

Flex Cut

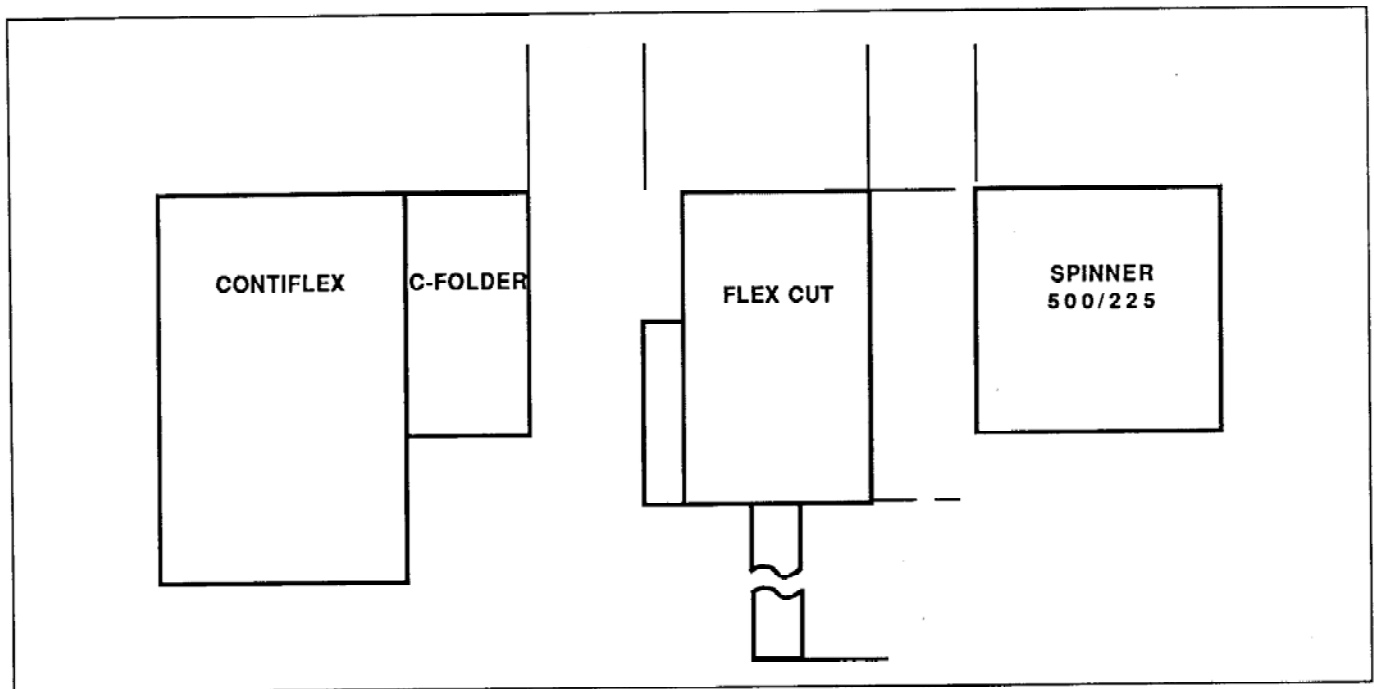
**Instruktioner
Instructions
Bedienungsanleitung**

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RESPONSIBILITY!

The supplier of the equipment takes no responsibility if the equipment is altered or used in a way which was not intended at the time of delivery. If the conditions for use of the equipment are changed the supplier should be contacted.



A. Electrical connection
 A. Elanslutning
 A. Elektroanschluss

B. Air connection
 B. Luftanslutning
 B. Druckluftanschluss

INSTALLATION

Place the Flex Cut between and as close as possible to the Contiflex and Spinner. The distance between the fan outlet and any possible pipe elbow shall be at least 2 m. Refer to Fig. 1.

Do not secure the Flex Cut in any way, but place it directly on the floor. The machine is fitted with wheels that run on rails screwed into the machine frame to enable the machine to be finely set or adjusted laterally. Refer to "Settings and Adjustments".

Electrical and compressed air supply connections are provided at the lower part of the machine.

Electrical connection, standard: 380 V, 50 Hz, 3-phase, neutral and earth.

Fuse rating: 16 A

Compressed air supply:

Required pressure: 6 bar

Consumption: max 200 litres per minute

Interlocking

The machine can be interlocked to enable all machines to stop if a fault arises in one of the machines in the production line. Refer to Wiring diagram.

STARTING AND OPERATION

The Flex Cut is fitted with a turnkey switch, see fig. 2. When the switch is locked and the key removed, all protective switches for hatches and guards function. When the switch is unlocked, the protective switches are by-passed and the machine can operate with open hatches and guards.

WARNING!

The machine may be operated with the turnkey switches unlocked by authorized personnel only. Take great caution. Be aware of the risk of injury caused by squashing.

To safeguard the rotating punch, the punch shaft is fitted with a brake facility that is activated when the main switch is disengaged, see fig. 3. When the main switch is engaged, the vacuum pump starts to operate and the brake is released.

The rotating punch must be in the upper position when the motor is started. To ensure this, an inductive sensor is fitted that is activated by a cam so that the sensor connects the current supply to the motor only when the punch is in the upper position. Refer to fig. 4.

NOTE that if the machine is shut off by means of the emergency stop button, for example, and the punch is not in an upward position, the main switch must be turned off and the punch turned manually to the upper position before starting.

WARNING!

The punch is hot and very sharp, which means that there is a risk of injury caused by burns and cuts.

When punching in the Flex Cut, the bellows hose shall be used. The web shall have two seals (A), with perforation (B) in between. Refer to fig. 5. The web shall be weaker in the middle and stronger at the edges.



Fig. 2

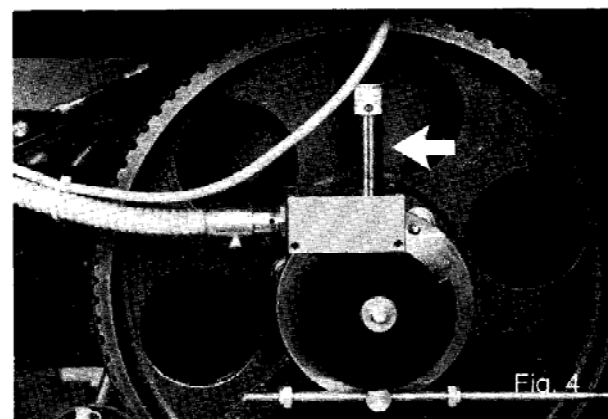
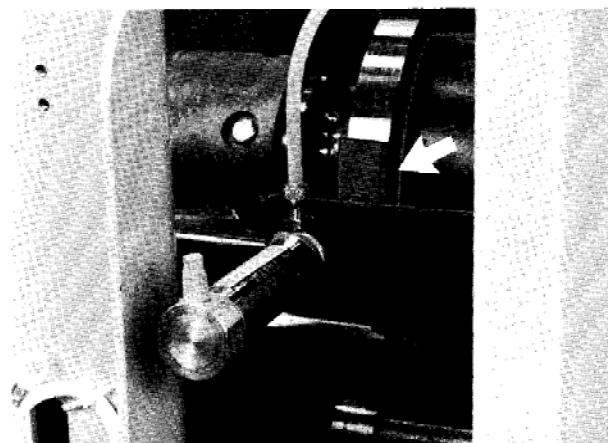
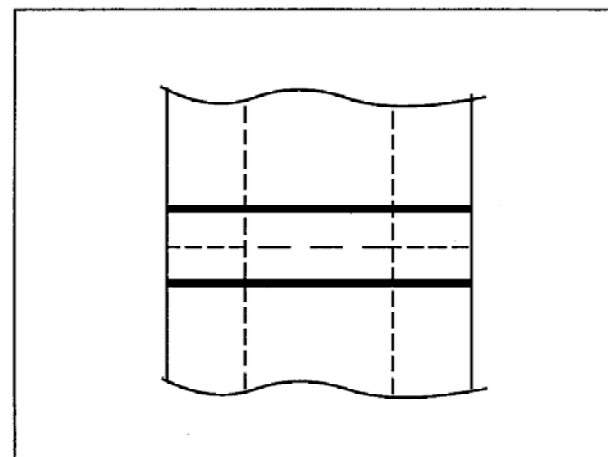
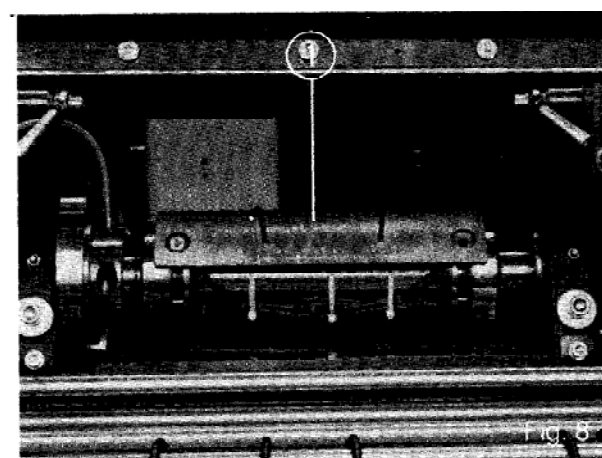
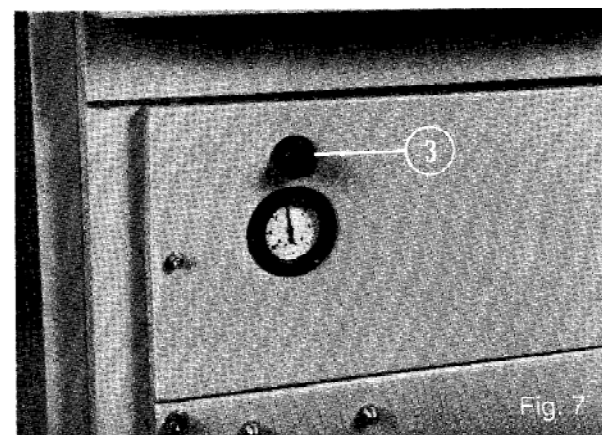
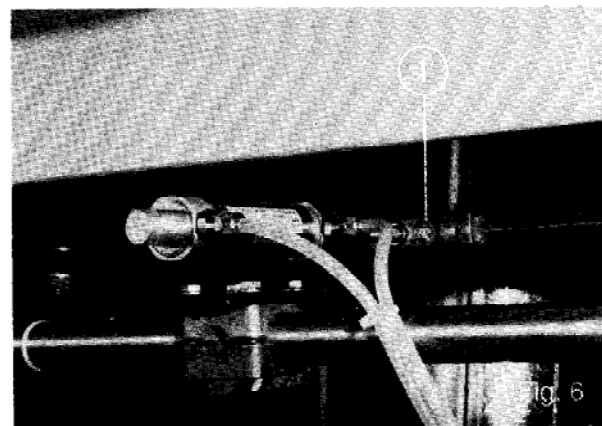


Fig. 4



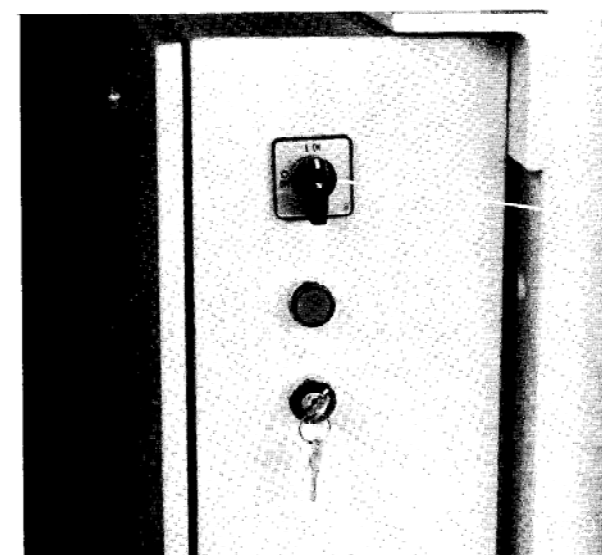
Before start

1. Place the spark electrode, which is attached to a cylinder, opposite the retaining brace.
2. Place the electrode at a distance of about 2 mm from the (cathode) rod.
3. Set the pressure for the rubber roller at 3 bar.



Starting

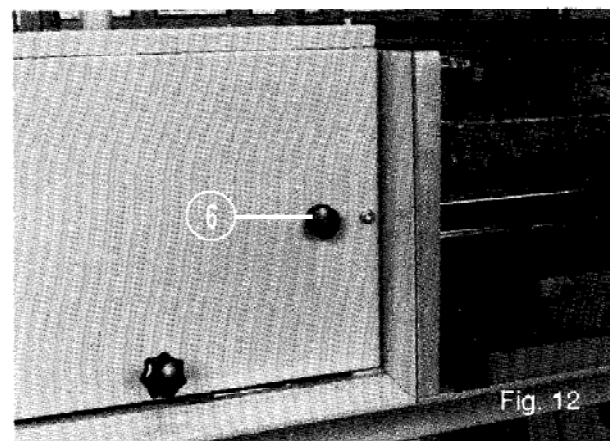
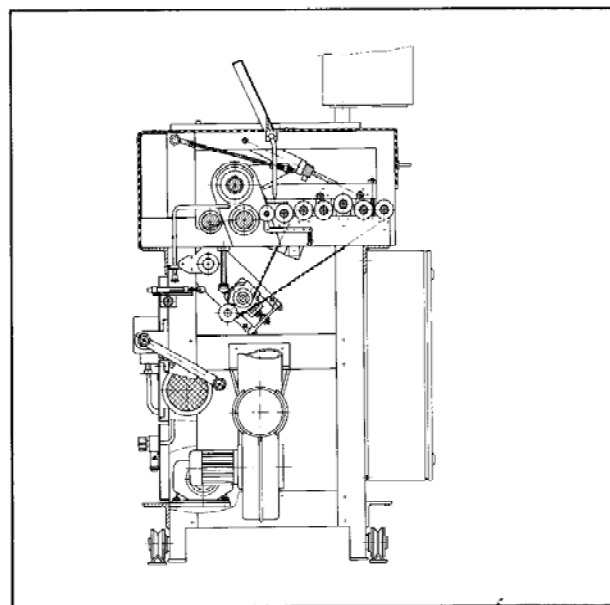
1. Check to make sure that the punch is in the upper position, see fig. 8. (It can be turned manually when the main switch is disengaged.)
2. Main switch "ON". The "SUPPLY VOLTAGE" lamp on the panel lights up and the vacuum pump starts to operate. Check to make sure that the vacuum pump's absolute pressure is set at 0.7 bar.



3. Turn off any lamps on the panel that may be on, see fig. 10.
4. Push the HEAT ON/OFF button (warming up time about 20 minutes).
5. Set the potentiometer TEMPERATURE at 100°C.
6. Thread the web as shown in fig. 11. Push the green button on the rear side of the machine, and then the web is blown between the contact roller and the rotating punch.

*1. Rotating punch
2. Contact roller
etc.*

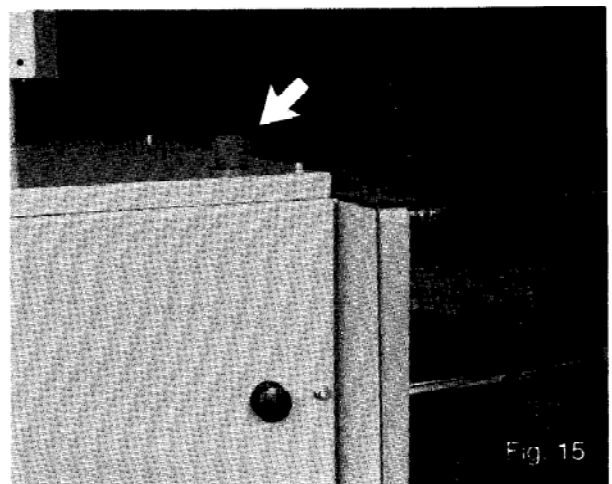
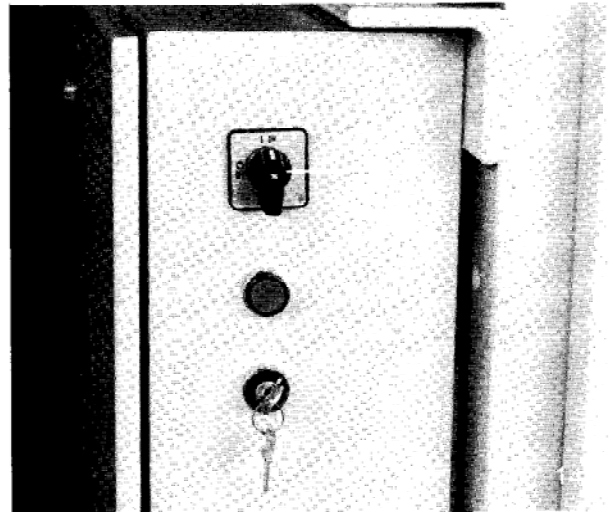
7. Push the NIP button (lamp on).
8. Push the MAIN MOTOR ON button (lamp on).
9. Set the potentiometer MACHINE SPEED at 15%.
10. Take the slack web from the Contiflex by carefully adjusting the potentiometer MACHINE SPEED to 100%.
11. Push the IDLER ROLLER button (lamp on) to lower the stretch rollers.
12. Adjust the potentiometer SPARK POWER to a suitable intensity; in other words, until the punch starts to rotate.
13. Push the FAN ON button (lamp on) to start the fan.
14. Push the PUSHER button (lamp on) to start the exhaust function.



Shutting down

Planned shutdown

1. Push the **PUSHER** button.
2. Push the **FAN OFF** button.
3. Turn the potentiometer **SPARK POWER** to 0 to stop the punch.
4. Turn the potentiometer **MACHINE SPEED** to 0.
5. Push the **MAIN MOTOR OFF** button.
6. Push the **IDLER ROLLER** button to raise the stretch rollers.
7. Push the **NIP** button to separate the rubber roller from the steel roller.
8. Push the **HEAT ON/OFF** button (lamp off). The cooling time of the punch is about 2 hours.
9. Main switch **OFF**.



Emergency shutdown

When any of the emergency shutdown buttons (figs. 13 & 15) are pushed, the movable parts of the machine cease to function, while the vacuum pump continues to operate.

Automatic shutdown

The Flex Cut can be interlocked to enable all machines in the production line to stop if any fault should arise in one of the machines. Refer to INSTALLATION. The push the AUTOMATIC SHUTDOWN button on the control panel (lamp on).

SETTINGS AND ADJUSTMENTS

Adjustments during operation

Setting of punch position

Set the punch position in relation to the perforation by means of the knob (1 in fig. 16) that actuates the stop position of the clutch.

Setting of web tension

The tension of the web in the machine shall be fixed by means of a belt variator that regulates the stretch roller speed. The variator can be readjusted by moving the belt sideways on the variator discs.

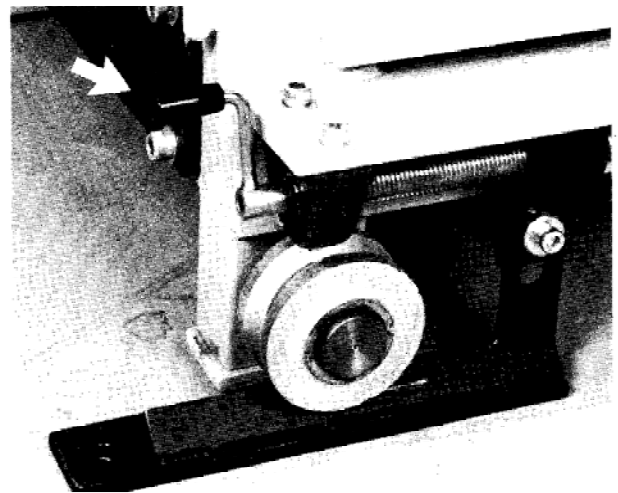
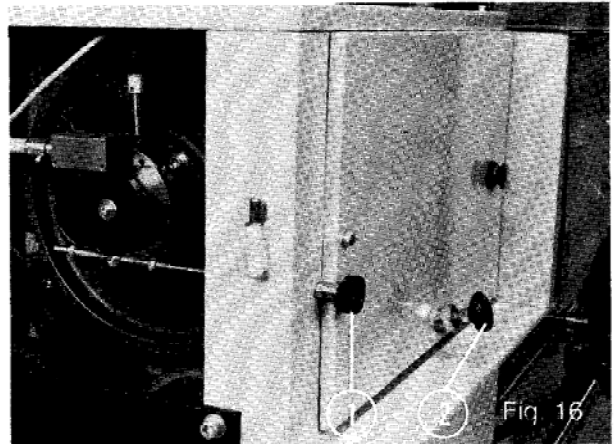
Readjust by means of the knob marked 2 in fig. 16.

Lateral setting of machine

Finely adjust the machine laterally by means of the crank handle on one of the wheels.

Setting of punch temperature

If the punching function during operation is not satisfactory, increase the punch temperature with the potentiometer TEMPERATURE. Increase gradually, 10 degrees at a time. When the temperature has reached about 180°C, seal the material. The punch must then be replaced or returned to the factory for regrinding.



Other settings

Belt tensioning

The variator belt must be tensioned to ensure that no slipping occurs during operation. Adjust the belt tension by resetting the bearing housing with the tensioning screws, see fig. 19.

The drive belts are correctly tensioned when they can be pushed down between the pulleys by about 1 cm. Readjust the belt tension by loosening the centre screw and moving the bearing housing, fig. 20.

NOTE that excessive belt tension will damage the bearings.

Checking the vacuum pump's working pressure

The vacuum pump supplies a vacuum to operate the clutch and brake.

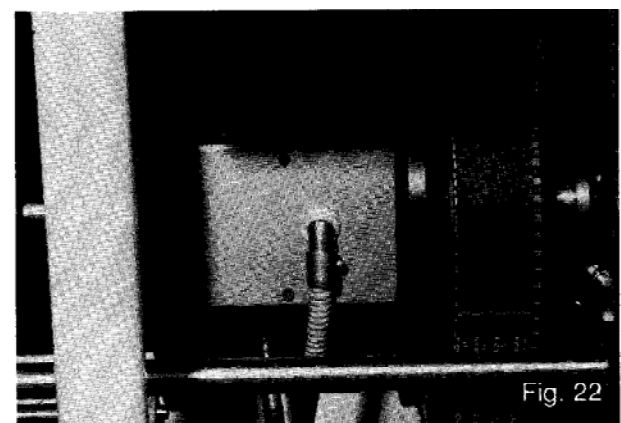
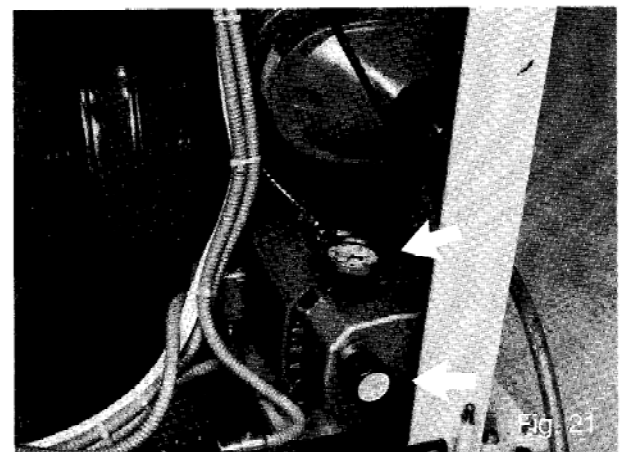
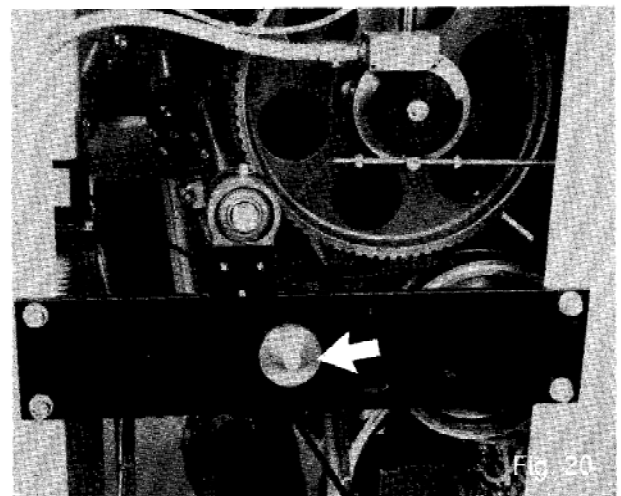
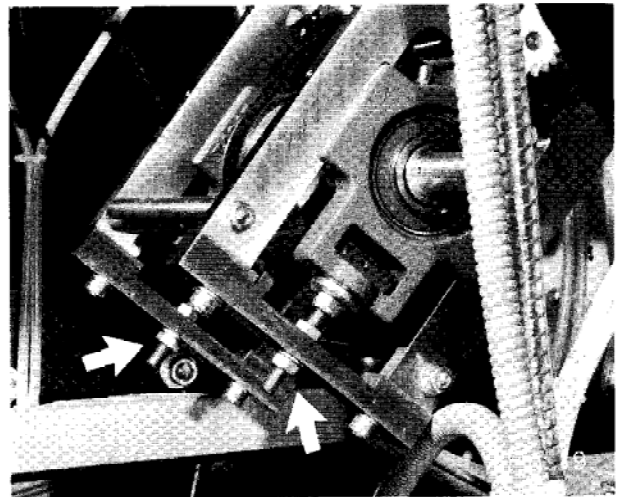
The working pressure shall be 0.7 bar. Adjust the pressure by means of the adjusting screw, if so required. Refer to fig. 21.

Clean the filter once a month.

Clutch/Brake

Check the ventilation louvres regularly to ensure that they have not become clogged and that the bearings are not damaged.

Fill the bearing closest to the brake with grease once a year. Use only heat-resistant silicon grease, such as "Wacker Silicon 511 medium" or "Klueber Unsilicon TK 44 N3". Fill the bearing up to 1/3 of the available free space.



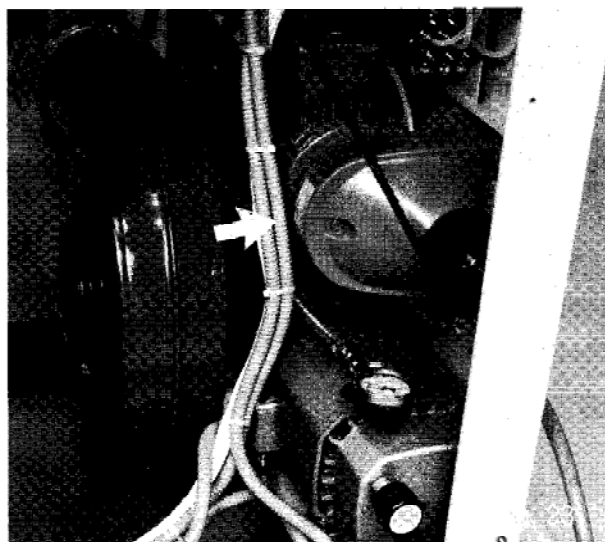
Gearbox

Check the ventilation louvres to make sure they have not become clogged.

Check the oil level regularly.

Change the oil every other year if mineral oil is used, and every fourth year if synthetic oil is used.

Recommended oil: Shell Omala 220.



Punch replacement

Punch replacement may be performed by **authorized personnel only**. If the punch is set incorrectly it will become damaged very quickly.

WARNING!

Take caution when working with the punch as it is hot and very sharp. There is a risk of personal injury caused by cuts and burns.

1. Main switch OFF. Wait for punch to cool.
2. Cut away the plastic tie and remove the shrink hoses. Solder and remove the cables from the heat cartridge.
3. Unscrew the temperature sensor cable from the punch.
4. Turn the punch to the upper position. Unscrew three attaching screws from the punch and remove the punch.
5. Unscrew the eccentric bearing's lock screws a few turns.
6. Unscrew the lock nuts and adjusting nuts on the eccentric setting device a few turns.

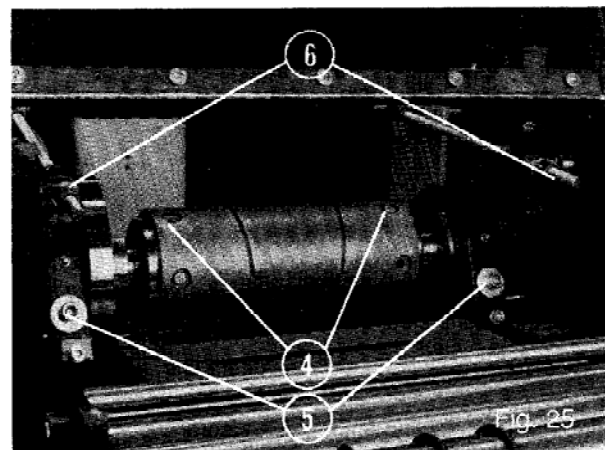
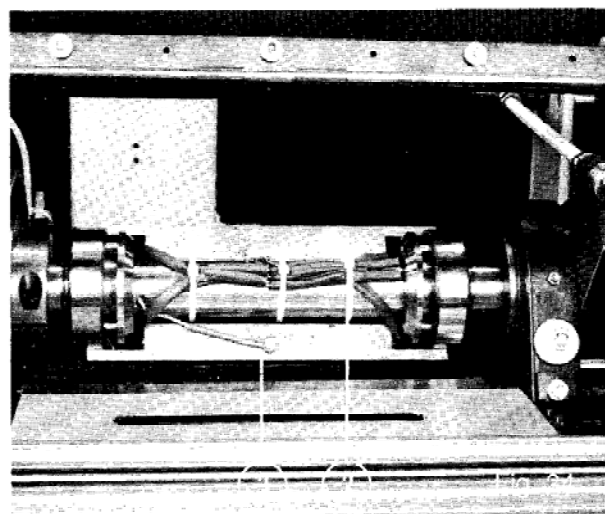
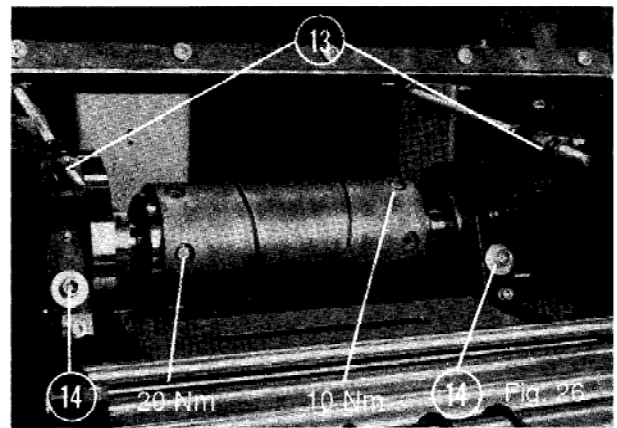


Fig. 25

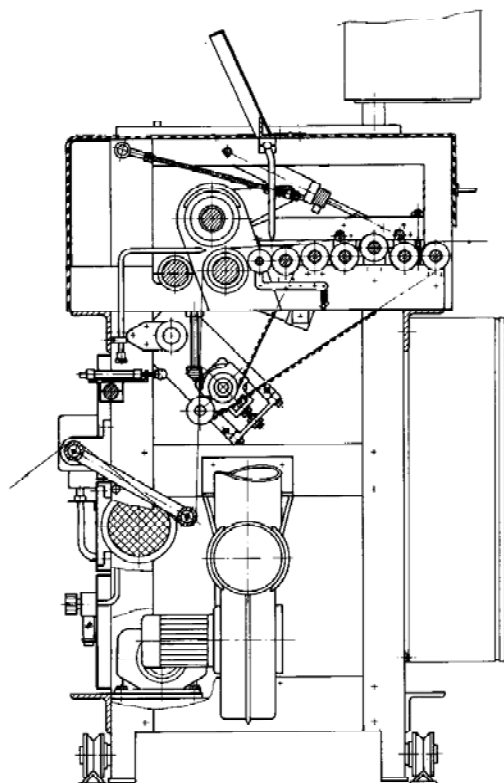
7. Place the new punch into position, and make sure that it is turned correctly. Fit the attaching screws. Tighten the screws furthest from the machine compartment with a torque of 20 Nm, and the screws nearest the machine compartment with 10 Nm.

NOTE that it is important to tighten the screws with the specified torque, otherwise the punch will bend.



8. Place the temperature sensor cable into position.
9. Solder and secure the cables to the heat cartridges.
10. Main switch ON, and potentiometer TEMP set at 100°C.
11. Wait about 20 minutes to allow the punch to become warm. Run the machine at low speed, and feed the web into the machine.
12. Push the MAN PULSE button to rotate the punch one full turn.
13. Tighten the adjusting nuts 1/4 turn, and run the punch one full turn. Repeat this operation until the punch cuts satisfactorily.
14. Tighten the eccentric lock screws and check the punching function. Tighten the adjusting nuts slightly if so required. Tighten the lock nuts. The punch can then be raised slightly, and this may necessitate some after-adjustment.





LUBRICATION INSTRUCTIONS

Pos.	Point of lubrication	Lubricant	Interval
1	Bearings, punch holder 2 nipples	Grease	Once a week
2	Bearings, eccentric unit 2 nipples	Grease	Once a week
3	Bearings, shafts and rollers 20 nipples	Grease	Once a week
4	Filter in vacuum pump	To be cleaned	Once a month
5	Gearbox	Check the air inlet	Once a week
		Check the oil level	Once a week
		Change the oil	Every other year

Lubricants:

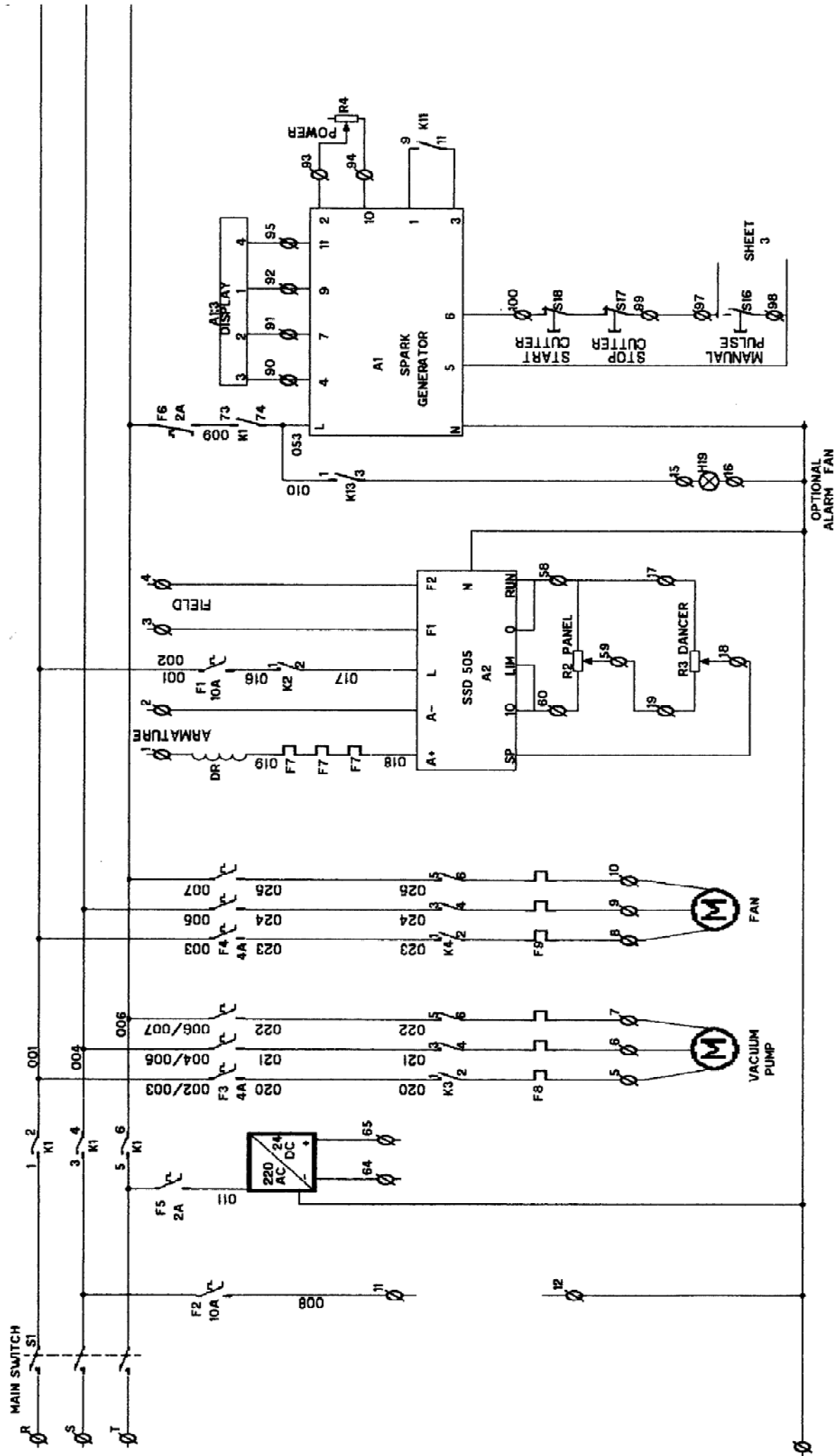
Bearings: SKF LIGHT 2 or equivalent

Gearbox: Shell Omala 220 or equivalent

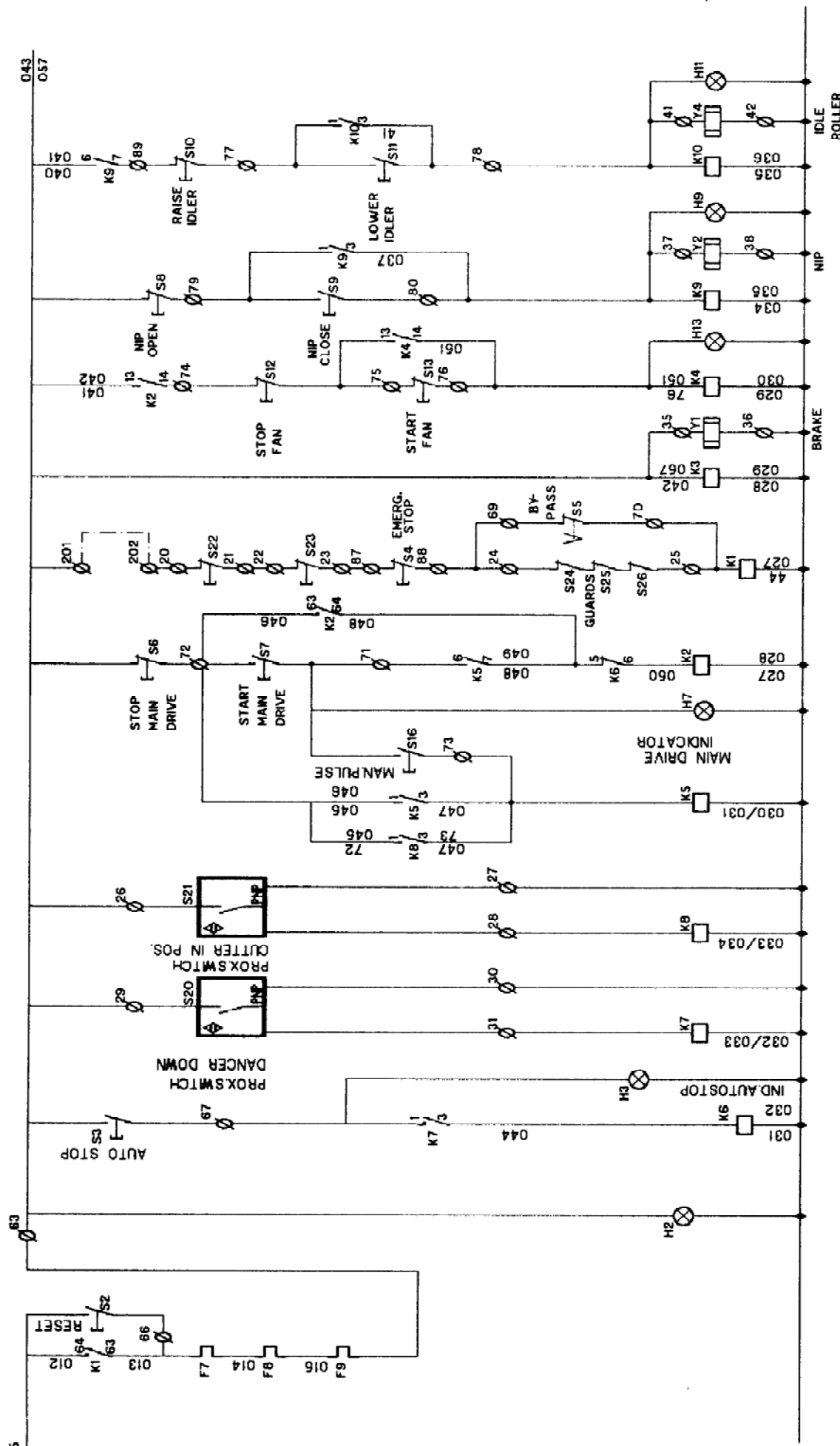
Synthetic oils may also be used. Change every four years.

FAULT TRACING

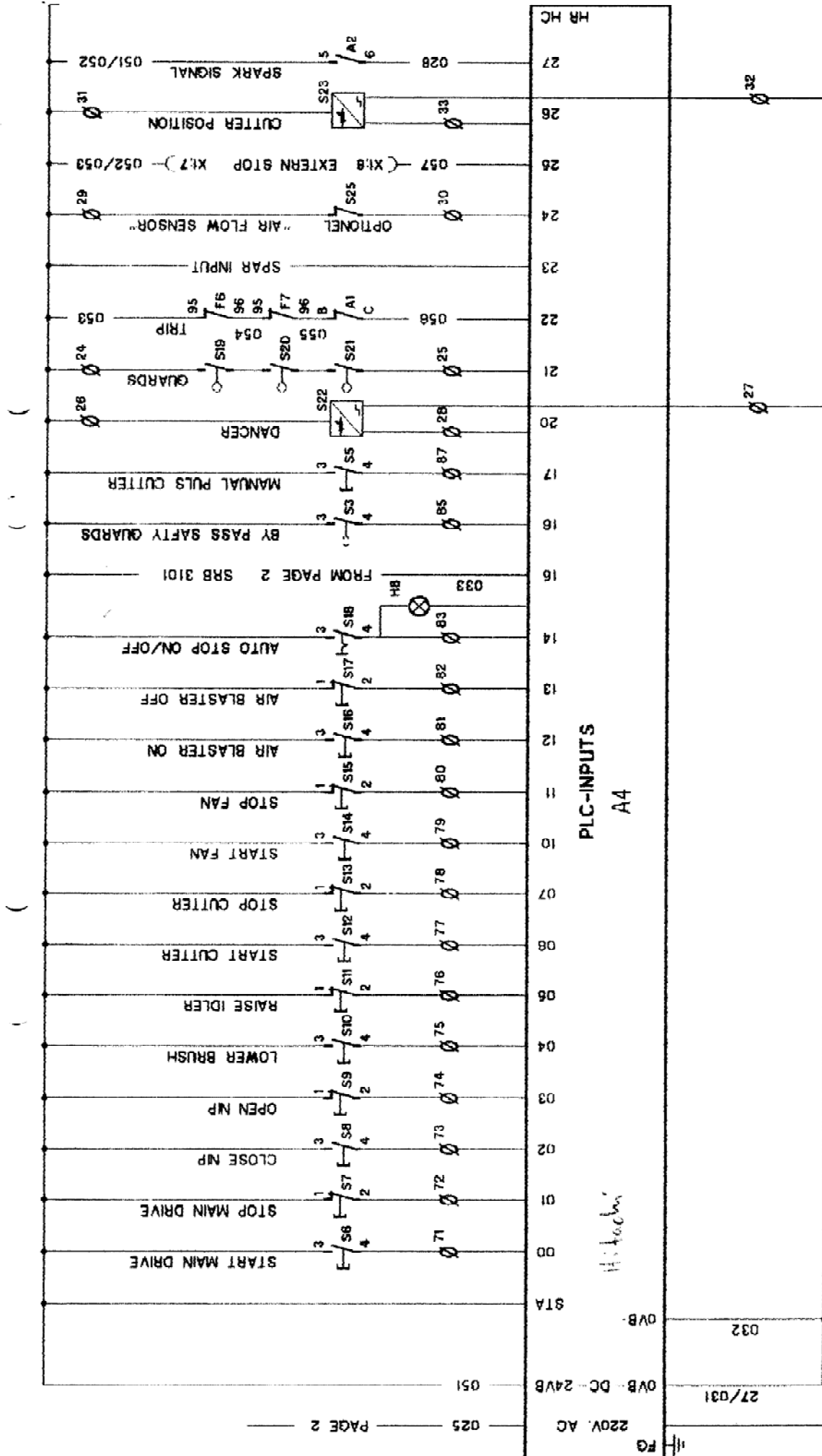
Fault	Remedy
Punch does not rotate	
Spark electrode in wrong position	Adjust as per fig. 7
Insufficient spark power	Increase the spark power. Refer to fig. 10, pos. 12
No spark at all	Replace the spark generator
Faulty perforation immediately behind the punch	
Idler roller speed too high	Adjust as per fig. 16
Punched part not stable in longitudinal position	
Uneven speed in Flex Cut	Check the bearings in the idler rollers in front of the nipple. Check the function of the precision potentiometer.
Flexible couplings worn out	Replace the couplings
Punched part remains in web	
Valve for exhaust not activated	Check the valve
The cam curve for the above valve in wrong position	Adjust
Poor punching function	Increase the temperature in the tool or replace it
Motor not running	
Circuit breaker released	Reset circuit breaker
Max. current relay released	Machine has been overloaded. Reset



DATAFIL	KUND	RIT.NR	DATUM
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ELECTRICAL DIAGRAM FLEXCUT SHEET 1 POWER			
fas converting machinery ab 27100 YSTAD			90.11.01



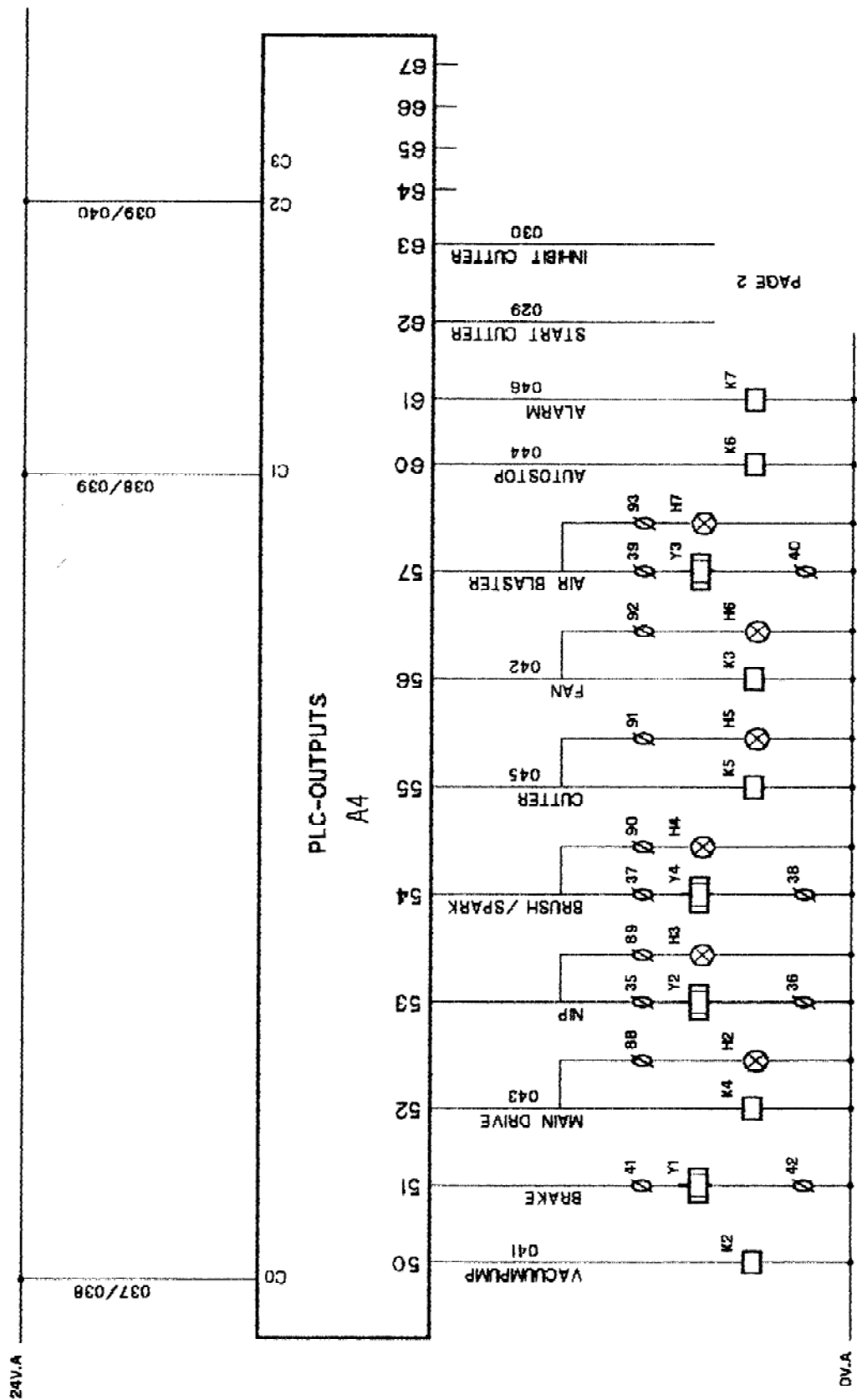
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ELECTRICAL DIAGRAM FLEXCUT "PLC-INPUT" PAGE 4

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ELECTRICAL DIAGRAM FLEXCUT "PLC-OUTPUT" PAGE. 5				

