1.oo Safety Precautions

1.1o General

- Read the Instructions before operating the machine.
- Never work without using the guards or with faulty or inadequate workpiece clamping arrangements.

1.2o Guards and Safety Interlocks on the Machine

- Hood (18)
- Key-operated main switch (19)
- Limit switch (15) detects end of material and shuts off inter-cycle-feed.
- Pressure-operated switch stops automatic machine if air pressure too low.

Note: Always turn off main switch (19) before changing saw blade.

2.oo Technical Data

Type	SA 1o3/25
Sawblade dia	42o mm, bore 3o mm
Cutting capacity	
Feed distance	5-6oo mm with double stroke 12oo mm
Power supply	3-ph
Voltage	22o/38o V, 5o Hz
Output rating/motor	3 kW/4.1 h.p.
Motor speed	28oo rpm
Compressed-air supply	7 bar
Air consumption	without coolant spray 5o l/cycle with coolant spray 62 l/cycle
Electrical safety	Earthed supply
Fuses	3 x 16 A
Safety precautions	Motor cut-out fitted Key-operated main switch Hood
Weight of machine	approx. 36o kg
Order No.	1o3 oo o3 25

3.oo Delivery and Installation

3.1o The machine is supplied mounted on a pallet

3.2o Installation Drawing

3.21 Foundations

No special foundations are required, but the floor should be level and free from vibration.

3.3o Installation

Remove machine from pallet, unscrewing the bolts used to secure it for transport. Place machine in required position. Level machine up by means of set screws (33).

3.4o Connection to Services

3.41 Connection to Electricity Supply

Have machine connected to a three-phase supply of the voltage and frequency specified on the name-plate. A 5-core cable must be used to connect the supply to the terminal board (L1, L2, L3, N, PE) in the switch cabinet (34).
Connections should be made by a qualified electrician.

3.42 Connection to Compressed-Air Supply

Connect air supply to air treatment unit (36) on machine by means of an 8-mm compressed air-hose. Before starting machine adjust air treatment unit regulator to a pressure of max. 7 bar.
The air consumption amounts to about 5o litres/cycle without the coolant spray, and about 62 litres/cycle with the coolant spray.

3.5o Circuit Diagram (see Appendix)

3.6o Assembly of the Machine

3.61 Mounting the Feed Cycle Cylinder

The feed cycle cylinder (35) supplied is fitted as follows:
Unscrew 4 socket-head bolts from cylinder. Push the cylinder from the right, with the piston rod leading, through the hole. Pass the piston rod through the stop (37) and bolt to the slider (38). Secure the cylinder by means of the 4 socket-head bolts, making sure that the air connections are at the bottom. Attach the air supply hoses to the cylinder.

3.62 Mounting the Swarf Extractor Hose

The swarf extractor hose is fitted with the swarf extractor stub on the rear of the machine and secured by means of a hose clip.

4.oo Start-Up and Operation

4.1o Lubrication before first Start-Up

- Clean rust-preventative compound from the machine.
- Lightly oil feed carriage guide columns.

4.2o Changing Sawblades

- Turn off main switch (19
- Tilt motor to 45°
- Use allen key to unscrew 3 socket-head bolts in saw head cover and take off cover.
- Unscrew blade clamping bolt by turning it clockwise with a 22-mm spanner, holding the clamping flange with a 46-mm spanner.
- Take off clamping flange and remove sawblade.
- Before fitting a new sawblade make sure that the contact surfaces are free from all dirt.

The faces of the sawblade teeth must point in the direction of the cut (arrow).

4.3o Adjustment of the Machine

4.31 Pneumatic Saw Feed

The saw feed speed is adjusted by means of throttle valve S8 (32).

4.32 Adjustment of Saw Feed

- The saw stroke is controlled by limit switch E5 (16).
  Adjustment is made by moving operating cam (21).
- The basic setting is controlled by limit switch E4 (17), the operating cam for this must <u>not</u> be moved.

4.33 Length Setting Adjustment

Adjust the required length of offcut according to scale (43) by means of the stop (37) which is secured by the clamping lever (2o).

4.34 Clamping of Workpiece

The clamping cylinders (3o) should be adjusted to suit the workpiece concerned. For adjustment, switch on "Materialspannung " ("Clamp Material") and make sure that the workpiece is firmly held. With some sections it is desirable to use packing pieces.

4.35 Feed Cycle Clamp

The feed clamping cylinders (31) should be adjusted to suit the workpiece concerned. Press "Taktspannung" ("Feed Cycle Clamp") button (13) and check.

<u>Note:</u> Limit switch E1 (15) must not be actuated when the section is clamped.

4.36 Feed Cycle Speed

The feed cycle speed is adjusted by means of the throttle valve (39). Note that the feed must suit the weight of the material or dimensional inaccuracies may occur in the cuts.

4.37 Coolant Spray Attachment

- The coolant spray attachment (22) ensures that a clean cut is achieved when cutting light alloys, and prevents the build-up of any lips on the cut edges. The rate at which the compound is sprayed is adjusted by means of the coolant spray dosing control (22).
- Use a mixture of 5 parts of cutting compound to 95 parts of cold water for the coolant spray.

4.38 Offcut Clamp

The piece to be cut off the stock is held by the clamping cylinder (41) on the left of the sawblade. This clamping cylinder is actuated by the sawblade feed. The force exerted by this cylinder can be adjusted by means of the pressure cylinder (23). It should amount to about 2 bar; the pressure will, however, have to be reduced for sections with inadequate rigidity.

4.4o Sawing Procedure and Operation

1. Turn on main switch (19)
2. Press "Netz Ein" ("Mains On") button (1)
3. Mains pilot light (green) (2) will come on
4. Take workpiece on the table
5. Adjust material clamp (3o) and cyclic feed clamp (31) to suit workpiece concerned
6. Limit switch E1 (15) must not be actuated when workpiece is clamped. Check by pressing "Takt" ("Cycle") button (13).
7. Adjust desired length of cut on scale and secure stop with clamping lever (2o).
8. Switch on "Materialspannung" ("Clamp Material") (12)
9. Close hood (18).
   Limit switch E6 (14) must be actuated when the hood is closed.
10. Switch on "Taktvorschub" ("Cycle Feed") selector switch (5).
11. Pilot light (6) will come on.
12. Press motor "EIN" ("ON") button (3).
    Note: Make sure the sawblade rotates in the direction indicated by the arrow.
13. White pilot light (4) will come on
14. Set required quantity on counter (8).
    Switch on "Materialspannung" ("Clamp Material") selector.
15. Press "Start" button (1o)
    Sawblade will move forward, adjust feed speed by means of throttle valve (32).
16. Automatic operation of the machine will commence.
17. Double stroking is selected by selector switch (9), i.e. when this switch is "EIN" ("ON") the material is fed forward twice before being cut.
18. Switch off "Taktvorschub" ("Cycle Feed") selector switch.
19. The "Cycle Feed" will stop, when the quantity required has been cut or the workpiece is finished.

4.5o Functional Test

The following requirements must be met for the machine to operate automatically:

1. The quantity required must be set on the counter (8).

2. Limit switch E1 (15) must not be actuated when the workpiece is clamped.

3. Hood (18) must be closed and limit switch E6 (14) must be actuated.

4.6o Use of Guards

The hood (18) must remain closed while the machine is operating automatically. Limit switch E6 (14) must be actuated.

5.oo Maintenance

5.1o Regular Cleaning

Daily cleaning off of swarf and dust is recommended to prevent faulty operation and damage.

5.2o Lubrication

The motor bearings of the machine require no lubrication. The guide rods should be kept oiled. Bearings should be greased as required by means of the grease nipples (4o) provided.

5.3o Air Treatment Unit

The air treatment unit (36) is provided to avoid difficulties with the air supply. The condensate must be drained off regularly from the water trap. The lubricator provides for the lubrication of cylinders and the solenoid valves. The oil reservoir should be filled with a thin machine oil. Oil with a viscosity of about 2-4^{o}E/5o^{o}C is recommended (e.g. Shell Tellus 15 or Esso Esstic 42).

5.4o Care of Sawblades

Make sure the coolant spray attachment is correctly adjusted. It increases the life of the sawblades and ensures a clean cut is obtained.

5.5o Faults and their Cure

5.51 Variations in Length Dimension

- Workpiece clamping cylinder or cycle feed cylinder incorrectly adjusted.
- Cycle feed speed too high.
- Material too heavy, section support (roller conveyor) incorrectly adjusted.

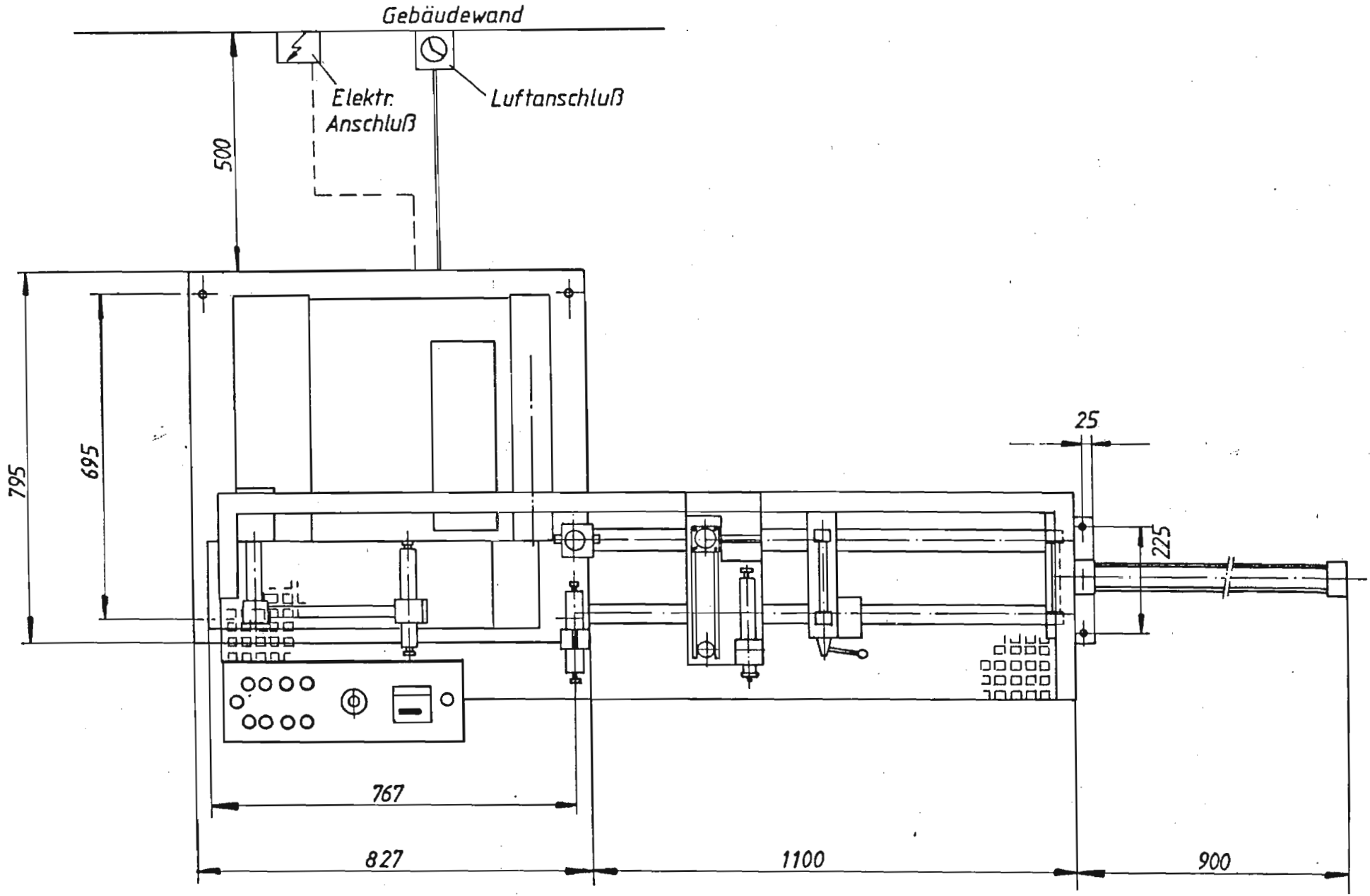
5.52 Cut not Clean

- Saw feed speed too high
- Insufficient coolant spray or container empty.
- Sawblade blunt.

6.oo Guarantee

The machine is guaranteed by the manufacturers in accordance with the terms on the enclosed guarantee card.

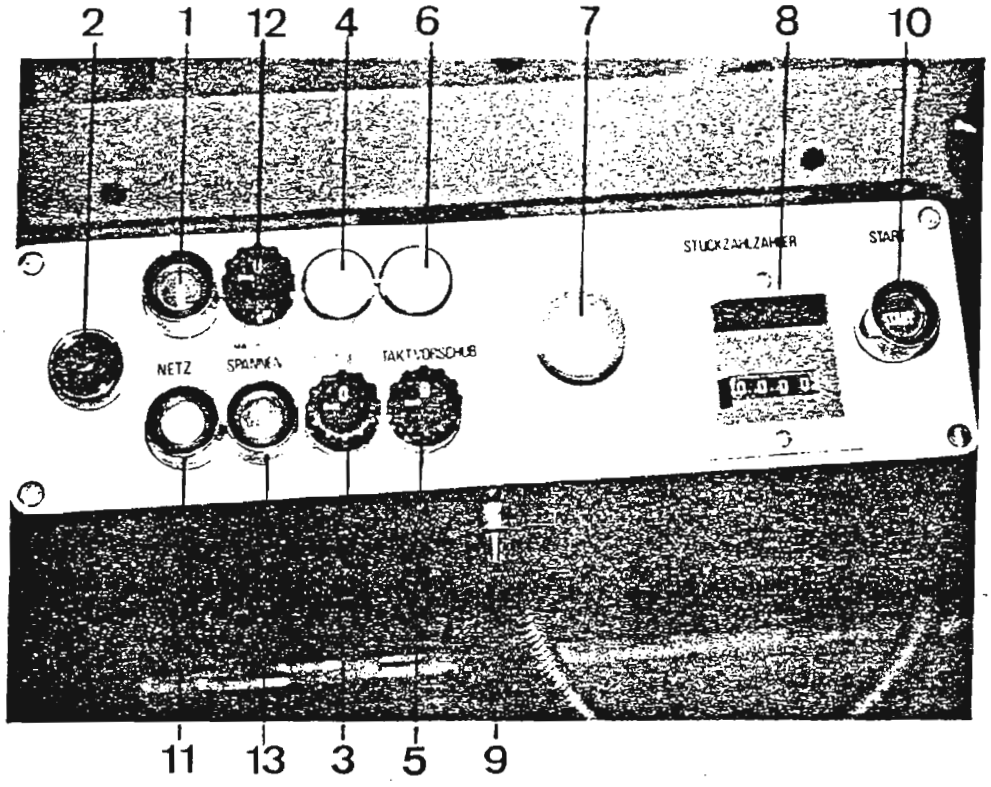
7.oo Accessories (see leaflet)

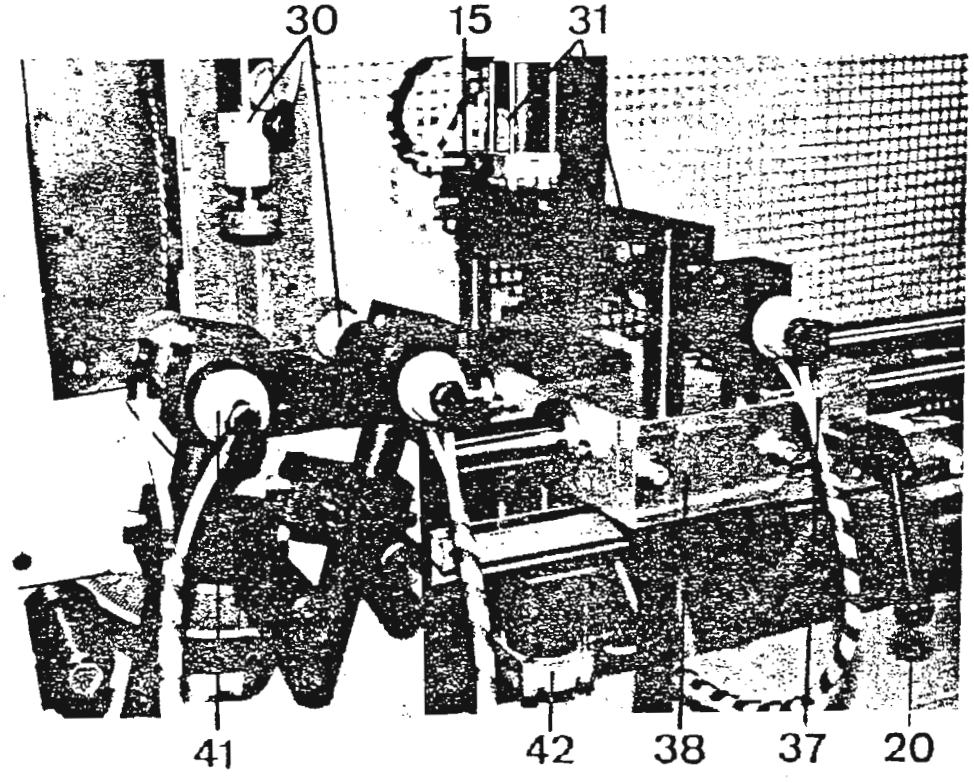


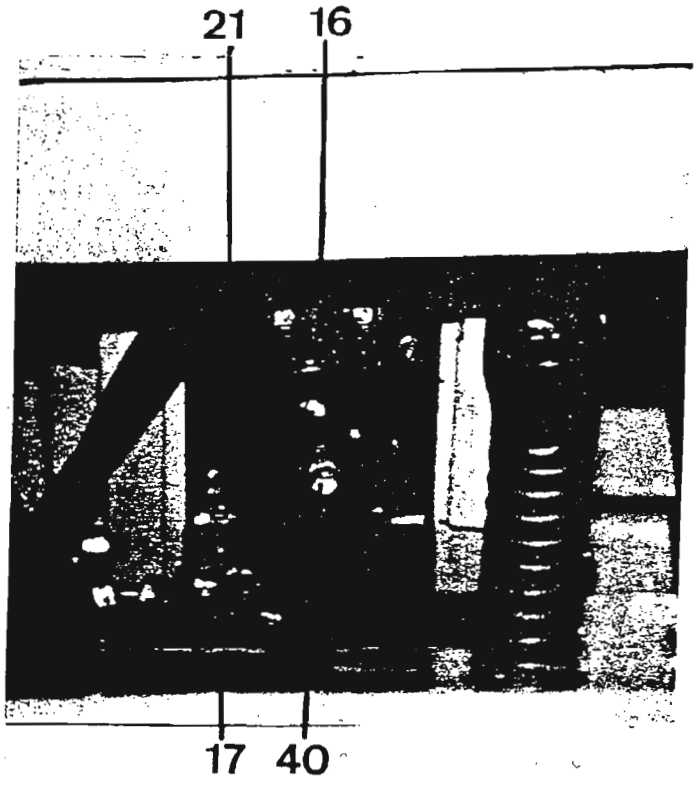
elumatec

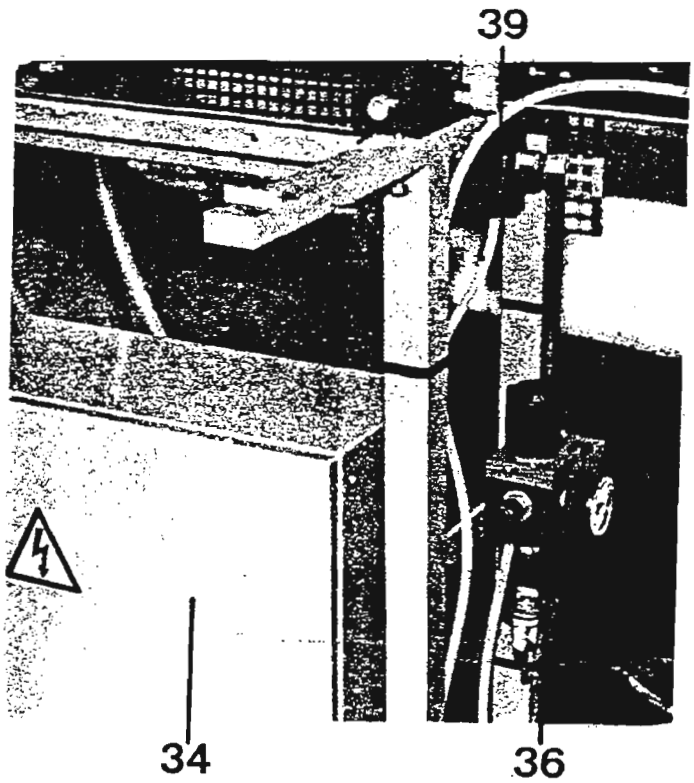
Fundamentplan

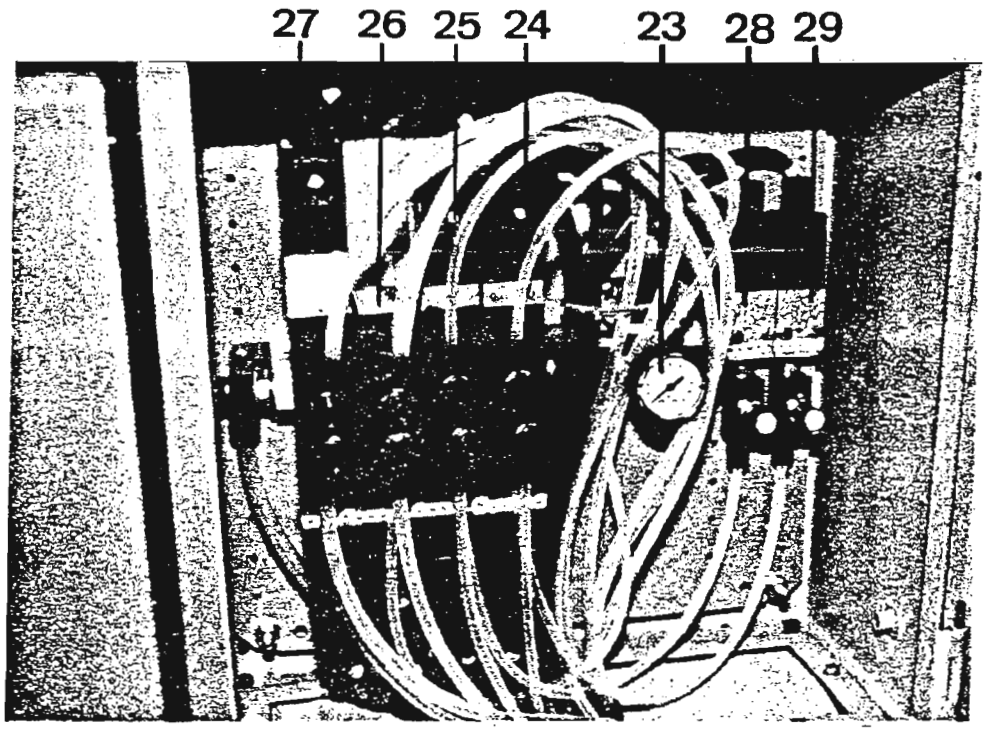
103 05 17 00

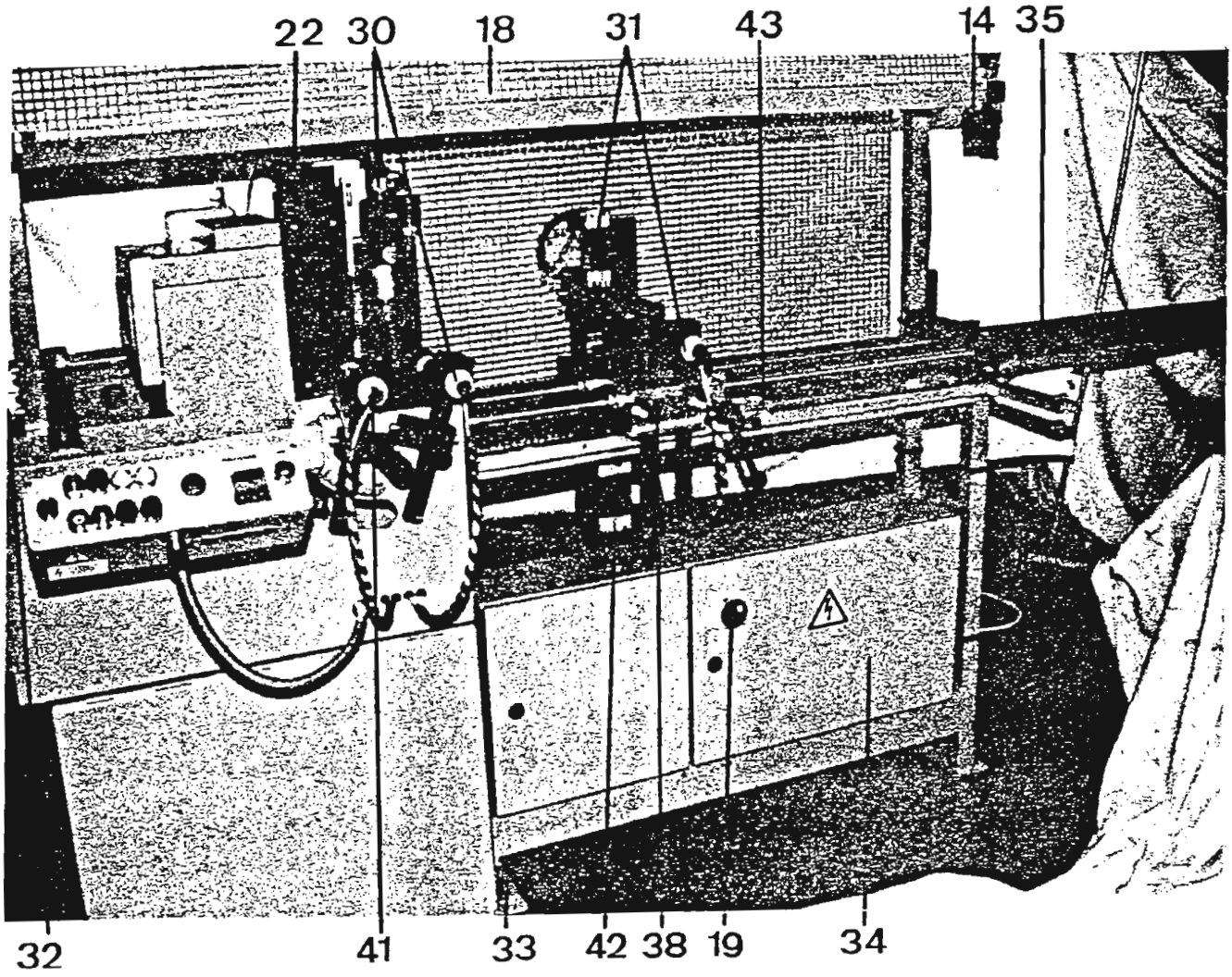

2
1
12
4
6
7
8
10
STUCKZAHLZAHLER
START
NETZ
SPANNEN
TAKTVORSCHUB
11
13
3
5
9


30
15
31
41
42
38
37
20


21
16
17
40


39
34
36


27
26
25
24
23
28
29


22
30
18
31
43
14
35
32
41
33
42
38
19
34

elumatec®

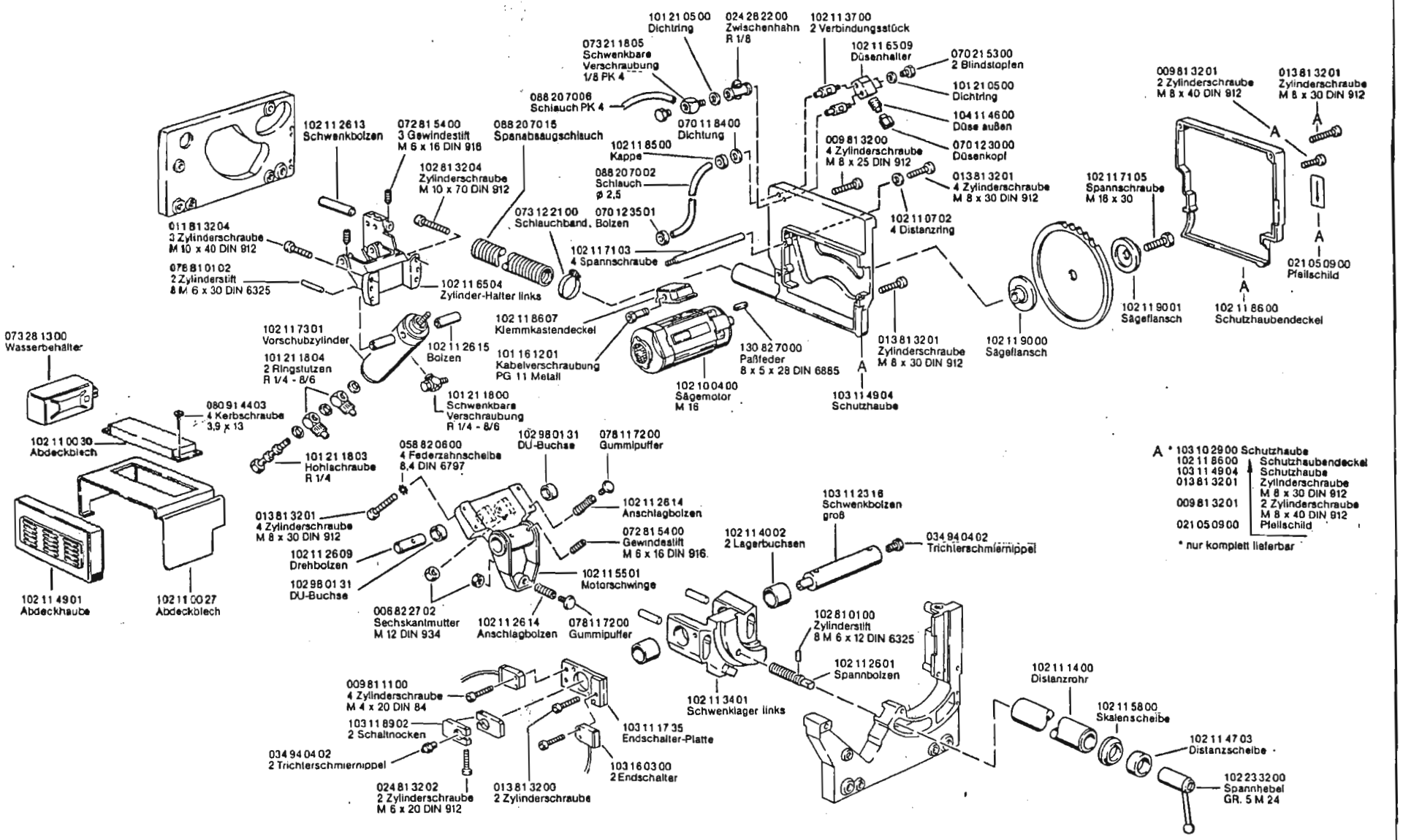
Index to photos

1. Power On Switch
2. Power On Light
3. Saw Motor On/Off
4. Control Lamp
5. Automatic Cycle Switch
6. Control Lamp
7. Emergency Stop Switch
8. Parts Counter
9. Double Stroke Switch
10. Start Switch
11. Power Off Switch
12. Material Clamp Switch
13. Carriage Clamp Switch
14. Limit Switch for Hood
15. Limit Switch for Out of Stock
16. Saw Forward Limit Switch
17. Saw In Base Position Limit Switch
18. Saw Hood
19. Main Switch
20. Clamp Handle
21. Switch Operating Cam
22. Coolant Spray Attachment
23. Pressure Reducing Valve
24. Solenoid Valve S1 (Material Clamp)
25. Solenoid Valve S2 (Cycle Feed Clamp)
26. Solenoid Valve S3 (Saw Feed)
27. Solenoid Valve S4 (Cycle Feed)
28. Pressure Switch P2 (Cycle Feed Clamp)
29. Pressure Switch P1 (Material Clamp)
30. Material Clamps
31. Cycle Feed Clamps
32. Flow Control
33. Adjusting Bolt
34. Electrical Enclosure
35. Profile Feed Cylinder
36. Air Filter-Regulator
37. Stop
38. Carriage
39. Flow Control
40. Grease Fitting
41. Clamp Cylinder
42. Material Lifting Cylinder
43. Scale

Sprüheinrichtung	(22)	= Coolant spray attachment	(22)
Materialspannung	(30)	= Material Clamp	(30)
Taktspannung	(31)	= Cycle feed clamp	(31)
Klemmhebel	(20)	= Clamping lever	(20)
Netzkontrolle	(2)	= Mains pilot light	(2)
Netz "EIN"	(1)	= Mains "ON"	(1)
Materialspannung	(12)	= Clamp material	(12)
Kontroll-Leuchten	(4/6)	= Pilot lights	(4/6)
Not-Aus	(7)	= Emergency Stop	(7)
Stückzahlzähler	(8)	= Counter	(8)
Start	(10)	= Start	(10)
Netz "AUS"	(11)	= Mains "OFF"	(11)
Taktspannung	(13)	= Cycle feed clamp	(13)
Motor Säge "EIN"	(3)	= Saw motor "ON"	(3)
Taktvorschub	(5)	= Cycle feed	(5)
Doppelhub	(9)	= Double stroke	(9)
Endschalter E4	(17)	= Limit switch E4	(17)
Schaltnocke	(21)	= Operating cam	(21)
Endschalter E5	(16)	= Limit switch E5	(16)
Drosselventil	(32)	= Throttle valve	(32)

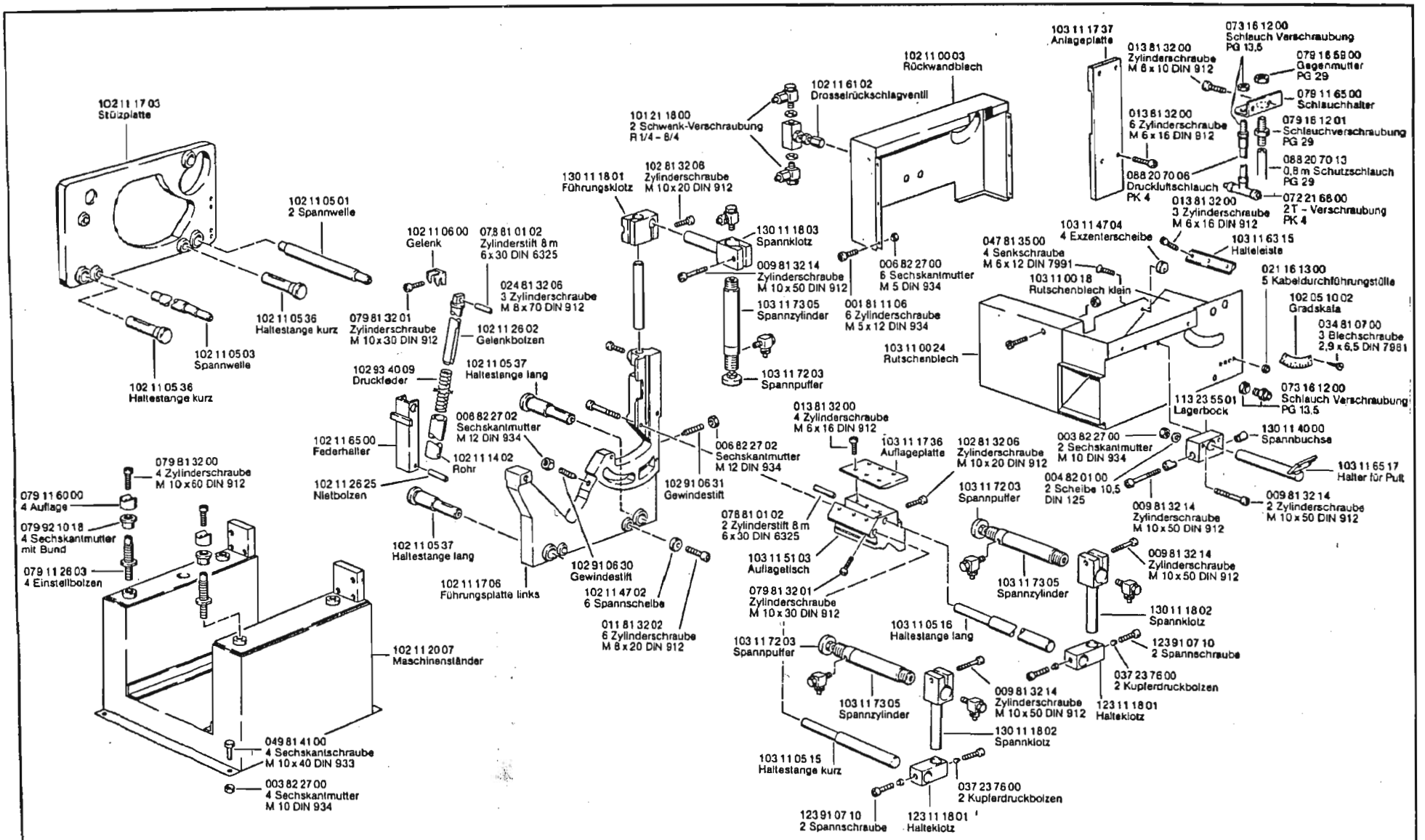
Druckminderer = Pressure regulator
Magnetventile = Solenoid valves
Druckwächter = Pressure-operated switches

Magnetventil...
Solenoid valve S1 (24) operates material clamp
Solenoid valve S2 (25) operates cycle feed clamp
Solenoid valve S3 (26) operates saw feed
Solenoid valve S4 (27) operates cycle feed



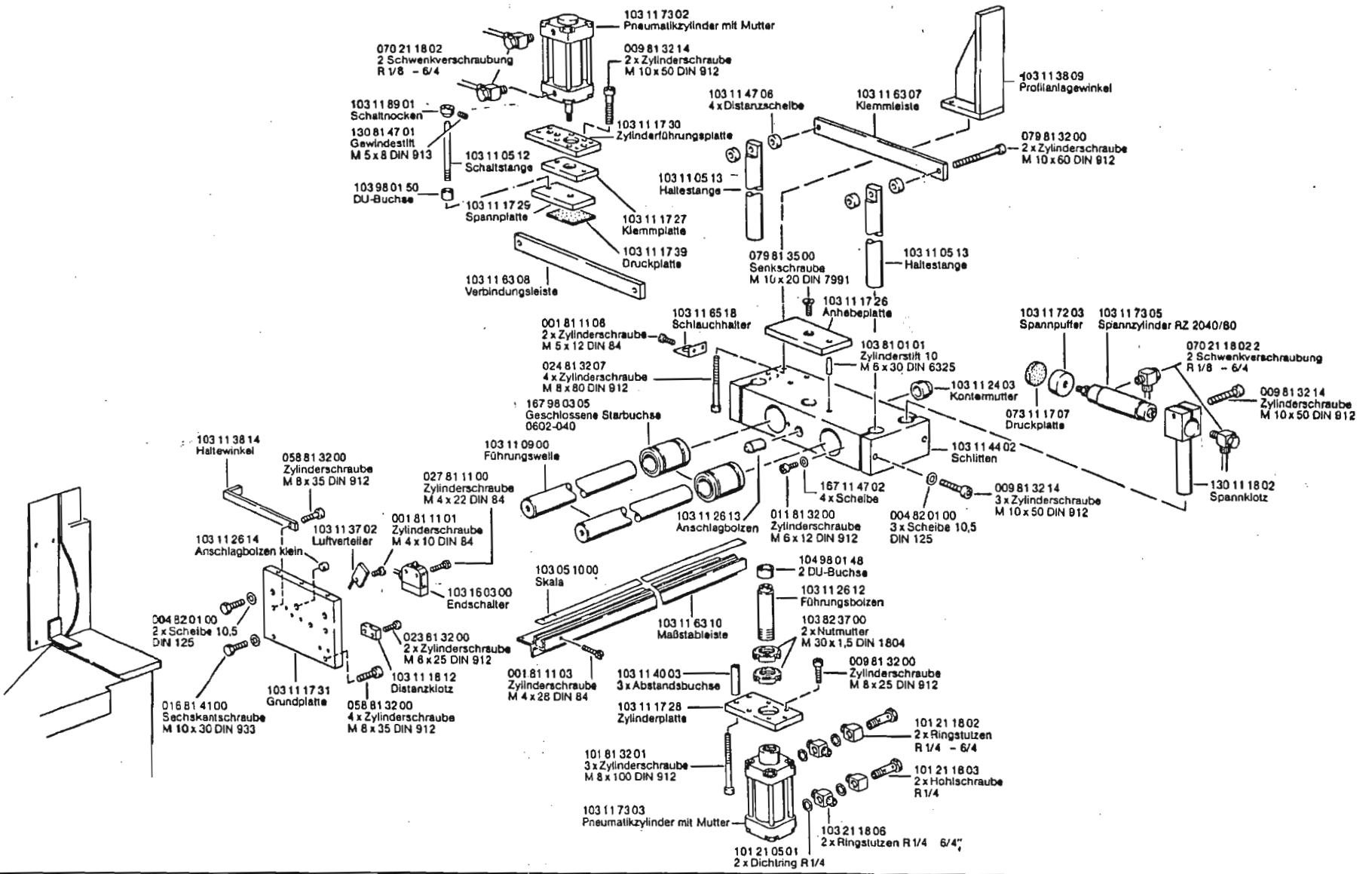
elumatec	Techn. Stand Februar 1985		Type: SA 103/25		Blatt 1 von 5
			Nr.: 103 00 03 25		

Bei Ersatzteil-Bestellungen bitte angeben. Type + Maschinen-Nr. + Ersatzteil-Benennung + Ersatzteil-Bestell-Nr.

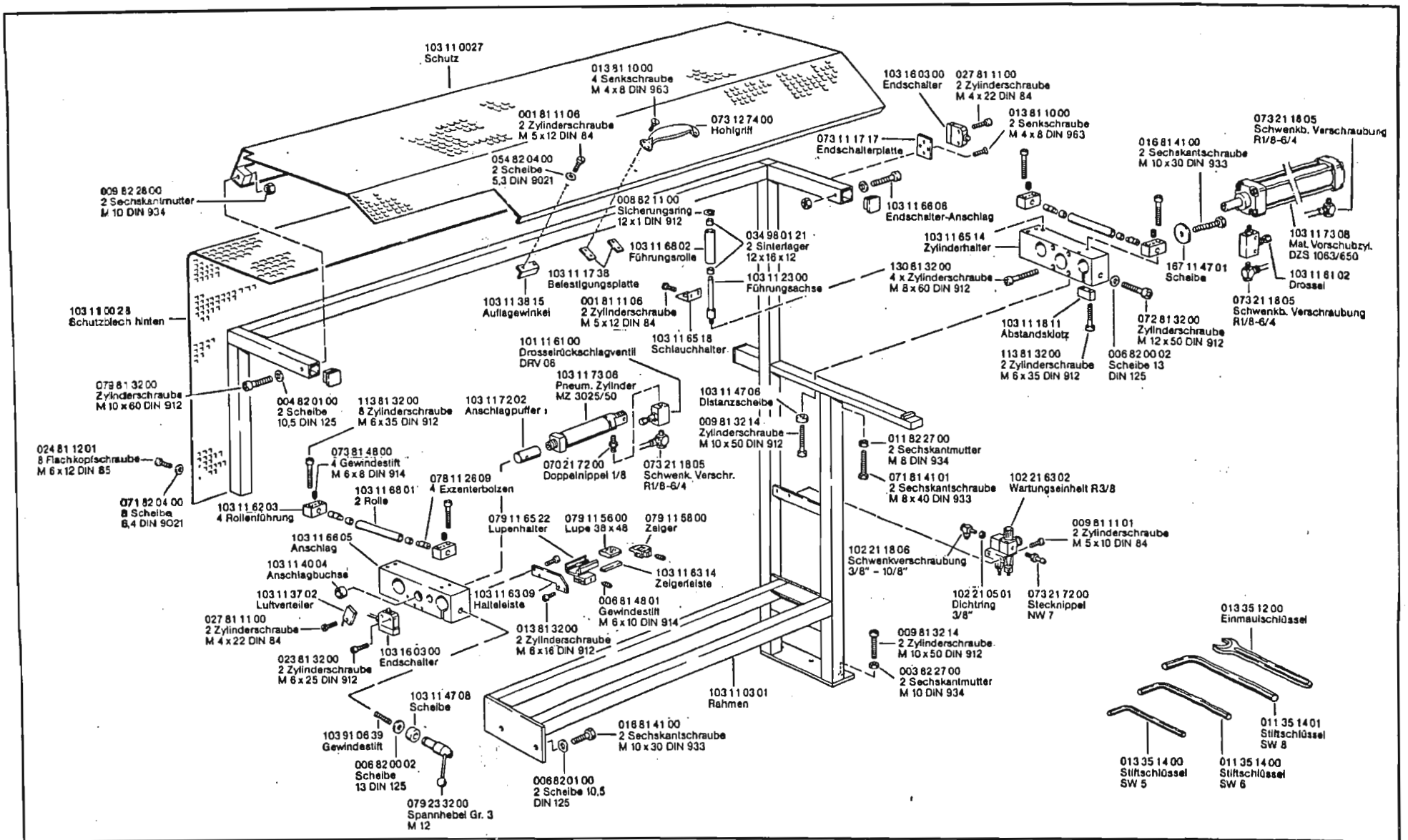


elumatec	Techn. Stand Februar 1985		Type : SA 103/25 Nr.: 103 00 03 25		Blatt 2 von 5

Bei Ersatzteil-Bestellungen bitte angeben: Type + Maschinen-Nr. + Ersatzteil-Benennung + Ersatzteil-Bestell-Nr.

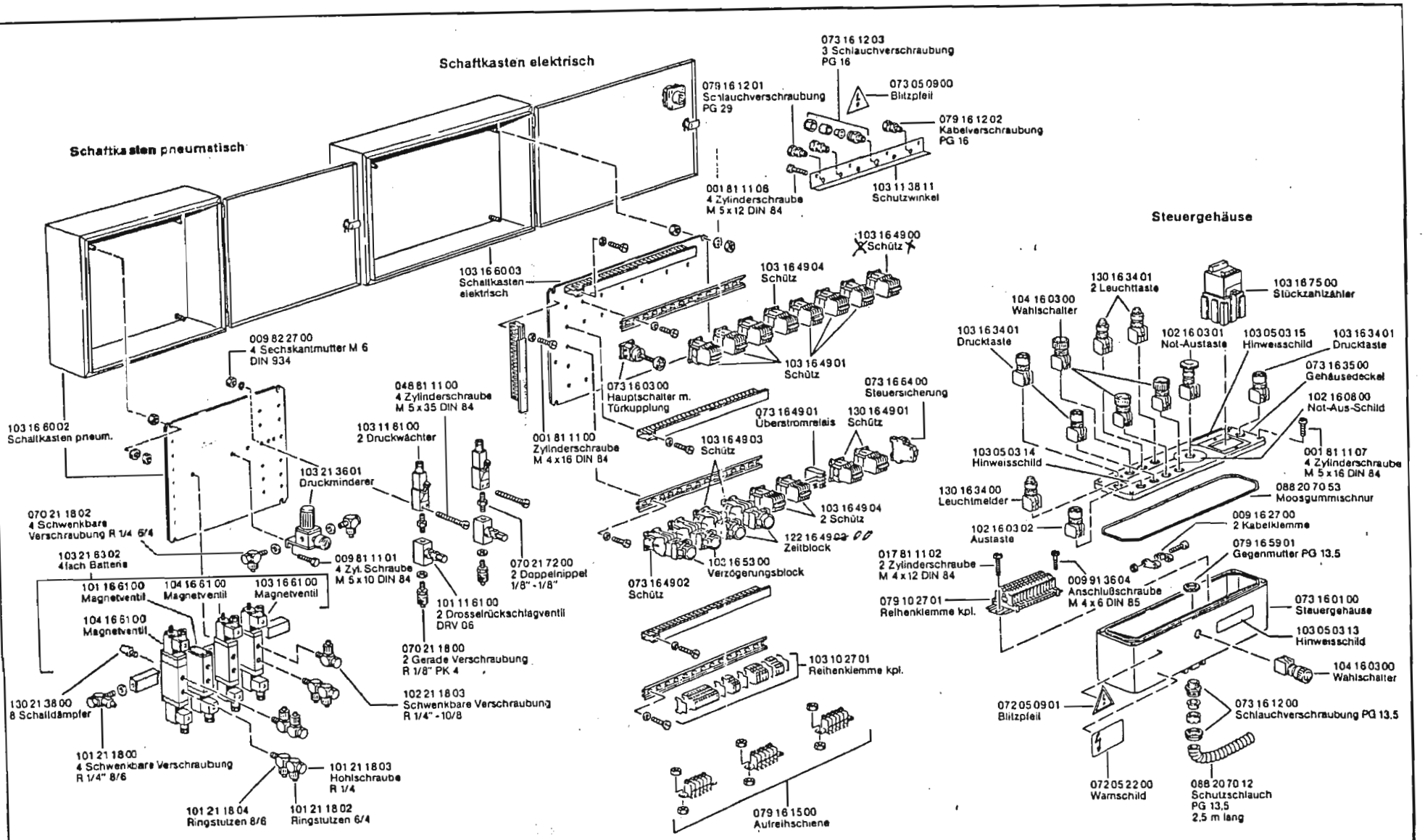


elumatec	Techn. Stand Februar 1985		Type: SA 103/25 Nr.: 103 000 325		Blatt 3 von 5



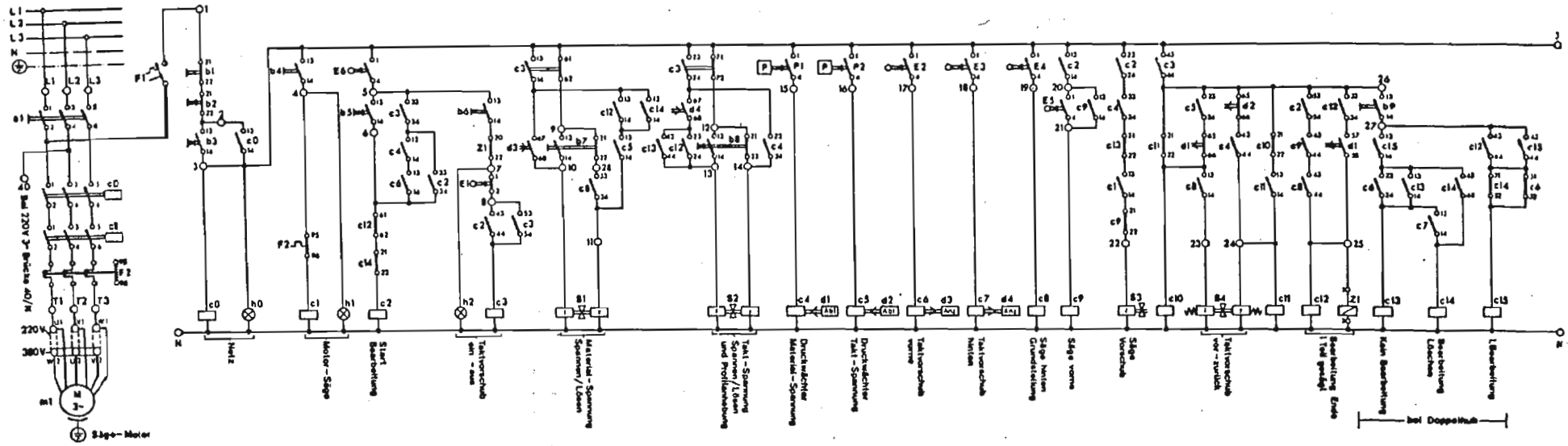
elumatec	Techn. Stand Februar 1985		Type: SA 103/25 Nr.: 103 00 03 25		Blatt 4 von 5

Bei Ersatzteil-Bestellungen bitte angeben: Type + Maschinen-Nr. + Ersatzteil-Benennung + Ersatzteil-Bestell-Nr.

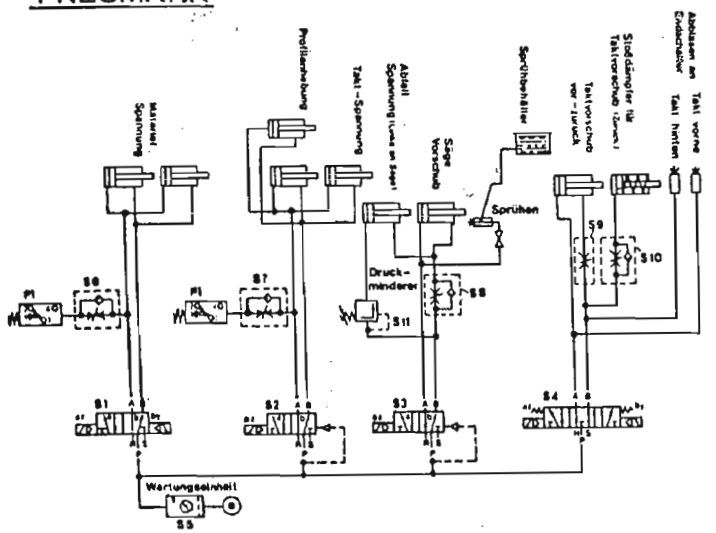


elumatec	Techn. Stand Februar 1985		Type: SA 103/25 Nr.: 103 00 03 25		Blatt 5 von 5

Bei Ersatzteil-Bestellungen bitte angeben Type + Maschinen-Nr + Ersatzteil-Benennung + Ersatzteil-Bestell-Nr.



PNEUMATIK



a 1	Hauptschalter	073 16 03 00
b 1	Not – Aus	102 16 03 01
b 2	Netz – Aus	102 16 03 02
b 3	Netz – Ein	103 16 34 01
b 4	Motor Säge Ein/Aus	104 16 03 00
b 5	Start Bearbeitung	103 16 34 01
b 6	Taktvorschub Ein/Aus	104 16 03 00
b 7	Material-Spannung – Spannen – Lösen	104 16 03 00
b 8	Taktspannung Spannen – Lösen	103 16 34 01
b 9	Doppelhub Ein/Aus	104 16 03 00
F 1	Steuersicherung	073 16 64 00
F 2	Überstromauslöser Motor Säge bei 380 V	073 16 49 01
	bei 220 V	073 16 49 03
E 1	Kein Profil in Maschine	103 16 03 00
E 2	Taktvorschub vorne	103 16 03 00
E 3	Taktvorschub hinten	103 16 03 00
E 4	Säge hinten Grundeinstellung	103 16 03 00
E 5	Säge vorne	103 16 03 00
E 6	Schutzscheibe	103 16 03 00
h 0	Netzkontrolle	130 16 34 00
h 1	Motor Säge Ein	130 16 34 01
h 2	Taktvorschub Ein	130 16 34 01
Z 1	Stückzahlzähler	103 16 75 00
m 1	Säge-Motor 102	

S 1	Magnetventil – Material Spannen – Lösen	4-fach	104 16 61 00
S 2	Magnetventil – Takt	Batterie	104 16 61 00
S 3	Magnetventil – Säge – Vorschub	103 21 63 02	104 16 61 00
S 4	Magnetventil – Taktvorschub		103 16 61 00
S 5	Wartungseinheit		102 21 63 02
S 6	Rückschlag – Drossel P1 verzögert		101 11 61 00
S 7	Rückschlag – Drossel P2 verzögert		101 11 61 00
S 8	Rückschlag – Drossel Sägevorschub		102 11 61 02
S 9	Drossel Taktvorschub		103 11 61 02
S 10	Rückschlag – Drossel Stoßdämpfer		101 11 61 00
S 11	Druckminderer Abfallspannung		103 21 36 01
P 1	Druckwächter Material – Spannung		103 11 61 00
P 2	Druckwächter Takt – Spannung		103 11 61 00
C 0	Netzschütz		130 16 49 01
C 1	Motor Ein		130 16 49 01
C 2	Start Bearbeitung		103 16 49 04
C 3	Taktvorschub Ein		103 16 49 04
C 4	Druckwächter Material Spannung	+ d 1	103 16 49 03
d 1	Druckwächter Material Spannung abfallverzögert aufgebaut	C 4	122 16 49 00
C 5	Druckwächter Taktspannung	+ d 2	103 16 49 03
d 2	Druckwächter Taktspannung abfallverzögert aufgebaut	C 5	122 16 49 00
C 6	Taktvorschub vorne	+ d 3	073 16 49 02
d 3	Taktvorschub vorne anzugverzögert aufgebaut	C 6	103 16 53 00
C 7	Taktvorschub hinten	+ d 4	073 16 49 02
d 4	Taktvorschub hinten anzugverzögert aufgebaut	C 7	103 16 53 00
C 8	Säge hinten		103 16 49 00
C 9	Säge vorne		103 16 49 01
C 10	Taktvorschub vor		103 16 49 01
C 11	Taktvorschub zurück		103 16 49 01
C 12	Bearbeitung Ende 1 Teil		103 16 49 04
C 13	Bei Doppelhub keine Bearbeitung		103 16 49 01
C 14	Bei Doppelhub Bnarbeitung Löschen		103 16 49 01
C 15	Bei Doppelhub 1. Bearbeitung		103 16 49 01

a1	Hauptschalter	Main Switch (Disconnect)
b1	Not-Aus	Emergency Stop Switch
b2	Netz-Aus	Power Off Switch
b3	Netz-Ein	Power On Switch
b4	Motor Säge Ein/Aus	Saw Motor On/Off Switch
b5	Start Bearbeitung	Cycle Start Switch
b6	Taktvorschub Ein/Aus	Automatic Feed On/Off Switch
b7	Material-Spannung-	Material Clamping Switch- Clamp-Release
b8	Taktspannung Spannen- Losen	Automatic Clamping Switch Clamp-Release
b9	Doppelhub Ein/Aus	Double Feed Stroke On/Off Switch
F1	Steuersichherung	Circuit Breaker (6A)
F2	Überstrommäuslöser Motor Säge	Blade Motor Overload Relay
E1	Kein Profil in Maschine	No stock in machine (Limit Switch)
E2	Taktvorschub Vorne	Feed Carriage Forward Limit Switch
E3	Taktvorschub Hinten	Feed Carriage Retracted Limit Switch
E4	Säge Hinten Grundeinstellung	Saw Head in Retracted Position Limit Switch
E5	Säge Vorne	Saw Head Forward Limit Switch
E6	Schutzscheibe	Saw Cover/Shield Down Limit Switch
h0	Netzkontrolle	Power On Light
h1	Motor Säge Ein	Saw Motor On Light
h2	Taktvorschub Ein	Automatic Feed On Light
Z1	Stückzahlähler	Parts Counter
m1	Säge-Motor 102	Saw Motor
S1	Magnetventil-Material Spannen-Losen	Directional Valve: Material Clamp-Release
S2	Magnetventil-Takt	Directional Valve: Automatic
S3	Magnetventil-Säge Vorschub	Directional Valve: Head Feed
S4	Magnetventil-Taktvorschub	Directional Valve: Automatic Cycle
S5	Wartungseinheit	Filter-Regulator-Lubricator
S6	Rückschlag-Drossel- P1 Verzögert	Flow Control- Pressure Switch P1
S7	Rückschlag-Drossel- P2 Verzögert	Flow Control- Pressure Switch P2
S8	Rückschlag-Drossel- Sägevorschub	Flow Control-Saw Feed
S9	Drossel- Taktvorschub	Needle Valve: Automatic Feed
S10	Rückschlag-Drossel- Stoßdämpfer	Flow Control-Stroke Damper
S11	Druckminderer- Abfallspannung	Pressure Reducing Valve- Remnant Clamping
P1	Druckwächter-Material Spannung	Pressure Switch: Material Clamping

P2	Druckwächter- Takt Spannung	Pressure Switch: Auto Cycle Clamping
C0	Netzschütz	Power On Relay
C1	Motor Ein	Motor On Relay
C2	Start Bearbeitung	Cycle Start Relay
C3	Taktvorschub Ein	Automatic Feed On Relay
C4	Druckwächter-Material Spannung	Material Clamping Pressure Switch Relay
d1		Material Clamping Pressure Switch Timer
C5	Druckwächter- Takt Spannung	Auto Cycle Clamping Pressure Switch Relay
d2		Auto Cycle Clamping Pressure Switch Timer
C6	Taktvorschub Vorne	
d3		Feed Carriage at Forward Position Timer
C7	Taktvorschub Hinten	Feed Carriage at Retracted Position Relay
		Feed Carriage at Retracted Position Timer
C8	Säge Hinten	Saw Head Retracted Relay
C9	Säge Vorne	Saw Head Forward Relay
C10	Taktvorschub Vor	Feed Carriage Moving Forward Relay
C11	Taktvorschub Zurück	Feed Carriage Retracting Relay
C12	Bearbeitung Ende 1 Teil	Parts Counter Relay
C13	Bei Doppelhub keine Bearbeitung	No Double Stroke Cycle
C14	Bei Doppelhub Bearbeitung Löschen	Double Stroke Cycle Unload
C15	Bei Doppelhub 1 Bearbeitung	Double Stroke Cycle Single Operation