Instruction Manual

Autopsy Tables for Large Animals

Type: GST-E XXXX

KUGEL medical GmbH & Co. KG
Hermann-Köhl-Str. 2A
93049 Regensburg / GERMANY

Phone +49 941/20 86 48-0
Fax +49 941/20 86 48-29
www.KUGEL-medical.de

zertifiziert nach ISO 9001

KUGEL medical

Instruction Manual

Content

KUGEL medical GmbH & Co. KG
Hermann-Köhl-Str. 2A
93049 Regensburg / GERMANY

Phone +49 941/20 86 48-0
Fax +49 941/20 86 48-29
www.KUGEL-medical.de

zertifiziert nach ISO 9001

KUGEL medical

KUGEL medical GmbH & Co. KG
Hermann-Köhl-Str. 2A
93049 Regensburg / GERMANY

Phone +49 941/20 86 48-0
Fax +49 941/20 86 48-29
www.KUGEL-medical.de

Instruction Manual

1 General Information

1.1 Symbols in the Instruction Manual

Tip! General, helpful tip

Warning! Contains a warning that a general hazard exists. Risk of injury If warning ignored.

Warning! Contains a warning that a general hazard exists. Risk of injury if Warning ignored.

Important Note! Important Information

Before taking into operation, please carefully read this operating instruction!
Observe the safety instructions!
File documentation!

The type- and test number (name plate) fixed to the lifting table are required for exact identification of the lifting table. Therefore, we request you to state test and type number as well as year of manufacture in case of questions or spare parts orders.

2 Intended Use

The hydraulic lifting table is a power operated lifting platform for lifting and lowering of loads suitable for integration in a complete machine or lifting device that is not fully functional until installed in a building or structure.

The manufacturer of the complete machine is responsible for carrying out a hazard assessment and determining conformity with EC-directives.

The lifting table is not suited for:

- trespass to the lifting platform
- transportation of people on the platform
- use as working platform

Not suitable in hazardous location.
Not suitable for use in corrosive atmosphere
Alterations to the hydraulic lifting table or fitting of accessories are only allowed with our written approval.
Pay attention to the technical data and functional description!

Without an extended hazard analysis / type approval, standard lifting tables in compliance with EN 1570-1 must not be used as:

- Permanently installed lifting tables that are equipped with a cabin and that approach predefined levels of a building;
- Permanently installed lifting tables with a vertical lift of over 2.0 m that are not equipped with a cabin and that approach predefined levels of a building;
- Power-driven lifting platforms for handicapped people;
- Lifting tables as ground devices for aviation;
- Lifting tables to be used on ships;
- Mobile aerial work platforms;
- Vehicle lifting platforms (for vehicle maintenance);
- Mobile lifting tables for fire fighting;
- Mobile lifting tables to be used as forklifts, forklift trucks or picking elevation trucks;
- Mobile lifting trucks with a speed of more than 1.6m/s;
- Shelf access equipment;
- Lowering and lifting devices on stages.

The manufacturer of the complete system is responsible for carrying out a hazard assessment or type examination test in compliance with Appendix IV of the Machinery Directive if the lifting table is used (installed) where there is a fall height of over 3 m.

The lifting table is not suitable for use in the following cases:

- Operation under difficult conditions (e.g. extreme climate, operation in freezer areas, strong magnetic fields);
- Operation to which special regulations apply (e.g. explosive atmospheres, mines);
- Handling loads whose properties can lead to hazardous situations (e.g. molten metals, acids, radioactive materials, particularly brittle loads);
- Hazards arising during manufacture, transport and mounting;
- Installations to be attached to the load platform or that replace this;
- Installation into systems or machines, controls with more than 2 control stations etc.;
- Wireless controls;

3 Accident Prevention Rules

Observe any rules that are valid for the respective country. 1)
Presently valid in Germany:

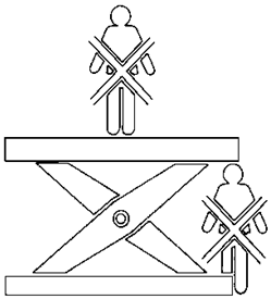
- EC directive 2006/42/EC
- BGR 500 chapter 2.10 Lifting platform
- EN 1570-1 Lifting table
- EN 349 Safety of machines, Minimum distances
- DIN EN ISO 13857 Safety distances
- EN 60204 T1 Electrical equipment of machines

1) in the respective version

4 Safety Instructions

Operation, installation and maintenance work should only be executed by competent, qualified persons (definition of experts acc. to IEC 364)

Qualified persons for reasons of their training, experience and instruction are persons who do their necessary activities without danger and who can avoid this danger due to their knowledge of directives, regulations for the prevention of accidents and standards. These persons are responsible for the security of the installation.



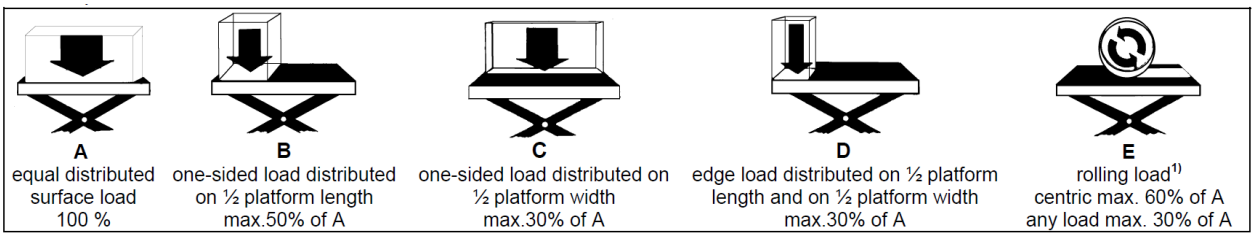
- Safety shoes must be worn at all times in order to prevent injury!
- Trespassing to the platform and staying under raised lifting table is prohibited
- Transportation of people is strictly forbidden for lifting tables that are not suited for this purpose.
- Staying in the motion area during operation is not allowed.
- Check safety functions before and during operation at regular intervals (contact rail, limit switch, safety valve etc.).
- Safety devices must not be made ineffective or used improperly.
- In case of occurring faults immediately, stop operation.
- The lifting platform must not be loaded over the permissible capacity/load distribution.
- The load must be distributed equally. With other distribution of load, reduce the load. (see page 18)
- Loads have to be positioned and secured in such a way that unintended change of position is prevented.
- The load must not overtop the platform.
- Observe the lifting table and the load during the entire lifting process.
- It is not allowed to climb up the load-carrying device or the load.
- The control place has to be situated and designed in such a way that the operator can operate the control devices unhindered and is not endangered by the load and movement of the lifting table and is not exposed to the danger of falling down.
- Lifting tables may only be operated and controlled from control places provided by regulation.
- For the responsible operation of lifting platforms only such persons may be occupied who are at least 18 years old, are instructed in the operation of lifting platforms and have proved their ability to the operator. They have to be authorised with the operation of the lifting platform.
- If more people work together on the platform, one supervisor has to be appointed.
- The operator has to take care that no movement of the platform can endanger himself or other people.
- When leaving the operating place, the lifting table has to be secured against unauthorised operation.
- For all works on the extended lifting table, the load has to be removed from the

platform and the supporting devices have to be put in. Switch off the main switch and lock.

- Personnel who are competent and qualified and are familiar with the operating instruction and regulation BGR 500 chapter 2.10 respective EN 1570-1 may only execute maintenance and repair.
- The lifting table must be checked in compliance with EN 1570-1 Appendix C after more extensive maintenance/repair work has been carried out.
- After repairs, check perfect function of all parts.
- The tracks of the rollers always have to be kept clean and free of foreign particles.

5 Load Distribution

Do not exceed the carrying capacity as per data sheet (nameplate).
The lifting table is designed for equally distributed load. With other distribution of load, please refer to the below
stated pictures.



1) Rolling load without fixing devices must be secured appropriately by the operator (for example by wedges, lashing straps ...)

Before taking into operation, a competent person must check installation and electric connection.

After erection and concrete pouring a trial run with and without load has to be effected after the concrete has set.

The results have to be noted in the test book.

6 Electric Installations

Trained experts may only execute the electric connection or repair on electric parts.

Observe the safety regulations and standards of electrical engineering. Works on the electric installation may only be executed with clear power supply.

7 Daily Inspections

- functional switch up/down
- safety contact rail
- lift limit switch
- emergency stop main switch
- pressure relief valve
- control
- Tightness of the hydraulic system. (during a period of 10 minutes no lowering must be noted!).
- load bearing parts of the structure.
- the load carrying medium

The lifting table should be given a thorough examination by a competent person at least once a year. The results have to be noted in the test book. Always ensure the maintenance intervals are adhered to. Only use original accessories and spare parts; otherwise, safe function is not guaranteed.

8 Functional Characteristics

The hydraulic lifting table is a lifting platform with hydraulic drive. One or two hydraulic cylinders via a scissors system lift the platform. Actuation is effected by means of a hydraulic pump with three-phase AC motor. Lowering after having opened the 2/2-way poppet valve. A mounted-in micro-flow control valve regulates the lowering speed. Hose break valves are mounted in the hydraulic cylinders. The hydraulic aggregate is equipped with a safety valve. The lifting table is equipped with an electric contactor control and thermal motor protection switch. Supporting devices for maintenance works are fixed to the scissors in hinged design. Under the platform, a safety contact rail is mounted. When operating this contact rail, the lowering movement is interrupted.

9 Technical Details

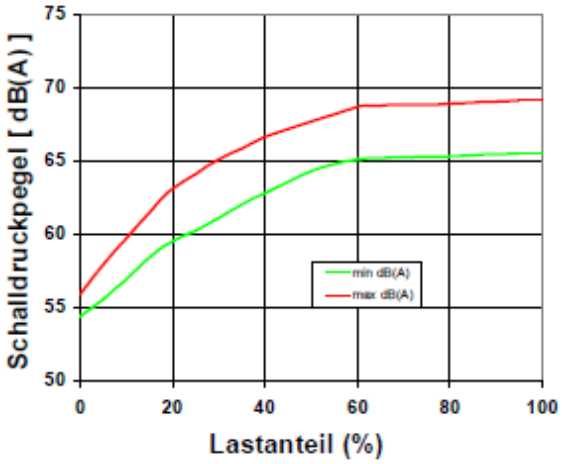
Type (Base No.)	Lifting capacity with equal distribution of load	Lift	medium lifting / lowering speed	Lifting/lowering time	Type of operation (max. load cycles/h)	Operating pressure	Oil quantity	Reaction pressure of the pressure control valve	Driving power	Three-phase current	Control voltage	Type of protection	max. sound level	Suitable for ambient temperature
	kg	mm	mm/s	sec		bar	l	bar	kW				dB(A)	
034560099	500	590	59	10	20 (one shift operation)	165	1,0	170	0,55	400 V - 50 Hz	24 V AC	IP 5 5	≤ 70	- 10° C - + 40° C
034560100	500	800	61	13		150	1,5	155	0,55					
034560101	500	800	61	13		150	1,5	155	0,55					
034560102	500	1000	50	20		150	1,5	155	0,55					
034560103	500	1000	50	20		150	1,5	155	0,55					
034560104	500	1200	55	22		160	2,5	165	0,75					
034560105	500	1200	55	22		160	2,5	165	0,75					
034560106	1000	800	31	26		155	1,5	160	0,55					
034560107	1000	800	31	26		155	1,5	160	0,55					
034560108	1000	1000	25	40		150	1,5	155	0,55					
034560109	1000	1000	25	40		150	1,5	155	0,55					
034560110	1000	1200	27	44		160	2,5	165	0,75					
034560111	1000	1200	27	44		150	2,5	155	0,75					
034560112	1500	800	25	32		150	1,5	155	0,75					
034560113	1500	800	25	32		150	1,5	155	0,75					
034560114	1500	950	26	36		150	2,5	155	0,75					
034560115	1500	950	26	36		150	2,5	155	0,75					
034560116	1500	1200	50	24		150	5,0	155	1,1					
034560117	1500	1200	50	24		150	5,0	155	1,1					
034560118	2000	800	33	24		130	3,5	135	1,1					
034560119	2000	800	33	24		130	3,5	135	1,1					
034560120	2000	950	35	27		130	5,0	135	1,1					
034560121	2000	950	35	27		130	5,0	135	1,1					
034560122	2000	1200	33	37		150	5,0	155	1,1					
034560123	2000	1200	33	37		150	5,0	155	1,1					

KUGEL medical GmbH & Co. KG
Hermann-Köhl-Str. 2A
93049 Regensburg / GERMANY

Phone +49 941/20 86 48-0
Fax +49 941/20 86 48-29
www.KUGEL-medical.de

9.1 Noise Emission – Sound Level

The max. expected sound level [dB(A)] depends upon the driving power as per diagram. The lifting table must be mounted in such a way that its noise emission is not amplified.



In special design, the lifting table may be equipped with:

- railing (for transportation of operating personnel)
- underflow protection device
- overload sheet metal etc.

10 Commissioning

see DIN EN ISO 13857 and EN 349

The applicable regulations for buildings and safe operation must be observed during mounting. Before mounting the lifting table, the necessary requirements on the operating site have to be fulfilled. Prepare the mounting pits according to the enclosed mounting pit plan 6.8.9 sheet 28 and 29.

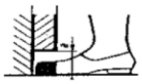
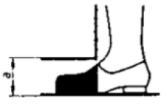
Reinforcement, concrete strength, and quality are to be determined by a construction expert.

Pay attention to exact dimensions and angles. Remove projecting ends of concrete or structural steel. For outdoor assembly, a drainage with oil separator (acc. to local regulation) as per mounting pit plan has to be provided. In case of installation without mounting pit, safety measures that prevent injuries by squeeze or scissors areas between basic frame and scissors are required (i.e. sheet steel covers).

10.1 Safety distances

The lifting table has to be located in such a way that squeeze- and scissors areas between mobile parts and between mobile and fixed parts are avoided by keeping sufficient safety distance.

The safety distances are to be kept as follows:

					
for fingers a = 25 mm	for toe a = 50 mm	for hands a = 100 mm	for arms and closed hands a = 120 mm	for feet a = 120 mm	for the body a = 500 mm

To avoid endangering the operator or any other person, other measures can be taken alternatively.

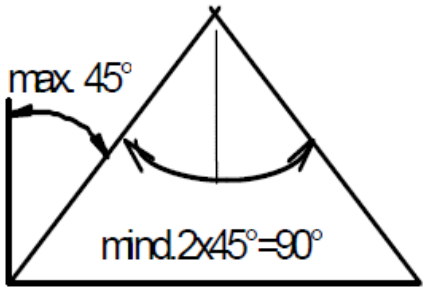
We recommend the following, although some of them are not sufficient as only measure:

- covers; protection devices; keep-off rails
- touchless effective sensors
- switching-off devices effective by touching
- several control devices which require simultaneous operation.

The safety distances are not necessary for those parts where the machine is entirely enclosed or "secured by its mounting position". If the machine is only partly enclosed, the safety distances or similar alternatives are required for these parts of the machine.

10.2 Installation

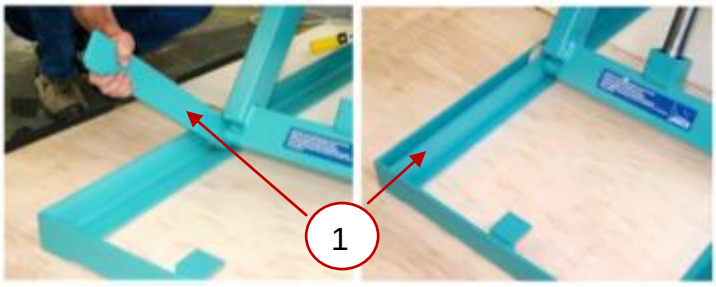
A crane or forklift truck may transport the hydraulic lifting table. For crane transport, 4 suspension shackles are provided by which the lifting table may be fixed to the crane hook by means of a suspension gear (max. angle of inclination 45°, expansion angle min. 2x45° (90°)). For transport with forklift truck, pay attention that the forks are only positioned to the longitudinal beams which serve as track rails. Electric leads and hydraulic hoses must not be damaged. If the existing forks are too short, respective carrying rails have to be used.



Before taking into operation, definitely unscrew the crane shackles!

The lifting table must be mounted on even surface (levelled). The mounting pit respective mounting place has to be clean. After transporting the lifting table to the mounting place and preliminary depositing into the pit, an electrician may extend it after a temporary electric connection. For this, operating elements and connected leads are pre-assembled.

If the lifting table does not lift within 3 seconds despite of motor sound, the motor phases were incorrectly connected. Re-connect the phases correctly. Lift the table to upper limit position and set on the safety supports. For all further transaction, the mounted-on assembly supports (1) have to be put in.

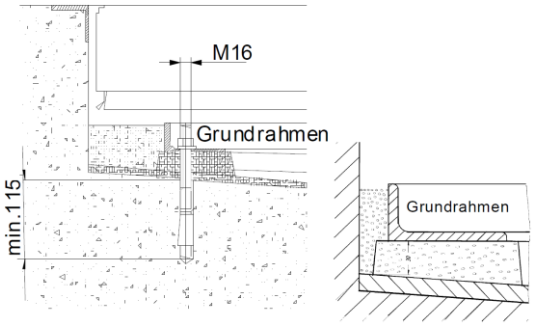


Then, the connecting leads may be laid out of the pit in the empty tube. The connecting diagram for the lifting table can be found in the control- or wiring box, a copy is enclosed in this operating instruction. Care must be taken during mounting that the noise level is not amplified. Additional precautions against falling are required in cases where the fall height is more than 3 m.

The base frame has to be exactly levelled by placing of blocks.

Then the basic frame has to be fixed or wedged and build with concrete (see picture).

The base frame is fixed with four pins ø16 into the foundation. Rec. pins e.g. „Hilti“Safety stud anchor M16/100. Borehole ø16 in concrete, bore depth min. 115 mm



observe instructions of pin manufacturer and local actualities.

Pay attention that the pins are not located in the track range or in the motion travel of the scissors

Grout the longitudinal beams of the basic frame with concrete B 25 as per the enclosed pit-mounting plan.

In case the lifting table is used for unequal load (the maximum permissible load is reduced see page 18), we recommend mounting it in such a way that the heavier load is positioned to the fixed side of the scissors.

For mounting on ramps, the fix-point of the scissors should point to the ramp.

KUGEL medical GmbH & Co. KG
Hermann-Köhl-Str. 2A
93049 Regensburg / GERMANY

Phone +49 941/20 86 48-0
Fax +49 941/20 86 48-29
www.KUGEL-medical.de

After mounting and grouting with concrete, make a test run in unloaded and loaded state with bounded concrete foundation. For all works on the extended lifting table, the load has to be removed from the platform and the supports have to be put in.

After a short operation time (at least after 5 operating hours), check all hydraulic screwing as well as screwed and bolted connections for firm seat.

11 Location of the Control Place

An information sign “Operation of the lifting table only by authorised persons” must be attached somewhere that is clearly visible.

11.1 Operating Elements

The operating switch must be firmly mounted. The push-button for lifting has to be located above the push-button for lowering. With foot buttons (special design), the button for lifting has to be located on the right side of the button for lowering. The control place has to be situated and designed in such a way that the operator can operate the control devices unhindered and is not endangered by the load and movement of the lifting table and is not exposed to the danger of falling down. Control places are to be situated and designed in such a way that the operator can observe the load carrying device, the load and the room under the load carrying device during all movements.

In direct proximity to the control place, a lockable main switch with emergency-stop function has to be provided. (integrated in standard electric control “Q1”)

12 Electric Installation

Works on the electric installation may only be effected:

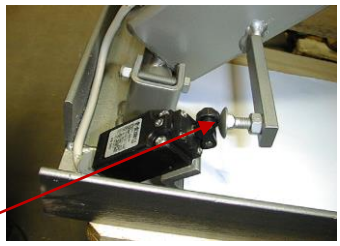
- with cleared power supply
- by trained experts

Observe the regulations and standards of electric engineering. In Germany, VDE regulations do apply. As standard the electric control is integrated into the lifting table, respective is delivered as control box for external attachment.

For designs without control, the electric control is provided on site in responsibility of the manufacturer of the entire installation. A respective clamping plan will be available. In this case, the wiring diagram in this manual does not apply.

12.1 Limit Switch (if existing)

The lifting table is equipped with a mechanical limit switch. After taking into operation, adjust the limit switch with the adjusting screw to exact lifting height.



Nominal current consumption with three-phase, 400 V, 50 Hz and recommended excess current devices (fuses): The main current fuses have to be provided on site.

Motor output (kW)	I_N	I_A / I_N	Short circuit protection (inert) [A]
0,55	1,45	4,9	4
0,75	1,9	5,7	4
1,1	2,7	4,0	6
recommended feed cable. Connecting cable between control and operating elements. Depending on length, a higher cross section may be used.			mind. 4 x 1,5² Cu mind. 5 x 1,5² Cu fixed leads, e.g.. NYM-J

Attention! When using longer cables one must consider an additional loss of current. Consult your electrical engineer.

The connecting cables are to be laid in suitable cable channels or protection tubes. Sharp edges, wire edges, rough surfaces or screw threads which the cable wires may come in to contact with, must be removed from around the cable channels.

If a control is provided on site, the circuit diagram of the manufacturer has to be presented. Observe the valid regulations.

The connection of the lifting table always has to be effected according to the circuit diagram included into delivery or to that provided on site. (circuit diagram see following pages)

Connection, protective measures, and safety precautions have to be effected according to local, national, and international regulations.

Before taking into operation, check:

- correct polarity, turning direction, placement of order devices (with wrong polarity the motor will start, but no lifting movement will be effected). Clamp correctly. Longer operation with a motor with wrong polarity may damage the hydraulic aggregate.
- protective conductor system

- insulation resistance
- overload protection adjustment (safety valve)
- function
- effect a test run

Position the lifting table and grout the foundation with concrete. When the concrete foundation is set, make test runs with and without load.

13 Operation

An information sign “Operation of the lifting table only by authorised persons” must be attached permanently at the control stations at a place that is clearly visible. The required direction is to be initiated by pressing the respective push-button.

In case of occurring faults, immediately stop operation and eliminate the fault.

In case of danger, operate the EMERGENCY-STOP switch.

During operation, the operator always has to observe the load, the room below and above the load and the load-carrying device.
For safety instructions refer to paragraph 4.
When overload protection is effective, reduce the load.
There is a risk of overloading if the lifting table is loaded while extended. The user must respond appropriately, e.g. weighing, to prevent overloading. When leaving the control place, secure the lifting table against unauthorized operation (insert the padlock into main switch and lock) If the control place is left when the lifting table is extended, the maintenance supports have to be put in.

14 Inspection and Maintenance Instructions

Before carrying out inspection and maintenance works under lifted parts of lifting tables, they have to be secured against unintended movement by putting in the mounting supports in unloaded state.

Works on the electric installation may only be effected with cleared current supply.

Inspection Intervals	Maintenance- Inspection Works
daily / per shift	Check the safety contact rail
	Check emergency stop button
	Check limit switch
	Check perfect function of the control
	Check functional switches UP/DOWN
	Check the hydraulic system for leakage (visual check)
	Check tracks of travelling rollers. Track surfaces must be free from dirt or foreign substances.
	Track rollers are provided with permanent grease lubrication. Re-lubrication is not required.
monthly	Check tightness in the hydraulic system (during a period of 10 minutes, no lowering may be noted)
	Re-grease the cylinder joint bearing in unloaded state.
	Provide the fixed scissors bearing with oil.
	Check level of hydraulic fluid.
	Check hydraulic hoses
quarterly	Check all screwed connections for firm seat.
	Check pin- and safety ring connections.
annually	Check whether type- and nameplates are existing and legible. I necessary replace them
	Check working pressure and adjustment of overload valve[1)]
	Arrange for an examination by a competent person [2)]
every 2000 operating hours or every 2 years	Change hydraulic oil. (pump off used hydraulic fluid, refill new one) Ventilate the hydraulic system.
if required, but at least every 6 years	Replace hydraulic pressure hoses.
after every more extensive repair	Have the manufacturer carry out an expert test of the lifting table

[1)] Measuring connection for manometer is located on the pump aggregate. A measuring device with measuring connection SMA 3 may be used. If not used, close cap.

[2)] only by Pfaff-silberblau service department.

The working life of the hydraulic lifting table is limited; wearing parts have to be replaced in good time.

15 Hydraulic

15.1 Hydraulic Lines, Hydraulic Hoses

Minimum specifications:
High-pressure hose 2 ST DIN 20022 / EN 853 Part 2 alternatively 2 SN DIN 20022 / EN 853 Part 4

Nominal diameter DN 10; burst pressure 1320 bar

Operating pressure	130 bar	150 bar	155 bar	160 bar	165 bar

15.2 Safety Instructions

[3)] The hydraulic hoses must be checked regularly and punctually for damage, they must be replaced at the latest 6 years after manufacture or 2 years in storage after manufacture + 4 years of operating time.

If there is a hose rupture despite all precautionary measures, the part of the lifting table affected by the burst hose is caught and retained by the line rupture protection valves. Operation must be stopped immediately if a hose bursts. The lifting table may only be put into operation again when the hydraulic hose concerned has been replaced.

Requirements and instructions for replacing the hydraulic hoses:

- Discharge the lifting table (with a crane or something similar)
- Engage the maintenance supports
- Replace hose (only use original high-pressure hose from the lifting table manufacturer) mount the hose in accordance with the mounting instructions.
- Remove maintenance supports (turn down)
- Carry out a test run

15.3 Ventilating Process

The venting of the hydraulic system is a given for the test drive. This is done by multiple strokes (unloaded) of the actuator to end position. The air from the cylinder passes through a drainage pipe in the tank and can escape through the bleed screw again.

15.4 Recommended Hydraulic Oil and Lubricant

For perfect function of the lifting table we recommend to use a hydraulic oil respectively a lubricant as per the below table. These special oils fulfil best the technical requirements with regard to viscosity (walk penetration) and pour point.

The lubricants are based on ambient temperatures of - 10° up to + 40°C.

In case of extreme temperatures, please contact us or the "Technical Services" of the below-listed mineral oil companies.

Viscosity class Quantity	rec. working substance for the hydraulic system Hydraulic Oil HLP-DIN 51524 T 2 ISO VG 32 see technical data	rec. lubricant for greasing points: multipurpose grease **DIN 51825 T1 - K2K**
Optimol	Optimol Hydo 5035	Optimol Olit 2 EP
Esso	Esso Nuto H 32	Esso Beacon 2
BP	BP Energol HLP 32	BP Energrease LS 2
Shell	Shell Tellus Oil 32	Shell Alvania grease R 2
ARAL	Aral Vitam GF 32	Aral Aralub HL 2
Mobil	Mobil D.T.E. 24	Mobil Mobilux 2
DEA	Astron HLP 32	Glissando FT 2
UK-Mineralölwerke Eschweiler	UKABIOL HY 32 *)	

Every other reputed brand of lubricant corresponding to the applicable specification of the table may be used.

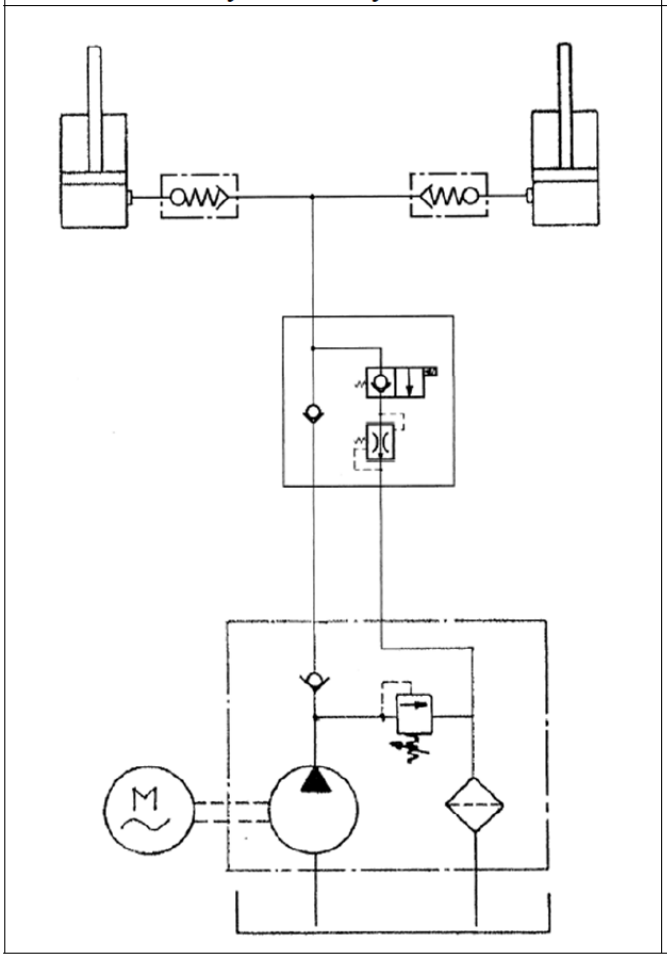
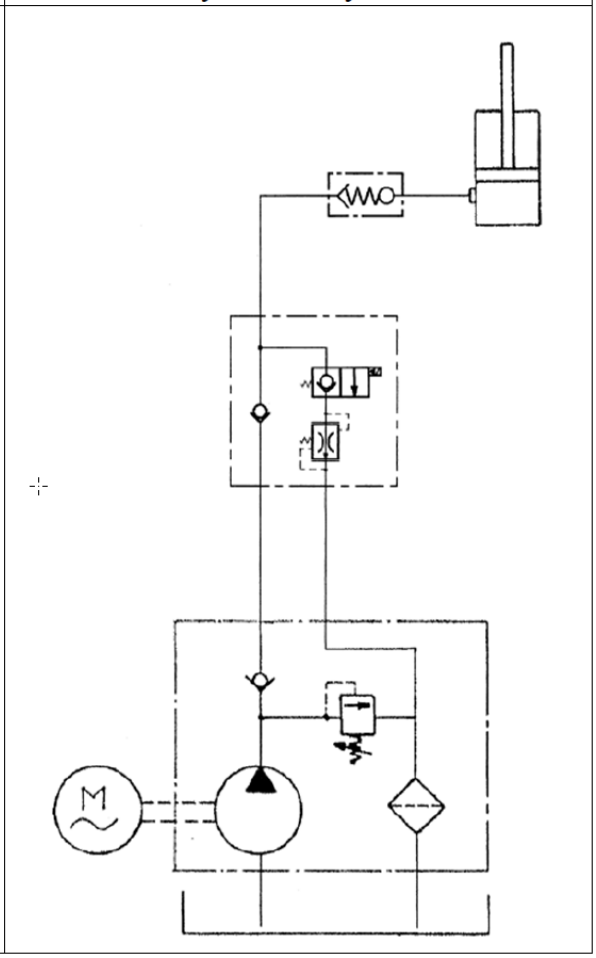
*) decomposable by 98,8% within 21 days. (if required, ask for manufacturer's documents)

Hydraulic oils and lubricants must not be allowed to enter the groundwater. Any leakages must be removed in good time. The user must take measures to prevent damage to the environment. Waste lubricant has to be disposed according to legal regulations!

KUGEL medical GmbH & Co. KG
Hermann-Köhl-Str. 2A
93049 Regensburg / GERMANY

Phone +49 941/20 86 48-0
Fax +49 941/20 86 48-29
www.KUGEL-medical.de

15.5 Hydraulic Diagram

2 hydraulic cylinders	1 hydraulic cylinder
	

KUGEL medical GmbH & Co. KG
Hermann-Köhl-Str. 2A
93049 Regensburg / GERMANY

Phone +49 941/20 86 48-0
Fax +49 941/20 86 48-29
www.KUGEL-medical.de

16 Operating Failures and their Causes

Failure	Cause	Elimination
Loss of oil in the cylinder	Normal wear of the sealing elements.	At design 0,5 t and 1t the cylinder is welded. We recommend to replace the entire hydraulic cylinder
		At design **1,5 t and 2t** replace the sealing elements. Extend the lifting table in unloaded state. Put in the mounting supports. Decompress the hydraulic system by lowering. Let the oil flow out of the cylinder. Remove hydraulic screwing. Disassemble the cylinder by unscrewing the guiding nut. Remove the spring ring, draw the piston rod upwards out of the guiding nut and put in new sealing. Mounting has to be effected in reverse order.
The table lifts jerkily.	The bearings got stuck.	Grease bearings or provide with oil.
	Foreign substances in the running paths of the track rollers.	Remove dirt or foreign substances. **Never grease the track rollers of the running paths.**
The table does not lift.	The lifting table is overloaded, the pressure control valve is effective	Reduce load.
	The electric motor does not start.	Check current supply (voltage), fuses, contactor.
	Magnetic valve does not close anymore or valve seat is leaky due to soiling.	Make the valve lifter running or remove the magnetic valve. Clean the valve and rinse thoroughly. For that, special cleanness has to be observed. If required, remove valve adapter.
Lifting speed is reduced	The pump is defect.	Remove the pump and check it. When establishing larger defects, send the pump in for repair.
	Motor does only run on two phases or has under voltage.	Check motor connection, control, and operating voltage.
Platform does not lift to the complete lifting height	Too low oil filling.	Re-fill oil according to oil recommendation (with hair sieve).
	The table is driving against a mechanical resistance	Check free movement of the platform, the scissors, and the guiding rollers and remove probably existing impediments.
The table does not lower, line rupture protection valve is actuated	The magnet on the drain valve is defect	Replace the magnetic coil.
	Leakage in the hydraulic system	▪ discharge the lifting table ▪ put maintenance supports in ▪ eliminate the damage ▪ ventilate the Hydraulic system ▪ release valve lock with “LIFTING“
	Burst hydraulic hose	
The table does not stop exactly on the positioned level.	Leakage in the hydraulic system	Tighten tube screwing. Check cylinder sealing.

Failure	Cause	Elimination
The table does not stop exactly on the positioned level.	Oil is soiled and therefore valve seat is not completely tight.	▪ discharge the lifting table ▪ put maintenance supports in ▪ extend the platform in unloaded state ▪ remove the valve, clean. ▪ effect an oil change, if necessary rinse it ▪ re-mount and make a test run.
	Return valve is leaky. Pump or electric motor is slowly turning backwards.	Clean respective replace the return valve.

17 Disposal

After having placed out of service, the parts of the lifting table have to be recycled or disposed acc. to legal regulations!

18 General Maintenance Tips for Stainless Steel Surfaces

The best thing about stainless steel is that it barely requires maintenance and soiling can be removed easily.

18.1 Initial Cleaning / Cleaning / Preventive Measures

After installing the stainless steel devices and/or furniture, an initial cleaning is to be performed to remove any soiling caused by storage, transport or installation works.

Protective films, paper packaging or residues of adhesives are to be removed completely after having installed the devices or furniture otherwise they might lead to corrosion. For cleaning you may only use suitable cleaning agents (see below). Normally, the corresponding cleaning agent is being distributed evenly on the surface with a microfiber cloth. Tough soiling is to be treated with a soft synthetic fleece, e.g.

Then remove cleaning agent stains with clear water and dry the surfaces with soft cloths.

Poorly soluble residues or small scratches can be removed with a suitable non-woven abrasive.

18.2 Cleaning Agents / Cleaning Instruments

Cleaning agents and instruments are t be used in accordance with the instructions of the respective producer.

18.2.1 Stainless Steel Polish / Stainless Steel Cleaner

Stainless steel polish – special cleaning product and protective agent for stainless steel. 400ml spray can.
Article No. 060.010.001

Shake spray can before use. Spray from approx. 25 cm distance and let it sink in for a few minutes. Then remove with a clean, dry cloth. You may sterilize and disinfect the surface if necessary afterwards.

18.2.2 Suitable Cleaning Agents

Basically, alkaline cleaning agents are to be used on stainless steel parts only.

Never use cleaning agents that contain hydrochloric acids or bleach. They might lead to discolorations.

18.2.3 Descaling Agents

Only use off-the shelf descaling agents for stainless steel.

18.2.4 Brushes / Non-Woven abrasives

Brushes made of natural or plastic bristles

Article	Article No.	Grain Size	Dimension L/W
Nylon non-woven abrasive (fine grain)	060.010.002	P 1000	200 x 115mm
Nylon non-woven abrasive (coarse grain)	060.010.003	P 280	200 x 115mm

Cleaning instructions for non-woven abrasives are to be observed provided that it is a ground surface. Always clean towards the grinding pattern, never across.

18.2.5 Textiles

Textiles made of natural or chemical fibers. Particularly microfibers are suitable to remove patches or fingerprints from stainless steel surfaces.

Article	Article No	Material	Dimension L/W
Microfiber cloth	060.010.005	80% Polyester 20% Polyamides	400 x 400 mm

CE

DECLARATION OF CONFORMITY

We KUGEL medical GmbH & Co. KG
Hermann-Köhl-Straße 2A
93049 Regensburg / GERMANY

explain in own responsibility, that the product:

Kind of equipment:	Autopsy tables for large animals

Type:	GST-E-2000, GST-E-2500, GST-E-2700-S, GST-E-2950

is in compliance with following standard specifications or documents

Technical regulations:	2006/42/EG, DIN EN 954, EN 60 204 T1, DIN EN 349, DIN EN 1570, VBG 14, VDE 0100

Regensburg, 02.05.2018

Authorized representative signature