



# Stille imagiQ2

Service and technical manual



Surgical Perfection. For life.

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At the time of printing, this manual correctly described the device and its functions. However, as modifications may have been carried out since the production of this manual, the system package may contain one or more amendments to the manual. This manual including any such amendments must be thoroughly read, before using the device.

The English version of the User Manual and Service Manual is the original instructions. Manuals in other languages are a translation of the original instructions.

The following **imagiQ2™** models are covered by this manual: 530-1700 imagiQ2 EU 230V, 530-1701 imagiQ2 GB 230V, 530-1702 imagiQ2 JP100V, 530-1703 imagiQ2 US 120V.

The imagiQ2 operating table is CE marked in conformity with the essential requirements, according to annex I, and classified, according to annex IX, as Class I (rule 12) of the Medical Device Directive 93/42/EEC.

We declare the compliance of the medical device concerned with the Swedish Medical Devices Act (1993:584) and the regulation LVFS 2003:11 of the Medical Products Agency. Hereby, the medical device complies with the requirements of the Medical Device Directive 93/42/EEC, the amending Directive 2007/47/EC and the applicable harmonized standards as well as the RoHS directive 2011/65/EU and the WEEE directive 2012/19/EU. The device does also comply with the International standards, IEC 60601-1, IEC/EN 60601-2-46, UL 60601-1. CAN/CSA C22.2 No 601.1-M90. Any modification to the device, not authorized by us, will invalidate this declaration.

The original signed CE declaration of conformity is a separate document can be obtained upon request.

#### Classifications

CE Medical device classification:	Class 1
GMDN code:	36606
FDA Regulation Status:	Class 1 Exempt 878.4960 (GDC)
FDA List No.:	E130044

#### Warranty terms for imagiQ2™ vascular imaging table:

To be able to benefit the full warranty terms of the Stille imagiQ2, the installation report that comes enclosed with the documentation must be filled in at installation and returned to QA@STILLE.SE  
Information regarding Stille Warranty Provisions can be found on Stilles website, <http://www.stille.se>.  
If you do not find the installation report please do contact QA@STILLE.SE for a copy.

It is recommended that all repairs and modifications are carry out by authorized personnel.

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## SAFETY INFORMATION

Always follow the manufacturer's instructions!

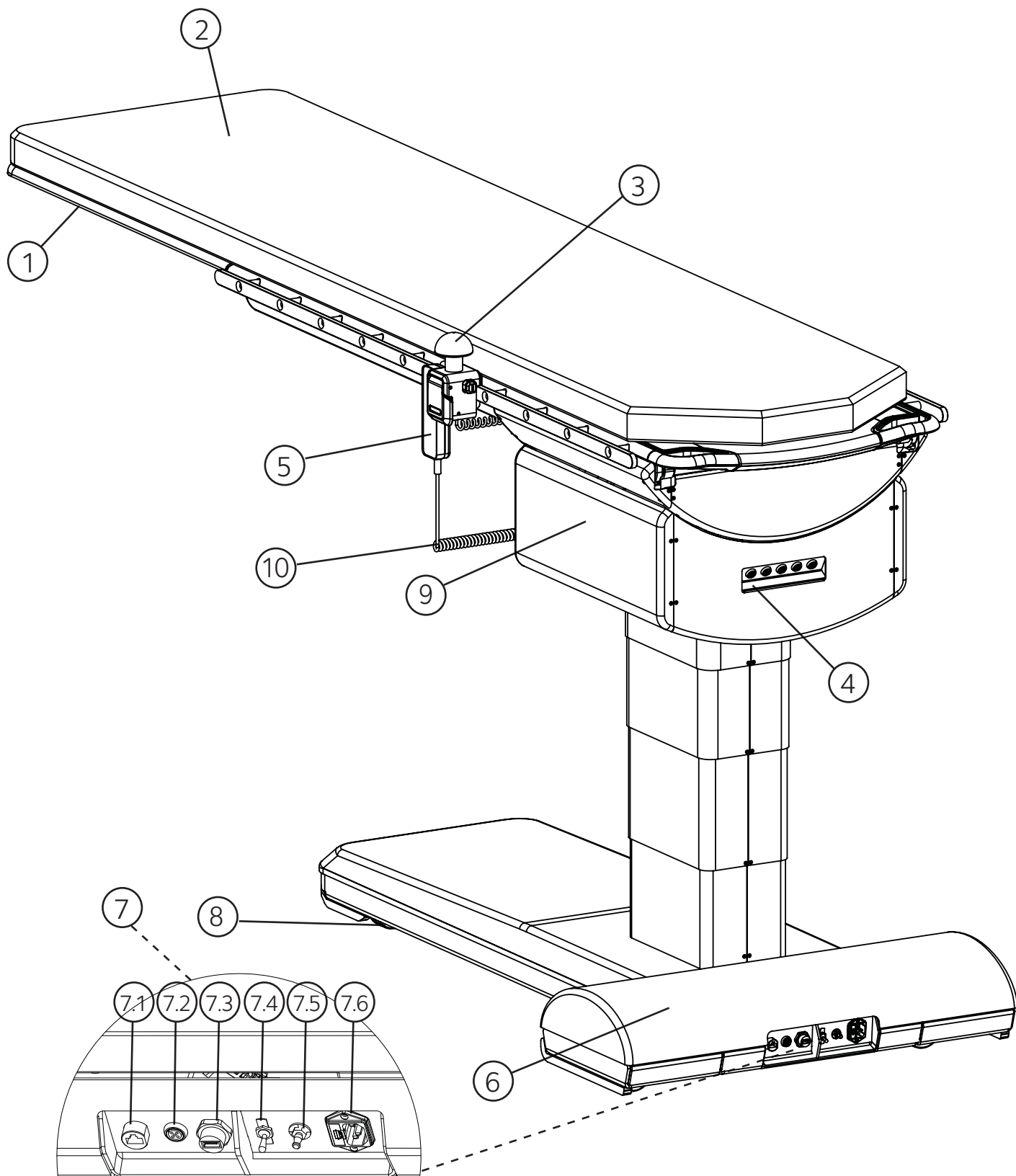
Read carefully and always follow the instructions in the users manual before first using the imagiQ2™ operating table. This manual has been written to ensure that you will handle the table in a safe and correct manner, use this manual together with the users manual.

- The device is intended to be used by qualified surgical staff.
- Quick Stop/ Main switch: Move the switch downwards for immediate shut-off (see page 12).
- All movements are interrupted when the hand control is switched off (OFF), or when the Quick Shut-off switch is turned off.
- All table top movements cease immediately if the button in question is released.
- Avoid discharging the batteries completely. Maximum battery life-time is achieved if charged regularly.
- The manual must always be stored within reach of the operating table.
- The main switch must be turned "ON" when charging the table.
- Follow the packaging / unpacking procedure to avoid personal injuries, equipment damage or property damage.
- This device, as all medical electric equipment in general, need special precautions regarding EMC and need to be installed and put into service according to information in the user and service manual.
- During operation make sure to not touch external ports or connectors and patient at the same time.
- Always use anti-static cushions to ensure that static electricity is discharged to the anti-static floor.
- The table is intended to be used on an anti-static floor.
- Always connect the table's potential equalization connection point to protective earth.
- Never place surgical cloths/ sheets so that the grounding rails are totally covered. Surgical cloths/ sheets prevent electric discharge to anti-static floors.
- Radio transmitting equipment, cellular phones etc. shall not be used in the close proximity of the imagiQ2™ table since this could influence the performance of the imagiQ2™ table.
- Particular precaution must be considered during use of strong emission sources such as High Frequency surgical equipment and similar so that e. g. the HF-cables are not routed on or near the imagiQ2™ table. If in doubt, contact qualified technician or your local representative.
- Do not subject the operating table to electromagnetic fields that exceed the applicable standards for radio frequency equipment, such as diathermy apparatus, defibrillators and defibrillator monitors.
- The table is only to be used with medical equipment complying with EN 60601-1, EN 60601-1-2.
- The imagiQ2™ table complies with the EMC requirements according to IEC 60601-1-2.
- The device is not intended for use with flammable anaesthetic gases. A possible explosion hazard exists and personal injury or equipment damage could occur.
- The device shall be cleaned / disinfected according to the user manual.
- Do not immerse the control unit device in water or any other liquid (see the care / maintenance section for specific details).
- The operating table is disconnected from mains by disconnecting the AC-power cord from the table.
- Unplug the power connector from its power source before moving the table, cleaning or servicing. Failure to do so could result in equipment damage.
- The table is more stable when parked. Always park the table when it's not being transported.
- Only use accessories approved by STILLE AB.
- Always check that mounted accessories do not collide with the operating table or surrounding equipment when movement is activated
- Remove any obstacles before lowering or tilting the operating table. It could tip over.
- The operating table base must always be stable and horizontally level.
- Centre the table top longitudinally over the column as far as possible before lowering the free end of the table top.
- When adjusting or when panning the operating table, never put your fingers under the table top or cover. Risk of injury.
- Secure the patient before changing the position of the operating table.
- The patient must not lie on conductive mattresses or on damp bedding when defibrillators, defibrillator monitoring screens or high frequency apparatus are being used. Nor should the patient come into contact with metal parts or their accessories on the operating table. This could result in burns.
- Keep the patient under constant observation.
- Use only STILLE spare parts.

- Ensure that hands, feet and equipment are clear of the frame assemblies when changing positions of the table.
- Use precaution as the imagiQ2™ table can be activated by another operator.
- Particular precaution must be taken during use of the foot control to avoid unwanted movements.
- Not intended to be used in an oxygen rich environment.
- Do not subject the operating table to electromagnetic fields that exceed the applicable standards for radio frequency equipment, such as diathermy apparatus, defibrillators and defibrillator monitors.
- All service shall be performed without any patient placed on the table. In case of emergency service and repair shall be performed without any connections between the technician and the patient or the operator.
- For moving safely over a threshold 15 mm or higher, it's required to be two persons.
- Before moving over a threshold always makes sure that the table top is centre.
- The battery shall only be changed by service personnel.
- Replenishment of oil into the hydraulic system shall only be done by service personnel.
- Addition to the Service Manual: Never overflow the hydraulic system when refilling oil.
- Do not place or position imagiQ2 so that it is difficult to disconnect the table from the supply mains socket.
- Do not touch the patient and accessible contacts of connectors simultaneously.
- The table shall be centered and turned OFF on the hand control before and during transport.
- Extra precaution must be taken during service when a guard is open and someone is activating a movement.  
Risk of injury.
- A clicking sound shall be heard when attaching the head rest to be sure that its attached safely.
- Preventive maintenance of the table shall always be performed according to the Service Manual.
- Always check that the accessories are securely attached to the table before use.
- Always check accessories before use. Damaged or worn accessories shall never be used as they can cause injury.
- Do not operate the device if the protective covers are removed, risk for personal injury.
- Skin contact with hydraulic fluid may cause skin irritation, clean and wash with soap and water.
- If another mattress is used than the original mattress, a grounding connection must be established.
- When the AC cable is connected to the device, the batteries are charging if the main switch is ON, if the batteries are completely discharged it may take some time before the device can be restarted.
- Isolation from the supply mains is made by disconnecting the AC power cable from the equipment.
- Enclosure protection of the foot control is IP68.
- No specific warnings specified in the service manual according to use of other accessories, transducers and cable other than those specified by Stille.
- Precautions has to be taken to equipment and surrounding equipment in relation to specific EMC requirements see tables for EMC specifications.
- Testing against IEC/EN 62353 shall be performed by Qualified personnel according to the requirements in the standard.
- Use of accessories, cables and spare parts other than those sold by Stille as replacement for internal components, may result in increased emissions or decreased immunity of the operating table imagiQ2.
- Warning: imagiQ2™ should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, imagiQ2™ should be observed to verify normal operation in the configuration in which it will be used.
- WARNING: if the table is beeping continuously every 30 second, table is in failstate, all safetyfunctions are turned OFF, do not transport patients on the table park the table during procedures.
- WARNING: Risk for pinch/squeezes damage when installing/ removing the detachable table top.
- WARNING: To avoid the risk of electric shock, this equipment must only be connected to a supply main with protective earth.
- WARNING: Using other cables and accessories than the specified, can possibly increase the emission and decrease the immunity in regards of EMC requirement.
- WARNING: To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
- WARNING: No modification of this equipment is allowed.
- Do not position the imagiQ2™ operation table so that it is difficult to operate the disconnection device.
- Means for isolating imagiQ2™ operation table from mains supply, trough disconnecting the power cord from the ME equipment.
- It is recommended that at least 2 persons are transporting the imagiQ2™ operation table.
- If in doubt, consult the supplier or person responsible for operating room equipment.

# OVERVIEW of the imagiQ2™ TABLE

Overview



## Intended use

imagiQ2™ is intended to be used by trained medical personnel's for positioning and supporting of patients before, during and after human surgery in operating rooms. It can be used for general open surgery but is suitable for minimally invasive vascular surgery e.g. endovascular and cardiovascular surgery.

Because the table top is made of translucent carbon-fiber it has a high degree of transparency of X-rays. The table is designed to fit well together with a C-arm for fluoroscopic procedures.

- The table is not suitable for infants.
- Intended medical indication:  
Minimal invasive surgery
- Intended patient population:  
Max. 225 / 300 kg – 496 / 661 Lbs patient weight (depending on model)
- Intended part of the body interacted with the device:  
Skin tissue
- Not intended for use during brain surgery

## Detailed description

1. The table top is made of translucent carbon fibre composite. Accessory rails run along 2/3 of the table top. Static electricity is discharged from the bottom of the mattress via the grounding rails on the upper surface of the table top.
2. The mattress is made of what is known as "Slow Recovery" material, to minimise pressure sores on patients during long operations.
3. The pan handle is a manoeuvring function allowing panning of the table top. The handle normally remains in a locked position on the accessory rail. Two pan handles can be used simultaneously.
4. Connections. The column contains connections for the pan handle and hand controls and a RED connector for special imagiQ2 accessories.
5. Hand control manages the hydraulic movements of the table. Normally, the hand control is suspended on the table top accessory rail.
6. Safety control cover holds the emergency

- Intended user profile:  
Trained medical personnel's

### Intended conditions of use

- To be used in operating theatres/rooms
- Temperature +10°C to +40°C (50°F to 104°F)
- Humidity 30% – 75%.
- Atmospheric pressure 700hPa – 1060hPa
- Cleaned and disinfected before use

### Operating principle

- A battery operated mobile surgical operating table intended to support and positioning patients during surgical and examination procedures.

### Least favorable working condition

The table is used during max. operation conditions, off center and unparked with max. safe work load placed on the table and the column all the way up.

### Essential performance

Essential performance according to EN 60 601-2-46: Essential performance of the imagiQ2 table is the Trendelenburg function. The function can be activated by the use of the hand control and can manually be achieved as an emergency function in cases of power failure.

operation control and safety hand control.

7. Connection panel located on the back of the base, which is the main interface for connectors for mains supply, main fuse and connector for foot control (optional).
  - 7.1 LAN
  - 7.2 Foot control
  - 7.3 USB port
  - 7.4 Quick-Stop / Main switch: automatic fuse, which also serves as a quick shut-off device.
  - 7.5 Potential equalization connector (on back side of the base).
  - 7.6 Appliances inlet, NOTE The main switch must be turned "ON" when charging the table.
8. Retractable wheels, park the operating table.
9. Side protective covers, protect the inside of the table.
10. Connector, hand control. Extension cable for connecting hand control at opposite end of table.



### Start-Up procedure

Follow the procedure described below before the Stille imagiQ2™ operation table is used for the first time:

■ Before the table is used for the first time:

- charge the batteries until they are fully charged, (the main switch must be "ON" when charging the table.)
- Fill out the installation report.
- Fill out the testprotocol ISO -EN 62353

- 1) Read the User Manual
- 2) Test run all functions on the hand control as described:
- 3) Column, Run column from lowest position to highest position and up again.
- 4) Lateral tilt right, Run tabletop from zero position to maximum right inclination, and then zero the table.
- 5) Lateral tilt left, Run tabletop from zero position to maximum left inclination, and then zero the table.
- 6) Longitudinal tilt (Trendelenburg), Run tabletop from zero position to maximum head down, and then zero the table.
- 7) Reversed longitudinal tilt (anti-Trendelenburg), Run tabletop from zero position to maximum head up and then zero the table.

- 8) Quick-trend (Trendelenburg), Run tabletop from zero position to maximum head down and then zero the table.
- 9) Zero position. Lateral tilt, Run tabletop from maximum left inclination to maximum right inclination and back. Make sure that the table stops both times it passes zero position.
- 10) Longitudinal tilt (Trendelenburg) Run tabletop from maximum head down to maximum head up and back. Make sure that the table stops both times it passes zero position.
- 11) Panning (float). Pan functions, place table in 0-position and test run both axis. Check that motion works effortlessly and smooth (manoeuvre with one hand only).
- 12) All above mentioned steps shall be controlled on the Safety Hand Control as well.

### Daily control before procedures

- The operator should have knowledge how to operate the device, be aware of warnings and signals described in the user manual and the user manual should always be available.
- The operator should perform a function Check according to 2-11.
- Test the device for proper function and inspect cables for cuts and other damage. If in doubt, replace the relevant parts.



#### ■ Target group

This service manual is intended for use by medical technicians with a general knowledge of operating tables. It is not intended for use by clinical personnel.

#### ■ Scope of the manual

The manual describes all checkpoints for maintenance of the table as well as other instructions for servicing the imagiQ2. Information is provided in the form of block-, hydraulic-, electronics diagrams and exploded views with associated lists of spare parts. Fault tracing is described in a separate chapter.

#### ■ Technical knowledge required of maintenance personnel

imagiQ2 is designed to give problem-free service for many years, provided that preventive maintenance is performed at the specified intervals and in accordance with the instructions given in this manual. To be able to perform installation and repair and maintenance correctly, the personnel are required to have general technical training for work with medical devices, it is beneficial to have knowledge of hydraulic systems (particularly attention to preventing the entry of dirt or particles into the hydraulic system) and suitable knowledge of medical devices with respect to operating tables. Knowledge of the operation of the table is also required and can be gained by reading the user manual. Effective maintenance ensures functional reliability and extends the service life of the table. Contact Stille AB in the event of any uncertainty or if relevant training is required.

#### ■ Technical Lifetime

This product has a technical lifetime, which by Stille AB is considered to be 10 years. At the time of delivery the product fulfils the existing regulations and standards but as all other electro-mechanical products, the Stille imagiQ2 table is subjected to age and wear, and even though the product undergoes regular and prescribed service, Stille AB can not guarantee the product's safety after the expiry of the technical lifetime. Stille AB recommends that the product is taken out of service after latest 10 years. By Stille AB provided spare parts and service after the expiry of the specified technical lifetime does not mean an extension of Stille AB's liabilities. Note: Maximum life time for the batteries (if well maintained and charged regularly) is 3 years. The technical lifetime for the mattress is 3 years.

### ■ Table function priority

All movements of the table-top cease immediately if the operating button or pedal has been released. All operations including those of the floor lock cylinders can be interrupted by either pressing the main "OFF" button or by disconnecting the voltage with the emergency power switch.

If several commands are given simultaneously from the same control unit, all movements cease. (With the exception of fast lowering of the head end ("Quick-Trend") in combination with head end down). It is only possible to connect one hand control to the table. Pressing the "OFF" button however, always takes precedence over all other commands. All hydraulically assisted movements can be activated by the hand control but only one hydraulically assisted movement can be activated at one time. Certain table-top movements can be activated by foot control. Column end up/down and fast lowering of the head end is executed independently of if the table is parked or not, and have priority over parking/unparking commands. Should a parking/ unparking sequence be in progress when one of these controls is activated, the parking/ unparking sequence is temporarily interrupted. Column up/down movements are executed independently of the parking status but a parking/ unparking sequence in progress takes precedence. The lateral tilt command or a return to zero position command is only possible when the table is parked and an acknowledgement has been received from the position switches for the parking circuit. An attempt to activate these movements when the table is unparked will result in an automatic parking of the table. The table can only be unparked when the table is in safe position, or if the weight of the load on the table is less than the unregulated transport weight (100kg). If the table is loaded with a higher weight load than allowed a fixed sound signal gives indication that the table is overloaded, the sound signal can be reset by lowering the weight load.

**WARNING:** Do not activate lateral tilting or return to zero position during transport of the table. Make a habit of switching off the table before any transport is begun.

The return to zero sequence is activated by pressing the zero button and holding it depressed until any lateral or longitudinal tilting movement has ceased. If the zero button is released, all movements cease immediately. The return to zero sequence restarts from the beginning when the button is pressed again. Lateral and longitudinal tilt movements are provided with automatic stop functions at the zero position. Movement ceases when the table has reached these positions. The movement is reactivated by releasing and depressing the button/pedal. This simplifies individual resetting of lateral and longitudinal tilting. There is no automatic stop at zero position function with fast lowering of the head end. The optional guide wheel is activated simultaneously when the table is unparked. The guide wheel is retracted hydraulically and is lowered by a return spring. When parking, the guide wheel is retracted automatically to avoid obstructing other equipment.

- Periodical preventive maintenance (PM)

The imagiQ2 requires a maintenance period of 1 time every year or 2000 hours of service whichever comes first according to the service schedule in this manual.

(2000 hours equals to 8 hours of service 5 days / week for 1 year)

If the service is not correctly documented the warranty is void.

Stille AB can not guarantee the product's safety if Periodical preventive maintenance (PM) has been neglected.

- Cleaning and care of the polyurethane coated mattress

- General Guidance

- Attention must be paid to the properties of any other materials, (eg washing agents and washing instructions).

- Some surface wrinkling may result from cleaning procedures. This has no adverse effect on the fabric's properties.

- Do not use washing machines

- Abrasive cleaning agents should not be used.

- Washing and Disinfection

- Superficial dirt on the coating may be removed by wiping with a soft cloth moistened with water containing a neutral detergent. More persistent contamination may be treated by wiping with alcohols or turpentine substitute, followed by hot water and detergent.

- Routine cleaning and disinfection may be carried out on the coating with hand hot water and a neutral detergent or with a sodium hypochlorite solution (0.1% or 1000 parts per million available chlorine).

- The material is compatible with the 10,000ppm available chlorine in solution required for the decontamination of blood spills. After the 2 minute required dwell, excess solution must be removed and the surface thoroughly rinsed and dried prior to reuse or storage.

- Proprietary disinfectants may be used provided manufacturer's instructions are followed.

- All cleaning agents, and disinfectants, must be thoroughly rinsed off and the item dried before storage. Failure to do this may result in the accumulation of reagent that could damage the polyurethane coating, react with the bed frame, or negate the biocompatibility results of the fabric.

- Drying

- It is essential that articles be thoroughly dried after all cleaning procedures and before storage.

- Drying may be effected at temperatures up to 130 °C (266 °F).

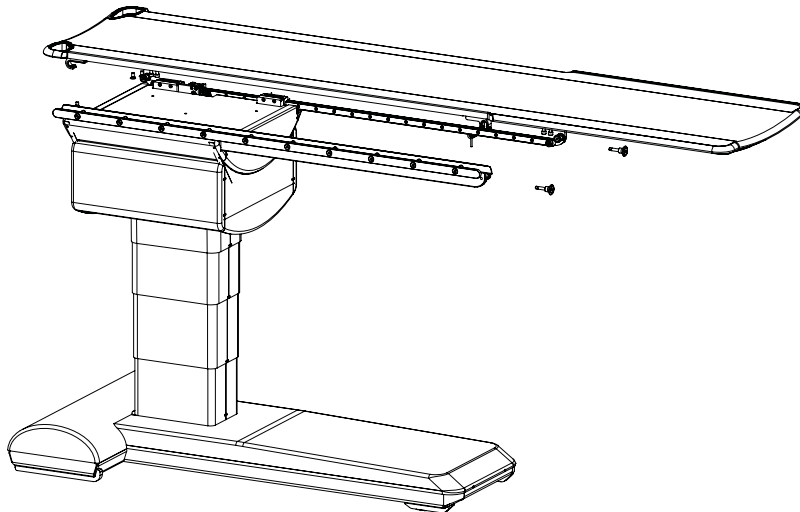
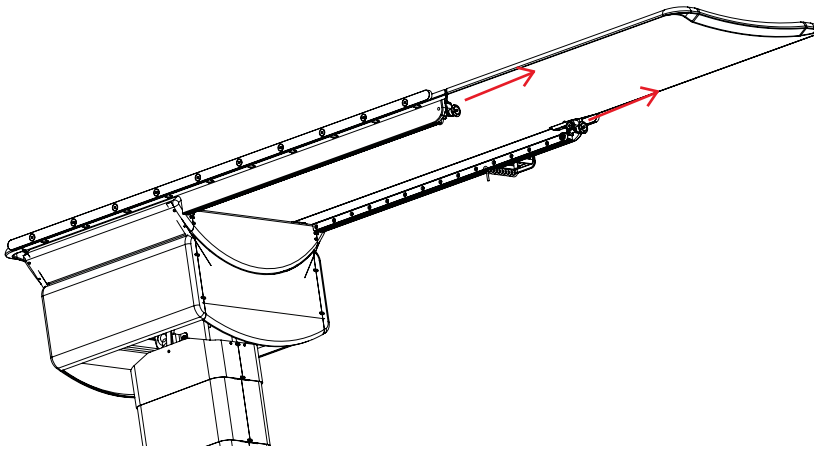
- Storage

- Store in a cool, dry area. Avoid excessive pressure and contact with non-colourfast materials

■ Remove the table top

It is recommended to be 2 persons, remove any accessories on the table top.

- Remove the lock pins.
- While one person holds the table top in the back handles the other person lifts the table top in the front, it may be needed to apply some force.
- When the front is lifted, slide the table top backward until the back is released.



- Installation of the imagiQ2
  - Complete the installation report imagiQ2
  - Document number 0260-6PF002 and submit to QA@stille.se
  
- Planning reference data
- Transport data:
  - Length = 2400 mm / 7,8 ft
  - Width = 875 mm / 2,9 ft
  - Height = 1168 mm / 3,8 ft
  - Gross weight 450 kg / 992 Lbs
  - Net weight 265 kg / 584 Lbs
  - Transport of Dangerous Goods by Air – Limited to class/UN 3164 –ADR, 1.3/IMDG 1.3/ IATA-DGR 1.5
- Electrical data:
  - Mains voltage 100 - 230 V AC, 50 / 60 Hz
  - Rated power Max 504 VA
  - Fuse rating T6,3 H, 250V SB
  - Output power 400W
- Environmental data:
  - Operating conditions
  - Temperature: +10°C to +40°C (50°F to 104°F)
  - Humidity: 30% - 75%.
  - Atmospheric pressure 700hPa - 1060hPa
  
- Storage conditions /Transportation requirements
  - Temperature -40°C to +70°C (-40°F to 158°F)
  - Humidity 10% - 80%rh. incl. condensation.
  - Atmospheric pressure 700hPa - 1060hPa.
  
- Tools for installation, service and repairs
  - Knife or scissor
  - Screw drivers
    - Small = 2 mm blade width
    - Medium = 5 mm blade width
    - Large = 10 mm blade width
  - Screwdriver for cross head screws
    - Small = PH 0
    - Medium = PH 2
  - Torx
    - TX 10
  - Allen keys
 

1,5 mm	5 mm
2 mm	6 mm
2,5 mm	8 mm
3 mm	10 mm
4 mm	
  - Combination wrenches
 

6 mm	13 mm
7 mm	14 mm
8 mm	15 mm
10 mm	17 mm
11 mm	19 mm
12 mm	
  - Other tools
    - Multimeter
    - Torque wrench
    - A digital angle-measuring level (recommended least resolution = 0,1°) analog can also be used
    - Hammer
    - Locking ring pliers (opening)
    - Other working materials:
      - Cable straps, 3 mm and 5 mm width.
      - Thread-locking fluid (Loctite 242 or equal)
      - Thread-seal (Scantech flange and thread seal, 4000T, or Loctite Thread Sealant 542 Fine Threads)
      - AFA grease, Part number 507-K9038
      - Hydraulic Oil, part number 507-K90385

- Position the table for service and repair.
  
- To position the table for service (and preventive maintenance) time ~20 minutes.
  - 1) Make sure the table is fully charged(recommendation)
  - 2) Move the table column to the highest position
  - 3) Park the table
  - 4) Remove the emergency cover
  - 5) Remove the lower column cover
  - 6) Remove the front cover( be careful with the cables when the column covers is slid out
  - 7) remove the front plate connection plate
  - 8) Remove the lateral side plates
  - 9) Remove the table top
  - 10) remove the top cover
  - 11) Depending on the service or repair additional dismantling can be necessary, see separate instruction.

## LoTo procedure Stille imagiQ2

LoTo = "Lock out Tag out, the procedure to make the device safe by removing stored energy.

### Important information

This instruction is intended to be a support instruction to meet the requirements from OSHA 29 CFR 1910.147(c)(4) Energy Control Procedure. For the safe operation of this product, the users and service manual must be followed. If the users manual is unavailable contact your service organization, distributor or Stille AB directly on [www.stille.se](http://www.stille.se).

Take care for personal protections, recommendation to wear protective eyewear, and gloves when working with hydraulic system.

### LOTO procedure Stille imagiQ2

(OSHA 29 CFR 1910.147(c)(4) Energy Control Procedure)

This procedure meets the basic LOTO requirements established by OSHA. It is designed to insure that each employee involved in servicing this equipment has exclusive control over the equipment. It is the obligation of each employee to follow this procedure and understand that failing to do so can cause serious injury or death.

Field Service Engineers are recommended to have complete a LOTO Authorized and initial LOTO Verification training to execute Lockout/Tagout on this system.

All non-authorized (non- service engineers) individuals are considered "affected" individuals.

The requires LOTO is described in respective repair instruction, if there are no specific repair instruction perform both hydraulic and electric LOTO

Each individual LOTO can be performed separately or together with the others if needed, depending on the required operation.

If hydraulic LOTO is going to be performed, always start with the hydraulic LOTO then perform the electric LOTO.

## HYDRAULIC ENERGY CONTROL PROCEDURES

NOTE! if hydraulic LOTO shall be performed always start with the hydraulic LOTO.

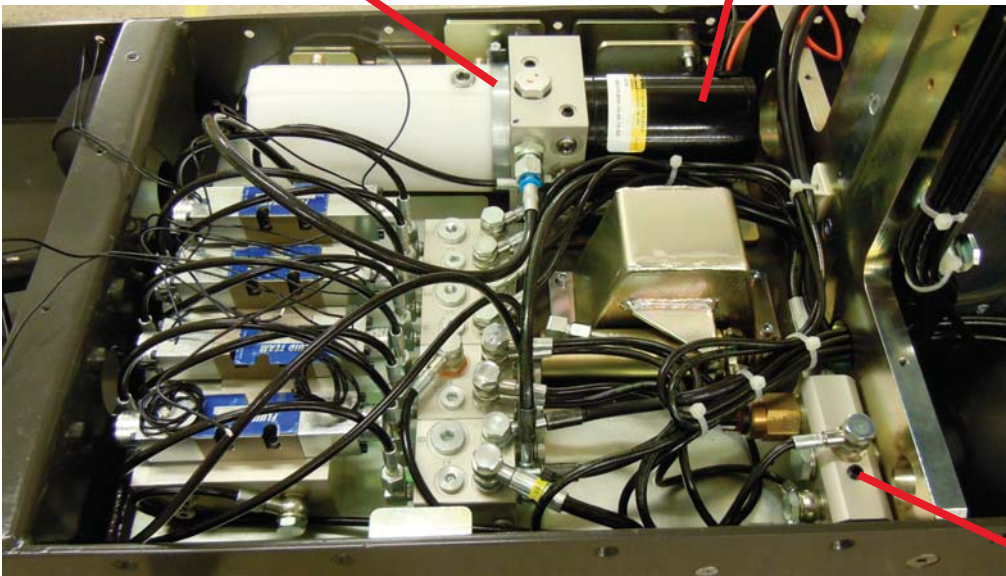
NOTE! this chapter handles the hydraulic energy source, for electrical energy see chapter 1.

(OSHA 29 CFR 1910.147(d) Application of Control)

HYDRAULIC ENERGY:

Hydraulic pump unit

24VDC motor cable

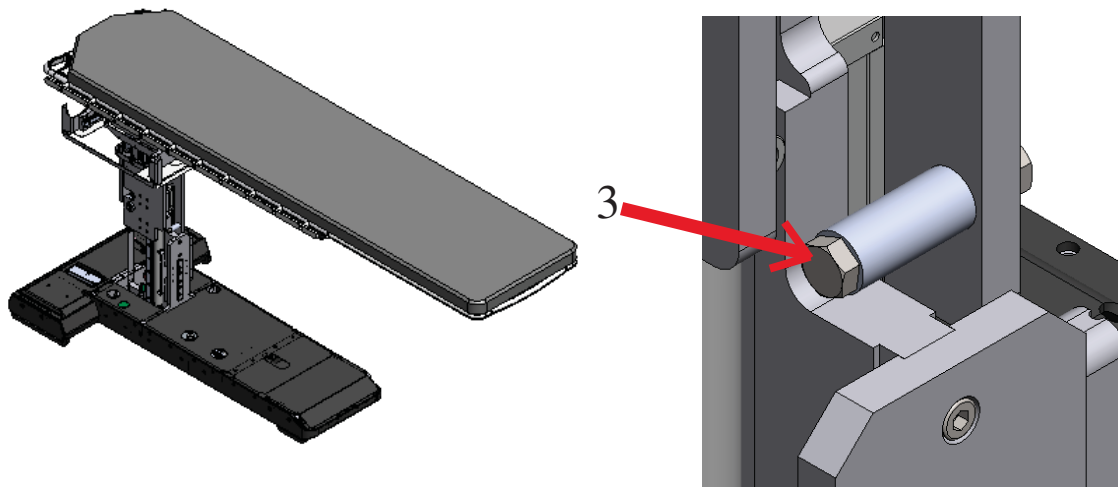


Manual clamp  
lock circuit release

Manual trend valve  
Placed under the  
back cover







1. Notify all affected individuals of a shutdown.\*
2. Position Table for service, elevate the lift column all the way to the top
3. Connect 1779-2AD001-01 Column support bracket LoTo to the side plate, make sure the nut is securely tightened, Do note that the tool 1779-2AD001-01 Column support bracket LoTo is delivered together with the table as a standard part.
4. Lower the lift column carefully until it is about 0 - 2 mm above the column.
5. Open the manual clamp lock and trend circuit release valve, open 0,5-1 turn.
6. Disconnect the 24V DC motor cable, orange / black - yellow/ blue.
7. Open the manual trend valve and press down the table top
8. Press and hold each of the keys related to the function that is affected, toggle between left and right key, this is to release any built in pressure in the system.  
Note it is important that you have supported the affected function before you press the key. Other wise the function might sink by its own weight, all the way until it reaches the end position.
9. Hydraulic power is now locked out.
10. It might be necessary to do an Electrical power LOTO according to the procedure for “electrical energy” .

\*In the event service will continue into another day, and/or the machine will cause a hazard if reenergized after the authorized employee leaves the location, leave the A/C cord cover installed with a “transition” lock and yellow tag attached. (OSHA 29 CFR 1910.147(f)(4) Shift/Personnel Changes)

\*If more than one authorized employee is going to conduct service on the same system, at the same time, multiple locking devices must be employed an each authorized employee must adhere the entire LOTO procedure. (OSHA 29 CFR 1910.147(f)(3) Group Lockout/Tagout)

## TESTING AND POSITIONING DURING SERVICE

(OSHA 29 CFR 1910.147(f)(1) Testing/Positioning)

### HYDRAULIC ENERGY:

In the event that lockout/tagout devices must be temporarily removed from the energy isolating devices, for testing or positioning purposes, the following sequence shall be followed:

1. Clear the table of tools and materials excluding the 1779-2AD001-01 Column support bracket LoTo.
2. Ensure that all employees/individuals in area are safely positioned or removed.
3. Close all of the valves.
4. Activate the system by reconnecting the 24VDC and turn on the main switch and the table pressing On on the hand control, remove 1779-2AD001-01 Column support bracket LoTo and proceed with testing or positioning.
5. De-energize table again after testing or positioning.

### RESTORE POWER AFTER SERVICE:

(OSHA 29 CFR 1910.147(e) Release of Lockout/Tagout)

1. Re-inspect work area for hazards.
2. Close all the valve.
3. Activate the system by reconnecting the 24VDC and turn on the main switch and the table pressing On on the hand control, remove 1779-2AD001-01 Column support bracket LoTo and proceed with testing or positioning.
4. Reinstall table covers.
5. Turn on main switch.
6. Notify all affected personnel that power being restored.
7. Energize the table.
8. Verify proper system operation.
9. Inform customer that system is ready to be returned to service.

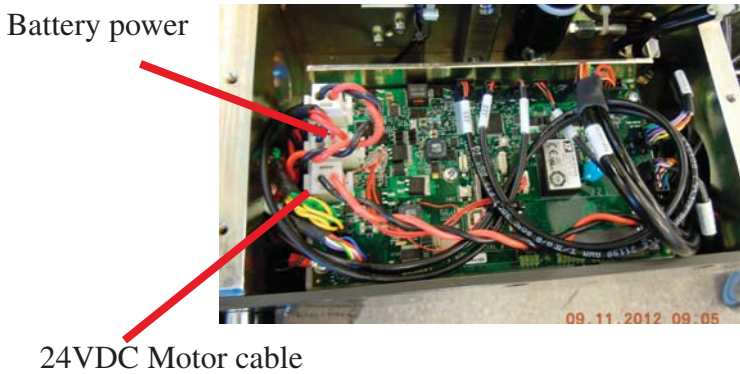
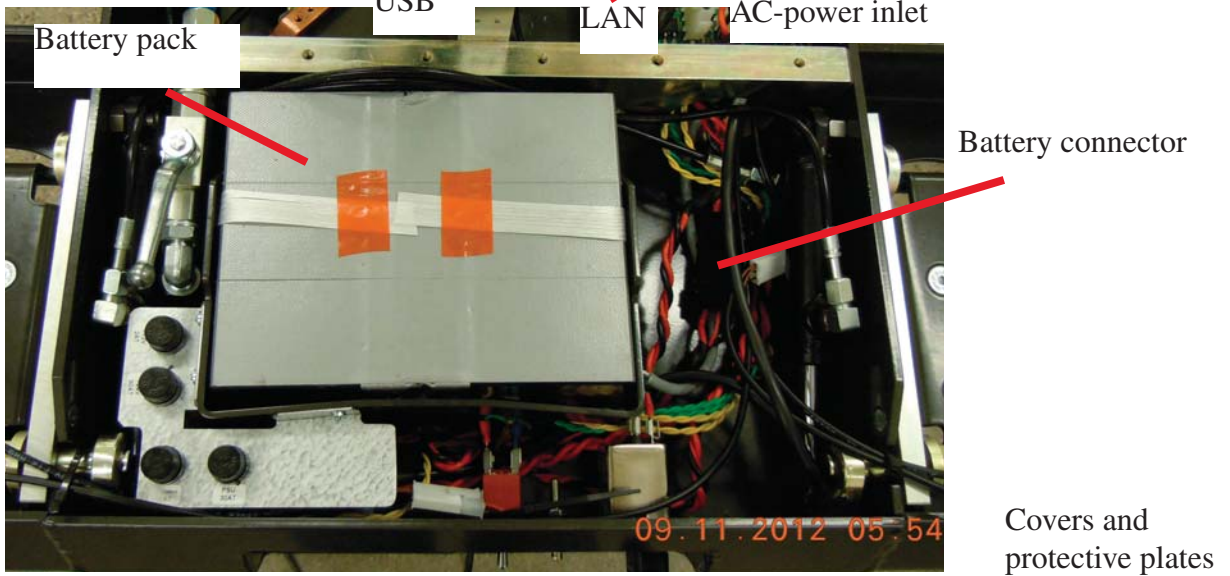
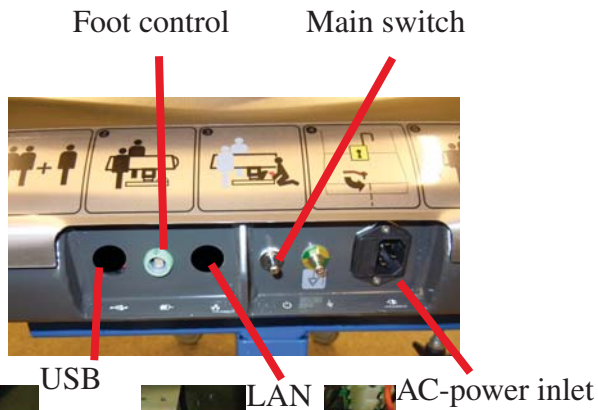
### ELECTICAL ENERGY CONTROL PROCEDURES

NOTE! if hydraulic LOTO shall be performed always start with the hydraulic LOTO.

NOTE! this chapter handles the electrical energy source, for hydraulic energy see chapter 2.

(OSHA 29 CFR 1910.147(d) Application of Control)

ELECTRICAL ENERGY:



**ENERGY CONTROL PROCEDURES**

(OSHA 29 CFR 1910.147(d) Application of Control)

**ELECTRICAL ENERGY:**

1. Notify all affected individuals of a shutdown.\*
2. Position Table for service
3. Turn OFF main switch
4. Remove A/C plug from wall power and from table.
5. Apply the red lock and tag to the AC plug.
6. Turn ON Main switch to verify primary power isolation.
7. Remove covers and protective plates
8. In the Table base verify zero volts A/C at AC-connector
9. Disconnect the red/black battery connector
10. Verify isolation by pressing ON on the hand control, nothing shall happend.
11. Turn OFF main switch
11. Electrical power is now locked out.
12. It might be necessary to do an hydraulic power LOTO according to the procedure for "hydraulic energy".

\*In the event service will continue into another day, and/or the machine will cause a hazard if reenergized after the authorized employee leaves the location, leave the A/C cord cover installed with a "transition" lock and yellow tag attached. (OSHA 29 CFR 1910.147(f)(4) Shift/Personnel Changes)

\*If more than one employee is going to conduct service on the same system, at the same time, multiple locking devices must be employed an each authorized employee must adhere the entire LOTO procedure. (OSHA 29 CFR 1910.147(f)(3) Group Lockout/Tagout)

**TESTING AND POSITIONING DURING SERVICE**

(OSHA 29 CFR 1910.147(f)(1) Testing/Positioning)

In the event that lockout/tagout devices must be temporarily removed from the energy isolating devices, for testing or positioning purposes, the following sequence shall be followed:

1. Clear the table of tools and materials.
2. Ensure that all employees/individuals in area are safely positioned or removed.
3. Remove energy control measures.
4. Energize system and proceed with testing or positioning.
5. De-energize table again after testing or positioning.

**RESTORE POWER AFTER SERVICE:**

(OSHA 29 CFR 1910.147(e) Release of Lockout/Tagout)

1. Re-inspect work area for hazards.
2. Reconnect the red/black battery connector
3. Reinstall table covers.
4. Turn on main switch.
5. Notify all affected personnel that power being restored.
6. Remove red lock and tag
7. Energize the table.
8. Verify proper system operation.
9. Inform customer that system is ready to be returned to service.

4: FSE Name: Date:

LOTO Procedure Performed:

Please check off each step as you perform the step. Keep attached to the LOTO procedure you performed.

Check box sign when done Procedure

Step 1: PREPARE FOR SHUTDOWN. All energy sources.

- Understand the applicable procedures. Determine associated equipment.
- Acquire protective materials (i.e. locks, tags, lock adapters).
- Access consequences of shutdown. Notify all affected persons.

Step 2: NOTIFICATION OF PERSONNEL. All energy sources.

- Personnel who may be affected shall be notified prior to the application and after the removal of lockout devices or tagout devices.
- Personnel may include operators, technicians, engineers or area managers

Step 3: SHUTDOWN. All energy sources.

- Operator & Maintenance, together shut down equipment, in a position that allows access & includes setting to the lowest position, blocking items that may move and relieving springs.

Step 4: ENERGY ISOLATION. All energy sources.

- Identify and shut off all energy source disconnect/shut off points.
- Vent system pressures, by opening vent valves or disconnecting lines or installing blanks.

Step 5: LOCKOUT TAGOUT. All energy sources.

- Each worker attaches individual LOTO Red Lock and filled out Red Tag on each point of disconnect, shut off, blank & vent. Verify that all above is complete.

Step 6: VERIFY ISOLATION. All energy sources.

- Extremely important! Do not assume the posted shutdown procedure is accurate
  - Report any inaccuracies to your EHS Rep.
- Each authorized employee performing work shall verify that the equipment is fully LOTO and that all energy is zero. This may be done by witnessing the test by an Authorized Employee with appropriate skills.
- Zero energy tests shall include

- 1) The Operator and Maintenance attempt to operate the equipment by start switches, the return switches to off position;
- 2) Verify meter/gauge operation;
- 3) Verify zero energy at disconnect and work points; and
- 4) Blocking, venting, grounding to protect against sticks/slip movement, leaking valves, capacitors, automatic controls.

Step 7: CONTROL STORED ENERGY. All energy sources.

- Assure that all stored potentially hazardous energy has been relieved, dissipated, restrained, drained or otherwise controlled (i.e. electrical capacitors & batteries, hydraulic accumulators & surge tanks, mechanical springs & gravity)

Step 8: RETURN TO SERVICE. All energy sources.

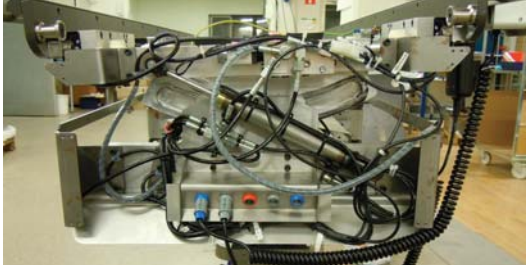

- Assure the area is clear of tools, all guards are in place, operating controls are in the off position.

- Notify affected persons that energy is to be restored.

- Each worker removes their tags & locks and return these points to operational positions.

Assure the equipment is functioning properly.

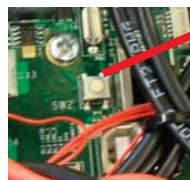
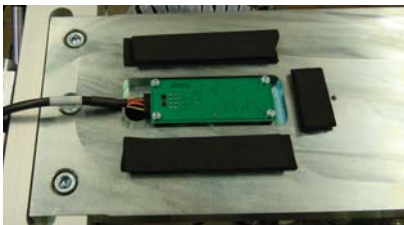
To replace Connection board

<p>The connection board is equipped with connectors for:                  2 pan handle connectors (2 pan handles can be connected at the same time)                  2 hand control connectors (only 1 hand control can be connected at the same time)                  1 Accessory control connector ( accessory table tops under development)</p>	
<p>1) If possible try to elevate the table top to the highest position, lock the wheels.</p>	
<p>2) Remove the lateral cover over Connection board, then remove the emergency cover and then the protective plate under the cover.</p>	
<p>3) Perform an electric LoTo according to the instruction to remove any stored energy in the system.</p>	
<p>4) Protect the electrical components against ESD.</p>	
<p>5) Make a note of where the electrical connectors are placed and carefully remove them, pull straight up, do not “wobble” the connector, you might break it.</p>	
<p>8) Remove the 4 screws that holds the connector board bracket.</p>	
<p>7) The Connection board is mounted with 5 plastic nuts, use a small screw driver to unlock the “lock lip” on top of the nut, remove the nuts and replace the main board.</p>	
<p>8) Reinstall the connectors and restore the power according to the LoTo procedure.</p>	
<p>9) Test the functions, take care as the device is not protected by the covers, risk for personal injury or damage to the device.</p>	
<p>10) Reinstall the protective covers.</p>	
<p>11) Complete the LoTo procedure.</p>	

## To replace Inclinometer board

### Warning take measure for ESD protection

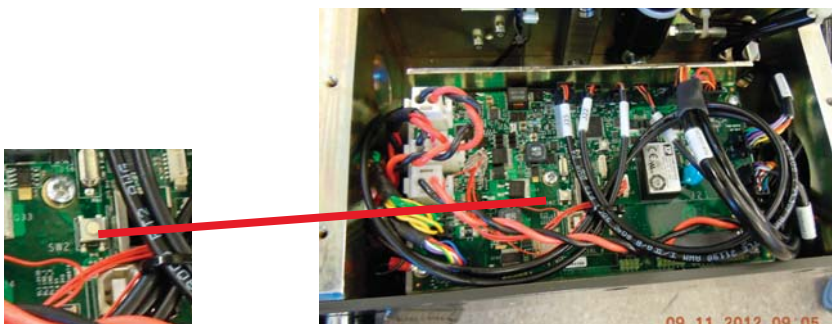
- 1) If possible place the table in position for service according to instruction, or try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the table top and the top cover, the emergency cover and then the protective plates under the cover.
- 3) Perform an electric LoTo according to the instruction to remove any stored energy in the system.
- 4) Protect the electrical components against ESD.
- 5) The inclinometer board is mounted with 4 screws, remove the screws.
- 6) Carefully remove the connector, pull straight up, do not “wobble” the connector, you might break it.
- 7) Reinstall the card and connector and mount it, restore the power according to the LoTo procedure. NOTE! do not overtighten the screws tighten only lightly.
- 8) Test the functions, take care as the device is not protected by the covers, risk for personal injury or damage to the device.
- 9) To read in a new 0-position, place the table in horizontal position with the table top slightly raised in the front about 1 degree up, turn OFF the hand control and press the 0- button on the main board for 1 second, turn table on and check 0 position, if needed redo the previous steps.
- 10) Reinstall the protective covers.
- 11) Complete the LoTo procedure.



## To replace Main board

### Warning take measure for ESD protection

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the emergency cover the lowest column cover and the front cover and then the protective plates under the covers.
- 3) Perform an electric LoTo according to the instruction to remove any stored energy in the system.
- 4) Protect the electrical components against ESD.
- 5) Make a note of where the electrical connectors are placed and carefully remove them, pull straight up, do not “wobble” the connector, you might break it.
- 6) The main board is mounted with 6 screws, remove the screws and replace the main board. NOTE do not overtighten the screws.
- 7) Reinstall the connectors and restore the power according to the LoTo procedure.
- 8) To read in a new 0-position, place the table in horizontal position with the table top slightly raised in the front about 1 degree up, turn OFF the hand control and press the 0- button on the main board for 1 second, turn table on and check 0 position, if needed redo the previous steps.
- 9) Test the functions, take care as the device is not protected by the covers, risk for personal injury or damage to the device.
- 10) Reinstall the protective covers.
- 11) Complete the LoTo procedure.





## To replace Power supply

### Warning take measure for ESD protection

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the emergency cover, the lowest column cover, and the front cover and then the protective plates under the covers.
- 3) Perform an electric LoTo according to the instruction to remove any stored energy in the system.
- 4) Protect the electrical components against ESD.
- 5) The Power supply is mounted under the main board. Make a note of where the electrical connectors are placed on the main board and carefully remove all connectors, pull straight up, do not “wobble” the connector, you might break it.
- 6) The main board assembly is attached to the frame with 2 screws from the outside, remove the screws and lift up the assembly.
- 7) The main board is mounted with 6 screws, remove the screws and remove the main board. NOTE do not overtighten the screws when attaching the main board.
- 8) Replace the power supply.
- 9) Reinstall the connectors and restore the power according to the LoTo procedure.
- 10) Test the functions, take care as the device is not protected by the covers, risk for personal injury or damage to the device.
- 11) Reinstall the protective covers.
- 12) Complete the LoTo procedure.



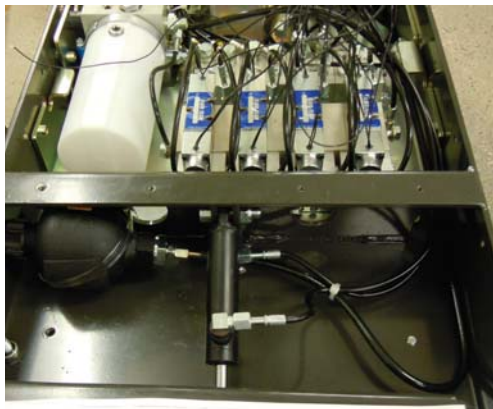
### To replace AC-inlet

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the emergency cover and then the protective plates under the covers.
- 3) Shut down the table on the main switch.
- 4) Perform an electric LoTo according to the instruction to remove any stored energy in the system.
- 5) Disconnect the AC-inlets three cables. Make a note for the positioning of the cables for re-attachment.
- 6) Unmount the AC-inlet by loosening the two screws on the front.
- 7) Before mounting the new AC-inlet check that the fuses are of the right ampere. See table for fuse rating.
- 8) Mount the new AC-inlet.
- 9) Tighten the two screws in the front.
- 10) Reattached the cables at the AC-inlet, make sure you get the cables positioning right.
- 11) Reinstall the protective covers.
- 12) Complete the LoTo procedure



### To replace Wheel cylinder

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the emergency cover, the lowest column cover, the front cover and then the protective plate under the covers.
- 3) Perform a hydraulic and electric LoTo according to the instruction to remove any stored energy in the system.
- 4) Place some paper towels under the hoses and then carefully untighten the hoses, some amount of oil will come from the hoses, wait until it stops (a couple of seconds) if oil with high pressure is flowing from the hoses, check that the LoTo is correct performed.
- 5) Remove the cylinder.
- 6) Mount the new cylinder.
- 7) All hydraulic washers must be replaced and tighten with the correct torque (12Nm) all other connectors shall be tightened finger tight and then minimum 3/4 turns.
- 8) Restore the power according to the LoTo procedure.
- 9) Inspect and refill the oil level
- 10) Reinstall all parts.



### To replace Lateral cylinder

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels and 0-out the table.
- 2) Remove the table top, all the top covers, the emergency cover the lowest column cover and the front cover and then the protective plate under the cover emergency cover.
- 3) Perform a hydraulic and electric LoTo according to the instruction to remove any stored energy in the system.
- 4) Place some paper towels under the hoses and then carefully untighten the hoses, some amount of oil will come from the hoses, wait until it stops (a couple of seconds) if oil with high pressure is flowing from the hoses, check that the LoTo is correct performed.
- 5) The cylinder is attached to the frame with 2 circlips, remove the circlips and remove the cylinder.
- 6) Mount the new cylinder.
- 7) All washers must be replaced and tighten with the correct torque (12Nm) all other connectors shall be tightened finger tight and then minimum 3/4 turns.
- 8) Restore the power according to the LoTo procedure.
- 9) Inspect and refill the oil level
- 10) Reinstall all parts.



### To replace Lift cylinder

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the table top, all the top covers, emergency cover the column covers and the front cover and then the protective plate under the emergency cover.
- 3) Float the table top to the left or right hand side, if that is not possible, tilt the lateral tilt to full inclination either left or right side.
- 4) Perform a hydraulic and electric LoTo according to the instruction to remove any stored energy in the system.
- 5) Place some paper towels under the hoses and then carefully untighten the hoses, some amount of oil will come from the hoses, wait until it stops (a couple of seconds) if oil with high pressure is flowing from the hoses, check that the LoTo is correct performed.
- 6) The cylinder is attached to the frame with 2 bolts, remove the bolts and remove the cylinder up through the construction.
- 7) Mount the new cylinder.
- 8) All connectors shall be tightened finger tight and then minimum 3/4 turns.
- 9) Restore the power according to the LoTo procedure.
- 10) Inspect and refill the oil level
- 11) Reinstall all parts.



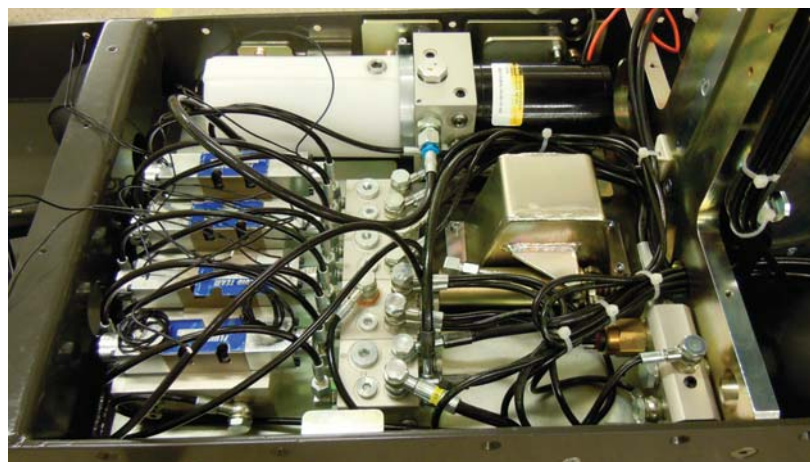
### To replace Trend cylinder

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the column covers first then the emergency cover, the front cover and then the protective plate under the emergency cover to get access to the cylinder.
- 3) Perform a hydraulic and electric LoTo according to the instruction to remove any stored energy in the system.
- 4) Remove the back plate that covers the trend cylinder.
- 5) Place some paper towels under the hoses and then carefully untighten the hoses, some amount of oil will come from the hoses, wait until it stops (a couple of seconds) if oil with high pressure is flowing from the hoses, check that the LoTo is correct performed.
- 6) The cylinder is attached to the frame with 2 axels, remove the axels and remove the cylinder.
- 7) Mount the new cylinder.
- 8) All washers must be replaced and tighten with the correct torque (12Nm) all other connectors shall be tightened finger tight and then minimum 3/4 turns.
- 9) Restore the power according to the LoTo procedure.
- 10) Inspect and refill the oil level
- 11) Reinstall all parts.



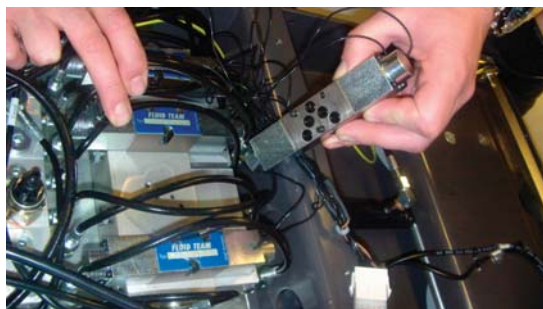
### To replace Pump unit

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the column cover first, then the emergency cover, the front cover and then the protective plates under the covers to get access to the hydraulic pump unit.
- 3) Perform a hydraulic and electric LoTo according to the instruction to remove any stored energy in the system.
- 4) The hydraulic pump unit is mounted on an assembly plate, remove the screws that holds the plate in the base and carefully lift up the plate.
- 5) Place some paper towels under the hoses and then carefully untighten the hoses, some amount of oil will come from the hoses, wait until it stops (a couple of seconds) if oil with high pressure is flowing from the hoses, check that the LoTo is correct performed.
- 6) The pump is attached to the plate with 3 screws, remove the screws and mount the new pump.
- 7) All washers must be replaced and tighten with the correct torque (12Nm) all other connectors shall be tightened finger tight and then minimum 3/4 turns.
- 8) Reinstall all parts and restore the power according to the LoTo procedure.



To replace Solenoid valve on main hydraulic unit

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the column cover first, then remove the emergency cover and the front cover and then the protective plates under the covers to get access to the hydraulic pump unit.
- 3) Perform a hydraulic and electric LoTo according to the instruction to remove any stored energy in the system.
- 4) The solenoid unit is mounted on the distribution block, mark the signal cables on both sides, as well if it is the front or back solenoid (solenoid and connector) and cut them in the middle.
- 5) Place paper towels around the solenoid, some amount of oil will come from the solenoid.
- 6) Remove the 3 screws that holds the solenoid in the base and carefully lift the solenoid, some oil will flow from the holes in the distribution block, if oil with high pressure is flowing from the block, check that the LoTo is correct performed.
- 7) Attach to the new solenoid.  
NOTE the rubber seals must be replaced  
NOTE make sure that the seals is properly attached  
NOTE it is very important that the screws are tightened carefully and in small intervals, risk for leakage if the solenoid is tightened incorrectly, final torque 2,9Nm.
- 8) Connect and isolate the cables, one cable is common+ and the other is the specific signal cable (the 2 cables coming from each solenoid are unspecific)
- 8) Restore the power according to the LoTo procedure.
- 9) Test the function and verify that there is no oil leakage coming from the solenoid.
- 10) Reinstall all parts and finalize the LoTo procedure.





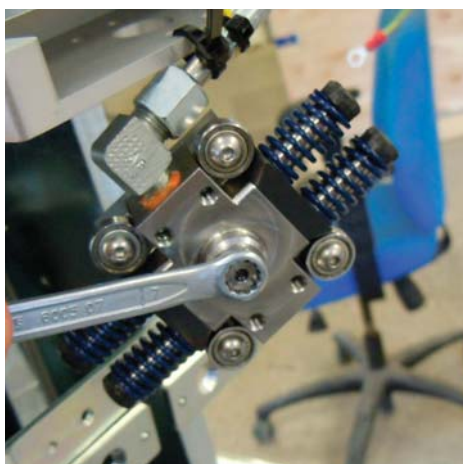
### To replace Brake valve

- 1) If possible place the table in position for service according to instruction, minimum try to elevate the table top to the highest position, lock the wheels.
- 2) Remove the column covers first, then remove the emergency cover and the front cover and then the protective plates under the covers to get access to the hydraulic pump unit.
- 3) Perform a hydraulic and electric LoTo according to the instruction to remove any stored energy in the system.
- 4) The Brake valve assy is mounted above the hand control connections.
- 5) Place some paper towels under the hoses and then carefully untighten the hoses, some amount of oil will come from the hoses, wait until it stops (a couple of seconds) if oil with high pressure is flowing from the hoses, check that the LoTo is correct performed.
- 6) The unit is attached to the frame with 2 screws, remove the screws and the electrical cable.
- 7) All washers must be replaced and tighten with the correct torque (12Nm) all other connectors shall be tightened finger tight and then minimum 3/4 turns.
- 8) Reinstall all parts and restore the power according to the LoTo procedure.



### To bleed the clamp brakes

- 1) Make sure the table is ON.
- 2) Open the screw in the middle slightly, keep the key on the screw.
- 3) Hold a paper or a towel around the screw and press the pan handle. CAUTION oil will flow with high pressure from the screw.
- 4) When the bubbles have stopped tighten the screw before releasing the pan handle.



To replace the internal fuses

- 1) Remove the outside cover and the inside protection plate.
- 2) Remove the top face cover and replace the internal fuse.

The fuses are the following

- 1pcs 30A 250 VAC Slow (PSU)
- 1pcs 30A 250 VAC Slow (battery)
- 1pcs 10A 440 VAC Slow (main switch)
- 1pcs 2A 440 VAC Slow (12V)



To adjust the rail tension of the Pan handle (all models)

- 1) Attache the pan handle to the side rail, check tension on the rail.
- 2) If needed, lift the lock handle and tighten the 2 screws in the side.
- 3) Close the lock handle and check tension, if needed, adjust again.



To lower the wheels when the table is malfunction.

To lower the wheels and make the table mobile the table must be partly operational.

If the table starts to beep when the main switch is turned on, or if the table starts to beep when a movement or function is requested, or if the hand control can't be started up by just pressing on.

- 1) Turn on the main switch.
- 2) Press the ON button on the hand control and keep it pressed for 10 seconds.
- 3) If the beeping stops and the hand control lights up the table will be manoeuvrable.
- 4) Unlock the table by pressing the unlock button on the hand control.

## ■ TROUBLE SHOOTING GUIDE

Electrical problems, indications on the hand control unit

Symptom	Probable cause	Procedure
Blue "Charging in progress" lamp on the hand control does not illuminate when the mains voltage power cable is connected.	<p>First withdraw the plug from the wall socket and inspect the mains voltage power cable. A damaged cable can become the cause of injury or death.</p> <p>a. The cable is not correctly connected</p> <p>b. The main power switch on the table is switched off.</p> <p>c. There is no voltage at the wall socket.</p> <p>d. The primary fuse (s) on the table has (have) blown. .</p> <p>e. The signal cable from the battery charger is not correctly connected to the control unit, (PX).</p> <p>f. The battery charger is unserviceable</p> <p>g. The control unit is unserviceable.</p>	<p>A damaged cable must be replaced immediately. Use a Stille original cable only.</p> <p>a. Check the cable connection</p> <p>b. Check the main power switch.</p> <p>c. Check that there is voltage at the wall socket.</p> <p>d. Check the primary fuse(s) on the table.</p> <p>N.B. The fuse values for 100/ 120/ 230 V are different.</p> <p>e. Check the connection of the signal cable. (PX).</p> <p>f. Replace the main board.</p> <p>g. Replace the control unit.</p>

■ TROUBLE SHOOTING GUIDE

Electrical problems, indications on the hand control unit

Symptom	Probable cause	Procedure
The green "Fully charged" lamp on the hand control illuminates after a few hours charging, despite the "Low battery level" lamp flashing when the charging was begun.	a. The battery package is unserviceable. b. The battery charger is unserviceable. c. The main board/ control unit is unserviceable.	a. Replace the battery package. b. Replace the main board. c. Replace the main board.
The green "Fully charged" lamp on the hand control does not illuminate after more than 10 hours charging with the yellow "Charging in progress" lamp illuminated.	a. The battery package is unserviceable/ short circuit in a cell. b. The battery charger is unserviceable. c. The control unit is unserviceable.	a. Replace the battery package. b. Replace the main board. c. Replace the main board.

## ■ TROUBLE SHOOTING GUIDE

Electrical problems, problems with the hand control unit

Symptom	Probable cause	Procedure
Lamps do not illuminate on the hand control when the system is activated.	<p>a. Connector to hand control incompletely connected.</p> <p>b. Cable/connector to hand control damaged. .</p> <p>c. Connector on connection board damaged (PX).</p> <p>d. Internal wiring to distribution board incorrectly connected.(PX).</p> <p>e. Internal wiring to control unit incorrectly connected. (PX).</p> <p>f. Unserviceable hand control.</p> <p>g. Internal wiring damaged.</p> <p>h. Unserviceable control unit.</p>	<p>a. Check the connector.</p> <p>b. Check the cable/connector</p> <p>c. Check the connection board</p> <p>d. Check the connector.</p> <p>e. Check the connector.</p> <p>f. Replace the hand control.</p> <p>g. Check the internal wiring.</p> <p>h. Replace the control unit.</p>



## ■ TROUBLE SHOOTING GUIDE

Electrical problems, problems with the hand control

Symptom	Probable cause	Procedure
The hand control function but show a different status.	<ul style="list-style-type: none"> <li>a. Unserviceable hand control</li> <li>b. Unserviceable emergency control.</li> <li>c. Unserviceable control unit.</li> </ul>	<ul style="list-style-type: none"> <li>a. Replace the hand control.</li> <li>b. Replace the emergency control.</li> <li>c. Replace the control unit.</li> </ul>
Hand control appears to function normally but the hydraulic pump remains silent and only return movements are possible. e.g. Column down, unparking etc.	<ul style="list-style-type: none"> <li>a. Connector to pump motor incorrectly connected.</li> <li>b. Pump motor unserviceable.</li> <li>c. Control unit unserviceable,</li> </ul>	<ul style="list-style-type: none"> <li>a. Check the connector.</li> <li>b. Check the pump motor.</li> <li>c. Replace the main board.</li> </ul>

## ■ TROUBLE SHOOTING GUIDE

### Electrical problems, non functional table

Symptom	Probable cause	Procedure
The table does not function while under battery power but functions normally when mains power is connected.	<p>a. The battery package is completely discharged.</p> <p>b. The battery package is not correctly connected in the table.</p> <p>c. The battery fuse has blown</p> <p>d. The battery package is unserviceable/failure in a cell.</p>	<p>a. Charge the batteries (approx. 10 hours).</p> <p>b. Check the connections of the battery package.</p> <p>c. Check first all the heavy red/black cables in the table for damaged insulation/a short circuit. Check the battery fuse. (replace any "blown fuses" with new fuses of the same rating.)</p> <p>d. Replace the battery package.</p>

■ TROUBLE SHOOTING GUIDE

Electrical problems, Batteries

Symptom	Probable cause	Procedure
The table is "completely dead" when under battery operation. The green "Fully charged" lamp on the hand control illuminates after a few hours charging but the lamps extinguish (almost) when an attempt is made to run the table while charging is in progress (and a slight squeaking noise can be heard from the hydraulic motor) after which only the blue "Charging in progress" lamp illuminates when the button is released.	<p>a. The battery package is not correctly connected in the table.</p> <p>b. The battery fues has blown.</p> <p>c. The battery package is unserviceable/failure in a cell.</p>	<p>a. Check the connections of the battery package</p> <p>b. Check first all the heavy red/black cables in the table for damaged insulation/a short circuit. Check the battery fuse.</p> <p>c. Replace the battery package.</p>
<p>The batteries are dead, table will not work, batteries will not take charging</p> <p>The "Charging in progress" lamp is not illuminated</p>	<p>a. Power cord is not connected to a socket with AC power</p> <p>b. Check the fuse box for blown fuses</p> <p>c. Check the output from the AC inlet, should be 100/120/ 230V</p> <p>d. Check 24V from Power supply to main board should be about 24V.</p> <p>e. Check the output from the charging circuit it should be about 27-29,5VDC</p>	<p>a. Try changing to another socket.</p> <p>b. Change the fuses.</p> <p>c. Change the ac inlet.</p> <p>e. Replace thePower supply.</p> <p>e. Replace the main board.</p>

## ■ TROUBLE SHOOTING GUIDE

### Hydraulic problems floor locks parking cylinders

Symptom	Probable cause	Procedure
The table can be parked but the pump motor continues for approx. 15 seconds. and an error indication (alternately blue/green) flashes on the hand control after the motor has stopped. Panning does not function.	Connector (PX) on the main board is not correctly connected.	a. Check the connector.
The blue/green lamps with the symbols for locked/open lock begin to flash alternately after the table has been parked a time.	<p>a. Incorrectly adjusted position switches</p> <p>b. Leak in the hydraulic parking circuit.</p> <p>c. position switches unserviceable.</p>	<p>a. Adjust the position switches.</p> <p>b. Trace any leak in the hydraulic parking circuit.</p> <p>c. Replace the position switches.</p>
The pump motor runs for approximately 15 seconds after an attempt has been made to park the table or adjust the lateral tilt/set the zero position, and a fault indication for parking (alternately blue/green) is presented after the motor stops. Panning is possible.	<p>a. Cable not correctly connected to the position switches.</p> <p>b. Incorrectly adjusted position switches.</p> <p>c. Leak in the hydraulic parking circuit.</p> <p>d. Position switches not giving signal.</p>	<p>a. Check the cable connections.</p> <p>b. Adjust the position switches.</p> <p>c. Trace any leak in the hydraulic parking circuit.</p> <p>d. Replace the position switches.</p>

■ TROUBLE SHOOTING GUIDE

Hydraulic problems pump motor

Symptom	Probable cause	Procedure
Hydraulic pump unit No movement of the table is executed when requested from the hand control.	<p>a. When activating a movement on the hand control the hydraulic pump motor does run and the solenoids become activated.</p> <p>b. When activating a movement on the hand control the hydraulic pump motor does run and the solenoids become activated.</p> <p>c. When activating a movement the solenoids do not become activated but the motor is running.</p> <p>d. The hydraulic pump motor does not run. Check 24VDC to the hydraulic motor.</p>	<p>a. Check the cable connections on the main board.</p> <p>b. replace the hydraulic pump motor.</p> <p>c. Replace the main board</p> <p>d. Replace the main board.</p>

■ TROUBLE SHOOTING GUIDE

Hydraulic problems trend is sinking

Symptom	Probable cause	Procedure
The trend is slowly sinking and the table has to be moved back using the hand control unit, to maintain a level table top.	a. An external oil leakage.  b. A leakage in the hydraulic pump unit.  c. An internal leakage in the trend cylinders.	a. Identify where the leak is coming from and replace the parts.  b. Replace the complete hydraulic valve unit or the solenoid valve plunger.  c. Replace the cylinder.

■ TROUBLE SHOOTING GUIDE

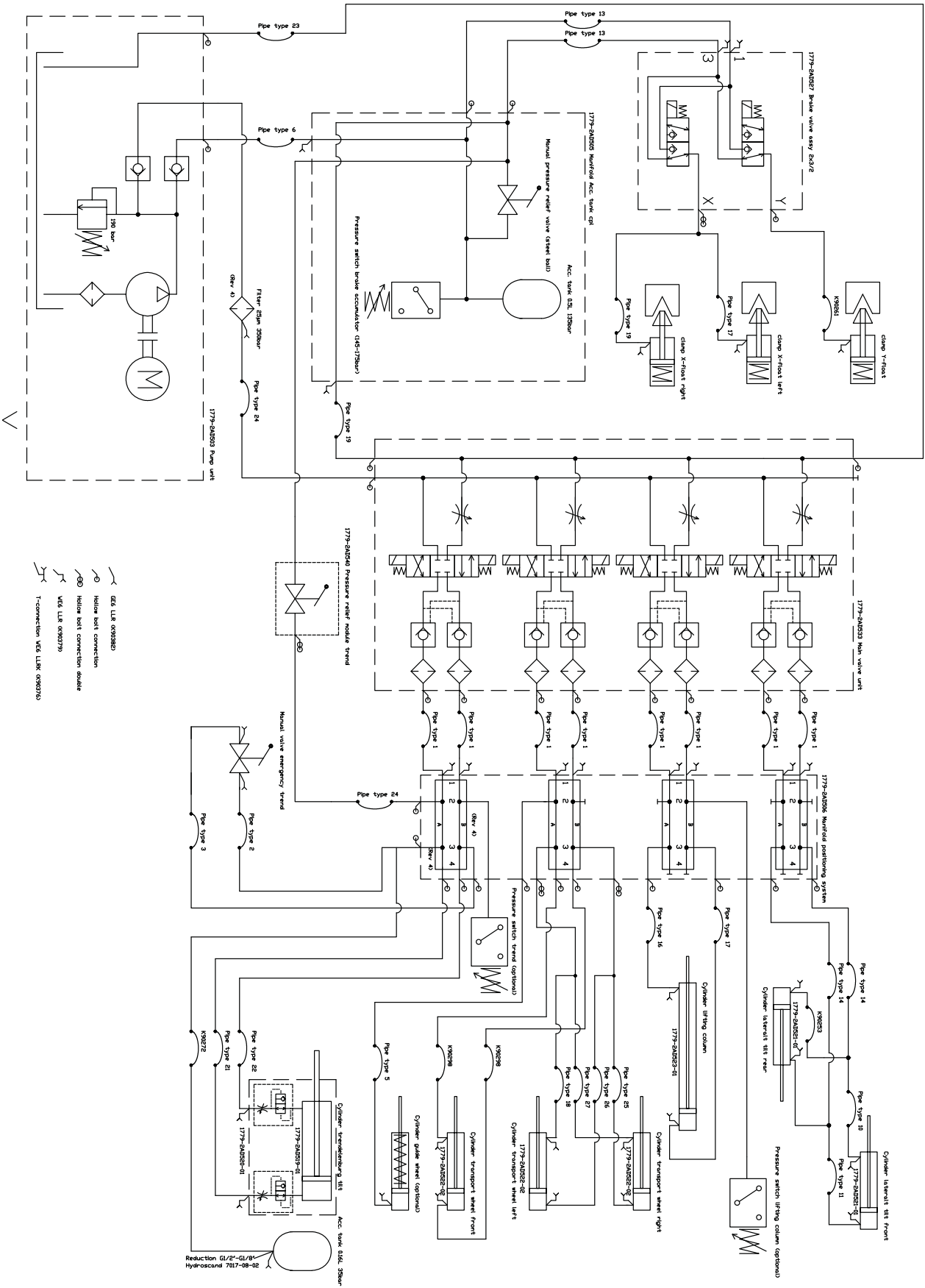
Function problems 0-position

Symptom	Probable cause	Procedure
The table does not stop at 0-position when moving.  The table does not find 0-position when pressing the button.	a. The inclinometer for lateral (table centre position) and trendelenburg (table left side) home position is not giving signal  b. Cables M1 not properly connected to the main board  c. broken cable between inclinometer and connection board or main board	a. Check cable connection on the inclinometer card.  b. Check the cable connections on the main board.  c. Measure with ohm meter if cable is ok replace any damaged cable.

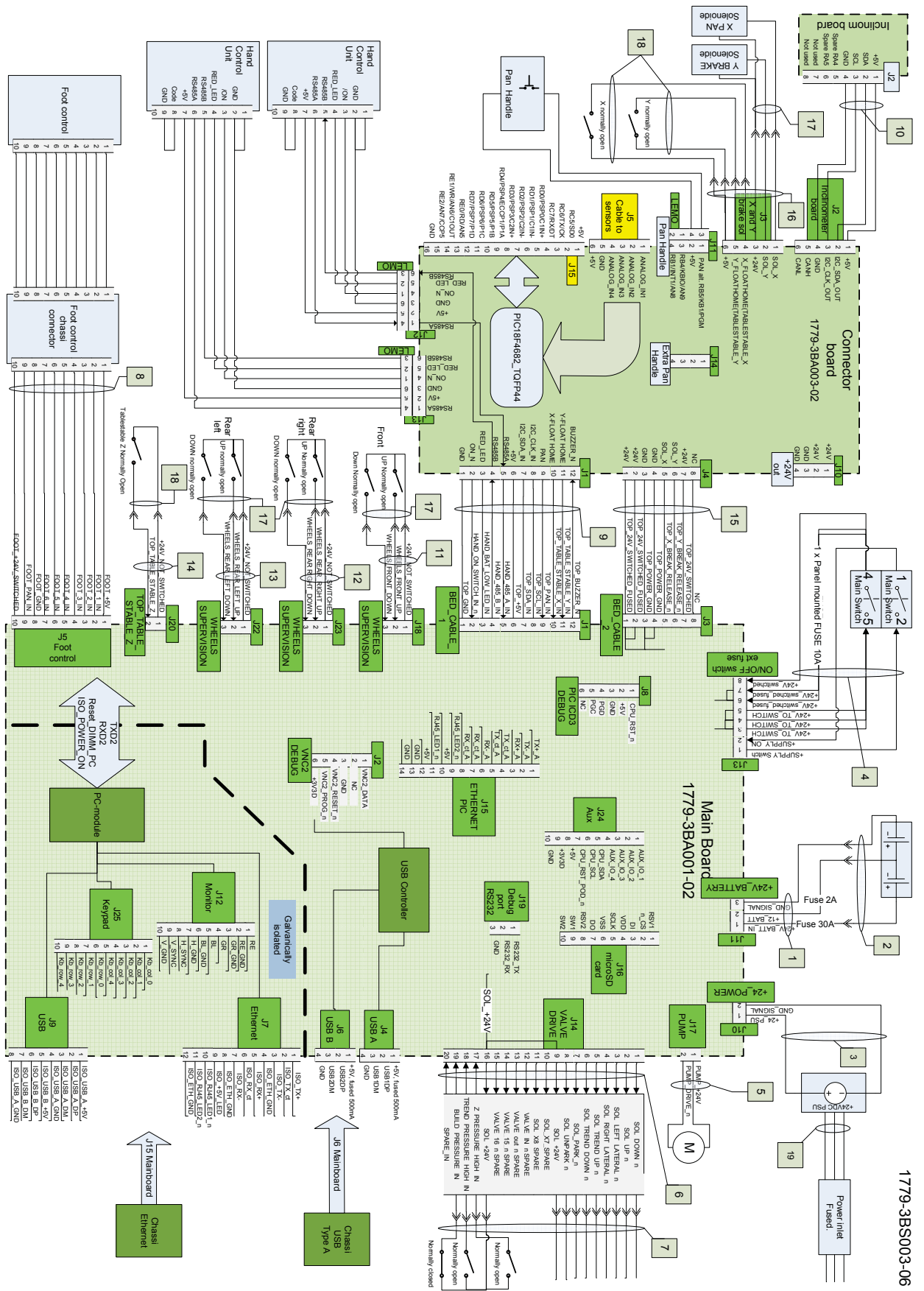
■ TROUBLE SHOOTING GUIDE

Free float function

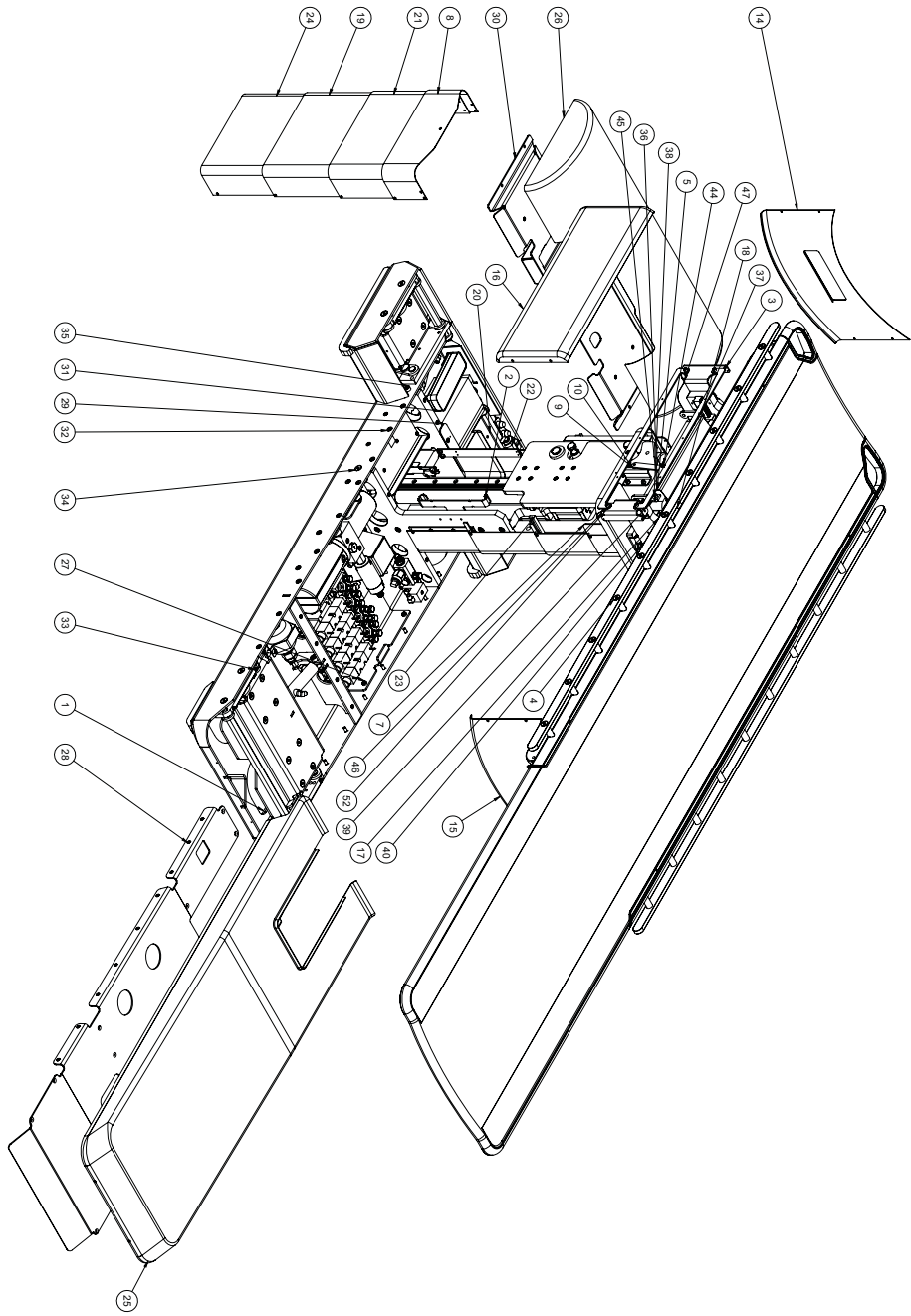
Symptom	Probable cause	Procedure
The free float does not work properly.	a. The clamp locks (brakes) does not open.  b. The hydraulic pump does run, but no function is available.  c. The hydraulic pump does run constantly does not shut off, but builds no pressure	a. Check the pressure switch.  b. Check that the solenoids gets signal  c. Check the pressure switch, try to adjust or replace the switch.
Free float not possible in longitudinal. Lateral works fine.	a. The table is not in 0-position  b. 0-position is not working	a. Press and hold 0 button on the hand control to reset the table to 0-position  b. Check the Inclinator card.
Free float not possible	a. Pan handle broken  b. The connection board is damaged	a. measure pan handle  b. try to use the other pan handel connector on the main board, replace the connection board.



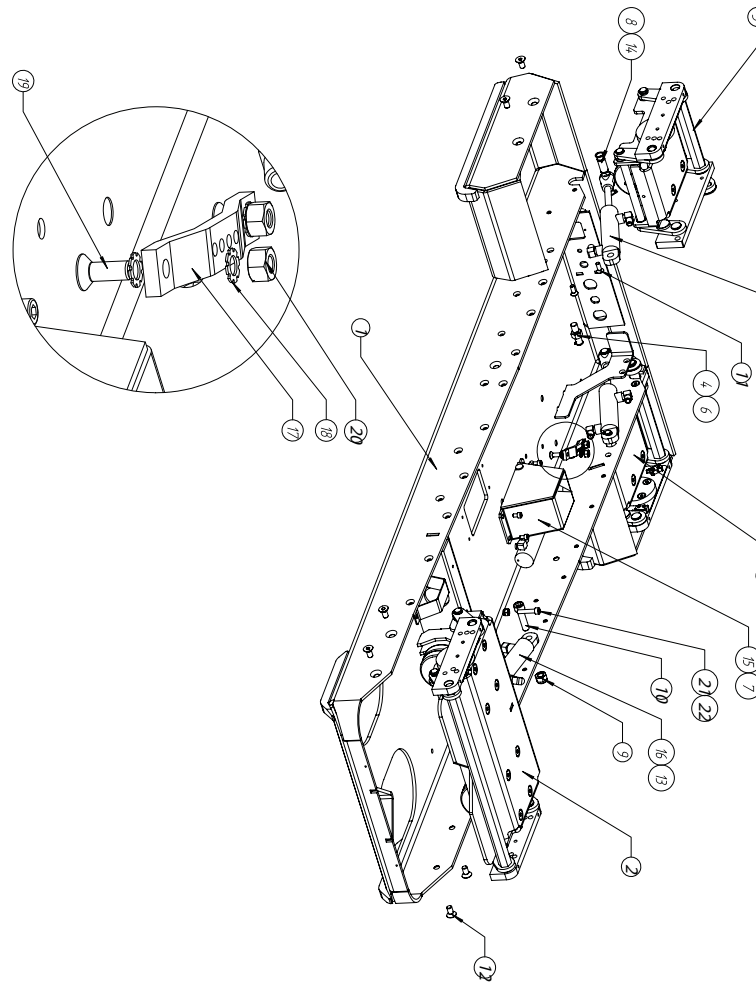




1779-3BS003-06

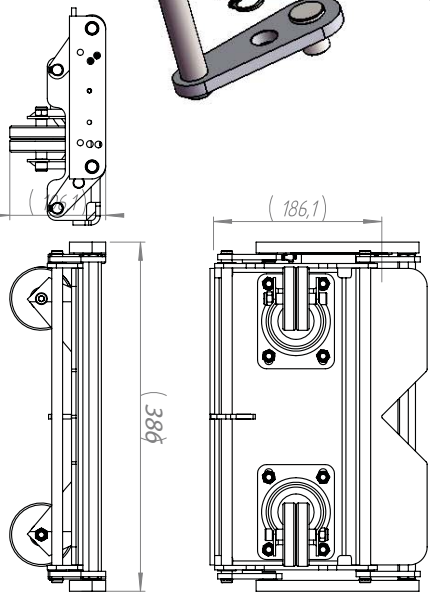
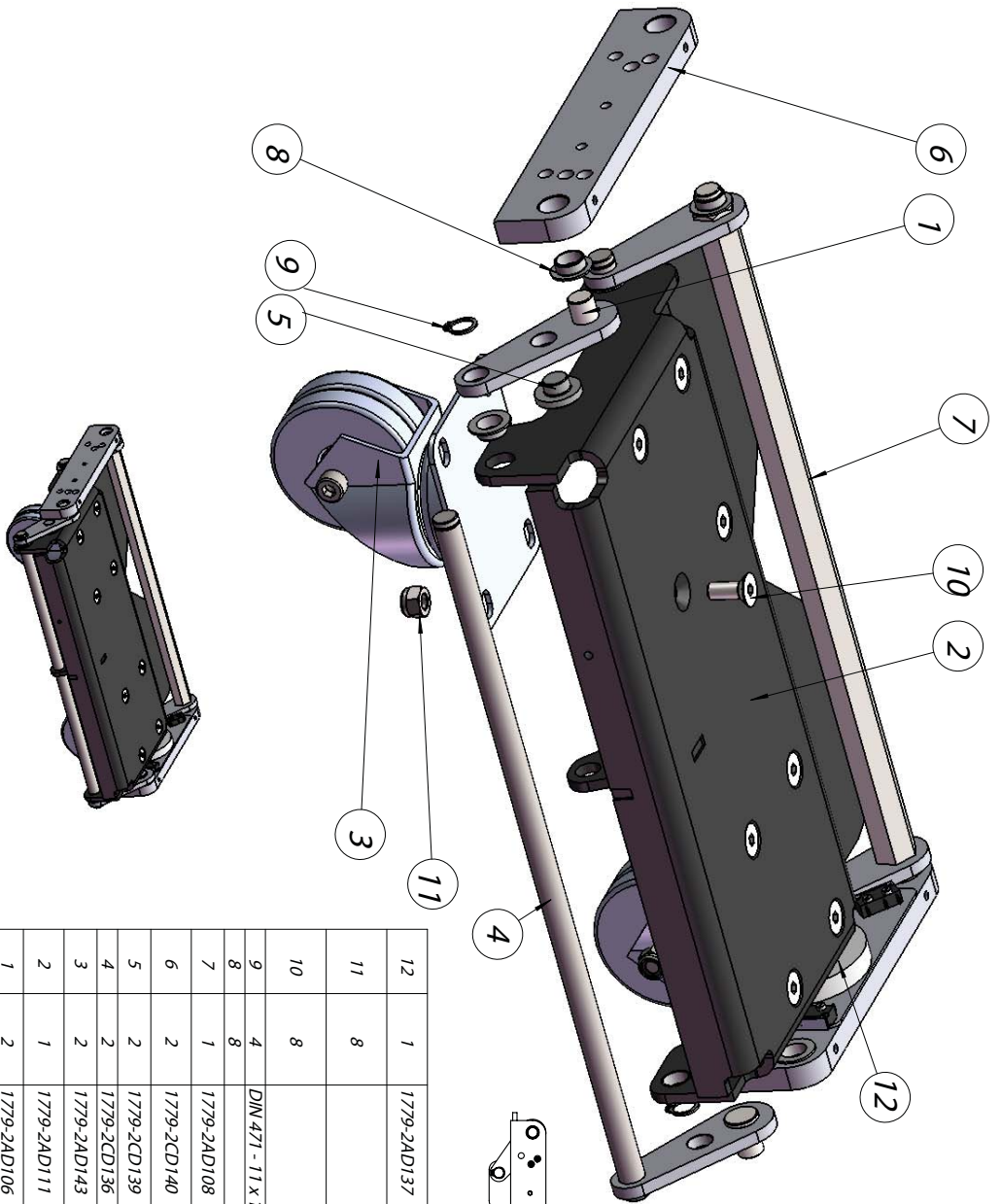


ITEM NO.	PART NUMBER	QTY
1	1775-2A0114-08 Front face sim. cd	1
2	1775-2A0216-08 Living column mechanics cd	1
3	1775-2A0444-08 Trf module	1
4	1775-2A0301-14 Table top assembly	1
5	1775-2C0441-02 Main 020A206	1
6	1775-2C0743-02 Top cover plate	1
7	1775-2C0744-02 column grille plate	2
8	1775-2C0714-04 top lateral column cover	2
9	1775-2C0715-02 lateral guide pin	1
10	1775-2C0711-03 Linkage arm	1
11	1775-2C0716-02 lateral side plate 2	1
12	1775-2C0712-04 Cover plate guide	2
13	1775-2C0713-03 lateral side plate	1
14	1775-2C0712-08 lateral lower back cover	1
15	1775-2C0716-08 lateral lower front cover	1
16	1775-2C0711-07 lateral lower side cover	2
17	1775-2C0715-08 top cover front/back	2
18	1775-2C0714-07 top cover side	2
19	1775-2C0714-03 mobile column cover	2
20	1775-2C0715-04 front cover back lid	1
21	1775-2C0715-03 upper column cover	2
22	1775-2C0716-02 fling bar	4
23	1775-2C0712-02 fling bar	2
24	1775-2C0713-04 lower column cover	2
25	1775-2C0711-08 slim front base cover	1
26	1775-2A0702-02 Back base cover cd	1
27	1775-2A0501-05 Main hydraulic module	1
28	1775-2A0114-08 Top plate long sim. cd	1
29	1775-2A0205-02 Main electronics	1
30	1775-2A0116-03 Rear protective cover cd	1
31	K 19501	1
32	3M 7891 - 1M8 X16 --- 8N	23
33	3M 7891 - 1M5 X10 --- 4N	16
34	3M 7891 - 1M8 X20 --- 11N	2
35	3M 912 1M8 X 20 --- 20N	4
36	1775-2A0438-01 Tripp Lite 14001 cd	1
37	1775-2C0711-02 cabinet bracket front/rear	2
38	3M 912 1M5 X 12 --- 12N	20
39	1775-2C0717-02 cabinet bracket	2
40	1775-2A0205-01 V Cable module	1
41	3M 912 1M8 X 20 --- 20N	2
42	3M 912 1M8 X 45 --- 24N	1
43	3M 912 1M8 X 45 --- 24N	2
44	3M 7891 1M5 X 10 --- 4N	2
45	1775-2C0716-03 dipping plate	2
46	1775-2C0714-03 front cover plate	1
47	1775-2C0714-03 back cover plate	1
48	3M 912 1M8 X 20 --- 20N	2
49	3M 7891 - 1M5 X25 --- 19N	1
50	3M 7891 - 1M5 X25 --- 19N	1
51	3M 7891 - 1M5 X25 --- 19N	1
52	1775-2C0714-03 Cable bar	2

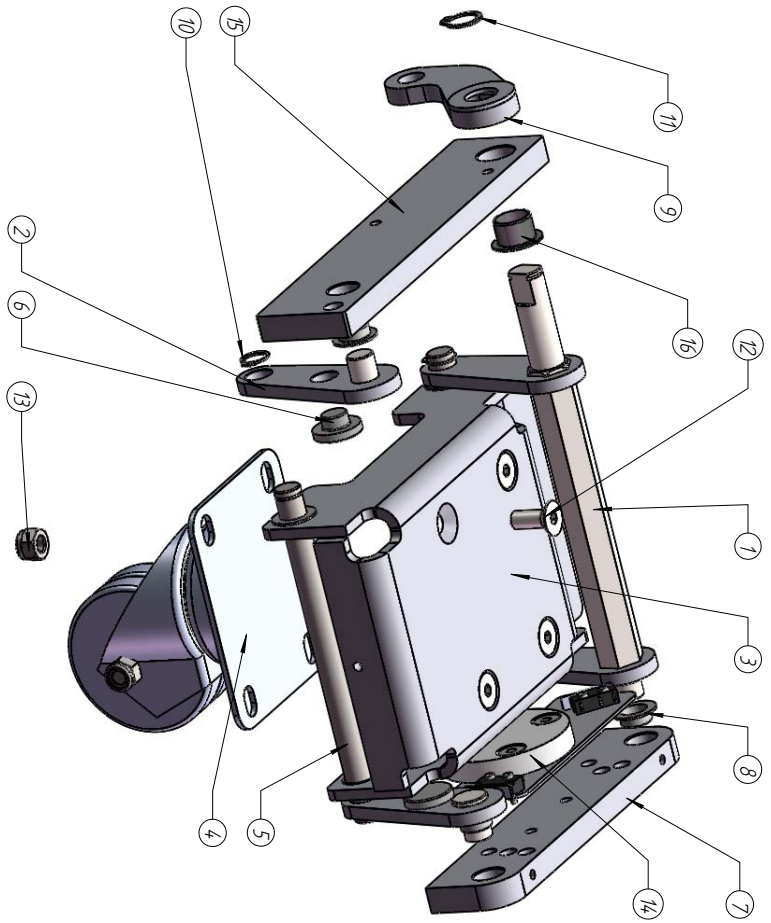


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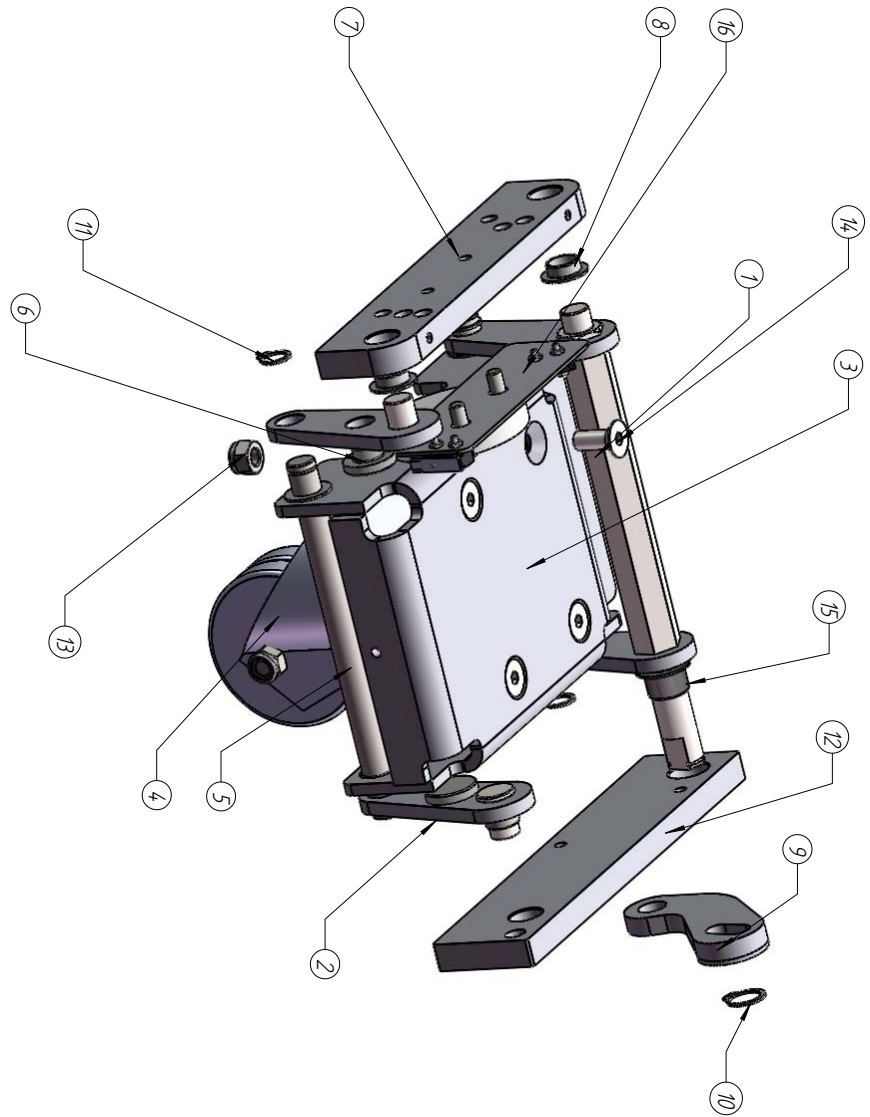
Nr.	Identifizierung	Bestellnummer/Drucknr./Material	Bezeichnung/Description
22	1	00N 21020 M6	REAR PHS SWITCH
20	2		MKS5 M6x50
19	2		MKS5 M6x16
18	4		Frontal face washer
17	1	177N 20052	Frontal face
16	3	177N 20052	Hydraulic cylinder 2000, 60
15	2	177N 20070	SPRING - handle wheel
14	6	K60123	Component for 80°
13	8		MKS5 M6x16
12	8		MKS5 M6x16
11	4		MKS5 M6x16
10	1		REAR PHS SWITCH
9	1	00N 211 - 11 X 1	MKS5 M6x8
8	4		MKS5 M6x8
7	2		External ferrule
6	2	00N 417 - 9 X 1	REAR PHS SWITCH
5	1	177N 20075	REAR PHS SWITCH
4	2	177N 20053	REAR PHS SWITCH
3	1	177N 20077	REAR PHS SWITCH
2	1	177N 20077	REAR PHS SWITCH
1	1	177N 20075	REAR PHS SWITCH



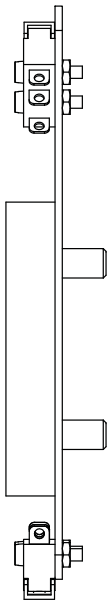
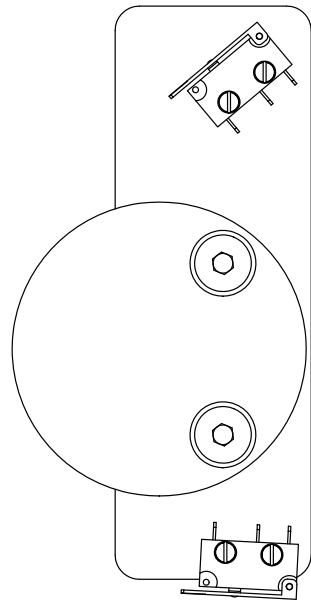
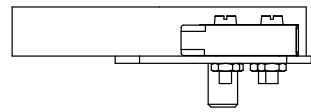
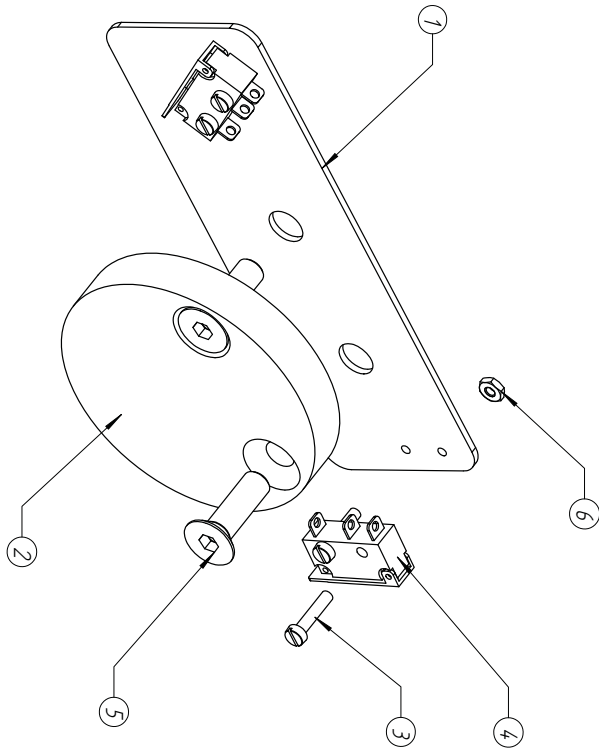
12	1	1779-2AD137	Wheel position detection unit
11	8		Prevailing torque type hexagon nut
10	8		Hexagon socket countersunk head cap screw DIN 7991 - M8 x 20
9	4	DIN 471 - 11 x 1	
8	8		
7	1	1779-2AD108	Swinger axle front cpl.
6	2	1779-2CD140	Holderplate retractable wheel
5	2	1779-2CD139	Slide bearing
4	2	1779-2CD136	Swinger axle Ø12x267
3	2	1779-2AD143	
2	1	1779-2AD111	Wheelframe retractable front cpl
1	2	1779-2AD106	Swinger arm cpl
Nr.	Qty	Drawing Number	Description



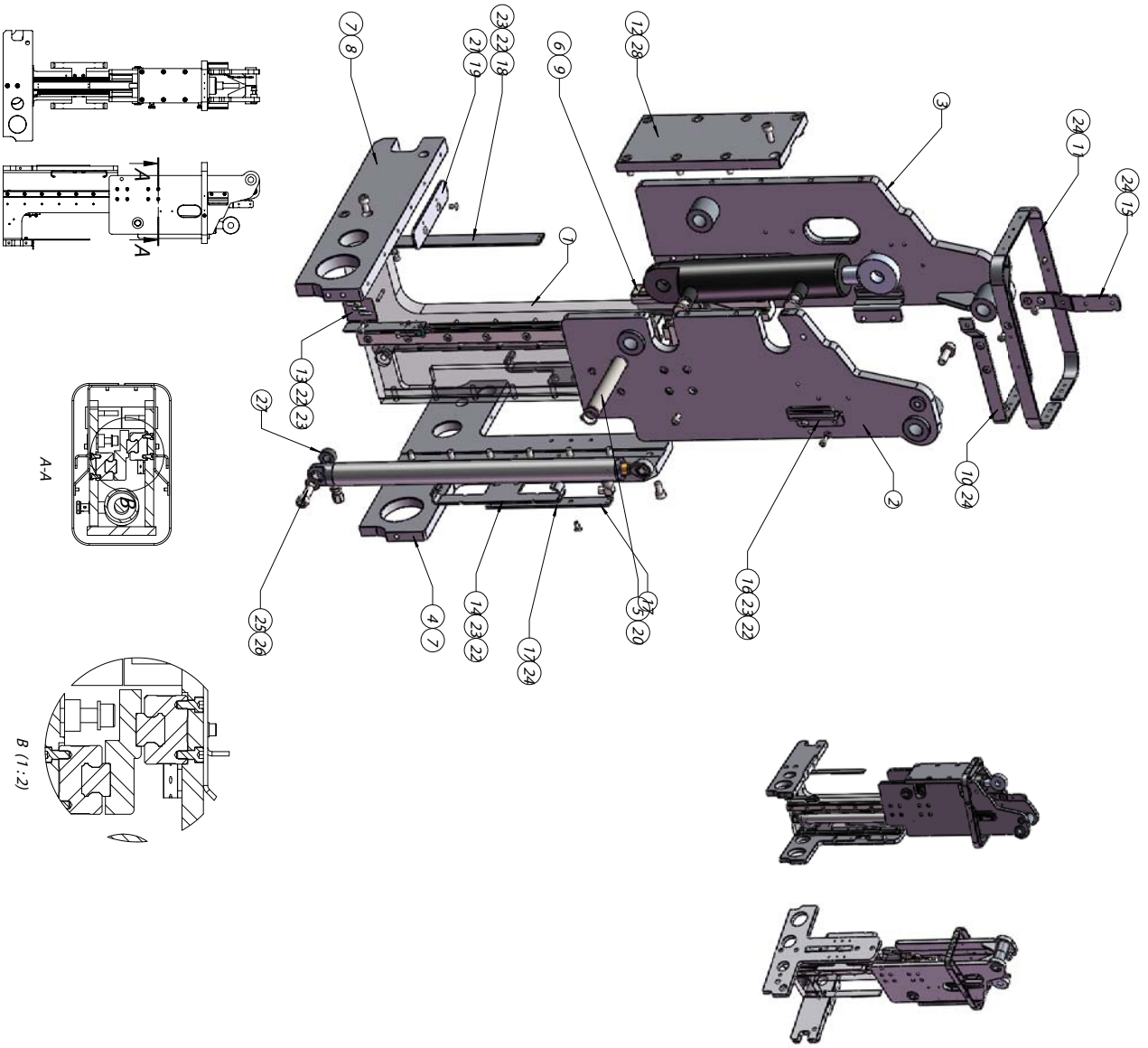
16	1	6PH-5S17-12-adv	Holderplate retractable wheel rear
15	1	1779-2A0145-02	Holderplate retractable wheel rear
14	1	1779-2A0137-02	Wheel position deflection unit
13	4	DM EN ISO 7040 - M8 - N	Hexagon socket countersunk head cap screw DIN 7991 - M8 x 20
12	4	DM 7991 - M8 x 20 --- 118N	Hexagon socket countersunk head cap screw DIN 7991 - M8 x 20 (incl. DM 471 - 14 x 1)
11	1	DM 471 - 14 x 1	Pin DM 471 - 14 x 1
10	4	DM 471 - 11 x 1	Pin DM 471 - 11 x 1
9	1	1779-2A0110-02	Pusher arm rear wheel left cpl
8	7	6PH-17H-06-adv	Pusher arm rear wheel left cpl
7	1	1779-2A0140-04	Holderplate retractable wheel
6	2	1779-2A0135-02	Holderplate retractable wheel
5	2	1779-2A0144-03	Side bearing
4	1	1779-2A0143-02	Swinger axle $\phi$ 12x159
3	1	1779-2A0143-04	Wheelpin
2	2	1779-2A0106-02	Wheelframe retractable rear
1	1	1779-2A0109-03	Swinger arm cpl
	1	1779-2A0109-03	Swinger axle rear cpl
Nr.	Art/Obj.	Art. No.	Description



Nr.	Activity	Reference Number	Part Description
16	1	1779-24098	Wheel position deflection unit mirrored
15	1	1779-240xx-xx	MFS M8x20
14	4		
13	4	1779-24049	Holderplate retractable wheel rear
12	1	DM 471 - 11 x 1	External Linclip
11	4	DM 471 - 14 x 1	External Linclip
10	1	1779-24017	Pusher arm rear wheel right cpl
9	1		Flange bush DM-124-06-6ally
8	7		Holderplate retractable wheel
7	1	1779-24040	Slide bearing
6	2	1779-24039	Swinger axle ø12x159
5	2	1779-24044	Wheel pivoting
4	1	1779-24043	Holderplate retractable rear
3	1	1779-24006	Swinger arm cpl
2	2	1779-24009	Swinger axle rear cpl
1	1		



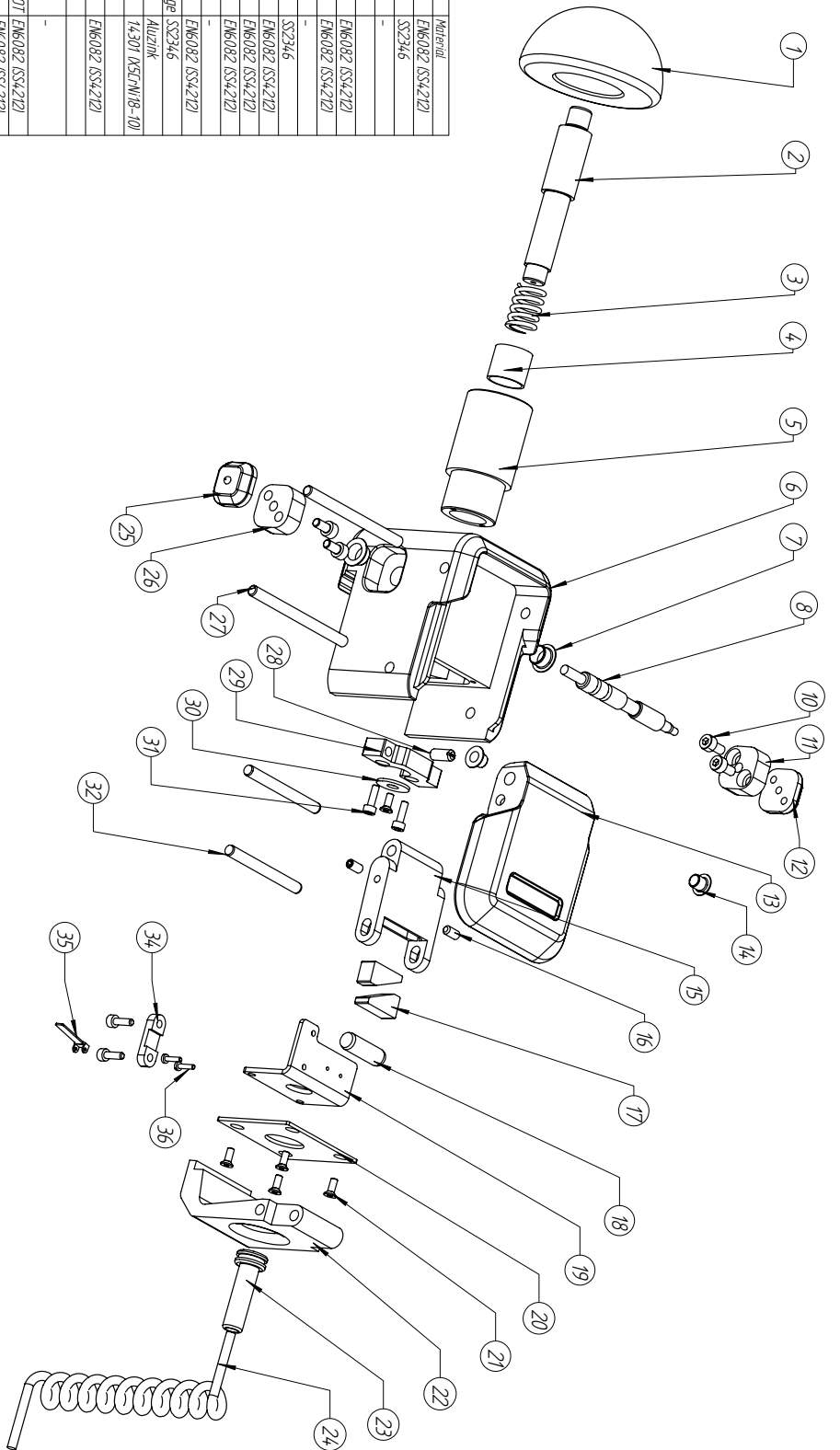
6	4	ISO 4035 - M2.5 - N	
5	2		Microswitch V4 with arm
4	2		
3	4		
2	1	1779-210188	Wheel switch protection stud
1	1	1779-210187	Wheel position switchplate
Nr	Qty	Reference Number	Description

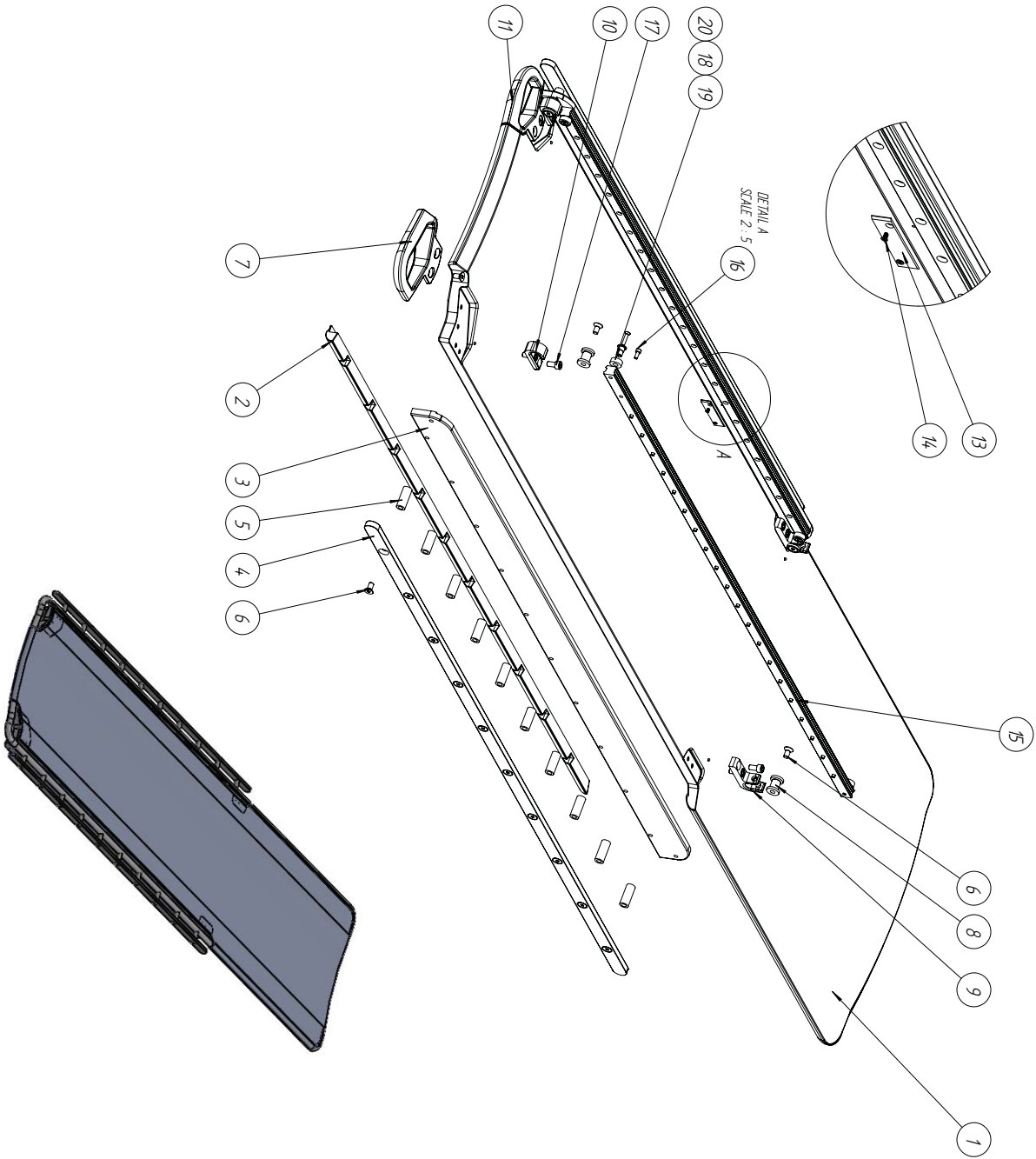


Nr.	Order No.	Part Name	Description
30	1	17798-ZCD341	Transmitter 50/25 cpl
29	1	17798-ZCD341	Lifting cylinder Z
28	1	17798-ZCD337	Backplate column
27	1	DIN 125 - A 10.5	Sieve
26	2	MCS5 M10x30	Flap washer
25	2	MCS5 M8x12	Washer B18 5.3
24	1	MCS5 M8x12	Washer B18 5.3
23	1	MCS5 M8x10	Washer B18 5.3
22	1	MCS5 M8x10	Washer B18 5.3
21	2	17798-ZCD310	Lifting Ø 19x1.2
20	2	17798-ZCD310	Lifting Ø 19x1.2
19	1	17798-ZCD310	Lifting Ø 19x1.2
18	1	17798-ZCD310	Lifting Ø 19x1.2
17	1	17798-ZCD310	Lifting Ø 19x1.2
16	2	17798-ZCD310	Lifting Ø 19x1.2
15	1	17798-ZCD310	Lifting Ø 19x1.2
14	2	17798-ZCD310	Lifting Ø 19x1.2
13	1	17798-ZCD310	Lifting Ø 19x1.2
12	1	17798-ZCD310	Lifting Ø 19x1.2
11	8	17798-ZCD310	Lifting Ø 19x1.2
10	1	17798-ZCD310	Lifting Ø 19x1.2
9	4	SH455 V	Guide block SH455-V
8	1	17798-ZCD310	Support plate lifting column
7	9	MCS5 M8x16	MCS5 M8x16
6	16	17798-ZCD310	MCS5 M8x16
5	1	17798-ZCD310	MCS5 M8x16
4	1	17798-ZCD310	MCS5 M8x16
3	1	17798-ZCD310	MCS5 M8x16
2	1	17798-ZCD310	MCS5 M8x16
1	1	17798-ZCD310	MCS5 M8x16

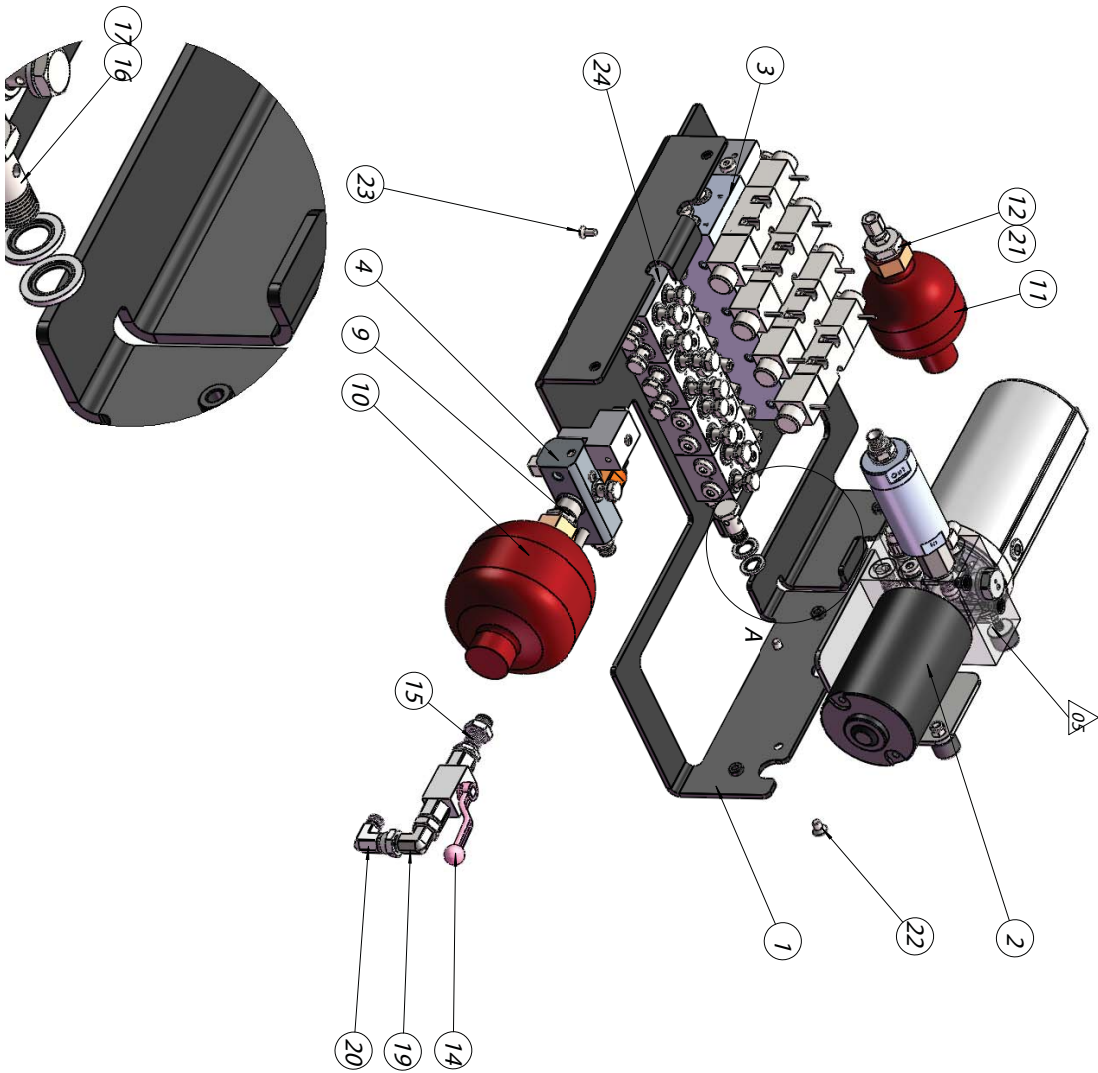


Nr.	Antydł	Beznamopisdescription	Material
1	1	Pan handle top	EN6082 SS42121
2	1	Push shaft	SS2346
3	1	Trykffulder	-
4	1	Guidgebussing	EN6082 SS42121
5	1	Guiding socket	EN6082 SS42121
6	1	Housing	EN6082 SS42121
7	2	GFM-0809-055	-
8	1	Lacking pin	SS2346
11	1	Red locking burton	EN6082 SS42121
12	1	Blue locking burton	EN6082 SS42121
13	1	Front	EN6082 SS42121
14	2	GFM-0506-6	-
15	1	Spring clamp link	EN6082 SS42121
17	2	Adjustment wedge large	SS2346
19	1	Microswitch bracket	Aluzink
20	1	Bottom cover plate	1430T XSEFN18-10
21	5	MF-SS3x8	-
22	1	Locking clamp ImagiQ	EN6082 SS42121
23	1	Draggervastare	-
24	1	Cable	-
25	1	Blue locking burton DOT	EN6082 SS42121
26	1	Green locking burton	EN6082 SS42121
27	2	CP 5x67	SS2346
28	1	Fjadrade trycksstift	Material -not specific-
29	1	Lacking bracket	EN6082 SS42121
34	1	Bojstyd	-
35	1	Mikrosvyrtarm	-
36	2	MF-SS2x10	-
37	4		
38	1		
39	2		
40	2		
41	1		
42	5		
43	2		

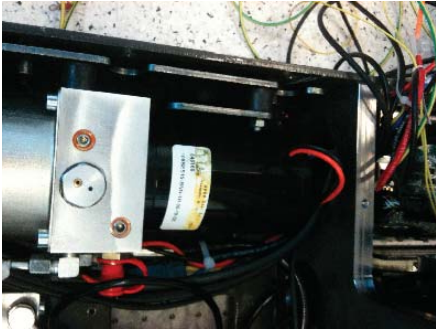




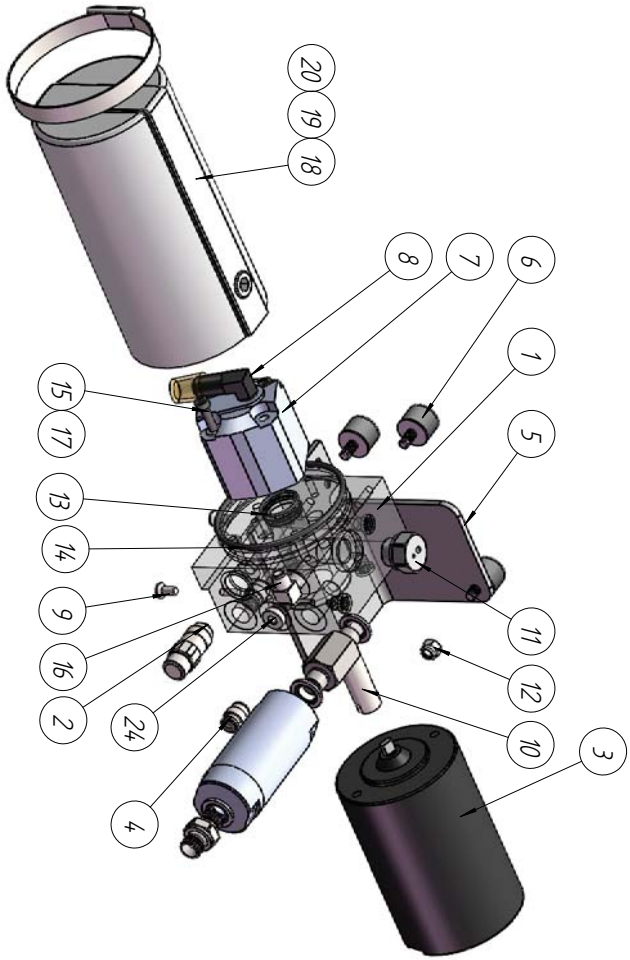
20	4	MSS MS25	MSS MS25
19	4	440364-1	Stake (distrubuting ring)
18	4	440364-1	Stake (distrubuting ring)
17	8	MSS MS16	MSS MS16
16	42	MSS MS12	MSS MS12
15	2	RAI SCS 20X340	RAI SCS 20X340
14	2	MFT MS6	MFT MS6
13	1	1775-210455	Capa rivete Microstrip
12	1	1775-210312	Capa rivete Beam right
11	1	1775-210311	Capa rivete Beam left
10	3	1775-210317	Top handle right
9	2	1775-210328	Top handle left
8	4	1775-210326	Top handle right
7	1	1775-210310	Top handle left
6	28	1775-210314	MSS MS16
5	20	1775-210314	Accessories rail distance
4	2	1775-210313	Accessories rail EU
3	2	1775-210312	Top handle support beam
2	1	1775-210308	Capa rivete Beam left
1	1	1775-210304	Capa rivete Top complete
1#	41007	Antenna complete (distrubuting beam)	Antenna complete (distrubuting beam)



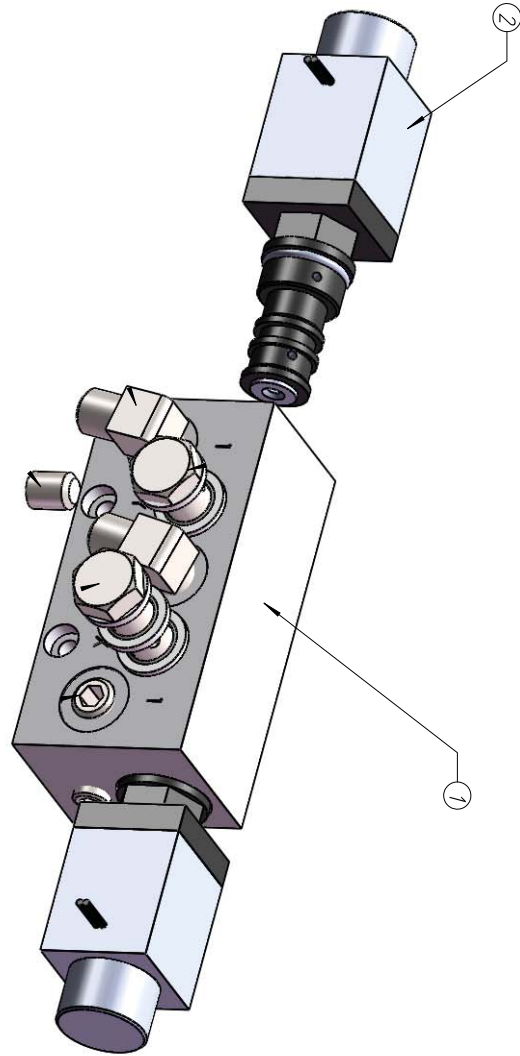
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29	1	1779-2AD544	Pipe type 24
28	1	1779-2AD543	Pipe type 23
27	1		Sealing washer 1.2"
26	1		Plug G1/8"
25	1	1779-2AD540	Pressure release middle trend
24	1	1779-2AD506	Manifold positioning system
23	8		MFGS MSX10
22	3		MFGS M6x10
21	1	K90382	Straight coupling
20	1		Elbow fitting 90° G1/8" R
19	1		Elbow fitting 90° G1/8" UF
18	22		Sealing washer 1.8"
17	2		Sealing washer
16	1		Hollow bolt G1/4"
15	1		Skidsteering 1/4"
14	1		Ball valve G1/4"
13	11		Hollow bolt G1/8"
12	1		Reduction G1/2" G1/8"
11	1		Accumulator tank 160ml
10	1		Accumulator tank 500ml
9	1	1779-2CD164	Gland accumulator tank
8	1	1779-2AD510	Pipe type 3
7	1	1779-2AD509	Pipe type 2
6	8	1779-2AD508	Pipe type 1
5	1	1779-2AD513	Pipe type 6
4	1	1779-2AD505	Manifold acc tank cpl
3	1	1779-2AD533	Main valveblock unit
2	1	1779-2AD503	Pump unit
1	1	1779-2AD507	Base plate main hydraulics cpl.



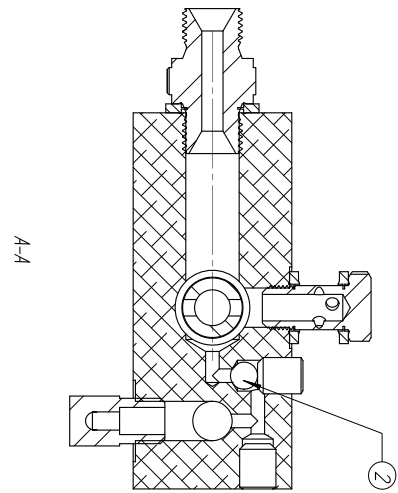
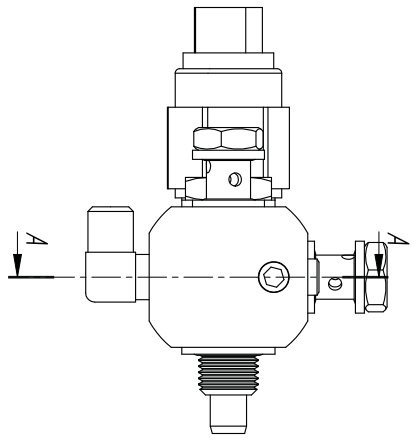
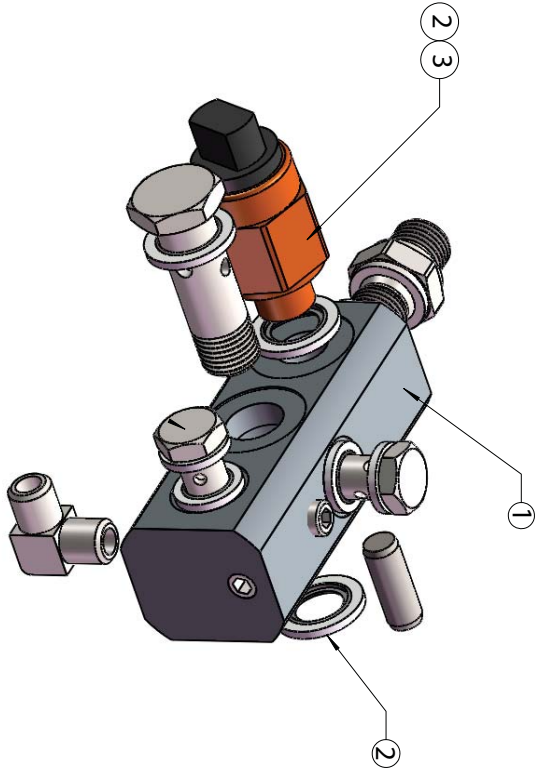
Pos 16, 17 and 20 is sealed with Scantrach 4000 T



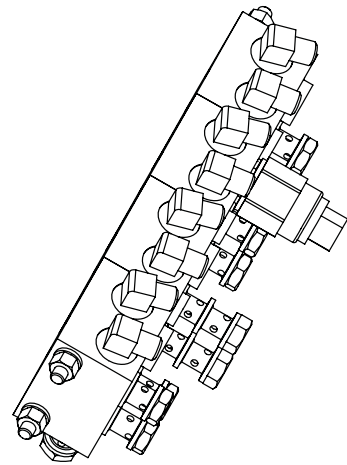
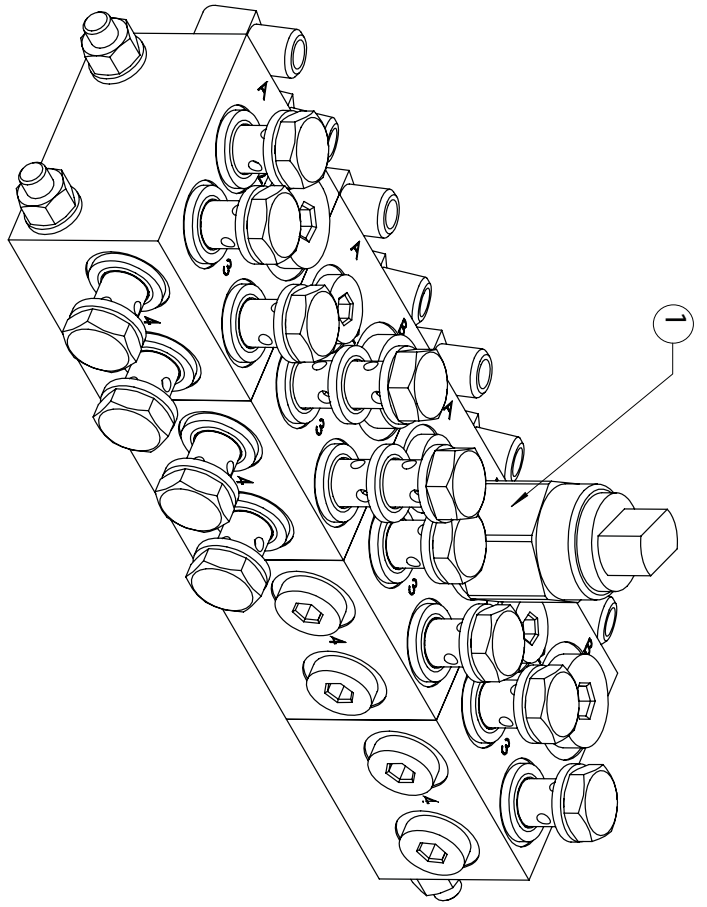
25	3		Sealing washer
24	1		Plug 5/16"
23	1		Adapter 2x 5/16"
22	1		High pressure filter 1/4"
21	1	1779-210518	Adapter filter
20	1		Hose clamp 8/16-10/16mm
19	1		Plug M3x0,8
18	1		Oil tank 0.5 L
17	2	K930376	Washer 8x8 5.3
16	1	ISO 4762 M5 x 55 --- 22N	Connection 1/8" 90°
15	2		Socket head screw
14	1	0-ring 28x3	0-ring
13	1	0-ring 21.35x4.78	0-ring
12	1	DIN 7640 M6	Nut 1/8" M16x2
11	1		Oil plug
10	1	1779-210514	Drive shaft
9	3		MFS5 M5x10
8	1	1779-240518	Suction pipe gnl
7	1		Hydraulic pump 0.24cc
6	3		Rubber damper 1/8" B 20x15 M6x12 70° A
5	1	1779-210506	Pump support bracket
4	2		Check valve
3	1	Motor Parker PD-50001	Electric motor
2	1		Pressure relief valve
1	1	1779-240517	Adapter block pump unit
Mo	DTV	Komponenten-Drawung-Number	Bestandbeschreibung



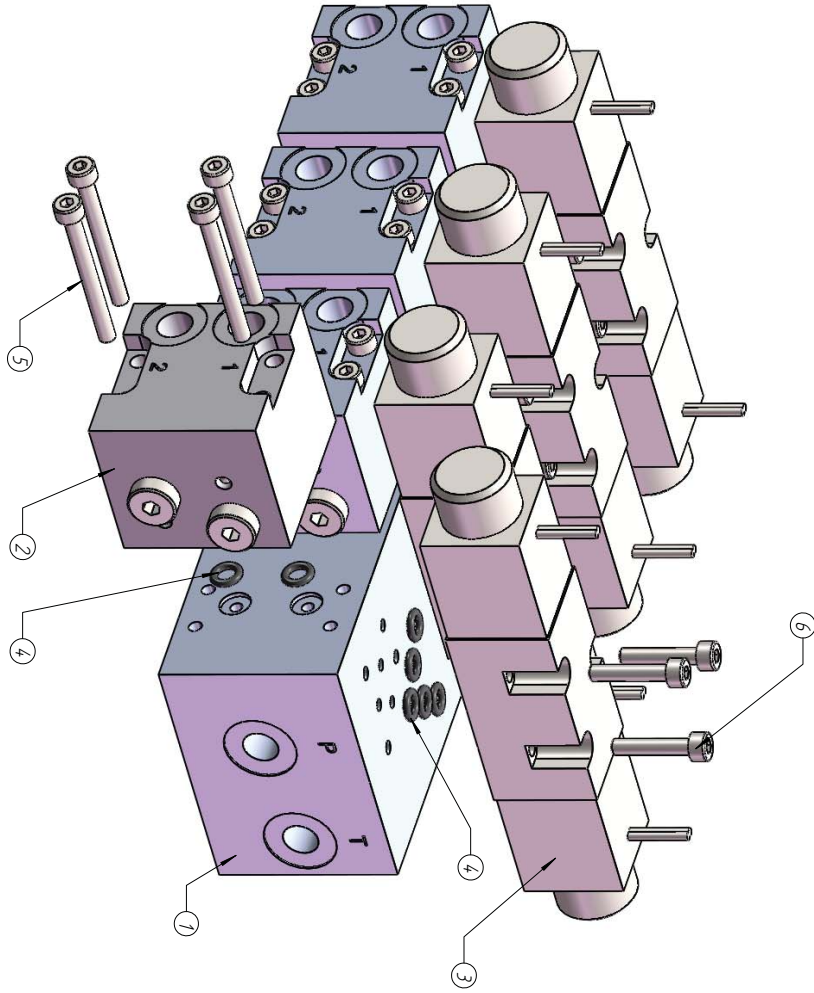
2	2		PILOT VALVE 3/2
1	1		MANIFOLD BLOCK THREE VALVES 2/3/2
No.	Qty	Ringnummer/Drawing Number	Benaming/Description



3	1	Pressure switch
2	4	Sealing washer
1	1	Manifold body gasket tank
nr.	anti/dry	Ringsnummer/Drawing Number Benaming/Description

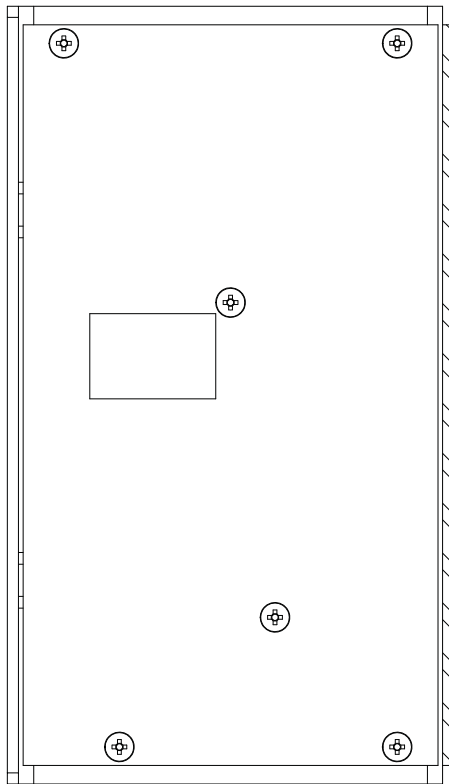
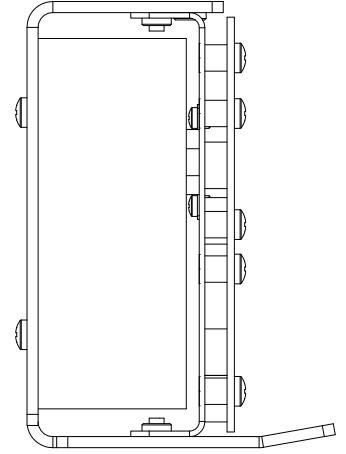
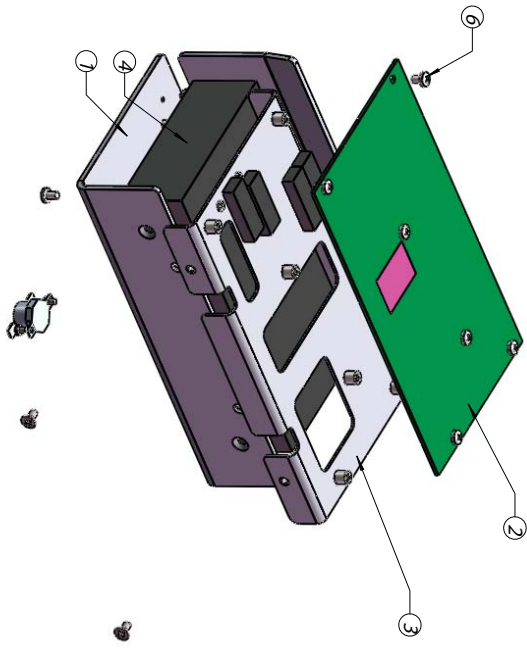


1	Riftingsnummer/Drawing Number	Pressure switch
M-Z-1000/071		Benaming/Description

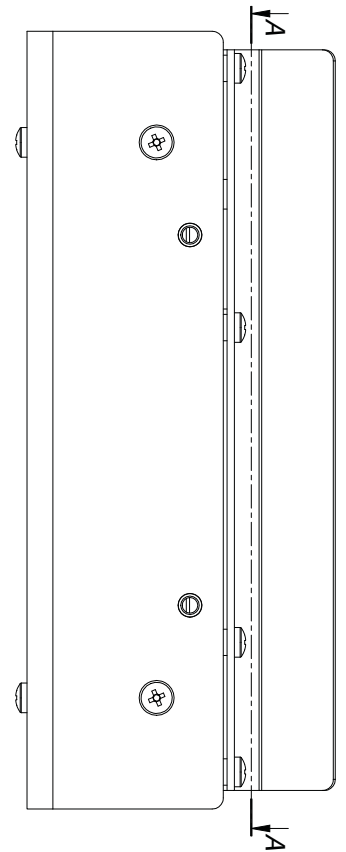


6	12		MES3 MA20
5	16		MES3 MA40
4	28	0-7009 44.7-178	0-7009
3	4	1179-2A0548	Valve 4/3 24V
2	4	1179-2A0548	Manifold check valve CPL
1	1	1179-2A0549	Manifold valves CPL
Nr.	Anzahl	Stücknummer/Zeichnung Nummer	Bezeichnung/Description

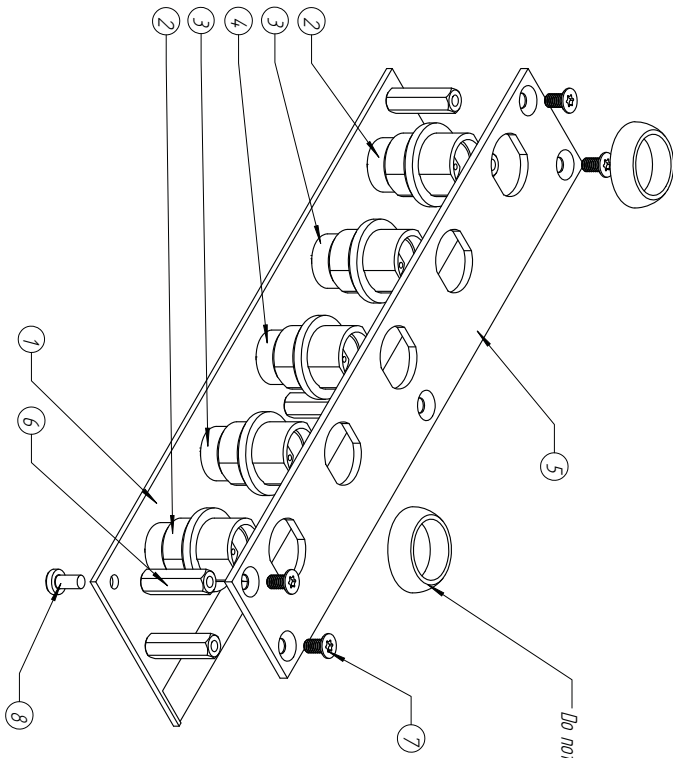




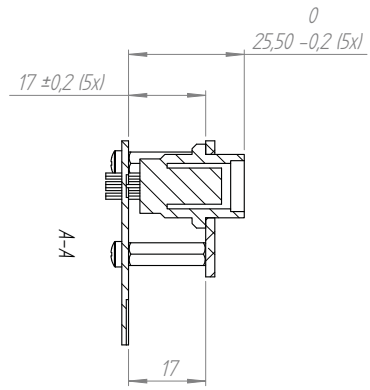
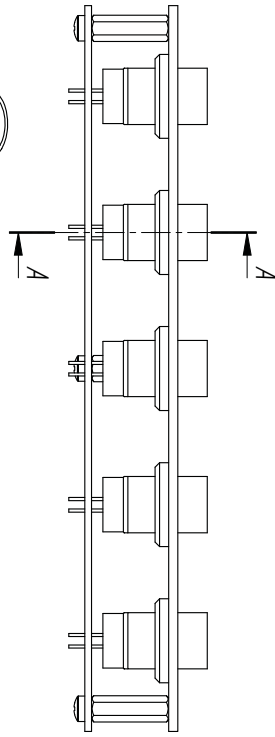
A-A



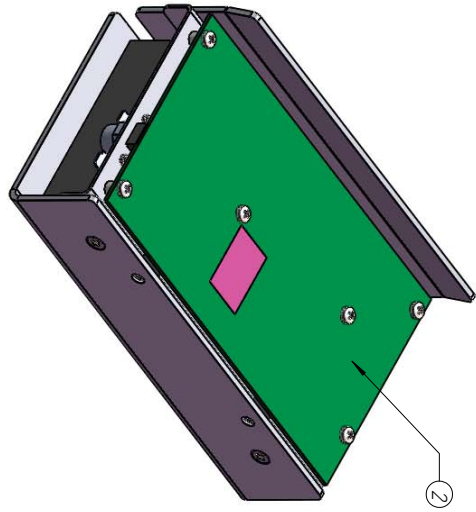
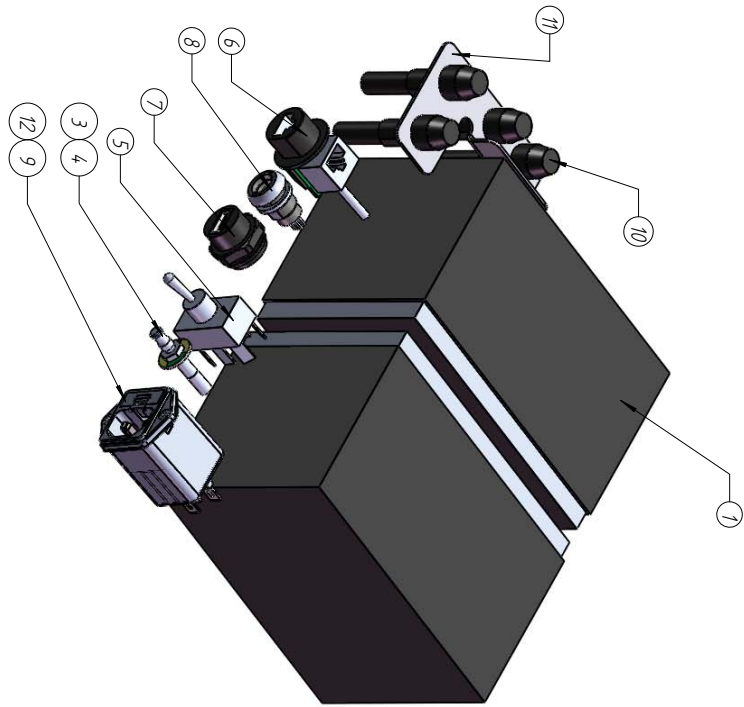
Nr.	Art./O/R	Revisionsnummer / Drawing / Revision / Description	Materialnummer / Part number / Description
4	1	1779-2AD909	Power supply 400 W
3	1	1779-2AD909	Main board holder
2	1	1779-2CD902	GPU-board
1	1	1779-2AD905	Control module bracket



Do not tighten these nuts until assembled in 1779-2A908



N°	Utan	Rehingsnummer/Drawing Number	Benaming/Description
8	5		ISO 7045 M3x6
7	5		MFT M3x6
6	5		Distance M3x6x17mm
5	1	1779-210930	cd mounting plate
4	1		Chassis receptacle 4-pole S-key
3	2		Chassis receptacle 6-pole M-key
2	2		Chassis receptacle 4-pole P-key
1	1	1779-38A003	Connection board



Nr.	Art/Nr.	Abkürzungsumme/Drawing Number	Bezeichnung/Description
12	2		ME T-M316
11	1	1779-240907	Face holder bracketed cpl
10	4		Panel hose holder
9	1		Net intake
8	1		Chassis receptacle 10-pole T-key
7	1		USB receptacle
6	1		RJ45 Receptacle
5	1		Toggle switch 20A
4	1		Toggle switch
3	1	1779-240904	Control module
2	1		Battery 12 12Ah
1	2		Battery 12 12Ah

## ■ Service kits and spare parts.

The service kits contains "all you need" to replace a specific set of component.

All parts in the kits can be ordered separately.

Kit number and information	The kit consists of the following parts
1779-2AD711 Top lateral cover bracket kit  The top covers and brackets set including the small torx screw holding the covers together.	1pcs 1779-2CD713 top cover bracket 1pcs 1779-2CD731 top cover bracket mirrored 4pcs 1779-2CD732 Cover plate guide 2pcs 1779-2CD733 Lateral slide plate 1pcs 1779-2CD745 front top cover bracket 1pcs 1779-2CD746 front top cover bracket 12pcs K50154 Screw MFT M3 x 4 A4 TORX 8pcs K50155 Screw MFT M3 x 8 A4 TORX
1779-2AD712 Column cover attachment kit  The bracket set for the telescopic covers including the small torx screw holding the covers together.	1pcs 1779-2CD720 Z cover bracket back 2pcs 1779-2CD721 Linkage arm 4pcs 1779-2CD730 lifting bar 2pcs 1779-2CD723 lifting lip 2pcs 1779-2CD735 lateral guide pin 2pcs 1779-2CD744 column glide plate 38pcs K50154 Screw MFT M3 x 4 A4 TORX 14pcs K50155 Screw MFT M3 x 8 A4 TORX
1779-2AD713 Column cover kit  The telescopic cover set including the small torx screw holding the covers together.	2pcs 1779-2CD703 lower column cover 2pcs 1779-2CD704 middle column cover 2pcs 1779-2CD705 upper column cover 2pcs 1779-2CD734 top lateral column cover
1779-2AD714 Front cover kit  The front cover set including the small cover strip and screws that connects the covers	1pcs 1779-2CD701 slim front base cover 1pcs 1779-2CD725 Front cover back lid 2pcs K50154 Screw MFT M3 x 4 A4 TORX 2pcs K50155 Screw MFT M3 x 8 A4 TORX
1779-2AD8501 FRU Service Kit 1  A kit of small components that can be handy to be carrying in the service kit.	2pcs K50168 Fuse 250V 6,3A SB 20pcs K50154 Screw MFT M3 x 4 A4 TORX 10pcs K50155 Screw MFT M3 x 8 A4 TORX 10pcs K87221 Rubber steel washers M10 10pcs K50180 Main hydraulic O-ring 4,48x1,78

■ List of cables and maximum lengths for cables of imagiQ2

Maximum cable lengths for the imagiQ2					
Cable		Maximum length	Type	Dimensions	
Mains power cord	AC-cable EC	6 meters / 19,7 feet	18AWG / < 0,823 mm <sup>2</sup>	3*0.75 mm <sup>2</sup>	0.00008342 ft <sup>2</sup>
	AC-cable UK	6 meters / 19,7 feet	18AWG / < 0,823 mm <sup>2</sup>		
	AC-cable US	6 meters / 19,7 feet	18AWG / < 0,823 mm <sup>2</sup> 3 SJT		
	AC-cable JP	6 meters / 19,7 feet	18AWG / < 0,823 mm <sup>2</sup>		
Hand control including extension cord		>3 meters/< 9,84 feet allowed		3*0.75 mm <sup>2</sup>	0.00008342 ft <sup>2</sup>
Pan handle including extension cord		>3 meters/< 9,84 feet allowed		3*0.75 mm <sup>2</sup>	0.00008342 ft <sup>2</sup>
Foot control including extension cord		>3 meters/< 9,84 feet allowed		3*0.75 mm <sup>2</sup>	0.00008342 ft <sup>2</sup>

■ Electromagnetic Emissions

ImagiQ2 is intended for use in the electromagnetic environment specified below. The customer or the user of imagiQ2 should assure that it is used in such an environment.		
Emission test	Compliance	Electromagnetic environment-guidance
RF-emission CISPR 11	Group 1	ImagiQ2 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF-emission CISPR 11	Class A	ImagiQ2 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purpose.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

Not: Figure 1 of the IEC 60601-1-2 standard used for creation of this table (Table 1 in the standard).

■ Recommended separation distance between portable and mobile RF communications equipment and imagiQ2

ImagiQ2 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of imagiQ2 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and imagiQ2 as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150KHz to 80MHz d= [0,58]√P	80MHz to 800MHz d= [0,35]√P	800MHz to 2,5GHz d= [0,7]√P
0,01	0,058	0,035	0,07
0,1	0,18	0,11	0,22
1	0,58	0,35	0,7
10	1,8	1,1	2,2
100	5,8	3,5	7,0


For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1 At 80 MHz to 800 MHz, the separation distance for the higher frequency range applies.

Note 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Not: Figure 5 of the IEC 60601-1-2 standard used for creation of this table (Table 6 in the standard).

■ Electromagnetic Immunity

<p>imagiQ2 is intended for use in the electromagnetic environment specified below. The customer or the user of the imagiQ2 should assure that it is used in such an environment.</p>			
Immunity test	IEC 60601 Test level	Compliance level	Electromagnetic environment- guidance
			<p>Portable and mobile RF communications equipment should be used no closer to any part of imagiQ2, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance</p>
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	10 V	$d = [0,58]\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	10V/m	<p><math>d = [0,35]\sqrt{P}</math> 80 MHz to 800 MHz  <math>d = [0,7]\sqrt{P}</math> 800 MHz to 2,5 GHz</p>
			<p>Where P is the maximum output rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).                      Field strength from fixed RF transmitters, as determined by an electromagnetic site survey, a should be less than the compliance level in each frequency range. b                      Interference may occur in the vicinity of equipment marked with the following symbol:</p> <div style="text-align: center;">  </div>
<p>Note 1 At 80MHz and 800 MHz, the higher frequency range applies.                      Note 2 These guidelines may not apply in all situations. Electromagnetic propagations are affected by absorption and reflection from structures, objects and people.</p>			
<p>a Field strength from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, armature radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which imagiQ2 is used exceeds the applicable RF compliance level above, imagiQ2 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating imagiQ2.                      b Over the frequency range 150 KHz to 80 MHz, field strengths should be less than 10 V/m.</p>			

- **WARNING:** Using other cables and accessories than the specified, can possibly increase the emission and decrease the immunity in regards of EMC requirement.

Not: Figure 5 of the IEC 60601-1-2 standard used for creation of this table (Table 4 in the standard).

■ Guidance and manufacturer’s declaration – electromagnetic immunity

The imagiQ2 is intended for use in the electromagnetic environment specified below. The customer or the user of the imagiQ2 should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	+/- 6 kV contact +/- 8 kV air	+/- 6 kV contact +/- 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient / Burst IEC 61000-4-4	+/- 2 kV for power supply lines +/- 1 kV for input/output lines	+/- 2 kV for power supply lines n/a. for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	+/- 1 kV differential mode +/- 2 kV common mode	+/- 1 kV differential mode n/a. for common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % UT (>95 % dip in UT) for 0,5 cycle  40 % UT (60 % dip in UT) for 5 cycles  70 % UT (30 % dip in UT) for 25 cycles  <5 % UT (>95 % dip in UT)) for 5 sec	<5 % UT (>95 % dip in UT) for 0,5 cycle  40 % UT (60 % dip in UT) for 5 cycles  70 % UT (30 % dip in UT) for 25 cycles  <5 % UT (>95 % dip in UT)) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the [Equipment or System] requires continued operation during power mains interruptions, it is recommended that the [Equipment or System] be powered from an uninterruptible power supply or battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment

NOTE UT is the a.c. mains voltage prior to application of the test level.

Essential performance according to EN 60 601-2-46: Essential performance of the imagiQ2 table is the Trendelenburg function. The function can be activated by the use of the hand control and can manually be achieved as an emergency function in cases of power failure.

No permanent degradation or loss of function or operator settings which are not recoverable shall be observed at any immunity test level. No inappropriate movement shall occur at all immunity test levels.

At all immunity test levels the ME EQUIPMENT shall maintain essential performance within the specification limits.

At all immunity test levels the temporary degradation or loss of function or performance is acceptable.

Within 10 s or after operator intervention without requiring the use of a tool, the ME EQUIPMENT shall resume normal operation in the previous operating mode, without loss of any operator settings or stored data, and shall continue to perform its intended function.

Compliance criteria.

Under the test conditions specified in 36.202 in EN 60 601-1-2 (2007), the equipment shall be able to provide the essential performance and remain safe. The following degradations associated with essential performance and basic safety shall not be allowed:

- Component failure	Not allowed
- Changes in programmable parameters	Not allowed
- Reset to factory defaults	Not allowed
- False alarms	Not allowed
- Cessation or interruption of any intended operation, even if accompanied by an alarm	Allowed only during voltage interruption >95% 5s
- Initiation of any unintended operation, even if accompanied by an alarm	Not allowed
- Error of a displayed numerical value sufficiently large to affect diagnosis or treatment.	Not allowed

The equipment may exhibit degradation of performance that does not affect essential performance or safety.

## ■ SERVICE PROTOCOL imagiQ 2

Site/location:	Serial no:
Service performed by:	Date:

### Preparations

Clean the table before service. This service should be performed every 1 year or 2000 hours, whichever comes first, always document every service inspection.

If possible put the table on charge prior to the testing, if the batteries are discharged, the speed of the table can be slower than normal. For the Grounding continuity test use a digital/analogue multimeter or similar instrument.

Remove the lower column cover, front and emergency cover and the protective cover under the emergency cover.

### Control system

Hand Control		
1. Functions, Run all functions.	OK	NOK
2. Cable, Check that spiral cable and connector is undamaged.	OK	NOK
3. Extension cable, Check for damages and pinch marks on the extension cord, check connectors.	OK	NOK
Extra safety hand control		
4. Functions, Test run all functions.	OK	NOK
5. Cable, Check that spiral cable and connector is undamaged.	OK	NOK

### Motion control

Movement		
6. Column up, Run column from lowest position to highest position and time the motion. Function should be smooth.	OK	NOK
7. Column down, Run column from Highest position to lowest position and time the motion. Function should be smooth.	OK	NOK
8. Lateral tilt right, Run tabletop from zero position to maximum right inclination and time the motion. Function should be smooth.	OK	NOK
9. Lateral tilt left, Run tabletop from zero position to maximum left inclination and time the motion. Function should be smooth.	OK	NOK
10. Longitudinal tilt (Trendelenburg), Run tabletop from zero position to maximum head down and time the motion. Function should be smooth.	OK	NOK
11. Reversed longitudinal tilt (anti-Trendelenburg), Run tabletop from zero position to maximum head up and time the motion. Function should be smooth.	OK	NOK
12. Quick-trend (Trendelenburg), Run tabletop from zero position to maximum head down and time the motion. Function should be smooth.	OK	NOK



Zero position		
13. Lateral tilt, Run tabletop from maximum left inclination to maximum right inclination and back. Make sure that the table stops both times it passes zero position.	OK	NOK
14. Longitudinal tilt (Trendelenburg)Run tabletop from maximum head down to maximum head up and back. Make sure that the table stops both times it passes zero position.	OK	NOK
Panning (float)		
15. Pan functions, test run both axis. check that motion works effortlessly and smooth (manoeuvre with on hand only).	OK	NOK
16. Mounting, Check the pan handle attachment to rail. It should fit firmly to rail	OK	NOK
17. Cable, Check that spiral cable and connector is undamaged.	OK	NOK

## Hydraulic

General		
18. Oil, check that oil level is correct. The table shall be parked, table top in 0-position and in top position, the sound from the motor shall be smooth there shall be there should be no "gurgeling" sound, oil in middle of the tank.	OK	NOK
19. Hoses, Check that hose array is correct positioned at column and check for wear and leakage.	OK	NOK
Leakage		
20. Cylinders, Check that cylinders don't have any external oil leakage (a small quantity of oil on the piston shaft is normal).	OK	NOK
21. Connections, Check that connections don't have any external oil leakage.	OK	NOK

## Electronic

22. Cables, cable array is correct positioned at column and check for wear.	OK	NOK
23. Control unit, check that all connectors are properly attached	OK	NOK
24. Ground connections, Check that all ground points and potential equalisation points are connected and tightened.	OK	NOK
25. Grounding continuity, Measure grounding continuity between the grounding pin on the AC-inlet and potential equalisation connectors, and the front base cover	OK	NOK

Mechanics		
26. Wheels, Check that wheels move freely and aren't damaged.	OK	NOK
27. Guide wheel (option), check that the guide wheel moves to it's end positions and isn't damaged	OK	NOK
28. Column cover, Check that column cover moves freely and doesn't have any damages.	OK	NOK

## Mechanics (continues)

29. Tabletop, Check that the carbon fibre laminates in the tabletop and head section doesn't have any damages that reach the carbon fibre layer.	OK	NOK
30. Accessory rails, check for damages and if needed tighten the mounting screws.	OK	NOK
31. Detachable side rails (option) Check that the rails can be attached and removed and they fit firmly.	Not applicable OK	NOK
32. Detachable Fistula arm board (option) Check that the arm board can be attached and removed and it fit firmly.	Not applicable OK	NOK
33. Head section (option), Check that head section can be attached, removed and adjusted.	Not applicable OK	NOK

## Emergency functions

General		
34. Emergency trend function; Open handle to check function, table top should be able to be moved down, close valve after test.	OK	NOK
35. Main switch; Turn of switch, table should be turned off.	OK	NOK

## Lubrication

General		
36. Pan, clean the guide rails for the pan-operation and relubricate them with AFA-grease.	OK	NOK
37. Column, clean the guide rails and relubricate them with AFA-grease.	OK	NOK

## Battery charging

General		
38. Power cord, Check for damages and pinch marks on the power cord and check connectors.	OK	NOK
39. Charging, Check hand control for a constant blue light when charging commences.	OK	NOK
40. Battery power, disconnect and measure the voltage it should be between 23-27V.	OK	NOK
ISO-EN62353 test		
41. ISO-EN62353 test performed	OK	NOK

■ Testprotocol according to ISO -EN 62353

The "REFERENCE VALUE" from the first test before putting into service together with the measuring method shall be documented as a reference for future measurements. Before testing, the ME EQUIPMENT shall be disconnected from the SUPPLY MAINS. All DETACHABLE POWER SUPPLY CORDS shall be inspected. It is recommended to follow the sequence of testing described by figure Figure B.1 in the standard. Measurement of APPLIED PART LEAKAGE CURRENT is not required, the device is classified as TYPE B APPLIED PART. Nominal test measures are described in the standard.

Testing organisation:	Test before putting into service (reference value) <input type="checkbox"/>	
	Recurrent test <input type="checkbox"/>	
	Test after repair <input type="checkbox"/>	
Name of testing person:		
Model: <span style="margin-left: 100px;">imagiQ2</span>	Serial number:	
Applied part type: <span style="margin-left: 100px;">B</span>	Mains connection: <span style="margin-left: 50px;">DPS</span>	
Measuring method: <small>(Direct method according to 5.3.3.2.3 or 5.3.3.3.3 in the standard is recommended)</small>		
Accessories:		
Test: Measurement equipment:	Complies: Yes <span style="margin-left: 100px;">No</span>	
Visual inspection:		
Measurements: <span style="float: right;">measured value</span>		
Protective earth resistance <span style="float: right;">_____</span>		
Equipment leakage current (according to Figure ___ ) <span style="float: right;">_____ mA</span>		
Patient leakage current (according to Figure ___ ) <span style="float: right;">_____ mA</span>		
Insulation resistance (according to Figure ___ ) <span style="float: right;">_____ Mohm</span>		
Functional test (parameters tested):		
Overall assessment use ISO -EN 62353 §4.3 as guideline for assessment:		
Where there any safety or functional deficiencies detected during the test!		
Where there any risks directed, deficiencies detected may be corrected on short term!		
If any deviation were detected the equipment shall be taken out of operation until deficiencies are corrected!		
Equipment does not comply - Modification / Exchange of components / Taking out of service - is recommended!		

Next recurrent test necessary in 1 year or 2000 hours service, whichever comes first.

It is recommended that the device is marked tested OK/ not Ok after test and if possible, when the next test shall be performed.

Date and signature of test person:

---

## Specification

### Dimensions

#### Outside dimensions

- Length 234 cm/92 in
- Width 77,2cm /30,3 in
- Height 71 cm-109 cm / 28"-43"

#### Table top

- Length 230 cm /90,5 in (256,8 cm / 101 in including head section)
- Width 55 cm / 21,6 in (excluding accessory rails)
- Height 71 -109 cm (centre of the table top)
- Panning lengthways 70 cm
- Panning sideways 24 cm
- Longitudinal tilt  $\pm 25^\circ$   
( $\pm 20^\circ$  on 300 kg/  
661 Lbs version)
- Lateral tilt  $\pm 15^\circ$
- Head section adjustment  $\pm 35^\circ$
- Maximum patient weight 225 kg / 300 kg  
496 Lbs / 661 Lbs
- Weight of table approx 265 kg

#### ■ Electrical standards applied

IEC 60601-1:2005, third edition, Medical electrical equipment – Part 1: General Requirements for basic safety and essential performance.

IEC 60601-2-46:2010, second edition, Medical electrical equipment - Part 2-46: Particular requirements for the basic safety and essential performance of operating tables.

IEC 60601-1-2:2007 third edition, Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic compatibility - Requirements and tests.

UL 60601-1 Issued: 2003/04/17 Ed: 1 Rev: 2006/04/26 Standard for Safety Medical Electrical Equipment, Part 1: General Requirements for Safety

CAN/CSA C22.2 No. 601.1-M90 Issue:1990/01/01 Medical Electrical Equipment - Part 1:

General Requirements for Safety General Instruction No 1; Supplement 1; 1994; Amendment 2 -February 1998; Update No. 2 - General Instruction No.2: 2003/11/01 - (R2005)

#### ■ Applied part

The mattress is considered to be the applied part

## Technical specification

### Electrical system

Mains voltage	100 – 230 V AC, 50 / 60 Hz
Rated power	Max 510 VA
Fuse rating	T6,3 H, 250V SB
Input current	Max 5.1A
Output power	400W
Enclosure	IP 24
Classification	⤴ type B
Electric safety	Class 1
Internal fuses	1pcs 30A 250 VAC Slow 1pcs 30A 250 VAC Slow 1pcs 10A 440 VAC Slow 1pcs 2A 440 VAC Slow

### Leakage current

The imagiQ2™ complies with the leakage current requirements according to IEC 60601-2-46, when connected to mains

Duty cycle	100%
Battery type	24 V DC
Battery recycling	Follow the environmental authority instructions carefully.

### Hydraulic system

Max system pressure	190 bar
Oil volume approx.	1,5L
Max. flow of pump	0.9 L/min
Oil grade	Castrol Hyspin/AWH-M32 or equivalent









| Stille imagiQ2 |

## Stille - Service Centers

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