Crozz two 2G 320/430/650

EN User guide

Jansen medicars

D00.02.02 – V2

Jansen Medicars

P.O. Box 49
3600 AA Maarssen
Netherlands

Tel. +31 30 2613500
Fax. +31 30 2616714
URL www.medicars.com

Content

1 Introduction

The trolley described in this manual was developed for the compact set up of medical equipment in, for example, operating theatres and treatment areas. The main starting points for the development of this trolley were:

- Modular set up, allowing the trolley to be assembled in accordance with the specifications of the customer.
- Great variety in accessories in order to be able to assemble an optimum configuration for each application.
- Option for mounting medical monitors on long monitor arms.
- Meeting the NEN standard for medical electrical equipment NEN/EN/IEC 60601-1 (particularly the electrical installation and stability.

1.1 Instruction

Please read this user manual completely before taking the trolley in use. Please follow all the safety instructions in particular. Never perform activities on the trolley if you do not have the required knowledge or if you are not qualified.

Jansen Medicars cannot be held liable for damage suffered as a result of incorrect use/acts or negligent maintenance.

1.2 Safety requirements

This manual contains important safety requirements with regard to working with the Crozz two trolley. It is important that the user is aware of this and acts accordingly. This paragraph contains the general safety requirements, the other chapters contain the additional requirements.

1.2.1 General safety requirements

Do not remove any activity, warning or safety labels. The guarantee expires if these labels are missing.

The trolley is only suitable for use indoors.

The trolley has been manufactured on the basis of the latest technology and meets the legal safety provisions. However, it is possible that the use of this trolley poses a risk for bodily harm of the user or third parties, damage to the trolley or other goods. Only use the trolley in the technically correct situation in accordance with the described use and in the environment for which the trolley was made as instructed in the user manual.

The power supply on the trolley is exclusively intended for the power supply of the equipment on the trolley. Do not connect any equipment to the trolley installation if this is not positioned on the trolley. Never connect equipment on the trolley with a power supply outside the trolley.

NEVER modify, remove or bend the metal pins or parts of the plugs.

Keep the power plug, isolation transformer, the socket strip and the internal power cords away from water or other liquids. NEVER INSERT THE PLUG IN THE SOCKET IF ONE OF THESE IS WET.

Never open the parts of the power supply of the trolley. Having these systems opened by unqualified personnel could cause serious bodily harm.

The trolley is NOT suitable for use in the presence of FLAMABLE ANAESTHETIC MIXTURES WITH AIR, OXYGEN OR LAUGHING GAS.

If one part of the trolley is missing or damaged, the trolley may not be used.

2 Set up of the trolley

A trolley is built according to the customer's specifications. The Crozz two basic trolley on the picture left forms the basis.

Platforms and drawers can be added to a basic trolley, as well as accessories such as a camera holder and bottle brackets. The trolley also has a standard electric installation to which a medical isolation transformer can be added if needed.

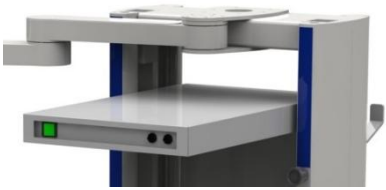
It is possible to add one or more monitor arms to the trolley to which monitors can be attached. A central attachment in the middle of the top of the trolley is also possible.

2.1 Platforms and drawers

Drawers and platforms can be added to the trolley. The platforms and drawers, except the one on top that forms part of the basic trolley, can be adjusted in height. If the trolley contains a medical isolation transformer and/or monitor arm, the trolley has a drawer directly above the bottom frame. This drawer contains the contra weights and/or isolation transformer and must not be adjusted in height.

2.1.1 Top platform

The top platform forms part of the basic trolley and has a fixed height. This platform has a central on/off switch which is located on the front. At the front are also the fuses that protect the trolley installation. The standard fuses used are 8AT anti-surge fuses.



The top platform also provides space for the storage of adapters (e.g. of the monitors) and the cables.

2.1.2 Bottom drawer

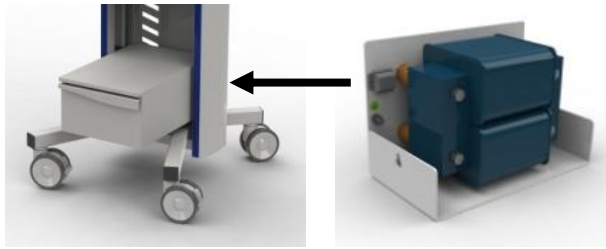
If the trolley contains an isolation transformer or monitor arms, the bottom drawer contains a storage area where the necessary contra weights and/or transformer are located. The height of this drawer cannot be changed because of the electrical connection and the desired low point of gravity.

2.1.3 Adjustable drawers and platforms

Adjustable drawers and platforms can be added to the trolley configuration if needed. These platforms and drawers are installed on the stainless steel carriers which are vertically placed on the side panels. The Allen key (no. 5) can be used to adjust the height of these drawers and platforms.

2.2 Electrical installation

The basic trolley contains an electrical installation. This consists of a 10-socket strip and a cable tray. The socket strip has been integrated in the right side panel and the cable tray in the left side panel. The 5-meter medical power cord and 1600VA medical isolation transformer are optional. The isolation transfer is placed in the housing of the bottom drawer; see the image below.



The height of this drawer cannot be changed because of the electrical connection.

2.3 Accessories

The trolley has different options for attaching accessories. They can be added on the inside of the trolley, on the outside of the side panels, at the bottom and on the top of the trolley. This paragraph shows a couple of examples. Please contact Jansen Medicars for more information.

The side panels have a rail on the front and back on which accessories can be attached, such as a camera holder, cable hook and appendage rails.

The front of the top of the trolley has connectors for scope holders and IV poles, one on the left and one of the right.

The holder has been positioned on a swivel arm, so that it can be placed next to the trolley. In the case of a scope holder, the main advantage it allows for a long MDL scope to be attached. In the case of an IV pole, the IV bags can hang next to the trolley, so that the trolley remains dry should one of the bags have a leak. This is safer for the electrical equipment and prevents the lacquer on the trolley to be affected by the liquid.

The star button on the front of the side panel allows the user to adjust the swivel arm and in doing so adjusting the height of the IV hook or scope holder.

The trolley can also contain a gas cylinder holder for large or small gas cylinders. There are three attachment options:

1. On the back, behind the door (large cylinders)
2. On the inside, at the back of the platforms (small cylinders)
3. On the side panel (only small cylinders)

2.4 Attachment of screens

Medical screens or panel PC's can be used on the Crozz two trolley and are attached by way of a central monitor attachment or monitor arms. The monitor arms are available in two lengths and offer optimum flexibility when positioning the monitor during a medical procedure or investigation.

2.4.1 Central monitor attachment

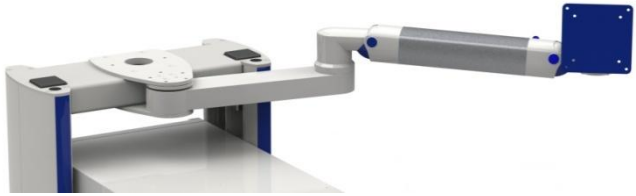
If it is not necessary to place the monitor on an arm, it can be attached on the central monitor attachment on top of the trolley. The screen attachment has a VESA 75/100 connection, allowing the monitor to turn and tip.

2.4.2 Monitor arms

Monitor arms are attached to the central turning point of the trolley. This central turning point is the bridge system that forms part of the trolley. This bridge system can have a central monitor attachment for one or two arms, one in front and/or one at the back:

1. The arm at the front is available in two varieties:
   a. Het Triple Element Arm SYstem (3EASY) arm with a lift arm and two extension of 30cm and 55cm respectively.

b. Het Double Element Arm SYstem (EASY) arm with one extension of 30cm and a lift arm



2. The arm at the back is an EASY arm, which consists of one extension of 30cm and a lift arm. This arm is optional for a second monitor.

The cables are incorporated in the arm and is only visible at the central turning point on the trolley and at the monitor connection. The cable tray of each part of the arm is closed with a lid.

The arm is optimized for the use of medical flat panel screens up to screen size of 27", with a VESA 75 or VESA100 connection and a weight of up to 12kg (including cabling and accessories). However, it is possible to attach larger screens, but the dimension of the screen could limit the flexibility of the arm and the stability of the trolley.

3 User instruction

The user manual for this trolley is intended for the positioning of medical equipment on the most optimum place in the OR or treatment room. The advantage of this solution is that the monitor and the medical appliances are all placed on one tray. This realises one compact set up of appliances, which can be flexibly and is ergonomically sound.

3.1 Transport of the trolley

The appliances must all be switched off before transport, the main switch on the trolley must be switched off and the plug must be removed from the socket. Cables, wires and cords must be fastened or hung on the trolley and loose parts must be stored away.

Before moving the trolley, it must be switched off. Turn the appliances off by using the main switch and remove the plugs from the socket. Make sure the power cord of the trolley is safely stored away (cable hook).

Close and lock (if possible) the drawers and extendible platforms before moving the trolley.

Make sure that the object placed on the trolley that is to be moved are securely fastened. This will prevent items falling off when moving the trolley.

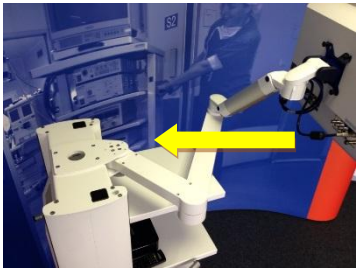
Before moving the trolley, the monitor arm (if present) must be fully folded up. The main reasons for doing so are:

1. The monitor maintains its central position on the trolley, which means that the visibility over or past the trolley is good for the person moving the trolley.

2. The arm will not fold out during movement (for example when taking a corner), causing:

a. the monitor and arm not to be broken as a result of hitting something.
b. the trolley cannot fall over as a result of the altered point of gravity when the arm is extended.
c. no bodily harm resulting from the arm suddenly turning and colliding with someone or as a result of the trolley falling on someone.

User stand


fold up


Position during transport

If the trolley has one or more monitor arms, these must be folded and, if possible, fastened to the trolley. This is important for the necessary stability during transport Make sure that the arms cannot move outwards during transport, as this could cause damage and personal injury!

Only move the trolley is arm is folder in and, if necessary, fastened. In order to guarantee the stability of the trolley, the monitor must be placed on top, or at least as close as possible to, the trolley.

When all the above mentioned instructions have been followed, the brakes can be released and the trolley is ready to be moved. The following safety requirements need to be followed:

Check before moving the trolley whether the brakes of both wheels have been released.

Check before and during moving whether people or objects could become entrapped by the trolley.

When moving the trolley, it must be PUSHED with the handle at the side of the trolley. This allows you to have maximum control over the trolley and have a good visibility on the trolley and your route.

Adjust your speed depending on your immediate circumstances. In order to maintain control over the trolley during unexpected situations, you should never move the trolley faster than 2km/hour. Moving the trolley at normal walking speed (4-5km/hour) is too fast.

Do not move the trolley over a ramp and obstacles, such as cables and thresholds (elevator). However if the trolley does need to be moved over a ramp or obstacles this should be done very carefully by at least two people.

Please note: a heavy trolley always has a certain stopping distance. Keep this in mind!

If you plan on moving backwards, make sure that you do not become trapped between the trolley and obstacles.

3.2 Use

The trolley is placed in the correct location in the OR or treatment during the preparation of a treatment or examination, and made ready for operation. The following safety requirements need to be followed:

Increase the stability of the trolley by turning the wheels at the side with the (longest) arm outwards and secure the brakes on the front wheels.

Position the monitors by extending the arms.

Never pull the monitor to extend the arm, always turn the individual elements to place the monitor in the desired position. Make sure you use both arms:

- one hand to turn the part of the arm and
- the other to keep the other side of the turning point in place.

PLEASE NOTE: THE TROLLEY CAN FALL IF THE MONITOR IS PULLED.

Make sure when adjusting the arm, that your fingers do not become trapped between the elements of the arm.

Please pay attention that the arm cannot come into contact with objects or people when moving the monitor.

Make sure that the height adjustment is not blocked before adjusting the height of the monitor. If the height adjustment is locked, the trolley could fall over if the monitor is pulled downwards. Do not push the monitor down if it is in the lowest position.

Do not place the monitor to the monitor arm above a patient/people, unless this is absolutely necessary. If this is necessary, first check the arm thoroughly for any irregularities (loose parts, sagging arm, arm swivelling to loosely, etc.). The monitor and monitor arm are not sterile parts and can therefore never be placed in a sterile area.

NEVER MOVE THE TROLLEY BY PULLING OR PUSHING THE MONITOR ARM. THIS CAN CAUSE THE TROLLEY TO FALL!

If the trolley is in the right position and the monitor arms are extended the system can be turned on. Place the plug in the socket and connect the equipotential bonding. Turn on the main switch of the trolley and then turn on the appliances on the trolley. Before using the system, it must be functionally tested. If the system does not work (correctly), there could be a defect. Have this checked by a technician before using the trolley.

The appliances on the trolley need power in order for them to function. To this end the trolley has a power cord of 5 meters. Place the power cord away from walk areas and make sure that no one can trip on the power cord.

The 5-meter power cord included is suitable for medical use. Connect the plug on a medical socket only. Before using the trolley is to be used, it must first be connected to the equipotential bonding. This guarantees a safe earthed connection.

Inspect the power cord before each use. NEVER USE THE TROLLEY IF THE POWER CORD IS DAMAGED.

Place the plug securely in the socket before use. Never pull the plug from the socket by pulling the cord. Never use excessive power to connect the plug to the socket.

Always turn the main switch off before the plug is placed in the socket or is removed from the socket.

NEVER USE THE ELECTRICAL SYSTEM IF THE TROLLEY IS WET.

Make sure the power cord, isolation transformer or socket strip do not become too hot. The ambient temperature can never exceed 40°C.

Do not drive, pull or place objects on/over the power cord. Do not stand or walk on the power cord.

The trolley is often located within the work area of operating personnel during use, and forms part of the instruments used. Please follow the following instructions during a medical procedure:

Monitor arms - and the monitors connected to these arms - are positioned far away from the trolley. Make sure you do not collide with it or that it touches objects.

If the trolley has multiple drawers, never open more than one drawer at a time. Make sure that the items placed in the drawers never way more than 5kg.

The wheels stick out at the sides to ensure the trolley's stability. Make sure that no one trips on these wheels.

3.3 Cleaning and inspection on correct operation

For a long-term trouble free use of the trolley, it is important that it is kept clean. Any splatters of saline, blood or other liquids must be removed as soon as possible, as this can permanently damage the coating (paint). We recommend that the trolley is cleaned and dried after each use.

The trolley may only be cleaned with a slightly moist cloth and a non-aggressive (household) cleaning agent. Never use aggressive solvents, such as alcohol, thinner or solutions containing saline for cleaning the arm.
The use of disinfectant cleaning agents based on 70% alcohol (aromatics free) with 0.1% chlorine, is permitted. Follow the instructions of the agent and do not allow the cleaning agent to dry up.

The trolley also has cables of the electrical installation. That is why liquid cleaning agents should be used sparingly as these could enter the installation. This could lead to hazardous situations and disruptions.

It is also important that the user is alert in determining irregularities (such as the suddenly supple turning, extreme sagging of the arm, equipment shutting down). Report any irregularities, also in case of doubt!

Check the trolley regularly for its normal operation. If you do find irregularities, have these checked out by qualified staff.

IF YOU FIND IRREGULARITIES IN THE MONITOR ARM, THE TROLLEY MUST NOT BE USED UNTIL IT HAS BEEN REPAIRED BY QUALIFIED STAFF AND HAS BEEN ASSESSED AS BEING FOR NORMAL USE AGAIN.

The trolley must regularly be inspected by technical staff. Important aspects are: check wear and tear, check screws, inspection fractures or deformation (including welding).

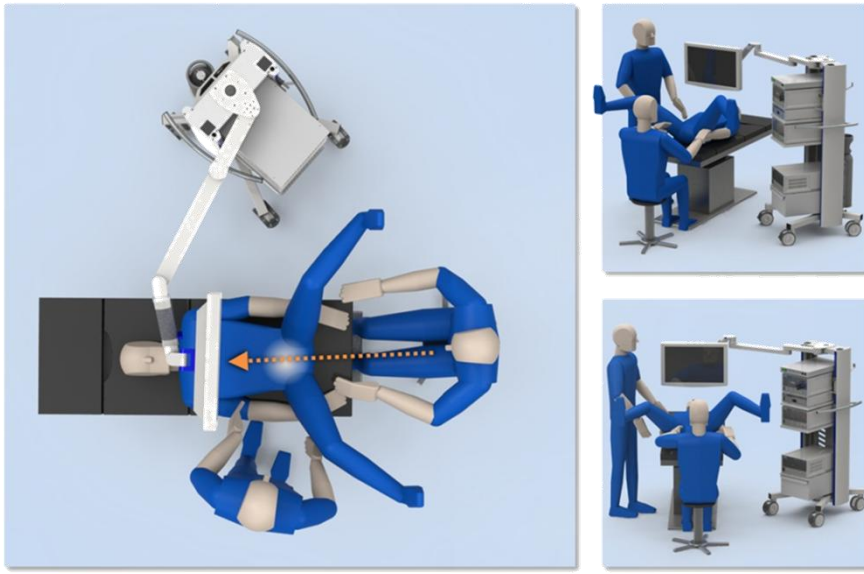
Technical maintenance must always be performed by qualified staff.

See chapter 6.5 for cleaning during maintenance of the trolley.

4 Ergonomics

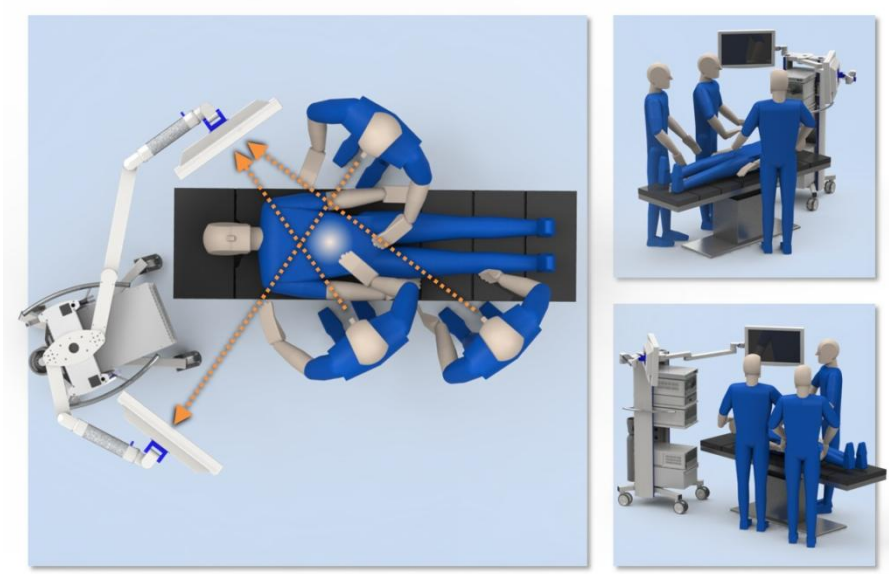
The Crozz two trolley has monitor arms for ergonomic purposes. The EASY and 3EASY arms, as described before, offer the flexibility to create an optimum ergonomic set up. This chapter provides some examples of the use of the Crozz two trolley with monitor arms. The purpose of this is to inform you, the user, of the possibilities of ergonomic optimisation in order to limit or even prevent problems due to an incorrect working position (such as neck problems).

4.1 Lower abdomen operation



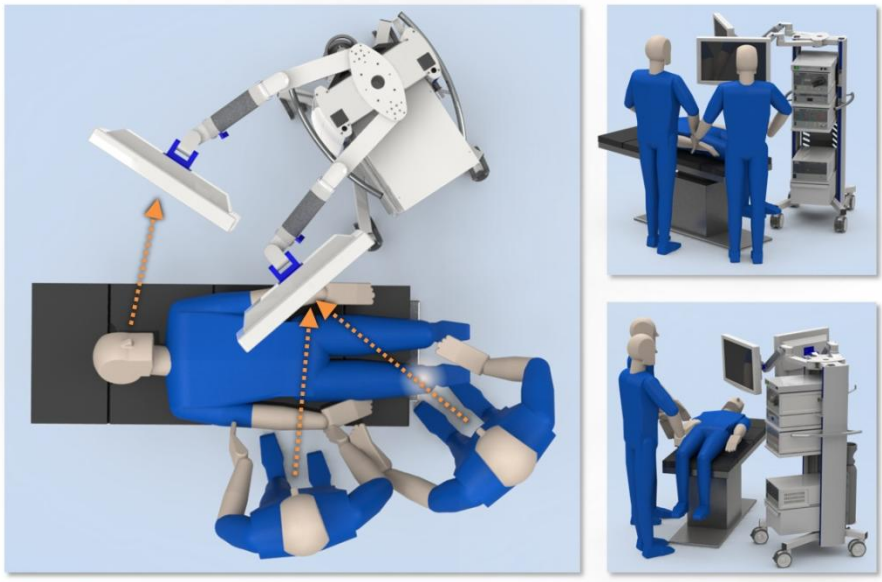
In this set up, the monitor is turned above the patient, allowing the surgeon to see his work area as well as the monitor. The monitor has also been positioned at sitting height.

4.2 Upper abdomen operation



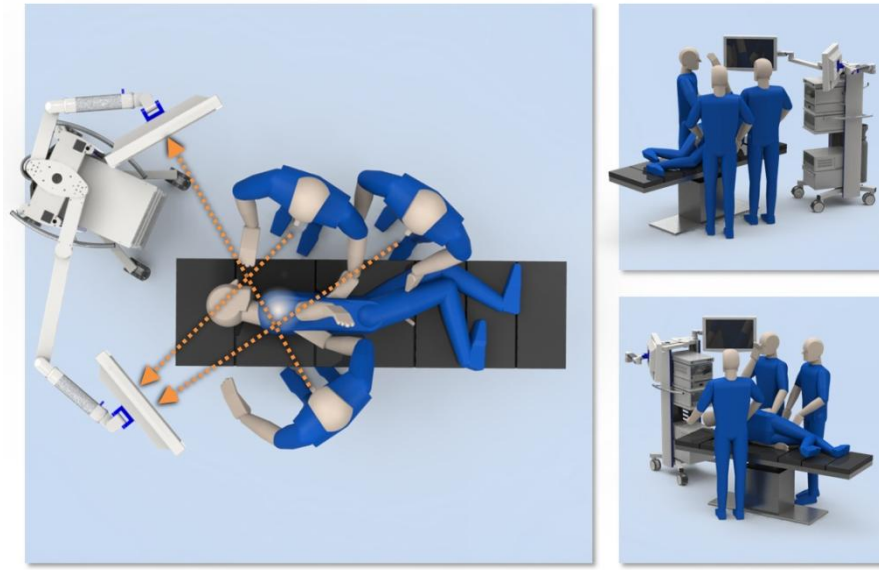
In this set up, the trolley has two arms, a 3EASY and an EASY arm. The surgeon and assistants can see the work area as well as the monitor. Thus creating an ergonomically sound set up.

4.3 Arthroscopic knee operation



If the patient is awake and wishes to look at the procedure, the patient can do so by watching one of the monitors. In this set up the trolley has two EASY arms.

4.4 Arthroscopic shoulder operation



In this set up the trolley has two arms, allowing the surgeon and the assistants to see the work area as well as the screen.

5 Installation of the trolley

The trolley has been designed as ready-for-use of medical and/or electronic appliances. For a sustainable and safe use of the trolley, it is important that it is correctly made ready-for-use. The instructions described in this chapter need to be completed before you can use the trolley.

The stability of the trolley is strongly affected by the appliances positioned on it.

1. Make sure that heavy appliances are placed as low as possible in the trolley.
2. Please note the maximum burden of the monitor arms.
3. Never place heavy equipment/accessories outside the wheel basis if there is no need to do so.

CHECK THE STABILITY OF THE TROLLEY AFTER HAVING INSTALLED ALL THE APPLICANCES AND ACCESSORIES. THESE MUST MEET THE 5° AND 10° TIP-TEST REQUIREMENTS AS STATED IN THE UL / IEC 60601-1 STANDARD.

5.1 Inspection upon receipt

1. Check whether the packaging is undamaged. If the packaging is damaged, there is a chance that the trolley has incurred damage during transport.

2. Open the packaging and roll the trolley from the pallet with the enclosed ramp plate. Follow the instructions enclosed in the packaging.

3. Keep the packaging for a possible return delivery in the event of damage, defects or incorrect content.

4. Check whether the delivered trolley and accessories are identical to your order.

5. Check whether the delivered goods have arrived undamaged.

6. Any complaints must be filed within 8 days after receipt of the goods.

5.2 Making the trolley ready for use

1. Check whether the wheels are correctly fastened and fasten them if necessary (45Nm torque moment).

2. With the exception of the top platform (which includes the central on/off switch), you can determine at which height the platforms, drawers and extended platforms are placed. These are fastened with drive screws on the stainless steel carriers in the side panels.

The Allen key (no. 5) can be used to adjust the height of these drawers and platforms. See the image above. Make sure that the platforms and drawers are placed horizontally.

If the trolley has a monitor arm or a medical isolation transformer, a drawer is placed directly above the under frame. This drawer contains the transformer and the necessary contra weights for the stability and cannot be adjusted in height.

3. After all the parts have been installed in the right place, you must check all the bolts and drive screws to see if they are securely fastened.

4. Place the appliances and accessories on the trolley. Take into account the maximum permitted load:
    a. Platform 50 kg

b. Platform of the drawer 5 kg
c. Extended platform 5 kg
d. In the drawer 5 kg
e. Whole trolley 150 kg.

Adding accessories on the outside of the trolley can negatively affect the balance of the trolley and is to be done at one's own insight and responsibility.

5.3 Installation of the arm

Follow these instructions for the installation of any monitor arms attached to the trolley.

5.3.1 Assembly of the arm on a trolley

The EASY and 3 EASY arm have been specifically designed for assembly onto the Crozz two 2G trolley. In most cases Jansen Medicars will install the arm on the trolley.

However, if Jansen Medicars does not install the arm, you need to make sure the trolley is ready for installation. If this is not the case, there is a chance that the trolley will topple if you install the arm. Contact Jansen Medicars if you are unsure whether the trolley is ready for installation.

The arm can carry a maximum burden of 12kg. The maximum permissible burden to the arm is also determined by the configuration of the trolley and can be less than 12kg. Contact Jansen Medicars if you are unsure of the maximum permissible burden.

When installing the cables in the monitor arms, the cables at the monitor side and trolley side must be long enough for the arm to move freely. This will prevent damage to the cables during their use.

5.3.2 Placing the cabling in the arm

The arm consists of one or more extensions and one lift arm. See the image below.

The necessary cabling runs through the elements and the rotating points. There is sufficient space for at least four cables and an earthed wire (normal use will involve one supply cable, one earth wire and one video cable). The number of cables mainly depends on the thickness of the cables.

The current DVI standard is mainly applied to medical monitors and have the largest standard video plugs and the thickest cables in comparison to other standards. That is why the design is based on the use of these cables.

The internal cables are most heavily burdened at the rotating points. This is caused by the cables bending at each rotating point, where the arm is rotated most.

The cables are covered with a sturdy plastic spiral at the rotating point by way of extra protection; this spiral is delivered with the arm. The cables must be covered with the spiral without being twisted.

Both swivel arms and the lift arm have a cable tray that is covered with a covering plate. If the covering plate is removed, you can access the rotating points and insert the cables in the arm.

The cables passed can only be used for power that is safe to touch. For alternating current (AC) this means a maximum of 50V; the maximum for direct current (DC) is 120V.

If available, we recommend the use of special cables that are suitable for mechanical stress. This is because the cables used is particularly subject to mechanical stress in the rotating points.

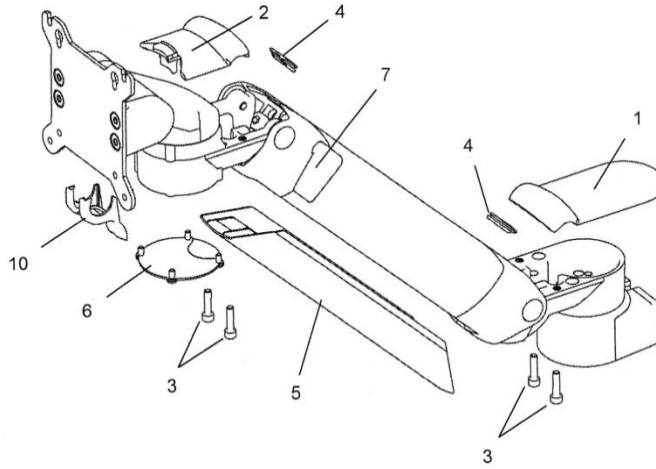
When removing the monitor, it is important to remember that the lift arm has a gas spring that is under significant pressure. If the arm is not in the highest position or has not been blocked in height, the VESA will move upward as soon as the monitor is removed. As a mute gas spring has been installed, the arm will not shoot up.

The lift arm has a gas spring that is under great pressure. If the monitor needs to be removed from the arm, the arm must be placed in the highest position and/or the height adjustment must be fixed.

Never place a heavier monitor than what the arm was designed for. This could cause the arm to become damaged or the trolley to become unstable and topple. Contact Jansen Medicars if you are intending to do so.

The following paragraphs are instructions on how to install a monitor and place the necessary cables. This QR code contains a link to a video instruction on YouTube. This instruction can also be found on the website of Jansen Medicars.

5.3.2.1 Preparing the lift arm



a) Release the height lock (7) to allow the arm to move freely up and down (lever in horizontal position). Remove the lid of the cable duct (5). This lid is tight and can be loosened with a flat screw driver. At the end of this lid are small openings, which can be used to open the lid.

b) Remove the screws (3) and remove the lids (1) and (2). In order to be able to remove lid (1), the arm must be placed in its lowest position (the VESA as low as possible).

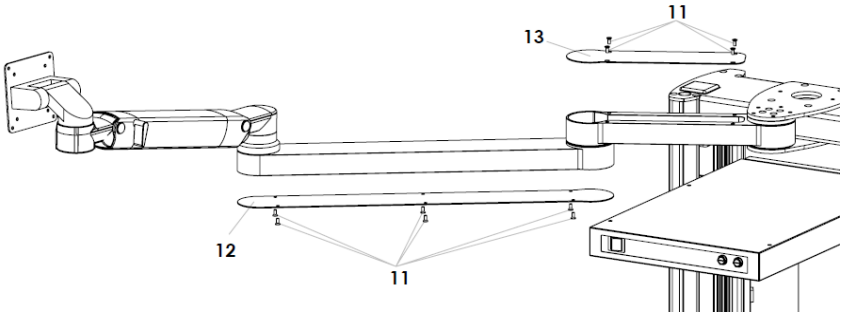
Turn the VESA plat upward (horizontal) and turn the VESA-basis 180° and remove lid (2). This lid can only be removed if the arm is in the highest position. See the image below.

Then slide the plastic covering plates (4) out the arm. This creates the necessary space for passing through the plugs of the cables.

c) If necessary, remove the lids (6) and VESA cover (10). These have not been added upon delivery of the arm, and are enclosed as separate parts.

d) Remove - if necessary - the lid of the top platform. This is done by unscrewing the four screws on the top of the platform and sliding the lid forwards.

5.3.2.2 Preparing the extensions



e) Remove the cover plates (12) and 913) of the extension(s) by removing the screws (11).

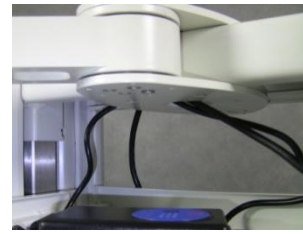
5.3.2.3 Setting up the cables

Set up the cables from the trolley and work towards the screen. Make sure you leave enough space to connect it to the monitor.

If several cables are placed in the arm, they need to be placed besides each other, without being intertwined. This will allow the necessary movement for the cables.

The cable must be protected by the supplied spiral protection in all the rotating points.

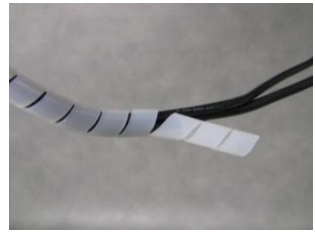
f) Place the adapter of the monitor in the top platform (if present) and pass the cable through the round hole at the bottom of the bridge, from up to down.



g) Pass the cables through the hole in the first extension and then through the rotating point between the two extensions. Pull the cables through, allowing a sufficient cable length for the remaining part of the arm.

h) The next step is passing the cables through the back part of the lift arm. Pass the cables through the rotating point upwards and through the arm to the cable tray of the lift arm below. The cable can be passed through the space that has been created by removing the covering plate (4) at the back of the arm.


i) Turn the VESA basis forwards and stick the cable upwards from the cable tray through the cable duct behind the VESA. Again the cable can be passed through the space that has been created by removing the covering plate (4) at the front of the arm. Then apply the spiral protection around the cables. This will protect the cables in the rotating point.

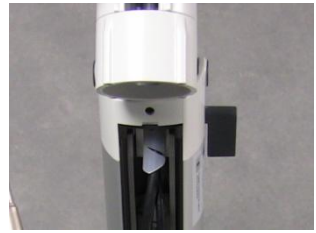



j) Now turn the VESA basis backwards again, push the cable in the resulting opening, place the lid (2) and turn the VESA basis back again.

Make sure the cables are positioned correctly in the opening, otherwise they could be damaged when turning back the VESA basis.


k) The cables have now been placed in the VESA. Check whether the length of the cables is sufficient and place the VESA cover (10) and install the covering lid (6).

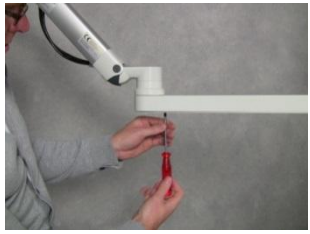
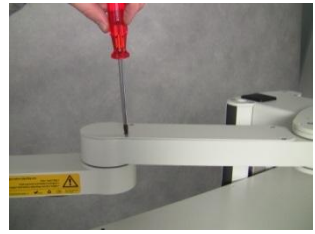
l) Apply the spiral protection at all the rotating points and place the cables in the cable trays by sliding the excess cables towards the trolley.



m) Place the plastic covers (4) back in their original position and place the lid (1). This lid can only be placed if the arm is in the lowest position. Now place the lid of the cable tray (5) back again.

Place lids (1) and (2) with the two screws (3).


n) Place the lids of the cable trays (12) and (13) and fasten them with the accompanying screws (11).

o) Place the cables in the cable tray of the trolley, connect the monitor adapter to the socket strip.


p) Now close the lid of the top platform. Fasten it again with the four screws at the top.

q) Install the monitor to the VESA and connect the cable; then fold the arm(s) inwards in order to move the trolley.


5.4 Cabling and final electrical inspection

When installing the appliances, keep in mind the maximum burden of the installation of the trolley.

Never connect more appliances to the trolley than the indicated power specifications of the trolley.

Before the fuses are removed, the trolley must be switched off and the power plug must be removed from the socket.

The left side panel of the trolley has 10 sockets with appliance connection (IEC320-C13). Each connection has an earth potential equalization contact. The appliances are connected to these sockets with short power cords.

The left side panel has a cable tray to store the power cords that connect the installed appliances with each other.

An optimum conductance of the cables is achieved by applying two cable bands (Velcro) at the back of the platforms. This guides the power cords from the appliances to the socket strip and/or cable duct.

If all the appliances have been placed and connected on the trolley, everything needs to be inspected to see if it functions as intended. If this is the case, an electrical test must be performed.

The following points must in any case be inspected:

1. Measurement of the earth resistance; this should be <200mΩ from the socket to all the medical appliances.
2. Measurement earth leakage power. This must be <500µA, and must be measured on the plug.
3. If the trolley contains an isolation transformer, then the earth leakage power on the trolley (secondary side of the transformer) must be <5mA.

6 Maintenance and inspection

For the user and his/her environment to be safe, it is very important for the trolley to always be in a good technical condition. After all, an installation (trolley plus appliances) is heavy. Incorrect use or bad maintenance can result in unnecessary risks.

Check the trolley regularly for its uninterrupted operation. If you do find irregularities, have these checked out by qualified staff.

Technical maintenance must always be performed by qualified staff.

The trolley must regularly be inspected by technical staff at least twice a year. Important aspects are: inspection wear and tear, checking screws and monitoring welded parts.

In order to exclude as many risks as possible, Jansen Medicars recommends that the trolley is inspected at least twice a year, as a preventative measure. Never perform activities on the trolley when you do not have the required knowledge or authorisation. If you have a technical department: this department must have the correct documentation and tools to perform this maintenance.

Jansen Medicars cannot be held liable for damage suffered as a result of incorrect use/acts or negligent maintenance.

6.1 Wear and tear inspection

The bearings of the arms and the cables that are moved a lot, such as the cables in the arms, are subject to wear and tear.

1. Check whether the bearings in the arms have not become loose. When they are too loose, the screws that determine the friction can be tightened. Apply a locking medium, they might otherwise loosen

during use.

2. Check the cables for damage. If one of the cables is damaged, then it is best to replace all the cables. The chances of the other cables becoming damaged within a short period of time are great.

3. We recommend replacing the moving cables as a preventative measure. This can limit failures happening during use. Depending on the use, the cables can, for example, be replaced annually.

4. If the rotating points run less smoothly, a lubricant can be added. This requires the rotating points to be dismantled. In this case the monitor needs to be removed, as well as the cables. Please make sure a locking medium is used upon assembly. Please contact Jansen Medicars if you have any questions.

6.2 Checking screws

It is important that the screws in the bearings and wheel bolts do not become loose. These bolts and screws are fastened with a locking medium and/or locking rings. If screws are tightened, make sure you use a locking medium again. Always use a strong, but removable locking medium!

If the screws in the bearings of the arms are adjusted, make sure you use a strong, but removable, locking medium. This will prevent the screws from loosening during use and the arm falling apart.

The wheel bolts must be fastened with a torque wrench. The desired torque moment is 45Nm.

6.3 Inspection deformation and fractures

If deformation or fractures have been established in the (bearing) parts of the trolley, it cannot longer be used until the parts in question have been replaced. Fractures can only result from overload. In theory, this

can occur in any part of the trolley. Replace the faulty parts and check with Jansen Medicars to determine how this could have arisen and how this is prevented.

If parts have fractures or are deformed, these need to be replaced before the trolley can be used again. Always contact Jansen Medicars in these events.

6.4 Inspection electrical systems

The electrical installation of the trolley must be inspected at least twice a year. Important areas of inspection are:

1. Verification of an uninterrupted power supply to the installed medical appliances.
2. Measurement of the earth resistance; this should be <200mΩ from the socket to all the medical appliances.
3. Measurement earth leakage power. This must be <500µA, and must be measured on the plug.
4. If the trolley contains an isolation transformer, then the earth leakage power on the trolley (secondary side of the transformer) must be <5mA.

6.5 Cleaning

For a long-term trouble free use of the trolley, it is important that the users keep it clean. We recommend thoroughly cleaning the trolley when performing regular maintenance, also in the places where the user does not or cannot clean. For example in the arm or between the bearings.

Switch all the appliances on the trolley off before cleaning and remove the power cord from the socket to ensure that you do not receive an electric shock during cleaning.

The trolley has and integrated electrical installation. That is why you must not use too much liquid on the trolley, as some of the liquid could enter the installation. This could lead to hazardous situations and disruptions.

The trolley may only be cleaned with a slightly moist cloth and a non-aggressive (household) cleaning agent. Never use aggressive solvents, such as alcohol, chlorine, thinner or solutions containing saline for cleaning the arm.

The use of disinfectant cleaning agents based on 70% alcohol (aromatics free) with 0.1% chlorine, is permitted. Follow the instructions of the agent and do not allow the cleaning agent to dry up.

The trolley also has cables of the electrical installation. That is why liquid cleaning agents should be used sparingly as these could enter the installation. This could lead to hazardous situations and disruptions.

Do not use grease-dissolving cleaning agents in and around the moving parts, such as the bearings of the arm. The turning points could become stiff, resulting in serious wear and tear.

Remarks

P.O. Box 49
3600 AA Maarssen
Netherlands

Tel. +31 30 2613500
Fax. +31 30 2616714
URL www.medicars.com

D00.02.02