

### 3 Safety

#### 3.1 Explanation of basic concepts

#### 3.2 Safety symbols



**Danger to life!**

Identifies imminent hazard. If you do not avoid the hazard, death or severe injury will result.



**Hazardous situation!**

Identifies a potentially hazardous situation. If you do not avoid the situation, injury or damage to property can result.



**Prohibition!**

Identifies imminent a prohibition. If you do not avoid the prohibition, death and severe injury, or damage to property will result.

#### 3.3 Explanation of basic concepts

Gripping range:      • specify the minimum and maximum product measurements of the gripping good, which can be gripped with this device.

Gripping good (s):      • is the product, which will be gripped or transported.

Opening width:      • consists of the gripping range and the measure to drive over the gripping good.  
 *$\text{gripping range} + \text{measure to drive over the gripping good} = \text{opening width}$*

Immersion depth:      • is the maximum gripping height of gripping goods, conditional of the height of the gripping arms of the device.

Device:      • is the description for the gripping device.

Product dimensions:      • Are the dimensions of the gripping good (e.g. length, breadth, height of the product).

Dead weight:      • is the own weight (without gripping good) of the device.

Load capacity:      • specify the maximum possible load of the device (lifting of gripping goods).

#### 3.4 Definition skilled worker / specialist


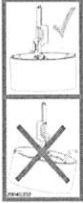
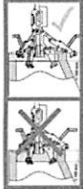
Only skilled workers or specialists is it allowed to carry out the installation, - maintenance, - and repair work on these device!

Skilled workers or specialists must have for the following points (if it applies for these device), the necessary professional knowledge.


- for mechanic
- for hydraulics
- for pneumatics
- for electrics

### 3.5 Safety Marking



#### PROHIBITION SIGN

Symbol	Meaning	Order-No.:	Size:
	It is not allowed to be under hanging loads. <b>Danger to life!</b>	2904.0210 2904.0209 2904.0204	30 mm 50 mm 80 mm
	The device may not be lifted, if the gripping good hangs diagonally.	2904.0333	45x112 mm
	No manholes may be lifted, if the height of the cylindrical part of the cover opening is larger than 150 mm.	2904.0359	45x112 mm

#### WARNING SIGN

Symbol	Meaning	Order-No.:	Size:
	Danger of squeezing the hands.	2904.0221 2904.0220 2904.0107	30 mm 50 mm 80 mm

#### REGULATORY SIGN

Symbol	Meaning	Order-No.:	Size:
	Inner diameter and tolerance of the manholes.	2904.0332	40x85 mm
	Read operating instructions before operating.	2904.0366 2904.0365	30x57 mm 50x95 mm

### 3.6 Personal safety requirements



- Each operator must have read and understood the operating instructions.
- Only qualified, authorized personal is allowed to operate the device and all devices which are connected (lifting equipment).



- The manual guiding is only allowed for machines with handles.

### 3.7 Protective equipment

The protective equipment must consist, according to the safety regulations of the following parts:

- Protective clothing
- Safety gloves
- Safety shoes

### 3.8 Accident prevention



- The workplace has to be covered for unauthorized persons, especially children.
- Take care in case of thunderstorm!



- The workplace has to be sufficiently illuminated.
- Take care with handling wet, dirty and not solidified components.



- The working with the device in case of atmospheric editions under 3° C (37,5° F) is forbidden! Because the goods could be fall down caused by dampness or freezing.

### 3.9 Function Control

#### 3.9.1 General



- Before using the device check the functions and the working condition.
- Maintenance and lubrication are only permitted when device is shut down!



- Do not use the device, until all faults which can cause safety hazards are removed.
- If there are any cracks, splits or damaged parts on any parts of the device, **immediately** stop using it.



- The operating instructions must be available at the workplace every time.
- Do not remove the data-plates of the machine.
- Unrecognisable information signs must be replaced.

### 3.10 Safety procedures

#### 3.10.1 General



- The use of the device is only permitted in proximity to the ground. Do not swing it over peoples heads.
- The manual guiding of is only allowed for devices with handles.
- The operator is not allowed to leave the control unit as long as the device loaded with load. The load must always be in the range of vision of the operator.



- While using the device is the stay of persons in the working area forbidden. Except it is indispensable. Caused of the way of using the device, e.g. if the device must be leaded by hand.
- The jerky lifting and lowering of the device with and without load. e.g. caused through driving fast with the support frame/lifting device over uneven grounds is **forbidden**. Because the gripping good could **fall down**. Unchecked movements of the device.



- While using the device be sure that there are no persons in the working area. **Danger to Life!**
- Do not pull out stuck or tightened loads with the device.
- Do not lift any components off-centre, because that **could fall down**.
- The device should not be opened if the opening path of the gripping arm is blocked by a resistance (e.g. other concrete blocks or the like)!
- **Never exceed the carrying capacity and the nominal width of the device.**
- **Never pull or drag loads sideways.** Otherwise parts of the device could be damaged. (see Fig. A →)

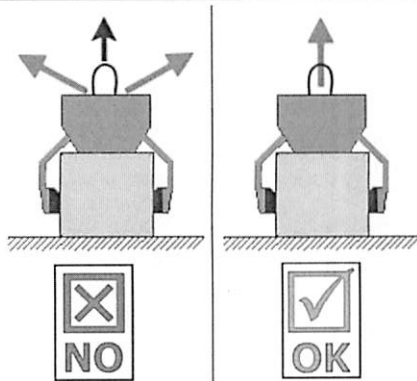


Fig. A

#### 3.11 Hydraulic excavator and other lifting equipments



- Hydraulic excavator and other lifting equipments have to be in good, safe working condition.
- Only authorized and qualified personnel is allowed to operate the excavator and other lifting equipments.
- The operator staff must have all the necessary qualifications.



- **Never exceed the maximum capacity of the hydraulic excavator and other lifting equipments.**

## 4 General

### 4.1 Authorized use

The device (SVZ-uni UK) is only suitable to transport and installation uncoated manhole bottom parts, cones and manhole rings according to DIN 4034 part 1 and 2 (with a minimum total height of 250 mm (10")) and to UK specification BS 5911, EN BS 1917.

Furthermore the device (SVZ-uni UK) is suitable for handling „Polypipe Ridgistor XL“ plastic chambers.

The device (SVZ-uni UK) can be mounted to support frames, like excavators, loading cranes or wheeled loaders.



When gripping manhole rings with a height of 250 mm (10") an accessory must be fitted additionally:

"Adaptor kit for SVZ-uni" → Order no. 4400.0079

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*Concrete pipes, manhole basers, rings and cones according to DIN 4034 T1 and T2 are called in the further text shaft elements.*

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Coping stones (cover plates) with eccentric entrance hole may **not** be gripped and/or layed with the device.

**Otherwise the load or parts of the load could fall down!**

The device (SVZ-uni UK) may **not** be used for lifting or pulling of seized shaft elements!

Lifting of damaged shaft elements with the device (SVZ-uni UK) is **forbidden!**



Only sufficiently hydrated and free from cracks shaft elements may be transported.

**Otherwise the load or parts of the load could fall down!**



- The device is only designed for the use specified in this documentation.
- Every other use is not authorized and is forbidden!
- All relevant safety regulations, corresponding legal regulations, especially regulations of the declaration of conformity, and additional local health and safety regulations have to be observed.



Prior to every operation the user must ensure that:

- the equipment is suited to the intended operation, the functioning and the working condition of the equipment is examined, and the loads are suitable to be handled.

*Any doubts about instructions should be raised with the manufacturer prior to use.*



**ATTENTION:** The use of this device is only permitted in proximity to the ground.



**NOT ALLOWED ACTIVITIES:**

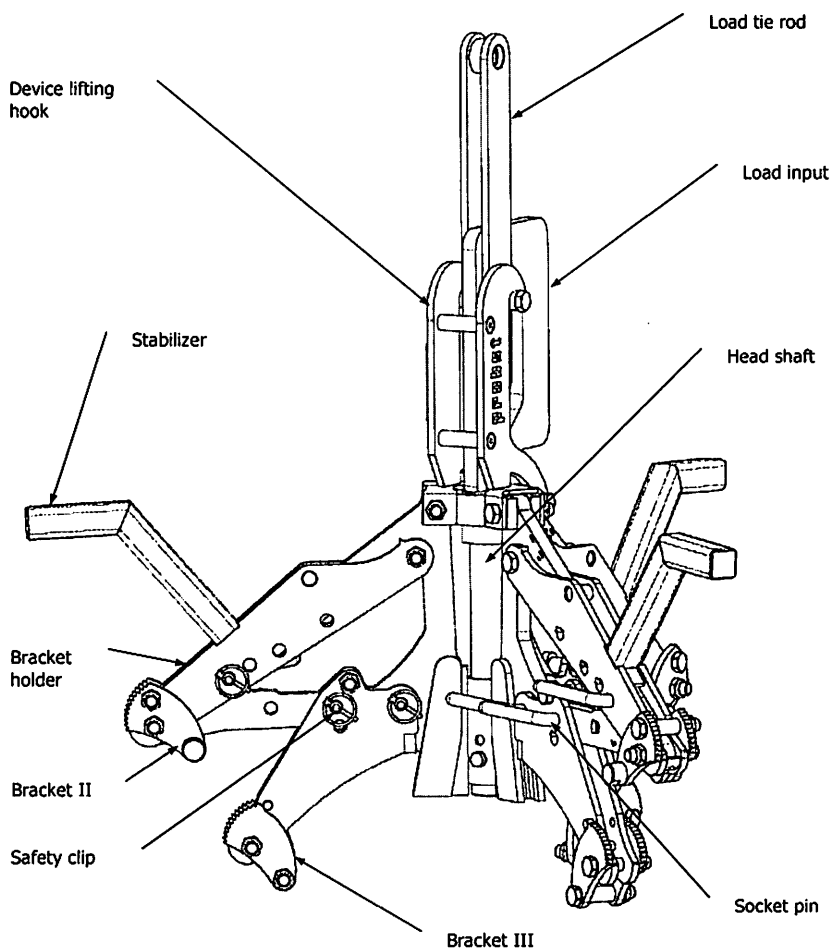
Unauthorized alterations of the device and the use of any self-made additional equipment could cause danger and are therefore **forbidden!!**

Never exceed the carrying capacity and the nominal width/nominal size of the device.

**All unauthorized transportations with the device are not allowed:**

- Transportation of people and animals.
  - Transportation of other loads and materials than described in this manual.
  - Never suspend any goods with ropes, chains or similar at the device.
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4.2 Survey and construction



4.3 Technical data

Type	Admissible inner diameter of manholes in mm(")	Carrying capacity
SVZ-uni UK	Ø 900, 1000, 1050 (42"), 1200 (48"), 1250, 1350 (54"), 1500 (60") **	2500 kg
Bracket II	Ø 1000, 1050 (42"), 1200 (48"), 1250, 1350 (54"), 1500 (60")	
Bracket III	Ø 900	

\*\*= Tolerance  $\pm 10$  mm ( $\pm 7/16$ " )

## 5 Installation

### 5.1 Mechanical connection

#### 5.1.1 Load hook and chains



- Fit suspension ring in the load hook of the lifting equipment.
- Ensure that the single chains are not twisted and may be easily pulled through the jaws



- Attaching the device to the lifting equipment take care that all local safety regulation is observed.
- It is not allowed to exceed the carrying capacity of the lifting equipment with the device and the maximum load.

## 6 Adjustments

### 6.1 Gripping range adjustment

Depending upon inner diameter of the gripping goods (manholes) the brackets must be adjusted accordingly.

#### 6.1.1 Bracket II

Fig. 1

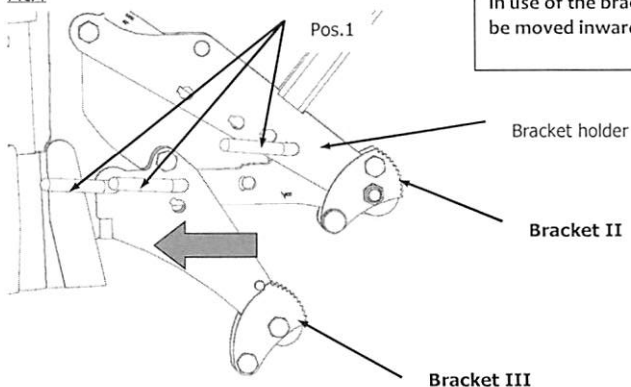
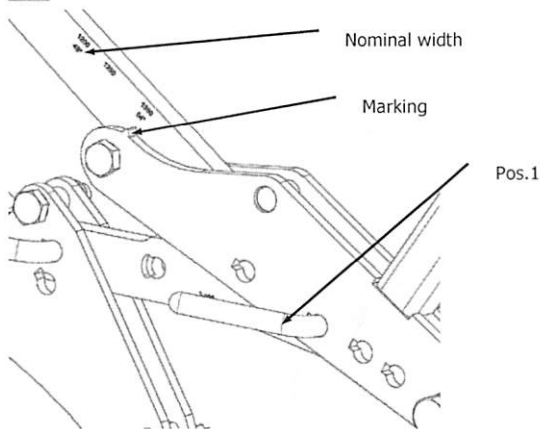


Fig. 2



Variant:	Application for:	NW *(Inner-Ø) mm
Bracket II	manholes	1000, 1050 (42"), 1200 (48"), 1250, 1350 (54"), 1500 (60") **

\* = (NW) Nominal width of gripping goods

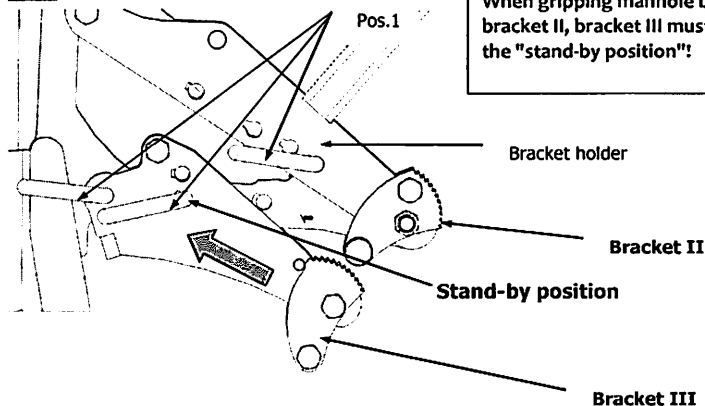
\*\* = Tolerance  $\pm 10$  mm ( $\pm 7/16$ " )





**ATTENTION:** when gripping manhole bottom parts → → ↓

Pic. 1A



#### PROCEDURE



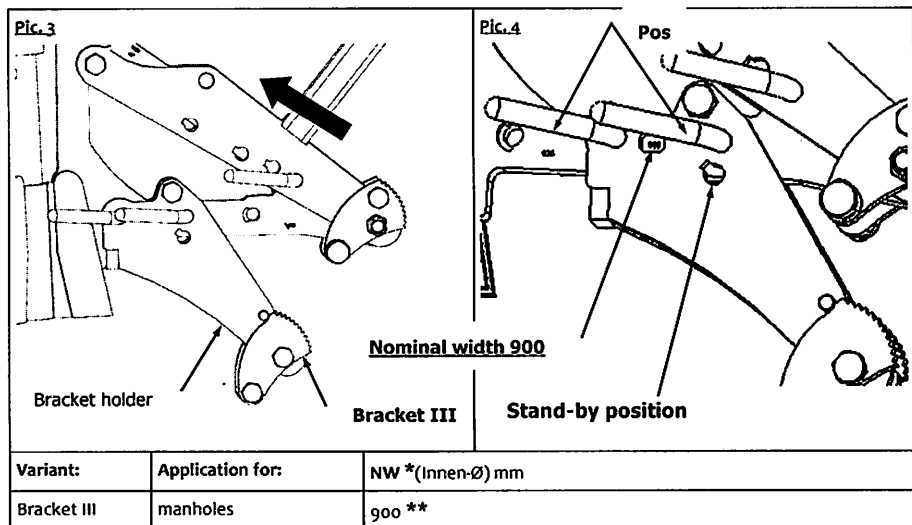
Caution with adjustments at the device, do not grip into moveable parts.  
**Danger of injury the hands!**

- To adjust the respective nominal width, first remove the safety clips at the socket pin and then pull the socket pin (Pos.1) out.
- Position bracket holder (marking) at the respective nominal width (Pic. 2).
- Insert the socket pin (Pos.1) again into respective hole.
- Secure socket pin (Pos.1) again with safety clip.



Take notice, that all three brackets are adjusted to the same nominal width.  
**Slipping danger of gripping good!**

6.1.2 Bracket III



\* = (NW) Nominal width of gripping goods

\*\* = Tolerance  $\pm 10$  mm ( $\pm 7/16$ " )

**PROCEDURE**



Caution with adjustments at the device, do not grip into moveable parts.  
**Danger of injury the hands!**

- To adjust the respective nominal width, first remove the safety clips at the socket pin and then pull the socket pin (Pos.1) out.
- Position bracket holder (marking) at the respective nominal width "900" (Pic. 4).
- Insert the socket pin (Pos.1) again into respective hole.
- Secure socket pin (Pos.1) again with safety clip.
- Bracket II must be moved inwards (see arrow-picture 3):




Take notice, that all three brackets are adjusted to the same nominal width.  
**Slipping danger of gripping good!**

## 7 Operation

### 7.1 General

#### 7.1.1 Manhole rings (general use)

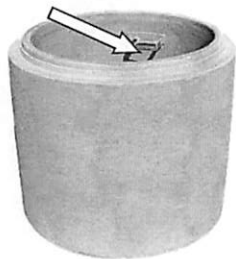


When gripping manhole rings with step irons (see ) , regard that the brackets are not positioned too close at the step irons!

#### TIP

When placing the manholes on each other, it is recommendable to mark the manholes at the outside with color, chalk or similar.

So that the step irons always is placed at the same position to the already placed manhole ring.

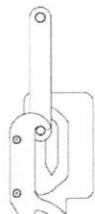


Caution: do not grip into moveable parts.

**Danger of injury the hands!**

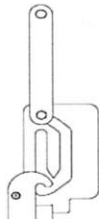
- Device (SVZ-uni UK) is fastened by chain suspension /load hook to the support frame (excavator).
- Position device (SVZ-uni UK) over the gripping good (manhole).
- Relieve chain suspension/load hook at support frame (excavator), until load tie rod slips downward.
- Move device lifting hook by diagonal pulling of load tie rod in position "release" (Pic. 1).
- Drive with device (SVZ-uni UK) into the gripping good.
- Relieve chain suspension /load hook at support frame (excavator), until load tie rod slips downward.
- Move device lifting hook by diagonal pulling of load tie rod in position "lift" (Pic. 2).

Fig. 1



Position „Release“

Fig. 2



Position „Lift“



**Nominal width 1000, 1050, 1200, 1250, 1350, 1500 – Bracket II**

All three stabilizers of the device must always rest on the upper edge of the gripping good (manhole) (see Pic. 3)

As soon as only one of the three stabilizers has a larger distance than 15 mm (between stabilizer lower edge and gripping good upper edge), it's in no case allowed, to lifted the gripping good!



**TIP:** Lower the device to the ground and try again.  
**Otherwise exists slipping danger of the gripping good!**

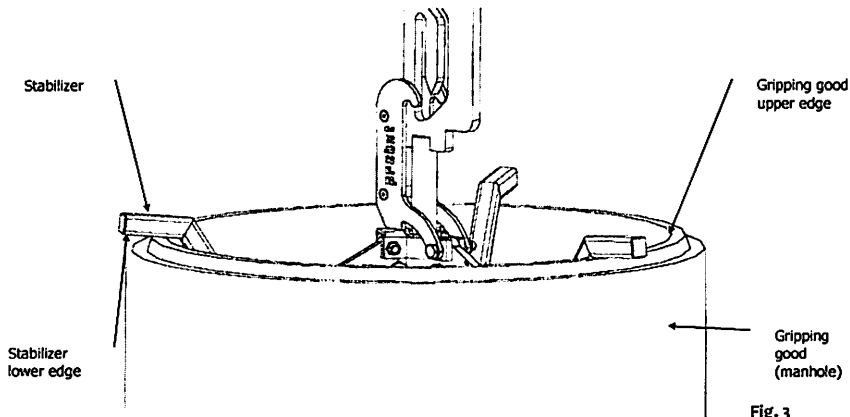


Fig. 3



### Nominal width 900 – Bracket III

All three stabilizers of the device must **always** rest on the upper edge of the gripping good (manhole): (see Pic. 4)

As soon as only one of the three stabilizers has a larger distance than 15 mm (0,59") (between stabilizer lower edge and gripping good upper edge), it's **in no case** allowed, to lifted the gripping good!



**TIP:** Lower the device to the ground and try again.

Otherwise exists slipping danger of the gripping good!

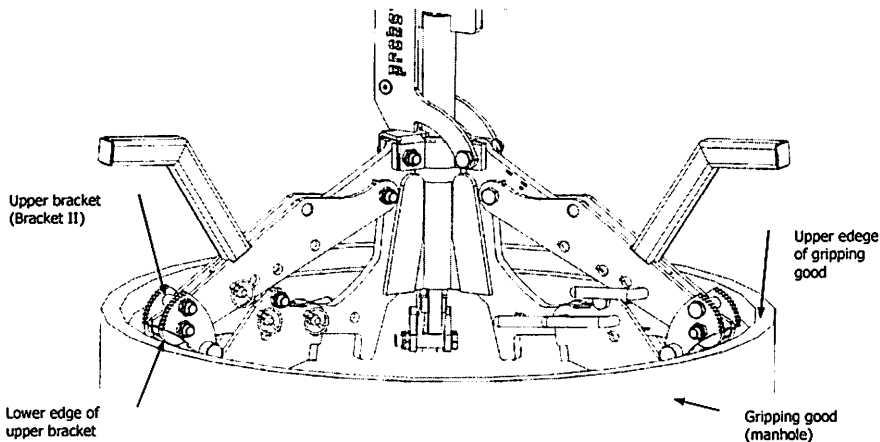


Fig. 4

**Lift the support frame slowly with seized gripping good and avoid jerky movements!**



**Never drive with the support frame (excavator) and gripped-load on device (SVZ-uni UK) over uneven area faster than slow modulation rate!**

7.1.1.1 Manhole rings (DIN 4034-1 and 2) with total height of 250 mm (10")



When gripping manhole rings with a minimum total height of 250 mm (10") an accessory must be fitted additionally:

"Adaptor kit for SVZ-uni" (see Fig. alongside). →

Order no.: 4400.0079



Adaptor kit may only be used, when manhole rings with a total height of 250 mm (10") should be installed (and not generally for larger total heights)!



Manhole rings with a lower total height as 250 mm (10") may not be gripped and transported!

- The gripping of manhole rings (total height 250 mm/10") WITHOUT above named accessory (4400.0079) is prohibited (→ see Fig. 1).  
Danger of slipping danger and damage the gripping good!

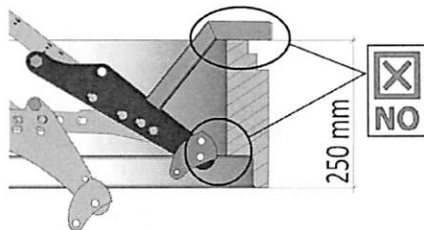
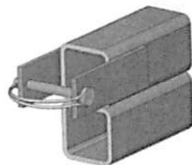


Fig. 1

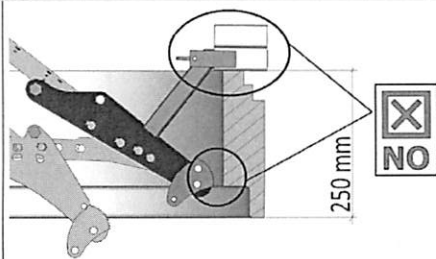


Fig. 2



Fig. 1 shows a manhole ring with a minimum total height of 250 mm (10") without "adaptor kit for SVZ-uni" (4400.0079).

Fig. 2 shows a manhole ring with a minimum total height of 250 mm (10") with "adaptor kit for SVZ-uni" (4400.0079) fitted wrongly.

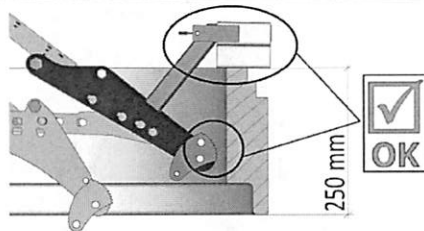


Fig. 3

Fig. 3 shows a manhole ring with a minimum total height of 250 mm (10") with "adaptor kit for SVZ-uni" (4400.0079) fitted correctly.

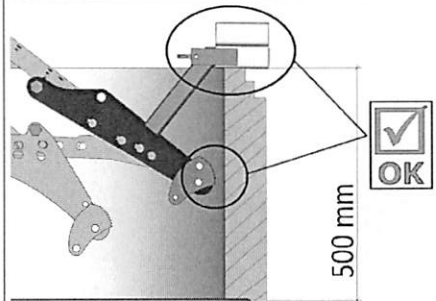


Fig. 4

Fig. 4 shows a manhole ring with a larger total height as 250 mm (eg 500 mm / ~ 19,5") with "adaptor" fitted for normal use of SVZ-uni" (4400.0079).

Reason: so that the adaptor cannot get lost.



### 7.1.2 Shaft cones



When gripping shaft cones with **bracket III** mind, that all three brackets are gripping below of the cylindrical part of the of the manhole cover opening (see Fig.5). I.e. the cylindrical part may have a **maximum** allowable measure of **150 mm** ( $< 150 \text{ mm}$ ).

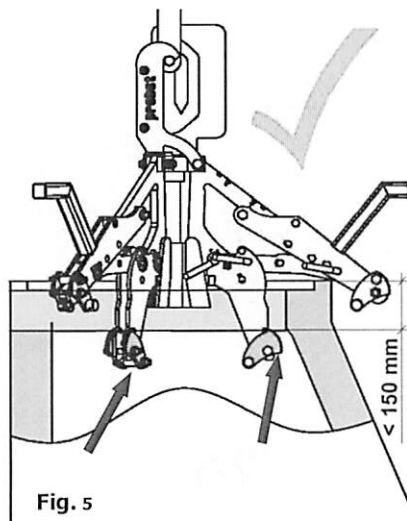


Fig. 5



The gripping of shaft cones with a cylindrical part **more than 150 mm** ( $> 150 \text{ mm}$ ) is **not allowed**. The brackets gripping then, with the lifting in the cylindrical part of the manhole cover opening (see Fig.6). The shaft cone hangs thereby a little diagonal. Thus it exists slipping danger of the grippiing good!

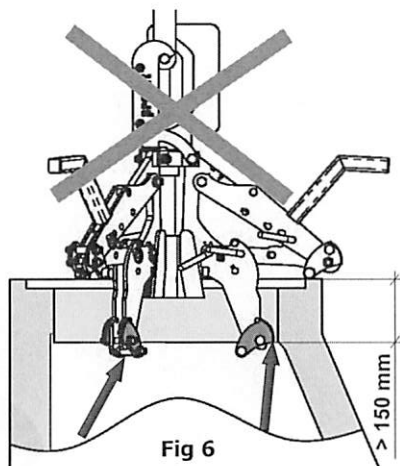
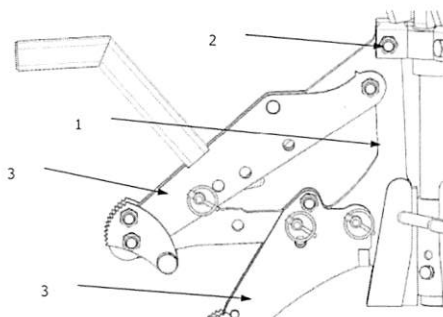


Fig 6

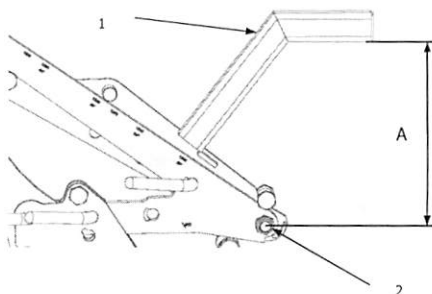
### SIDE PARTS



Check side parts (1) of damage and bent.  
Exchange damaged or bent side and remove bent side parts parts and adjust them with hydraulic press.

- Remove bracket holder (3) including bracket.
- Remove hexagon nut (2) including screws
- Replace side part (1) and/or adjust and insert it again.
- Loosen possibly tightened hexagon nuts and screws (2).

### STABILIZER



The distance (A) between stabilizer (1) and bracket fulcrum (2) must be equal large with all three stabilizer.

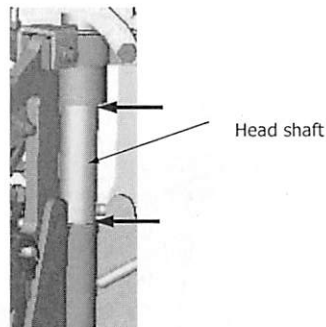
Differently large distances are referring to bent stabilizer (1).

- Verbogene Auflagen (1) korrigieren.
- Correct bent stabilizer (1).

### HEAD SHAFT

Keep head shaft free of dirt.

Grease if necessary the upper and lower range of the head shaft (see arrows).



Head shaft

The manufacturer of the device does not take over any adhesion for malfunctions, which are due to maintenance periods not taken place, rough contamination and maintenance lacking.