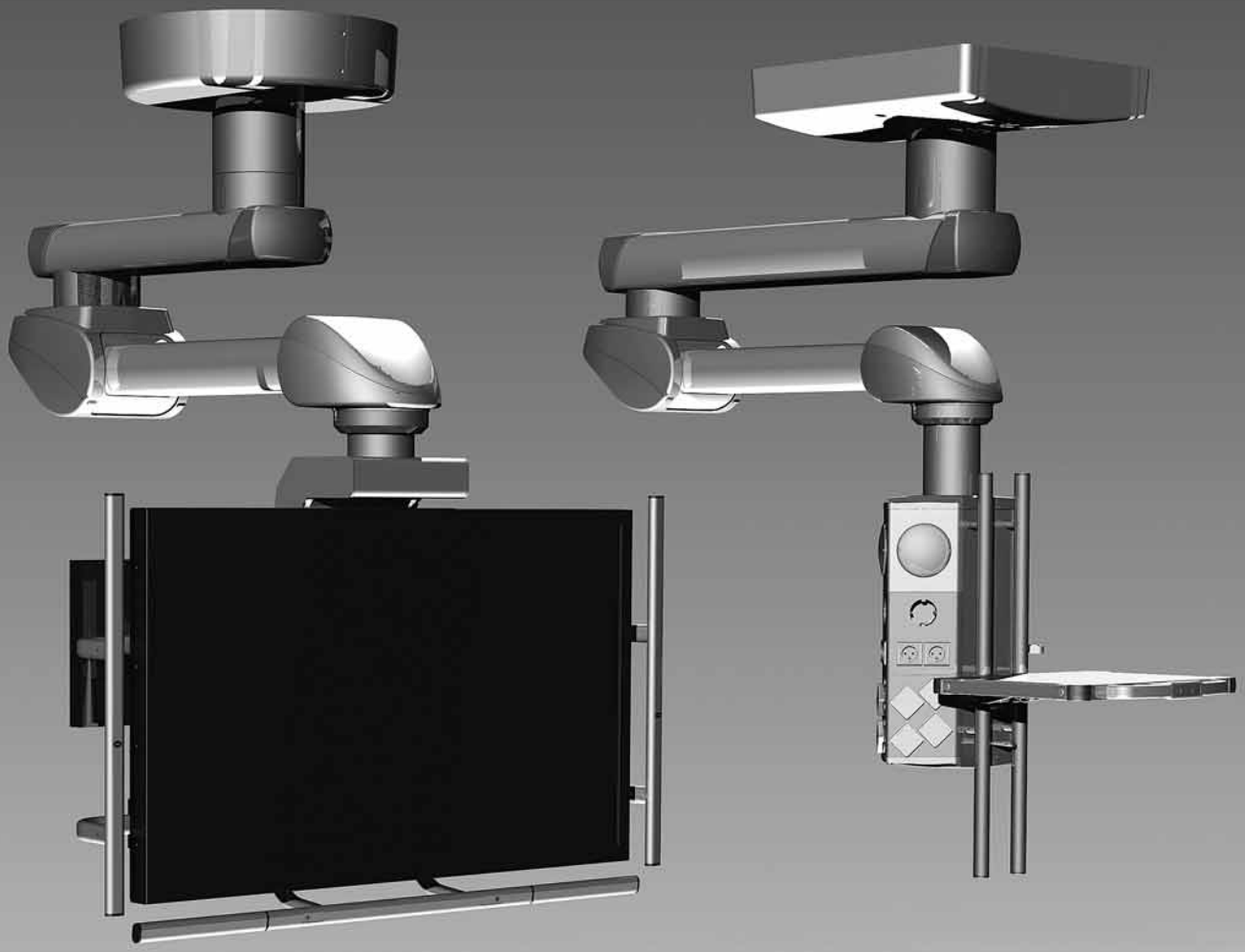

Operating Instructions [en]

Navigator Lift ™ 180 Single, Navigator Lift ™ 180 Dual, Navigator Lift ™ 180 Friction – Single, Navigator Lift ™ 180 Friction – Dual, Navigator Lift ™ 180 Air*Plus* – Single, Navigator Lift ™ 180 Air*Plus* – Dual, Navigator Lift ™ XL 180 Dual

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Figure 1: Pendant system Navigator Lift ™ 180 Single

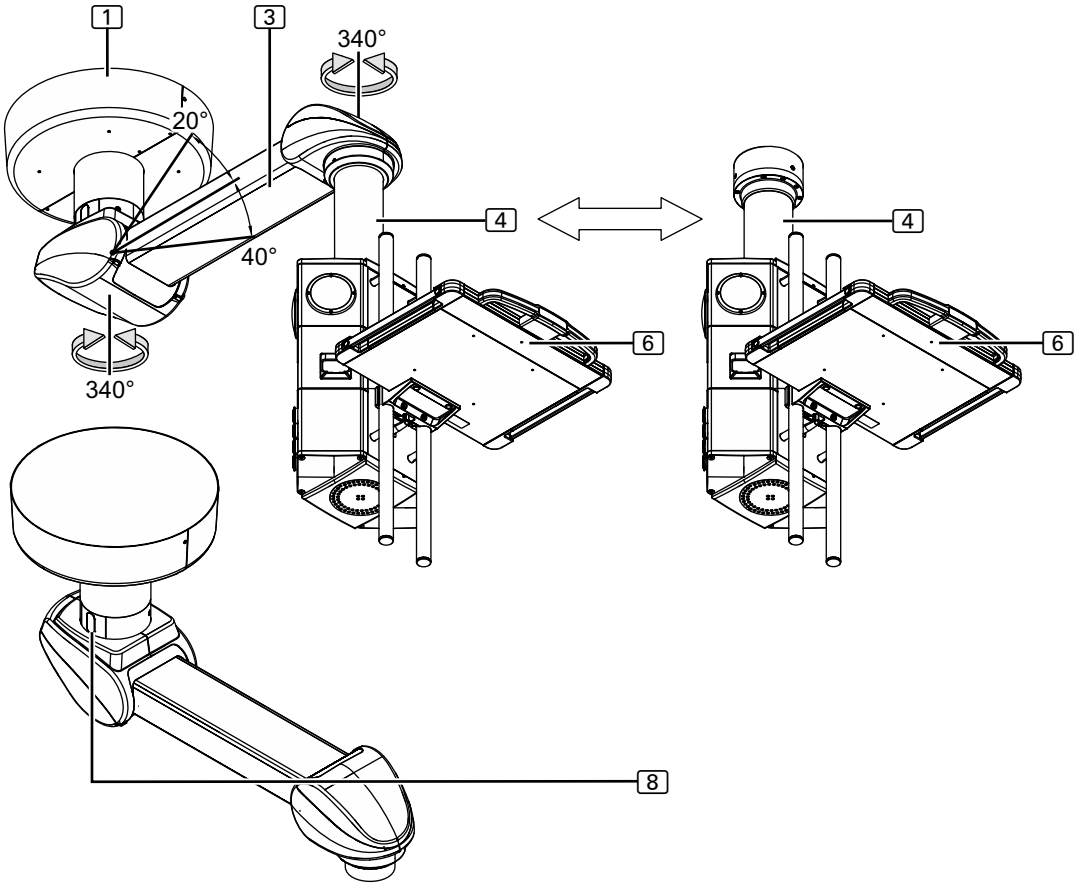
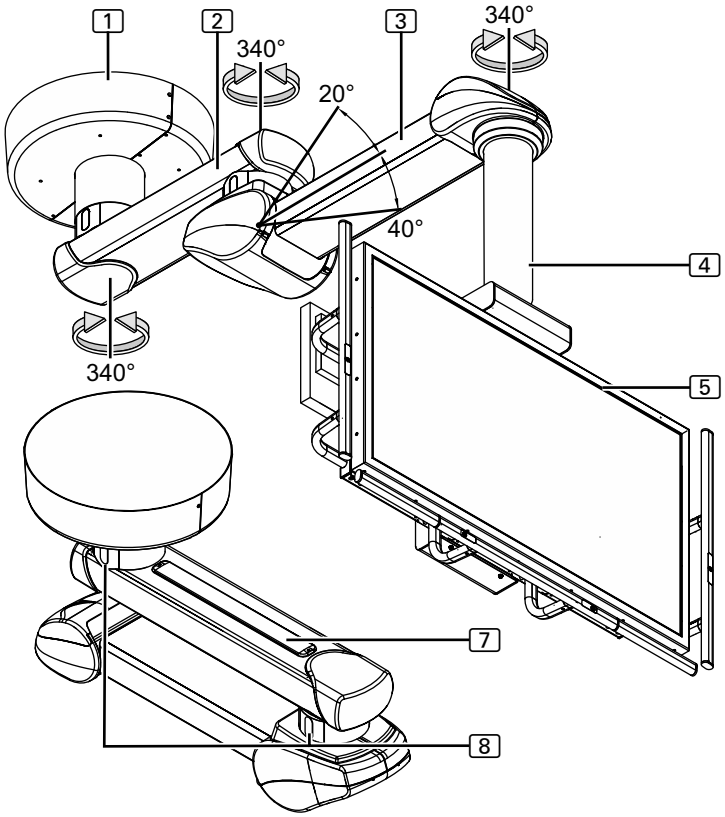
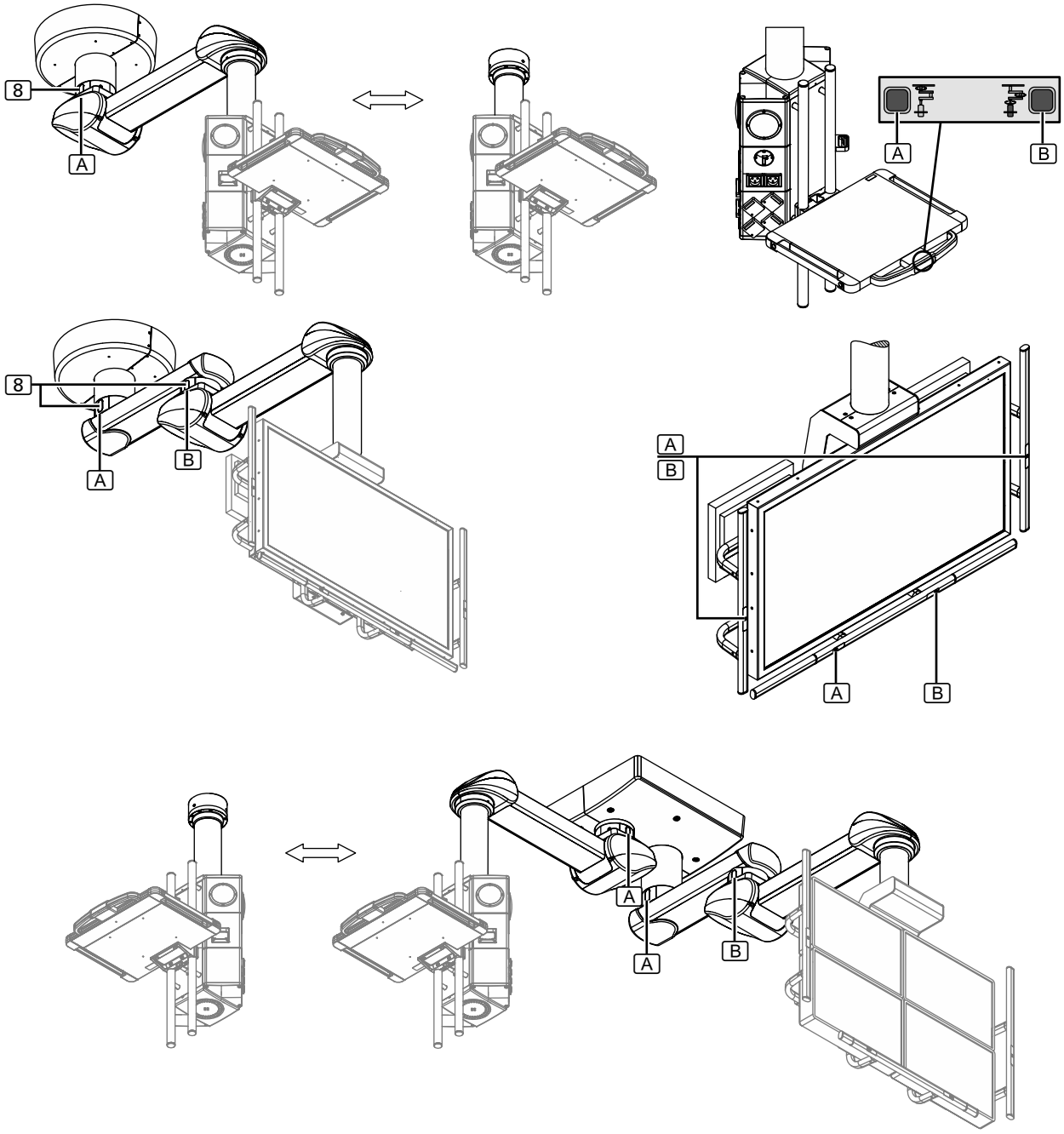


Figure 2: Pendant system Navigator Lift ™ 180 Dual



The two Figures illustrate examples of the pendant systems Navigator Lift ™ 180 Single and Navigator Lift ™ 180 Dual. Please note that your individual pendant system configuration can differ from these illustrations.

Figure 3: Brakes on the pendant system Navigator Lift ™ 180 Single / Dual



For more detailed information on the various brake designs refer to Chapter 2.4

The example illustrated in the Figure shows the Navigator Lift™ 180 version with extension arm and spring arm.

[1] Canopy

[2] Extension arm or XL extension arm
– Only for the dual-arm version in different lengths

[3] Spring arm
– The spring arm [3] is adjustable in height

[4] Drop tube
– The Drop tube [4] has a variable length for compensating different ceiling heights.

Approved Nuvo adaptions

[5] CEMOR (only for the pendant systems Navigator Lift ™ 180, Navigator Lift ™ 180 Friction and Navigator Lift ™ XL 180)
– (For more detailed information on the CEMOR refer to the Operating Instructions included in its scope of delivery).

[6] Navigator M6 (for the pendant systems Navigator Lift ™ 180, Navigator Lift ™ 180 Friction, Navigator Lift ™ XL 180 and Navigator Lift ™ 180 Air*Plus*)
– (For more detailed information on the Navigator M6 refer to the Operating Instructions included in its scope of delivery).

Optional equipment of the pendant system – Dual-arm type with Navigator M6

[7] Indirect extension arm lighting (SurroundLED basic C) on the extension arm
– extension arm lighting [7] with on/off switch on the Navigator M6 [6]

Optional equipment of the pendant system – Single- and dual-arm type with CEMOR or Navigator M6

[8] BrakeGuide on the pivot point of the extension arm or XL extension and spring arm
– When releasing the brake [A], [B] using the brake button [A], [B] on the Navigator M6 [6] or on the CEMOR [5], the corresponding BrakeGuide [8] lights up:

- Pendant system – Dual-arm type
  – The upper BrakeGuide [8] lights up green
  – The lower BrakeGuide [8] lights up blue
- Pendant system – Single-arm type
  – The BrakeGuide [8] lights up green

If no BrakeGuide [8] is available, plastic parts in different colours are attached to the extension arm and spring arm in order to be able to locate the brake [A], [B] actuated via the corresponding brake button [A], [B]:

- Pendant system – Dual-arm type
  – The upper plastic part is green
  – The lower plastic part is blue
- Pendant system – Single-arm type
  – The plastic part is green

Thank you very much for purchasing this Nuvo product. Please read these Operating Instructions very carefully, abide by the safety notices and observe all operating and cleaning requirements.

For which appliances do these Operating Instructions apply?

Pendant systems Navigator Lift ™ 180 Single, Navigator Lift ™ 180 Dual, Navigator Lift ™ 180 Friction – Single, Navigator Lift ™ 180 Friction – Dual, Navigator Lift ™ 180 Air*Plus* – Single, Navigator Lift ™ 180 Air*Plus* – Dual, Navigator Lift ™ XL 180 Dual

Please do not hesitate to contact our Customer Service team

if you have any questions about the appliance and its installation, and also in service or warranty cases.

Manufacturer and marketer

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1568913, Edition 2019-06, Version 0

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E-mail address sales@nuvosurgical.com

Supplier's address

Space for supplier's stamp or label

Copyright

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- Any other use than that regulated by law must be approved in writing by Nuvo Surgical, hereinafter referred to as Nuvo.
- Nuvo does not take any liability for or in relation to the misuse of this information in the prohibited manner by any person or company.

Modifications and translations

Modifications to the appliance

- Nuvo products are subject to continuous further development. Nuvo reserves the right to modify the form, equipment and technology of the scope of supply without prior notice.

Modifications to the Operating Instructions

- The contents of these Operating Instructions are subject to change without prior notice.

Translations

- In case of translations into foreign languages, the German version of these Operating Instructions shall take precedence.

Trademarks

- All trademarks mentioned in these Operating Instructions are the sole and exclusive property of the corresponding manufacturer.

1.1 Information for identification of the device

- These Operating Instructions are intended solely for appliances with the manufacturer's rating plate bearing the following information:

Device identification

  - Type designation: Pendants systems Navigator Lift ™ 180 Single, Navigator Lift ™ 180 Dual, Navigator Lift ™ 180 Friction – Single, Navigator Lift ™ 180 Friction – Dual, Navigator Lift ™ 180 Air*Plus* – Single, Navigator Lift ™ 180 Air*Plus* – Dual, Navigator Lift ™ XL 180 Dual

1.2 How to identify the Operating Instructions

Make sure you are using the latest version

- To ensure that you always have the latest version of these Operating Instructions, all pages bear a 7-digit identity number including the date of issue and the version number:

Identification of these Operating Instructions

  - Edition: 1568913, Edition 2019-06, Version 0

- This identification is binding for the validity of the Operating Instructions and must not be removed, regardless of the type of publication (printed form, electronic form or excerpts).

1.3 Identification of target groups

The groups of persons described below are mentioned in these Operating Instructions.

1.3.1 Operator

The following natural persons or legal entities shall be considered as operators:

- all persons who use the appliance in a medical practice, hospital, etc. or hand over the appliance to third parties for use/application, and who have actual physical authority over the appliance during operation.
- The operator shall be liable for handing over a safe appliance and for instructing the user in its proper operation and normal use.

1.3.2 User

The following persons shall be considered as users:

- persons who, due to their professional qualification and instruction by the persons designated by the operator, are authorised to operate the appliance and to work with it.
- Users shall be fully responsible for the safe operation of the appliance in accordance with its intended purpose.

1.3.3 Qualified personnel

The following persons shall be considered as qualified personnel:

- persons who underwent special professional training in the field of medicine or medical engineering,
- persons who can assess their work and recognise the potential hazards involved on the basis of their professional experience and instruction in safety-relevant regulations.
- In States where the performance of tasks in the medical or medical engineering sector is subject to certification, qualified personnel must have obtained the corresponding certificate.

1.4 Notes for the operator

- Even though the appliance has been designed according to the state of the art and is safe to operate, it must be considered a potential source of danger, in particular when operated by insufficiently trained personnel or used improperly and not as prescribed.
- The appliance may only be operated, cleaned and disinfected by trained qualified personnel.
- All the mounting, dismantling and adjustment work described in these Operating Instructions may only be carried out by qualified personnel who have been authorised and instructed by the operator.
- For safety reasons, any operator actions or interventions exceeding this scope may only be carried out by Nuvo or companies authorised by Nuvo. As a prerequisite for the authorisation of a company, its service technicians must have successfully participated in technical training organised by Nuvo. This authorisation is granted for a limited period.

1.4.1 Initial commissioning

Validity

- These Operating Instructions only apply after initial commissioning has been carried out properly.
- Prior to initial use, the appliance must be thoroughly cleaned and disinfected.
- The instruction for the proper installation of the appliance is included in its applicable Installation Instructions.

1.4.2 Availability of these Operating Instructions

Duty to inform

- Since these Operating Instructions are an integral part of the appliance, they must always be kept near it in order to be able to look up safety instructions and important information on use at any time.
- Do not pass on the appliance to any third party without valid Operating Instructions. Based on the ID and version numbers, make sure you hand over an up-to-date and valid version of the Operating Instructions together with the appliance.

1.4.3 Warranty

The warranty of Nuvo for the safety and operational reliability of the appliance is subject to the following conditions:

- The appliance is used exclusively as prescribed and operated as stipulated in these Operating Instructions.
- Only genuine spare parts or accessories and those defined and approved by Nuvo are used. The use of other parts may involve unknown risks and must be avoided in all cases.
- No structural alterations are made to the appliance. Unauthorised modifications or conversions to the appliance are not permitted for safety reasons.
- Inspections and maintenance are carried out at the specified time intervals.
- Initial commissioning has been carried out and the appliance has been released for operation by means of a declaration of acceptance.

1.5 Notes for the user

- All the steps described in these Operating Instructions may only be carried out by qualified personnel who have been authorised and instructed by the operator.

1.5.1 Instruction on the appliance

Instruction

- The instruction must be carried out on the appliance immediately by Nuvo, by a company authorised by Nuvo or by a person designated by the operator.
- On completion of the instruction, a certificate must be created and signed in order to document that the user has understood the special operator control actions required for normal use.

1.5.2 User's duty to inform and inspect

Duty to inform and inspect

- Read these Operating Instructions carefully prior to installation of the appliance. This ensures that you benefit from all its advantages and prevents any risk of injury or damage.
- Prior to any use or transfer for use, the functional reliability and proper condition of the appliance must be inspected by the user.

Troubleshooting

- In case of special problems which are not sufficiently described in detail in these Operating Instructions, contact your supplier for your own safety.

1.5.3 Marking

CE mark: Nuvo declares that the products comply with the relevant regulations set forth in the applicable European Directives.

CE mark with the ID number of the indicated conformity assessment body: Nuvo declares that the assessment of conformity in accordance with 93/42 EEC (Medical Device Directive) has been performed by the indicated body.

This symbol marks the product as a component approved by a "Nationally Recognized Testing Laboratory" which complies with both Canadian and US deviations from applicable standards.

1.5.4 Standards and directives

The appliance complies with the safety requirements of the following standards, laws and directives:

- Medical Devices Act (MPG)
- 93/42 EEC (Medical Device Directive)
- IEC 60601-1 – Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance

1.6 Intended purpose

- The pendant system is individually equipped; depending on the version and equipment, it serves for:
  – carrying and positioning medical end devices in OR or intensive care rooms and medical environments;
- the conveying and extraction of fluids including:
  – medical gases, vacuum and compressed air (only Navigator M6),
  – electricity and data.

- The pendant system is suitable for continuous operation.

Qualified personnel

- The pendant system may only be operated by instructed, qualified medical personnel.
- The pendant system may only be cleaned and disinfected by instructed hygiene specialists.
- Maintenance work on the pendant system must be carried out by the operator's technical specialist personnel in accordance with the applicable instruction document.

1.6.1 Incorrect use

- The maximum load bearing capacity of the pendant system and its components as specified in Chapter , "", on page 45 must not be exceeded.

Duty cycle of the electromagnetic brakes

- The maximum duty cycle of the electromagnetic brakes of the pendant system must not exceed 1 minute.
  – If the electromagnetic brakes are actuated over a longer period of time, the power pack can switch off automatically as a protection measure against overheating.
  – Once the power pack has switched off, it must cool down for 10 minutes and then be disconnected from the mains for 10 seconds before being switched back on again. Normal system operation can only be resumed afterwards. To prevent safety cutoffs, the maximum duty cycle should not be exceeded.

1.6.2 Contraindications

- The pendant system must not be used close to strong magnetic fields.
- No BF or CF application parts in accordance with IEC 60601-1 may be directly connected to the pendant system.

1.7 Ambient conditions

1.7.1 Ambient conditions for storage and transport

The following conditions apply to storage:

- Ambient temperature: -25 °C to 70 °C
- Relative humidity: 10 % to 75 %
- Atmospheric pressure: 500 hPa to 1,060 hPa

1.7.2 Ambient conditions for operation

- Ambient temperature: 10 °C to 40 °C
- Relative humidity: 30 % to 75 %
- Atmospheric pressure: 700 hPa to 1,060 hPa
  (This corresponds to a maximum operating altitude of 3,000 m).

1.8 Approved Nuvo products

The following Nuvo products are approved for use on the pendant system:

- Nuvo products in accordance with Chapter 15, “Approved Nuvo Products”, on page 54
- The components are adapted to each other and safe to operate. Any other type of installation, and in particular the use of components from third-party manufacturers, is strictly prohibited because these components can be potential sources of danger.
- The combination of any other Nuvo product with the pendant system must be approved by Nuvo. If applicable, the conformity assessment must be repeated.

1.9 Combination with products of other manufacturers

Read the Operating Instructions for combined medical products

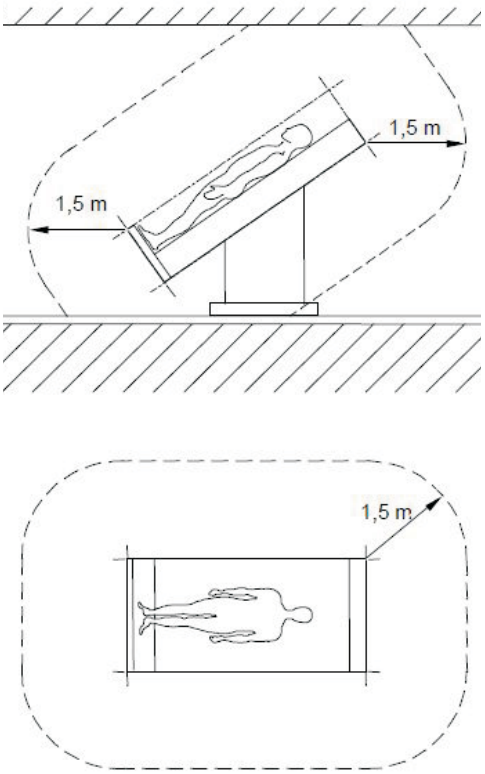
- The pendant system is combined with the CEMOR monitor carrier system or the Navigator M6. To prevent dangerous overload, which can lead to a failure or collapse of the pendant system, the maximum load bearing capacity specified in Chapter , “”, on page 45 must be adhered to.
- The party placing the appliance into operation is responsible for the validation of the overall system. A conformity assessment procedure shall be executed if required and a declaration in accordance with Article 12 of 93/42/EEC (Medical Device Directive, MDD) shall be provided.
- Read the Operating Instructions provided by the third-party manufacturer to obtain the information required for the operation of the end device (e.g. flat screen, medical device, etc.).
- Power packs intended for the supply of end devices must ensure electrical isolation and provide two protective measures in accordance with IEC 60601-1.

1.10 Patient environment

(See Figure 4)

- If medical electrical appliances with tangible parts are attached to the pendant system and if these are positioned within the patient environment, they must provide two patient protection measures (MOPP) in accordance with IEC 60601-1.
- If tangible parts are positioned outside the patient environment, two Means Of Operator Protection (MOOP) in accordance with IEC 60601-1 must be provided.
- The dimensions in the Figure illustrate the minimum extension of the patient environment in an unrestricted area.

Figure 4: Patient environment, illustration A.9 from IEC 60601



2.1 Structure of the safety instructions

2.1.1 Warnings of risk of injury

Important notes in this document are marked with graphic symbols and signal words. Signal words such as DANGER, WARNING or CAUTION describe the degree of risk of injury. The different triangle symbols visually emphasise the degree of hazard.

⚠ DANGER

DANGER refers to a potential hazard with a high degree of risk which, if not avoided, will lead to death or severe injury.

⚠ WARNING

WARNING refers to a potential hazard with a medium degree of risk which, if not avoided, can lead to death or severe injury.

⚠ CAUTION

CAUTION refers to a potential hazard with a low degree of risk which, if not avoided, can lead to minor or moderate injury.

2.1.2 Warnings of damage to property

NOTICE

NOTICE refers to a potential hazard, which, if not avoided, will lead to damage to property.

2.1.3 Indication of additional information

NOTE

A NOTE provides additional information and useful tips for the safe and efficient use of the appliance.

2.2 Supplementary symbols used in the safety instructions

Explosion hazard: warns of the improper use of oxygen (see Chapter 2.7, “Proper use of oxygen”, on page 21).

Danger of fire: warns of the improper use of oxygen (see Chapter 2.7, “Proper use of oxygen”, on page 21).

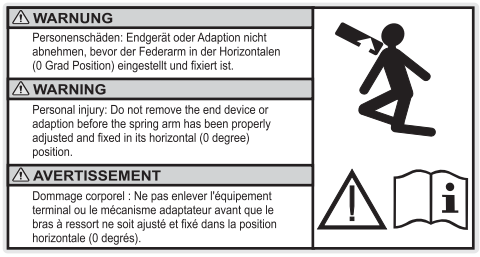
Electric shock hazard: warns of electric shock which can lead to severe injury or even death.

Risk of parts falling off: warns of parts falling off while carrying out mounting or dismantling work underneath the pendant system.

Sudden release of the spring arm: warns that the spring arm may jump up suddenly whilst dismantling the end device (e.g. flat screen, medical device, etc.) from the Navigator M6 or the CEMOR.

Tightening torque: warns of the pendant system suddenly dropping because the fastening screws have not been sufficiently tightened or not tightened at all.

2.3 Description of graphic symbols possibly used on the appliance and the package



WARNING SIGN: warns that the spring arm may jump up suddenly.

Personal injury: Do not remove the end device or adaption before the spring arm has been properly adjusted and fixedly attached in its horizontal (0 degree) position.

Personal injury: Do not remove the end device or adaption before the spring arm has been properly adjusted and fixed in its horizontal (0 degree) position.

Dommage corporel : Ne pas enlever l'équipement terminal ou le mécanisme adaptateur avant que le bras à ressort ne soit ajusté et fixé dans la position horizontale (0 degrés).

Observe the Operating Instructions: Read the Operating Instructions carefully prior to installation of the pendant system. This ensures that you benefit from all the advantages of the pendant system and prevents any risk of injury or damage.

Observe the maximum load bearing capacity or maximum loading capacity (payload): warns of the risk of the appliance suddenly dropping because the maximum load bearing capacity or maximum loading capacity (payload) has been exceeded. The maximum value is indicated in kg or Nm.

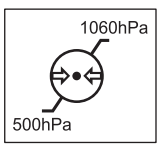
General note reminding the user to handle the pendant system with care.

Environmentally friendly disposal: warns of damage to the environment caused by improper disposal of the pendant system (must not be disposed of as normal household waste).

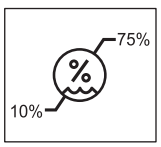
CE mark: Nuvo declares that the products comply with the relevant regulations set forth in the applicable European Directives.

CE mark with the ID number of the indicated conformity assessment body: Nuvo declares that the assessment of conformity in accordance with 93/42 EEC (Medical Device Directive) has been performed by the indicated body.

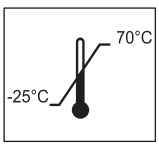
This symbol marks the product as a component approved by a "Nationally Recognized Testing Laboratory" which complies with both Canadian and US deviations from applicable standards.



Atmospheric pressure: indicates the permissible atmospheric pressure values in a range from 500 hPa to 1060 hPa for transport and storage.

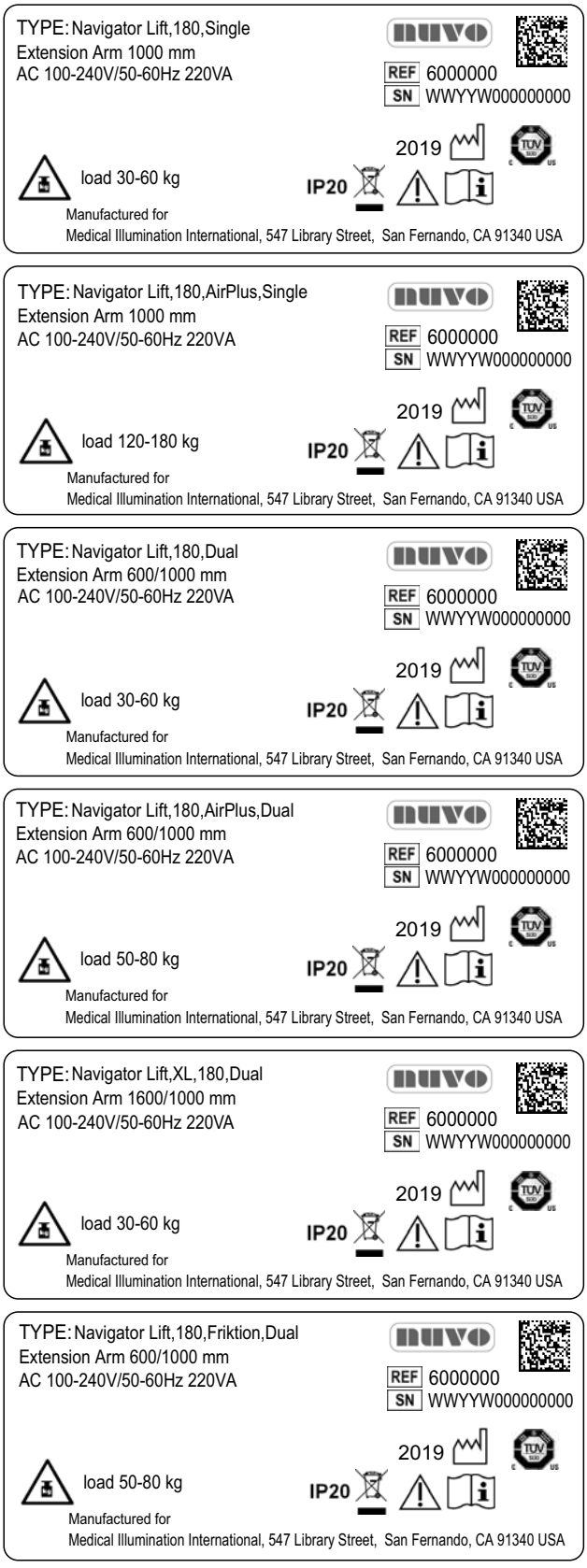


Relative humidity: indicates the permissible humidity values in a range from 10 % to 75 % for transport and storage.



Ambient temperature: indicates the permissible ambient temperature values in a range from -25 °C to 70 °C for transport and storage.

Figure 5: Information on the rating plate



2.4 Information on the rating plate

(See Figure 5)

- The rating plates are attached to the top side of the extension arm or XL extension arm and under the front cover of the spring arm.
- Navigator Lift ™ 180 is the version equipped with electromagnetic brakes.
- Navigator Lift ™ 180 Air*Plus* is the version equipped with pneumatic (compressed air operated) brakes.
- Navigator Lift ™ XL 180 is the version equipped with the XL extension arm.
- Navigator Lift ™ 180 Friction is the version equipped with a mechanical brake.

Serial number

- The rating plate indicates the serial number (SN) of the pendant system.

Power supply

- The rating plate provides information on the power supply of the pendant system.

Load bearing capacity

- The value of e.g. 120 – 180 kg indicates the permissible weight range and the maximum load bearing capacity of the spring arm.

Date of manufacture

- The digits 1 to 4 of the serial number (SN) indicate the date of manufacture of the pendant system.
  - The first two digits indicate the week of manufacture, e.g. 14 = calendar week 14.
  - The following two digits indicate the year of manufacture, e.g. 15 = 2015.
  - The letter in the 5th position indicates the factory, e.g. H = Hünfeld.
  - The digits following the letter indicate the serial number.
- The information and illustrations serve as examples.
- The information and illustrations on the rating plate can vary.

2.5 Overview of the most important safety instructions

The safety instructions in the following chapters must be adhered to.

2.5.1 Operation

⚠WARNING

Sudden release of the spring arm

Warns of the spring arm suddenly jumping up whilst dismantling the end devices from the CEMOR or the Navigator M6 or whilst dismantling the adaption device, such as the Navigator M6 or the CEMOR, from the spring arm:

- Before dismantling an end device (e.g. flat screen, medical device, etc.) from the CEMOR or the Navigator M6, or before dismantling the CEMOR or the Navigator M6 from the spring arm, adjust the height adjustment mechanism on the spring arm to the horizontal (0 degree position) and then fix it in this position.
- Check the height adjustment of the spring arm. Once the height adjustment mechanism has been fixed in the horizontal (0 degree position), it must no longer be possible to move the spring arm upwards.
- The end device (e.g. flat screen, medical device, etc.) may only be removed in the horizontal (0 degree position), if the spring arm can no longer be moved upwards.

⚠WARNING

Risk of the pendant system dropping because the maximum load bearing capacity has been exceeded

If the maximum load bearing capacity has been exceeded, there is a risk that the pendant system or components thereof may disengage from the fastening device and drop:

- The maximum load bearing capacity of the pendant system and components thereof must not be exceeded (see Chapter , “”, on page 45)!
- Do not attach or mount additional loads to the pendant system, the CEMOR or the Navigator M6 and end devices.

Collision damage

In case of collision with other devices, walls or ceilings, the pendant system, the CEMOR or the Navigator M6 can be damaged and important patient care systems can fail:

- After a collision, the CEMOR or the Navigator M6 and the pendant system must be inspected for damage.
- In case of doubt, contact your supplier.

2.5.2 Mounting / dismantling

⚠WARNING

Electric shock hazard

To prevent the risk of electric shock, the pendant system may only be connected to a power supply network equipped with a protective conductor:

- The pendant system must be connected in such a way that it can be disconnected from the mains at all poles and at the same time.

Electric shock hazard

Power supply cables are laid in the pendant system, in the CEMOR or in the Navigator M6. Contact with energised components presents a danger to life from electric shock. Prior to any installation/dismantling and setting up work, the pendant system must be disconnected from the mains:

- Disconnect all the poles from the mains and prevent the appliance from being switched back on again.
- Make sure that all the appliances connected via the CEMOR or the Navigator M6 are de-energised.

⚠WARNING

Risk of parts falling off

During all dismantling and installation work, it must be ensured that no person is in the area underneath the pendant system.

2.5.3 Cleaning and disinfection

Cleaning

⚠WARNING

Risk of contamination and infection of the patient

Parts of the pendant system and the adaptions are made of plastic. Solvents can dissolve plastic materials. Strong acids, bases and agents with an alcoholic strength of more than 60 % can lead to the plastic materials becoming brittle. Detached particles can fall into open wounds. If liquid cleaning agents are allowed to penetrate the pendant system and the adaptions, excess cleaning liquid may drip into open wounds.

Disinfection

⚠CAUTION

Health hazard

Disinfectants can contain substances hazardous to health which, when in contact with the skin and eyes, can cause injuries or affect the respiratory organs when inhaled. Observe the protective measures:

- Observe the hygiene regulations.
- Adhere to the disinfectant manufacturer's instructions.
- Perform surface disinfection every working day and in case of contamination.

2.5.4 Maintenance work

⚠WARNING

Electric shock hazard

Power supply cables are laid in the pendant system and in the Navigator M6 or the CEMOR. Contact with energised components presents a danger to life from electric shock. Disconnect the pendant system from the mains before any maintenance work:

- Disconnect all the poles from the mains and prevent the appliance from being switched back on again.
- Make sure that all the appliances connected via the Navigator M6 or the CEMOR are de-energised.

⚠CAUTION

Maintenance work

- The pendant system must be inspected as specified in Chapter 18, “Inspection plan”, on page 109.
- In case of failure or damage, please contact your supplier.

2.6 Warranty

⚠WARNING

Pendant system dropping

The pendant system and the CEMOR or the Navigator M6 are an adapted system with regard to the maximum load bearing capacity.
Alterations to the pendant system can result in exceeding the permissible, total or maximum load bearing capacity of the individual components. In this case, there is a risk of the pendant system or components of the pendant system disengaging from the fastening device and dropping.
Nuvo warrants the functional reliability of the pendant system only under the condition that:

- no structural alterations are made to the pendant system. Unauthorised modifications or conversions to the pendant system are not permitted for safety reasons.
- only genuine spare parts or accessories and those defined and approved by Nuvo are used. The use of other parts may involve unknown risks and must be avoided in all cases.
- inspections and maintenance are carried out at the specified time intervals.
- Related documents for dismantling, mounting and adjustment work to be carried out on the adaptions and the spring arms are available from Nuvo on request.
- The party placing the appliance into operation is responsible for the validation of the overall system. A conformity assessment procedure shall be executed if required, and a declaration in accordance with Article 12 of 93/42/EEC (Medical Device Directive, MDD) shall be provided.

2.7 Proper use of oxygen

⚠ DANGER

Oxygen explosion

Oxygen becomes explosive when in contact with oils, greases and lubricants. Compressed oxygen presents an explosion hazard:

- Make sure that the oxygen and gas outlet points are free from oily, greasy and lubricating materials!
- Do not use any cleaning agents containing oil, grease or lubricants.

Danger of fire

Escaping oxygen is combustible:

- Open fire, red hot objects and open light are not permitted when working with oxygen!
- Do not smoke!

2.8 Disposal

⚠ WARNING

Sudden release of spring tension

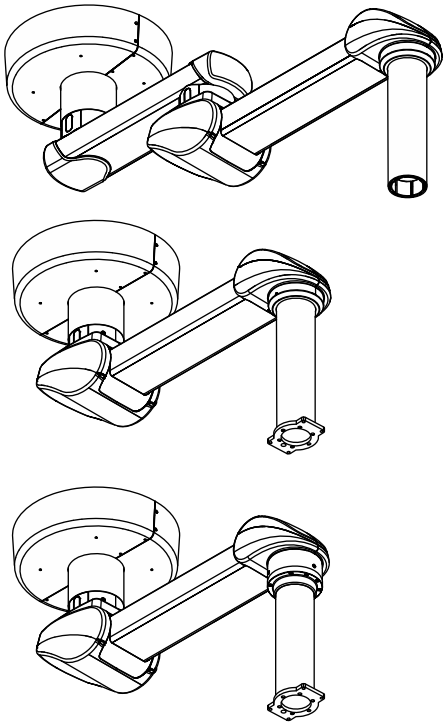
The spring arm is equipped with a compression spring. When dismantling the spring arm, the compression spring suddenly releases its tension and can lead to severe injury:

- Do not dismantle the spring arm for disposal.

RoHS conformity

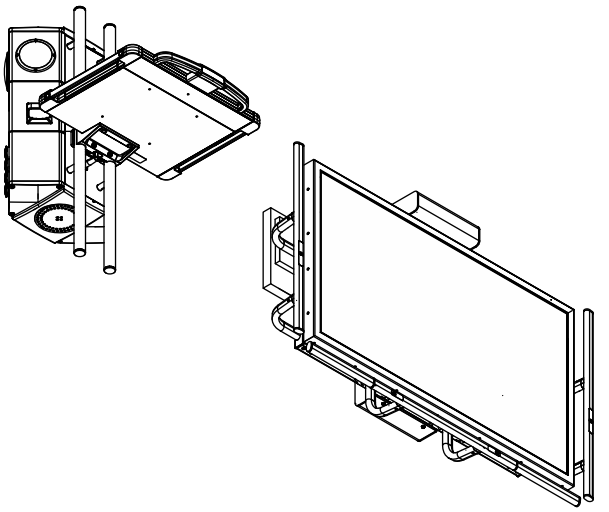
- The pendant system complies with the requirements of the 2011/65/EC RoHS Directive (on the restricted use of certain hazardous substances in electrical and electronic equipment).
- To prevent environmental damage and personal injury, we request you to contact us or your authorised service partner if you intend to take the pendant system out of operation for the purpose of disposal.
- The pendant system must be disposed of at a suitable collection point for recyclable waste in accordance with country-specific regulations.

Figure 6: Overview of the structure of the Operating Instructions



The Operating Instructions of the entire pendant system consist of separate documents. For this reason these Operating Instructions are only valid and complete if all the documents are available at the place of installation. The following parts must be available:

Part 01: Pendant systems Navigator Lift ™ 180, Navigator Lift ™ 180 Friction, Navigator Lift ™ XL 180 and Navigator Lift ™ 180 Air*Plus*

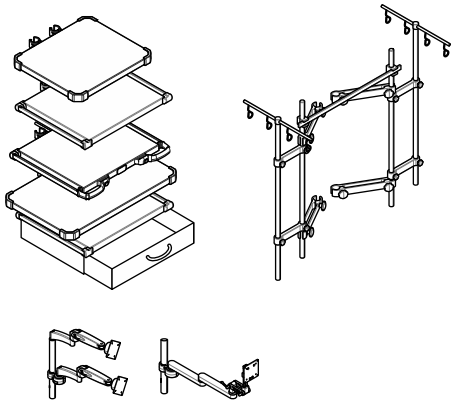


Part 02: Approved Nuvo adaptions

CEMOR
(only on the pendant systems Navigator Lift ™ 180, Navigator Lift ™ 180 Friction and Navigator Lift ™ XL 180)

Navigator M6
(on the pendant systems Navigator Lift ™ 180, Navigator Lift ™ 180 Friction, Navigator Lift ™ XL 180 and Navigator Lift ™ 180 Air*Plus*)

(Observe the Operating Instructions of the gas outlets installed – these Operating Instructions are included in the scope of delivery)



Part 03: Accessories approved for the Navigator M6, see accessories catalogue

4.1 Device description

Canopy

Since the points for connecting the electrical cables of the pendant system are located under the canopy [1], the canopy [1] may only be removed by specialist personnel authorised by the operator.

Extension arm (dual-arm type only)

The extension arm [2] or the XL extension arm [2] can be rotated up to 340 degrees horizontally.

Spring arm (single- and dual-arm type)

The spring arm [3] can be rotated up to 340 degrees horizontally and can be vertically adjusted +20 degrees upwards and –40 degrees downwards.

Drop tube

The length of the Drop tube [4] compensates different ceiling heights in order to ensure that the CEMOR [5] or the Navigator M6 [6] is positioned at the working height desired.

CEMOR

The CEMOR [5] can be rotated up to 340 degrees horizontally. For more detailed information on the CEMOR [5] refer to the Operating Instructions included in the scope of delivery of the CEMOR [5].

Navigator M6

The Navigator M6 [6] can be rotated up to 340 degrees horizontally. For more detailed information on the Navigator M6 [6] refer to the Operating Instructions included in the scope of delivery of the Navigator M6 [6].

4.2 Functional description

Extension arm (dual-arm type only)

The extension arm [2] or the XL extension arm [2] serves for the horizontal positioning of the CEMOR [5] or the Navigator M6 [6].

Spring arm

The spring arm [3] serves for the horizontal and vertical positioning of the CEMOR [5] or the Navigator M6 [6].

End stops on the extension arm, spring arm and Drop tube

In order to prevent collisions with other components or walls, the swivel range of the extension arm [2], extension arm XL [2], spring arm [3] and Drop tube with roller bearing [4] can be restricted by means of internal end stops. The end stops of the extension arm [2], spring arm [3] and the Drop tube with roller bearing [4] are pre-adjusted at the factory. They can be re-adjusted as described in Chapter 8.8 on page 34.

Brake on the extension arm and spring arm

Pendant system Navigator Lift ™ 180:
The extension arm [2] and the spring arm [3] are equipped with an electropneumatic brake [A], [B] which keeps the extension arm [2] and the spring arm [3] stable in any adjusted position.
Pendant system Navigator Lift ™ 180 Friction**:**
The extension arm [2] and the spring arm [3] are equipped with a mechanical brake which keeps the extension arm [2] and the spring arm [3] stable in any adjusted position. The mechanical brake can be adjusted as described in Chapter 8.2.2 on page 28.
Pendant system Navigator Lift ™ XL 180:
The extension arm XL [2] and spring arm [3] is equipped with an electropneumatic brake [A], [B] which keeps the extension arm XL [2] and spring arm [3] stable in any adjusted position.
Pendant system Navigator Lift ™ 180 Air*Plus*:
The extension arm [2] and the spring arm [3] are equipped with a pneumatic (compressed air operated) brake [A], [B] which keeps the extension arm [2] and the spring arm [3] stable in any adjusted position.
The additional mechanical brakes (friction brakes) ensure that the extension arm [2] and spring arm [3] remain stable at the bearing point towards the ceiling tube and also between the extension arm and the spring arm (Dual arm type only) in the case of a failure of the pneumatic (compressed air operated) brake [A], [B]. The braking force can be adjusted as described in Chapter 8.2.1 on page 28.

Brake on the Drop tube

The CEMOR [5] or the Navigator M6 [6] are braked by means of a mechanical brake (friction brake) on the Drop tube [4] and remain stable in any adjusted position. The braking force can be adjusted as described in Chapter 8.2.2 on page 28 or Chapter 8.4 on page 29.

Releasing the brake on the CEMOR or the Navigator M6

To release the brake [A], [B], press the corresponding brake button [A], [B] on the CEMOR [5] or the Navigator M6 [6]. The extension arm [2] or the XL extension arm [2] with spring arm [3] can be rotated. (For more detailed information on how to correctly operate the brakes refer to the Operating Instructions of the CEMOR [5] or the Navigator M6 [6].)

Vertical lift of the spring arm

To prevent collisions with other components or the ceiling, the vertical lift of the spring arm [3] can be restricted. The vertical lift was defined during installation. The vertical lift can be adjusted as described in Chapter 8.6 on page 32.

Function of the springs in the spring arm

To facilitate the positioning of the CEMOR [5] or the Navigator M6 [6] 1 or 2 springs are mounted in the spring arm [3]. The springs compensate the weight of the CEMOR [5] or the Navigator M6 [6] and are available in different spring equipment versions.

Adjusting the load bearing capacity in the spring arm

If the spring arm [3] with the end device (e.g. flat screen, medical device, etc.) moves down or if a new end device is mounted, the load bearing capacity of the spring arm [3] must be readjusted. The load bearing capacity can be adjusted as described in Chapter 8.5 on page 30.

Reducing the vertical lift to the horizontal (0 degree position)

In order to prevent the spring arm [3] jumping up when removing the end device (e.g. flat screen, medical device, etc.), the vertical lift of the spring arm [3] must be reduced to the horizontal (0 degree position). The vertical lift can be adjusted to the horizontal (0 degree position) as described in Chapter 8.6 on page 32.

Extension arm lighting (optional)

Pendant systems Navigator Lift™ 180, Navigator Lift™ 180 Friction and Navigator Lift™ XL 180 only – Dual-arm type with Navigator M6: indirect extension arm lighting [7] (SurroundLED basic C) on the extension arm [2] or XL extension arm [2]. The extension arm lighting [7] is switched on and off via either the on/off switch or a rotary dimmer switch (SurroundLED advanced system) in the light module of the Navigator M6 [6].

BrakeGuide on the extension arm (optional)

Only pendant systems Navigator Lift™ 180 and Navigator Lift™ XL 180 – Single- and dual-arm type:
The BrakeGuide [8] lights up when releasing the brake [A], [B] via the brake button [A], [B] on the CEMOR [5] or the Navigator M6 [6]:

Pendant systems Navigator Lift™ 180 and Navigator Lift™ XL 180 – Dual-arm type:
- The upper BrakeGuide [8] lights up green
- The lower BrakeGuide [8] lights up blue

Pendant system Navigator Lift™ 180 – Single-arm type:
- The BrakeGuide [8] lights up green

Figure 7: What is the maximum load bearing capacity?

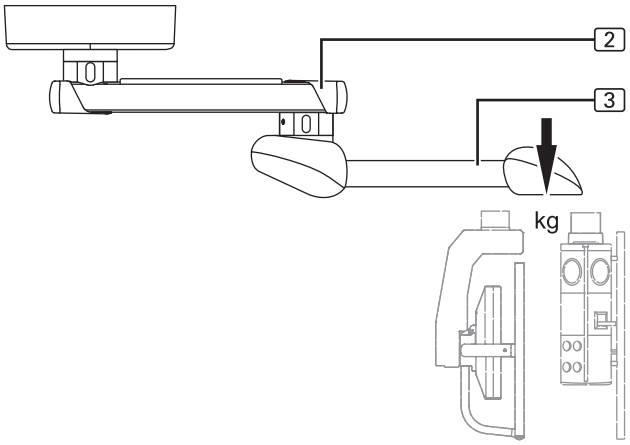
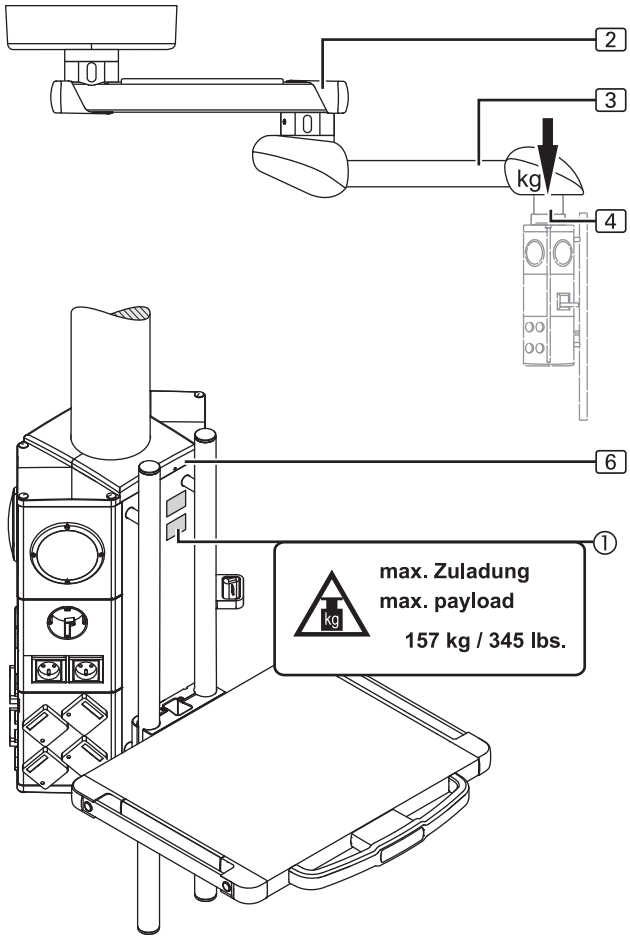


Figure 8: What is the maximum loading capacity (payload)?



5.1 What is the maximum load bearing capacity?

(See Figure 7)

The maximum load bearing capacity is the maximum weight which the extension arm [2] with spring arm [3] can carry. Table 01 indicates the maximum permissible load bearing capacity of the Single version on the spring arm [3] using the example of the pendant system Navigator Lift ™ – Dual-arm type. To look up the maximum load bearing capacity of all pendant systems refer to Chapter , "", on page 45.

Table 01: Maximum load bearing capacity on the pendant system Navigator Lift ™ 180 – Dual-arm type

Dual-arm versions	Load bearing capacity [kg]
Extension arm 600 mm with spring arm	180
Extension arm 800 mm with spring arm	170
Extension arm 1,000 mm with spring arm	150
Extension arm 1,200 mm with spring arm	130

5.2 What is the maximum loading capacity (payload)?

(See Figure 8)

The dead weight of the Drop tube [4] and the CEMOR [5] or the Navigator M6 [6] must be subtracted from the maximum load bearing capacity of the pendant system.
This value corresponds to the maximum loading capacity (payload). In the example illustrated in the Figure, the maximum payload is 157 kg / 345 lbs. It is indicated on the adhesive label ① on the Navigator M6 [6]. If the Drop tube [4] or the Navigator M6 [6] are replaced, the maximum loading capacity (payload) must be calculated again and indicated on the label ① on the Navigator M6 [6].

For more detailed information on the maximum loading capacity (payload) refer to the Operating Instructions of the Navigator M6 [6].

5.3 Structural alterations to the pendant system

(See Figure 8)

The pendant system is an adapted system with regard to the maximum load bearing capacity and the maximum loading capacity (payload). Alterations to the pendant system can result in exceeding the permissible, total or maximum load bearing capacity of the individual components. In this case, there is a risk of the pendant system or thereof components disengaging from the fastening device and dropping:

- For this reason, structural alterations to the pendant system, including the replacement of the Navigator M6 [6] and the end devices (e.g. HF surgical device, flat screen, etc.), may only be carried out by specialist personnel authorised by the operator whilst taking the maximum load bearing capacity of the extension arm, spring arm and the Navigator M6 [6] into consideration.
- Be aware that the maximum loading capacity (payload) on the CEMOR [5] must not be changed.
- The pendant system may only be dismantled and mounted by the Nuvo technical service team or by trained and authorised service personnel.
- Related documents for dismantling, mounting and adjustment work are available from Nuvo on request.

Initial commissioning

1. The pendant system must be installed. Instructions for installation are included in the scope of delivery of the product.
2. For commissioning following installation, proper initial commissioning must be carried out for the entire pendant system.

Functional test

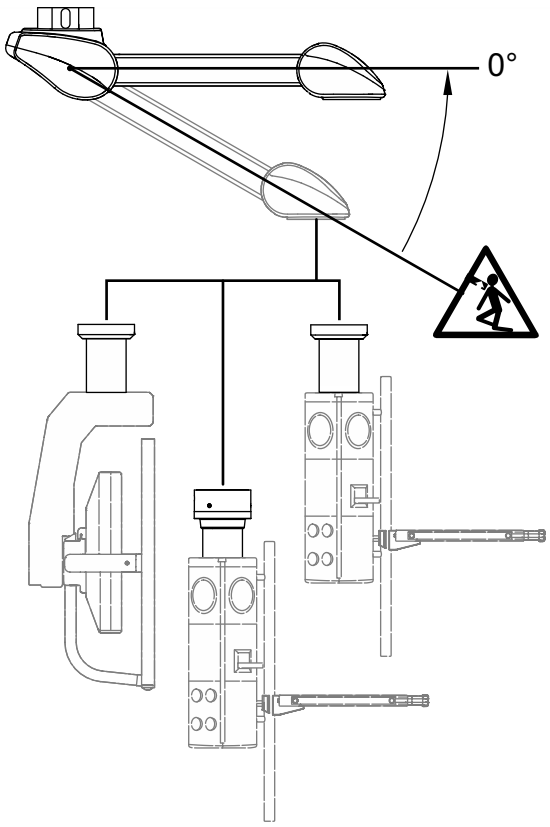
Prior to using the pendant system and the CEMOR or the Navigator M6 on a patient for the first time, a functional test must take place at the installation site. This functional test must be carried out by the operator or a person authorised by the operator, and the persons authorised by the operator must be duly instructed.
This requirement is considered fulfilled if:

1. the functional reliability of the pendant system and the CEMOR or the Navigator M6 has been ensured,
2. the maximum permissible loading capacity (payload) has been safely determined and is indicated on a label attached to the Navigator M6,
3. the proper functioning of the appliance has been approved by the operator during initial commissioning and documented by signing a declaration of acceptance.

The following points must be observed during handover to the operator:

1. The pendant system and the CEMOR or the Navigator M6 must not be handed over to the operator until they have been tested.
2. Handover must be documented in writing including confirmation by the operator.
3. On handover, the operator must be instructed in the functioning and effect of the maximum loading capacity (payload).
4. In addition, the operator must be instructed in the functioning, operation, cleaning and disinfection of the pendant system and the CEMOR or the Navigator M6 during the handover procedure.
5. Furthermore, on handover, the operator must be instructed in the adjustments permitted according to the Operating Instructions included in the scope of delivery.
6. On completion of the instruction, an instruction certificate must be created and signed in order to document that the operator/user has understood the special operator control actions required for normal use.

Figure 9: Replacing an end device



(See Figure 9)

⚠WARNING

Sudden release of the spring arm

Warns of the spring arm suddenly jumping up whilst dismantling the end devices from the CEMOR or the Navigator M6 or whilst dismantling an adaption device, such as the Navigator M6 or the CEMOR, from the spring arm:

- Before dismantling an end device (e.g. flat screen, medical device, etc.) from the CEMOR or the Navigator M6, or before dismantling the CEMOR or the Navigator M6 from the spring arm, adjust the height adjustment mechanism on the spring arm to the horizontal (0 degree position) and then fix it in this position.
- The end device (e.g. flat screen, medical device, etc.) may only be replaced by the operator or qualified personnel who have been authorised and instructed by the operator.

1. Fix the spring arm in the horizontal (0 degree position) as described in Chapter 8.6, “Adjusting the vertical lift on the spring arm”, on page 32.
2. Check the height adjustment of the spring arm. Once the height adjustment mechanism has been fixed in the horizontal (0 degree position), it must no longer be possible to move the spring arm upwards.
3. Position the spring arm in the horizontal (0 degree position).

- The end device (e.g. flat screen, medical device, etc.) may only be removed in the horizontal (0 degree) position, if the spring arm can no longer be moved upwards.

8 Adjustments

8.1 General safety instructions

⚠WARNING

Electric shock hazard

Electrical supply cables are laid in the pendant system. Contact with energised components presents a danger to life from electric shock. Disconnect the appliance from the mains before any adjustment work:

- Disconnect all poles of the pendant system from the mains and prevent it from being switched back on again.
- Make sure that all the appliances connected via the CEMOR or the Navigator M6 are de-energised.

⚠CAUTION

Performing adjustment work

Adjustment work may only be carried out by qualified personnel who have been authorised and instructed by the operator.

Figure 10: Adjusting the brake on the bearing unit (only Navigator Lift ™ 180 Air*Plus*)

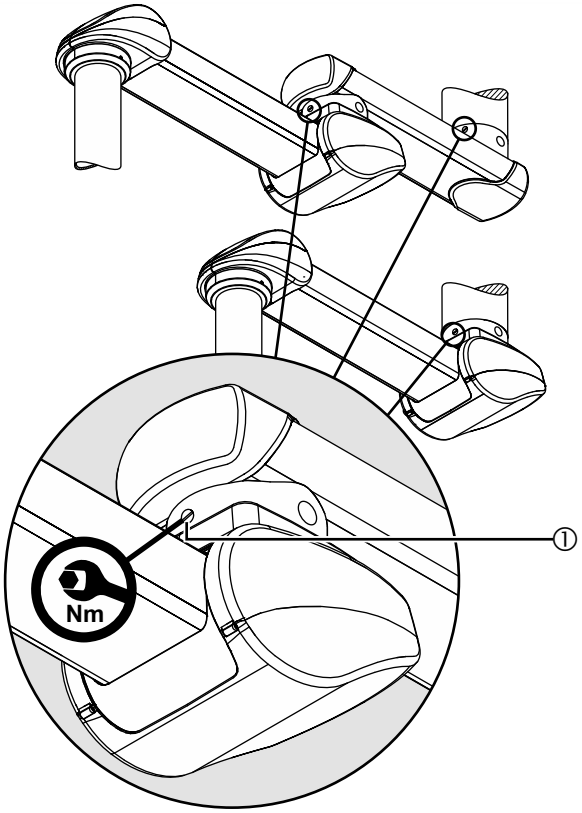
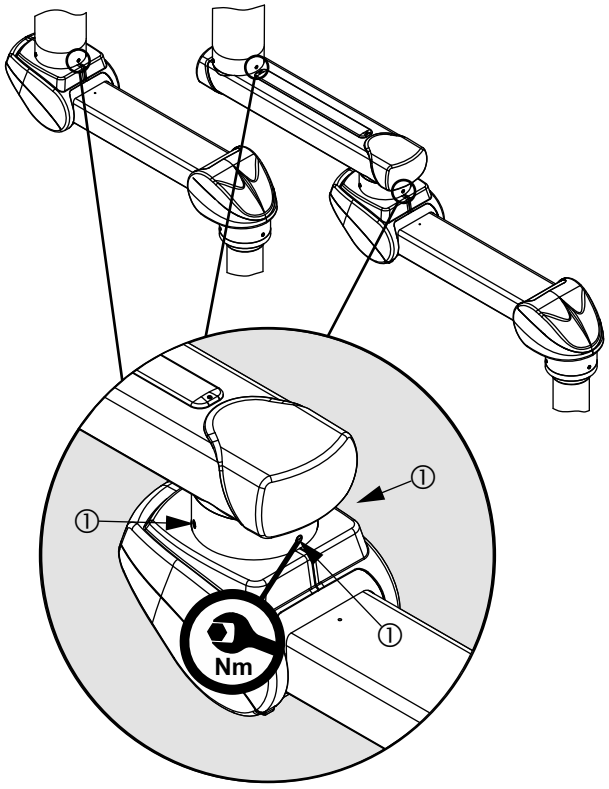


Figure 11: Adjusting the brake on the Bearing Unit Friction (only Navigator Lift ™ 180 Friction)



8.2 Adjusting the mechanical brake for the extension arm and spring arm

8.2.1 Adjusting the brake on the bearing unit (only Navigator Lift ™ 180 Air*Plus*)

(See Figure 10)

In the case of a failure of the pneumatic (compressed air operated) brakes, the additional mechanical brakes (friction brakes) of the Navigator Lift ™ 180 Air*Plus* version keep the extension arm and spring arm stable in any set position. Adjust the braking force in such a way that the spring arm or extension arm remain stable in any position and can still be conveniently adjusted.

Follow the general safety instructions prescribed in Chapter 8.1 on page 27.

- Tool to be used
  - Use a suitable torque spanner.

- To increase the braking force
  - Screw the slotted brake screw ① by uniformly rotating it to the right (clockwise).
  - Tighten the brake screw ① to up to 1.6 Nm.

- To reduce the braking force
  - Unscrew the slotted brake screw ① by uniformly rotating it to the left (anti-clockwise).
- Perform a function test.

8.2.2 Adjusting the brake on the Bearing Unit Friction (Navigator Lift ™ 180 Friction)

(See Figure 11)

For the pendant system Navigator Lift ™ 180 Friction, the mechanical brakes (friction brakes) keep the extension arm or spring arm in any adjusted position. Adjust the braking force in such a way that the spring arm or extension arm remain stable in any position and can still be conveniently adjusted. If the brakes are not adjusted correctly, the extension arm or spring arm can move automatically in an uncontrolled manner.

NOTE: Adjusting the brakes for the Navigator Lift ™ 180 Friction – Dual

Observe the end stop recommendation in Chapter 8.8.3 on page 35 and make sure that you turn the brake screws of the Bearing Unit Friction on the ceiling tube tighter than on the bearing point of the spring arm. This facilitates the bending of the spring arm and allows the bearing unit on the spring arm to rotate freely. Follow the general safety instructions prescribed in Chapter 8.1 on page 27.

- Tool to be used
  - Use a suitable torque spanner.
- To increase the braking force
  - Screw the slotted brake screws ① by uniformly rotating them to the right (clockwise).
  - All 3 brake screws must be tightened with the same tightening torque which, however, must not exceed 1.6 Nm.
- To reduce the braking force
  - Unscrew the slotted brake screws ① by uniformly rotating them to the left (anti-clockwise).
- Performing a function test

Figure 12: Adjusting the brake on the Drop tube Friction (slide bearing)

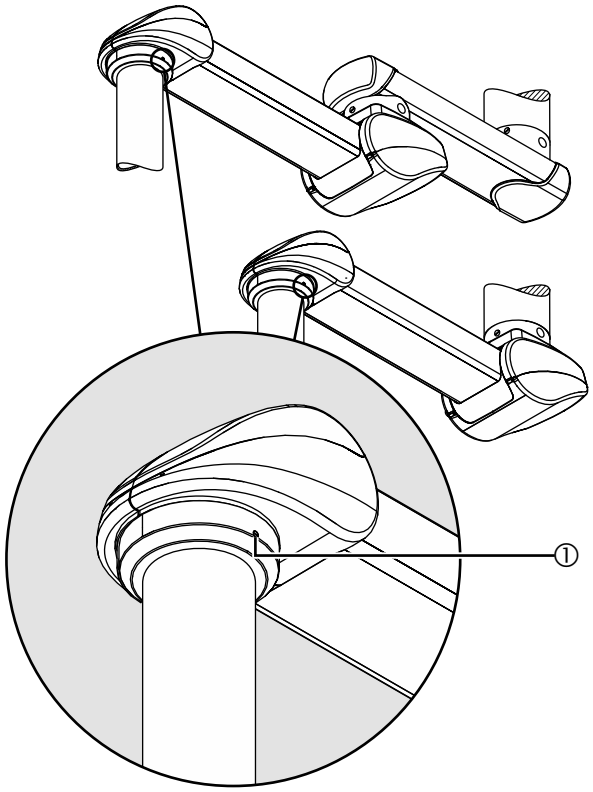
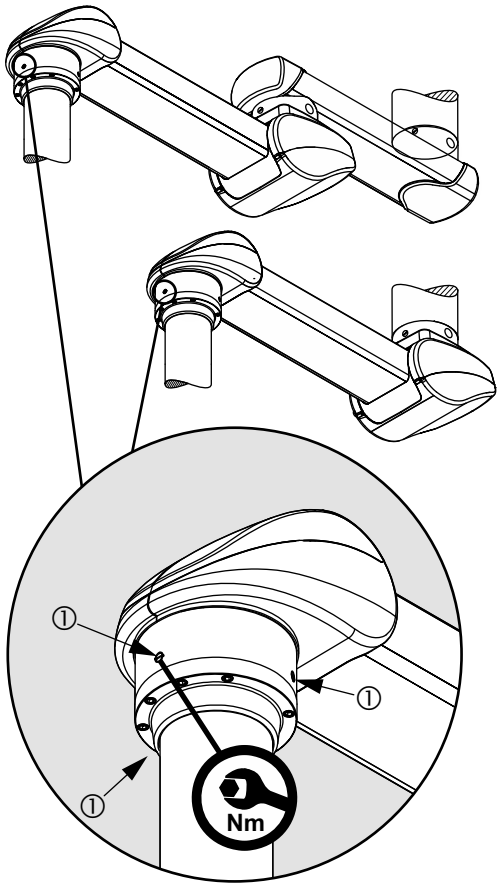


Figure 13: Adjusting the brake on the Drop tube Friction (roller bearing)



8.3 Adjusting the brake on the Drop tube Friction (slide bearing)

(See Figure 12)

For all pendant system versions the mechanical brake (friction brake) on the Drop tube keeps the adaption (CEMOR or Navigator M6) in the adjusted position.
Adjust the brake force of the corresponding end device (e.g. Navigator M6) such that the end device remains stable in any set position and can still be conveniently adjusted.

Follow the safety instructions
Follow the general safety instructions prescribed in Chapter 8.1 on page 27.

Tool to be used
Use a suitable slotted screwdriver.

To increase the braking force
- Insert the slotted screwdriver into the brake screw ① and turn in the clockwise direction.

To reduce the braking force
- Insert the slotted screwdriver into the brake screw ① and turn in the anti-clockwise direction.

- Perform a function test.

8.4 Adjusting the brake on the Drop tube Friction (roller bearing)

(See Figure 13)

The brake screws (friction brakes) are adjusted in the same way for all the different pendant system versions.

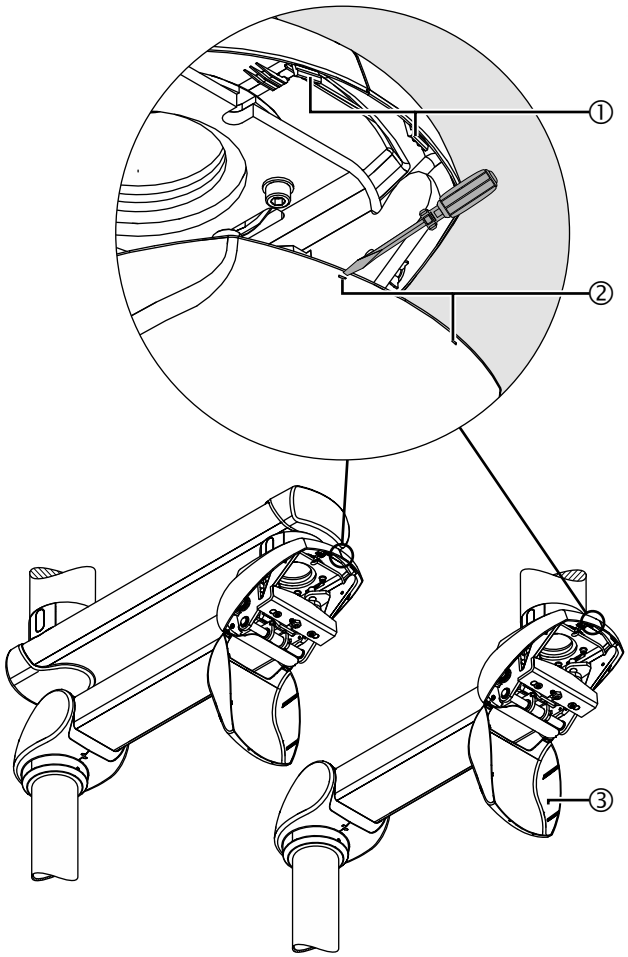
In the case of the Drop tube with friction bearing unit, the mechanical brakes ① (3 friction brakes) maintain the end device (e.g. Navigator M6) in the adjusted position.
Adjust the braking force in such a way that the corresponding end device (e.g. Navigator M6) remains stable in any set position and can still be conveniently adjusted.
Follow the safety instructions
Follow the general safety instructions prescribed in Chapter 8.1 on page 27.

- Tool to be used
  - Use a suitable torque spanner.

- To increase the braking force
  - Screw the slotted brake screws ① by uniformly rotating them to the right (clockwise).
  - All 3 brake screws must be tightened with the same tightening torque which, however, must not exceed 1.6 Nm.

- To reduce the braking force
  - Unscrew the slotted brake screws ① by uniformly rotating them to the left (anti-clockwise).
- Performing a function test

Figure 14: Opening the lower, rear cover panel



8.5 Adjusting the load bearing capacity on the spring arm

(See Figure 14)

The simplified representation illustrates the extension arm and spring arm without the cables mounted. The adjustment is identical for all versions.

The spring arm is equipped with 1 or 2 springs which compensate the weight of the CEMOR or the Navigator M6 with the end device (e.g. flat screen, medical device, etc.).
Adjust the load bearing capacity on the spring arm such that the spring arm with the CEMOR, or the Navigator M6 with the end device (e.g. flat screen, medical device, etc.), remains stationary in any set position.

If the spring arm does not remain in position after adjusting the spring tension, the spring arm must be replaced by a service technician.

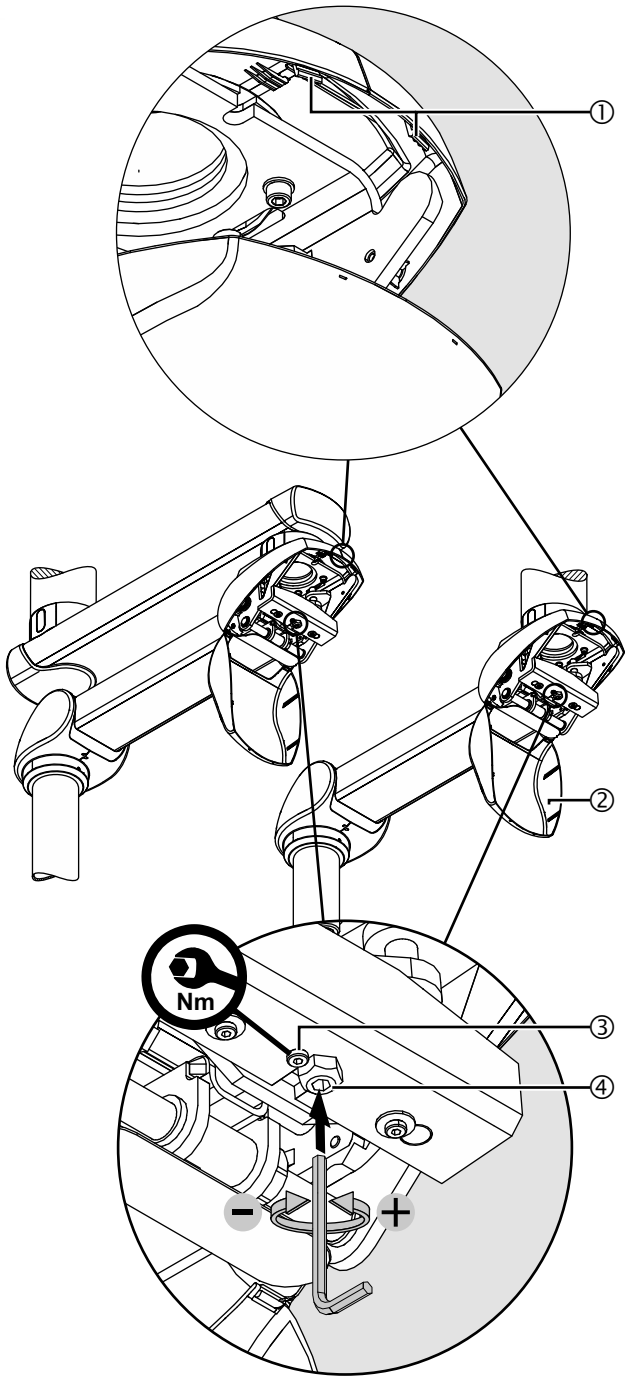
Possible spring equipment versions
30 – 60 kg, 50 – 80 kg, 70 – 110 kg, 80 – 135 kg, 120 – 180 kg. The load bearing capacity ranges and the maximum load bearing capacity are indicated on the rating plate of the spring arm.

8.5.1 Opening the lower, rear cover panel

(See Figure 14)

1. Follow the general safety instructions prescribed in Chapter 8.1 on page 27.
2. Insert a suitable screwdriver into the 2 openings ② one after the other and then disengage the 2 latches ① .
3. Fold down the upper, rear cover panel ③ .

Figure 15: Adjusting the load bearing capacity and closing the lower, rear cover panel



8.5.2 Adjusting the load bearing capacity

(See Figure 15)

Tool to be used
Use an Allen key (size 10) or a ring spanner (size 24).

4. Unscrew the Allen cylinder screw M8 x 16mm ③ – DIN 7984.
5. Insert the Allen key into the adjustment screw ④ .

- Lift the spring arm approx. 10 degrees above the horizontal (0 degree position) in order to relieve the tension on the adjustment screw ④ .

If the spring arm moves down, the load bearing capacity is too low:

- Turn the Allen key to the left (anti-clockwise) as illustrated in the Figure.

If the spring arm moves up, the load bearing capacity is too high:

- Turn the Allen key to the right (clockwise) as illustrated in the Figure.

6. Perform a function test.
7. Screw in and tighten the Allen cylinder screw M8 x 16mm ③ – DIN 7984.

NOTE – Load bearing capacity changing

The load bearing capacity adjustment can change progressively during use if the Allen cylinder screw M8 x 16mm ③ – DIN 7984 has not been properly tightened:

If this is the case, the spring arm no longer remains stable in its adjusted position:

- Tighten the Allen cylinder screw M8 x 16mm ③ – DIN 7984 with a tightening torque of 12Nm.

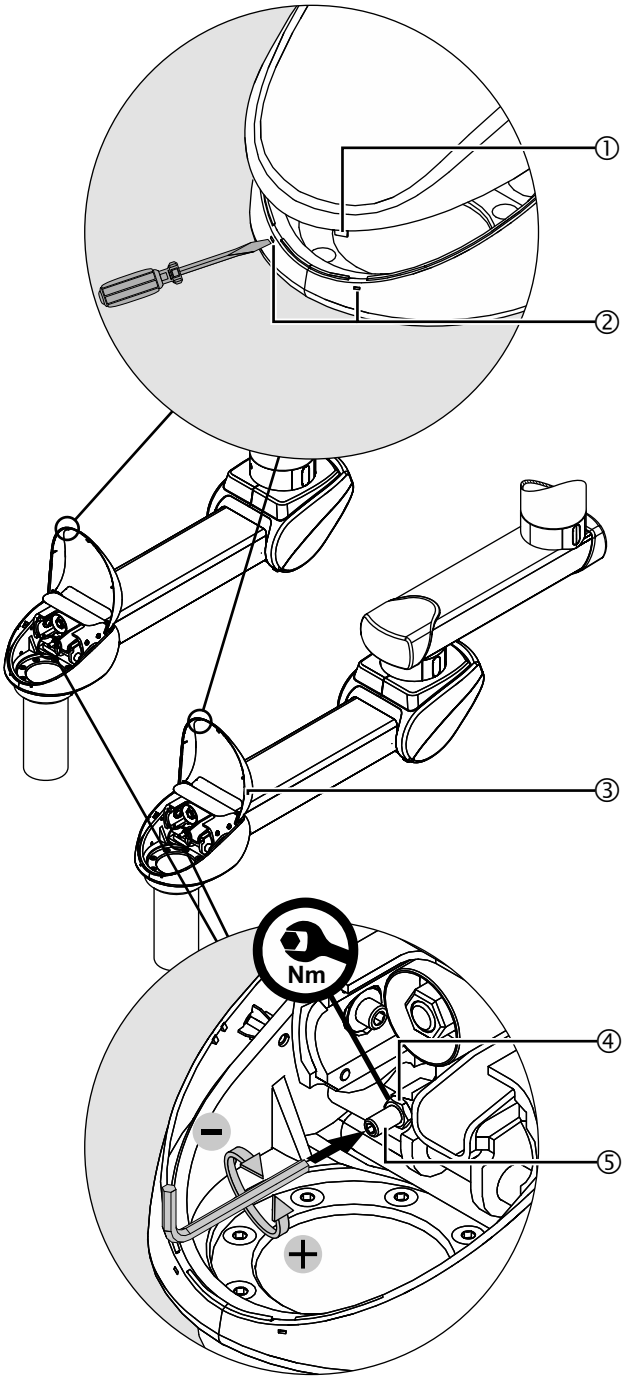
8.5.3 Closing the lower, rear cover panel

(See Figure 15)

8. Fold up the lower, rear cover panel ② until the 2 latches ① snap into place.
9. Check that the cover ② is securely in place:

- The guides (not illustrated in the Figure) of the cover ② must sit in the side panels.
- The cover ② must sit on the side panels without gaps.

Figure 16: Adjusting the vertical lift on the spring arm



8.6 Adjusting the vertical lift on the spring arm

(See Figure 16)

When replacing an end device (e.g. flat screen, medical device, etc.) the spring arm must be adjusted to the horizontal (0 degree position).

8.6.1 Opening the front, upper cover panel

(See Figure 16)

1. Follow the general safety instructions prescribed in Chapter 8.1 on page 27.
2. Insert a suitable screwdriver into the 2 openings ② one after the other and then disengage the 2 latches ① .
3. Fold up the front, upper cover ③ until it snaps into place.

8.6.2 Adjusting the vertical lift

(See Figure 16)

Tool to be used
Use an Allen key (size 10) and a ring spanner (size 18).

4. Loosen and turn back the hexagonal nut M12 ④ – ISO 4035.
5. Insert the Allen key into the adjustment screw ⑤ .

To reduce the vertical lift:
- Turn the Allen key to the left (anti-clockwise) as illustrated in the Figure.

To increase the vertical lift:
- Turn the Allen key to the right (clockwise) as illustrated in the Figure.

6. Perform a function test.
7. Tighten the hexagonal nut M12 ④ – ISO 4035.

NOTE – Vertical lift changing

The vertical lift can change progressively during use if the hexagonal nut M12 ④ – ISO 4035 has not been properly tightened:

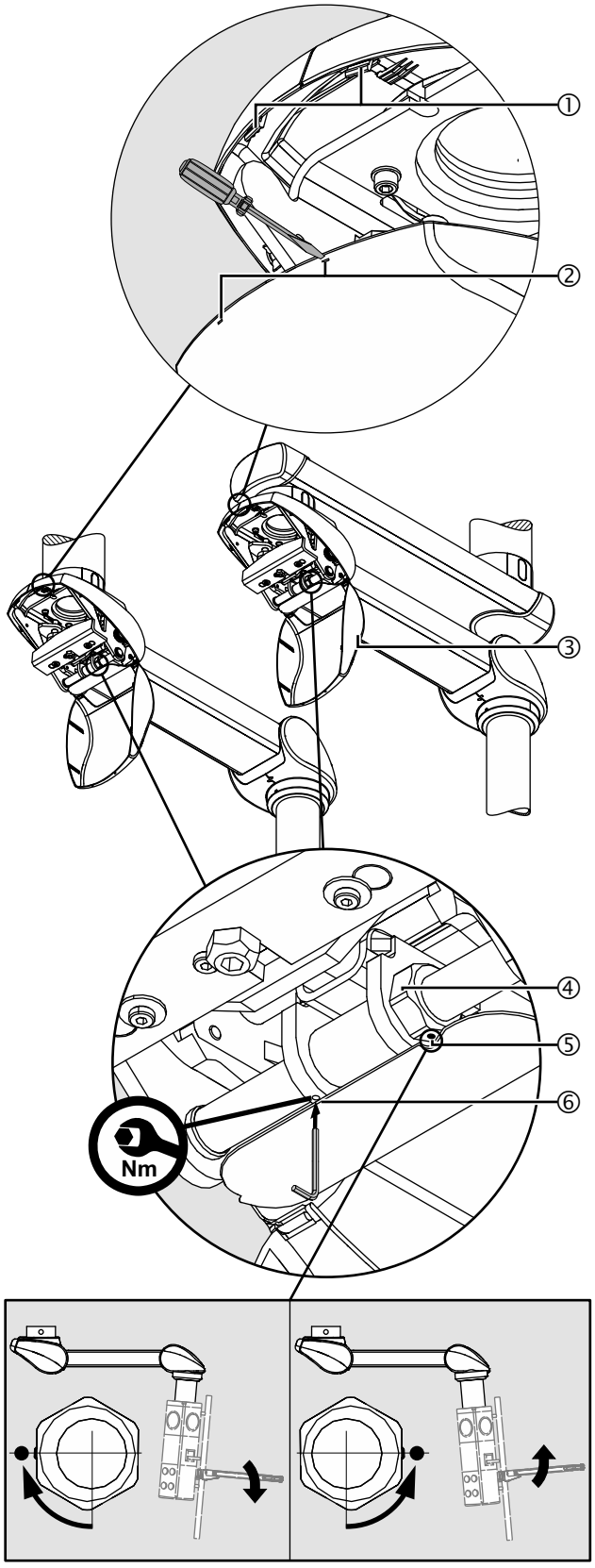
In this case there is a risk of the spring arm hitting the ceiling or another pendant system:
- Tighten the hexagonal nut M12 ④ – ISO 4035 with a tightening torque of 30 Nm.

8.6.3 Closing the front, upper panel

8. Fold down the front, upper cover ③ such that the 2 latches ① snap into place.
9. Check that the cover ③ is securely in place:

- The guides (not illustrated) of the cover ③ must sit in the side panels.
- The cover ③ must sit on the side panels without gaps.

Figure 17: Correcting the vertical alignment of the CEMOR or the Navigator M6



8.7 Correcting the vertical alignment of the CEMOR or the Navigator M6

(See Figure 17)

After mounting an end device (e.g. flat screen, medical device, etc.) there is a risk that the CEMOR or the shelf of the Navigator M6 are no longer in a precisely vertical position due to the weight of the end device.

8.7.1 Opening the lower, rear cover panel

(See Figure 17)

1. Follow the general safety instructions prescribed in Chapter 8.1 on page 27.
2. Insert a suitable screwdriver into the 2 openings ② one after the other and then disengage the 2 latches ① .
3. Fold down the upper, rear cover panel ③ .

8.7.2 Correcting the vertical alignment

(See Figure 17)

Tool to be used
Use an Allen key (size 4) and a spanner wrench (size 36).

4. Loosen the setscrew M4 ⑥ – DIN 914.
5. Place the spanner wrench onto the hexagonal bolt ④ .
- The indicator screw ⑤ points downwards (do not loosen this screw).

To lower e.g. the shelf:
- Rotate the hexagonal bolt ④ such that the indicator screw ⑤ points forwards (towards you).

To raise e.g. the shelf:
- Rotate the hexagonal bolt ④ such that the indicator screw ⑤ points backwards (away from you).

6. Perform a function test.
7. Tighten the setscrew M4 ⑥ – DIN 914.

NOTE – Vertical alignment changing

The vertical alignment can change progressively during use if the setscrew M4 ⑥ – DIN 914 has not been properly tightened:

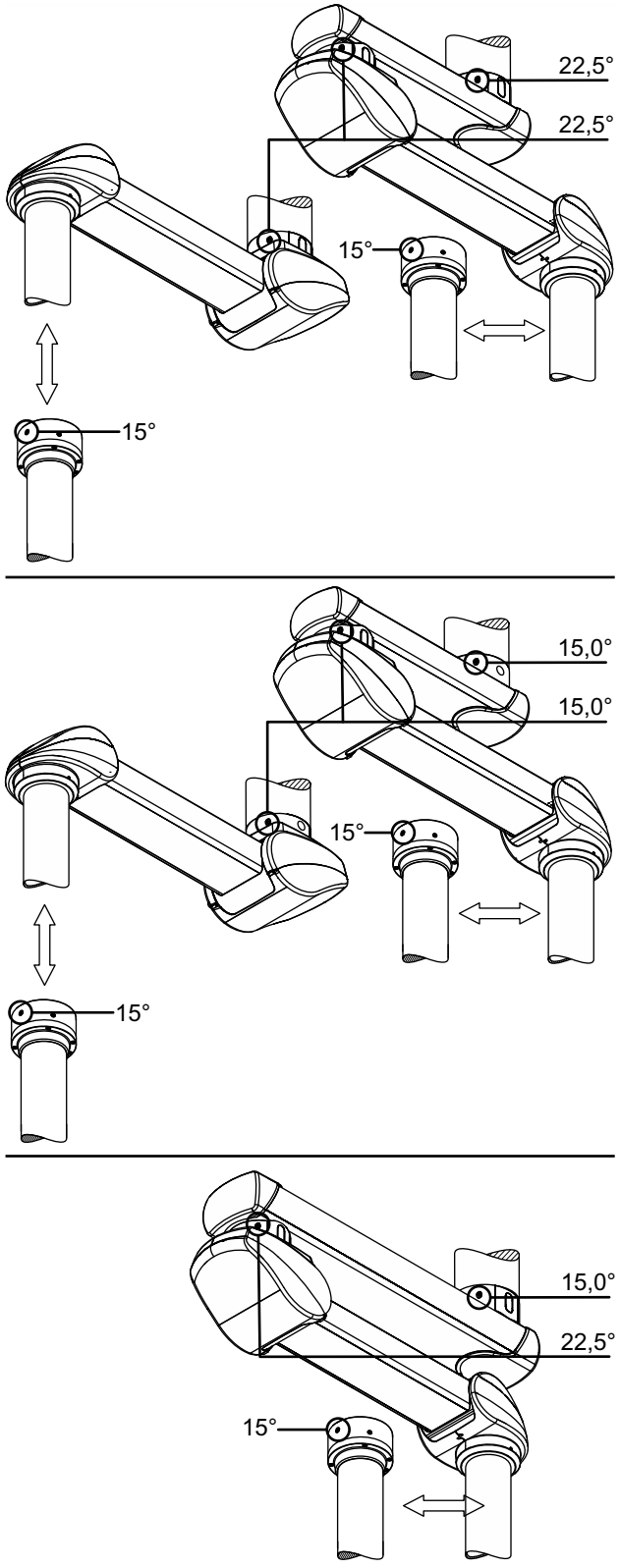
If this is the case, the adaption (CEMOR or Navigator M6) no longer remains stable in its adjusted position:
- Tighten the setscrew M4 ⑥ – DIN 914 with a tightening torque of 2 Nm.

8.7.3 Closing the lower, rear cover panel

(See Figure 17)

8. Fold up the lower, rear cover ③ until the 2 latches ① snap into place.
9. Check that the cover ③ is securely in place:
- The guides (not illustrated) of the cover ③ must sit in the side panels.
- The cover ③ must sit on the side panels without gaps.

Figure 18: Adjusting the swivel stop on the extension arm, spring arm and Drop tube
(Navigator Lift ™ 180 / Navigator Lift ™ 180 Air*Plus* / Navigator Lift ™ XL 180 with extension arm XL)



8.8 Adjusting the swivel stop on the extension arm, spring arm and Drop tube

(See Figure 18)

The extension arm, spring arm and the Drop tube are equipped with at least 1 swivel stop which prevents internal cables being destroyed. With 1 ball stop installed, the swivel range is restricted to a maximum of 340 degrees. With 2 ball stops installed, the swivel range can be restricted further.

⚠WARNING

Electric shock hazard

In order to prevent the internal supply cables twisting off, at least 1 ball stop must be mounted. This ball stop serves as twist protection:

- To restrict the angle of rotation of the extension arm, spring arm or Drop tube to 340 degrees, mount at least 1 ball stop as described in Chapter 8.8.4 on page 36.

8.8.1 Versions

(See Figure 18)

Proceed as follows in order to adjust the swivel ranges:

Navigator Lift ™ 180

- Adjust the swivel range of the extension arm and spring arm in graduations of 22.5 degrees.

– Use 1 setscrew M16 and 2 ball stops Ø 12.7 mm for each extension arm and spring arm.

Navigator Lift ™ 180 Air*Plus* / Navigator Lift ™ 180 Friction

- Adjust the swivel range of the extension arm and spring arm in graduations of 15 degrees.

– Use 1 setscrew M16 and 2 ball stops Ø 10 mm for each extension arm and spring arm.

Navigator Lift ™ XL 180

- Adjust the swivel range of the extension arm XL in graduations of 15.0 degrees and on the spring arm in graduations of 22.5 degrees.

– For the extension arm use 1 setscrew M20 and 2 ball stops Ø 16 mm.

– For the spring arm use 1 setscrew M16 and 2 ball stops Ø 12.7 mm.

Drop tube with Bearing Unit Friction (roller bearing)

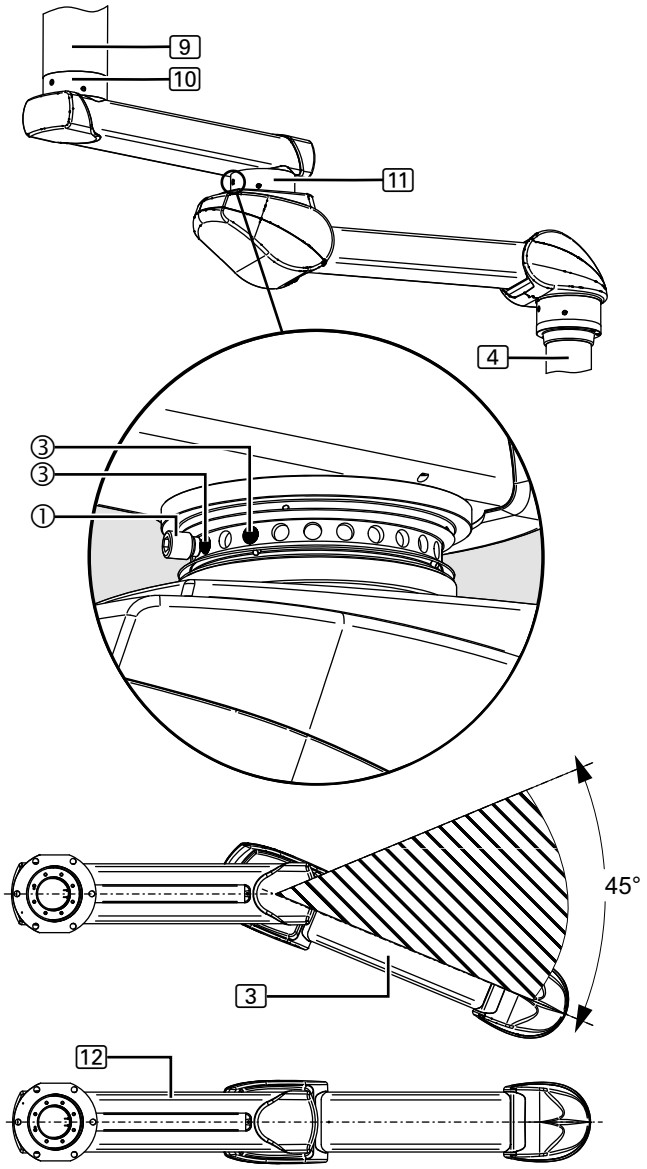
- Adjust the swivel range of the Drop tube in graduations of 15.0 degrees.

– Use 1 setscrew M16 and 2 ball stops Ø 10 mm for each Drop tube.

8.8.2 Tool to be used

A magnetic pin or a similar tool is required in order to offset the ball stop. The telescopic magnet pick-up tool set is available from Nuvo as an option.

Figure 19: Stop recommendation: Dual-arm pendant system with Bearing Unit Friction (roller bearing)



8.8.3 Stop recommendation: Dual-arm pendant system with Bearing Unit Friction (roller bearing)

(See Figure 19)

For all dual-arm pendant systems with a Bearing Unit Friction as intermediate bearing [11], Nuvo recommends that you mount 2 ball stops ③ (position illustrated in the Figure).

The detailed representation illustrates the intermediate bearing [11] (without external bearing ring) and the position of the stop screw ① to the ball stops ③ .

NOTE: Movement range of the spring arm

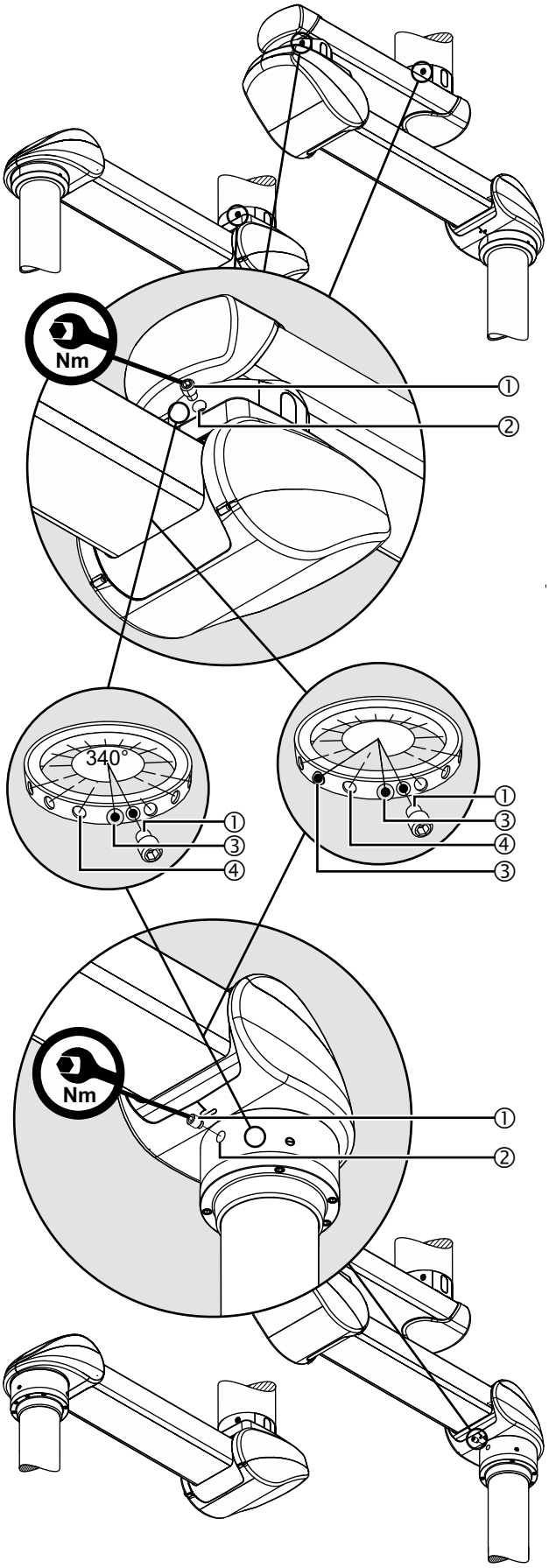
When adjusting the end stop as illustrated in Figure 19, the dead centre area is 45°. This means that the spring arm [3] has a maximum movement range of approx. 315°.

If the minimum adjustment on the end stop is not defined whereas the brakes on the intermediate bearing [11] and on the ceiling bearing [10] are adjusted, it is rather difficult to bend the pendant system from the stretched position [12] and rotate it on the intermediate bearing [11] of the spring arm [3].

When moving the adaption on the [4] from the stretched position [12], there is a risk that the extension arm and the spring arm rotate around the ceiling bearing [10] even though bending in the area of the intermediate bearing [11] would be desired.

For more details on how to mount the swivel stop refer to Chapter 8.8.4 on page 36.

Figure 20: Mounting the swivel stop



8.8.4 Mounting the swivel stop

(See Figure 20)

1. Follow the general safety instructions prescribed in Chapter 8.1 on page 27.

2. The assignment and size of the setscrew ① and the ball stop ③ for the different versions of the pendant system and the Drop tube are described in Chapter 8.8.1, “Versions”, on page 34.

3. Unscrew a setscrew ① from the threaded hole ② .

4. Rotate the extension arm, extension arm XL, spring arm or Drop tube towards the desired end stop position and then insert 1 ball stop ③ into the threaded hole ② .

NOTE – Make sure that the ball stop is securely in place

The extension arm, spring arm or the Drop tube can be rotated once the ball stop ③ has been completely inserted into one of the mounting fixtures ④ . Otherwise, these are blocked and the ball stop ③ must be pushed into one of the mounting fixtures ④ whilst gently rotating the extension arm, spring arm or Drop tube using s screwdriver.

5. Rotate the extension arm, spring arm or Drop tube towards the desired second end stop position and then insert 1 additional ball stop ③ into the threaded hole ② .
6. Slightly rotate the extension arm, spring arm or Drop tube and then screw the setscrew ① into the threaded hole ② as far as it will go.

- The setscrew ① now serves as an end stop for the ball stop ③ mounted and restricts the swivel range of the extension arm, spring arm or Drop tube.

⚠ WARNING

Nm

Risk of internal supply cables twisting off

The swivel stop can fail if the fixing elements have not been properly tightened, and the supply cables can twist off.

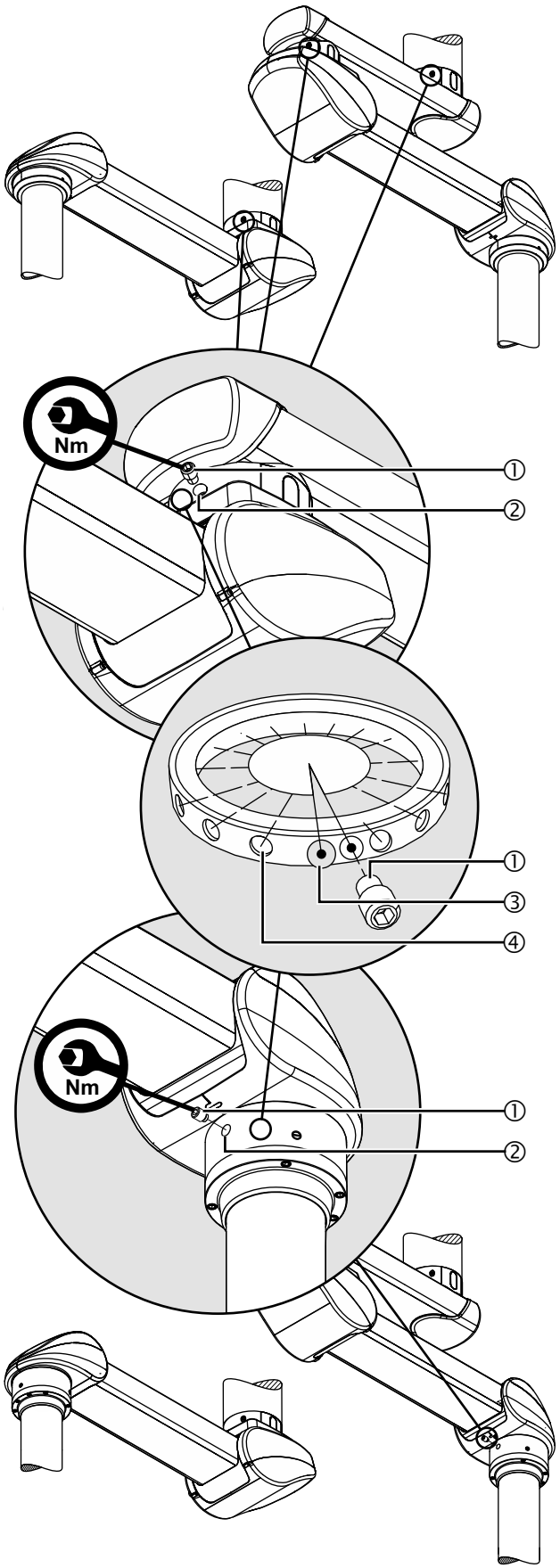
- Tighten the setscrew M16 ① or setscrew M20 ① to 40 Nm.

7. Tighten the setscrew ① to 40 Nm.
8. To check that the swivel stop functions securely:

- The swivel range of the extension arm or spring arm must be restricted to less than 360 degrees.

9. To change a ball stop ③ mounted, refer to Chapter 8.8.5, “Changing or dismantling the swivel stop”, on page 37.

Figure 21: Changing or dismantling the swivel stop



8.8.5 Changing or dismantling the swivel stop

(See Figure 21)

1. Follow the general safety instructions prescribed in Chapter 8.1 on page 27.
2. The assignment and size of the setscrew ① and the ball stop ③ for the different versions of the pendant system and the Drop tube are described in Chapter 8.8.1, “Versions”, on page 34.
3. Unscrew a setscrew ① from the threaded hole ② .
4. Rotate the extension arm, extension arm XL, spring arm or Drop tube until the ball stop ③ in the threaded hole ② is visible.
5. Using a telescopic magnet pick-up tool, remove the ball stop ③ from the threaded hole ② and keep it in a safe place.

⚠ WARNING

Electric shock hazard

To prevent the internal supply cables twisting off, at least 1 ball stop must be mounted. This individual ball stop serves as twist protection:

- Mount the swivel stop directly afterwards.
- Mount at least 1 ball stop ③ in order to restrict the angle of rotation of the extension arm, spring arm or Drop tube to 340 degrees.

6. Mount the swivel stop as described in Chapter 8.8.4 on page 36.

9.1 General safety instructions

⚠WARNING

Electric shock hazard

The appliances can carry an electric current and must be treated with the utmost care during cleaning and disinfection:

- If a mains plug exists, pull out the mains plug.
- Do not apply spray cleaning and/or spray disinfection.
- Do not spray liquid into power sockets, gas sockets or appliance openings and prevent the penetration of liquids.

9.2 Cleaning

Follow the safety instructions

1. Follow the general safety instructions prescribed in Chapter 9.1 on page 38.

Cleaning agents

Recommended cleaning agents
Use a mild soap solution or a regular dishwashing product.

2. Wipe the surfaces of the appliances with a moderately moist cloth; add a mild soap solution (dishwashing product) if required.
3. Afterwards, carefully wipe the surfaces dry with a clean cloth.

9.3 Disinfection

Follow the safety instructions

1. Follow the general safety instructions prescribed in Chapter 9.1 on page 38.

Disinfection method

Wiping disinfection is the standardised disinfection method prescribed for the pendant system. Hygiene regulations and related safety instructions for the disinfection methods to be applied must be defined by the operator.

- In case of contamination with potentially infectious material (e.g. blood, body secretion or excrement) the surfaces must be immediately and specifically disinfected.
- Make sure you apply the disinfectant in the correct concentration.
- For surface disinfection do not spray, but wipe, the surfaces.
- Wiped surfaces may only be used after the disinfectant has dried.

⚠WARNING

The appliance is not suitable for sterilisation

Avoid damage

Make sure that no liquid penetrates the appliance whilst cleaning it.

To prevent damage to plastic parts, refrain from using abrasives or alkaline, acidic or corrosive cleaning agents.

Do not use bleaching agents on stainless steel parts.

Deploy trained technical specialists only and abide by national regulations.

Cleaning/disinfection must be carried out by trained technical specialists only. The requirements of the national hygiene and disinfection committee must be complied with.

10.1 General safety instructions

⚠WARNING

Electric shock hazard

Power supply cables are laid in the pendant system and in the CEMOR or the Navigator M6. Contact with energised components presents a danger to life from electric shock. Disconnect the pendant system from the mains before any maintenance work:

- Disconnect all the poles of the pendant system, the CEMOR or the Navigator M6 from the mains and prevent them from being reconnected.
- Make sure that all the appliances connected via the CEMOR or the Navigator M6 are de-energised.
- Wait until the end device (e.g. HF surgical device, flat screen, etc.) has cooled down.

The necessary maintenance work must be carried out as specified in Chapter 18, “Inspection plan”, on page 109.

10.2 Built-in components from third-party manufacturers

Third-party manufacturers

Built-in components from third-party manufacturers must be inspected and maintained as prescribed in the applicable Operating Instructions.

10.3 Repeated inspection

The repeated inspection must be performed in accordance with DIN EN 62353 standard.

11 Disposal of the Pendant System

11.1 Disposal

- The pendant system complies with the requirements of the 2011/65/EC RoHS Directive (on the restricted use of certain hazardous substances in electrical and electronic equipment).
- To prevent environmental damage and personal injury, we request you to contact us or your authorised service partner if you intend to take the pendant system out of operation for the purpose of disposal.
- The pendant system must be disposed of at a suitable collection point for recyclable waste in accordance with country-specific regulations.

11.2 List of materials used for the pendant system

Component	Materials used
Package	Cardboard, paper, wood, metal, plastics
Mechanical load-carrying parts	Metal
Cover panels	Plastics
Cables	Metal, plastics

Figure 22: Spring arm Navigator Lift ™ 180 / Navigator Lift ™ 180 Friction – Single-arm variant with CEMOR

The Figure illustrates the spring arm Navigator Lift ™ 180 with CEMOR as an example. Please note that your individual pendant system configuration can differ from the illustration.

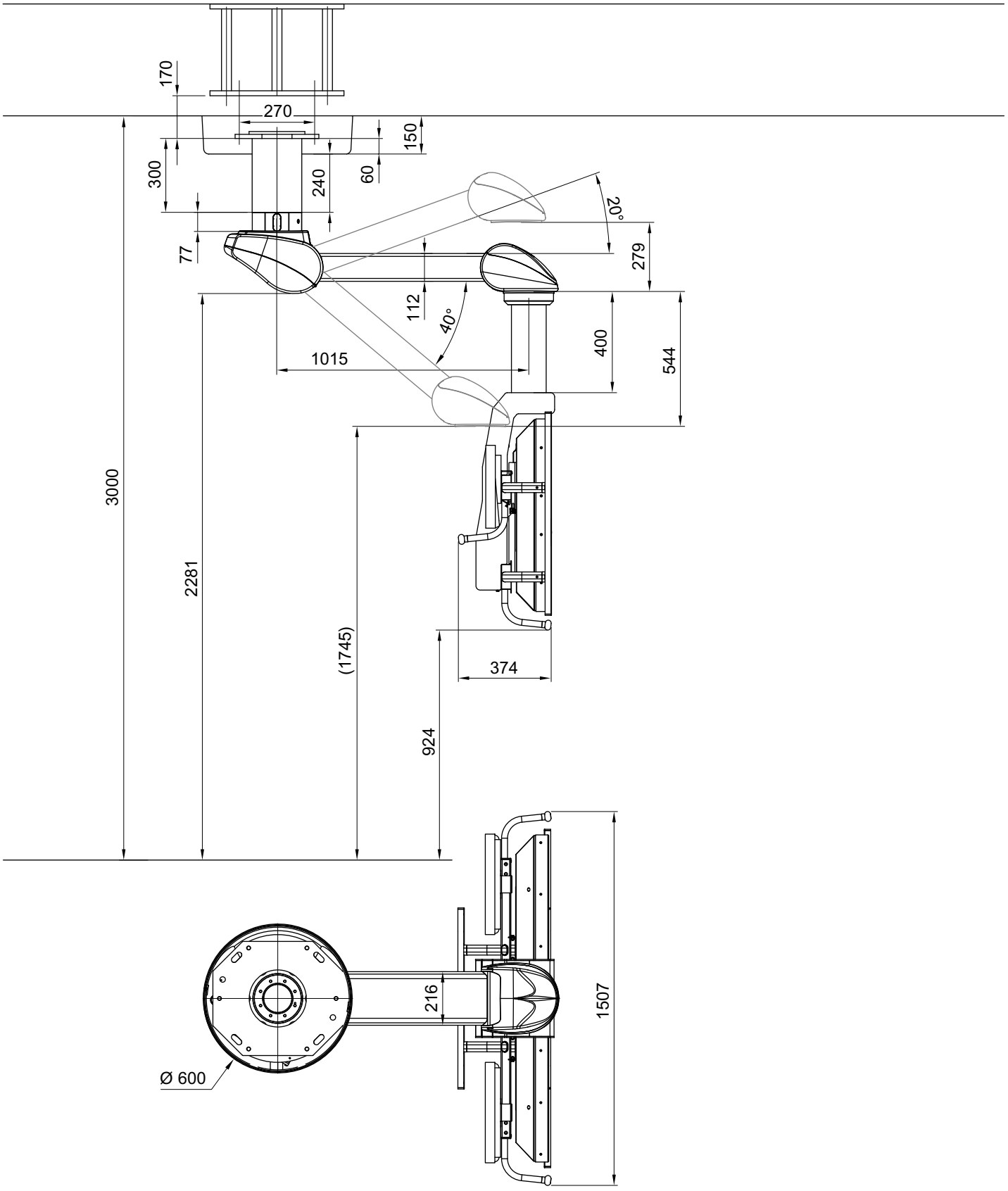
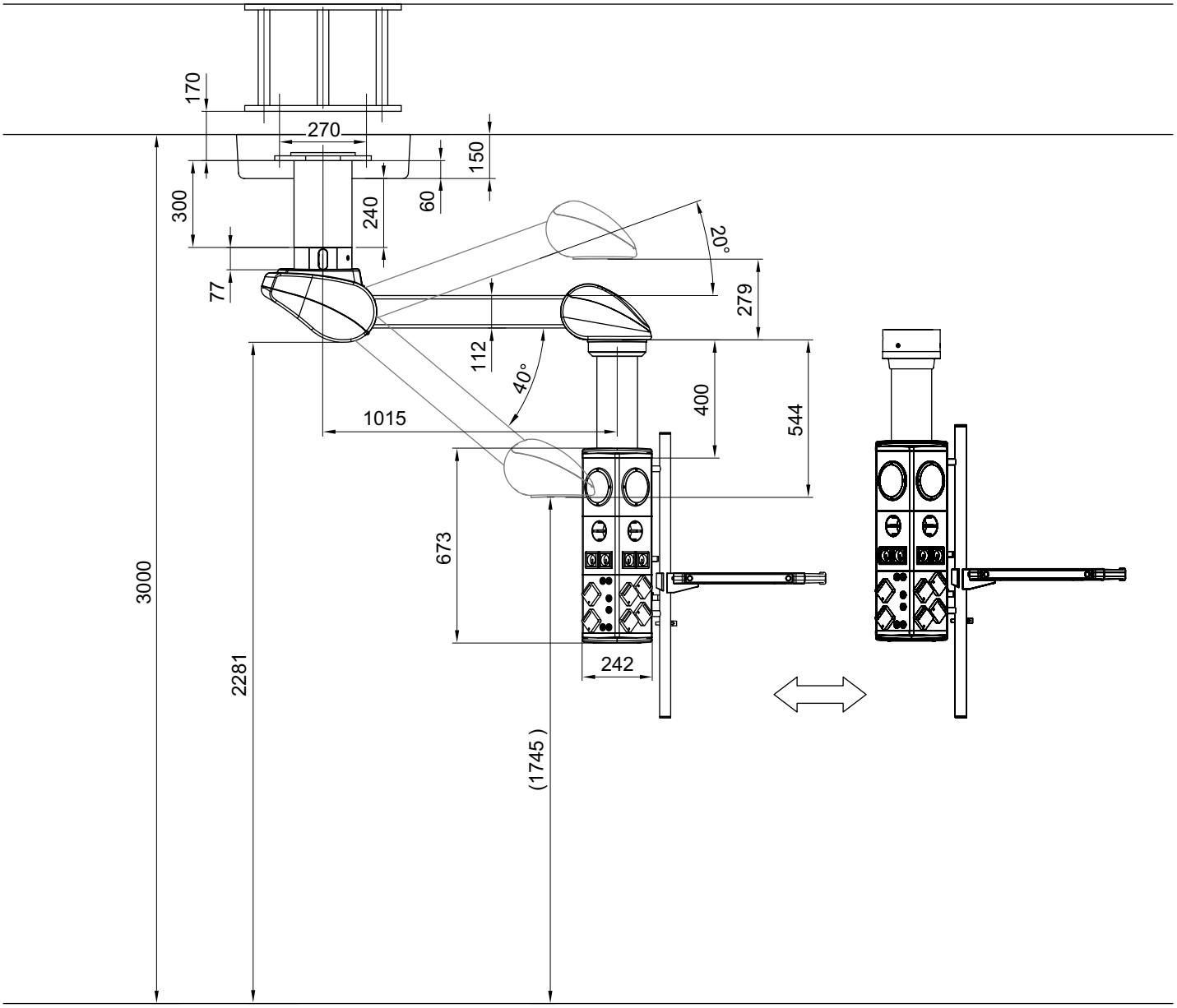


Figure 23: Spring arm Navigator Lift ™ 180 / Navigator Lift ™ 180 Friction – Single-arm variant with Navigator M6

The Figure illustrates the spring arm Navigator Lift ™ 180 with Navigator M6 as an example. Please note that your individual pendant system configuration can differ from the illustration.



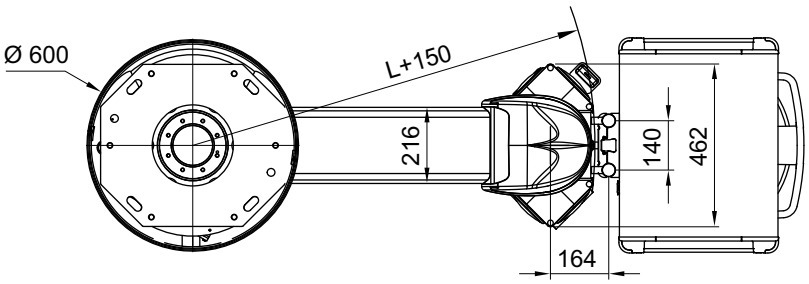


Figure 24: Extension arm with spring arm Navigator Lift ™ 180 / Navigator Lift ™ 180 Friction – Dual-arm variant with CEMOR

The Figure illustrates the extension arm with spring arm Navigator Lift ™ 180 with CEMOR as an example. Please note that your individual pendant system configuration can differ from the illustration.

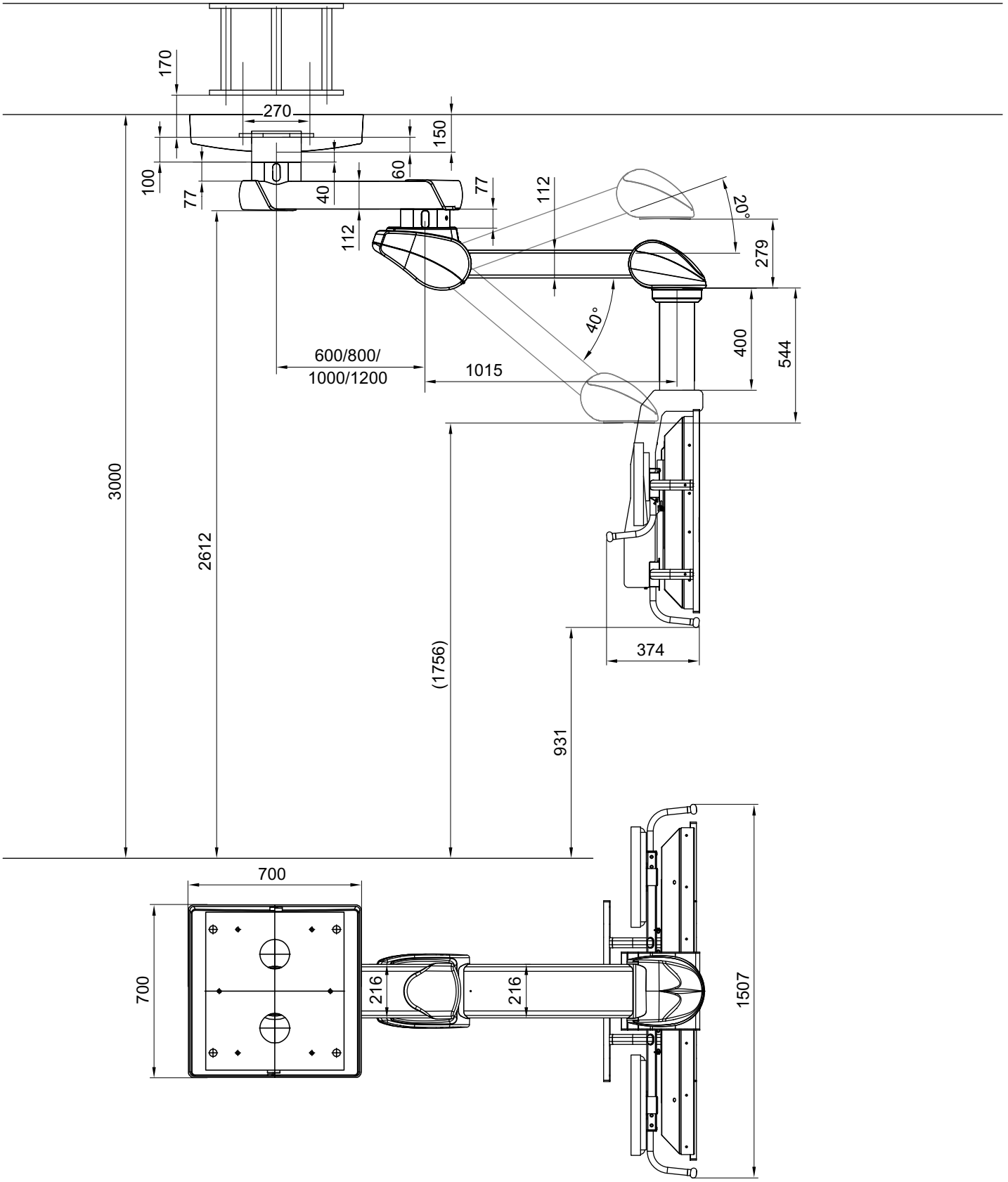


Figure 25: Extension arm with spring arm Navigator Lift ™ 180 / Navigator Lift ™ 180 Friction – Dual-arm variant with Navigator M6

The Figure illustrates the extension arm with spring arm Navigator Lift ™ 180 with Navigator M6 as an example. Please note that your individual pendant system configuration can differ from the illustration. *The maximum extension arm length of the variant: extension arm with spring arm Navigator Lift ™ 180 Friction with Navigator M6 is 1000 mm.

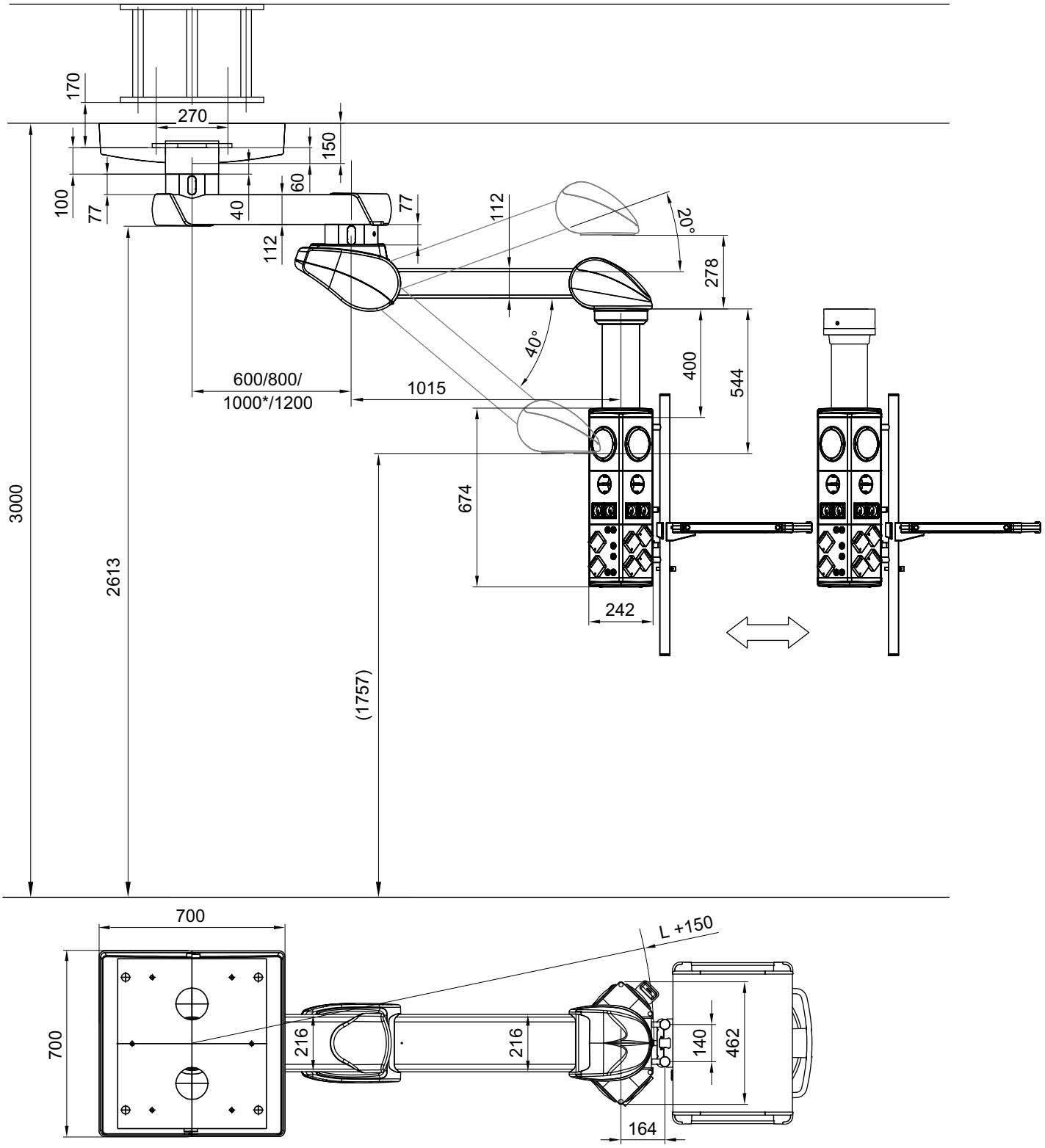


Figure 26: Extension arm XL with spring arm Navigator Lift ™ XL 180 – Dual-arm variant with CEMOR

The Figure illustrates the extension arm XL with spring arm Navigator Lift ™ XL 180 with CEMOR as an example. Please note that your individual pendant system configuration can differ from the illustration.

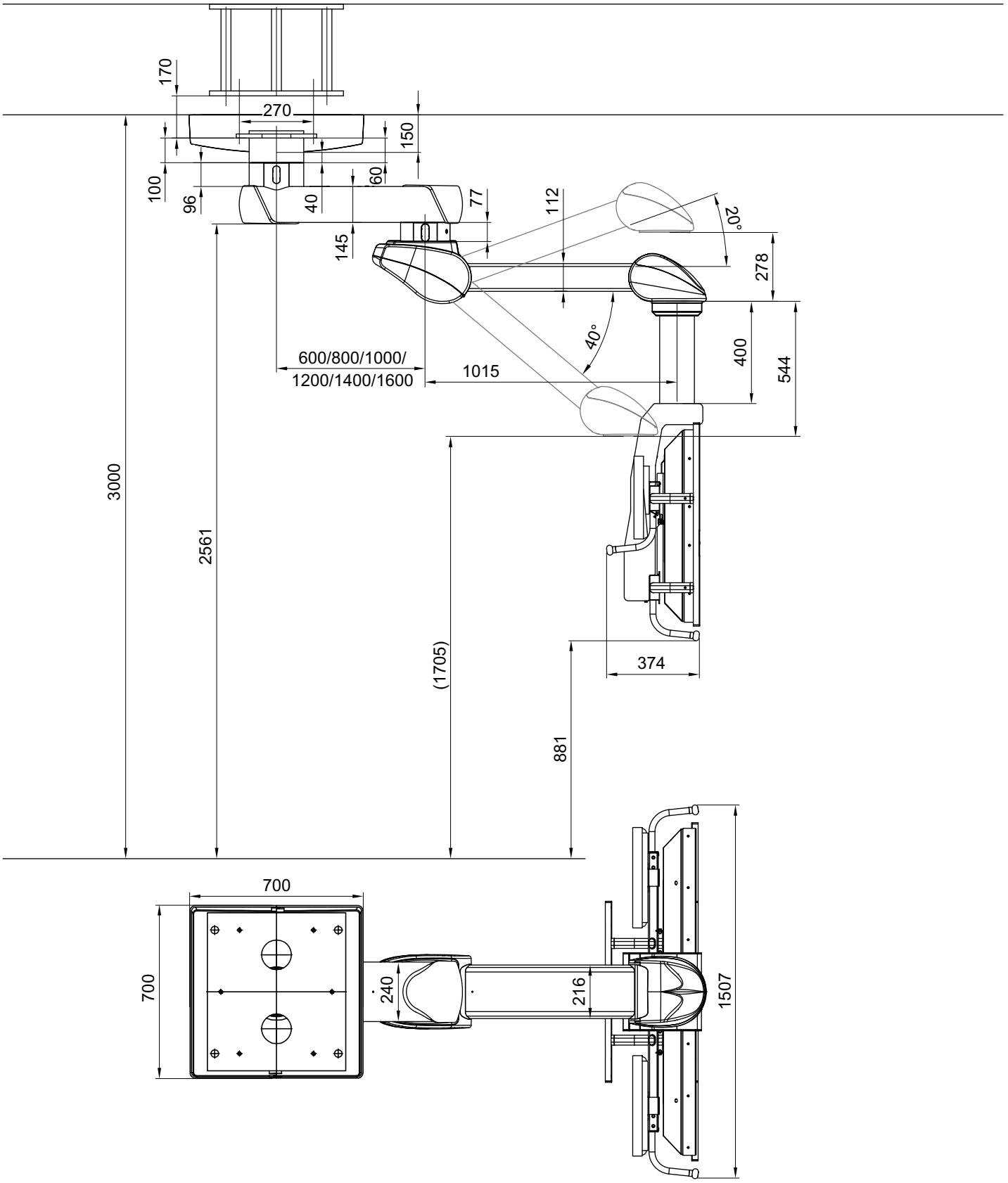
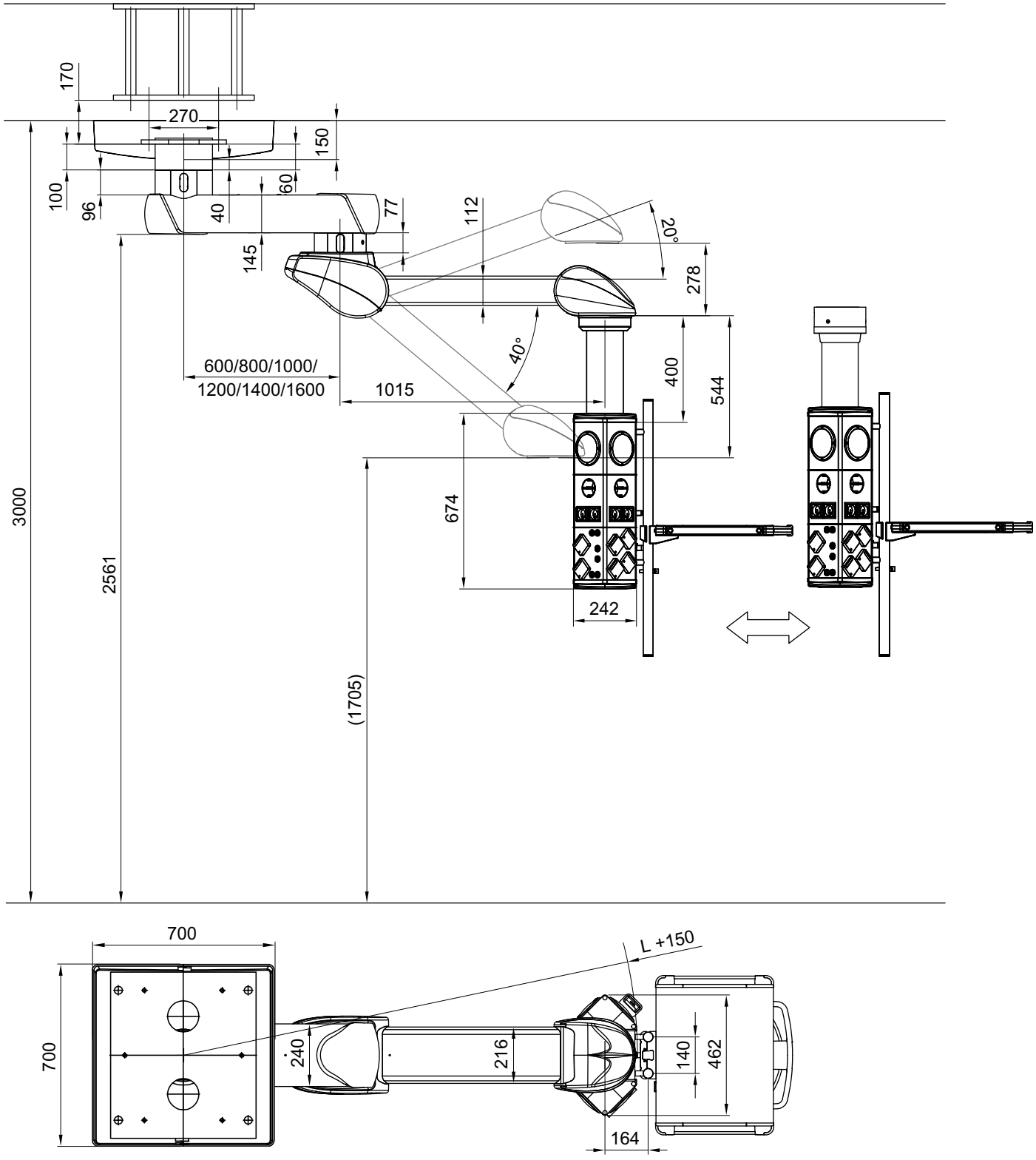


Figure 27: Extension arm XL with spring arm Navigator Lift ™ XL 180 – Dual-arm variant with Navigator M6

The Figure illustrates the extension arm XL with spring arm Navigator Lift ™ XL 180 with Navigator M6 as an example. Please note that your individual pendant system configuration can differ from the illustration.



Modes of operation

- The pendant systems Navigator Lift ™ 180 Single, Navigator Lift ™ 180 Air*Plus* – Single, Navigator Lift ™ 180 Dual, Navigator Lift ™ 180 Friction – Single, Navigator Lift ™ 180 Friction – Dual, Navigator Lift ™ 180 Air*Plus* – Dual, Navigator Lift ™ XL 180 Dual are suitable for continuous operation.

Duty cycle of the electromagnetic brakes

- The maximum duty cycle of the electromagnetic brakes must not exceed 1 minute.
- If the electromagnetic brakes are actuated over a longer period of time, the power pack can switch off automatically as a protection measure against overheating.
- Once the power pack has switched off, it must cool down for 10 minutes and then be disconnected from the mains for 10 seconds before being switched back on again. Normal system operation can only be resumed afterwards.

Rating plate

- The rating plates are attached to the top side of the extension arm or XL extension arm and under the front cover of the spring arm (see Chapter 2.4 on page 17).

Dead weight of the pendant system*

Spring arm 1015mm	71kg
Extension arm 600mm with spring arm 1015mm	96kg
Extension arm 800mm with spring arm 1015mm	99kg
Extension arm 1000mm with spring arm 1015mm	102kg
Extension arm 1200mm with spring arm 1015mm	105kg
XL extension arm 600mm with spring arm 1015mm	112kg
XL extension arm 800mm with spring arm 1015mm	117kg
XL extension arm 1000mm with spring arm 1015mm	122kg
XL extension arm 1200mm with spring arm 1015mm	127kg
XL extension arm 1400mm with spring arm 1015mm	132kg
XL extension arm 1600mm with spring arm 1015mm	137kg

* Without gas hoses and supply cables inserted, without ceiling or Drop tube and without optional accessories.

Dead weight of the ceiling tube for the extension arm

Flange	6kg
Steel tube	24kg/m

Dead weight of the ceiling tube for the XL extension arm

Flange	7.5kg
Steel tube	31.7kg/m

Dead weights of the bearing units on the Drop tube

Bearing Unit Friction (slide bearing)	5kg
Bearing Unit Friction (roller bearing)	13kg
Bearing Unit E-Brake	14kg

Dead weight of the Drop tube

Drop tube	8kg/m

Maximum loading capacity on the pendant system	
Navigator Lift ™ 180/Navigator Lift ™ 180 Friction – Single arm	Spring arm 1015mm 180kg
Navigator Lift ™ 180/Navigator Lift ™ 180 Friction – Dual arm	Extension arm 600mm with spring arm 1015mm ..... 180kg Extension arm 800mm with spring arm 1015mm ..... 170kg Extension arm 1000mm with spring arm 1015mm ..... 150kg Extension arm 1200mm with spring arm 1015mm 130kg
Navigator Lift ™ 180 with extension arm XL	XL extension arm 600mm with spring arm 1015mm ..... 180kg XL extension arm 800mm with spring arm 1015mm ..... 180kg XL extension arm 1000mm with spring arm 1015mm ..... 180kg XL extension arm 1200mm with spring arm 1015mm ..... 180kg XL extension arm 1400mm with spring arm 1015mm ..... 180kg XL extension arm 1600mm with spring arm 1015mm 180kg
Maximum loading capacity with different spring equipment versions	Possible spring equipment versions . 22 – 40, 30 – 60, 50 – 80, 70 – 110, 80 – 135, 120 – 180kg
Electrical data	Rated voltage ..... AC 100-240V Rated frequency ..... 60 / 50Hz Rated output ..... 220W Indirect extension arm lighting ..... DC 12V 2 / 4 lighting boards (supply voltage 12V DC, 2 lighting boards each connected in series to 24V DC)
Noise level	Sound energy level ..... 65db (A) (EN ISO 3746) not exceeded
Brake torque	Brake torque with the electromagnetic brake actuated on the spring arm ... approx. 70Nm Brake torque with the electromagnetic brake actuated on the extension arm and on the spring arm ..... approx. 70Nm / approx. 70Nm Brake torque with the electromagnetic brake actuated on the XL extension arm and on the spring arm ..... approx. 150Nm / approx. 70Nm
Manual forces	Dynamic torque with the electromagnetic brake released depending on the position and payload ..... 3.5 to 40Nm
Protection class / type	Protection class in accordance with IEC 60601-1 ..... I IP classification in accordance with IEC 60529 ..... IP 20
Medical Device Directive 93/42/EEC	Classification I
Applicable standards, laws and directives	• Medical Devices Act (MPG) • 93/42 EEC (Medical Device Directive) • IEC 60601-1 – Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance.
Approvals of the standard equipment	• Recognised UL component.

Approved adaptions

The following Nuvo products are approved as adaptions to the pendant system:

- Chapter 15, “Approved Nuvo Products”, on page 54,
- Chapter 16, “Optional Accessories”, on page 54,
- Chapter 17, “Possible Combination with Third-Party Products”, on page 54:

– The components are adapted to each other and safe to operate. Any other type of installation, and in particular the use of components from third-party manufacturers, is strictly prohibited because these components can be potential sources of danger.
– The combination of any other Nuvo product with the pendant system must be approved by Nuvo Surgical. If applicable, the conformity assessment must be repeated.

Read the Operating Instructions for combined medical products

- The pendant system can be equipped with adaptions and end devices from third-party manufacturers. To prevent dangerous overload, which can damage or lead to a collapse of the pendant system, the maximum load bearing capacity specified in Chapter , “”, on page 45 must be adhered to:

– The party placing the appliance into operation is responsible for the validation of the overall system. A conformity assessment procedure shall be executed if required and a declaration in accordance with Article 12 of 93/42/EEC (Medical Device Directive, MDD) shall be provided.
– Read the Operating Instructions provided by the third-party manufacturer and in particular the relevant pages with information on the operation of the end device.

14.1 Guidelines and manufacturer's declarations

14.1.1 Electromagnetic emissions

The Navigator Lift™ 180 is intended for use in the ELECTROMAGNETIC ENVIRONMENT specified below. The customer or the user of the Navigator Lift ™ 180 must ensure that it is used in such an environment.

Emission tests	Compliance	ELECTROMAGNETIC ENVIRONMENT – Guideline
RF emissions in accordance with CISPR 11	Group 1	The Navigator Lift ™ 180 uses RF energy only for its internal FUNCTIONING. Therefore, its RF emissions are very low and are not likely to cause any interference with electronic equipment nearby.
RF emissions in accordance with CISPR 11	Class A	The Navigator Lift ™ 180 is suitable for operation in professional healthcare facilities.
Harmonic emissions in accordance with IEC 61000-3-2	Class A	
Voltage fluctuations/flicker emissions in accordance with IEC 61000-3-3	Complies	

14.1.2 Electromagnetic immunity

The Navigator Lift ™ 180 is intended for use in the ELECTROMAGNETIC environment specified below. The customer or the user of the Navigator Lift ™ 180 should ensure that it is used in such an environment.

Interference immunity test	Test level in accordance with IEC 60601	Test result
Electrostatic discharge in accordance with IEC 61000-4-2	±8kV contact ±2kV, ±4kV, ±8kV, ±15kV air	passed
Electrical fast transients / bursts in accordance with IEC 61000-4-4	±2kV 100kHz repetition rate	passed
Surges Line-to-line in accordance with IEC 61000-4-5	±0.5kV, ±1kV	passed
Surges Line-to-earth in accordance with IEC 61000-4-5	±0.5kV, ±1kV, ±2kV	passed
Voltage dips in accordance with IEC 61000-4-11	0% U_T; 1/2 period at 0, 45, 90, 135, 180, 225, 270 and 315 degrees	passed
	0% U_T; 1 period and 70% U_T; 25/30 periods Single phase: at 0 degrees	passed
Voltage interruptions in accordance with IEC 61000-4-11	0% U_T; 250/300 periods	passed
Power frequency magnetic field immunity in accordance with IEC 61000-4-8	30A/m 50Hz or 60Hz	passed

Please note:
U_T is the a.c. mains voltage prior to application of the test level.

Cont.

The Navigator Lift ™ 180 is intended for use in the ELECTROMAGNETIC environment specified below. The customer or the user of the Navigator Lift ™ 180 should ensure that it is used in such an environment.

Interference immunity test	Test level in accordance with IEC 60601	Compliance level
Immunity to conducted disturbances, induced by radiofrequency fields IEC 61000-4-6	3V 0.15MHz to 80MHz 6V in ISM frequency bands from 0.15MHz to 80MHz 80% AM at 1kHz	passed
High-frequency electromagnetic fields in accordance with IEC 61000-4-3	3V/m 80MHz to 2.7GHz 80% AM at 1kHz	passed
NOTE 1 At 80 MHz and 800 MHz, the higher value applies. NOTE 2 These guidelines may not apply in all cases. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.		
[a] The field strength of stationary transmitters, including the base stations of mobile phones and mobile land mobile radios, amateur radio stations, AM and FM radio and TV broadcasting transmitters, cannot be precisely predetermined theoretically. To assess the electromagnetic environment due to stationary RF transmitters, an electromagnetic site survey should be considered. If the field strength measured in the location in which the Navigator Lift ™ 180 is used exceeds the applicable RF compliance level above, the Navigator Lift ™ 180 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Navigator Lift ™ 180. [b] Field strengths over the 150 kHz to 80 MHz frequency range should be less than 3 V/m.		

14.1.3 Test specifications

Test specifications for the INTERFERENCE IMMUNITY of ENCLOSURES against high-frequency wireless communication facilities

Test frequency MHz	Frequency band [a] MHz	Radio service [a]	Modulation [b]	Maximum power W	Distance m	IMMUNITY TEST LEVEL V/m
385	380 to 390	TETRA 400	Pulse modulation [b] 18Hz	1.8	0.3	27
450	430 to 470	GMRS 460, FRS 460	FM [c] ± 5kHz stroke 1kHz sine	2	0.3	28
710	704 to 787	LTE Band 13, 17	Pulse modulation [b] 217Hz	0.2	0.3	9
745						
780						
810	800 to 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation [b] 18Hz	2	0.3	28
870						
930						
1720	1700 to 1998	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation [b] 217Hz	2	0.3	28
1845						
1970						
2450	2400 to 2570	Bluetooth, WLAN 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation [b] 217Hz	2	0.3	28
5240	5100 to 5800	WLAN 802.11 a/n	Pulse modulation [b] 217Hz	0.2	0.3	9
5500						
5785						

NOTE
To reach the IMMUNITY TEST LEVELS, the distance between the transmitting antenna and the ME DEVICE or ME SYSTEM can be reduced to 1m if required. The 1 m test distance is permitted in accordance with IEC 61000-4-3.

[a] For certain radio services only the frequencies for the radio connection from the mobile communication device to the base station ("up-link") are indicated in the table.
[b] The carrier must be modulated with a square wave signal with a 50% duty cycle.
[c] As an alternative to frequency modulation (FM), pulse modulation with a 50% duty cycle at 18Hz can be used because pulse modulation would also represent the worst case (but not the actual modulation).

⚠WARNING

Do not operate this device immediately next to or together with other devices stacked on top of each other because this could result in improper operation. If operation in the described manner is unavoidable, this device and all other devices should be monitored in order to ensure proper operation."

⚠WARNING

The use of other ACCESSORIES, other converters and other cables than those prescribed or provided by the MANUFACTURER of this device can lead to increased ELECTROMAGNETIC INTERFERENCE EMISSIONS or reduced electromagnetic immunity of the device, and thus improper operation.

⚠WARNING

PORTABLE RF communication devices (radio equipment, including ACCESSORIES such as antenna cables and external antennas) should not be used at a distance of less than 30cm (12inches) from the Navigator Lift™ 180 components and cables specified by the MANUFACTURER. Be aware that the performance of the device can be reduced if this safety rule is not observed.

Designation
CEMOR and approved Nuvo products in accordance with the current Operating Instructions of the CEMOR.
Navigator M6 and approved end devices in accordance with the current Operating Instructions of the Navigator M6.

16 Optional Accessories

Designation	Dead weight	Maximum payload
Indirect extension arm lighting	2.0kg	---
Brake indicator lighting board	0.1kg	---
Adapter Acrobat Swing 3p, L360*	2,2kg	10kg / 113Nm
* The accessories can only be used if the extension arm has been supplied with preparation for adapter. This option can be selected for the dual-arm variant on the upper extension arm: Navigator ™ / Navigator ™ Air / Navigator ™ Air*Plus* in lengths of 800 mm and 1000 mm Navigator ™ XL in lengths of 1000 mm and 1200 mm		

17 Possible Combination with Third-Party Products

Approved third-party products with CE mark
For more detailed information on the requirements for the interface towards the pendant system please contact Nuvo customer service in order to prevent damage to persons or property: • Phone: +1 (800) 663-1152 (USA and CANADA) • Phone: +1 (814) 899-4220 (INTERNATIONAL)
The party placing the appliance into operation is responsible for the validation of the overall system. A conformity assessment procedure shall be executed if required and a declaration in accordance with Article 12 of 93/42/EEC (Medical Device Directive, MDD) shall be provided.

☐ Navigator M6 combined with ☐ Navigator ☐ MMP90/85 ☐ OSC400
☐ CEMOR combined with ☐ Navigator Lift ☐ MMP200 ☐ OSC600

18 Inspection plan

System Data

Supplier: _____ *Date of installation:* _____
Nuvo serial no.: _____
Operator's serial no.: _____
Device location: _____

Important information

- The inspection intervals must be observed.
- This inspection plan is only valid when combined with the Nuvo Installation and Operating Instructions which must be consulted as complementary reference documents during inspections.

The pendant system must be checked by Nuvo or a company authorised by Nuvo for the following points at the intervals specified below:

Visual inspection (annually)	NOK	OK
• The parts of the pendant system are not deformed and are free from damage (scratches, cracks, etc.)*		
• The system is free from defects in paintwork*		
• The plastic covers are available and correctly positioned*		
• All ratings plates and labels are available and readable		
• All the plastic screws of the canopy are available and fixedly attached		
• All cables and gas hoses must be inspected for damage and replaced if required**. Nuvo recommends that you replace cables and gas hoses after 10 years.		

Functional check (annually)	NOK	OK
• The system is safely positioned; adjust the limit stops if required		
• At least 1 limit stop is set at each centre of rotation, properly attached and effective**		
• After releasing the pneumatic brake or electromagnetic brake, the extension arms can be conveniently positioned		
• The brake valves have been vented & close properly; the brake buttons operate smoothly***		
• The mechanical brakes (friction brakes) have been adjusted properly; re-adjust them if required		
• The system remains in any selected position**		
• All sockets (if existing) have been fixedly mounted and function properly**		
• Protective conductor resistance checked** (DIN EN 62353)		
• The screw type connections, with the torques specified in the Installation Instructions, are securely in place		
• The gas sockets (if existing) have been fixedly mounted and function properly**		
• Inspection of the gas hoses/sockets (if exist.) by an authorised body with regard to the gas type/gas density**		
• Load compensation/spring tension correct, re-adjust it if req.**		
• The BrakeGuides (optional) light up when pressing the corresponding brake button*		
• The extension arm lighting (optional) lights up when actuating the switch (on the Navigator M6 / CEMOR)**		

Remarks

Confirmation of the inspection

The work mentioned above has been executed, including the adjustments required and the safety test:

Date *Name (in block letters)* *Signature/Stamp*

* Damaged, deformed or missing components must be replaced as a precaution. In this case, contact the supplier of the pendant system.

** If one of the points mentioned above is found to be incompliant during the inspection, the pendant system must be placed out of operation immediately as a precaution in order to prevent further damage to persons and equipment. Notify the system supplier immediately.

*** Only applies to Navigator Lift™ 180 Air*Plus*

The Medical Product Book which belongs to the medical product in accordance with Medical Devices Operators Ordinance (MPBetreibV) must be available on site. Service and maintenance work and security checks must be documented in this Medical Product Book. Test reports, including this report, must be filed out in the corresponding Medical Product Book.

MedicalIllumination
547 Library St
San Fernando, CA 91340 USA
(818) 838-3025

No. 1568913

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