

Cutting and bending machine for radial taped components

Type C094

Translation of the original operating manual

Streckfuss USA

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Autor: Streckfuss USA
PO Box 140008
Dallas, TX 75214
USA
Tel. +1 972 790 1614
sales@streckfuss.com
www.streckfuss.com

Streckfuss USA
PO Box 140008
Dallas, TX 75214
USA
Tel. +1 972 790 1614

E-Mail: sales@streckfuss.com
Internet: www.streckfuss.com

EC Declaration of Conformity **In according to EC Machinery Directive 2006/42/EC** **Appendix II A**

We herewith declare that the machine described hereinafter satisfies the essential safety and health requirements set out in the EC Machinery Directive with regard to its design and construction as well as the type marketed by us.

In case of an alteration of the machine without our agreement this declaration shall become void.

We furthermore point out that for the installation of spare parts only original parts of the company Burst & Zick GmbH may be used.

Description of the machine:	Cutting and bending machine
Machine type:	C 094
Machine number:	22.03.134
Applicable directives:	EC Machinery Directive (2006/42/EC appendix II A) EC Low Voltage Directive (2014/35/EC); EC Electromagnetic Compatibility Directive (2014/30/EG)
Applied harmonized standards, particularly:	EN ISO 12100:2010 DIN EN 13857 DIN EN 60204-1 DIN EN 61000-6-1 DIN EN 61000-6-3 DIN EN 14070 was pulled up informatively
Attachment of the CE label:	CE
Place/Date/Signature:	Karlsruhe, den 16.03.2022

Managing director

General

1. Notes on industrial safety

The following notes on industrial safety have to be specially adhered to:

- The cutting, forming and bending machine C094 has been constructed according to the current state of the art and conforms to the ESD regulations. Nevertheless, perils may arise from this machine if it is used by untrained personnel or for other than the intended purposes.
- **Statement on the residual risk**
 1. Danger of electric shock if the switchbox is opened while voltage-carrying. Work in and on the electrical equipment may principally only be carried out by qualified electricians.
 2. Danger of contusion and shearing during setup operation..

The danger areas are marked with signs.



- Applicable accident prevention regulations have to be adhered to by the user, particularly the
 - DGUV Regulation 1
- The machine may only be operated by trained personnel.
- Any mode of operation which can impair the safety of the machine has to be refrained from.
- The user undertakes to operate the machine only in perfect condition.
- Unauthorized alterations or variations which impair safety have to be refrained from.
- Safety devices may principally not be dismantled or put out of operation. If it is indispensable to dismantle safety devices for the purpose of tool changes or for maintenance and repair work, the safety device has to be reinstalled immediately afterwards.

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3. General description

The cutting and bending machine C094 has been specially developed for the processing of radial taped components. Optionality the machine can also be used for bending and forming of radial taped components.

The feeding of the components is done exclusively via tape rolls. For this purpose a combined receptacle for component-rolls or ammpack are available.

The component tape is transported to the processing station via a transport comb. First, the component is touched to compensate for the belt tolerances, after which it is processed. The cutting length is determined by the tool.

With the use of exchangeable tape-feedings it is possible to work with components of a pitch size of 12,7 mm and as well with components of a pitch size of 15 mm.

The finished parts are being delivered into a container in loose form.

Options:

- De-reeler for all common tape rolls
- Electrical counter that switches the machine off automatically when the preselected number of pieces is reached.

4. Technical data

Dimensions	Width:	500 mm (without de-reeler)
	Depth:	400 mm
	Height:	500 mm
Weight:		ca. 20 kg
Drive:		Electro – pneumatic control
Electrical connection:		115V / 50 - 60 Hz or 230V / 50 - 60 Hz look at the table
Air pressure:		6 bar
Cycle time:		max. 5000 components / hour 12,7 mm bzw. 15 mm
Tape hole spacing:		(conversion bar)
Component pitch:	min.	2,5 mm
	max.	form dependent
Wire Ø:		0,4 bis 0,8 mm

5. Spezifikation:

Please note:

All IEC approved taped components can be processed with this machine.

Should parts, not conforming to IEC standard norm, be processed through this machine, our otherwise provided machine guarantees are not applied.

Note

tolerance per 20 holes of component tape: $\pm 1\text{mm}$

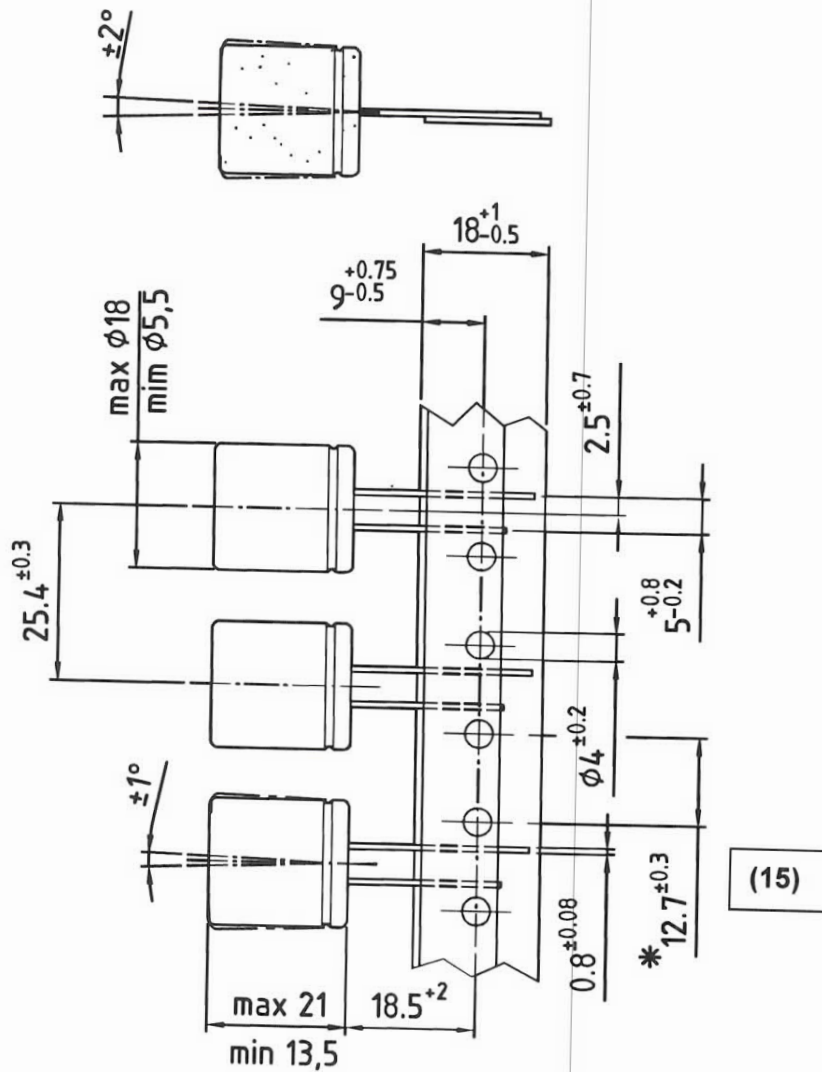


Figure 1
IEC Form Tolerances

6. Construction of the machine

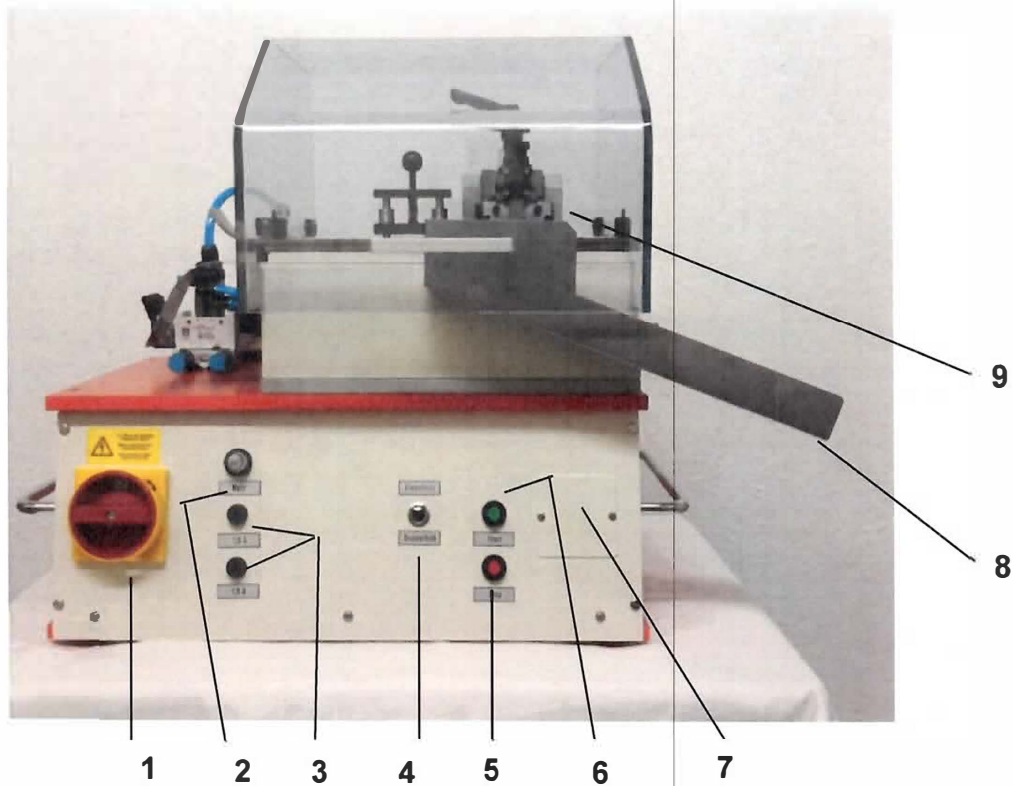


Figure 2
General view

1. Mainswitch, emergency stop machine ON – OFF
2. Power lamp
3. Fuses
4. Switch single- double stroke
5. Stop
6. Start
7. Counter (Option)
8. Component slide
9. Tools

Commisioning

1. Installation

The machine is delivered fully assembled and installed. Please check the shipment immediately with the help of the delivery note and/or the packing list. In case the consignment is incomplete or if damages have occurred during transport, please inform us immediately.

Place the machine on a stable, level working table.

2. Connection

- Connect power cable with 230V / 50 Hz or 115V 50/60 Hz socket. Look at the table which voltage you need.
- A pressure regulator with hose connection NW 6 is provided on the back of the machine for connection to the compressed air network.
Set air pressure to 6 bar

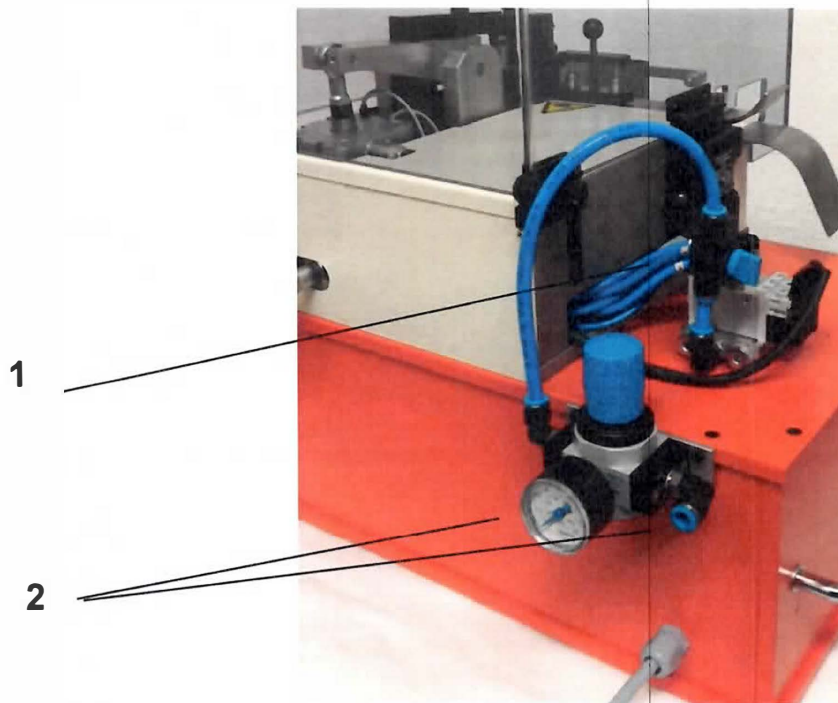


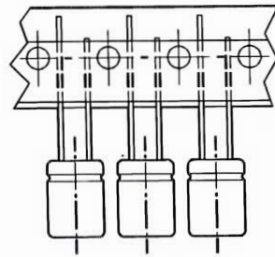
Figure 3 – air connection

1. Shot-off-valve
2. Manometer with air connection



3. Inserting component tape

3.1. **Smaller** components are mostly taped like this



1. In this case set switch SINGLE STROKE – DOUBLE STROKE to **SINGLE STROKE**
2. Insert component tape as follows:
 - 2.1. Open protection cover.
 - 2.2. Slide component tape from left into the guiding rails.
 - 2.3. Lift component centering at the handle and slide the tape over the catch pins so that the first component arrives immediately in front of the tool.
 - 2.4. Lower the component centering. The centering pins must enter the transport holes.
 - 2.5. Check:
 1. Switch set to **SINGLE STROKE**.
 2. The first component in the tape is right in front of the tool.

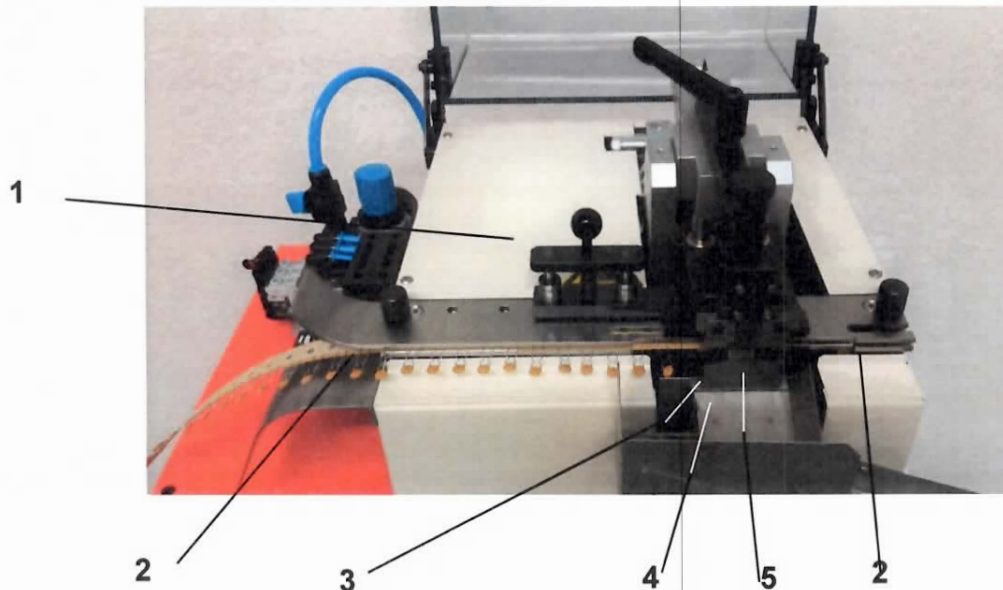
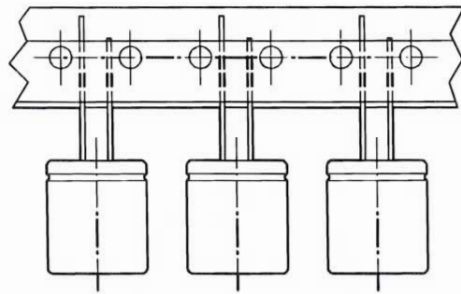


Figure 4 - Tape centering and tools

1. Handle (Lift up the tape centering)
2. Knurled screw (component guide clamping)
3. Lower tool
4. Upper tool
5. Clamping die



3.2 Larger components are mostly taped like this:



1. Set switch SINGLE STROKE – DOUBLE STROKE to **DOUBLE STROKE**.
2. Insert component tape as follows:
 - 2.1. Open protection cover.
 - 2.2. Slide component tape from left into the guiding rails.
 - 2.3. Lift component centering at the handle and slide the tape over the catch pins so that the first component arrives immediately in front of the tool.
 - 2.4. Lower the component centering. The centering pins must enter the transport holes.
 - 2.5. Check:
 1. Set switch to **DOUBLE STROKE**.
 2. The first component in the tape is right in front of the tool.

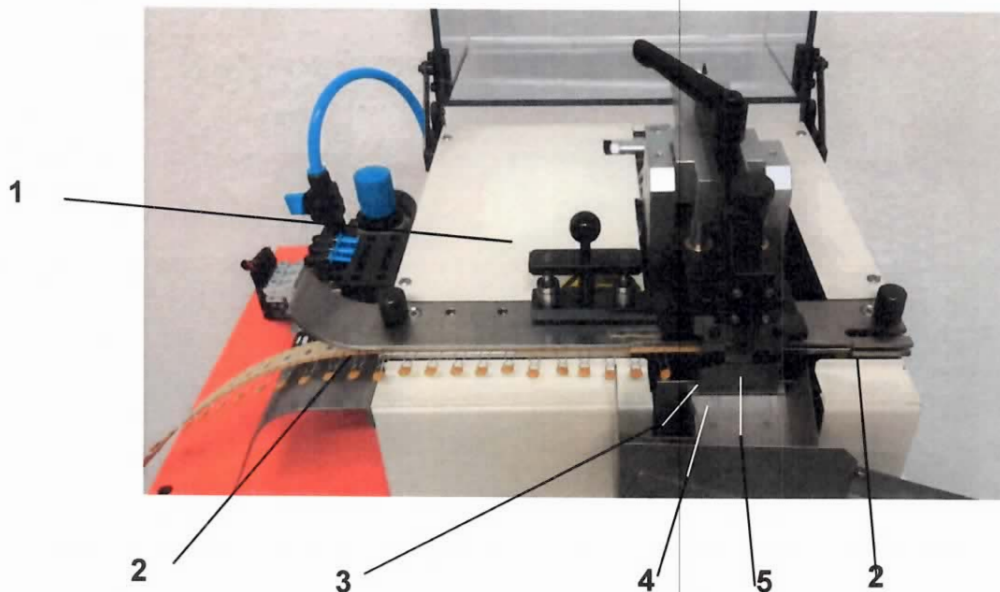
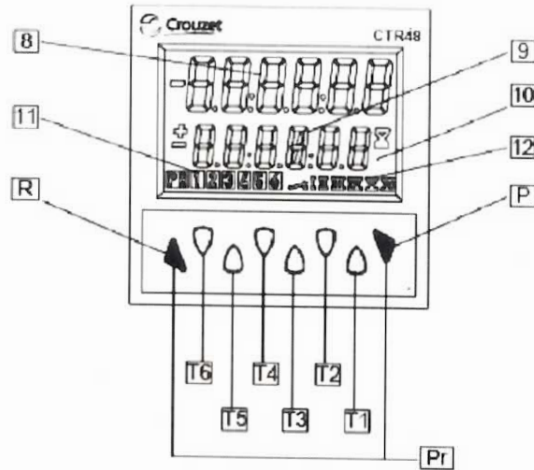


Figure 5 - Tape centering and tools

1. Handle (Lift up the tape centering)
2. Knurled screw (component guide clamping)
3. Lower tool
4. Upper tool
5. Clamping die

4. Counter (optional)

Extract from original instruction of the manufacturer, Crouzet



- T1–6** Decade key T1...T6
- P** Prog/Mode key
- R** Reset key
- 8** Current count value/main counter
- 9** Preset value/Total count/Batch counter
- 10** Run display for Timer
- 11** Shows which preset value is being displayed
- 12** Shows which preset output is active
- PR** Keys necessary for programming the parameters (highlighted in grey)

5. Switch on the machine

The following switch-on conditions must be fulfilled:

- Main switch ON
- Air pressure on (shut-off valve open).
- Protection cover close.
- Counter must be reset.

Start the machine by pressing the start button.

6. Stop the machine

When the target number of pieces is reached, or by pressing the stop button or canceling one of the switch-on conditions. (opening the protective cover)

7. Working speed

The cycle-time of the Machine was set by the use of cylinders – and air chokes to an optimum.

Please do not make any changes here.

Retool

1. Basic remarks on setting the machine

- Secure the machine for retrofitting and maintenance work so that no unintentional (unauthorized) connection can take place.

Switch OFF the machine and pull out the mains plug

- Make sure that all loosened screws are tightened again after all settings.
- Upon request, the manufacturer will set up the machine for any chosen component. To prevent damage to the unit and/or tooling changes to settings should be performed based on instructions provided in the manual.



2. Tool change

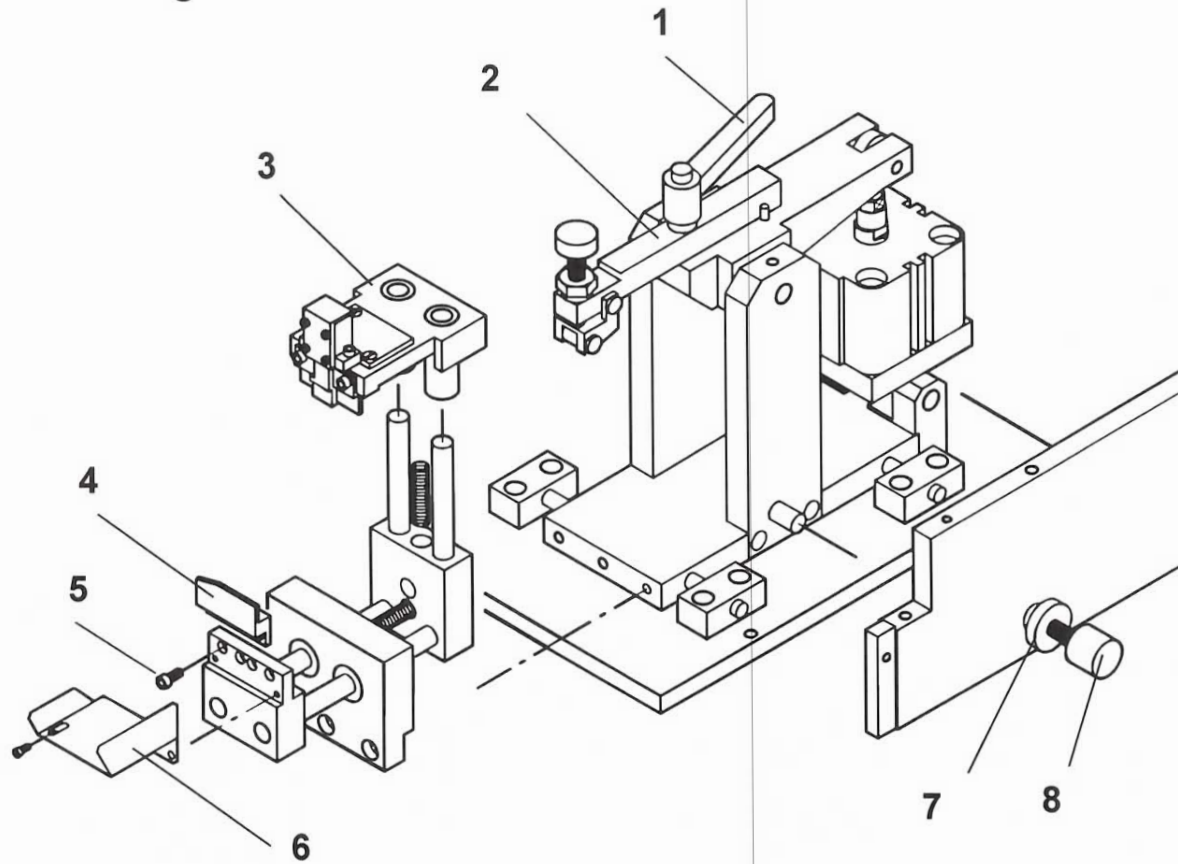


Figure 6 – Tool change

- | | |
|------------------------|--------------------|
| 1. Locking lever | 5. Allen screw |
| 2. Tooling lever | 6. Component slide |
| 3. Complete upper tool | 7. Knurled knob |
| 4. Lower tool | 8. Spindle |

1. Upper tool

- 1.1. Loosen the clamping lever (1) and swivel the tool lever (2) to the side.
- 1.2. The complete upper tool (3) can then be easily removed from the top of the guide columns and can be replaced.
- 1.3. Push the new tool down by hand and swivel the tool lever (2) back into the working position.
- 1.4. Tighten the clamping lever (1) again.

2. Lower tool

2.1. Remove component slide (6).

2.1. Remove the Allen screws (5) and take out the tool (4) towards the front.

2.3. Assemble the new tool in reverse order.

3. Adjust tools

3.1. Upper tool

Tool is fixed. No further setting required.

3.2. Lower tool

Readjust the lower tool when changing the component pitch.

1. Insert component tape between upper and lower tool.

2. Check if the connecting wires are exactly under the tools in the working position.
Überprüfen, ob in Arbeitsposition die Anschlussdrähte exakt unter den Werkzeugen liegen. Possible correction: Loosen the knurled nut (7) and move the complete tool plate in the horizontal direction accordingly with the spindle (8).

4. Set the cutting length using the micrometer screw

Tip: For fine adjustment edit some components and measure. Adjust correct according to the specification.



Picture 7 - Adjustment of the cutting length

7. Knurled screw

8. Spindle

9. Micrometer screw

5. Modification to another pitch size

5.1. Replacement of the tape guide

1. Remove the upper tools from the machine.
2. Interrupt the compressed air supply.
3. Remove the front protective cover.
4. Unscrew the knurled screws (10).
5. Remove the complete tape guide upwards. Use the new tape guide in its place. Make sure that the driving pin (11) is hooked into the feed cylinder (12).
6. Screw in the knurled screws again and fit the front protective cover.

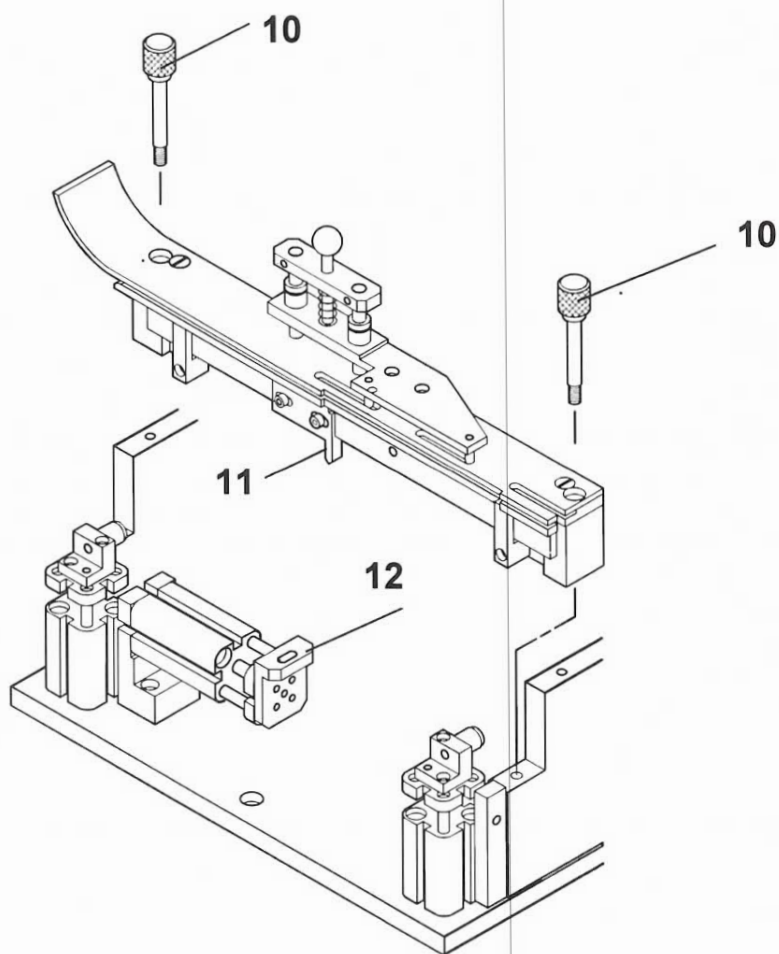


Figure 8 – Modification to another pitch size

10. Knurled screw

11. Driving pin

12. Feed cylinder

6. Faults and their rectification

Caution: All maintenance and repair work may only be performed by qualified and trained personnel!



If used properly, the machine will function virtually without trouble. If, contrary to expectation, faults should occur, please inform your supplier first.

Your contact: **Streckfuss USA, Tel. +1 972 790 1614**

The type of fault discussed consequently can be taken down in the following table with the description of causes and measures for the correction of the faults.

Type of fault	Cause	Measures

Maintenance

Caution: All maintenance and repair work may only be performed by qualified and trained personnel !

For safety reasons, the machine must be disconnected from the mains!

Maintenance plan					
	Interval				Täsk
	d	w	m	y	
Machine general	X				Vacuum-clean or clean from wire clippings and other remains with a brush.
Tools		X			Check bending and cutting tools for tin deposits and remove these, if necessary, without damaging the tools.
All sliding parts		X			Clean and lubricate slightly with oil. No grease
Ball bearing			X		Clean and oil lightly
elektrische Überprüfung			X	X	To note local provisions as in Germany DGUV Regulation 3

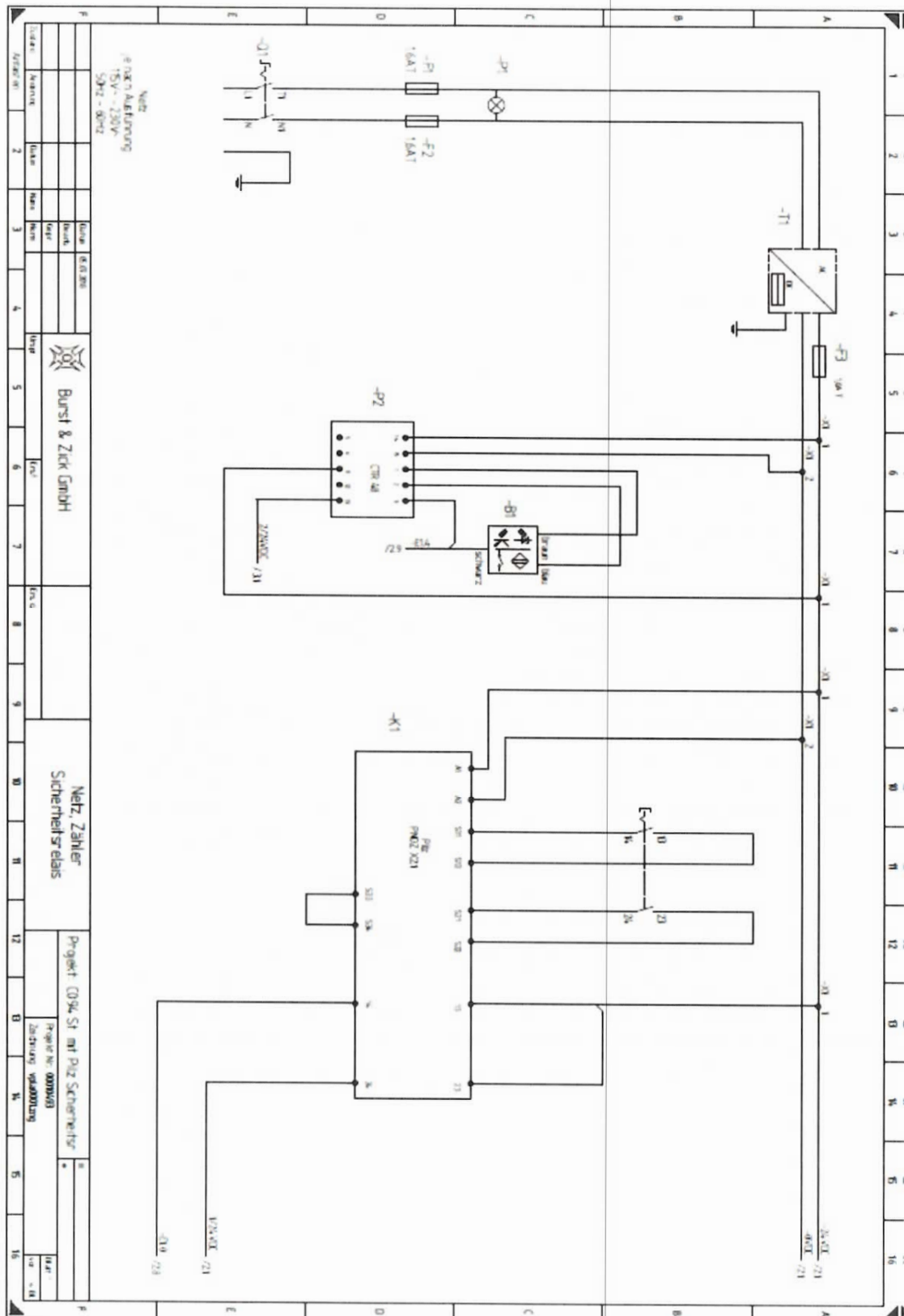
d = daily
 w = weekly
 m = monthly
 y = annualy

Caution: All maintenance and repair work may only be performed by trained specialists!

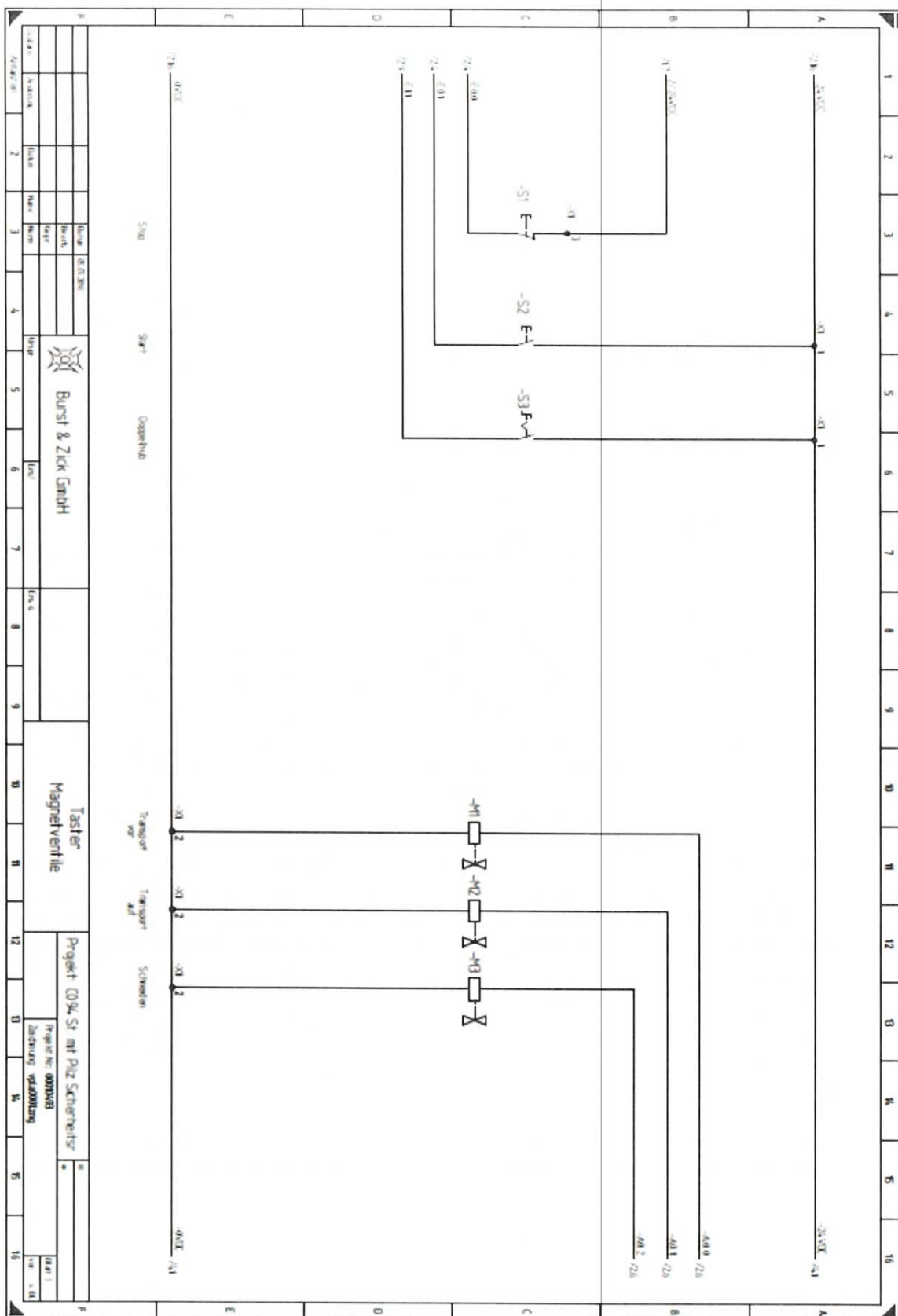
Caution: No grease may be used for lubricating moving and sliding parts. Use thin lubricants only.

Technical documents

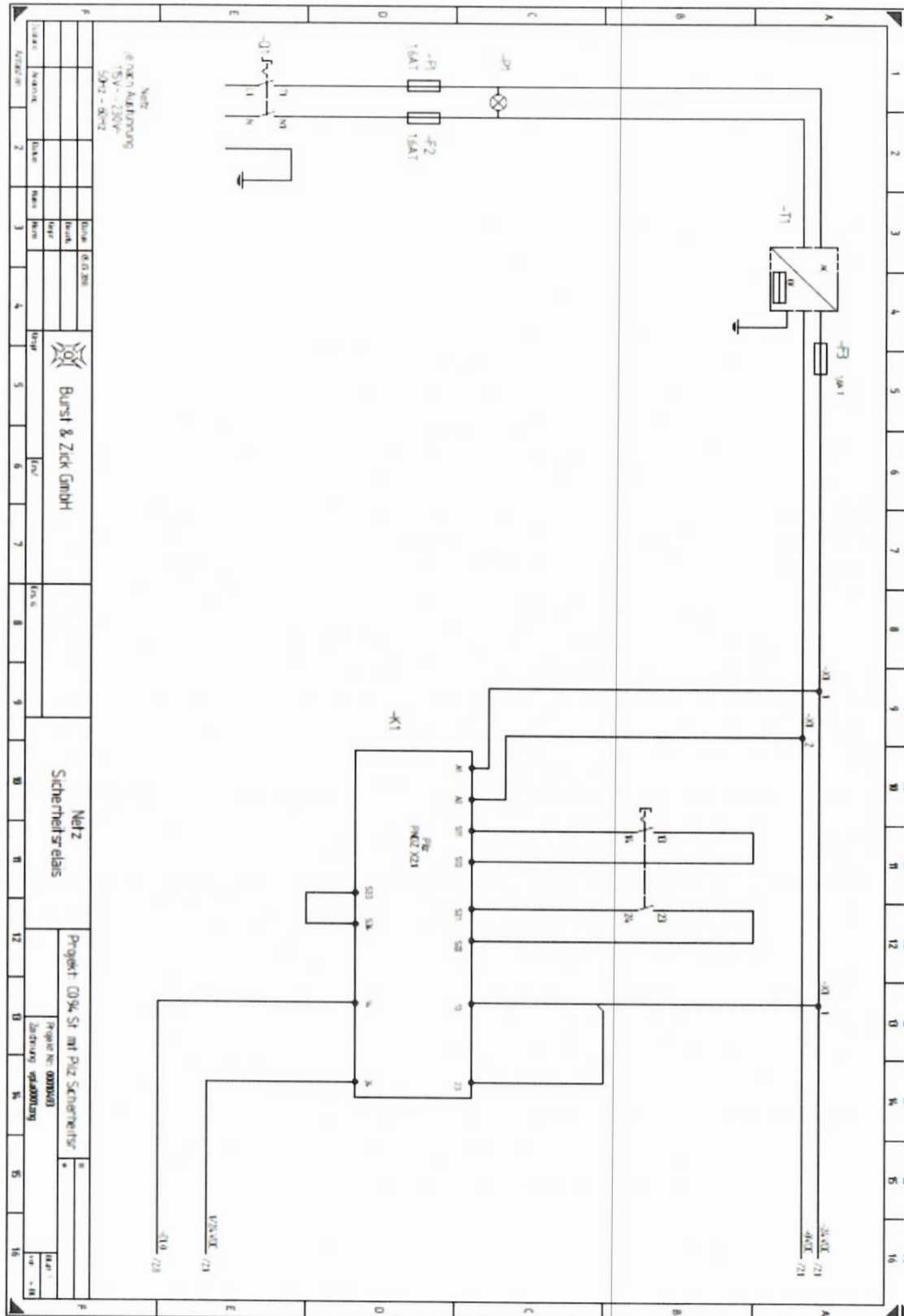
1. Circuit diagram C094 with counter

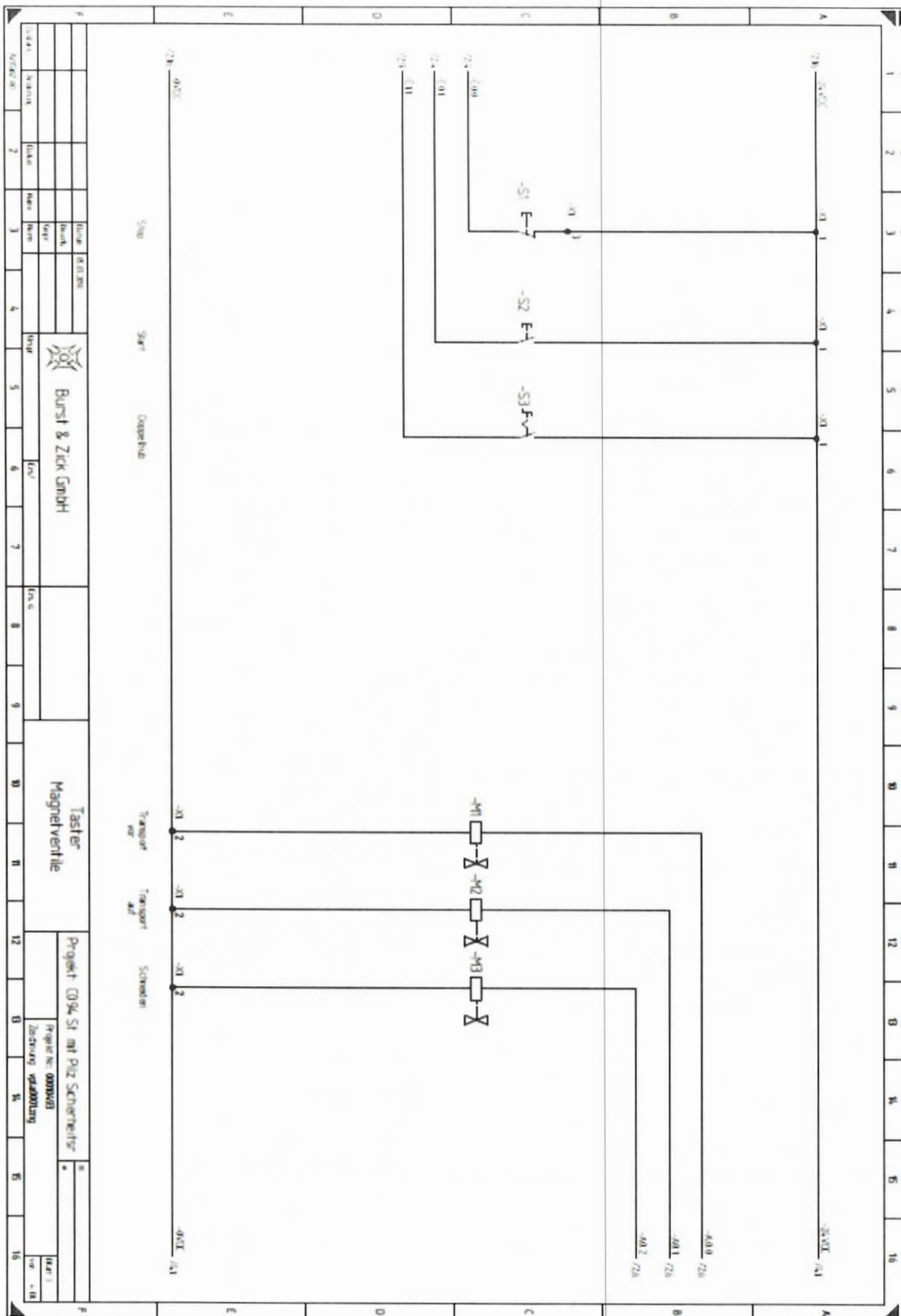






1a. Circuit diagram C094 without counter



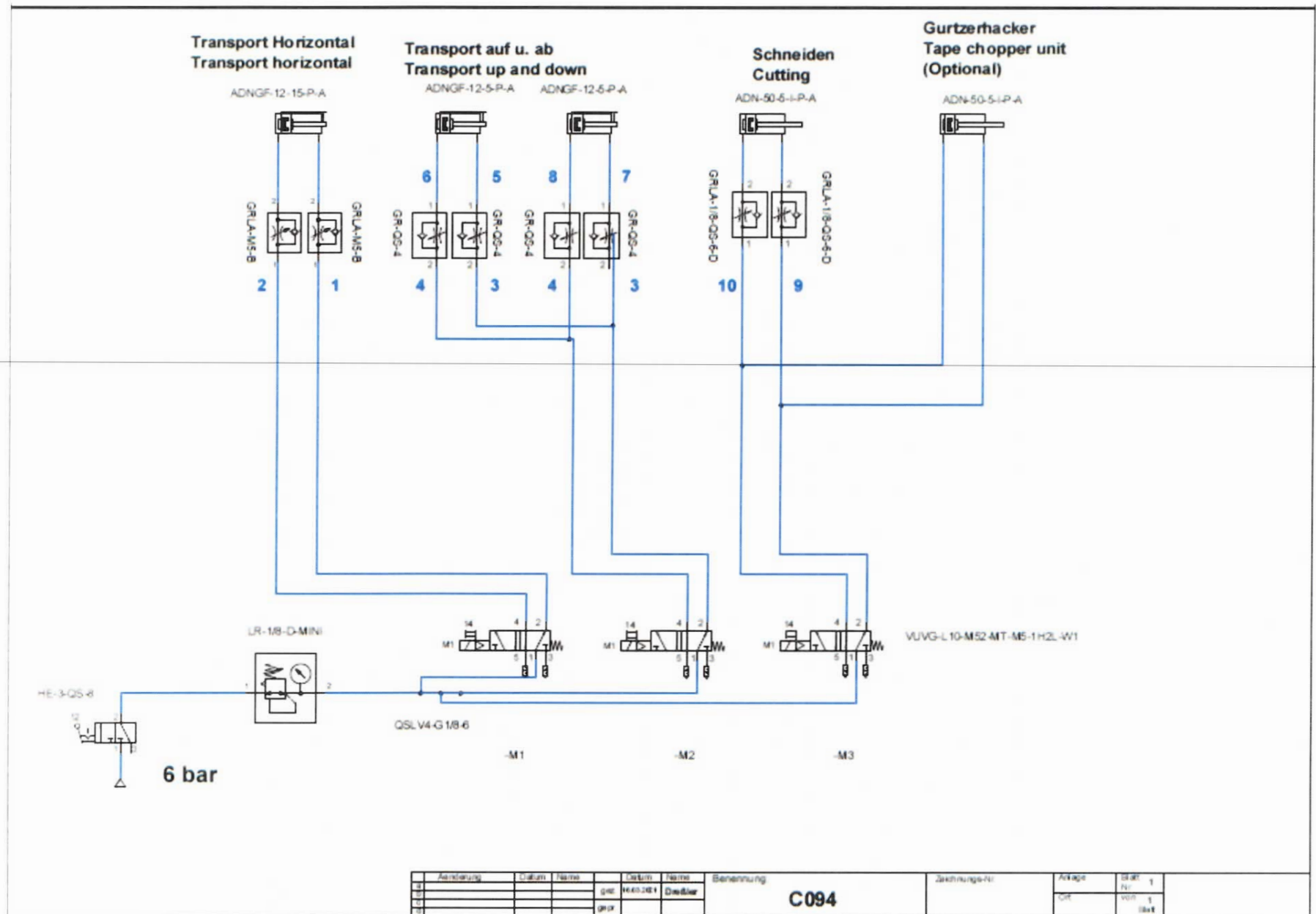




2. Piece- and spare parts list electrical parts C094

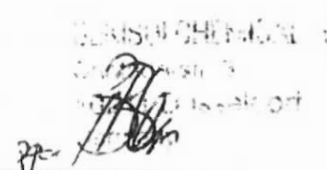
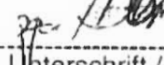
Name	Type	Number
Q1	Cam switch	CA10 T302/D-A004 EG
F1,F2	Fuse holder FPG1 Locking device Fuse 1,6AT	3101.0210 0696.0033 419-993
F3	Fuse holder Fuse 1,0 AT	UK 5 HESI 5x20mm
P1	Lamp socket Lamp 230V Cap	1.60502.1020214 578-367 5.52011.026
P2	Counter	CTR 48 87621111
T1	Power supply 1,3A	DSP 30-24
K1	Safety relay	PNOZ X2.1
S1	Push button red	110001151/0301
S2	Push button green	110001001/0507
S3	Switch	0100.1201
K2	S7-1200 CPU 1212C	6ES7 212-1AE40-0XB0
K3	Signal modul	7ES7 221-1BF32-0XB0
B1	Fork light barrier	OGU-050-G3T3
B2, B3, B7,B8,B9	Proximity switch	SME8-M-DS-24V-K0,3-M8D
B4	Proximity switch	SMT-8M-A-PS-24V-E-0,3-M8D
B5	Proximity switch	SMT-8G-PS-24V-E-0,3-M8D
X1	Terminalblocks	WDK 2,5
X2	Sensor pad	8000-88010-3570-300
M1, M2, M3	Valve cluster	VUVLG-10-M52-MT-1H2L-W1
S 101	Safety switch Actuator B2	AZ 16-02 zvrk AZ 15/16

3. Pneumatic layout with types



4. Certification for protective disks

Bescheinigung für Schutzscheiben ESLON-DC PVC 401 AS nach EN 10204

<p align="center">Bescheinigung nach EN 10204 (Werksbescheinigung) Certification of Compliance with the Order Best.: 820700</p>			
<p>Wir bescheinigen die Übereinstimmung unserer Lieferungen mit den Lieferbedingungen / Bestellungen der</p>		<p>We certify the compliance of the delivered parts with the delivery standards / purchase order of</p>	
<p align="center">Theodor Schmid GmbH Glasgroßhandlung An der Roßweid 2 76229 Karlsruhe</p>			
<p>Bescheinigende Firma</p>		<p>Certifying Company</p>	
<p align="center">Sekisui Chemical GmbH Cantadorstr. 3 40211 Düsseldorf</p>			
<p>Bemerkungen</p>		<p>Remarks</p>	
<p align="center">ESLON-DC PVC 401AS antistatisch, klar, transparent 1000x2000x5mm Oberflächenwiderstand $3 \times 10^7 \sim 5 \times 10^7 \Omega/\text{sq}$</p>			
<p align="center">  </p>			
<p>11.04.2008</p>	<p></p>	<p></p>	<p></p>
<p>Datum</p>	<p>Unterschrift / Stempel</p>	<p>Date</p>	<p>Signature / Stamp</p>

Spare parts – catalogue

Machine CO94

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Housing	Tz1
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Tool actuation	Tz3
Transport	Tz4
Tool pusher	Tz5
Machine housing	Tz9
Cutting tool	Tz10
Protection cover	Tz11
Recommended spare parts	

Assembly: Tz 1 Housing

Item	Qty	Drawing no.	Description		Notes
1	1	Tz 1 T. 1	Base plate		
2	2	Tz 1 T. 2	Side plate		1x left, 1x right *)
3	1	Tz 1 T. 3	Carrier plate		
4	1	Tz 1 T. 4	Carrier plate		
5	1	Tz 1 T. 5	Back plate		
6	1	Tz 1 T. 6	Side plate, right		
7	1	Tz 1 T. 7	Side plate right		
8	1	Tz 1 T. 8	Holder		
9	1	Tz 1 T. 9	Cover rail		
10	1	Tz 1 T. 10	Rail		
11	1	Tz 1 T. 11	Mounting plate		
12	1	Tz 1 T. 12	Spacer rail		
13	1	Tz 1 T. 13	Threaded bushung		
14	1	Tz 1 T. 14	Spindle		
15	1	Tz 1 T. 15	Coenter nut (Knurled nut)		
30	1		Valve cluster		
31	3		Magnet valve		
32	1		Pressure regulator LR-1/8-MINI-D		
33	1		Manometer MA-40-16-1/8		
34	4		Rubber foot		
35	2		Handle GN 425-235 CR		

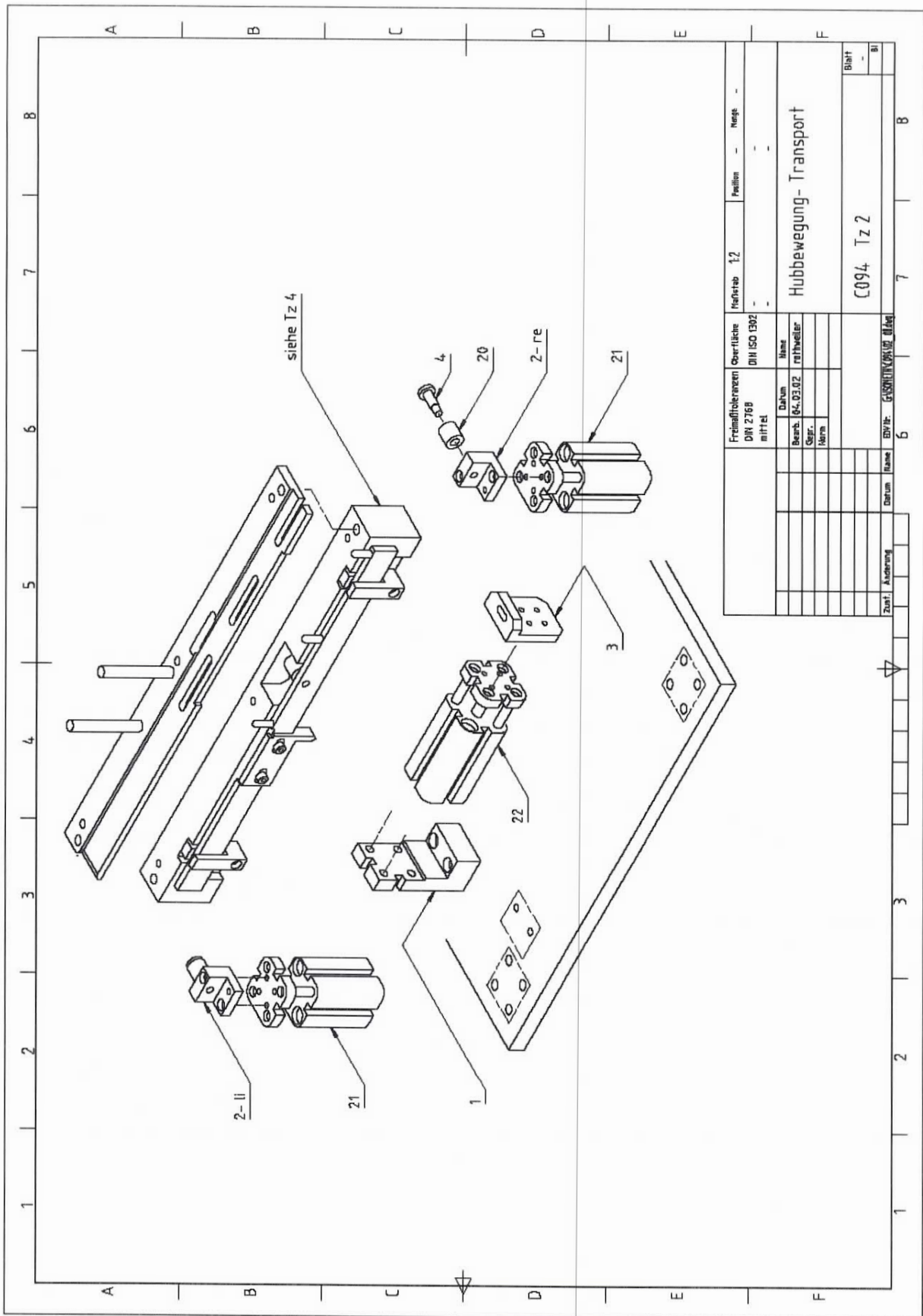
Note *) = please specify when ordering!



Assembly: Tz 2 Stroke movement - transport

Item	Qty	Drawing no.	Description		Notes
1	1	Tz 2 T. 1	Cylinder holder		
2	2	Tz 2 T. 2	Transport lifter		1x left, 1x right *)
3	1	Tz 2 T. 3	Slide bracket		
4	2	Tz 2 T. 4	Bolt		
20	2		Needle bearing NK 5/10		
21	2		Compact cylinder ADNGF-12-5-P-A		
22	1		Compact cylinder ADNGF-12-15-P-A		

Note *) = please specify when ordering!



Assembly: Tz 3 Tool actuation

Item	Qty	Drawing no.	Description		Notes
1	1	Tz 3 T. 1	Bearing plate		
2	2	Tz 3 T. 2	Bracket		
4	1	Tz 3 T. 4	Level		
5	1	Tz 3 T. 5	Levell		
6	1	Tz 3 T. 6	Support Bracket		
7	1	Tz 3 T. 7	Pivot		
8	1	Tz 3 T. 8	Support plate		
9	2	Tz 3 T. 9	Block for pressure spring		
10	4	Tz 3 T. 10	Block		
15	1	Tz 3 T. 15	Bolt		
16	1	Tz 3 T. 16	Adjustment screw		
17	1	Tz 3 T. 17	Nut		
18	1	Tz 3 T. 18	Cap		
20	1	Tz 3 T. 20	Pin		
21	1	Tz 3 T. 21	Pin		
22	1	Tz 3 T. 22	Pin		
30	4		Shaft hardened Ø8h6 x 55		
31	1		Shaft hardened Ø10h6 x 80		
32	1		Pressure spring D-166 D		
34	1		Shaft hardened Ø6h6 x 35		
35	2		SM- Bushing Ø10 x Ø16 x 20		
36	1		Needle bearing NK 5/10		
37	1		Piston rod attachments SGS-M6		
38	1		Compact cylinder ADN-50-5-I-P-A		
39	1		Locking lever GN-100-14-M6x 32 sw		
40	2		One-way flow control valves GRLA-1/8-QS-6D		

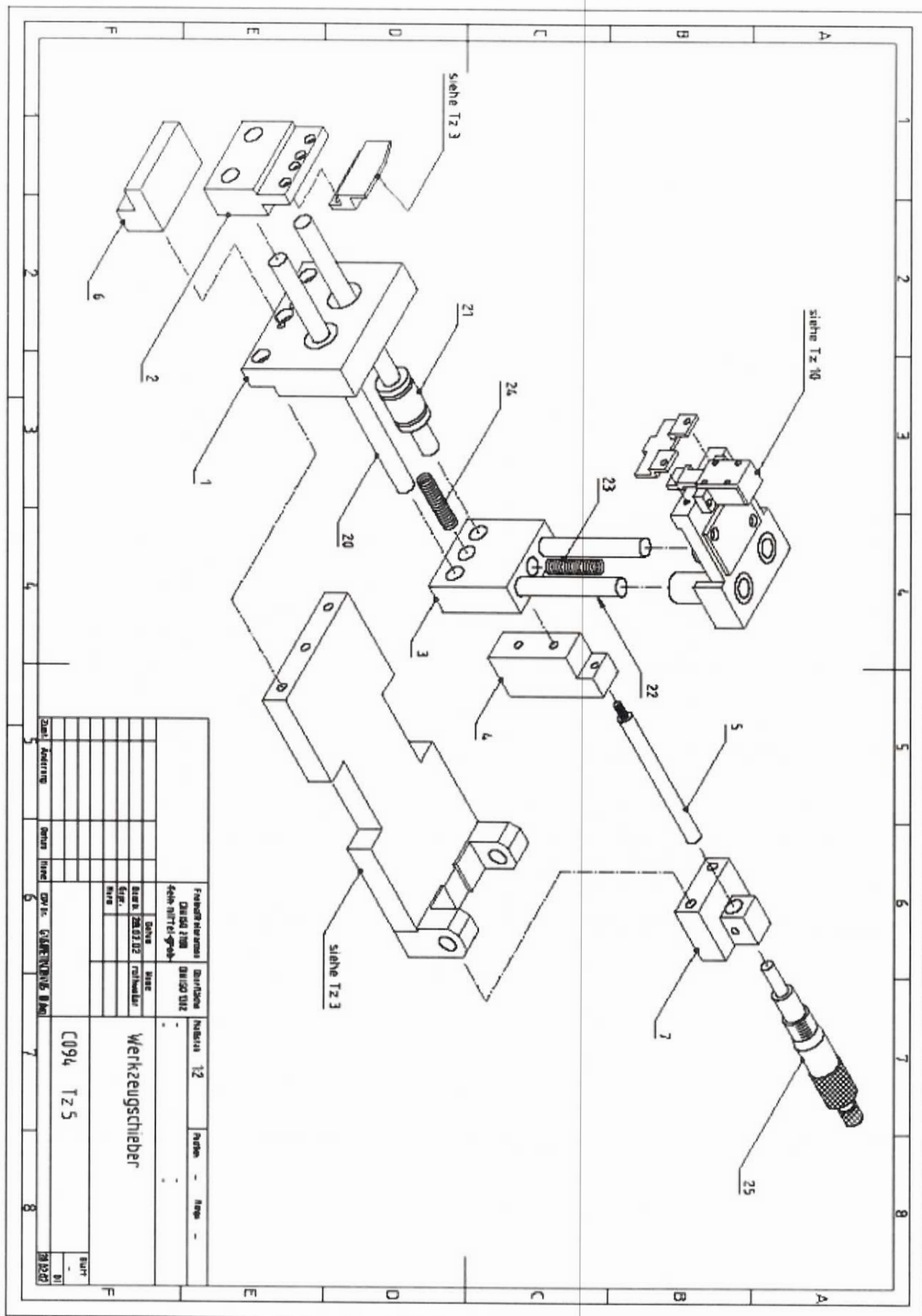
Assembly: Tz 4 Transport

Item	Qty	Drawing no.	Description		Notes
1	1	Tz 4 T. 1	Belt guide		
2	1	Tz 4 T. 2	Guide		
3	1	Tz 4 T. 3	Indexing beam		
4	1	Tz 4 T. 4	Rail		Pitch 12,7 ¹⁾
4a	1	Tz 4 T. 4a	Rail		Pitch 15 ¹⁾
5	1	Tz 4 T. 5	Tape centering		Pitch 12,7 ¹⁾
5a	1	Tz 4 T. 5a	Tape centering		Pitch 15 ¹⁾
6	1	Tz 4 T. 6	Plate		
7	1	Tz 4 T. 7	Latch		
8	1	Tz 4 T. 8	Rail		
9	2	Tz 4 T. 9	Collar pin		
10	2	Tz 4 T. 10	Bearing jewel		
11	2	Tz 4 T. 11	Cam		
12	3	Tz 4 T. 12	Cam		
13	1	Tz 4 T. 13	Stop		Only pitch 12,7
14	1	Tz 4 T. 14	Bearing pin		
15	1	Tz 4 T. 15	Bolt		
30	2		Dowel pin Ø6m6 x 70 DIN 6325		
31	2		Recirculating ball bushing N-6V		
32	1		Needle bearing NK 5/10		
33	1		Pressure spring		
34	1		Ball knob M4 DIN 319		

¹⁾ Optionally = please specify when ordering!

Assembly: Tz 5 Tool pusher

Item	Qty	Drawing no.	Description		Notes
1	1	Tz 5 T. 1	Tool supprt block		
2	1	Tz 5 T. 2	Tool holder		
3	1	Tz 5 T. 3	Guide		
4	1	Tz 5 T. 4	Back support		
5	1	Tz 5 T. 5	Shaft		
6	1	Tz 5 T. 6	Angle bracket		
20	2		Shaft hardened Ø10h6 x 78		
21	2		Recirculating ball bushing N-10V		
22	2		Shaft hardened Ø10h6 x 88		
23	1		Pressure spring D-199		
24	1		Pressure spring		
25	1		Micrometer screw		
26	1		Compact cylinder ADNGF-20-5-I-P-A		
27	1		Pressure spring D-115H-11		



Funktionsbezeichnung		Bauteilnummer		Material		Position		Menge	
C094 TZ5		08120 012		-		-		-	
4444 0112-012		-		-		-		-	
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Assembly: Tz 9 Machine housing

Item	Qty	Drawing no.	Description		Notes
1	1	Tz 9 T. 1	Top cover		
2	1	Tz 9 T. 2	Front cover		
3	1	Tz 9 T. 3	Cover		
4	1	Tz 9 T. 4	Front panel		
5	1	Tz 9 T. 5	Chassis		
6	1	Tz 9 T. 6	Slide		
8	1	Tz 9 T. 8	Component slide		
9	1	Tz 9 T. 9	Inflow sheet		

Assembly: Tz 10 Cutting tool

Item	Qty	Drawing no.	Description		Notes
1	1	Tz 10 T. 1	Tool guide		
2	1	Tz 10 T. 2	Upper cutting tool		
3	1	Tz 10 T. 3	Lower cutting tool		
5	1	Tz 10 T. 5	Plate		
6	1	Tz 10 T. 6	Casing for clamping die		
7	1	Tz 10 T. 7	Clamping die		
8	1	Tz 10 T. 8	Cover for clamping die		
15	1		Pressure spring D-072 A		
16	2		Bearing bushing Ø10 x Ø16 x 43		

Assembly: Tz 11 - Protection cover

Item	Qty	Drawing no.	Description		Notes
1	1	Tz 11 T. 1	Protective hood		
2	2	Tz 11 T. 2	Hinge part		
3	2	Tz 11 T. 3	Hinge part		1x left, 1x right *)
4	1	Tz 11 T. 4	Hood support latch		
5	1	Tz 11 T. 5	Bracket		
6	1	Tz 11 T. 6	Bush		
7	1	Tz 11 T. 7	Distance washer		
8	1	Tz 11 T. 8	Threaded plate		
20	1		Safety switch, AZ 16 zvrk		
21	1		Bracket for Safety Switch		
22	1		Handle, 10501-003 154		

Note *) = please specify when ordering!



Recommended spare parts

Item	Qty	Drawing no.	
1	Tz 2 T. 4	Bolt	
1	Tz 4 T. 4 (4a)	Rail 12,7 or 15	
1	Tz 4 T. 5 (5a)	Rail 12,7 or 15	
1	Tz 4 T. 7	Plate	
2	Tz 4 T. 10	Bearing jewel	
2	Tz 4 T. 11	Cam	
3	Tz 4 T. 12	Cam	
1	Tz 4 T. 14	Bearing pin	
2	Tz 4 T. 31	Recirculating ball bushing N-6V	
1	Tz 4 T. .32	Needle bearing NK 5/10	
1	Tz 4 T. .33	Pressure spring	
1	Tz 5 T. .23	Spring	
2	Tz 5 T. 21	Recirculating ball bushing	
1	Tz 5 T. 24	Spring	
1	Tz 10 T. 2	Upper cutting tool	
1	Tz 10 T. 3	Lower cutting tool	
1	Tz 10 T. 7	Clamping die	
1	Tz 10 T. 5	Pressure spring D-072 A	
2	Tz 10 T.16	Bearing bushing Ø10 x Ø16 x 43	