



Karussell- und Spezial-
maschinenbau GmbH

■ ZIERER Karussell- und Spezialmaschinenbau GmbH
Josef-Wallner-Str. 10, D-94469 Deggendorf

Versand-/Lieferanschrift:

Delivery Address:
Neuhausen
Moosgasse 4
D-94560 Offenberg

Telefon:

(+49) 991 91060 Zentrale
(+49) 991 910638 Service

Telefax:

(+49) 991 910684 Verkauf/Sales
(+49) 991 910683 Service
(+49) 991 910624 Technik/
Engineering

E-Mail:

info@zierer-rides.de
service@zierer-rides.de

Internet:

www.zierer-rides.de

Ihre Nachricht vom: Ihre Zeichen:
Your message dated: Your reference:

Unser Zeichen:
Our reference:

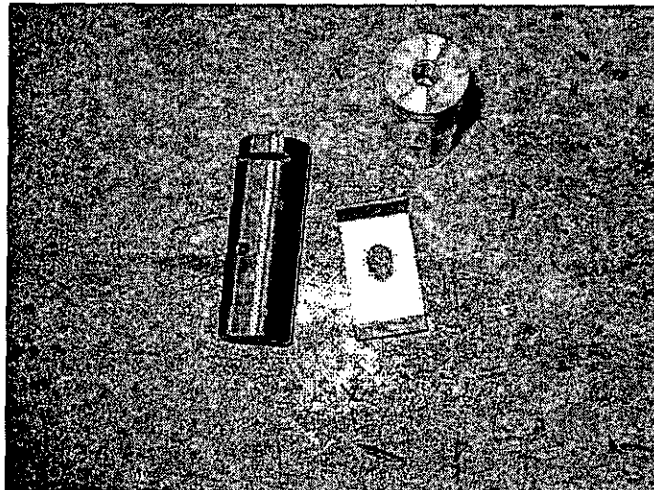
Tel.-Durchwahl:
Direct Line:
+49 991 9106-

Datum:
Date:
03.11.2003

Wheel axle – Flitzer Ride; Tivoli Coasters, Viererbob

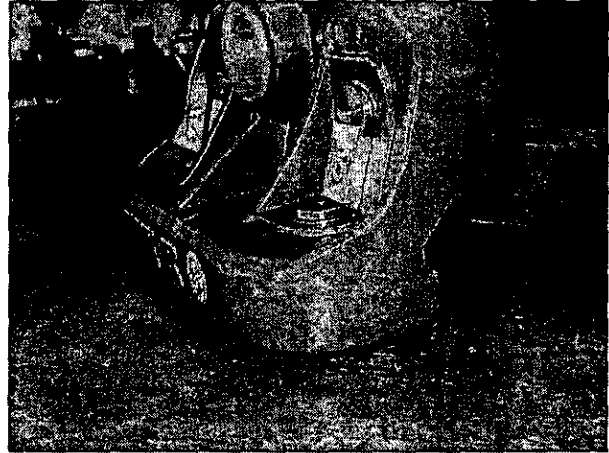
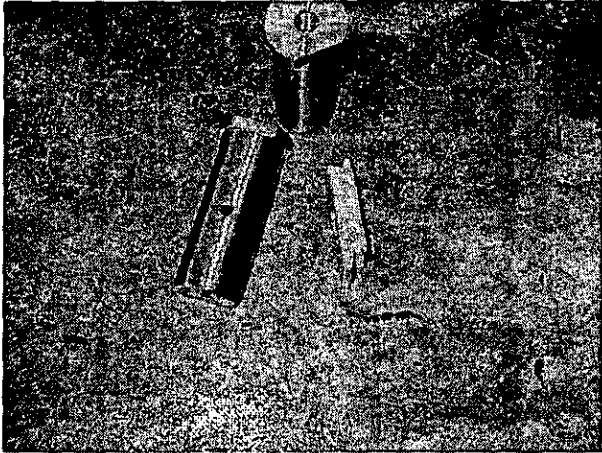
Zierer constantly strives to improve safety related components of its amusement rides. Therefore, we would like to inform you our improvement to the wheel axles of the wheel housings of our Flitzer Ride, Tivoli Coaster and Viererbob ride.

Previous wheel axle and safety plate:



Page 2
Wheel axle – Flitzer Ride; Tivoli Coasters, Viererbob
Date: 03.11.2003

Modified wheel axle and safety plate:



We recommend you consider replacing the wheel axles and the safety plates of your ride with the new modified version, in order to make your ride even safer.

If you have any questions please do not hesitate to contact us.

Best regards

ZIERER Karussell- und
Spezialmaschinenbau GmbH
Martin Weichselgartner

Tel.: (+49) 991 910640
Fax: (+49) 991 910683
Mobil: (+49) 170 3137666
E-Mail: m.weichselgartner@zierer-rides.de
Net: www.zierer-rides.de



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D-94560 Offenberg

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Non destructive testing – Flitzer - Ride

To whom it may concern!

We would like to inform that there is a new German TÜV regulation on older amusement rides which requires a special examination on safety relevant parts. To ensure the safety of the ride we highly recommend to perform this as requested.

Attached please find a „Wear inspection / Non destructive testing“ chart for the Flitzer ride.

This testing requirement is restricted to dynamic high stress structural components whose breakdown could endanger the passengers. It is meant to be an addition to the required regular safety checks and maintenance check list and it is by no means a complete inspection program.

The testing results are to be documented in detail and comprehensible. These testing results are to be presented to the local safety authorities, responsible for the safety of Amusement Rides, along with evaluations and statements.

If doubts about their clear identification exists, the examined structural components are to mark distinctively (e.g. punch marks, etc.) in order to avoid confusion by further prospective testings.

Attached „Wear inspection / Non destructive testing“ chart is based on the assumption, that the ride is not modified and still original.

Remark:

The replacement of components can sometimes be more cost-efficient than expensive test procedures.

For questions or assistance on site regarding the examination and/or assembling/disassembling work, as well for spare parts, please don't hesitate to contact us.

ZIERER Karussell- und
Spezialmaschinenbau GmbH

Martin Weichselgartner
Tel.: (+49) 991 9106 40
Fax: (+49) 991 9106 83
E-mail: m.weichselgartner@zierer-rides.de



Karussell- und Spezial-
maschinenbau GmbH

Wear inspection / Non destructive testing / -- Addition to the maintenance checklist and daily lubrication schedule:

Facility: Flitzer Ride

Please check the applicable items:

Components	Drw.-No.	Pos.	Time code	Test method code	Remark
Car:					
Car frame / Body	027-10-01	01	M	C2	Check welding seams, check for cracks and deformation
Car frame / Body	027-10-01	01	Y6	B1 or B2 or B3	Check welding seams, check for cracks and deformation
Choke at front axle	027-10-02	01	Y1	B1 or B2 or B3	Check welding seams, check for cracks
Front axle, stub	027-10-02	02	Y1	B1 or B2 or B3	Check welding seams, check for cracks, check for deformation
Front axle, frame	027-10-02	03	Y6	B1 or B2 or B3	Check for cracks
Elastic bearings	027-10-02	03	M	C1 or C2	Check for play and wear
Bolt -- front axle	027-10-02	05	Y6		Check for play and wear
Rear axle, stub	027-10-03	01	Y1	B1 or B2 or B3	Check welding seams, check for cracks, check for deformation
Rear axle, frame	027-10-03	02	Y6	B1 or B2 or B3	Check welding seams, check for cracks,
Roll bearing slewing rim / rear axle	027-10-03	03	Y10	A1 or A2 or A3	Check for play
Wheel housing	027-10-04	01	M	C1 or C2	Check for cracks
Wheel housing	027-10-04	01	Y1	B1 or B1 or B3	Check for cracks
Bearing bush	027-10-04	02	M	C1 or C2	Check for wear and deformation

Wheel axle + bushing for wheel axle	027-10-04	03	M6	C1 or C2	Check for wear
Wheels	027-10-04	04	M	C2	Check for wear
Clamping device	027-10-05	01	M	C2	Check for wear and play, check for cracks
Release bar, bushing, actuating blocs	027-10-06	01	M	C2	Check for wear and play
Hand rails / head rest	027-10-07	01	W	C2	Check for loose bolts
Brakes:					
Magnet brake support + switch mechanism	027-10-08	01	W	C2	Check for cracks
Magnet brake support + switch mechanism	027-10-08	01	Y	B1 or B2 or B3	Check for cracks
Safety / bloc brakes	Photo # 1	01	W	C2	Check for wear on lining, check for wear on the guiding of the brake bars, check for cracks
Safety / bloc brakes	Photo # 1	01	Y6	B1 or B2 or B3	Check for wear on lining, check for wear on the guiding of the brake bars, check for cracks
Frame, drive unit	Photo # 2	01	M	C1 or C2	Check welding seams, check for cracks
Rails and Frame/Columns:					
Column/Frame	Photo # 3	01	W	C2	Check welding seam, check for cracks, check anchor bolts for tight fitting,
Track to track connection	Photo # 3	02	W	C2	Check welding seam, check for cracks, check connecting bolts
Track to column/frame connection	Photo # 3	03	W	C2	Check welding seam, check for cracks, check connecting bolts
Track to cross bracket connection	Photo # 3	04	W	C2	Check welding seam, check for cracks, check connecting bolts
-Track	Photo # 3	05	W	C2	Check for cracks and wear
Footing, struts	Photo # 3	06	W	C2	Check for cracks, check connections
Anti roll back	Photo # 4	01	W	C2	Check for play on the bolt, check for cracks and wear
Lift system:					
Chain	Dwg # 2	01	M6	C2	Check for wear and elongation
Chain sprocket	Dwg # 1+2	02	M6	C2	Check for wear
Bolt/Axle for sprocket	Dwg # 2	03	M6	C2	Check for wear
Sprocket support	Dwg 1+2	04	Y10	B1 or B2 or B3	Check for cracks



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Legend of Time code:

D = daily
W = weekly
W2 = every two weeks
M = monthly
M6 = every six month
Y = yearly
Y5 = every five years
Y6 = first time after 6 years, then after 3 years, then yearly
Y10 = first time after ten years and then every four years

Legend of Test method code:

A1 = examination by manufacturer
A2 = examination by specialized company
A3 = accredited laboratory
B1 = magnaflux testing (MT)
B2 = paint penetration testing (PT)
B3 = ultrasonic testing (UT)
B4 = X-ray testing (RT)
C1 = visual inspection by an expert
C2 = visual inspection by an experienced, qualified maintenance staff
D = replacement

Remark: Above chart is a general valid chart for the Flitzer Ride. There might be some slight differences to your model.

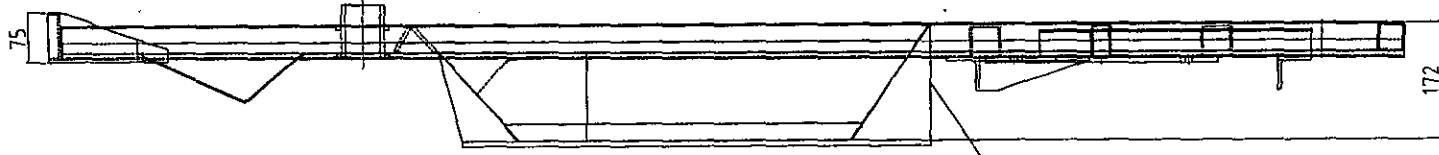
Detected broken, worn or cracked parts have to be replaced and/or repaired immediately by a qualified worker or company

The test results are to be documented in detail and comprehensibly. These test results along with evaluations and statements are to be presented to the local safety authorities, responsible for the safety of Amusement Rides.

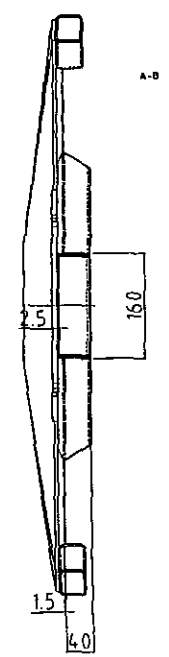
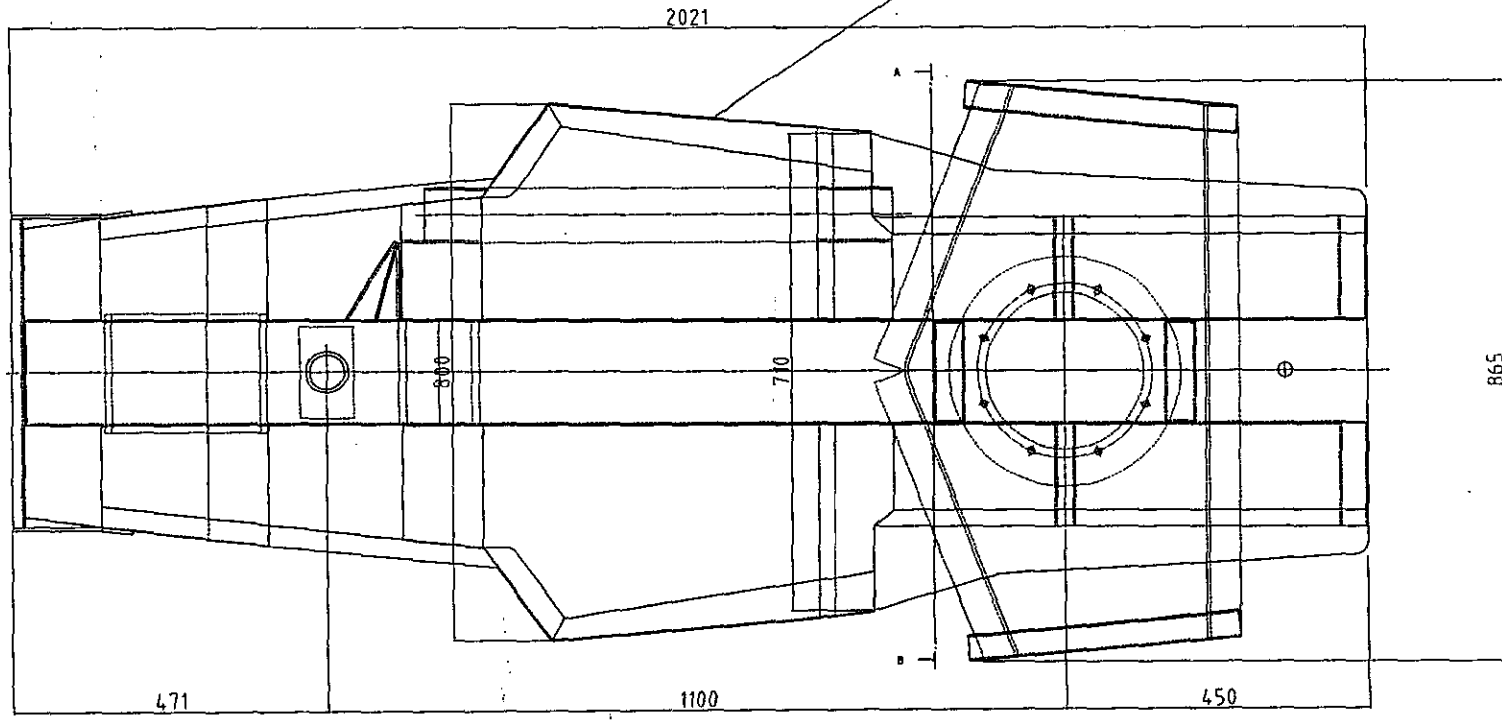
In order to avoid doubts as to their proper identification, the examined structural components should be marked distinctively (e.g. punch marks, etc.). Additionally to our "Wear inspection and NDT" requirements, the requirements of your local safety institutions have to be followed

The replacement of components can sometimes be more cost-efficient than expensive test procedures.
The check interval dates of replaced components change, based on the date they were exchanged.

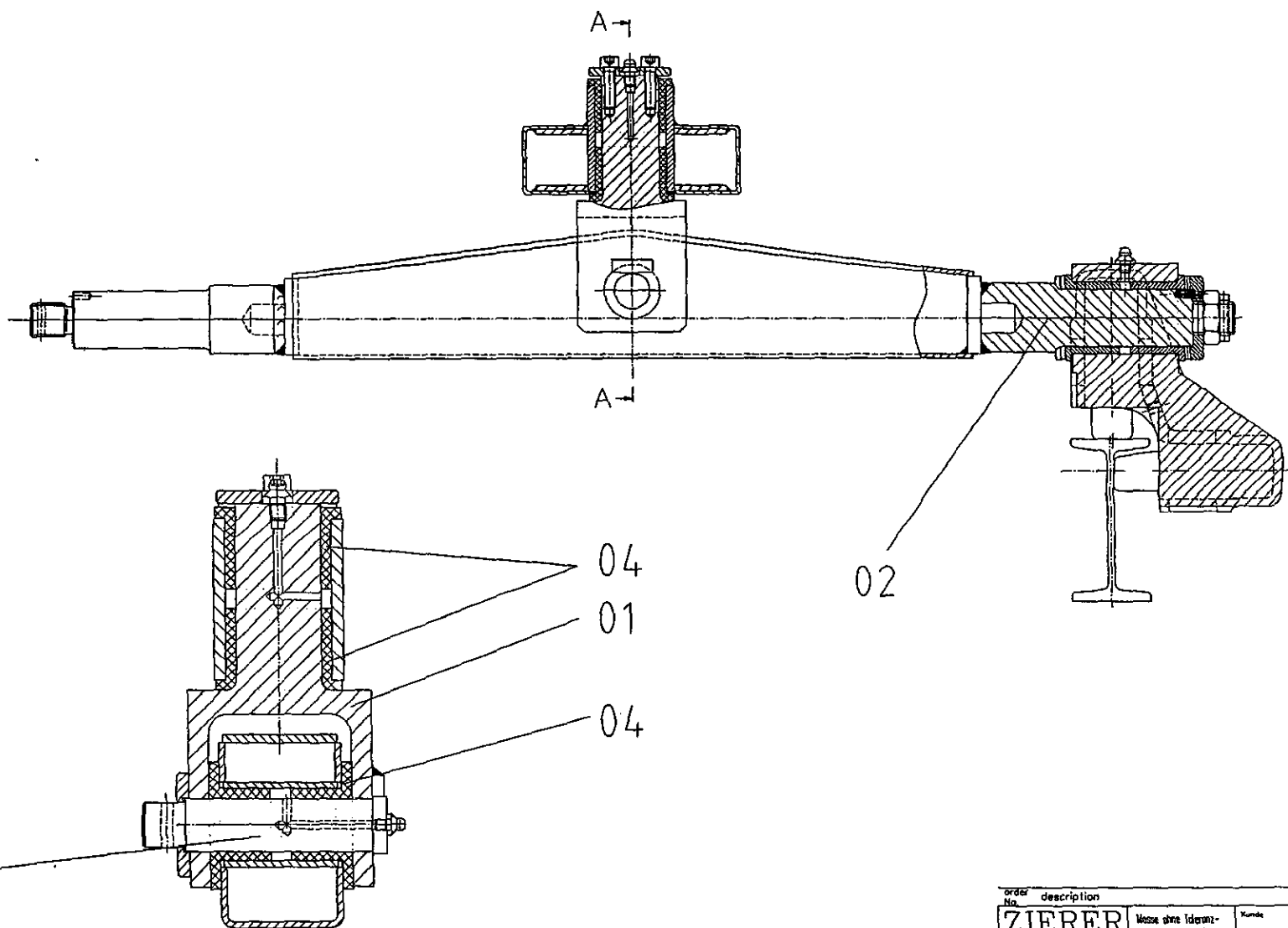
Same type components or component assemblies are subject to random check, with at least 20% but no less than two components being examined. A defect in any of these components requires a thorough check of all similar components.



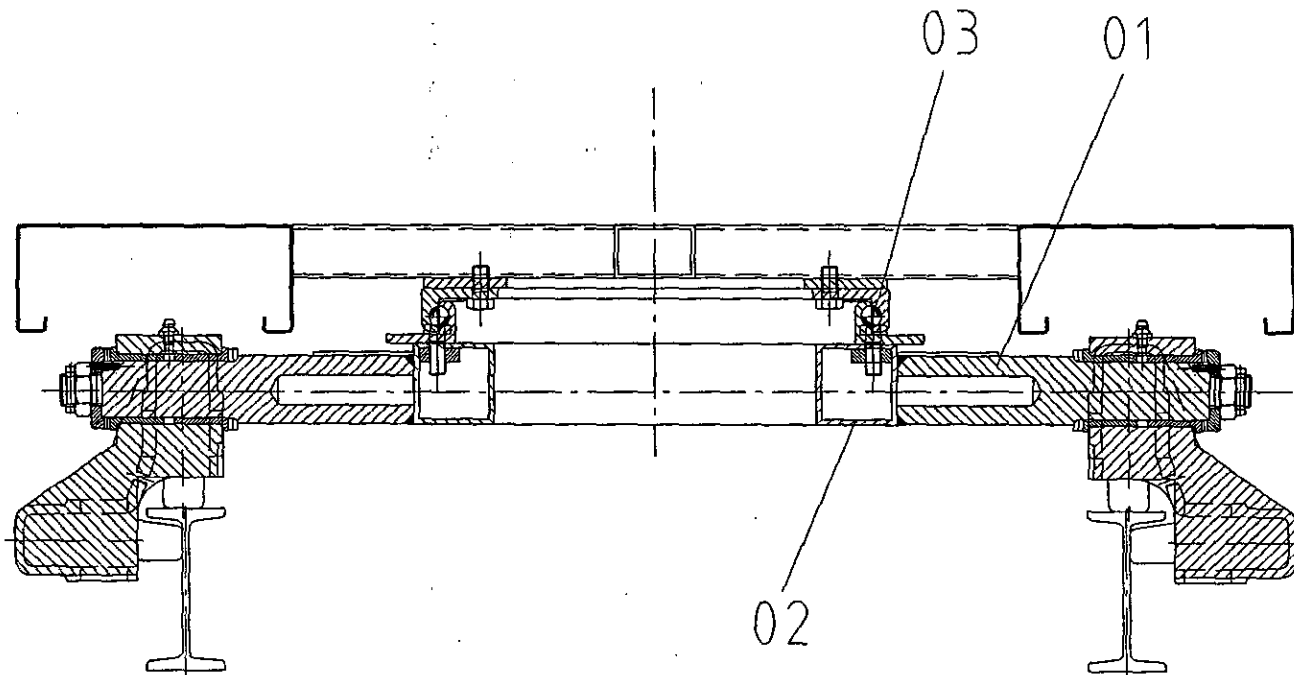
Pos.01



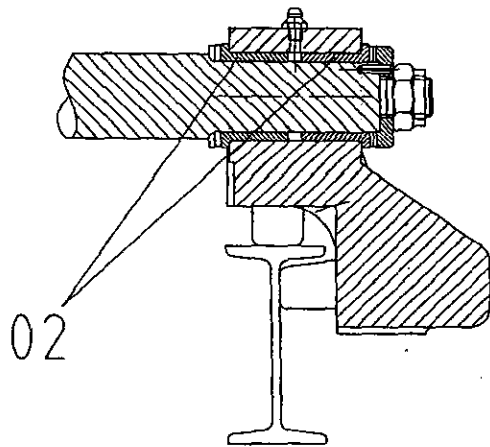
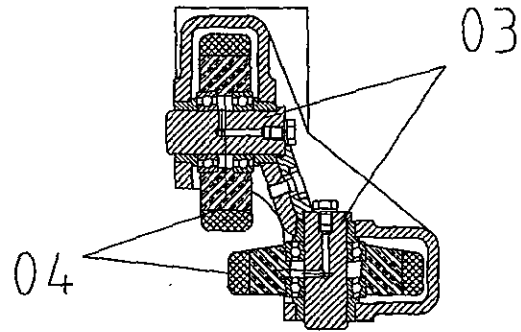
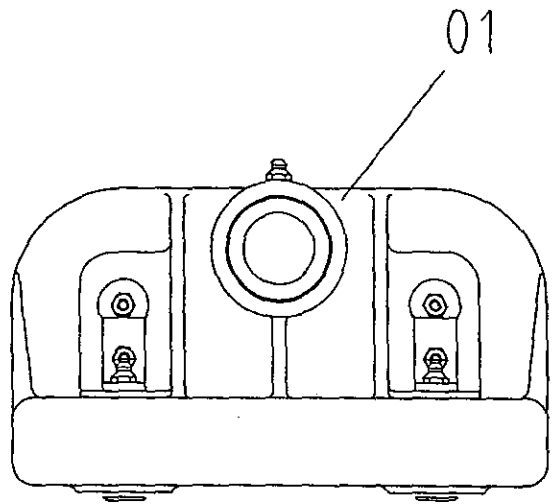
ZIEHER		Part No. 111
Frame		
027-W-01		



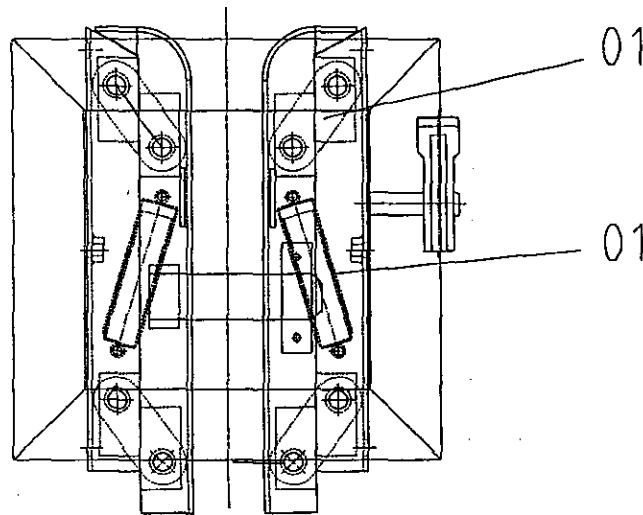
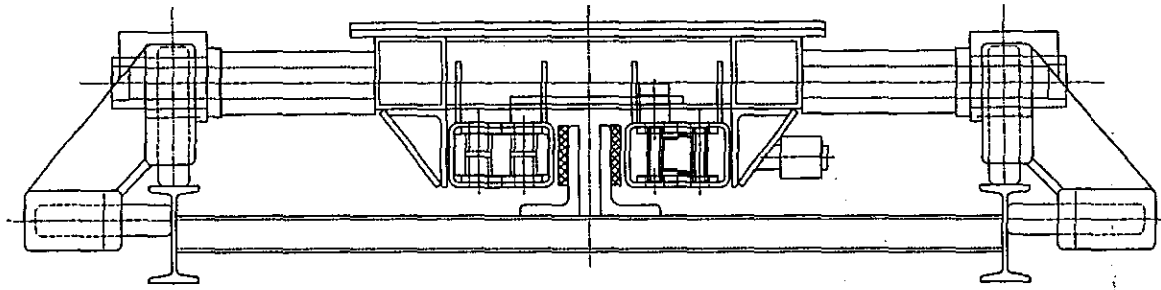
order No.	description	customer	drawing No.	Pos.
ZIERER	Masse ohne Identifizierung angebe n. DIN 7160-m			
Karosseri- und Fahrzeugbau GmbH	Maßstab	Format	A4	Linien
Wegmann & Söhne 12485 Welling Tel. 039 43 11-11 Fax 039 43 11-22	1998 Datum Bearb. 13.04	Name WZL	Beschreibung front axle	
	Zeichnungs-Nr.	027-10-02		
Eut. / Hersteller	Teil Name	CAD-Nr. :		



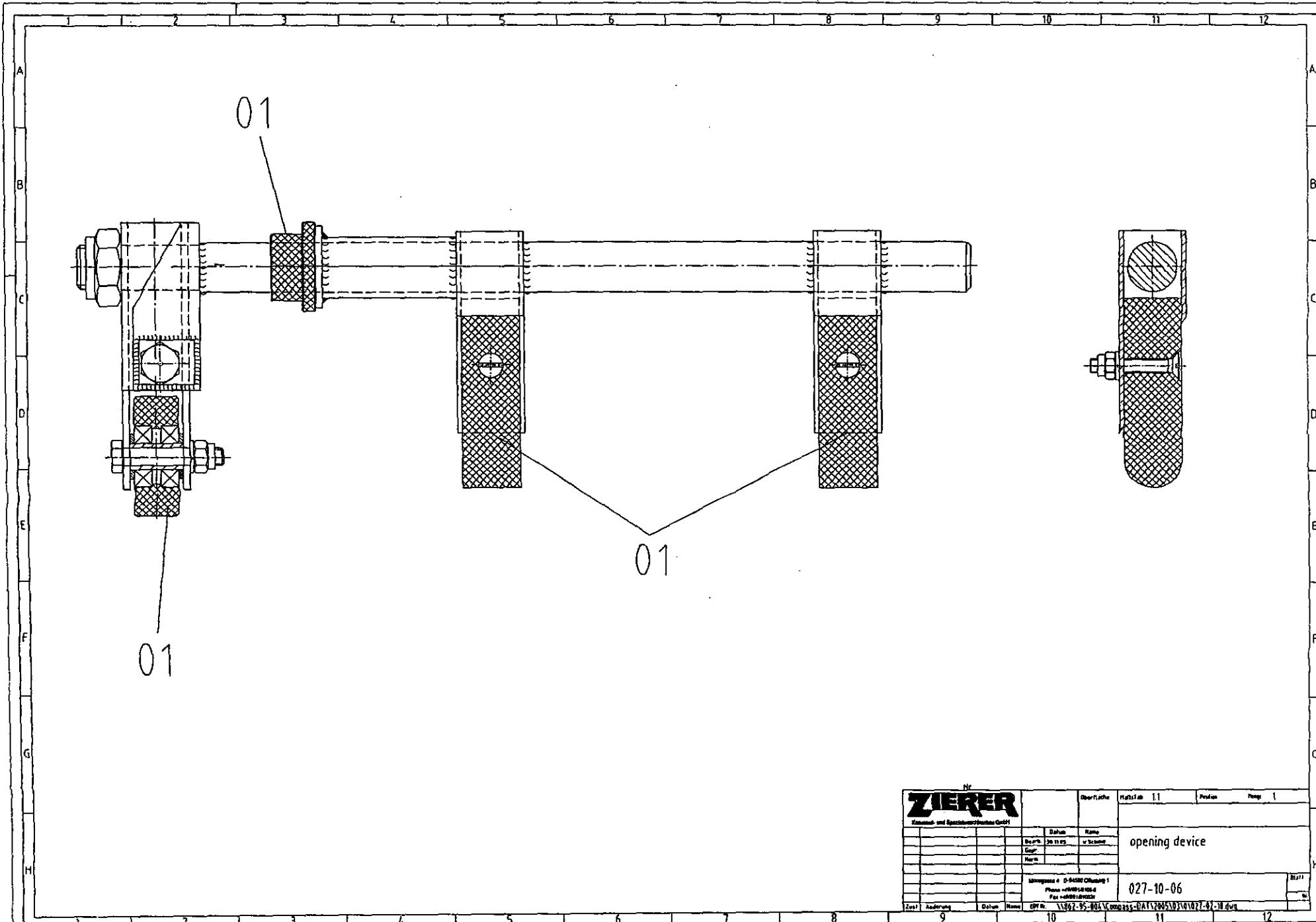
ZIERER Karren- und Fahrzeugbau GmbH Hauptstr. 4 Phone 089/7108-0 81269 München Fax 089/7108-1 Germany Telefax 089/7108-2	Masse ohne Identifizierung anzeige a. DW 7162-m	Nummer	
	Masstab	Format A4	Laufzeit
1998 Datz Name WZ	Datum 13.04	Bezeichnung rear axle	
Zeichnungsnummer 027-10-03		CAD	
Zuz. Hersteller Teil Name			



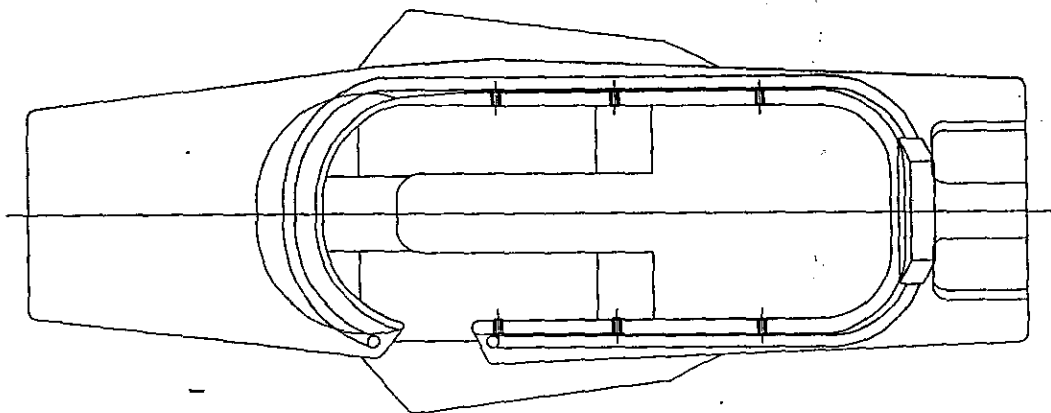
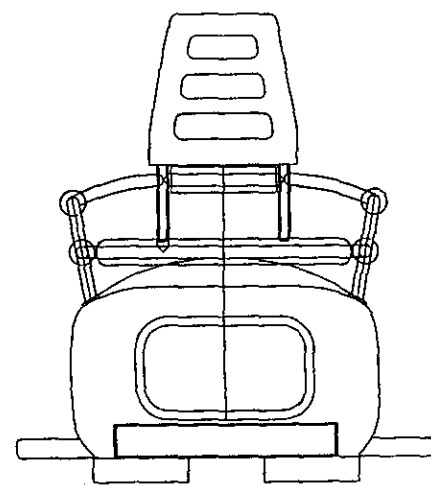
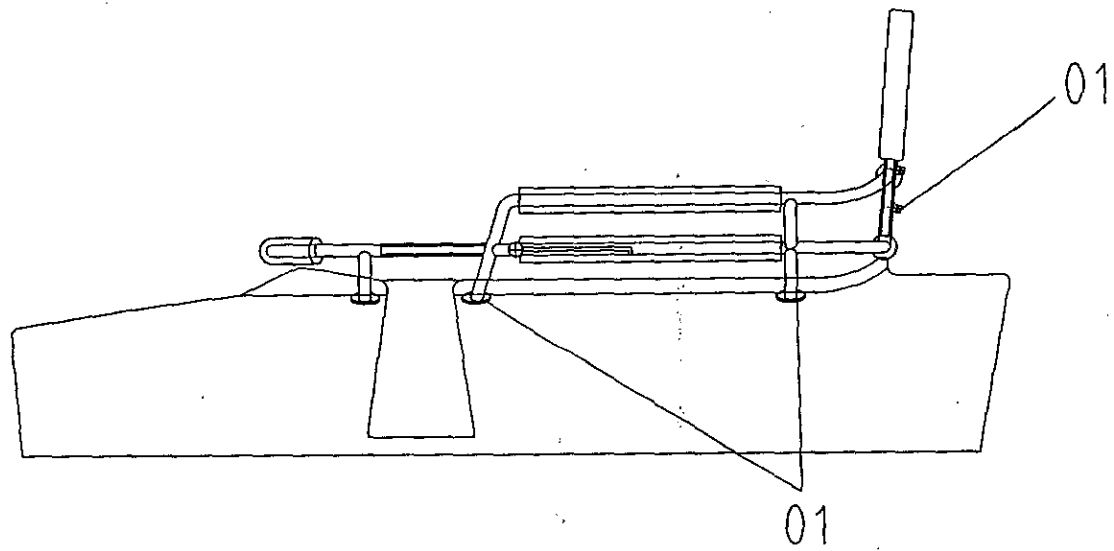
ZIERER		Masse ohne Fahrtrag- angabe n. DIN 7168-m		Kunde	
Karlsruhe- und Fabrikstrasse Ort		Mastab		Formet A4	
Telefon 071/2121-4 Fax 071/2121-5 E-Mail zier@zierer.de		1998 Datum Name		Bezeichnung wheel housing	
		Bauh. 13.02.2004 W. J. J.		Zeichnungs-Nr. 027-10-04	
		Zust. Änderung Tag Name			



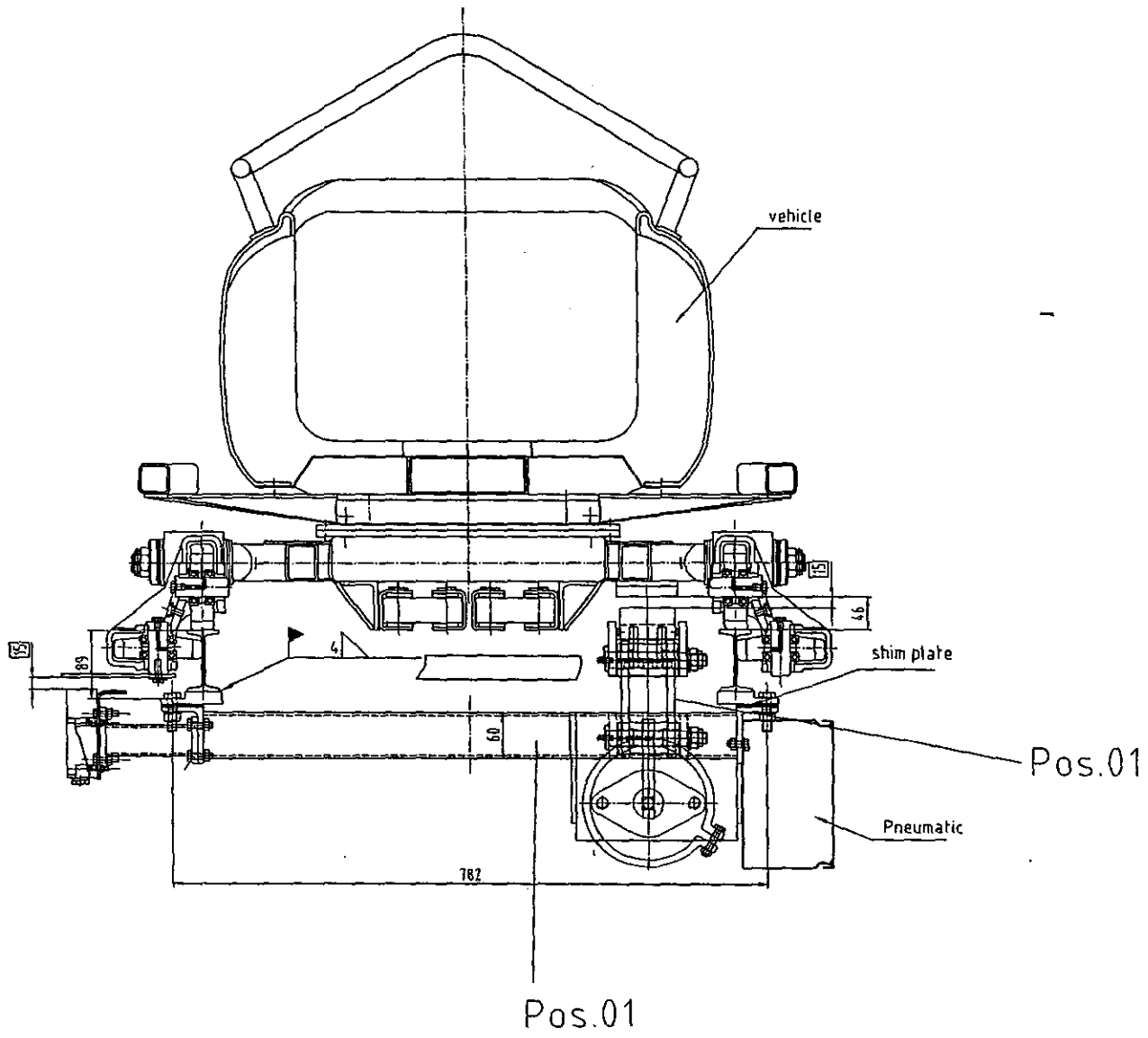
ZIERER Hersteller von Messmaschinen und Werkzeugen		Werkstatt	Blatt Nr. 17	Profil	100
Zeichner	Gezeichnet	Geprüft	clamping device		
Werkstatt	Werkstatt	Werkstatt	027-10-05		
Werkstatt	Werkstatt	Werkstatt	027-10-05		



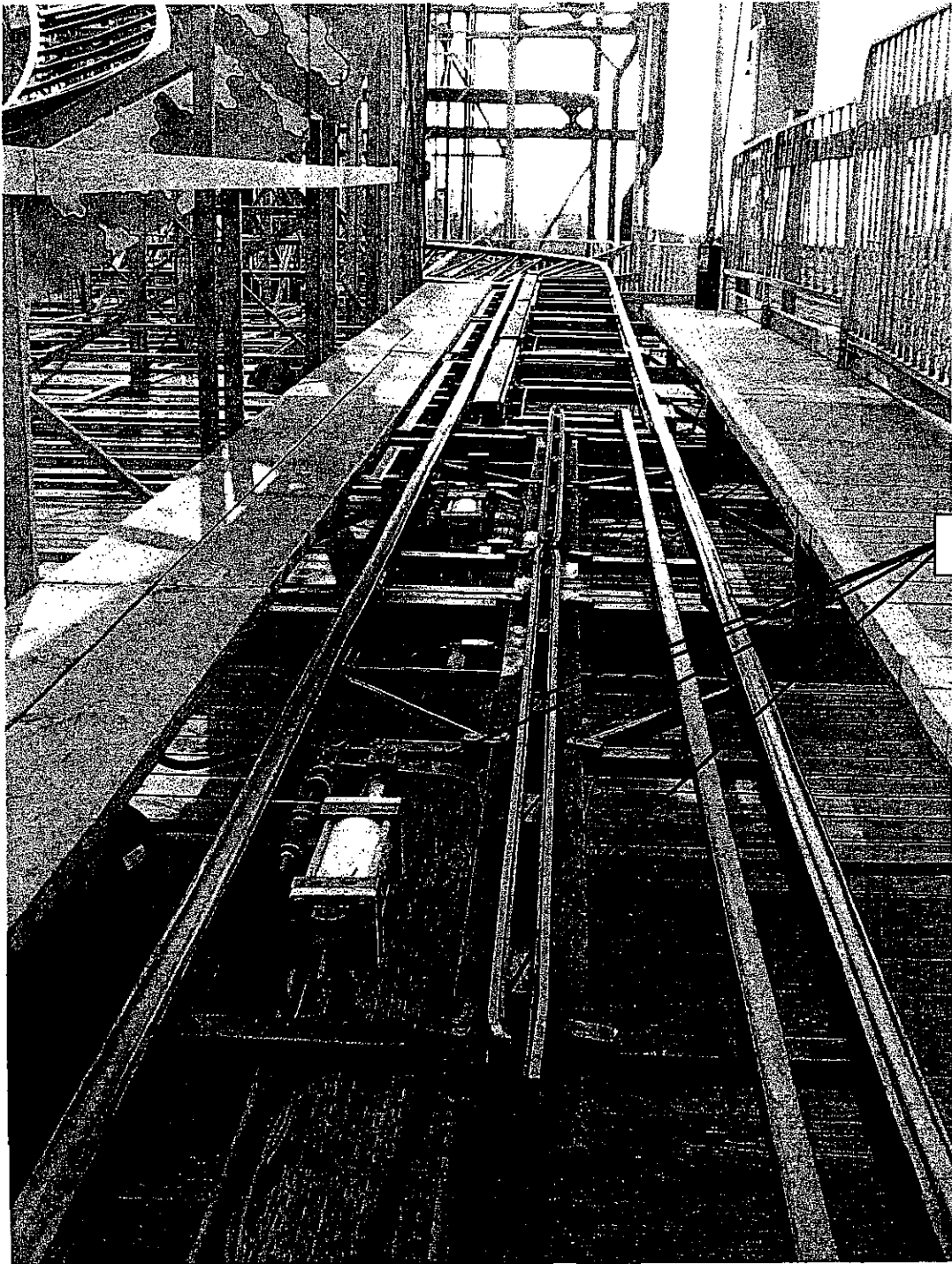
ZIERER		Standard- und Spezialwerkzeuge GmbH		Nr.		Oberfläche		Material		Position		Penge	
				Datum	30.11.05	Name	u. Schmitt	opening device					
				Gepr.				027-10-06					
				Norm.				1062-95-804/Compass-DAT/2005/03/07-07-10.dwg					
Zust.		Änderung		Datum		Rev.		10		11		12	



ZIERER		Part No.	15	Sheet	1
ZIERER & COMPANY		Quantity	1		
	1/2" Dia	Material			
	1/4" Dia	Material			
	1/8" Dia	Material			
	1/16" Dia	Material			
	1/32" Dia	Material			
	1/64" Dia	Material			
	1/128" Dia	Material			
	1/256" Dia	Material			
	1/512" Dia	Material			
	1/1024" Dia	Material			
Manufactured in Germany		Part No.		Order No.	157-20-07
ZIERER & COMPANY					
ZIERER & COMPANY					
ZIERER & COMPANY					
ZIERER & COMPANY					

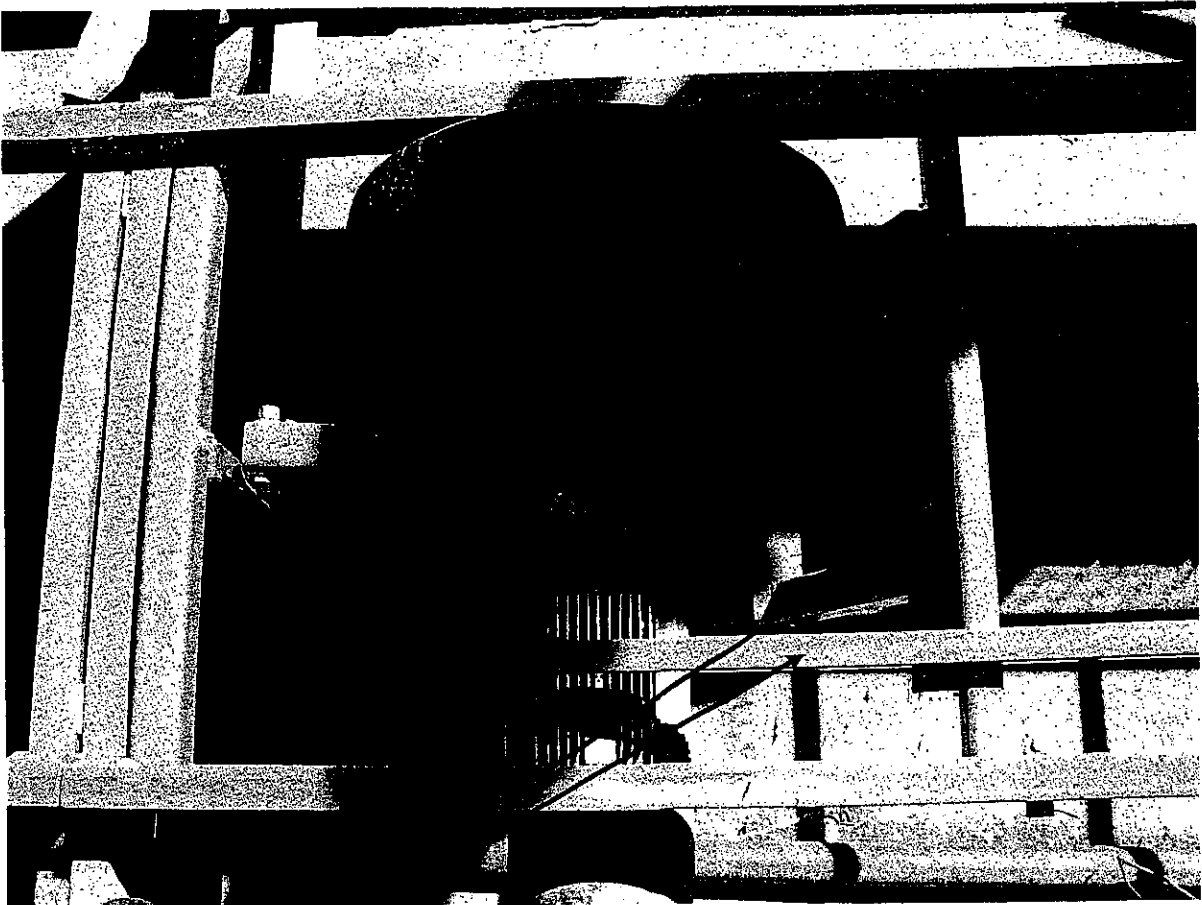


ZIEMER		Sheet 11
Part No.	827-M-48	Magnetic brake
Rev.		
Drawn		
Checked		
Approved		



Pos. 01

Photo # 1
Safety/Bloc Brake



Pos. 01

Photo # 2
Frame, Drive Unit

Pos. 03

Pos. 01

Pos. 02



Pos. 05

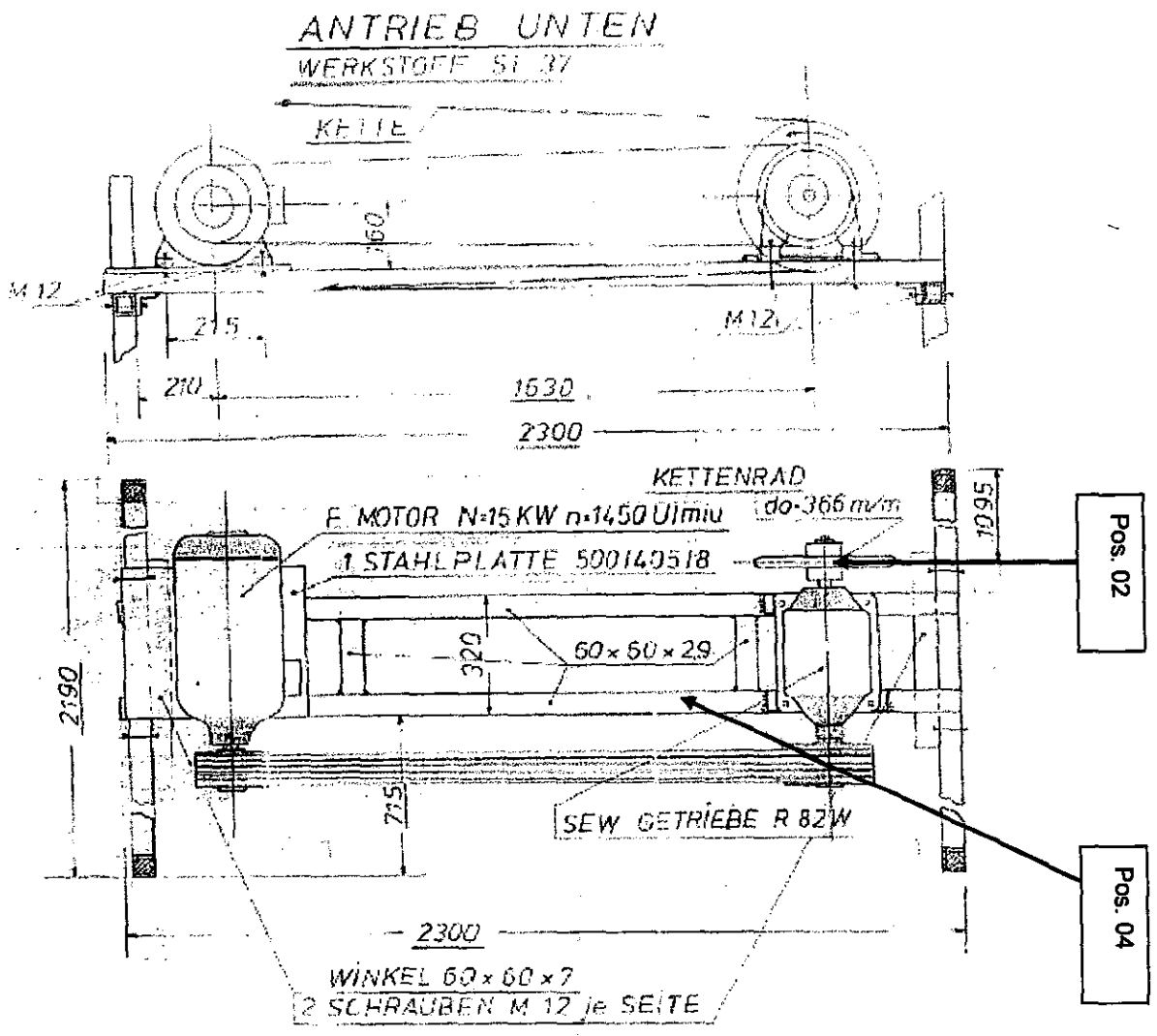
Pos. 04

Photo # 3
Column / Frame

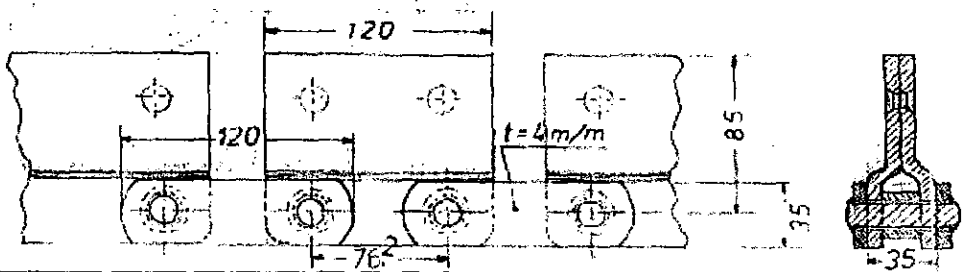
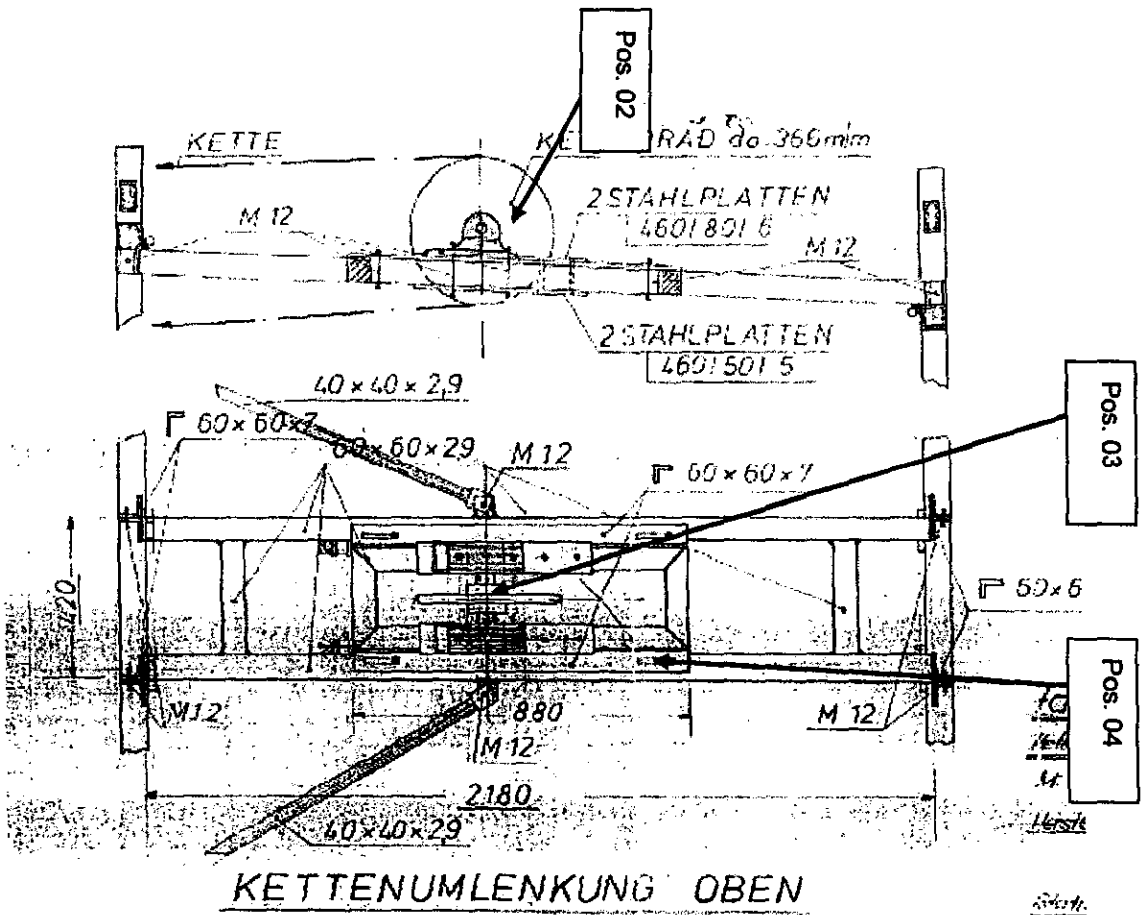
Pos. 01



Photo # 4
Anti Roll Back



Dwg. # 1
 Lift System



Dwg. # 2
Lift System