

Achieving Greater  
Mobility and Independence



# DIANA Operating Instruction

**Comfort – Compact - Sonja**



Serial No. ....



**HORCHER GmbH - REHA SYSTEME**

**Dear Customer!**

We would like to thank you, for your confidence in our Lift as well as your choice in buying a Horcher GmbH Diana Lift.

Please read this manual carefully and familiarize yourself with the safety instructions and the handling before utilizing the Lift for the first time.

**EC-Declaration of Conformity**

**Is done in compliance with Annex VII of the Council Directive 93/42/EEG of 14 June 1993 concerning medical devices**

We, the Horcher GmbH, Philipp-Reis-Str. 3, 61130 Nidderau, declare that the

**Patient Lift „DIANA“**

Serial No: .....

is in compliance with the essential Requirements of the Council Directive 93/42/EEG 14 June 1993 Annex 1.

Nidderau, 04/06/1998

Horcher GmbH  
Managing Director

Willi Horcher  
Stefan Horcher

The „DIANA“ – Patient Lift helps to achieve a greater mobility and independence for the handicapped and older people in their daily living activities, especially in private homes, hospitals and in Senior Citizens homes.

This manual is for the following Diana Lift's

|                |               |
|----------------|---------------|
| <b>Sonja</b>   | <b>H,E,EN</b> |
| <b>Comfort</b> | <b>H,E</b>    |
| <b>Compact</b> | <b>H,E,EN</b> |

## **Safety Instruction**

### **Please acknowledge the following safety instructions**

The patient Lift Diana should only be utilized on a hard even and clean floor, (not on a stony or uneven surface) the floor has to be clean and free of all obstacles.

A sight check is absolutely necessary and should be done before utilizing the Diana or any other kind of Lift. If you notice any kind of defect do not use the Lift.

Only authorized persons from the Horcher GmbH are allowed to repair the Lift.

Before using the Diana Lift and after each move or transport the wheels should be locked.

Do not utilize the Lift for long transportation's like up or down hill. Please use a wheelchair for long transports.

Caution has to be used when driving through tight area such as door frames.

Before using the Lift please make sure that all the straps and / or hooks are attached and secured and that the sling is adjusted in the right place.

The battery charger is not to be installed in damp areas or close to water faucets.

To clean the Lift just use a damp cloth don't use any strong detergent.

**The model Diana Comfort E can only to be utilized in connection with a V2A floor plate, before using the swivel option.**

Keep the wheels clear of all dirt such as hair dust or lose thread (lint).

Avoid sudden movements like pushing or shoving. This might cause accidents.

Ignoring one or more of the safety instructions causes you to lose all warranty through Horcher GmbH.

A yearly maintenance service check through authorized personnel from the Horcher GmbH is recommended.

We recommend that you purchase a service contract through your supplier or Horcher GmbH.

## **Table of contents**

|                                                                     |           |
|---------------------------------------------------------------------|-----------|
| <b>1. Where the mobile „DIANA“ Patient Lift can be utilized</b>     | <b>5</b>  |
| <b>2. General operating instructions</b>                            | <b>5</b>  |
| 2.1 Utilizing the „DIANA“ - Lift                                    |           |
| 2.2 Base adjustment                                                 |           |
| 2.3 Wheels with breaks                                              |           |
| 2.4 Cleaning                                                        |           |
| <b>3. Instruction for adjusting different height</b>                | <b>7</b>  |
| 3.1 Handling the adjustable hydraulic (H-Model)                     |           |
| 3.2 Handling the electrical height adjustment ( E-Model)            |           |
| <b>4. Model and Data</b>                                            | <b>8</b>  |
| 4.1 „DIANA“ - Sonja                                                 |           |
| 4.2 „DIANA“ - Compact                                               |           |
| 4.2.1 Compact E with the electrical Patient Positioner              |           |
| 4.3 „DIANA“ - Comfort                                               |           |
| 4.4 „DIANA“ - E - Model – electrical Data                           |           |
| <b>5. The mechanical Emergency Relief Handle</b>                    | <b>11</b> |
| <b>6. The Sling System</b>                                          | <b>12</b> |
| 6.1 Original - Horcher – Sling System                               |           |
| 6.2 Applying the Sling                                              |           |
| 6.2.1 Applying the Sling in a sitting position                      |           |
| 6.2.2 Applying the Sling in a lying position                        |           |
| 6.2.3 Applying the Sling to the legs                                |           |
| 6.3 Attaching the Sling to the Lift                                 |           |
| 6.4 Sling System for the patient positioner                         |           |
| 6.4.1 Applying the Sling System                                     |           |
| 6.4.2 Applying the Sling to the Lift                                |           |
| 6.5 Caring for the Sling                                            |           |
| 6.6 Sling System                                                    |           |
| <b>Service- Maintenance and Warranty Information</b>                | <b>14</b> |
| <b>7. Information about the capacity for the IBS Battery System</b> |           |
| 7.1 Intelligent Battery System „IBS“                                |           |
| 7.2 Battery capacity                                                |           |
| 7.3 Information about the loading station                           |           |
| <b>8 Additional accessory Scale</b>                                 | <b>20</b> |

## 1. Where the “DIANA” floor model Patient Lifts can be utilized.

Since 1986 the Horcher GmbH has developed the “DIANA” Lift. During that time we have reached a high technical standard for efficiency and reliability. Our systems have been developed extensively for individuals which are either handicapped or with limitations in their mobility.

Serving individuals, families and professionals in private homes, hospitals, rest homes and Senior Citizens resident as well as in a variety of other settings. They are most efficient transfer devices, serving both the care-giver and the caretaker.

The “DIANA” Lift is especially designed to be used on flat, hard surfaces and is primarily intended for indoor use only.

This Lift is can be utilized for lifting and moving patients in and out of bed, bathtub, wheel chair and many more varieties.

## 2. General Instruction

The “Diana” Lift is delivered to you as ready to use unit. Insert the loaded battery pack by pushing it straight in the receptacle on the back of Lift. To start the Lift just pull out the red knob on top of the console. The big red knob is also the emergency ON / OFF button. When pushing the red button down the electric circuit is interrupted and the Lift stops immediately. Pulling the red button starts the Lift. The black knob on the side of the console moves the Lifts up or down.



### Control lights

|                          |             |                      |
|--------------------------|-------------|----------------------|
| Green light              | Lift        | ready to use         |
| Red light continuous ton | Battery low | needs to be charged. |

### 2.1 Important:

Each time you utilize the Diana Lift great caution must be taken. The nurse / assistant or family member should watch the patient at all time's while in the lifting is in the process. Only responsible adult person's should utilize this Lift and only for the purpose of lifting patients. During the lifting explain the procedure to the patient.

### 2.2 Base Adjustment.

To get as close as possible to the patient you can adjust the base to three different width. The handle for the base adjustment is located on the bottom base of the Lift. After the base is adjusted to your need, the handle can be removed for more freedom of movement.

|   |                      |   |                   |
|---|----------------------|---|-------------------|
| 1 | handle to the left   | = | base is parallel  |
| 2 | handle to the middle | = | base is half open |
| 3 | handle to the right  | = | base is wide open |

### 2.2 Lock Wheels

Prior to operating the Diana Lift you should always make sure that the rear wheels are locked. To lock the wheels step on the break lever on the hind wheels. Release the break by pulling lever up.

We the Horcher GmbH can offer you two different types of Diana Lift's

- hydraulic height adjustment Diana H –Model
- electric height adjustment Diana E- Model

### 3.1 Handling the hydraulic elevation ( H-Model)

With this „Diana“ Lift you have in your possession a hydraulic valve operating model with a hydraulic pump to lift or lower the patient.

#### Lifting the patient:

To lift the patient you have to close the valve. To do so turn the valve clockwise till it stops. Now you can use the handle to pump slowly up and down until the piston has reached the maximum pressure (length). Check if all sling straps are properly connected to the swivel bar. Be sure patient and sling are free of any obstacles. Now the patient can be moved.

#### Lowering the patient:

To lower the Lift, carefully open the hydraulic valve just a crack for a gentle lowering. Great caution has to be used when opening the valve. Opening the valve to fast could result in an a rapid decline and startle or scare the patient.

#### Handling the electric remote control, for the E- Models,

Lifting / Lowering: Press the top left button to lift the patient and the top right button to lower patient.

## 4. Model and Data

With all „DIANA“ – Model's you can either use the manual or motorized patient positioner.

All H-Model's come with a hand powered Hydraulic pump.

### 4.1 „DIANA“ - Sonja

This Model is available in three sizes.

„DIANA“ - Sonja - EN

„DIANA“ - Sonja - E

#### Technical Data for the Sonja Lift

Lift base length with wheels

1020 mm

Horcher GmbH - 61130 Nidderau - Ph.-Reis Str.3 - Telephone (06187) 9204.0 - Fax  
[-email-office@horcher.com](mailto:email-office@horcher.com) -internet [www.horcher.com](http://www.horcher.com)



|                         |         |
|-------------------------|---------|
| Base width with wheels  | 585 mm  |
| Base width fully spread | 870 mm  |
| Lift height with mast   | 1200 mm |
| Weight of the Lift      | 37,5 kg |
| Min. radius             | 600 mm  |
| max. Lifting load       | 160 kg  |

#### 4.2 „DIANA“ - Compact

„DIANA“ - Compact - EN  
„DIANA“ - Compact – E

with mechanical emergency relief  
with electric patient positioner

##### Technical Data Compact

|                              |         |
|------------------------------|---------|
| Lift base length with wheels | 1170 mm |
| Base width with wheels       | 580 mm  |
| Base width fully spread      | 980 mm  |
| Lift height with mast        | 1360 mm |
| Min. radius                  | 590 mm  |
| Weight of the Lift           | 37,5 kg |
| max. Lifting load            | 160 kg  |



##### 4.2.1 Compact E with motorized patient positioner

Operating instructions for the electric hand control „DIANA“ -  
Compact – E with motorized patient positioner :

##### UP/DOWN

Press the top left button to lift the top right button to lower patient.

##### Positioning Patient:

Second row or optional middle row of buttons; Press the left button to raise leg straps and recline patient. Right button to lower leg straps and the patient is in a sitting position.

##### Geometrcal Data for Compact E with motorized patient positioner



|                              | Type 1. | Type 2. |
|------------------------------|---------|---------|
| Lift base Length with wheels | 1170 mm | 1170 mm |
| Base width with wheels       | 580 mm  | 640 mm  |
| Base width fully spread      | 980 mm  | 1020 mm |
| Min. radius                  | 655 mm  | 670 mm  |
| Weight of the Lift           | 37 kg   | 39 kg   |
| Max. Lifting load            | 160 kg  | 160 kg  |

#### 4.3 „DIANA“ - Comfort

All Comfort Models have the capability to be equipped with a swivel mast.

Before the swivel mast can be utilized a special V2A plate has to be mounted into the floor and fasten with concrete anchors. The installation should only be done through authorized technicians.

The Lift must be secured to the floor plates before you can use the swivel option. The mast can be pivot at an 180°. This is only possible if the safety bolt is removed on the turning point of the Lift and the stop screw has to be pushed down with the help of the pedal until the rotation is free of the lock. Please make sure the mast is locked in the stop screw again when the turning is completed.

#### Geometrical Data Comfort

|                              |         |
|------------------------------|---------|
| Lift base length with wheels | 1170 mm |
| Base width with wheels       | 580 mm  |
| Base width fully spread      | 980 mm  |
| Lift height with mast        | 1450 mm |
| Weight of the Lift           | 38,5 kg |
| max. Lifting load            | 160 kg  |
| min. Radius                  | 655 mm  |



#### 4.4 „DIANA“ - E - Model – electronically Data

One 24 V Battery.

|                                |                              |
|--------------------------------|------------------------------|
| Electrical supply              | 24V                          |
| Battery capacity               | 24V / 2,7 Ah                 |
| Charging station               | 220 V / 24 V / 1 A           |
| Fuse type for charging station | Type G. 124-1                |
|                                | T 0,315 A in Loading station |

#### 5. Mechanical emergency relief (not standard)

The mechanical emergency relief helps to let the patient down in case of electrical failure.

The emergency cylinder is located between the T-bar and the lifting arm.

### Handling the emergency relief :

Remove the ring on the end of the pin and pull the pin out. The cylinder looks like part of a ratchet and also works like one just turn the red part on the bottom.

## 6. The Sling-System

These original Sling Systems from the Horcher GmbH can be used with the Diana Lift.

USB, USS, USS K, UTK, UPG

For more information check our Horcher GmbH booklet for Sling Systems.



### 6.1 Original - Horcher – Sling-system

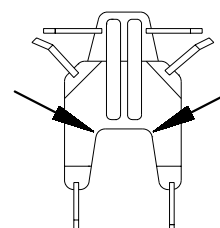


The sling can be applied to either a sitting or reclined person. The USSK sling with the head support is for patients who are not able to hold up their head on their own. The head support stays are made out of plastic and can be removed for easy washing.

### 6.2 Applying the sling

#### 6.2.1 Applying the sling in a sitting position

The nurse stands behind the patient's back, and takes the sling (see drawing ) starting at the shoulders and working it down his back, past the hips to the surface of the seat. The back of the sling should be pushed down behind the back as far as possible. The top portion of the sling should end at the shoulders or the head depending on the sling you are using. For a more comfortable sitting position the sling should be pushed all the way down the bottom. Take the straps for the legs and turn them from the outside to the in side.



#### 6.2.2 Applying the sling in a lying position:

Position the sling under a patient in a lying position, using the same way as mentioned above by lifting the upper body enough if that is possible to slide the sling behind the back. If this is not possible the patient can be "log rolled" onto his or her side. The sling can be fan folded and placed behind the patient's back. Roll the patient back onto the sling and the fan folded part can be pulled through to the other side.

#### 6.2.3 Applying the sling on the leg's:

The straps on the bottom of the leg's are wrapped around separately under the patient's leg's , above the knee and as high as possible up to the thigh. The leg straps should be as straight as possible (no wrinkles), for patient's comfort and proper positioning. Another variation for applying the leg straps is to pull both straps

under both legs and attach the straps to the outside points on the spreader bar. This holds the legs together rather than open.

### 6.3 Attaching the sling to the Lift:

The sling is attached to the swivel bar with either four or six loops for the head support, it always depends on the sling you are using.

Attention: All loops/hooks must be attached to the Lift prior to lifting the patient.

You have four loops on the USS sling. There are two pair of straps on the sling; one pair on each side of the patient's shoulder's and one pair at the bottom on each side of the patients leg's. The slings can be attached to the spreader bar in two different way's. Attachment is either by Safety Clips which lock onto the swivel bar or by straps. Slings with straps have a choice of three different lengths short, medium and long. Choice of straps dependent's on the patient's condition. Care must be taken to choose straps of equal lengths for the top pair and equal lengths for the bottom pair, or the patient will be positioned unevenly in the sling when being lifted.

**Attention:** It is very important that you check whether all strap's are hooked to the swivel bar and that they have the same lengths.

The USSK has two additional straps on each side of the head, be careful, so the patient's head or neck is not flexed it must be supported at all times.

- The head and shoulder strap's are hooked on the outside of the swivel bar.
- The leg straps are hooked on the inside of the swivel bar.

### 6.4 Sling Care.

- (a) Remove head support stays before washing. The Sling may be machine washed, using normal cycle, warm water, and tried on low temperature settings.
- (b) The sling should be inspected frequently for any unusual tear and wear, including the straps and where they are attached to the sling. The sling should be replaced without hesitation in the event of accidental tearing or cutting and **never ever** repaired.
- (c) It is recommended that the Sling should be replaced every 12 month, regardless of evidence of wear.

## 7. SERVICE AND WARRANTY INFORMATION

All mechanical and electrical components of the Horcher GmbH "Diana" Lift, have a limited **two year** warranty from the date of the original purchase and delivery, providing such defect is the result of poor craftsmanship or inherent defect in component material and not the result of improper use or handling.

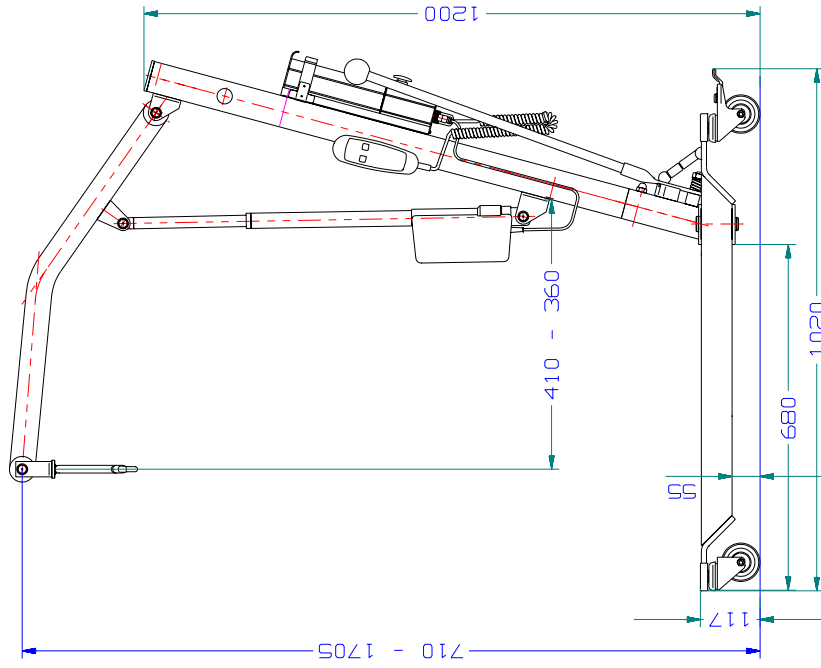
Please send the warranty card with the serial number of your Lift and date of purchase back to the:

**Horcher GmbH,  
Philipp-Reis-Str. 3,**

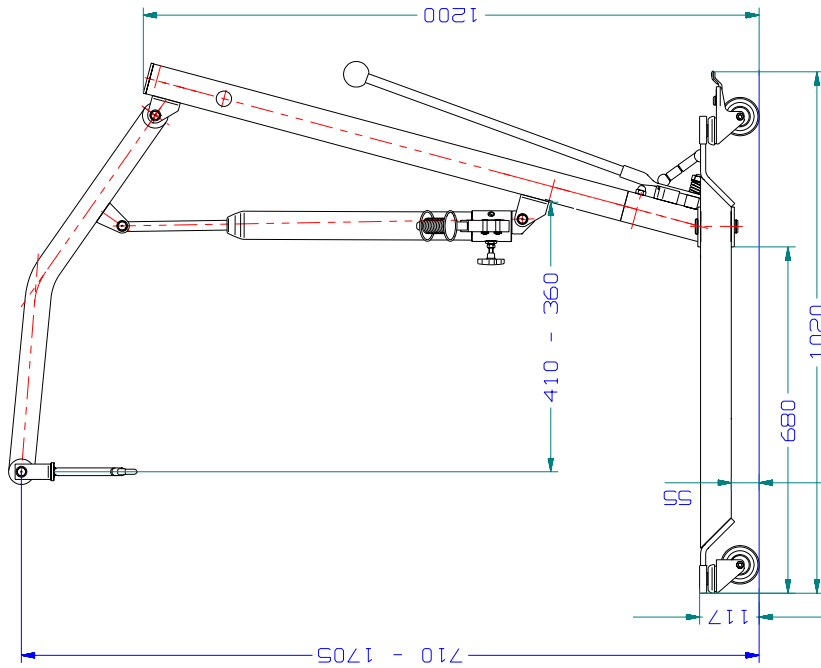
**61130 Nidderrau 1**

This will make it easier should a problem arise with your Lift during the warranty period.  
Thank you!!

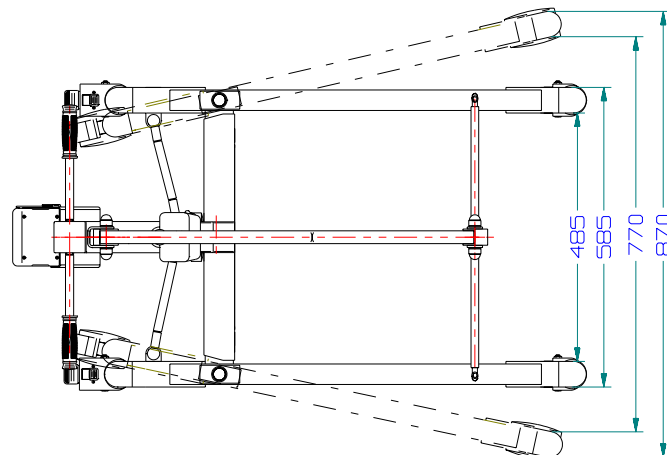
DIANA Sonja E



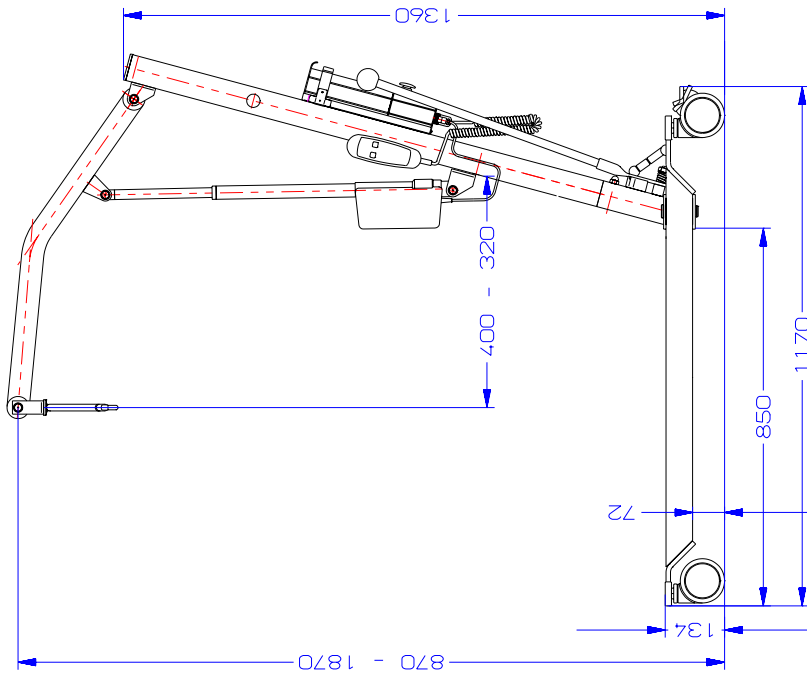
DIANA Sonja H



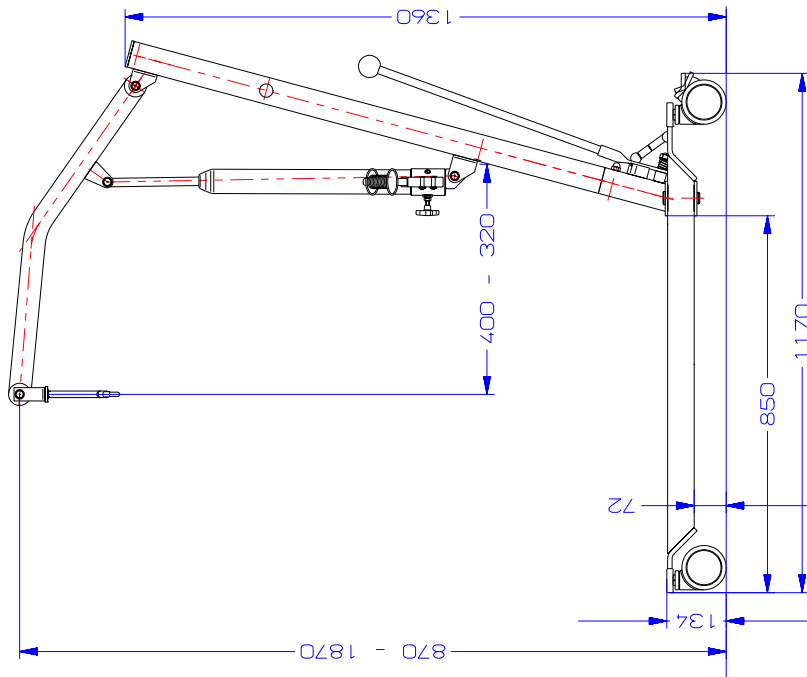
DIANA Sonja  
von oben



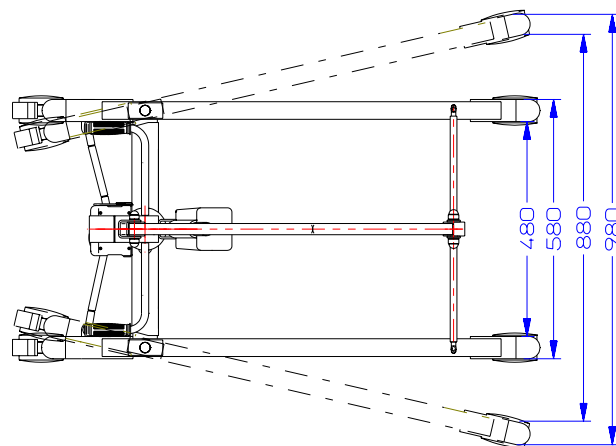
DIANA Compact E



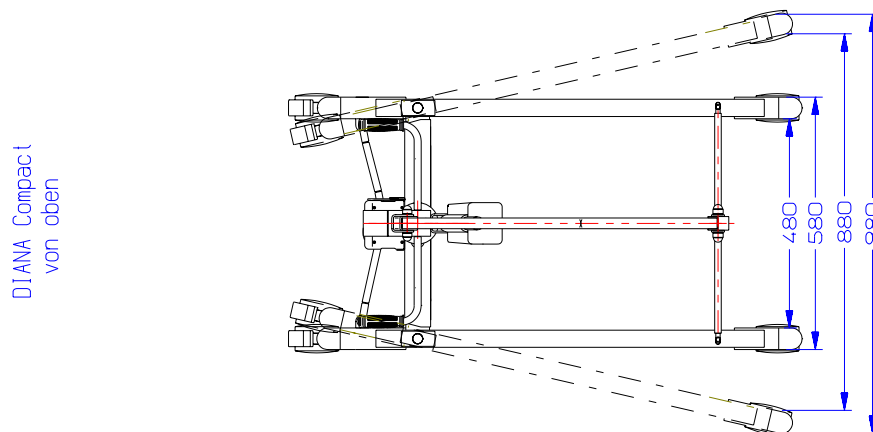
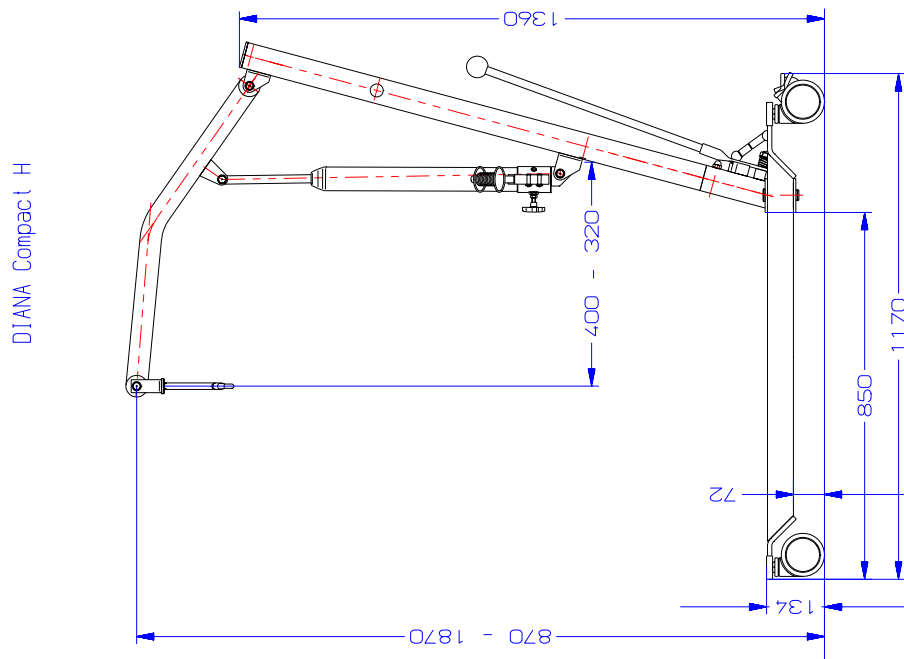
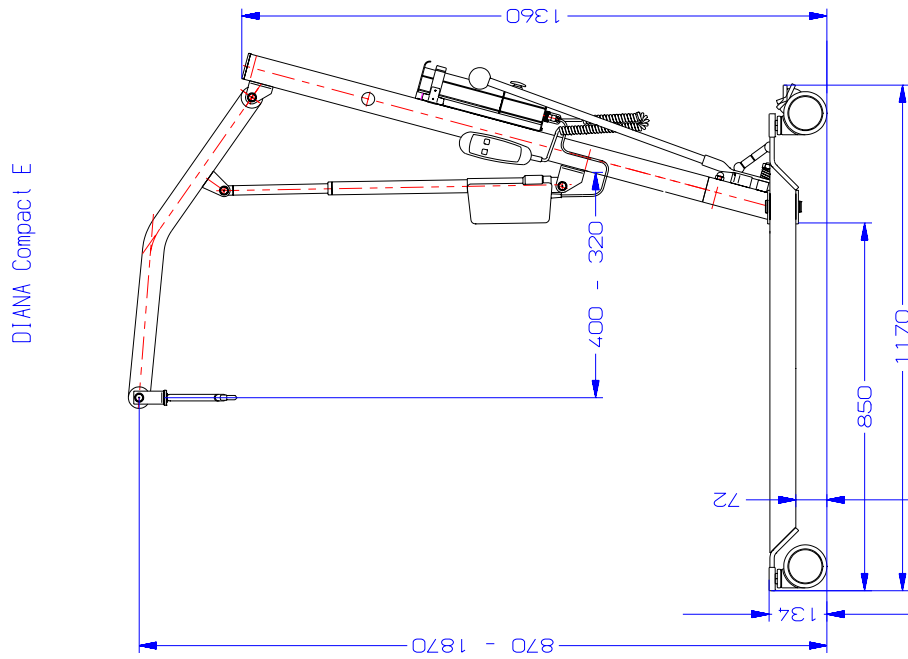
DIANA Compact H



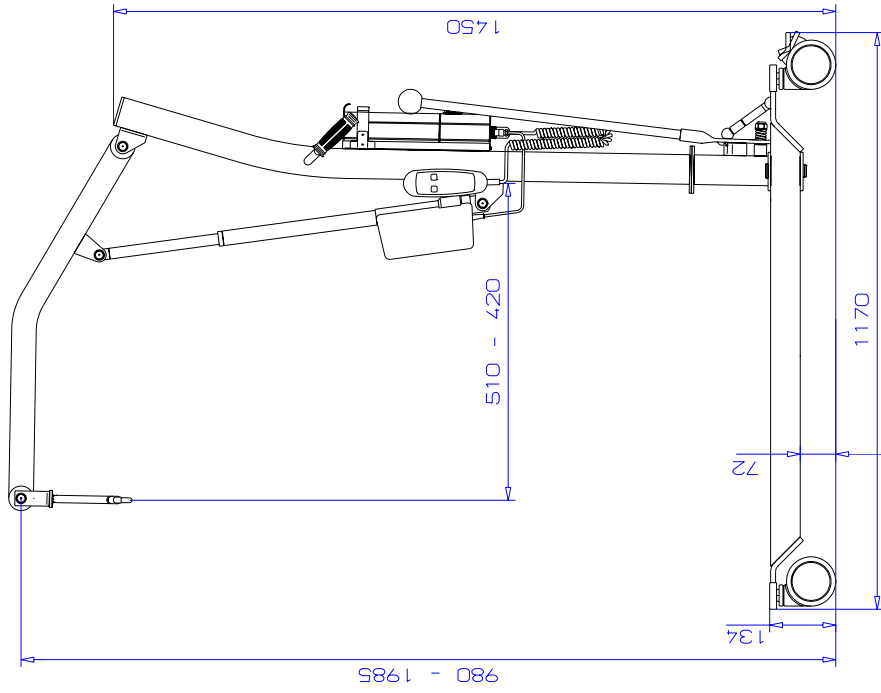
DIANA Compact  
von oben



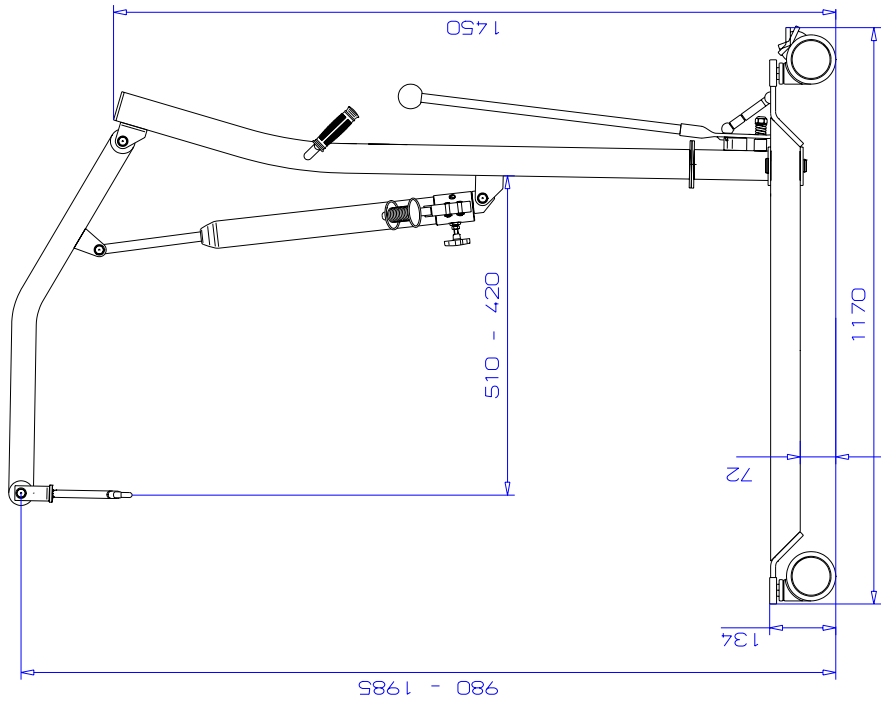
F



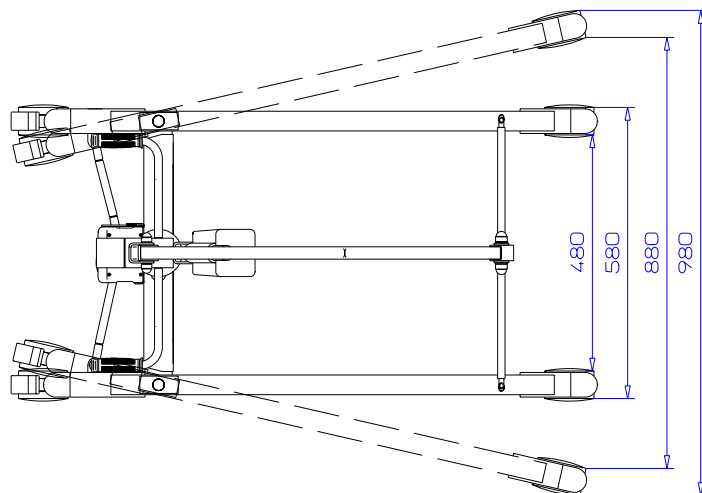
DIANA Comfort E



DIANA Comfort H



DIANA Comfort  
von oben



## 8.1 What is IBS

### The New Intelligent Battery System

Your Lift has been equipped with this new battery system. The battery is charged before delivery.

We the Horcher GmbH have developed this new IBS Battery System for rechargeable batteries. It consists of an integrated regulated memory chip this safes the battery from handled the wrong way.

Turns automatically to sleep modus after three minutes.

Reminds the user when battery is low through an interval tune.

If the user disregards this message then a continuance tune will remind him that the battery is low and need's to be recharged.

Battery shuts off automatically when voltage is low, so no damage occurs to the battery. When not in use, the IBS battery shuts of automatically after three minutes, safe's energy.

## 8.2 The battery capacity

This battery has a capacity of 2,7 Ah. When the lifting is in process the battery uses approximately 3.6 A.

The approximate lifting capacity of this battery is about 0.75 hours by lifting 160 kg /lbs. You can use this battery about 90 times at a lifting time of 0,5 minutes with a weight of 160 kg/lbs. If the patients weighs less then the battery has a longer using time.

## 8.3 Battery charger

Plug battery into charging station, make sure the charging station is plugged into the wall outlet. Charger light will glow brightly green while being charged. Your battery is



totally charged when the control light goes out.

The wall mounted battery charger should only be installed in dry areas and close to an electrical outlet. Make sure the battery charger is not installed close to a water faucet or in a damp area.

## 9. Accessories Scale

Direction for use of the personnel scale Model Number 878 ( DIANA / UDL )

Push the Zero button to set system to zero. The digit 0 will pan across the display for a few seconds then the display will read "0.0."

On the left side of the display you will see the weight unit in either Kg stands for Kilogram and lbs. which stands for American pounds.

To change form Kg/lbs. push the Kg/ lbs. button and it will change. The scale will memorize the change.

Remove the sling. Position the patient in to the sling, than reattach the sling to the swivel bar.

Carefully lift the patient and make sure he is free of obstacles. When the motion has stabilized, press the Operate button once again.

Read the weight on the display of the scale and check that you have the correct setting either for Kg or Lbs.

The scale Model 878 shuts off automatically after 60 Seconds.

To activate the scale again, just push the Operate button again.

For the following weighing just repeat point four, always use the same sling.

You only have to repeat point 1-3 if you changed the sling.

Point 3 only if you want to change from Kg to lbs. or vice versa.

### System specification:

Measuring in Kg or lbs. changeable.

|                                       |               |                                    |
|---------------------------------------|---------------|------------------------------------|
| Weight Range                          |               | 180,0 kg or 400 lbs. Please regard |
| the authorized leverage for the Lift. |               |                                    |
| Accuracy                              |               | 0,1 %                              |
| Calibrated accuracy                   |               | 0.1 %                              |
| Scale Size                            |               | approximately 80 X 150 X 80 mm     |
| Power supply                          |               | 9 Volt Battery                     |
| Battery capacity                      | approximately | 3000 times                         |
| Display                               |               | Liquid crystal display             |

### Exchanging the battery

When battery replacement is needed an indicator will appear on the display. Battery should only be changed from an authorized technician.

You must loosen the bolts on the lifting arm to access the battery remove the two screws on the case now you can remove the battery. Please make sure that the bolts are secured again after replacing the battery.

**Caution:** Do not apply pressure to the display.

**Caution: When inserting battery watch for the polarity.**

To set scale again start at point one again.

## Equipment data



Inventory-No.

\_\_\_\_\_

Equipment

\_\_\_\_\_

Type of Equipment

\_\_\_\_\_

Factory-No.

\_\_\_\_\_

Manufacturer/ Importer

\_\_\_\_\_

Supplier

\_\_\_\_\_

Year of purchase

\_\_\_\_\_

A **Inventory-No.** \_\_\_\_\_

## Functional Testing

on: \_\_\_\_\_  
 through: \_\_\_\_\_

## Instruction

Responsible \_\_\_\_\_

| <input type="checkbox"/> Date | Manufacturer/ <input type="checkbox"/> Supplier | Name of the person responsible for Instructing | Signature |
|-------------------------------|-------------------------------------------------|------------------------------------------------|-----------|
|                               |                                                 |                                                |           |
|                               |                                                 |                                                |           |
|                               |                                                 |                                                |           |
|                               |                                                 |                                                |           |
|                               |                                                 |                                                |           |
|                               |                                                 |                                                |           |
|                               |                                                 |                                                |           |
|                               |                                                 |                                                |           |
|                               |                                                 |                                                |           |
|                               |                                                 |                                                |           |









## Essential Addresses:

### A) Inform the person responsible in case of problems

Name:

Telephone:

Technical Service:

Name:

Telephone:

Emergency No.:

Name: Horcher GmbH

Telephone: 06187/92040

### B) Operating Manual to be found:

### C) Accidents with personal injury

Notify:

Telephone:

Notify: Horcher GmbH

Telephone: 06187/92040

## Inventory List

|                                                                            |                     |
|----------------------------------------------------------------------------|---------------------|
| <b>Type of LIFT:</b>                                                       |                     |
| <b>Serial No:</b>                                                          |                     |
| <b>Year of purchase:</b>                                                   |                     |
| <b>Manufacturer:</b>                                                       | <b>Horcher GmbH</b> |
| <b>Factory Id No:</b>                                                      |                     |
| <b>Side of location</b>                                                    |                     |
| <b>Yearly technical safety controls:</b><br><br>(see label on the product) |                     |