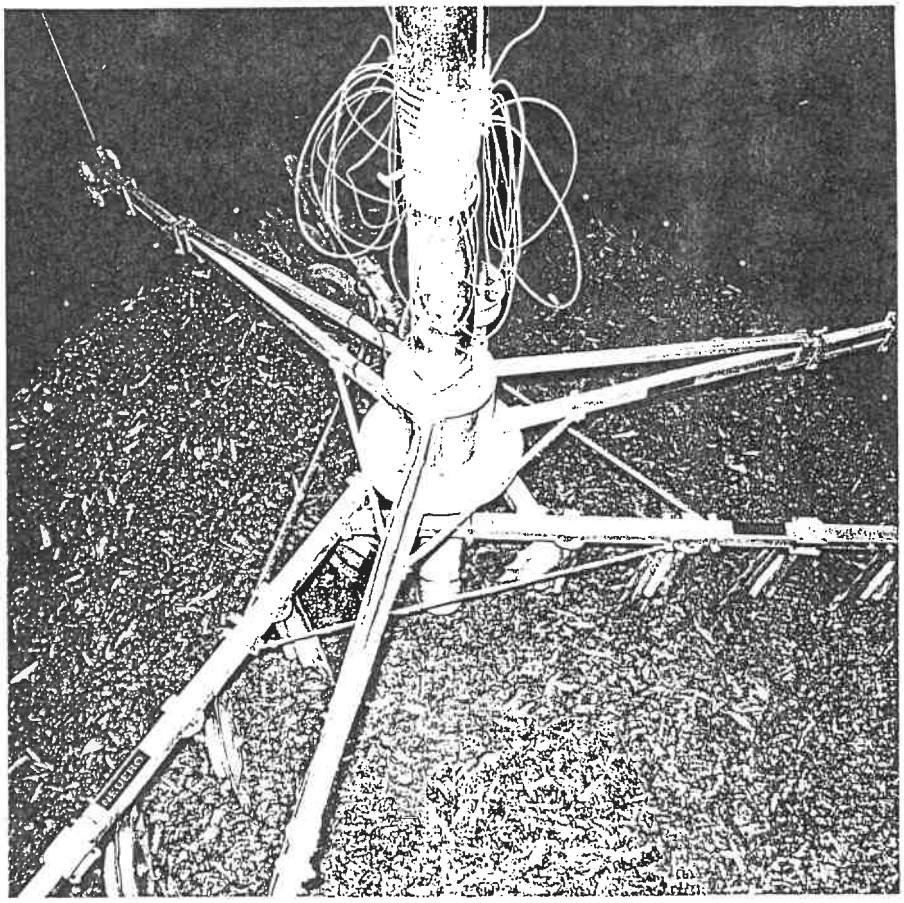
NEUERO



NEUERO

Operating instructions

NEUERO AS silo top- unloaders

85.075

PLEASE NOTE THE FOLLOWING:

Under the German act of 24. 6. 68 relating to technical equipment (Federal Legal Gazette I, page 717) as amended on 13. 8. 79 (Federal Legal Gazette I, page 1432) we would like, inter alia, to draw the following facts to your attention:

1. To operate the present equipment in any way it is essential for the operator to be fully familiar with the present operating instructions and to comply with them.

2. The equipment is intended only for the purposes detailed in the present operating instructions.

3. In all cases, the owner or operator assumes responsibility for the safe functioning of the equipment when it is used in a non-standard manner.

4. We accept no responsibility for damage or loss arising as a result of failure to observe the above stipulations. These stipulations do not constitute a widening of the scope of the terms of guarantee and liability contained in our General Terms of Business.

5. We or the producers of the individual units retain copyright in all documents and drawings. They are made available to the recipient for his personal use only. They may not be copied or duplicated or passed on or shown to third parties, particularly competitors, without our written consent. Unlawful use by recipients or third parties may have consequences in civil and criminal law.

   We reserve the right to make technical modifications aimed at improving the equipment.

NEUERO Landtechnik
ENGELBRECHT + LEMMERBROCK GmbH + Co.

Operating Instructions

for NEUERO AS Silo-Top Unloaders

I n d e x

In conjunction with other items of NEUERO equipment, the system described below can be used for filling, distributing and compacting of grass and maize silage, and also for emptying it.

Suitable for use in all circular tower silos made of steel, wood or concrete etc. when handling grass silage with a cutting length up to 15 cm (150 mm).

To be used for material with a moisture content up to 65% for grass silage and up to 70% for chopped maize silage.

85.075

S A F E T Y R E G U L A T I O N S

The silage silo is a closed bin. Lethal gases may also be contained in a bin which has already been emptied.

NEVER ENTER A SILAGE SILO COMPLETELY OR PARTIALLY FILLED WITHOUT TAKING THE BELOW-MENTIONED PRECAUTIONS!

DANGER TO LIFE BECAUSE OF SILAGE GASES!

The term "silage gases" means t w o different kinds of gas:

1. Carbon dioxide CO_2

   It is not detrimental to health, but replaces atmospheric oxygen thus resulting in suffocation. Carbon dioxide is heavier than air; it is scentless, tasteless and colourless.

   CO_2 is always produced during fermentative process.

2. Nitrogen oxide, mainly NO_2

   is a hazardous gas because it dissolves on the wet internal surfaces of the lungs when breathing in. In this connection strong nitric acid is produced burning the surface of the lungs.

   NO_2 is heavier than air, it smells pungently, its colouring is rufous/yellowish-brown.

   NO_2 may develop. However it is only developed in case the plant has taken up nitrates and these have not yet been changed to forage proteins.

   We recommend that you contact agricultural organizations in order to find out how you can prevent the development of nitrogen gases.

BEFORE ENTERING the silo for discharge of residuals and for maintenance of the unloading and loading equipment

- open the centre hatch in the roof and the silo hatch above the silage layer or the silo floor cautiously.

  Hold a wet cloth in front of mouth and nose in case you notice symptoms of a pungent smell.

Go away from the silo quickly or climb up the ladder because the gas will sink down in the air.

- AERATE OR DEAERATE the silo bin with fresh air by using a powerful blower (possibly pneumatic conveyor) for a minimum period of 45 minutes depending on the size of the silo. Let the blower run while staying in the silo.

- Make a LIGHT TEST with a naked flame (e.g. kerosene lamp). If the flame is extinguished, CO_2 is available.

- For his safety, the person entering the silo must be roped up by two strong assistants standing outside the silo.

- The main switch for the unloading and loading equipment has to be set to position "0".
  (See also operating instructions for silo equipment).

- Never enter the silo while the unloader is raised.

- Lock the silo hatches in the operating area of the unloader.

Should it prove necessary to enter the silo, this should be done immediately after the filling process. Do not wait until the next day!

The lower ladder which can be removed by hand has to be put on a safe place and locked up after each access. This will prevent children from climbing up the silo.

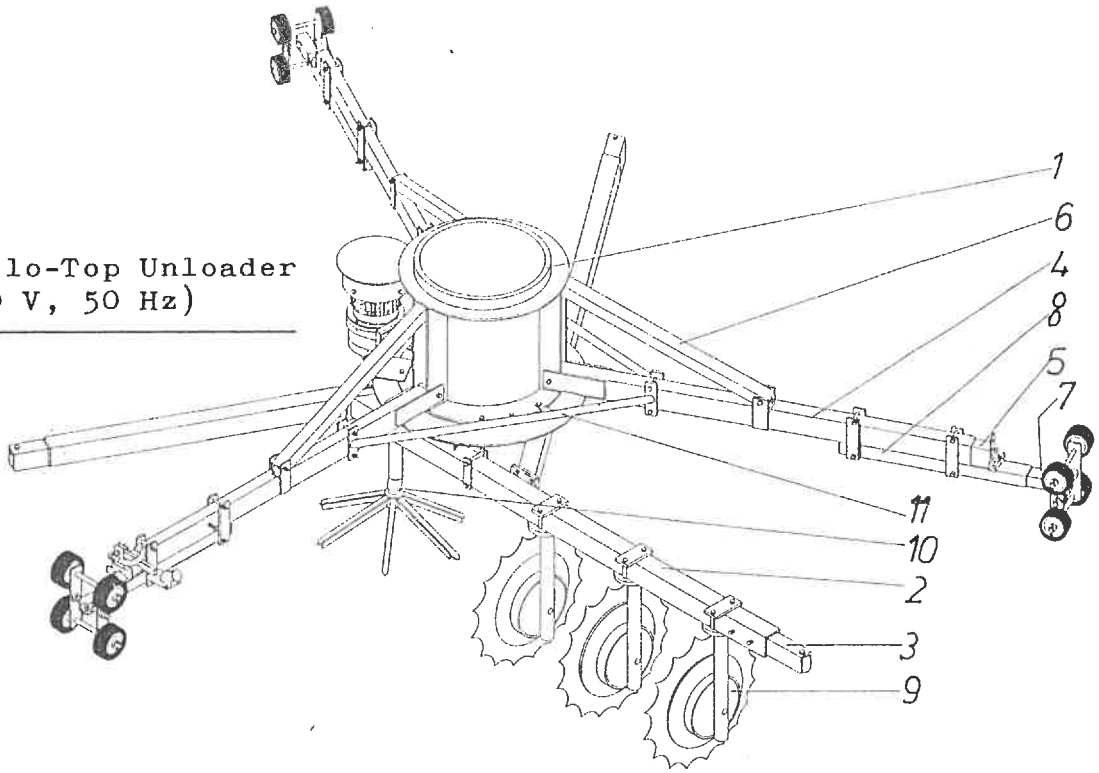
Fasten all loose parts laying on the roof (e.g. pipeline parts) to ensure that they will resist strong wind loads.

The silo must only be used for purposes for which it is designed.

Do not forget to observe the local SAFETY REGULATIONS imposed by the authorities in the country of destination!

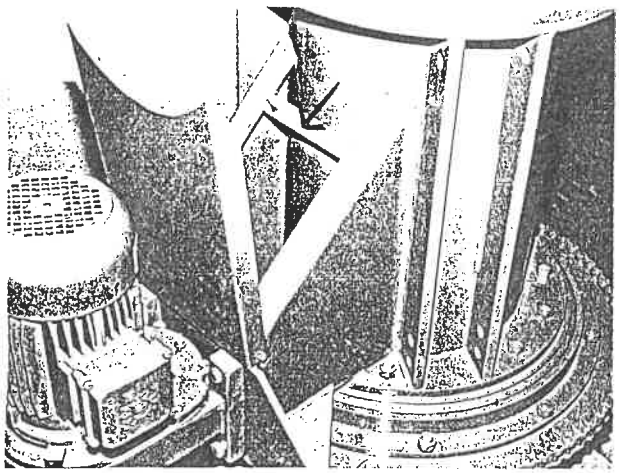
****

NEUERO Silo-Top Unloader
AS 2 (380 V, 50 Hz)

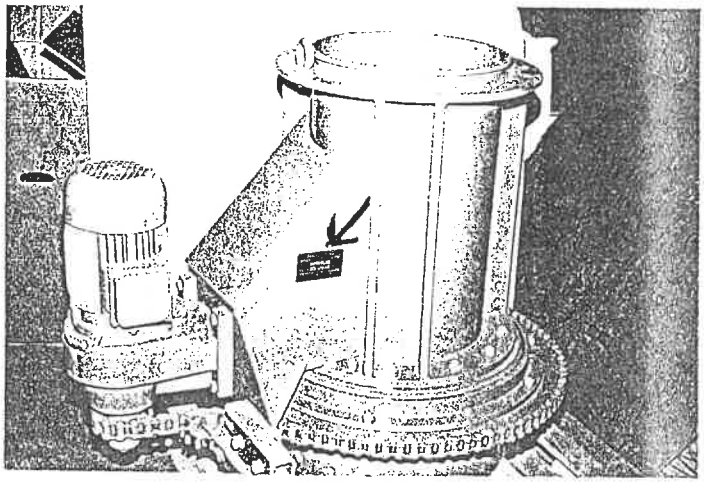


1. Driving head
2. Rotary arm
3. Rotary arm extension
4. Carrying arm
5. Carrying arm extension
6. Supporting arm
7. Supporting wheel bracket
8. Supporting wheel sleeve
9. Pick-up disc
10. Clean-up device
11. Cross bracing for carrying arm

On inquiries, orders etc., please indicate the production number and the serial number.



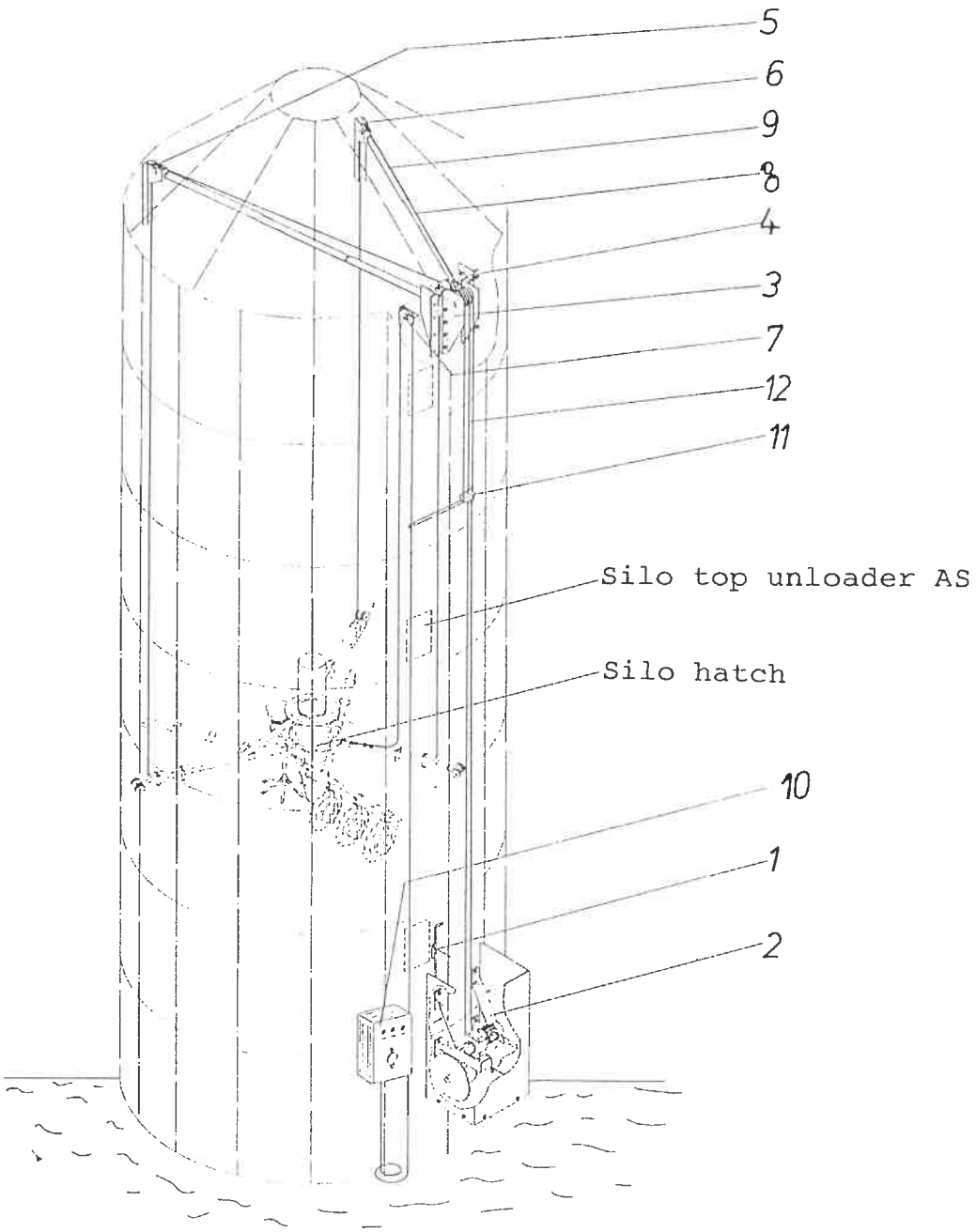
Production number



Serial number

For level control, the identification number from the type plate and the drawing number (in the switch cabinet) should be indicated.

NEUERO Silo-TOP Unloader AS 2 with winch and level control



1. Limit switch
2. Winch
3. Outer roller block
4. Internal roller block
5. Internal roller support, left hand
6. Internal roller support, right hand
7. Cable pulley block
8. Adjusting pipe
9. Transverse bracing
10. Level control
11. Deflection pulley
12. Bundle of hauling ropes and cable

1. Level control system

Basic settings for filling and emptying (as from 1.6.84)

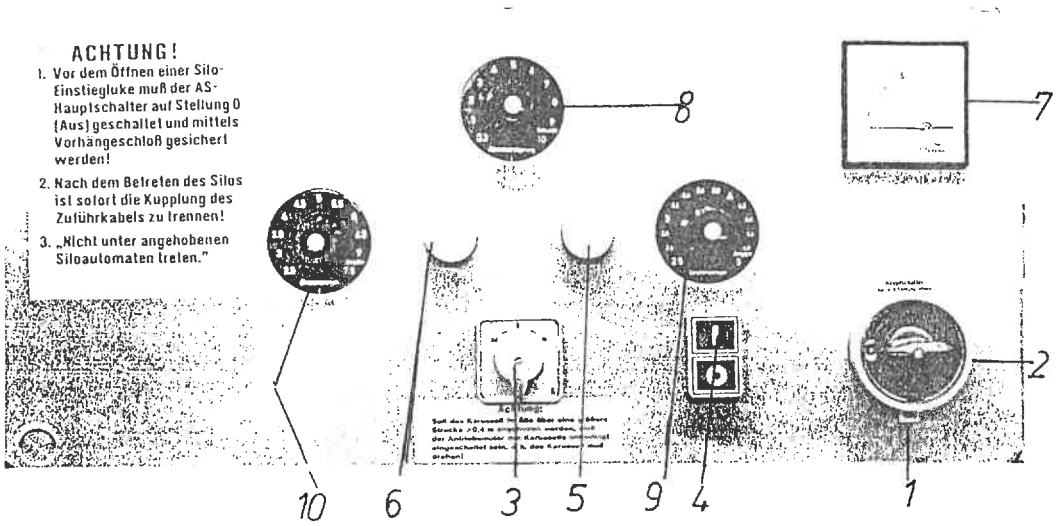


Fig. 1.1

Important: The basic settings described below must not be made until the electrician responsible for installation has checked the direction of rotation of the unloader (anti-clockwise looking from above) and the direction of rotation of the winch.

1.1 Raise the unloader by approximately 0.4 m.

For this, remove the safety padlock (Fig. 1.1/1), turn the main switch (Fig. 1.1/2) to "I", turn the selector switch (Fig. 1.1/3) to "Auf" ("Up") and hold it there for approximately 1 minute. The pilot light (Fig. 1.1/6) will come on.

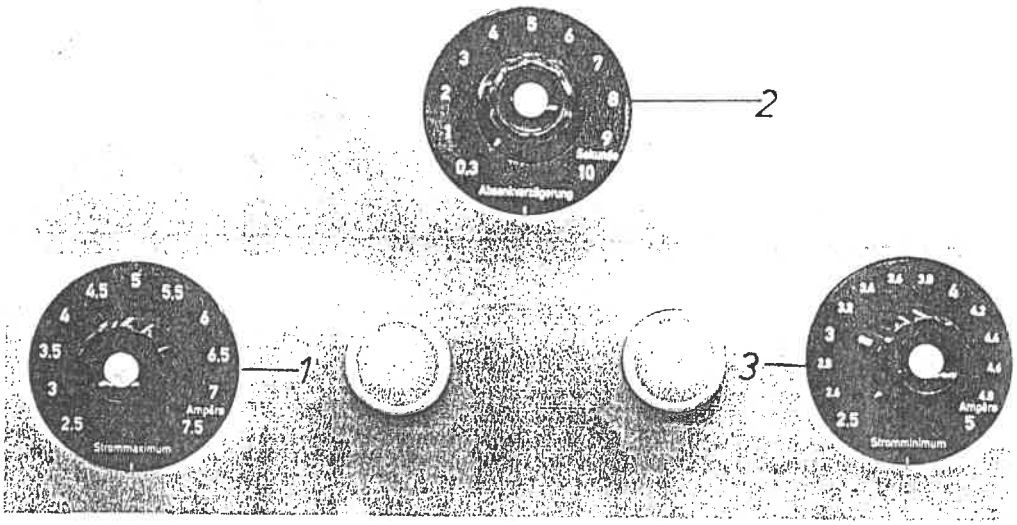


Fig. 1.2

1.2. Set the minimum-current relay (Fig. 1.2/3) to approximately 4 A.

1.3. Set the maximum-current relay (Fig. 1.2/1) to approximately 5 A.

1.4. Set the delay-time relay for lowering (Fig. 1.2/2) to 0.3 sec.

1.5. Switch on the motor of the unloader -

Press button "I" (Fig. 1.1/4). The pilot light (Fig. 1.1/6) will come for a short time and subsequently the other pilot light (Fig. 1.1/5) will come on.

1.6. Read off the current value of the idle running unloader on the ammeter (Fig. 1.1/7) and set this value on the minimum-current scale (Fig. 1.2/3).

1.7. Set the current-maximum scale (Fig. 1.2/1) by at least 0.8 A higher than the current-maximum scale (Fig. 1.2/3).

1.8. Set the delay-time relay for lowering (Fig. 1.2/2) to approximately 2.5 seconds.

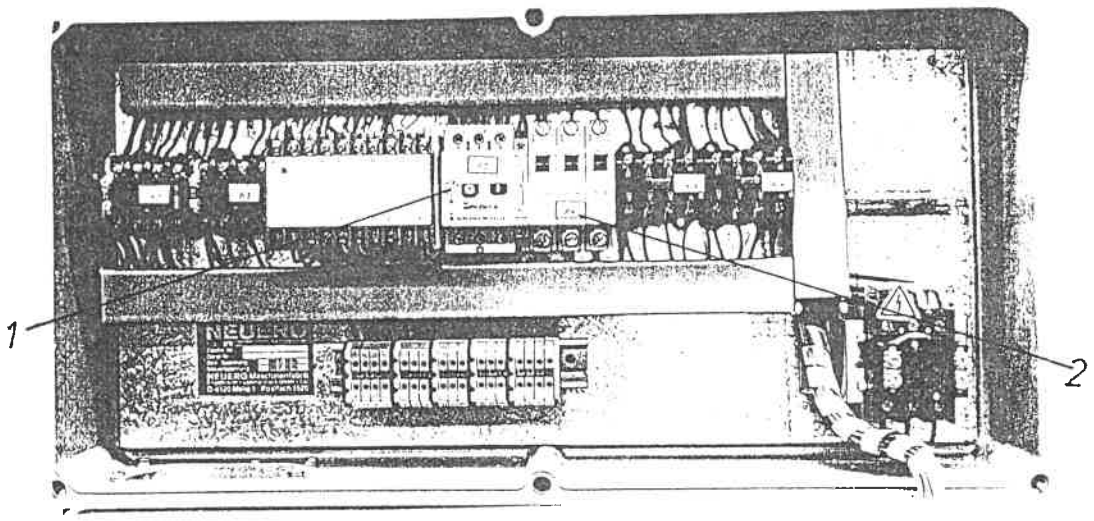


Fig. 1.3

1.9. Set the protective motor switch (Fig. 1.3/1) to approximately 5.3 A.

1.10. Once the settings have all been made, turn the main switch (Fig. 1.1/2) to "0" and lock it with the padlock.

Important: If the lowest possible settings are to be obtained, the drive motor of the unloading- or suction blower should be switched on while the level control system is being set (only when an electric drive motor is used).

2. Filling

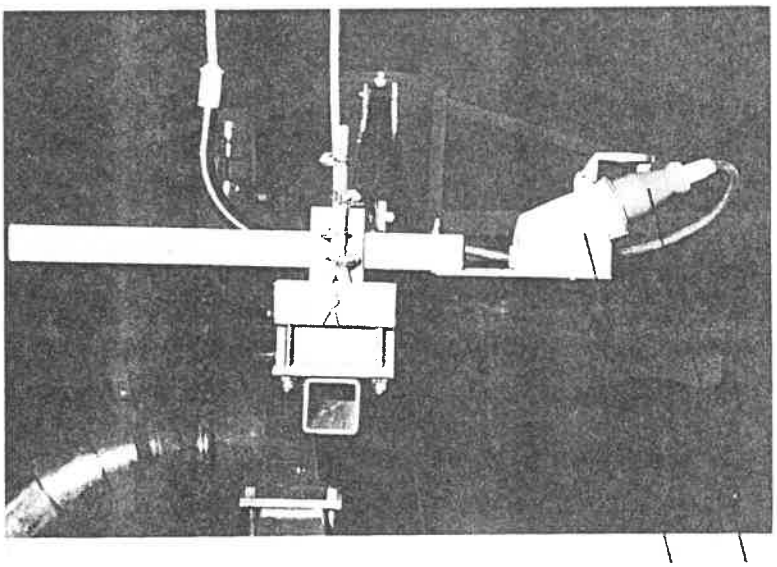


Fig. 2.1

Important:

Before entering the silo, lock the main switch (Fig. 1.1/2) with the safety padlock and immediately on entering the silo disconnect the plug (Fig. 2.1) on the supply cable.

Note: Accurate mechanical distribution during the filling operation is essential not only to ensure that the silage is of good quality but also to ensure that the silo can be emptied efficiently and without any trouble.

2.1. Set up the pick-up discs as shown in the appriopriate one of the accompanying setting-up plans for filling.

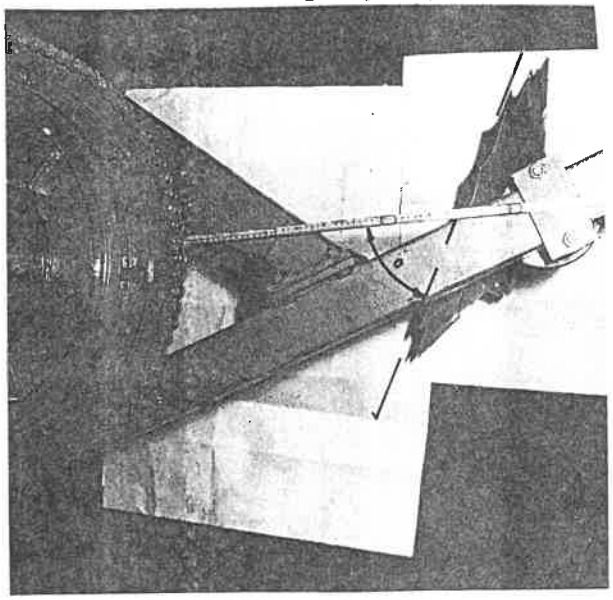


Fig. 2.2

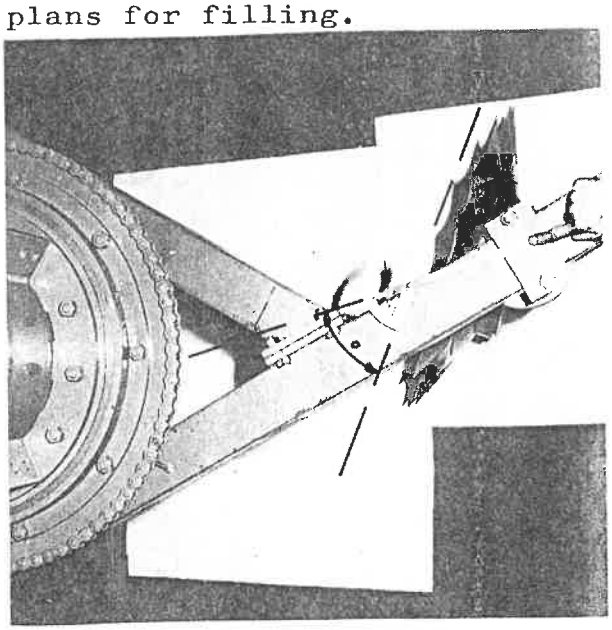


Fig. 2.3

The angle is set by eye using either a straight edge (Fig. 2.2) or an engineer's protector (Fig. 2.3), with the straight edge or the blade of the protrector pointing to the centre of the drive head.

2.2. Relax the pressure on supporting wheels (Fig. 2.4) by screwing out the extending spindles (Fig. 2.4/1) for approximately 2 cm.

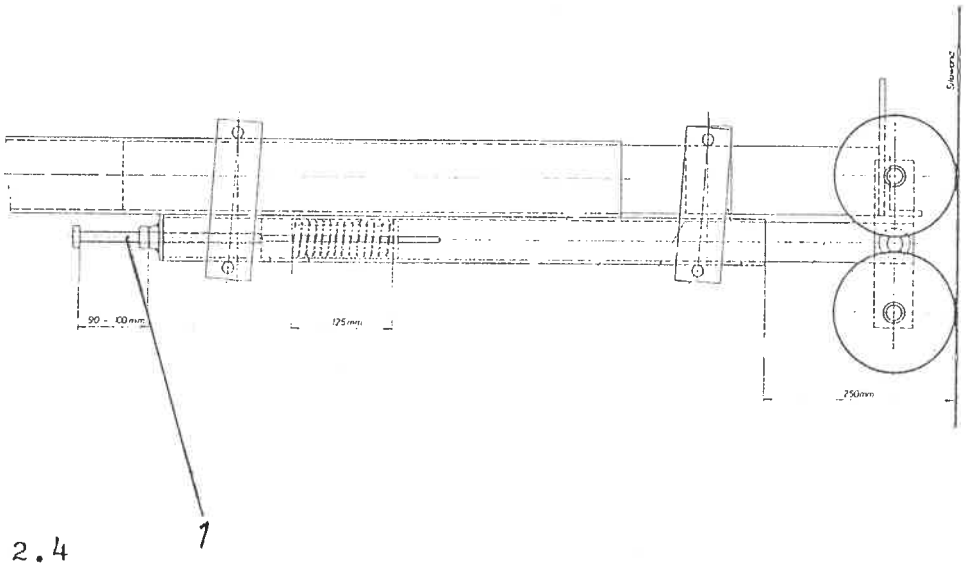


Fig. 2.4

2.3. Remove the telescopic tube (does not apply to steel silos with NEUERO clamping cover).

2.4. Remove the suction tube (Fig. 2.5/1) or curved suction trunk (Fig. 2.6./1+2).

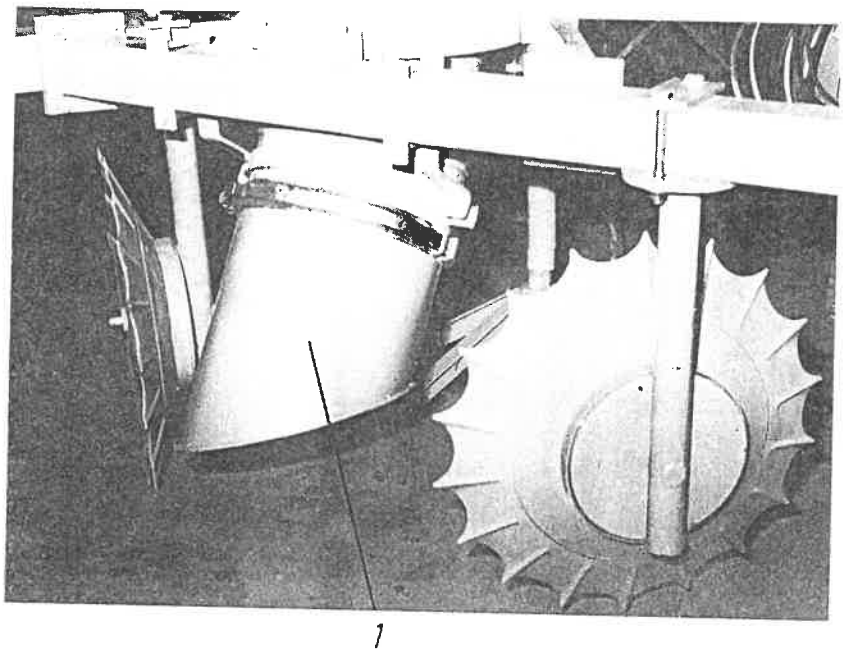


Fig. 2.5

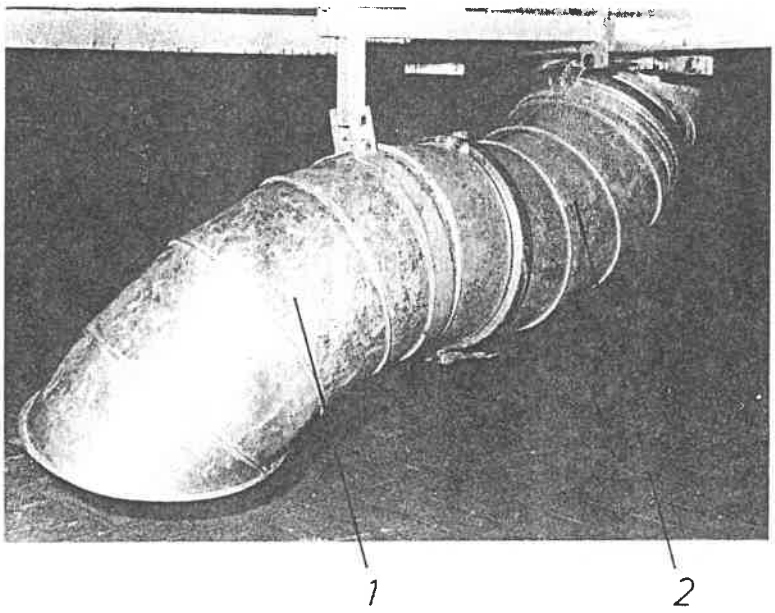


Fig. 2.6

2.5. Raise the unloader approx. 1 m by following the directions in 1.1. (takes approx. 5 minutes).

2.6. Open the top silo hatch to make sure that no overpressure will arise which may destroy the silo.

2.7. Fill the silo with approximately half a waggon load of material.

2.8. Switch on the unloader -

Turn the main switch (Fig. 1.1/2) to "I" and press the button "I" (Fig. 1.1/4). The filled material will be distributed over the whole area of the silo.

2.9. Fill the silo with additional 2 to 3 wagon loads while the unloader is running. Subsequently observe the distribution work.

Important: The unloader should be left running during temporary interruptions, caused for example by bringing the wagons into position, provided that such interruptions do not last for more than 15 minutes or so.

Note: The accompanying setting-up plans can only be considered as giving a basic setting. It is not possible to lay down one precise setting for all the different kinds of material with their varying structures, cut lenhths, moisture contents, etc. It is therefore essential for one of the operators to adjust the pick-up discs after watching the filling process for an adequate length of time (2 to 3 wagon loads), doing so as follows:

2.10. Uneven distribution

2.10.1 Depression of the material at the centre

- Set delay-time relay for lowering (Fig. 1.2/2) to approx. 1 second
- Set maximum-current relay (Fig. 1.2/1) to approx. 0.2 A higher
- Set minimum-current relay (Fig. 1.2/3) to approx. 0.2 A higher
- If necessary, set pick-up and feeding disc no. 2 (short suction trunk) respectively no. 3 (long suction trunk) so that they push the material inward more (try a 5^{o} adjustment to start with).

2.10.2 Depressing on the outside

- Set the discs which force material outward so that they do so to a greater degree (try a 5^{o} adjustment to start with).
- If necessary, adjust the three outer discs which force the material inwards to a less acute angle (try a 5^{o} adjustment to start with).

2.10.3 Hummock of material at the centre

- Set the discs which force material inwards to a less acute angle (5^{o} initially).

Important: Each of the steps outlined above may by itself produce an improvement in distribution and for this reason adjustments should always be made step by step following the sequence given above.

Important: When watching in the distribution action it is vital to make sure that the silo hatch opened for this purpose does not lie in the path of the rotary arms as they rotate.

2.11. During the uninterrupted filling of the silo which then follows, the operator should keep a watch on the operation of the system by watching the pilot lights (Fig. 1.1/5+6) as they light up. If the unloader stops for any length of time it may so deeply buried in the material being filled into the silo that it is impossible for it to be pulled free.

3. Faults during filling

3.1. The pilot lights (Fig. 1.1/5+6) fail to come on over a fairly lengthy period (approx. 1 minute).

Reason:

- Drive motor of the unloader has stopped.
- The level control system has not been switched on.
- The protection switch (Fig. 1.3/1) has tripped - check setting of 5.3 A - or the maximum-current relay (Fig. 1.2.1) is set too high, meaning that the drive motor is overloaded due to unloader being raised with too great delay.
- Cut-outs (Fig. 1.3/2) have tripped. If they should trip again immediately after switching on there is a fault present which can only be cured by an electrician.
- The unloader has travelled up to the maximum hight in the silo and has thereby tripped the safety limit switch (Fig. 3.1). When the silo is filled for the first time, the distance which exists between the deflection pulley in the top of the silo and the uppermost clip on the wire-rope attached to the front supporting arm when the safety limit switch trips should be measured and the switch then moved downwards by the same amount.

Fig. 3.1

Important: As the limit switch is only operating in the automatic mode, it can be over-run by manual operation.

3.2. Dump box or conveyor belt fails to start or stops.

Reason: - The drive motor of the unloader is not switched on or has stopped.

- Check as in 3.1 above.

- The termal cut-out of the winch motor has tripped.
  The system can be switched on again after a wait of about 10 minutes.

3.3. The "Ab" ("Down") pilot light (Fig. 1.1/5) remains on continuously despite the fact that filling is going ahead.

Reason: - There is no supply to the drive motor of the unloader.

- The plug (Fig. 2.1) has come out of its socket

- Faults in the supply lead.
  Call in the electrician to check.

3.4. The "Ab" ("Down") pilot light (Fig. 1.1/5) fails to come on.

Reason: - The current drawn by the drive motor of the unloader is more than the figure to which the minimum-current relay (Fig. 1.2/3) is set. This fault may for example be caused by voltag fluctuations in the supply.

- Set the minimum-current relay to a higher setting (to approx. 0.2 A higher).

3.5. The "Auf" ("Up") pilot light (Fig. 1.1/6) fails to come on despite a rising level of forage in the silo.

Reason: - The drive motor of the unloader is not switche on or has stopped

- Check as in 3.1 or 3.2.

- Check whether the unloader can be raised manually.
  Turn switch (Fig. 1.1/3) to "Auf" ("Up").

Reason: - The limit switch has switched off the system.

4. Things to be done after filling

4.1. Lock the main switch (Fig. 1.1/2) by means of a safety padlock.

4.2. Clean the unloader carefully to prevent rusting caused by material laying on it.

4.3. Set the pick-up discs for emptying (according to setting-up plan).

4.4. Lubricate at the lubrication points detailed in section 10.

4.5. Fit the telescopic pipe where applicable.

4.6. Complete the suction arrangement.

4.7. Remove the filling pipe and carefully close the filling and end entry hatches.

4.8. Where there is a permanently installed telescopic suction pipe this should be sealed off by means of an inserted sealing disc and a pipe clip fitted with sealing gasket (Fig. 4.2).

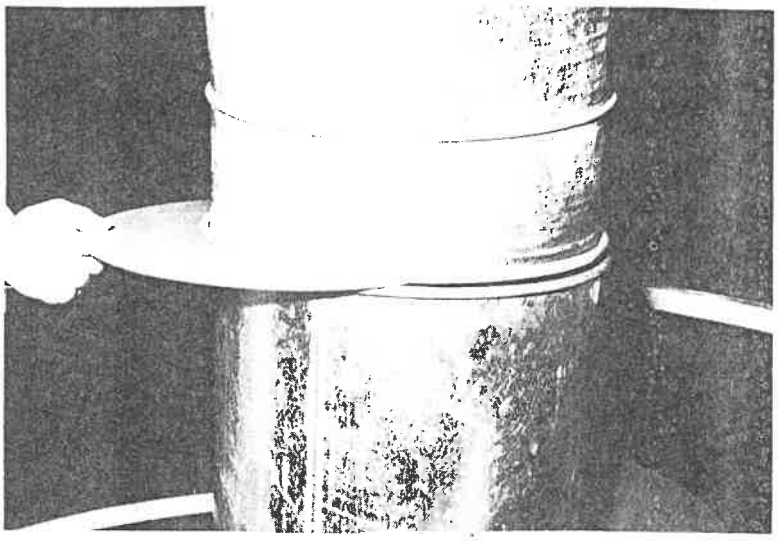


Fig. 4.2

4.9. Lift the unloader by approx. 20 cm and cover the the silage stack with an awning.

Important: After a short time (approx. 2 hours) dangerous gases will be produced by the material stored in the silo. There is thus a danger that anyone entering the silo may be asphyxiated.

Please follow strictly the safety regulations on page 4.

5. Emptying

5.1 Preparatory work

5.1.1. Open the top silo hatch. This is important to provide a supply of air during the emptying operation as otherwise a high vacuum may be produced in the silo which could result in a severe damage to it.

5.1.2. Connect up the suction blower. If this is a discharge forage blower its speed should first of all be increased by changing pulleys.

5.1.3. Where applicable change over the pipe diverter in the filling and suction pipeline and lock it in position.

5.1.4. Remove the sealing disc (Fig. 4.2).

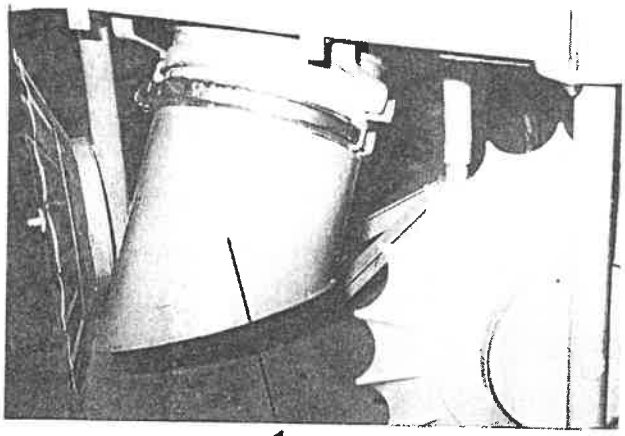


Fig. 5.1

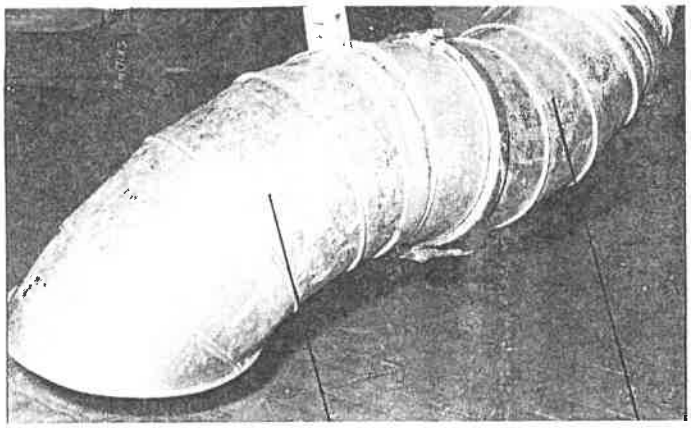


Fig. 5.2

Note: The suction arrangement (Fig. 5.1) is designed for a accurately chopped or short-cut heavy material with a moisture content of more than 50%.

The suction arrangement (Fig. 5.2) is designed for long-cut material with a moisture content of less 50%. Cut length up to 15 cm.

5.1.5. Fit the telescopic pipe where applicable.

5.1.6. Extend the supporting wheels by using the adjusting spindle (Fig. 2.4.1).

5.1.7. Remove the awning from the silage stack.

6. Starting the emptying operation

6.1. Switch on the suction blower.

6.2. Switch on the unloader by turning the main switch (Fig. 1.1/2) to "I" and pressing button "I" (Fig. 1.1/4).

6.3. Check that the pick-up capacity is satisfactory.

6.4. Check that the clean-up action of the pick-up discs is satisfactory.

7. Stopping the emptying operation

7.1. Raise the unloader manually by holding the selector switch (Fig. 1.1/3) on "Auf" ("Up") until no material is extracted. Then turn the selector switch to "0".

7.2. Press the "0" button.

7.3. Switch off the suction blower.

7.4. Lock the main switch at "0" (Fig. 1/2) by means of safety padlock.

8. Poor performance during emptying

8.1. Output too low:

- Set the minimum-current relay (Fig. 1.2/3) to a figure approximately 0.1 to 0.2 A higher.
- Similarly set the maximum-current relay (Fig. 1.2/1 to a figure 0.1 to 0.2 A higher.

Important: The maximum setting must not be more than 5 A.

- Set the delay-time relay (Fig. 1.2/3) to a shorter time, approx. 1.5 seconds.
- If necessary, set up the pick-up discs to force material inward more.
- The pick-up discs are not forcing the material inward in a spiral, i.e. the surface of the material is not even and ridges form between the discs which are forming the ridge at a more acute angle or if necessary move the discs in question

inwards or outwards along the rotating arm.

- The unloader jerks. Adjust the pressure on the supporting wheels on the supporting arms.

- Material was not properly distributed by the unloader during filling.

- The suction capacity of the suction blower is too small

- The material is very short and heavy. Lengthen the suction arrangement (Fig. 5.1) with an additional 70 mm length of suction tube and a pipe clip.

- The suction arrangement takes in secondary air.

8.2. Output too high: (Delivery pipe becomes blocked)

- Set minimum-current relay lower (at least, however, to 0.2 A above no-load current as otherwise the unloader will raise constantly).

- Set maximum-current relay lower.

- Set the delay-time relay (Fig. 1.2/2) to a higher time, up to 10 seconds where applicable.

- Set the pick-up discs to a less acute angle.

9. Faults during emptying

9.1. The reason for any electrical faults will be the same as in section 3.

9.2. Blockage in or upstream of the suction trunk

- The material is presented to the trunk in excessive quantities or irregularly. Check the settings of the level control system and if necessary readjust the pick-up discs.

9.3. Conveying rate suddenly drops

- Blockage in the suction or delivery pipe (horizontal or inclined pipes are particularly prone to this).

- The pipe diverter is not firmly locked which means that an excessive amount of extraneous air is getting in.

- The inlet for auxiliary air is opened too wide.

- The blower or delivery pipe is clogged up. This may happen when re-fermented material or material containing sugar as chopped maize is being fed.
  Where necessary the blower and pipe should be washed out with water from time to time.

Important: Whenever any work is done in the silo the same safety precautions should be taken as are described in the section on filling.

Note: Settings should not be changed until the system has been watched for an adequate length of time and it is clear exactly what needs to be changed.

10. Lubrication and maintenance

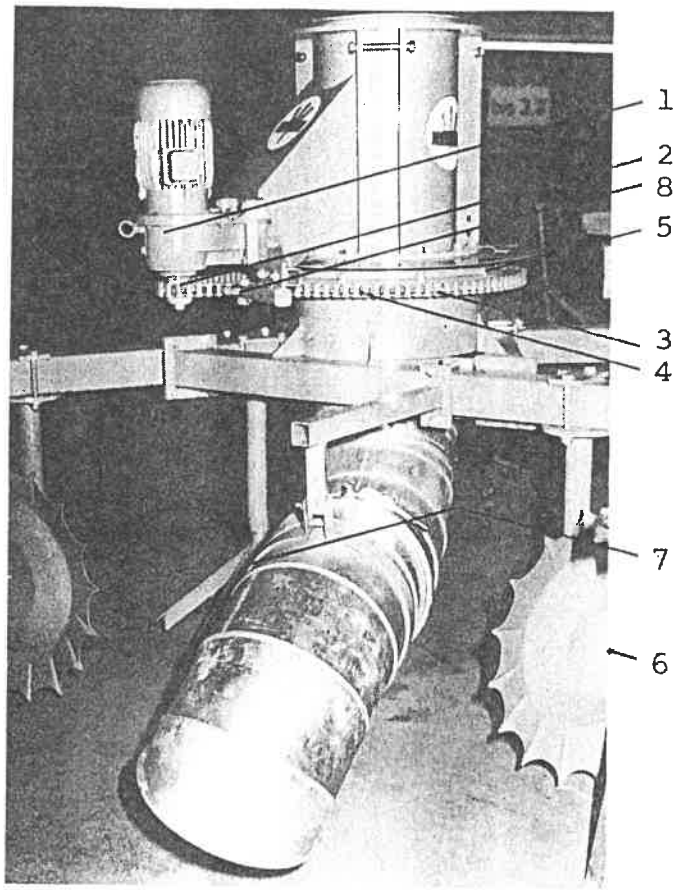


Fig. 10.1

Fig. 10.1/Item 1) Gearbox: First oil change after 200 operating hours and once every two years.

Oil: 1.55 litres of 22E/50° C EP gear oil (avarage climatic conditions) or "Mobil 1" oil (extreme climatic conditions).

Item 2) Motor sprocket: Clean and oil after the filling operation.

Item 3) Roller chain: As under item 2 motor sprocket.

Item 4) Main sprocket: As under item 2 motor sprocket.

Item 5) Mounting ring for main sprocket: (4 grease nipples)
a) Lubricate on completion of filling operation;
b) before starting of emptying operation;
c) every two months during emptying.

Item 6) Pick-up discs: (1 grease nipple each) As for item 5

Item 7) Clean-up device: (1 grease nipple) As for item 5 mounting ring

Item 8) Chain tensioner: As for item 2 motor sprocket

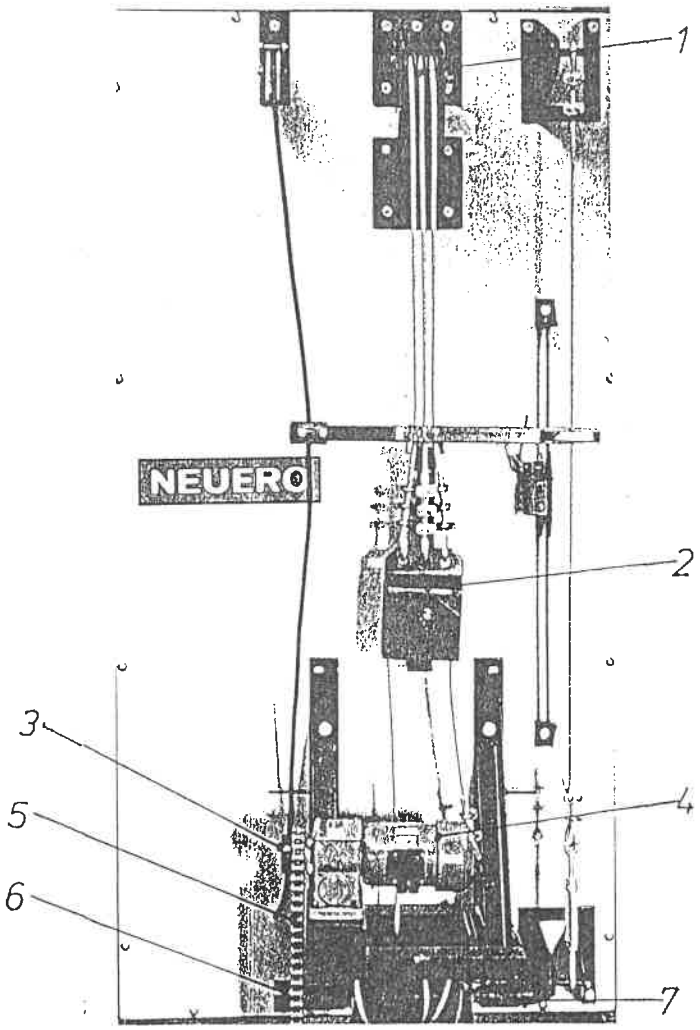


Fig. 10.2

Fig. 10.2/Item 1) Pulley block: (1 grease nipple)

a) Lubricate before starting of filling operation;

b) on completion of filling operation;

c) every three months subsequently.

Item 2) Cable deflection pulleys: (1 grease nipple) — As under item 1 pulley block.

Item 3) Motor sprocket: — Oil twice a year.

Item 4) Winch motor: — ----

Item 5) Roller chain: — Oil twice a year.

Item 6) Main sprocket: — Oil twice a year.

Item 7) Winch bearings: (2 grease nipples) — Grease every 2 months.

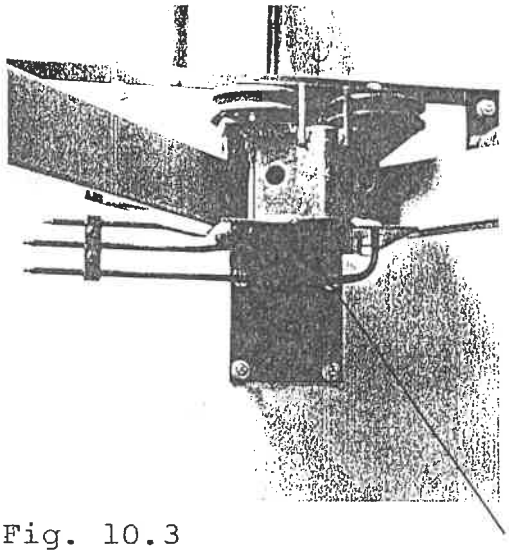


Fig. 10.3

Fig. 10.3/Item 1) Internal roller block: (3 grease nipples) Lubricate of the end of filling operation.

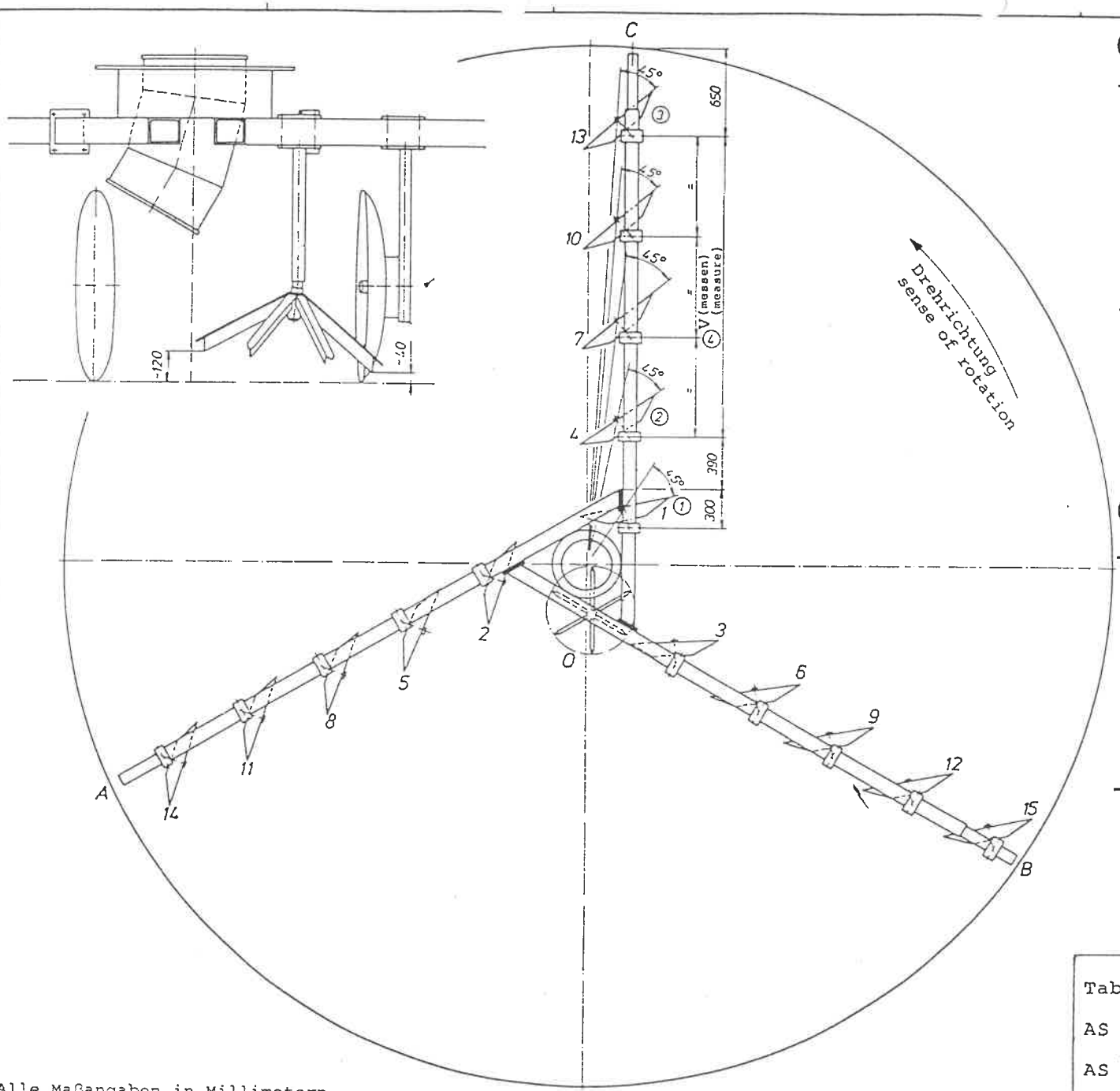
Important: The unloader must never be used as a hoist or as a supporting framework for installation work, nor should it be used to stand on when greasing the components.

Note: Wearing parts should be inspected roughly three times a year. If worn items are replaced in good time this will avoid even greater expenses caused by components breaking.

The following are to be considered as wearing parts:

1. All plain bearings and ball bearings, roller chain, sprockets and pulleys
2. Supporting wheels
3. Wire ropes
4. Cables
5. Cable pulleys
6. Suction trunks
7. Pipes

See also list of spare parts of the assembly instructions for AS.



D

-Befestigung der Räder auf Arm C

1. Rad 1: nur Winkel ändern
2. Rad 4: nach angeg. Maßen
3. Rad 13(äußerstes): nach angeg. Maßen
4. Abstand V messen und dazwischen die restlichen Räder gleichmäßig verteilen

-Befestigung der Räder auf Arm A und B

Alle Angaben in Zeichnung:

Entnahmeradeinstellung Auslagerung Tab. 1105

GB

-Fixing of discs on arm C

1. Disc 1: change angle only
2. Disc 4: according to the indicated dimensions
3. Disc 13: according to the indicated dimensions
4. Determine distance V and fix the other discs uniformly

-Fixing of discs on arms A and B

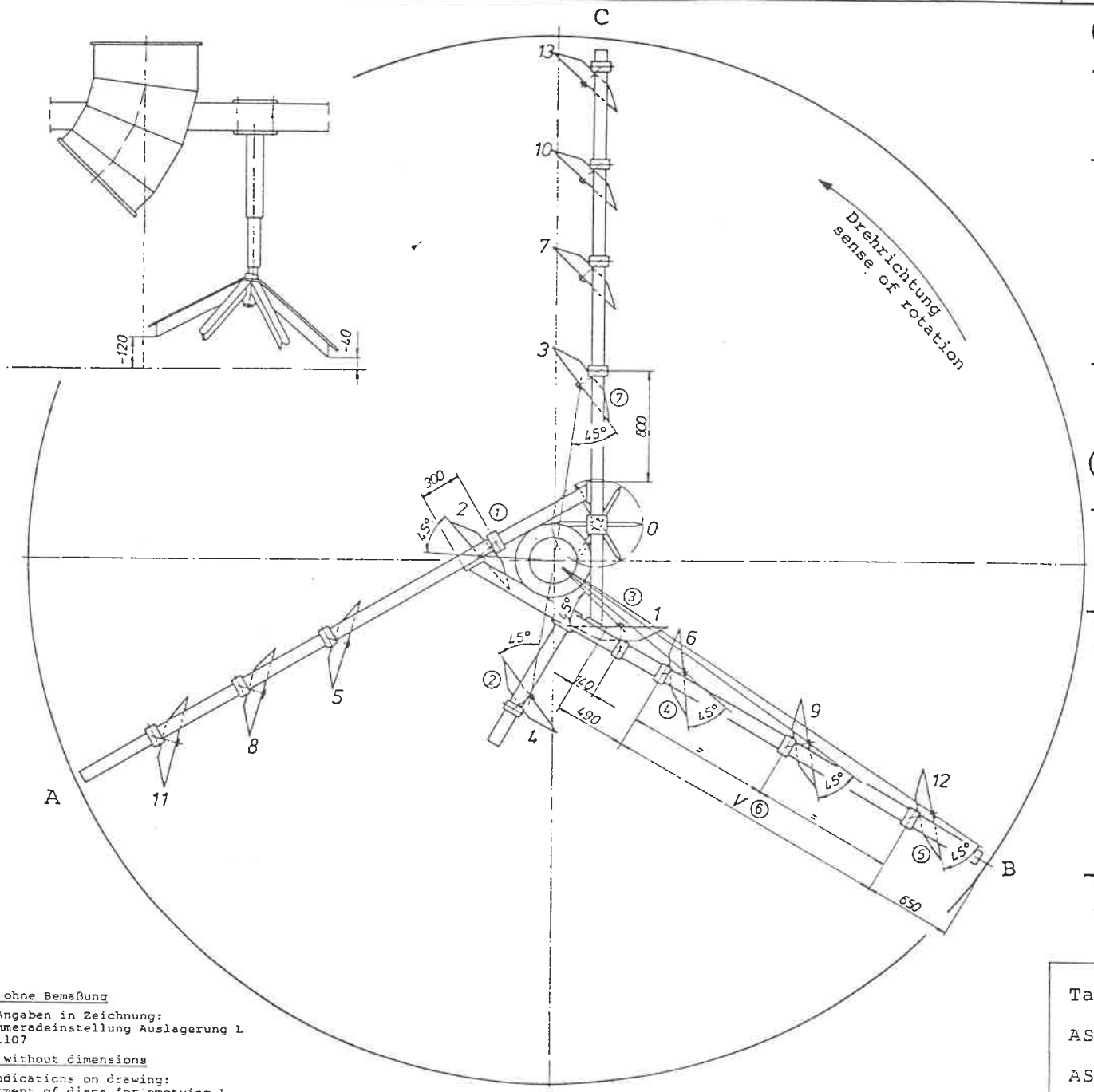
All indications on drawing:

adjustment of discs for emptying L Tab. 1105

Tab. 1106

AS Entnahmeradeinstellung - Einlagerung (Kurze Absaugvorrichtung)
AS Setting of discs for filling (Short suction device)

Alle Maßangaben in Millimetern
All dimensions in millimeters



D

-Befestigung der Räder auf Arm A

① Rad 1: nach angegebenen Maßen

-Befestigung der Räder auf Arm B

② Rad 2: nur Winkel ändern

③ Rad 3: nach angeg. Maßen

④ Rad 6: nach angeg. Maßen

⑤ Rad 12(äußerstes): nach angeg. Maßen

⑥ Abstand V messen und dazwischen die restlichen Räder gleichmäßig vert.

-Befestigung der Räder auf Arm C

⑦ Rad 4: nach angeg. Maßen

GB

-Fixing of discs on arm A

① Disc 1: according to the indicated dimensions

-Fixing of discs on arm B

② Disc 2: change angle only

③ Disc 3: according to the indicated dimensions

④ Disc 6: according to the indicated dimensions

⑤ Disc 12: according to the indicated dimensions

⑥ Determine distance V and fix the other discs uniformly

-Fixing of discs on arm C

⑦ Disc 4: according to the indicated dimensions

Räder ohne Bemaßung

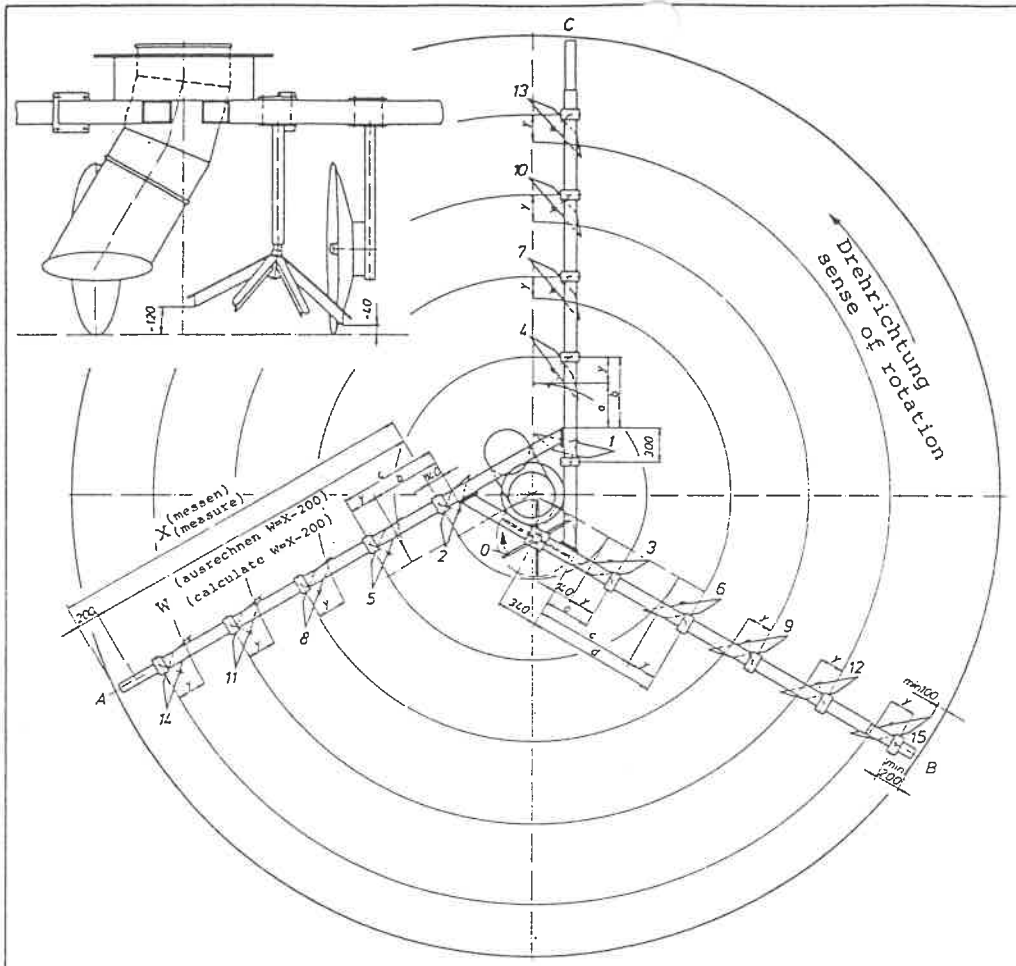
Alle Angaben in Zeichnung:
Entnahmeradeinstellung Auslagerung L
Tab. 1107

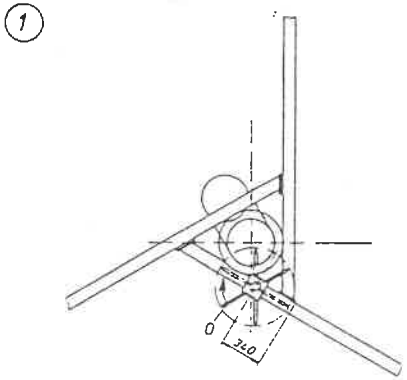
Discs without dimensions

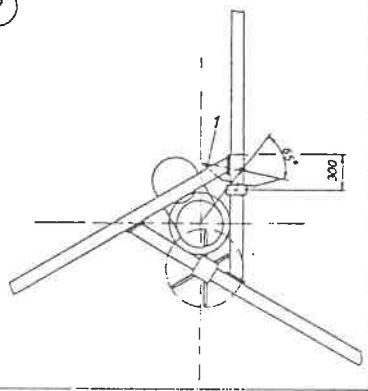
All indications on drawing:
adjustment of discs for emptying L
Tab. 1107

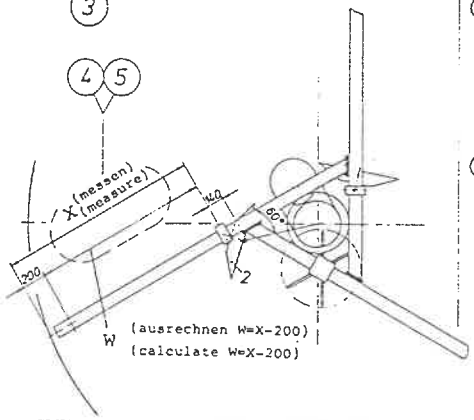
Tab. 1108

AS Entnahmeradeinstellung - Einlagerung
(Lange Absaugvorrichtung)
AS Setting of discs for filling
(Long suction device)







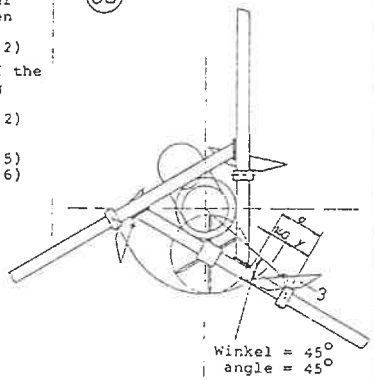


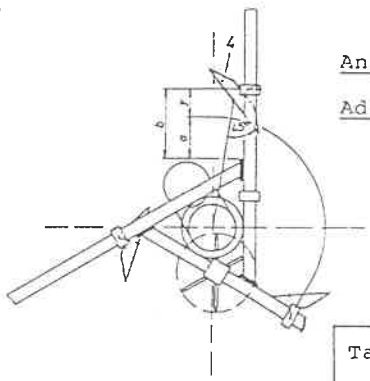
⑥ Z = Anzahl der restlichen Räder (ohne 1 u.2)

Z = Number of the remaining wheels (less 1 a.2)

⑦ Y = W / Z (siehe 5) (siehe 6)

Y = W / Z (see 5) (see 6)





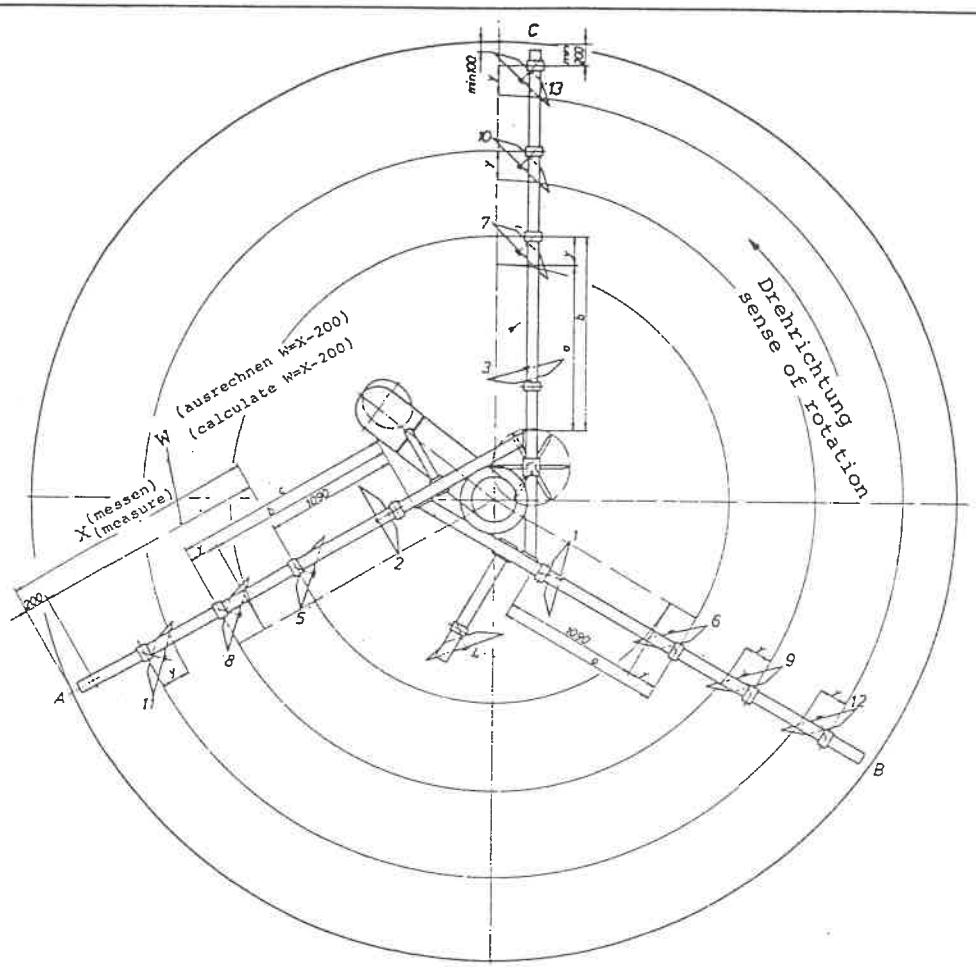
Anstellwinkel aller weiteren Räder 45°

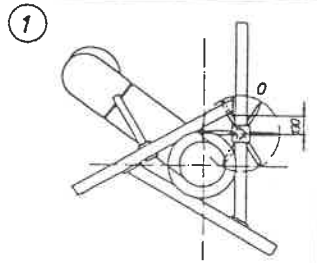
Adjusting angle of all other discs 45°

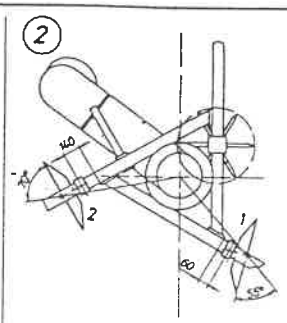
Tab. 1105

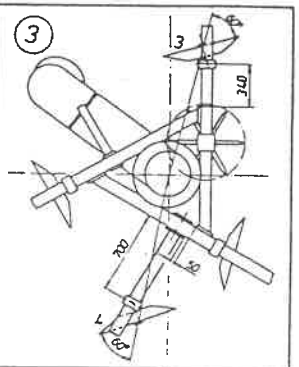
AS Entnahmeradeinstellung - Auslagerung (kurze Absaugvorrichtung)

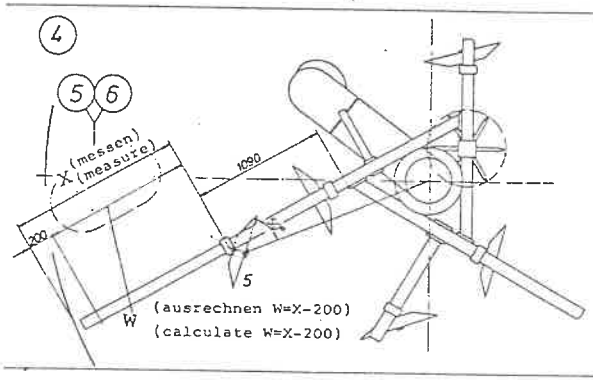
AS Setting of discs for emptying (short suction device)





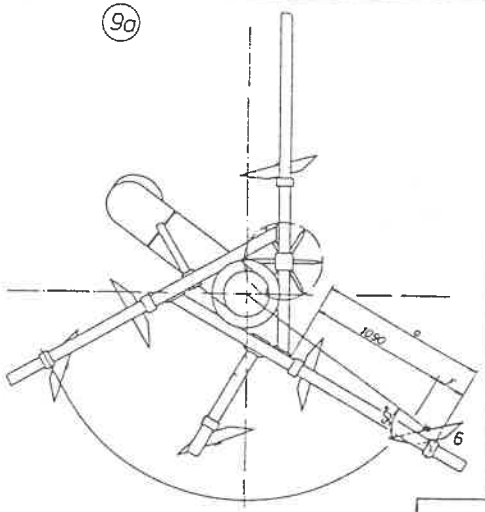


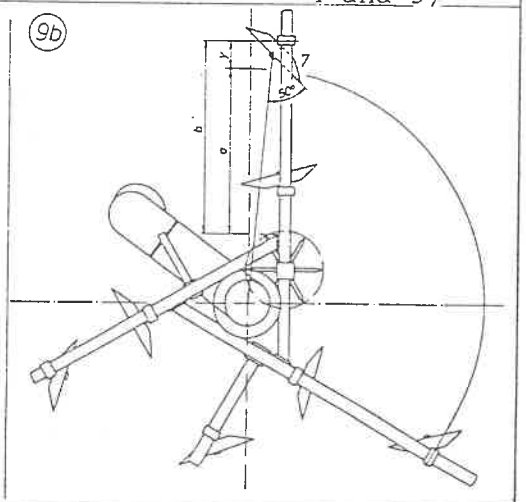


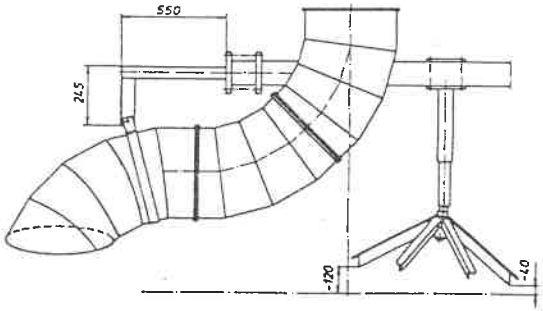


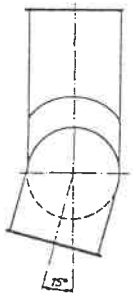
Z = Anzahl der restlichen Räder (ohne 1,2,3,4u.5)

Z = Number of the remaining discs (less 1,2,3, 4 and 5)









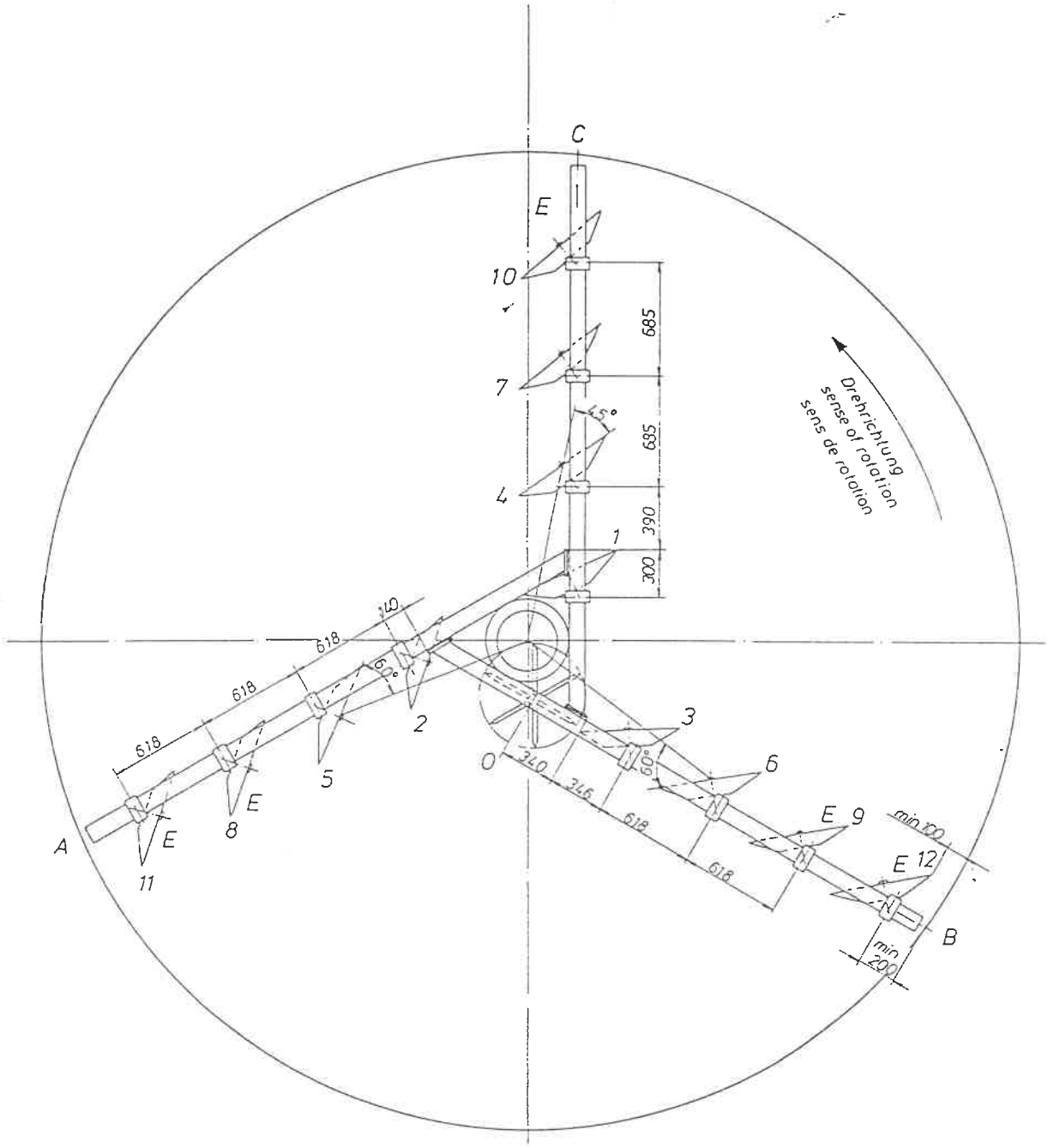
Alle Maßangaben in Millimetern
All dimensions in millimeters

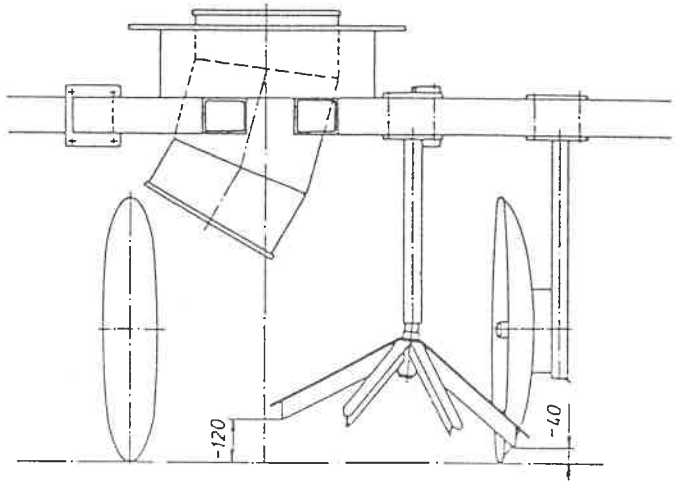
Anstellwinkel aller weiteren Räder 50°
Adjusting angle for all other discs 50°

Tab. 1107

AS Entnahmeradeinstellung - Auslagerung
(Lange Absaugvorrichtung)

AS Setting of discs for emptying
(Long suction device)



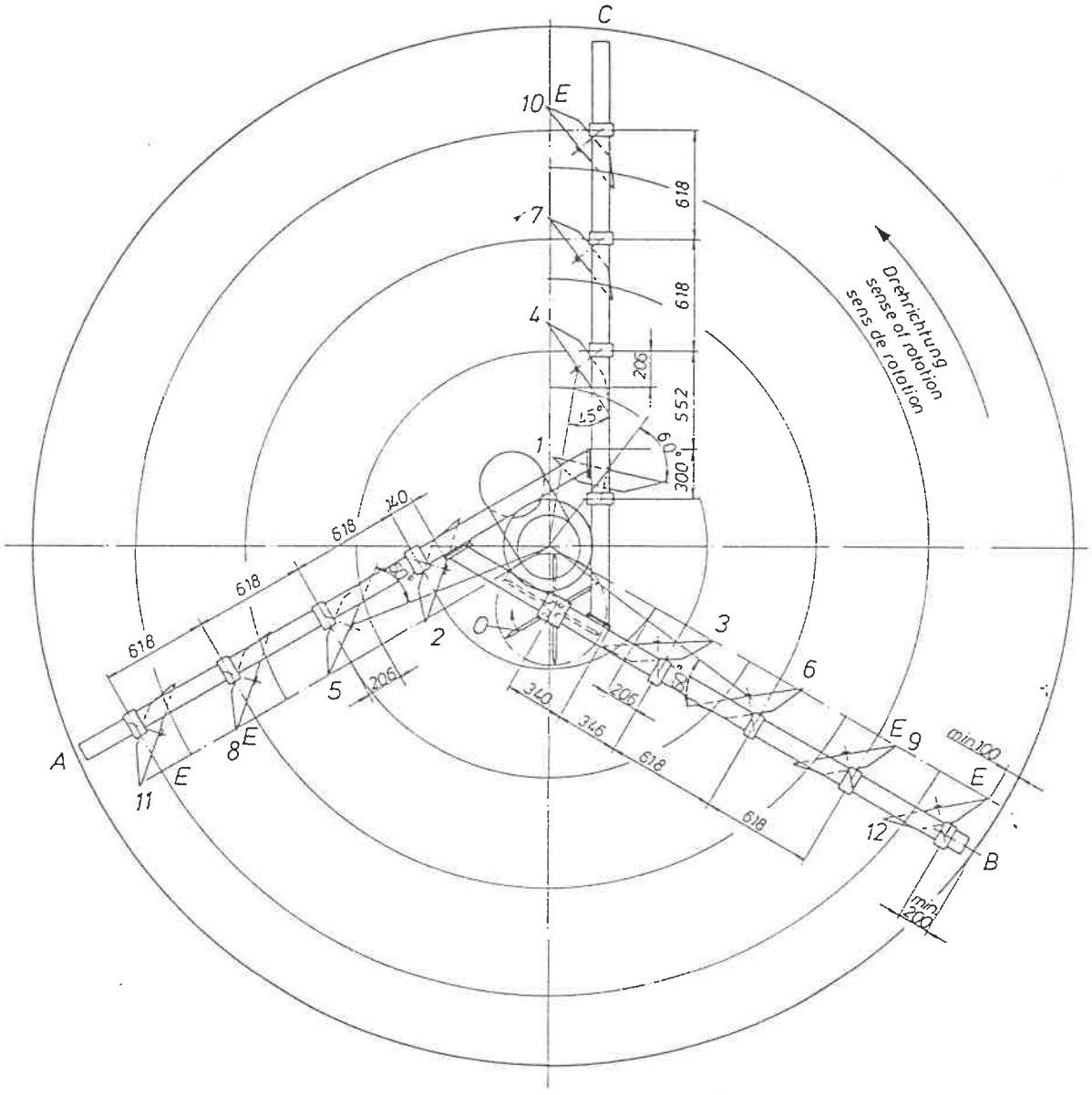


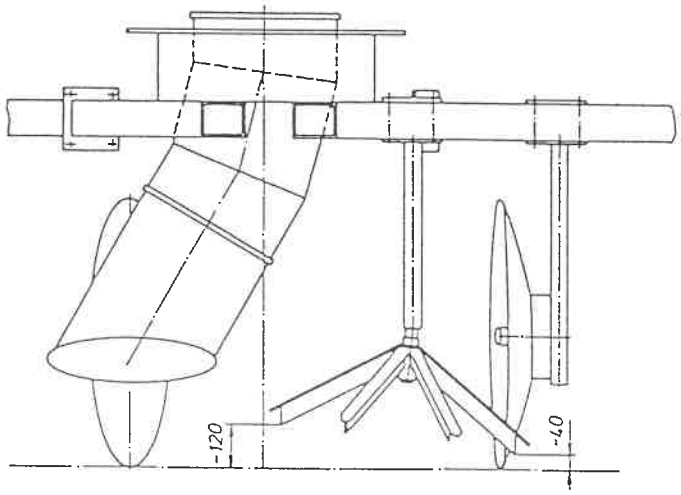
E = Entnahmerad mit Eisdorn
pick up discs with spikes

Zeichngs.-Nr	Teil	Gegenstand	Stck.	Rohmaße	Werkstoff
AS		Gegenstand: Entnahmeradeinstellung Einlagerung Harvestore Typ 20 Φ 5,98			Maßstab 1:2(

NEUERO
Engelbrecht & Lemmerbrock GmbH + Co.

	Name	Datum
Gezeichnet		12.6.85
Geprüft		



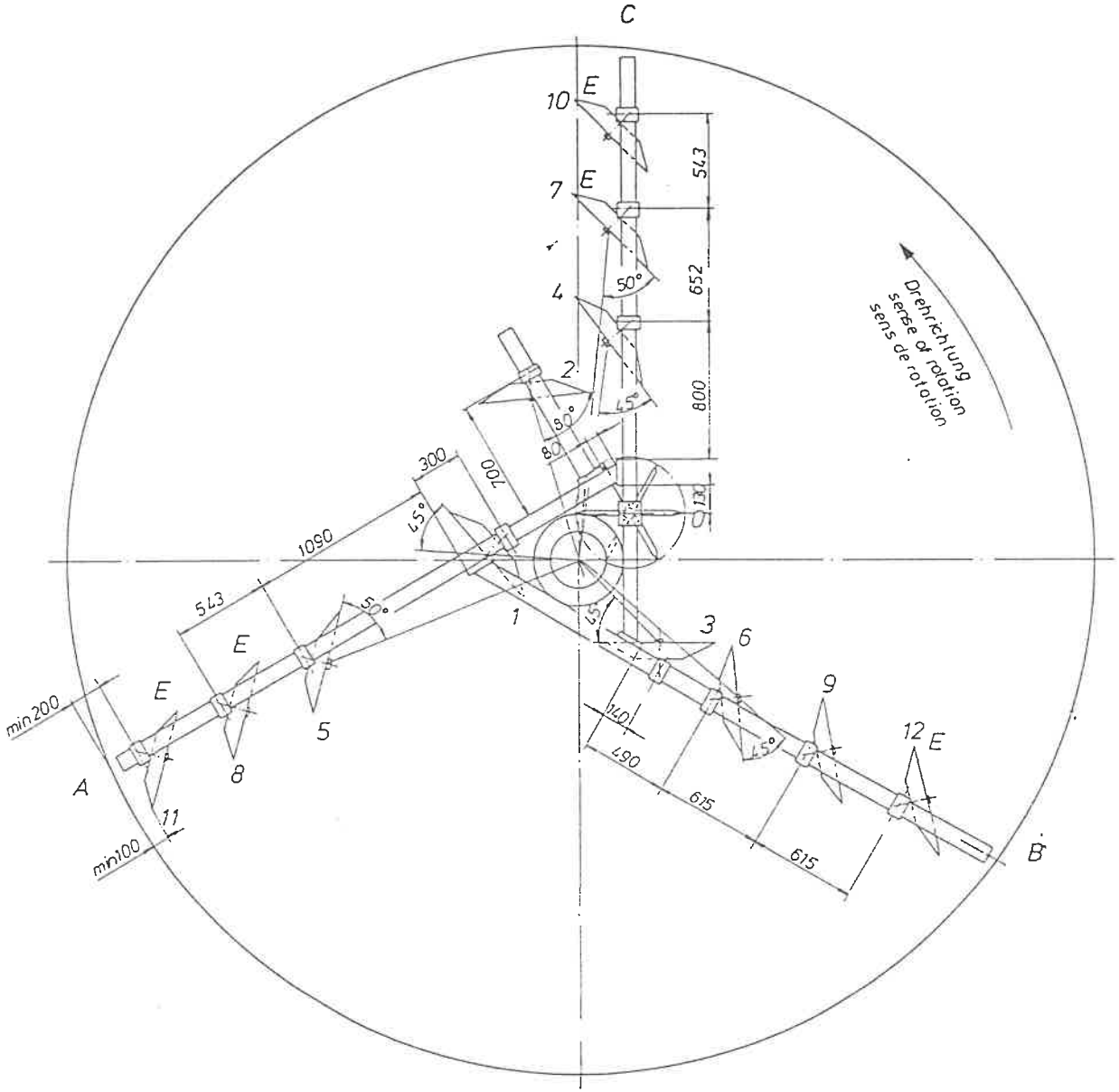


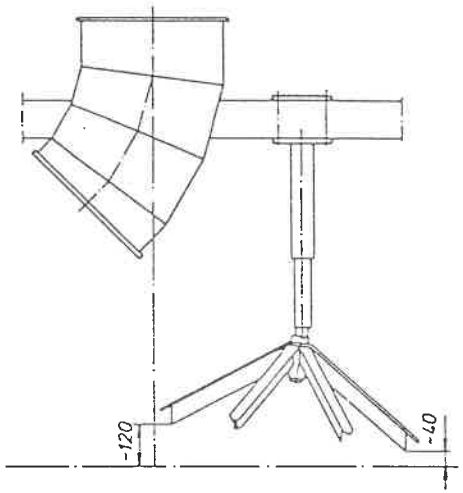
E = Entnahmerad mit Eisdorn
pick up discs with spikes

Zeichnungs-Nr.	Teil	Gegenstand	Stck.	Rohmaße	Werkstoff	DIN
AS		Entnahmerdeinstellung Auslagerung Harvestore Typ 20 Φ 5,98m				Maßstab 1:20

NEUERO
Engelbrecht & Lemmerbrock GmbH + Co.

	Tag	Name
Gezeichnet	12.6.85	
Geprüft		





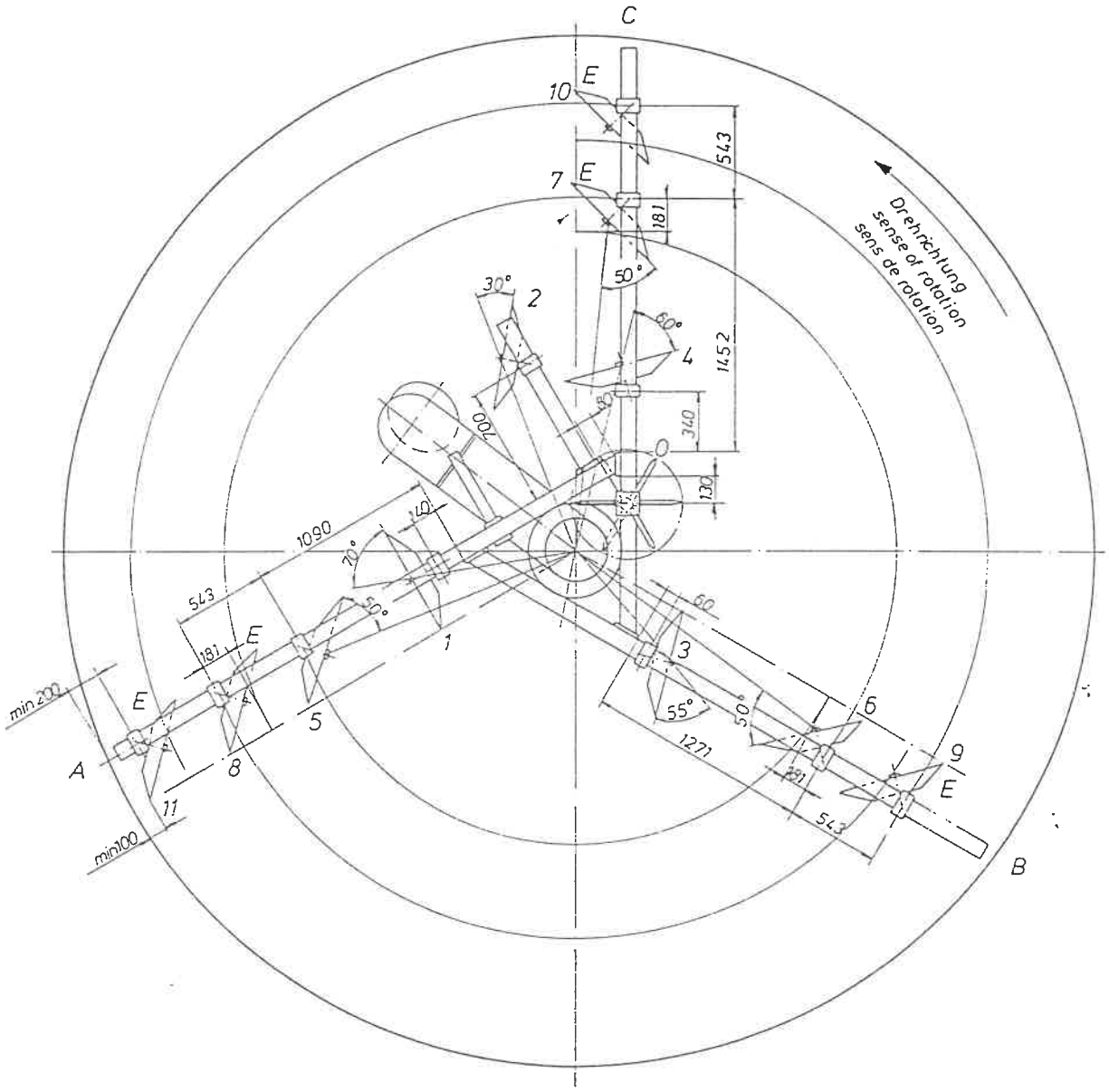
E = Entnahmerad mit Eisdorn
pick up discs with spikes

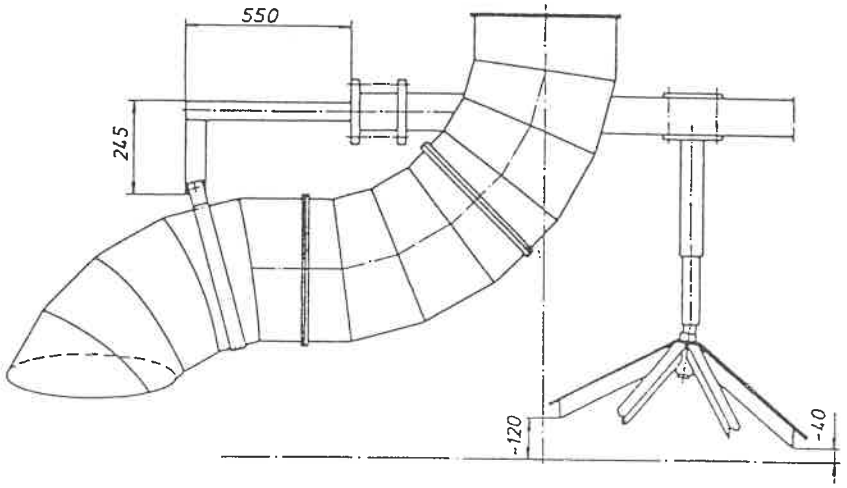
Zeichnungs-Nr.	Teil	Gegenstand	Stck.	Rohmaße	Werkstoff	DIN
AS		Gegenstand: Entnahmeradeinstellung Einlagerung L Harvestore Typ 20 ϕ 5,98				Maßstab 1:20

NEUERO
Engelbrecht & Lemmerbrock GmbH + Co.
4520 Melle, Neuerostraße

	Tag	Name
Gezeichnet	13.06.85	
Geprüft		

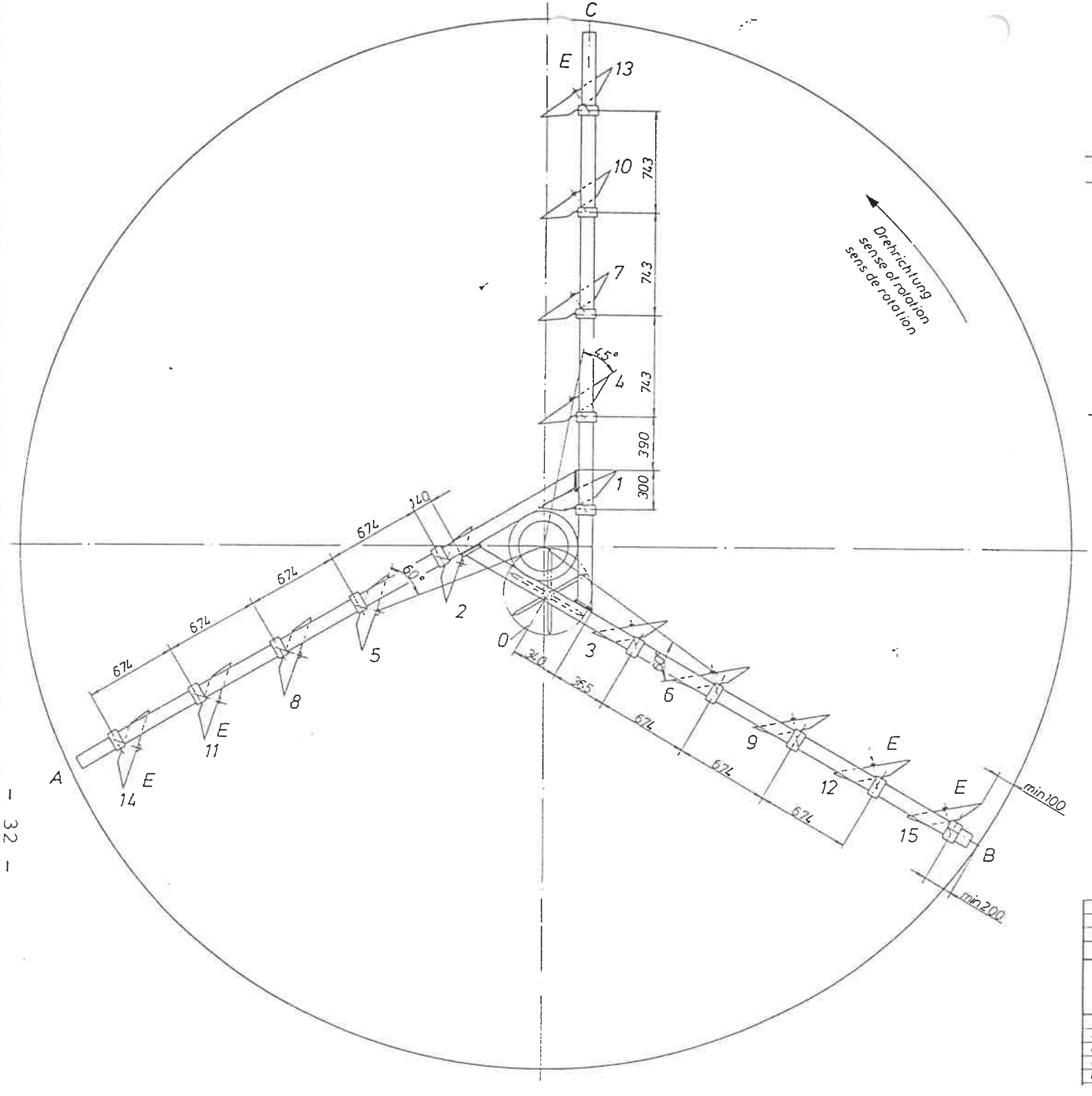
Zeichn. Nr. Tab. 1405

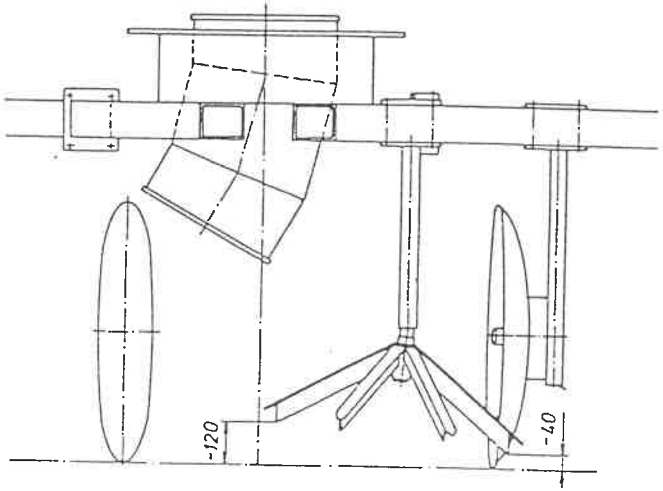




E = Entnahmerad mit Eisdorn
pick up discs with spikes

3						
2						
1						
Zeichngs.-Nr.	Teil	Gegenstand	Stck.	Rohmaße	Werkstoff	DIN
AS	Gegenstand: Entnahmeradeinstellung Auslagerung L Harvestore Typ 20 Φ5,98 m					Maßstab 1:20
f		NEUERO Engelbrecht & Lemmerbrock GmbH + Co.		Tag	Name	
e			Gezeichnet	13.06.85	Uhlgas	
d			Geprüft			
c			Zeichn. Nr.			



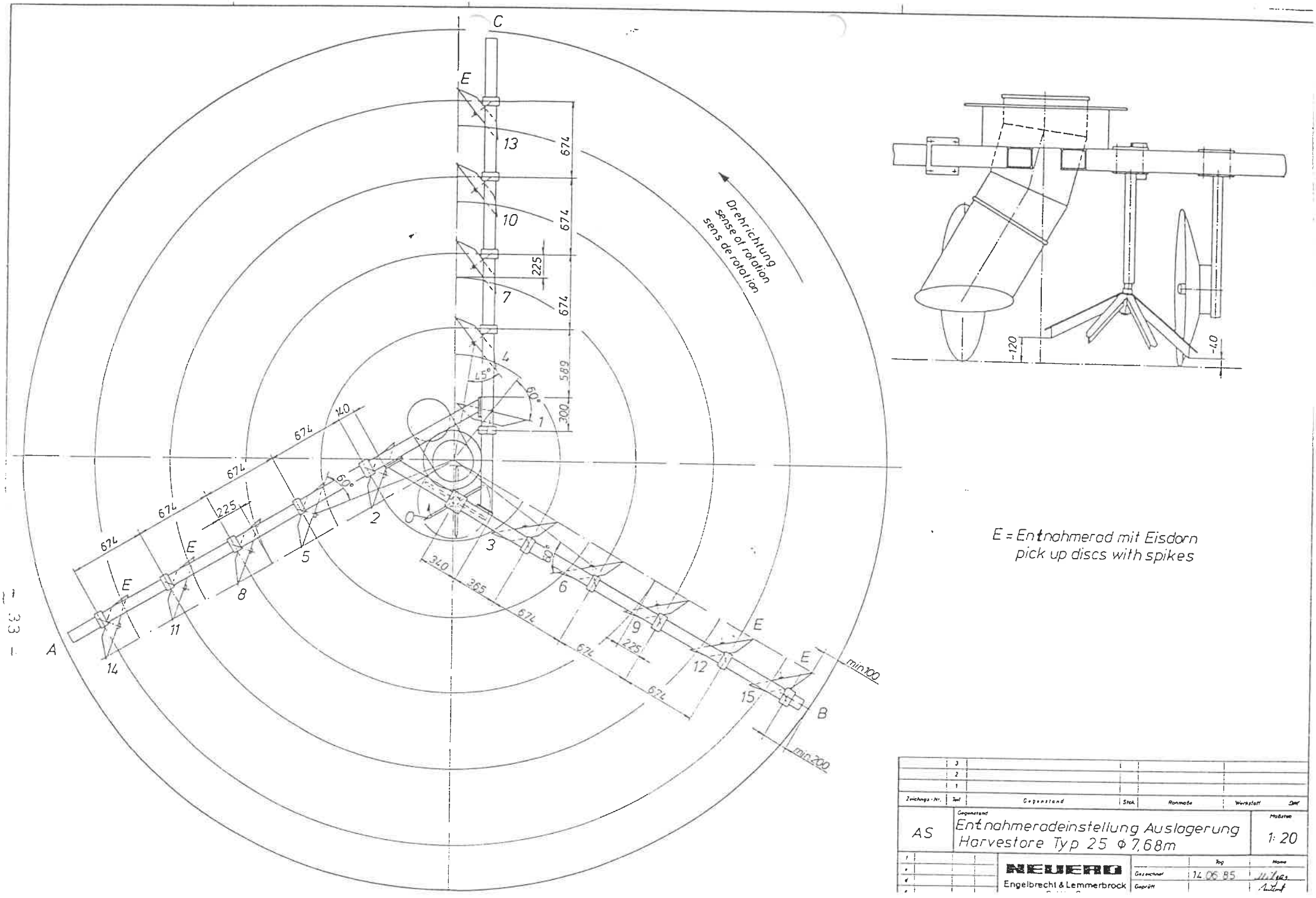


E = Entnahmerad mit Eisdorn
pick up discs with spikes

Zeichnungs-Nr.	Gegenstand	Maßstab
AS	Entnahmeradeinstellung Einlagerung Harvestore Typ 25 Φ 7,68m	1:20

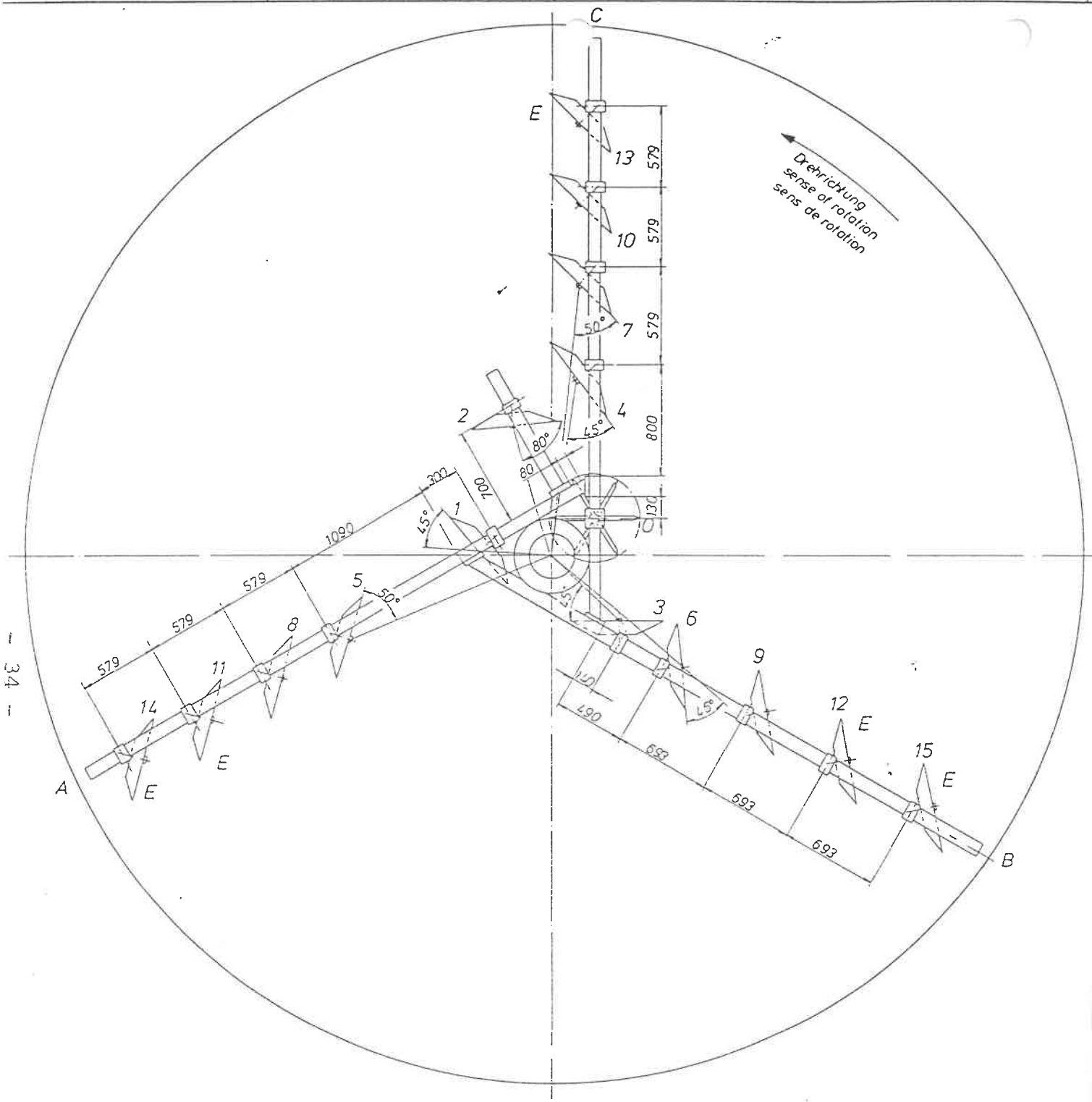
NEUERO
Engelbrecht & Lemmerbrock GmbH + Co.
4520 Melle, Neuerostraße

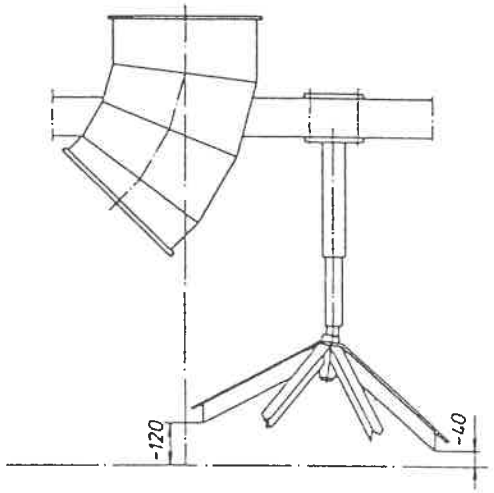
Gezeichnet: 14.5.85



E = Entnahmerad mit Eisdorn
pick up discs with spikes

Zeichngs.-Nr.	Teil	Gegenstand	Stck.	Normaße	Werkstoff	Bem.
AS		Entnahmeradeinstellung Auslagerung Harvestore Typ 25 Φ 7,68m				Maßstab 1:20
		NEUERO Engelbrecht & Lemmerbrock		Gezeichnet 14.06.85		
				Geprüft		



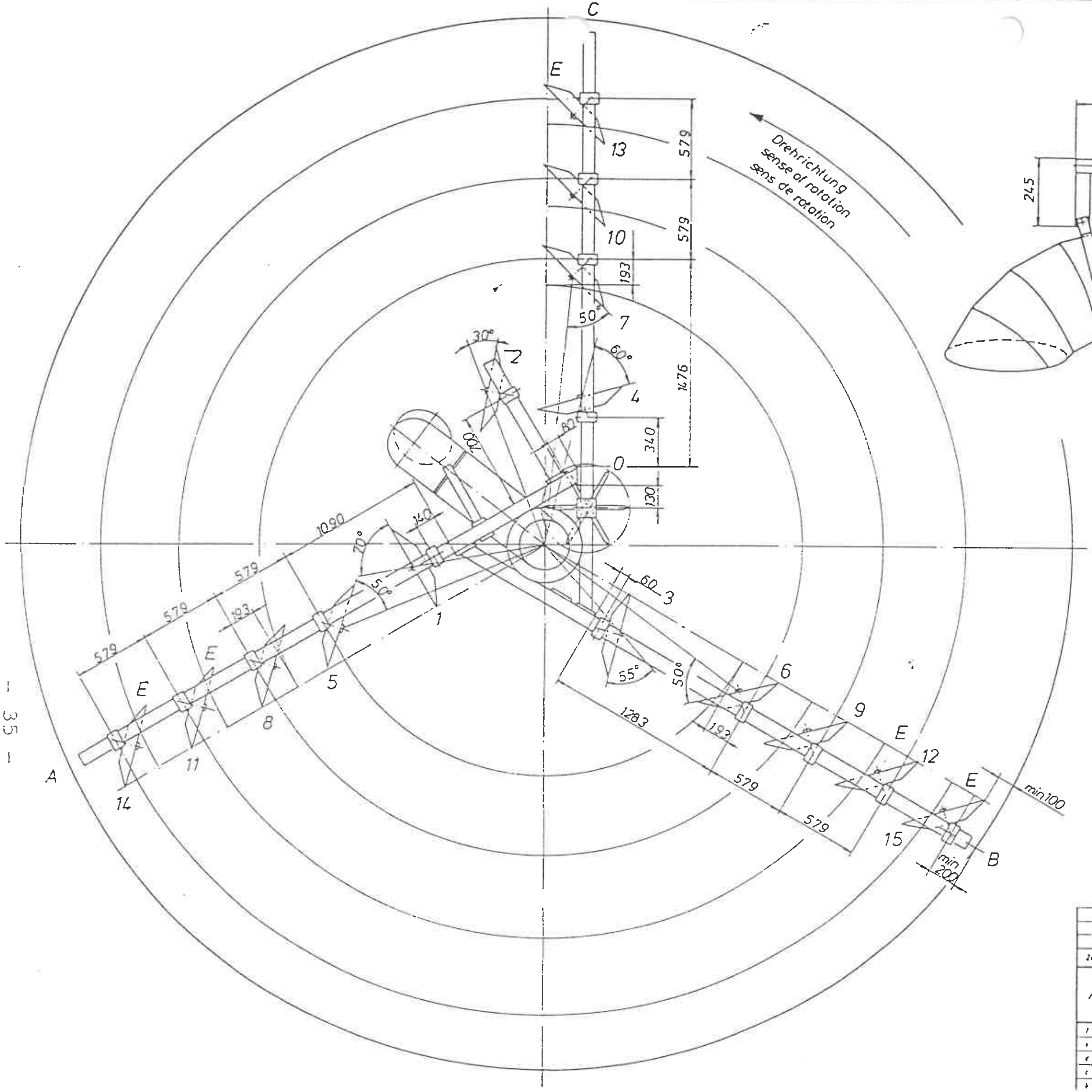


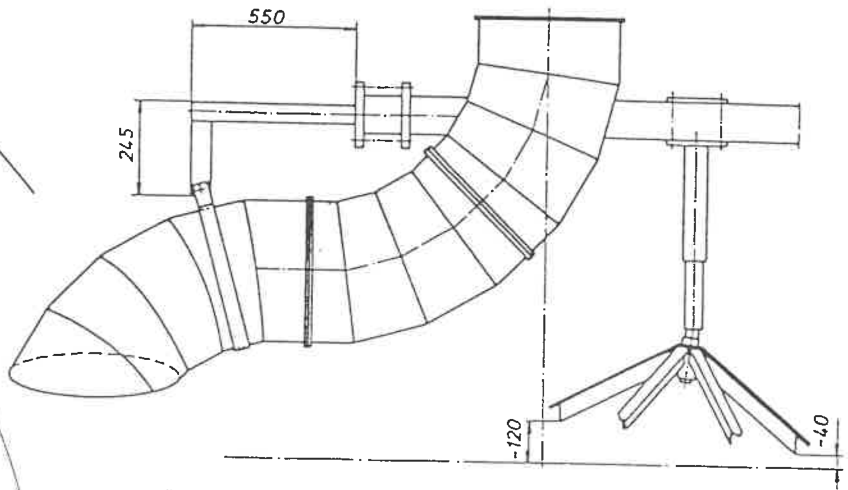
E = Entnahmerad mit Eisdorn
pick up discs with spikes

	3					
	2					
	1					
Zeichngs.-Nr.	Teil	Gegenstand	Stck.	Rohmaße	Werkstoff	DIN
AS	Gegenstand: Entnahmeradeinstellung Einlagerung L Harvestore Typ 25 ⌀ 7,68					Maßstab 1:20

NEUERO
Engelbrecht & Lemmerbrock GmbH + Co
4520 Melle, Neuernstraße

	Tag	Name
Gezeichnet	18.06.85	
Geprüft		
Zeichn. Nr.		



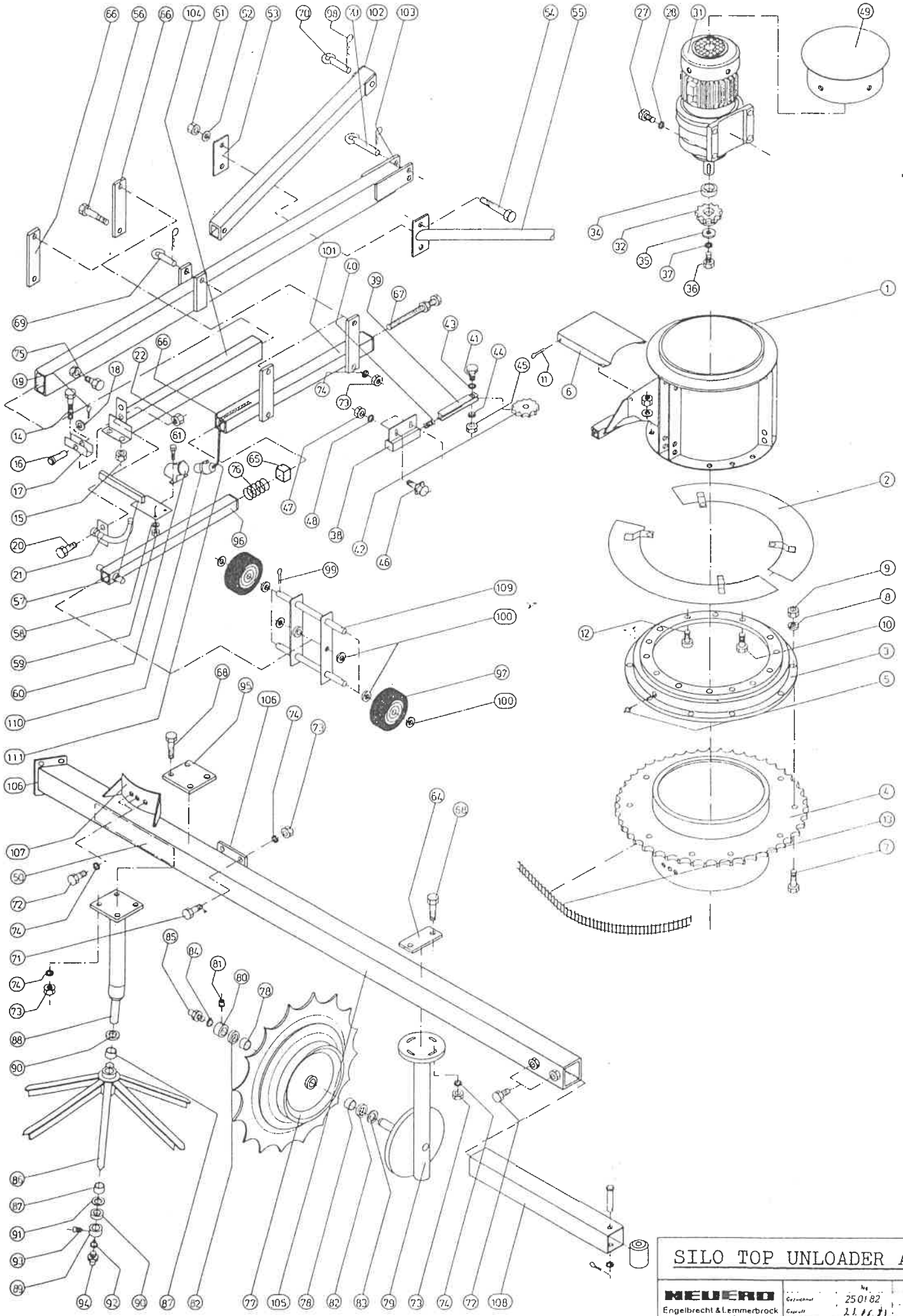


E = Entnahmerad mit Eisdorn
pick up discs with spikes

Zeichnungs-Nr.	Teil	Gegenstand	Stck	Rohmaße	Werkstoff	DIN
AS		Gegenstand: Entnahmeradeinstellung Auslagerung L Harvestore Typ 25 Φ 7,68				Maßstab 1: 20

NEUERO
Engelbrecht & Lemmerbrock
GmbH + Co.
4520 Melle, Neuerostraße

	Tag	Name
Gezeichnet	18.06.85	[signature]
Geprüft		[signature]
Zeichn. Nr.		



SILO TOP UNLOADER A:

NEUERO
Engelbrecht & Lemmerbrock GmbH + Co
4520 Melle, Neuerostraße

25 01 82

6 Tab 912

N E U E R O - SPARE PARTS SPECIFICATION

SILO TOP UNLOADER AS 2

List no.	Part no.	Wearing part	Pieces	Designation
1			1	Central pipe
2			1	Safety disk
3		x	1	Ball bearing slewing rim
4		x	1	Driving head- lower part
5	02366	x	4	Lubricating nipple
6			1	Covering cap
7			10	Hexagon bolt
8			10	Spring washer
9			10	Hexagon nut
10			8	Hexagon bolt
11			2	Split-pin
12			4	Hexagon bolt
13	02410	x	1	Roller chain
14			6	Hexagon bolt
15			12	Hexagon nut
16			3	Pin
17			3	U-rail
18			3	Washer
19			3	Split-pin
20			2	Hexagon bolt
21			1	Cable guidance
22			2	Hexagon nut
23			3	Pin with hole for split-pin
24			3	Split-pin
25			3	Washer
26			3	Roller of polyamide
27			4	Hexagon bolt
28			4	Spring washer
29				
30				

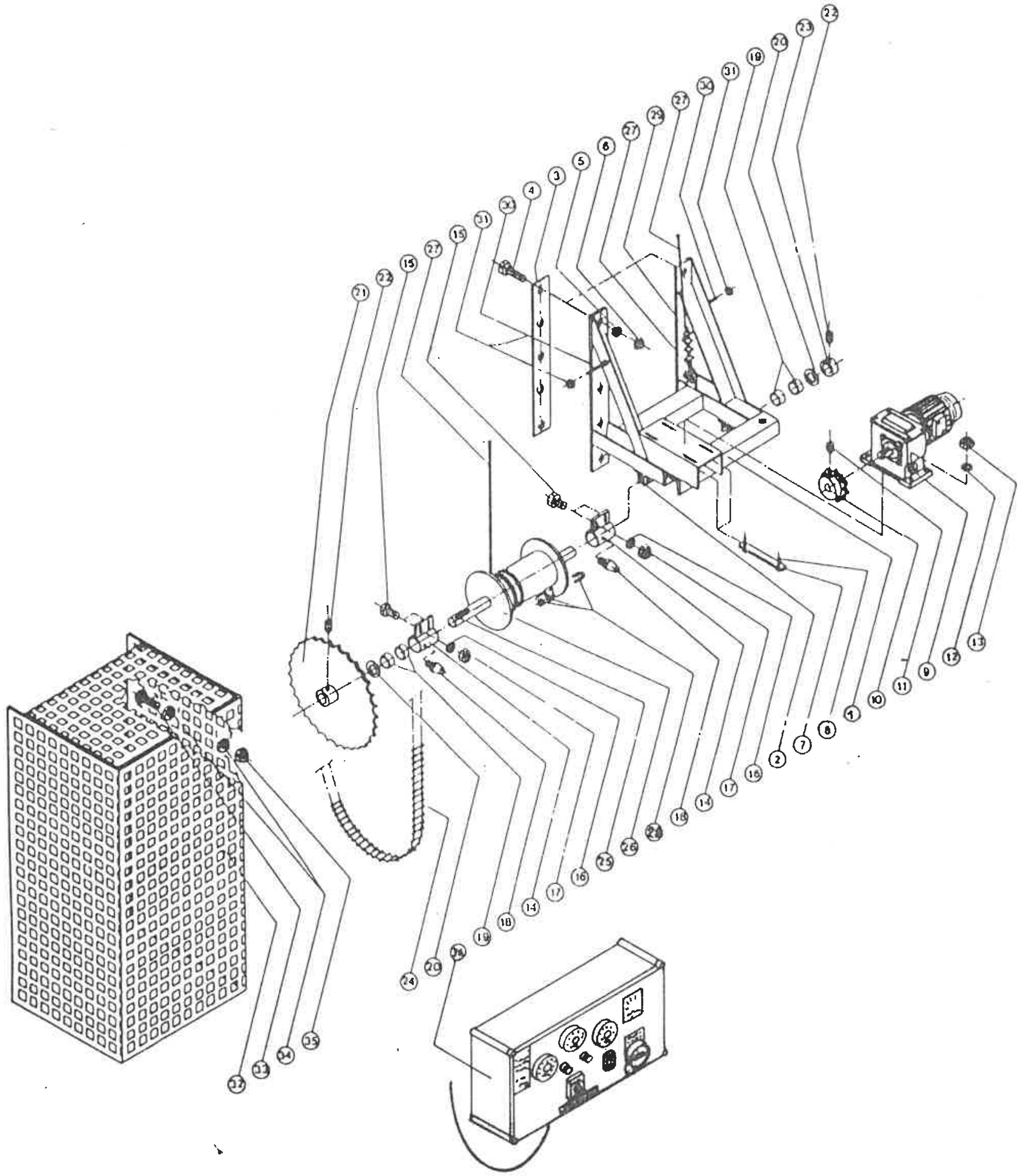
List no.	Part no.	Wearing part	Pieces	Designation
31	94030	x	1	Gear motor
32	02412	x	1	Chain wheel
33				
34			1	Distance sleeve
35			1	Washer
36			1	Hexagon bolt
37			1	Spring washer
38			1	Guidance - chain adjuster
39			1	Fork - chain adjuster
40			1	Pressure spring
41			1	Hexagon bolt
42	02413	x	1	Chain tensioning wheel
43			1	Spring washer
44			1	Spring washer
45			1	Hexagon nut
46			2	Hexagon bolt
47			2	Hexagon nut
48			2	Washer
49			1	Motor dust protection
50			3	Rotary arm reinforcement
51			6	Hexagon nut
52			6	Spring washer
53			3	Flange
54			6	Hexagon bolt
55	24245		2	Cross connection for carrying arms
56			18	Hexagon bolt
57			1	Lever arm for CEE-coupling
58			2	Washer
59			2	Hexagon nut
60			1	CEE-coupling with wall mounting
61			2	Slotted cheese head screw
62				
63				

List no.	Part no.	Wearing part	Pieces	Designation
64				Clamping flange for
			10	AS 2 50
			12	AS 2 60
			14	AS 2 70
			15	AS 2 80
			17	AS 2 90
65			3	Thrust piece
66			12	Bracket for carrying arm
67		x	3	Threaded rod with hexagon nut
68		x		Hexagon bolt for
			24	AS 2 50
			28	AS 2 60
			32	AS 2 70
			34	AS 2 80
			38	AS 2 90
69			9	Pin
70			3	Pin
71			12	Hexagon bolt
72			15	Hexagon bolt
73				Hexagon nut for
			63	AS 2 50
			67	AS 2 60
			71	AS 2 70
			73	AS 2 80
			77	AS 2 90
74				Spring washer for
			63	AS 2 50
			67	AS 2 60
			71	AS 2 70
			73	AS 2 80
			77	AS 2 90
75			3	Hexagon bolt
76			3	Pressure spring
77	24239	x		Pick-up disk for
			10	AS 2 50
			12	AS 2 60
			14	AS 2 70
			15	AS 2 80
			17	AS 2 90

List no.	Part no.	Wearing part	Pieces	Designation
78	02480	x		Bushing for
			10	AS 2 50
			12	AS 2 60
			14	AS 2 70
			15	AS 2 80
			17	AS 2 90
79				Pick-up disk mounting for
			10	AS 2 50
			12	AS 2 60
			14	AS 2 70
			15	AS 2 80
			17	AS 2 90
80				Set collar for
			10	AS 2 50
			12	AS 2 60
			14	AS 2 70
			15	AS 2 80
			17	AS 2 90
81				Threaded pin
			10	AS 2 50
			12	AS 2 60
			14	AS 2 70
			15	AS 2 80
			17	AS 2 90
82	02195	x		Ferrous compensation disk for
			20	AS 2 50
			24	AS 2 60
			28	AS 2 70
			30	AS 2 80
			34	AS 2 90
83	02487	x		Compensation disk for
			10	AS 2 50
			12	AS 2 60
			14	AS 2 70
			15	AS 2 80
			17	AS 2 90
84	02493	x		Sealing ring for
			10	AS 2 50
			12	AS 2 60
			14	AS 2 70
			15	AS 2 80
			17	AS 2 90

List no.	Part no.	Wearing part	Pieces	Designation
85	02366			Hydraulic-type lubricating nipple for
			10	AS 2 50
			12	AS 2 60
			14	AS 2 70
			15	AS 2 80
			17	AS 2 90
86			1	Clean-up device
87	02480	x	2	Bushing
88			1	Mounting for clean-up device
89			1	Set collar
90	02195	x	2	Ferrous compensation disk
91	02487	x	1	Compensation disk
92	02493	x	1	Sealing ring
93			1	Threaded pin
94	02366	x	1	Hydraulic-type lubricating nipple
95			1	Clamping plate for clean-up device
96	24236		3	Supporting wheel bracket
97		x	12	Running wheel
98			12	Feather key
99			4	Split-pin
100			8	Washer
101	24238		3	Supporting wheel sleeve
102			3	Supporting arm
103			3	Carrying arm for
	24221			AS 2 50
	24223			AS 2 60
	24234			AS 2 70
	24235			AS 2 80
				AS 2 90
104			3	Carrying arm extension for
	24226			AS 2 50
	24226			AS 2 60
	24226			AS 2 70
	24228			AS 2 80
	24229			AS 2 90
105			3	Rotary arm for
	24205			AS 2 50
	24207			AS 2 60
	24209			AS 2 70
	24211			AS 2 80

List no.	Part no.	Wearing part	Pieces	Designation
106			6	Flange
107			3	Segment for rotary arm
108	24214		3	Rotary arm extension
109			6	Axle
110			1	Plug
111				Cable



Zeichngs.-Nr	Teil	Gegenstand	Stck.	Rohmaße	Werkstoff	DIN
	3					
	2					
	1					

Gegenstand

Level Control and Winch

Maßstab

Änderung	Tag	Name
f		
e		
d		
c		
b		
a		

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	Tag	Name
Gezeichnet	14.8.85	Milges
Geprüft		

Zeichn. Nr. Tab. 1443

Ersatz für

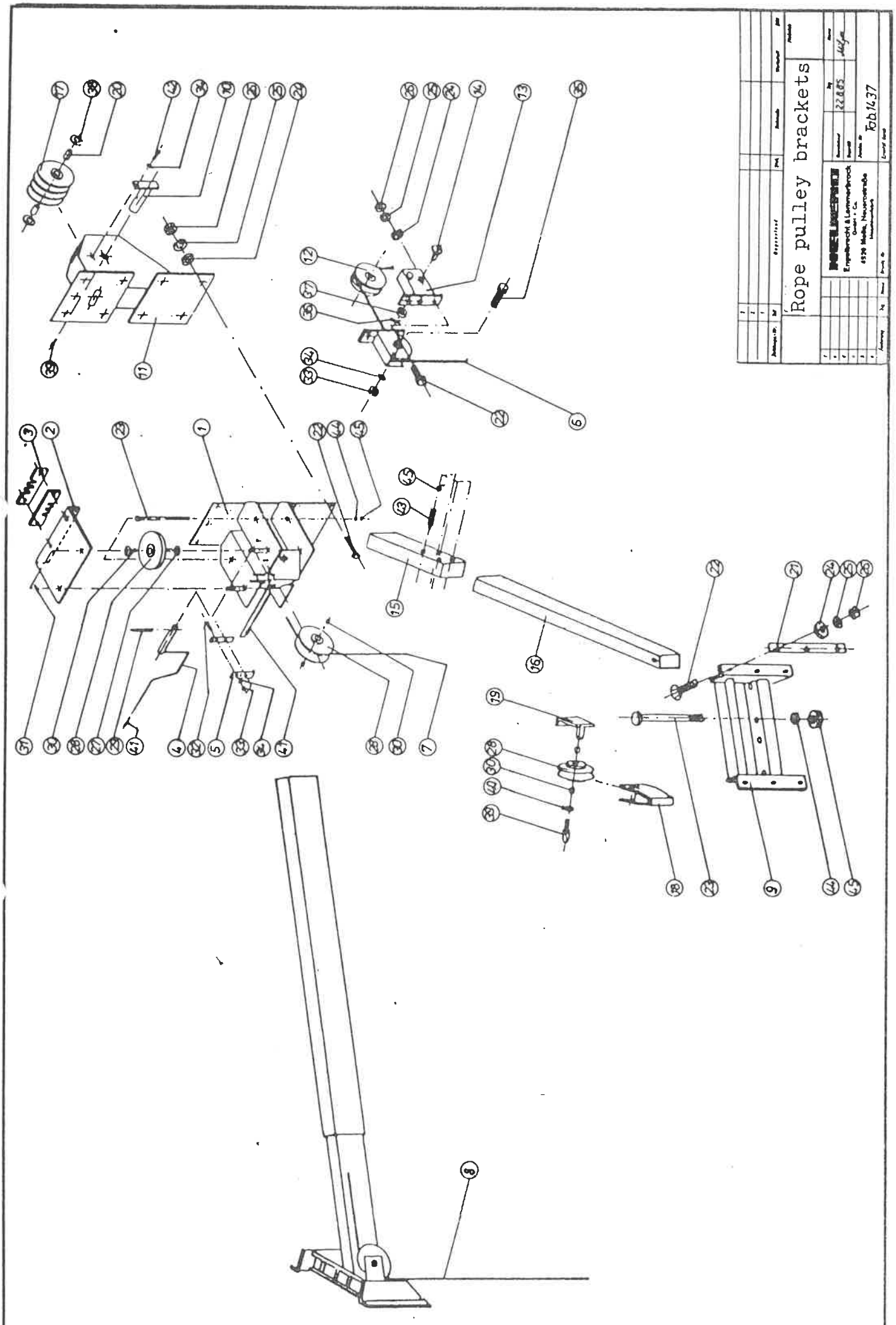
Ersetzt durch

N E U E R O - SPARE PARTS SPECIFICATION

Level Control and Winch — August 1985

8 table 1442

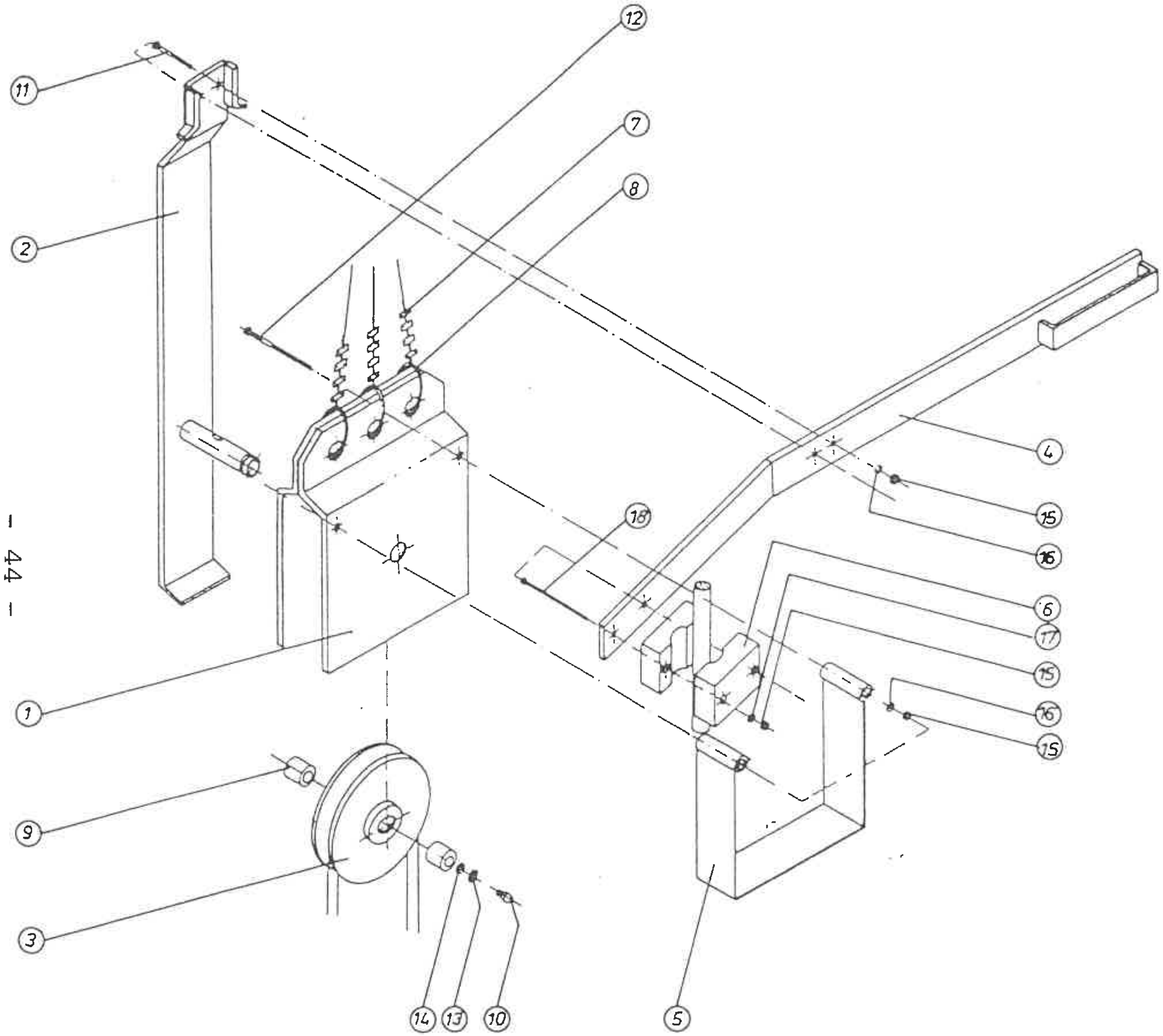
List no.	Part no.	Wearing part	Pieces	Designation
	24256		1	Winch 250 Watt, complete
1			1	Motor console
2			2	Spring washer
3			2	Back stop
4			10	Hexagon bolt
5			10	Spring washer
6			10	Hexagon nut
7			2	Mounting rail
8			4	Hexagon bolt
9	94036	x	1	Gear motor ODM
10	02419	x	1	Motor chain wheel, ∅ 24
11			1	Threaded pin
12			4	Spring washer
13			4	Hexagon nut
14			2	Bearing pipe with mounting plate
15			4	Hexagon bolt
16			2	Spring washer
17			4	Hexagon nut
18	02366	x	2	Lubricating nipple
19		x	4	Bushing
20		x	2	Ferrous compensation disk
21	02421	x	1	Chain wheel disk
22			2	Threaded pin
23			1	Set collar
24	02423	x	1	Roller chain
25			1	Feather key
26			1	Winch drum
27				Wire rope for:
27a			1	Silo height 16 m.
27b			1	Silo height 20 m.
27c			1	Silo height 24 m.
27d			1	Silo height 27 m.
28			24	Rope clamp
29		x	6	Wire rope clamp
30			2	Hexagon bolt
31			2	Hexagon nut
32			1	Protecting device
33			6	Hexagon bolt
34			12	Washer
35			6	Hexagon nut
36	24292		1	Level control


Rope pulley brackets
Fab 14.37

Rope Pulley Brackets - AS 3 August 1985

8 table 1444

List no.	Part no.	Wearing part	Pieces	Designation
1	24346		1	Internal roller bracket, complete
1			1	Internal roller bracket
2			1	Roller cover plate
3			2	Stripper
4			1	Bolt with lubricating conduit
5			2	Clamp strap
6				Cable NSTN9 for:
6a			1	Silo height 16 m.
6b			1	Silo height 20 m.
6c			1	Silo height 24 m.
6d			1	Silo height 27 m.
7				Wire rope for:
7a			1	Silo height 16 m.
7b			1	Silo height 20 m.
7c			1	Silo height 24 m.
7d			1	Silo height 27 m.
8				Wire rope for:
8a			1	Silo height 16 m.
8b			1	Silo height 20 m.
8c			1	Silo height 24 m.
8d			1	Silo height 27 m.
9	24343		2	Internal roller support for outside winch
10			1	Bolt with lubrication bore hole
11	24344		1	External roller bracket, complete
11			1	External roller bracket
12			2	Cable roller
13	24345		2	Cable roller bracket, complete
13			2	Cable roller bracket
14			2	Bolt
15	24841		2	Cross bracing
16				Adjusting pipe for:
16a	24269		2	AS 60
16b	24271		2	AS 70
17			1	Rope pulley, three-grooved
18	24342		2	Roller bracket, complete
18			2	Roller bracket
19			2	Bolt
20			2	Bushing
21			4	Back stop
22			23	Hexagon bolt
23			10	Hexagon bolt
24			23	Washer
25			23	Spring washer
26			23	Hexagon nut
27			2	Ferrous compensation disk
28			5	Rope pulley
29			1	Dowel pin
30			8	Bushing
31			1	Split-pin
32			2	Hexagon bolt
33			4	Hexagon nut
34			5	Spring washer
35			2	Hexagon bolt
36			2	Split-pin
37			2	Washer
38			2	Ferrous compensation disk
39	02366		3	Lubricating nipple
40			2	Sealing ring
41			3	Lubricating nipple
42			1	Hexagon bolt
43			4	Threaded pin
44			10	Spring washer
45			14	Hexagon nut



N E U E R O - SPARE PARTS SPECIFICATION

Deflection Pulley 24341

List no.	Part no.	Wearing part	Pieces	Designation
1			2	Fork for deflection pulley
2			1	Pin for deflection pulley
3			1	Rope roller
4			1	Cable mounting for deflection pulley
5			1	Cover plate
6			1	Clamping piece
7			24	Rope clamp
8			3	Rope eye
9			2	Bushing
10	02366		1	Lubricating nipple
11			2	Hexagon bolt
12			2	Hexagon bolt
13			1	Sealing ring
14			1	Washer
15			6	Hexagon nut
16			4	Spring washer
17			2	Washer
18			2	Hexagon bolt

Deflection Pulley 24341

1:25

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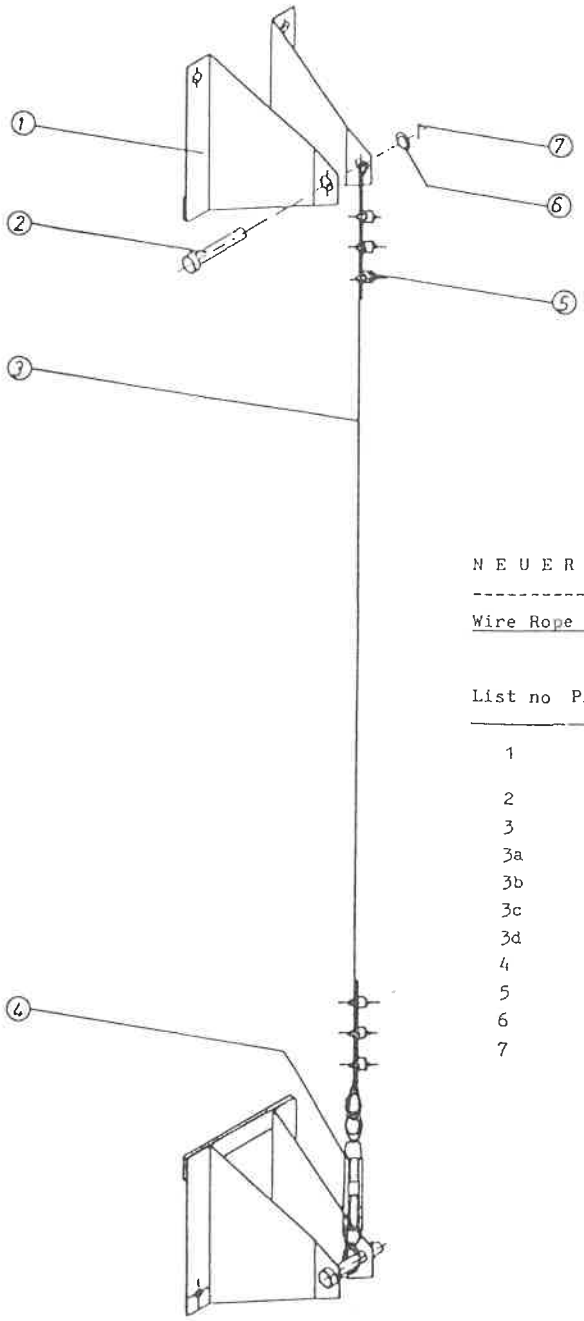
Tab 1445



N E U E R O - SPARE PARTS SPECIFICATION

Wire Rope Guidance

List no	Pieces	Designation
1	2	Mounting for wire rope guidance
2	2	Pin
3		Wire rope for:
3a	1	Silo height 16 m.
3b	1	Silo height 20 m.
3c	1	Silo height 24 m.
3d	1	Silo height 27 m.
4	1	Turnbuckle with 2 eyelets
5	6	Rope clamp
6	2	Washer
7	2	Split-pin

3
2
1

Zeichngs Nr	Teil	Gegenstand	Stck	Rohmaße	Werkstoff	DIN

Gegenstand

Wire Rope Guidance

Maßstab

Änderung	Tag	Name
f		
e		
d		
c		
b		
a		

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Maschinenfabrik

Tag | Name

Gezeichnet 22.8.85 Milgos

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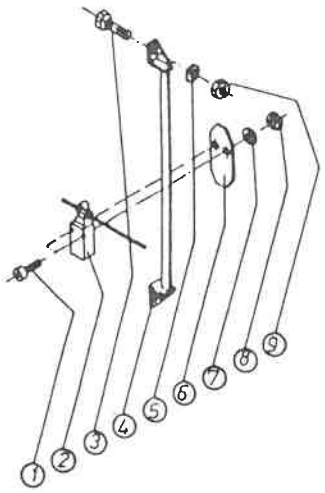
Zeichn Nr Tab.1440

Ersatz für

Ersetzt durch

N E U E R O - SPARE PARTS SPECIFICATION

Limit Switch



List no.	Pieces	Designation
1	2	Cheese head screw
2	1	Limit switch
3	2	Hexagon bolt
4	1	Fixing rod
5	2	Washer
6	1	Back stop
7	2	Washer
8	2	Hexagon nut
9	2	Hexagon nut

3
2
1

Zeichngs-Nr	Teil	Gegenstand	Stck.	Rohmaße	Werkstoff	DIN

Gegenstand: Limit Switch

Maßstab:

f
e
d
c
b
a

Änderung | Tag | Name

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Zeichn Nr: Tab.1436

Ersatz für

Ersetzt durch