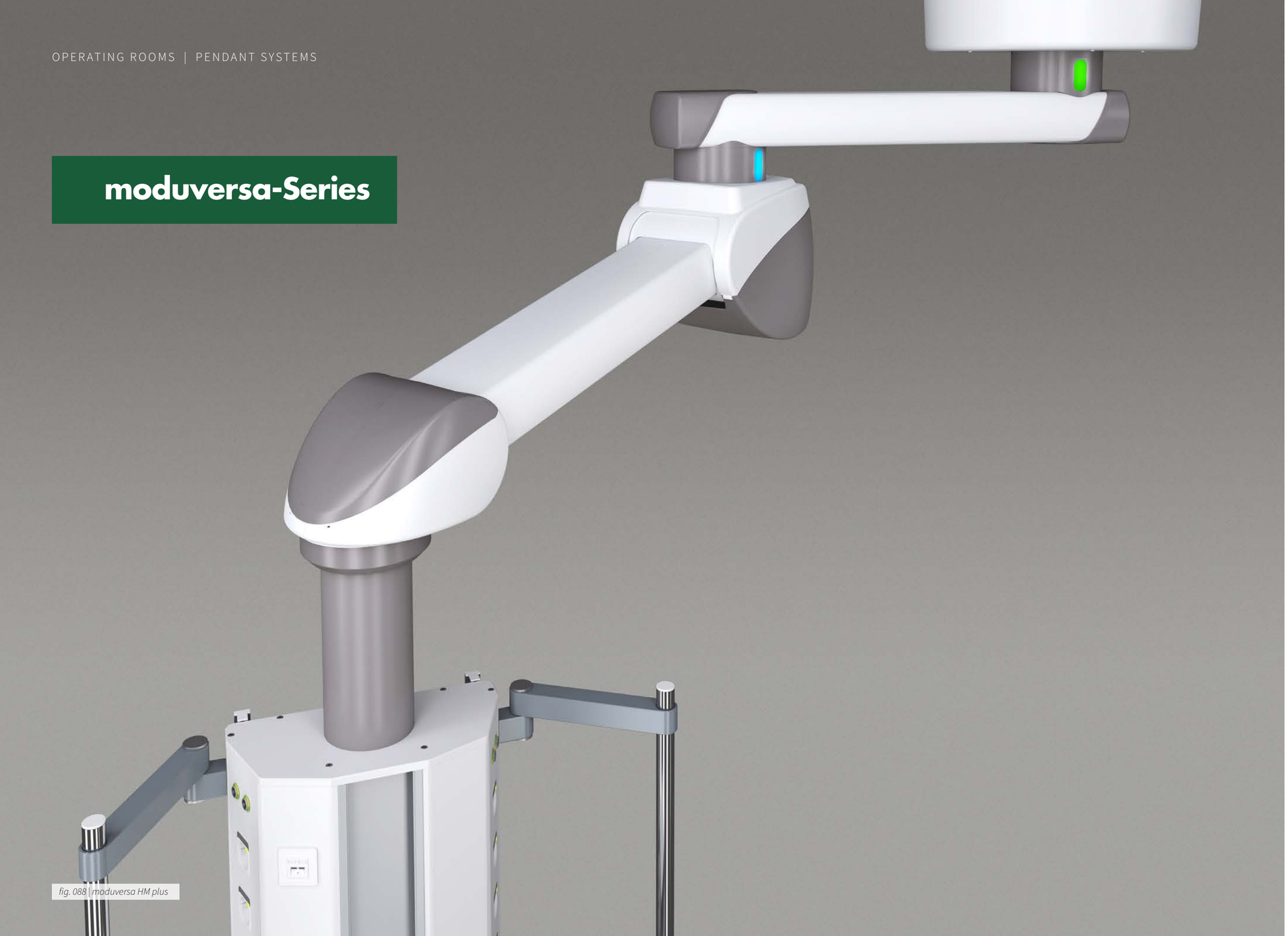


fig. 088 | moduversa HM plus

MODUVERSA – A STRONG FAMILY

The new generation of our ceiling supply units is called **moduversa**. Designed for heavy loads, this product family in a modern look boasts many technical innovations.

Whether with two extension arms, as a tandem unit for extra flexibility in your work area or height-adjustable with a spring- or motor arm – there is a right solution for everyone!

We will do the planning. The result: An ergonomic workplace which meets your requirements.

moduversa

COMPLEX TECHNOLOGY ELEGANTLY PACKED

TECHNICAL DATA

(country-specific differences possible)
Further technical data and design options on request

Electric specifications
Nominal voltage: 115 V - 240 V / 50-60 Hz - continuous operation
Protection class: I
Protection type: IP 20

Lighting technology indirect RGB lighting
Nominal voltage: DC 12 V
Available design option: From 800 mm arm length

Operating pressure of medical gas technology
Oxygen: 5 bar
Compressed air: 5 bar
Compressed air: 8 bar
Vacuum: - 0,8 bar
Laughing gas 5 bar
CO_2: 5 bar
AGSS: 5 bar
Air-Motor: 8 bar

Support arm length	max. additional load support arm
600 mm	640 kg / 1000 kg*
800 mm	470 kg / 820 kg*
1000 mm	370 kg / 650 kg*
1200 mm	300 kg / 540 kg*

* Max. additional load XL-variants (optional)

General information
Media current feed: From the top in the support arm
Braking system: Electromagnetic (optional compressed air)
Comfort option: Braking system with BrakeGuide* (optical feedback)
Total additional load of supply unit: Project-related

* BrakeGuide cannot be combined with compressed air brake

tab. 033

Even the basic model of the **moduversa** range combines all the benefits of the product family for heavy loads. The sleek and elegant design of the support arms in its robust design provides huge assembly capacities for media feeds to the **BSP 2500** supply head.

The maintenance-free bearing system of the swivel joints makes the system easy to swivel and an integrated electro-magnetic brake system facilitates accurate positioning without readjustments. However, on request the system can also be designed to run pneumatically.

The high maximum load means the supply system can be planned for use with nearly all apparatus placements.

moduversa can be designed as a single or tandem system.

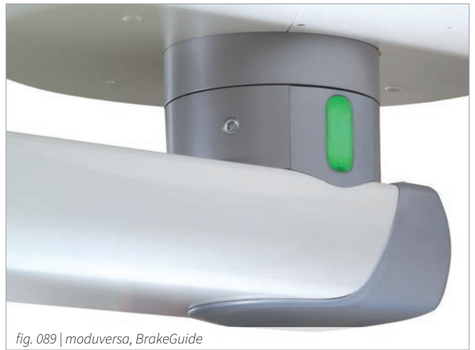


fig. 089 | moduversa, BrakeGuide

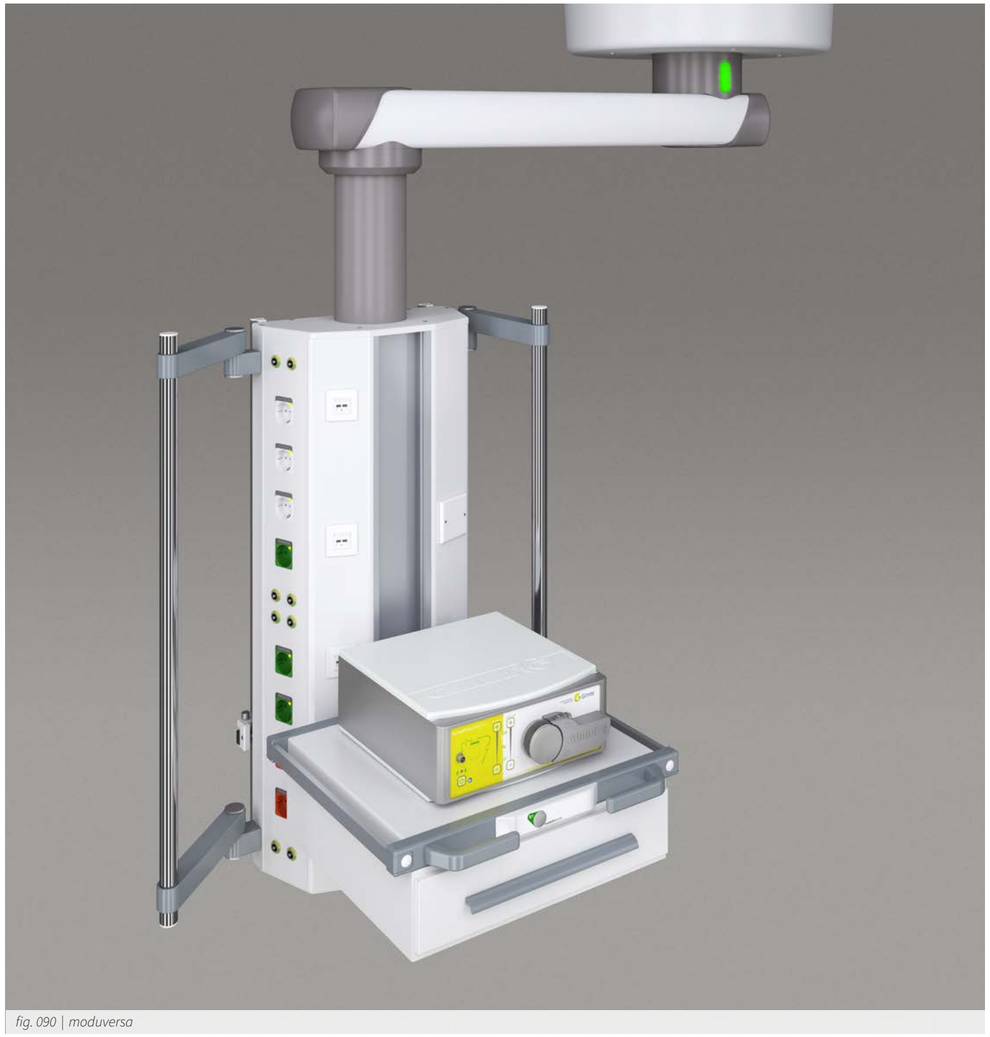


fig. 090 | moduversa

moduversa plus

MORE PRECISION, MORE OPERATING RANGE

TECHNICAL DATA

(country-specific differences possible)
Further techncial data and design options on request

Electric specifications
Nominal voltage: 115 V - 240 V / 50-60 Hz - continuous operation
Protection class: I
Protection type: IP 20

Lighting technology indirect RGB lighting
Nominal voltage: DC 12 V
Available design option: From 800 mm arm length

Operating pressure of medical gas technology

Oxygen: 5 bar	Compressed air: 5 bar
Compressed air: 8 bar	Vacuum: - 0,8 bar
Laughing gas 5 bar	CO_2: 5 bar
AGSS: 5 bar	Air-Motor: 8 bar

Support arm length	**max. additional load support arm**
600 mm / 600 mm	300 kg / 530 kg*
600 mm / 800 mm	260 kg / 470 kg*
800 mm / 800 mm	220 kg / 390 kg*
800 mm / 1000 mm	190 kg / 330 kg*
1000 mm / 1000 mm	170 kg / 300 kg*
1200 mm / 1000 mm**	150 kg / 270 kg*
1200 mm / 1200 mm**	130 kg / 240 kg*
1400 mm / 1100 mm**	240 kg*
1400 mm / 1200 mm**	200 kg*
1600 mm / 1000 mm**	200 kg*

* Max. additional load with XL-extension arm (optional)
** Not available with compressed air brake

General information
Media current feed: From the top in the support arm
Braking system: Electromagnetic (optional compressed air)
Comfort option: Braking system with BrakeGuide* (optical feedback)
Total additional load of supply unit: Project-related

* BrakeGuide cannot be combined with compressed air brake

tab. 034

With **moduversa plus** you acquire additional movement space through its second, swivel arm. Within a radius of over two metres around the ceiling attachment point, you can accurately position the **BSP 2500** supply system at any point in the room. This means that **moduversa plus** is the ideal solution if flexible working is requested and if concurrent horizontal movement of the supply unit is required.

The bearing and the electromagnetic braking system of **moduversa plus** enable the particularly light and precise positioning of the supply head. In this design **moduversa plus** is also maintenance-free and requires no compressed air, which makes the installation easier and saves additional costs.

moduversa plus is also available with a pneumatic braking system as a cost-effective alternative.

On request, **moduversa plus** may be also be designed as a tandem system.



fig. 091 | moduversa plus

moduversa HM

GENTLE POSITIONING WITHOUT JERKS!

TECHNICAL DATA

(country-specific differences possible)
Further technical data and design options on request

Electric specifications
Nominal voltage: 115 V - 240 V / 50-60 Hz - continuous operation
Protection class: I
Protection type: IP 20

Operating pressure of medical gas technology
Oxygen: 5 bar
Compressed air: 5 bar
Compressed air: 8 bar
Vacuum: - 0,8 bar
Laughing gas 5 bar
CO_2: 5 bar
AGSS: 5 bar
Air-Motor: 8 bar

Support arm length	max. additional load support arm
1000 mm	150 kg / 250 kg*

* Max. additional load with XL-bearing (optional)

General information
Media current feed: From the top in the support arm
Braking system: Electromagnetic (optional compressed air)
Comfort option: Braking system with BrakeGuide *(optical feedback)
Total additional load of supply unit: Project-related
Height-adjustment: Electric motor
* BrakeGuide cannot be combined with compressed air brake

tab. 035

The highlight of **moduversa HM** is the sophisticated bearing system of the joints and particularly in the motor which drives the articulated joint for the vertical positioning.

Through the soft-start drive technology the system starts up extremely gently and moves **BSP 2500** supply head including all the monitors and apparatus attached to it into the desired position without any start-up jerking. No wobbling, no dropping of attached items - only gentle gliding into the desired position.

The electromagnetic braking system has LED lights at each joint which makes correct operation considerably easier. The integrated dimmable LED lighting in the horizontal arm improves illumination of the work area.

The maximum arm load capacity of 150 kg is sufficient for most medical applications.

And by the way, all products in the **moduversa** range have been designed so they also retain their respective position in the event of power failures and can even be positioned by hand.

moduversa HM can be designed as a single or tandem system.



fig. 092 | moduversa HM

moduversa HM plus

MAXIMUM FLEXIBILITY IN THE OR

TECHNICAL DATA

(country-specific differences possible)
Further technical data and design options on request

Electric specifications
Nominal voltage: 115 V - 240 V / 50-60 Hz - continuous operation
Protection class: I
Protection type: IP 20

Lighting technology indirect RGB lighting
Nominal voltage: DC 12 V
Available design option: From 800 mm arm length (upper extension arm)

Operating pressure of medical gas technology

Oxygen: 5 bar	Compressed air: 5 bar
Compressed air: 8 bar	Vacuum: - 0,8 bar
Laughing gas 5 bar	CO_2: 5 bar
AGSS: 5 bar	Air-Motor: 8 bar

Support arm length	**max. additional load support arm**
600 mm / 1000 mm	150 kg / 250 kg*
800 mm / 1000 mm	150 kg / 250 kg*
1000 mm / 1000 mm	150 kg / 250 kg*
1200 mm / 1000 mm**	140 kg / 250 kg*
1400 mm / 1000 mm**	140 kg*
1600 mm / 1000 mm**	200 kg*

* Max. additional load with XL-extension arm (optional)
** Not available with compressed air brake

General information
Media current feed: From the top in the support arm
Braking system: Electromagnetic (optional compressed air)
Comfort option: Braking system with BrakeGuide* (optical feedback)
Total additional load of supply unit: Project-related
Height-adjustment: Electric motor

* BrakeGuide cannot be combined with compressed air brake

tab. 036

Just as **moduversa HM**, the motorised HM plus also has the soft start system for a smooth positioning in the room and the LED-supported electromagnetic braking system.

Thanks to its second horizontal arm **moduversa HM plus** offers even more flexibility in the exact positioning of the **BSP 2500** supply head. More flexibility is not possible, especially since the maximum operating radius is approximately 2.6 metres around the ceiling mount.

Despite the additional joint, the maximum load capacity is more than sufficient for numerous medical devices, monitors, work tables and drawer blocks.

And by the way, all products in the moduversa range have been designed so they also retain their respective position in the event of power failures and can even be positioned by hand.

On request **moduversa HM plus** can also be configured as a tandem system or combined with other models in the **moduversa** range.

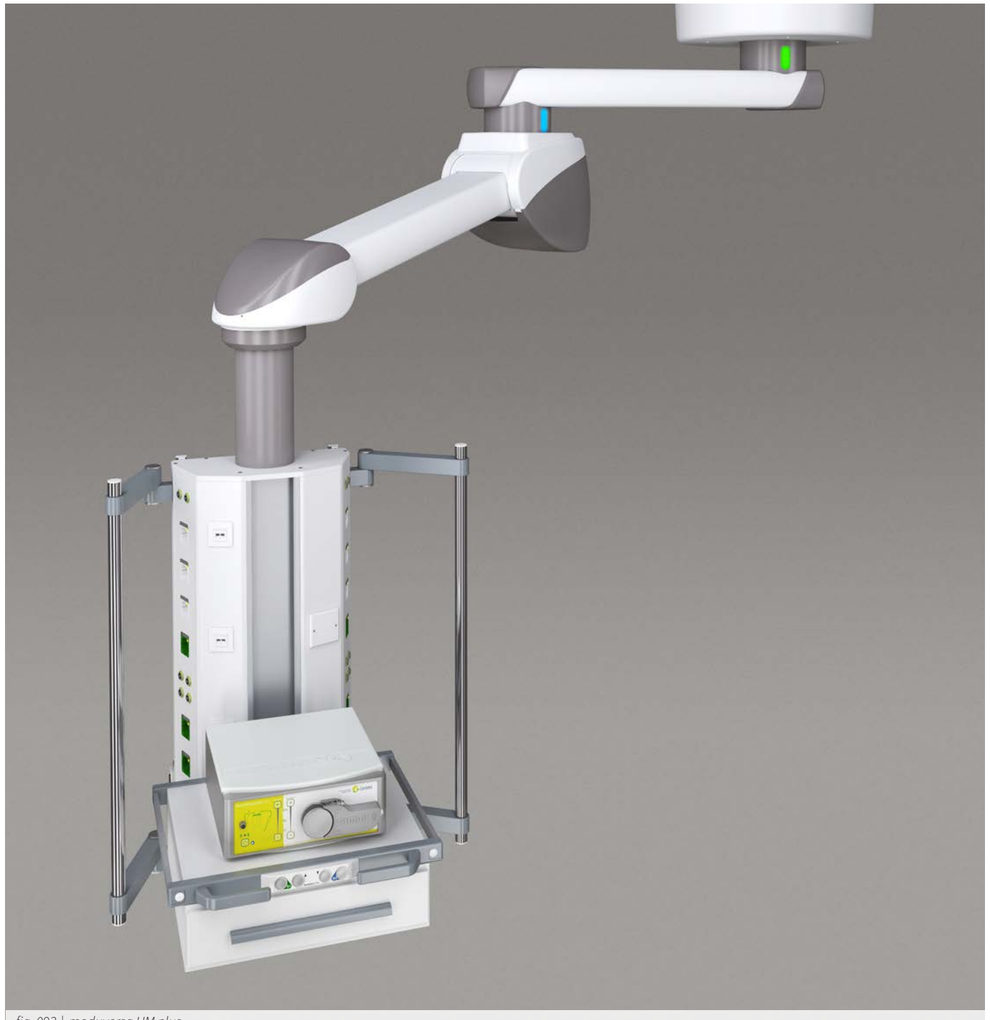


fig. 093 | moduversa HM plus

moduversa HF

FEATHERLIGHT AND ALWAYS ON YOUR SIDE

TECHNICAL DATA

(country-specific differences possible)
Further technical data and design options on request

Electric specifications
Nominal voltage: 115 V - 240 V / 50-60 Hz - continuous operation
Protection class: I
Protection type: IP 20

Operating pressure of medical gas technology
Oxygen: 5 bar
Compressed air: 5 bar
Compressed air: 8 bar
Vacuum: - 0,8 bar
Laughing gas 5 bar
CO_2: 5 bar
AGSS: 5 bar
Air-Motor: 8 bar

Support arm length	**max. additional load support arm**
1000 mm	180 kg

General information
Media current feed: From the top in the support arm
Braking system: Electromagnetic (optional compressed air)
Comfort option: Braking system with BrakeGuide*(optical feedback)
Total additional load of supply unit: Project-related
Height-adjustment: Spring force

* BrakeGuide cannot be combined with compressed air brake

tab. 037

Whether you are sitting or standing, **moduversa HF** is always by your side and offers optimum access in every position to all media connections and apparatus on the rotatable **BSP 2500** supply head.

The positionable system has infinite horizontal and vertical adjustments and with an arm length of 1 metre can adapt to every room size and work situation. The maximum arm load capacity of 180 kg is sufficient for most medical applications.

The maintenance-free electromagnetic brake system and the smooth swing arm enable precise positioning in both a vertical and horizontal direction. And here the spring can be set precisely for the respective load. LED signal lamps on the braking system make accurate operation easier.

Like all **moduversa** products, moduversa HF can be designed as a single or tandem system.



fig. 094 | moduversa HF

moduversa HF plus

FLEXIBLE WORKING – AT EVERY POINT IN THE ROOM!

TECHNICAL DATA

(country-specific differences possible)
Further techncial data and design options on request

Electric specifications
Nominal voltage: 115 V - 240 V / 50-60 Hz - continuous operation
Protection class: I
Protection type: IP 20

Lighting technology indirect RGB lighting
Nominal voltage: DC 12 V
Available design option: From 800 mm arm length
(upper extension arm)

Operating pressure of medical gas technology

Oxygen: 5 bar	Compressed air: 5 bar
Compressed air: 8 bar	Vacuum: - 0,8 bar
Laughing gas 5 bar	CO_2: 5 bar
AGSS: 5 bar	Air-Motor: 8 bar

Support arm length	**max. additional load support arm**
600 mm / 1000 mm	180 kg
800 mm / 1000 mm	170 kg / 180 kg*
1000 mm / 1000 mm	150 kg / 180 kg*
1200 mm / 1000 mm**	130 kg / 180 kg*
1400 mm / 1000 mm**	180 kg*
1600 mm / 1000 mm**	180 kg*

* Max. additional load with XL-extension arm (optional)
** Not available with compressed air brake

General information
Media current feed: From the top in the support arm
Braking system: Electromagnetic (optional compressed air)
Comfort option: Braking system with BrakeGuide*(optical feedback)
Total additional load of supply unit: Project-related
Height-adjustment: Spring force
* BrakeGuide cannot be combined with compressed air brake

tab. 038

The spring arm of **moduversa HF plus** can be adjusted to the specific load and enables an effortless height adjustment of the **BSP 2500** supply head. The additional swivel arm ensures horizontal flexibility.

This enables the system to position itself through infinite precision adjustments at every point within the operating radius of 2.6 metres. Here the user is supported by an electro-magnetic braking system which through LED signal lamps makes accurate operation easier.

At the maximum arm length of 2.6 metres, the additional load on the arm of the **moduversa HF plus** is up to 180 kg.

The LED light integrated into the swivel arm ensures optimum illumination of the work area.

Like all moduversa products, **moduversa HF plus** can be designed as a single or tandem system.

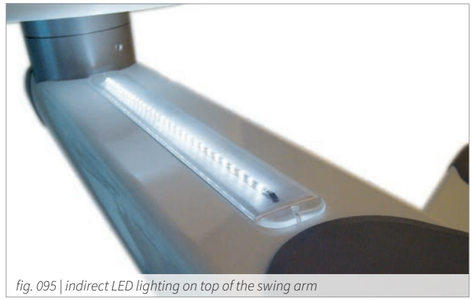


fig. 095 | indirect LED lighting on top of the swing arm



fig. 096 | moduversa HF plus

modul technik

Medizinische Versorgungssysteme und Geräte
medical supply systems and equipment

CE 0044

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The technical data in the catalouges as well as the weight, load and dimensions have been issued to the best of our knowledge.
Errors reserved. We reserve the right to make technical alterations for the purpose of progress.

TÜV NORD CERT GmbH ISO 9001/ISO 13485

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