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ferrum

Operating Instructions to Seaming Machine

F505/F506

16.03.04 RAP

Important

- Technical modifications having a bearing on the machine's function or safety must only be performed by Ferrum staff or with express approval of Ferrum AG.
  Otherwise Ferrum AG will accept no liability either for the modifications or for any conse quential damage.

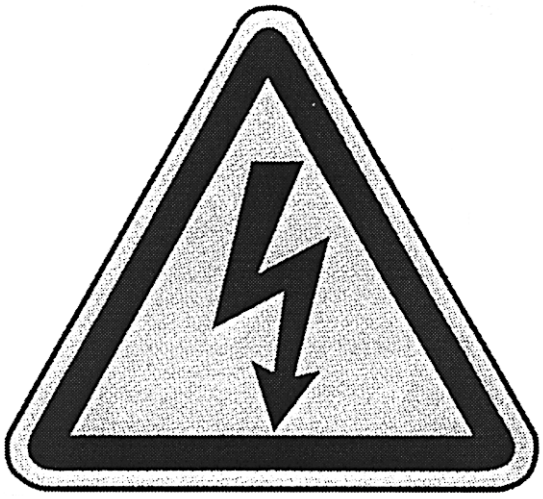
- Safety devices must never be put out of operation when the machine is being used for normal production purposes.

- Ferrum AG accepts no liability for machine overhauls or repair work performed by persons other than Ferrum staff or without the express approval of Ferrum AG, or for any consequential damage.

- Any guarantee claims on parts not made by Ferrum, the original manufacturer, are ruled out.

- Be sure to follow the accident prevention regulations of your trade association.

- Be sure to comply with existing provisions on the disposal of materials constituting a hazard to health and the environment.



- Installation, maintenance and repair work on the electric line have to be done only by qualified personnel.

- Make electric line currentless before any work is done:

  - Switch off main switch
  - Secure against restoring power with pad lock or warning plate
  - Reconfirm electric tension off
  - Connect to earth and shorten circuit

- During work all personnel not authorised has be away from the line.

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1. Construction of the machine

F505 / F506 Seaming machine

This all-rounder with five/six spindles is designed to meet the needs of the canning industry, namely to seam two and three-piece aluminium steel and composite cans. The seaming machine is suitable for the canned food and drinks industry as well as for the manufacture of cans, and care has been taken to keep maintenance requirements to a minimum.

The cans are seamed according to the tried and tested "rotating can" system. The seaming chucks and seaming plates are driven.

The machine is provided with a programmable logic control (PLC).

Faults may be indicated as follows according to customers' wishes:

- Touch screen
- LED display
- Mimic diagram

Design features:

The robust constuction consists of a lower and an upper housing of grey cast iron, wich gives the machine high dynamic rigidity and makes it particularly quiet in operation.

The machine is made mainly of stainless steel and complies with current standards of hygiene.

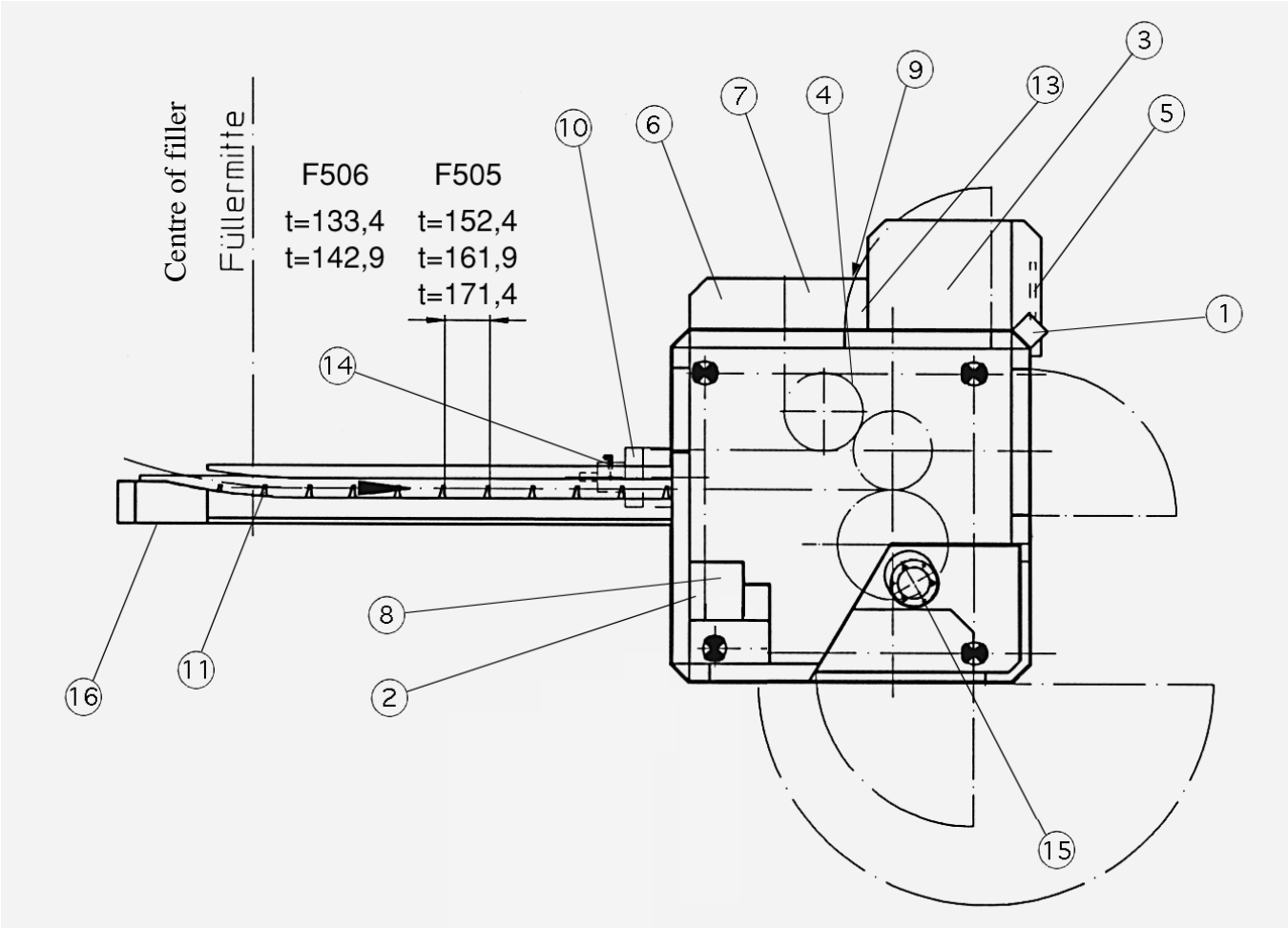
The base plate in stainless steel supports and is bolted together with a noise and safety guard.

A closed lubrication cycle reduces machine maintenance to a minimum.

2. Data

2.1 Technical data

	F505	F506
Production capacity	100 - 450 cans/min	120 - 540 cans/min
Cleaning speed	approx. 100 cans/min	approx. 100 cans/min
Number of seaming stations	5	6
Drive	static frequency converter	
Motor	7.5 kW for F 505 / F 506	
Motor	5.5 kW for F 505 E / F 506 E	
Power consumption	11 KVA for F 505/ F 506	
Power consumption	7.5 KVA for F 505 E / F 506 E	
infinitely adjustable with	Potentiometer / Touch screen	
Machine lubrication	Oil circulation lubrication	
Seaming roll lubrication	Manual greasing	
Number of lid magazines	1	
Height adjustment	hydraulic	
Rotations per seam		
1. OP	7.3	
2. OP	3.6	
Can dimensions	Diameter in mm	Height in mm
Standard	50-100 (106)	50-200
Special low can	Special version	28-180
Gassing/Steam sterilization	50-100	56-200
Chain pitch	152.4 mm	133,4
	161.9 mm	142,9
	171.5 mm	
Height of can infeed level	min. 950+/- 25 mm	
Compressed air connection	4.5 - 6 bar	
Consumption	2 Nm3/h	
Gassing CO2	Pressure 6-8 bar	
Consumption	1000 cans approx. 1 Nm3	
	or 2 kg liquid gas	
Hot water connection	Pressure min. 3 bar	
(automatic cleaning option)	Temperature 70-85°C	
Consumption	approx. 100 litres/min	
	in cleaning mode	
Steam	4.5-5 bar	
dry-saturated steam		
Consumption	20-40 kg/h	
Steam consumption depends on the can head space, output and steaming intensity		
Net weight	approx. 2800 kg	approx. 2900 kg
Control	PLC	



1. Controller (Emergency stop, jogging) (64)
2. Terminal box (33)
3. Main drive (13)
4. Oil viewing glass
5. Hand wheel (1)
6. Oil tank (77)
   Filling port (78)
   Drain screw (79)
7. Air conditioner unit (59)
   Shut-off cock and connector (58)
8. Oil flow monitor (80)
9. PE converter
10. Filler synchronization (4)
11. Transfer chain
12. Control panel (34)
13. Height adjustment (100)
14. Can sensor for lid release (94)
15. Lid magazine (25)
16. Discharge table (31)

2.2 Operating principle

With in motion timer (filler drive) (option)

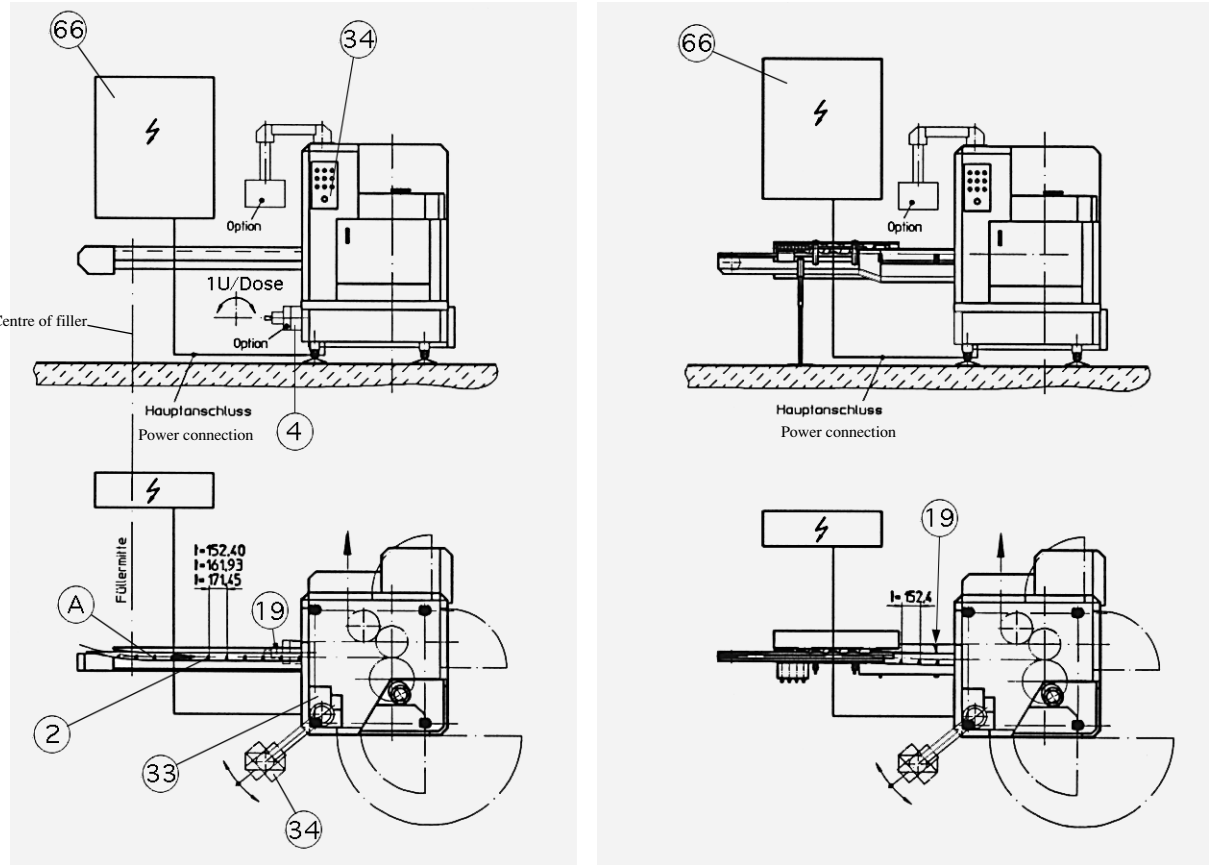
The cans to be seamed are transferred by a filling machine to the transfer chain (2) at A. To prevent spillage of the can contents, the transfer of cans to the transfer chain (2) may be adjusted precisely during operation, using the hand wheel (3) on the in motion timer (4).

With screw infeed table

This version is without a filler drive (4) so that the cans are passed to the infeed screw at random and adjusted to the chainpitch by the infeed worm.

When a can passes the lid release sensor (19), an air cylinder (20) causes the retaining knife (21) in the lid magazine to withdraw, a lid is removed from the stack (6) and positioned below the seaming chuck (5) by the can lid turret (10). If required, the lid may be stamped at D as it passes on its way. The can head space may be gassed or steamed before the can and the lid meet beneath the seaming station.(Look at p.26)

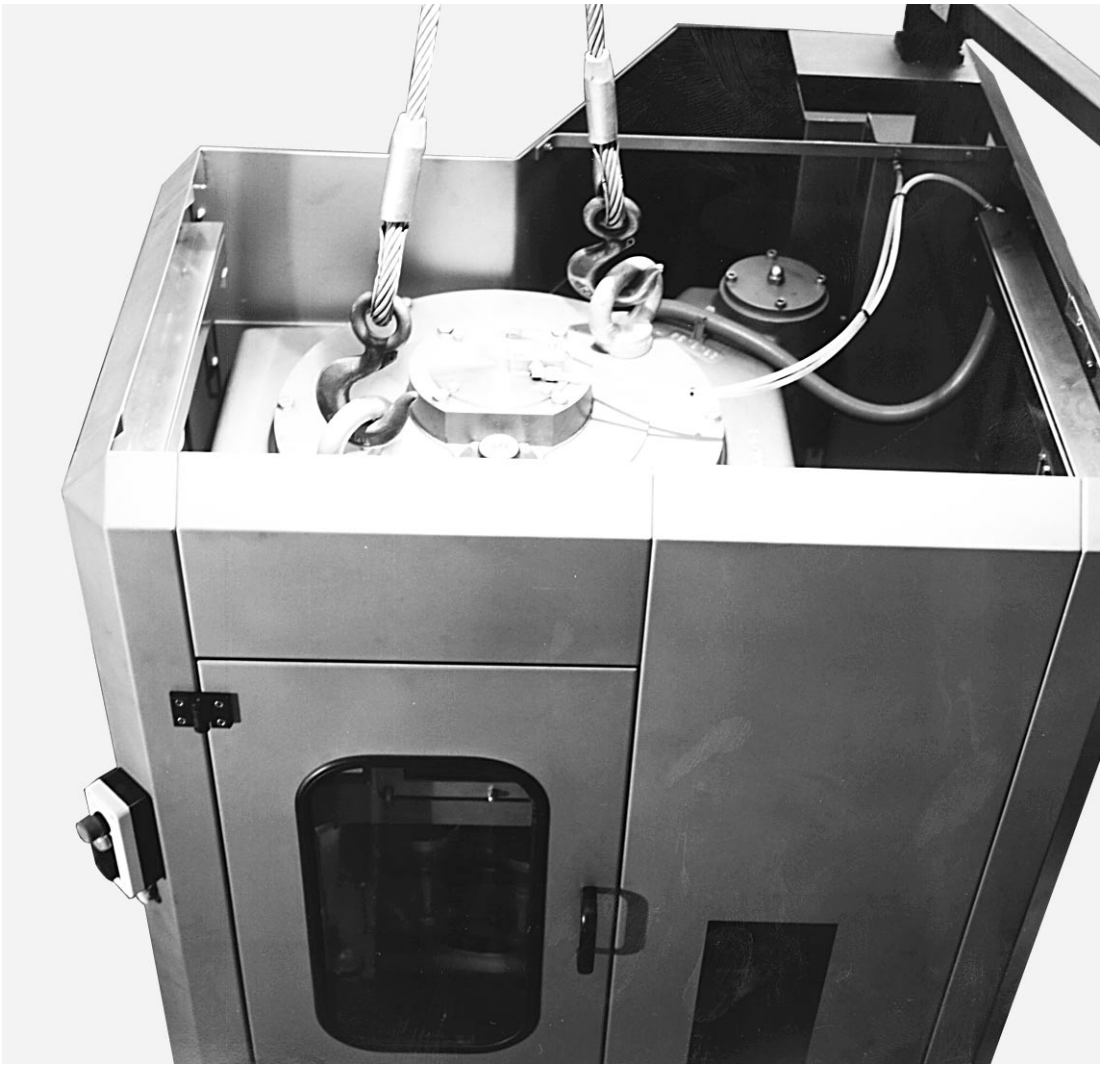
The can is centered precisely by the can lid turret (10) and the central turret (28), and lifted by the seaming plate (29) directly below the lid. At the same time, the knock-out pad (30) presses the lid onto the can, which starts to rotate as soon as it is pressed between the seaming plate (29) and the seaming chuck (5). Then the seaming operation begins. At B the knock-out pad (30) presses the can away from the seaming chuck and the discharge turret takes the can from the machine and places it on the discharge table (15).(Look at p.26)



3. Setting up the machine

3.1 Crane transport

The machine may be lifted only at the points shown on the photograph. The chain must be designed and tested for a load of 3000 kg.



3.2 Power connection

The power connection is made at the terminals marked L1, L2, L3, N, and PE in the electrical cabinet (66).

Connected load Depending on voltage and motor rating as in circuit diagram

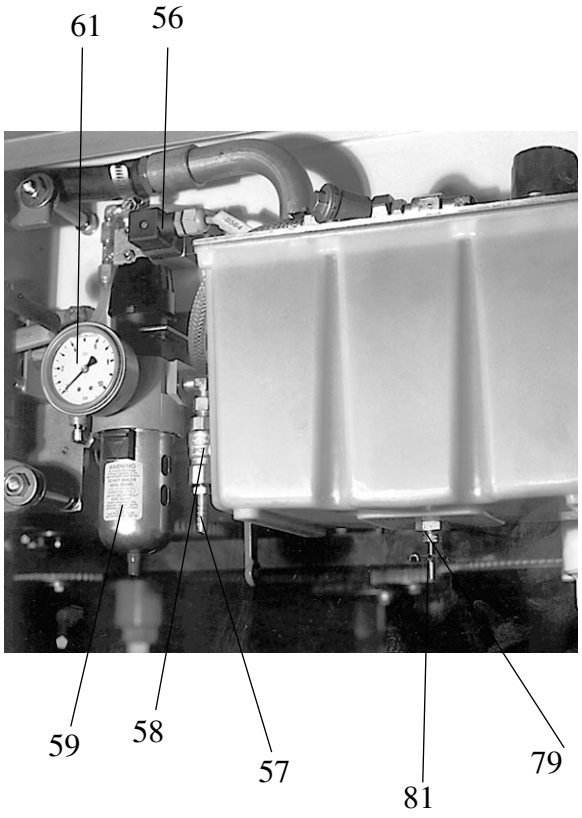
The connecting cables between the electrical cabinet (66) and the terminal box (33) are supplied by the customer. Insulated cables should be used, as shown on the diagram. The connecting cables must be attached carefully and correctly to the marked terminals.

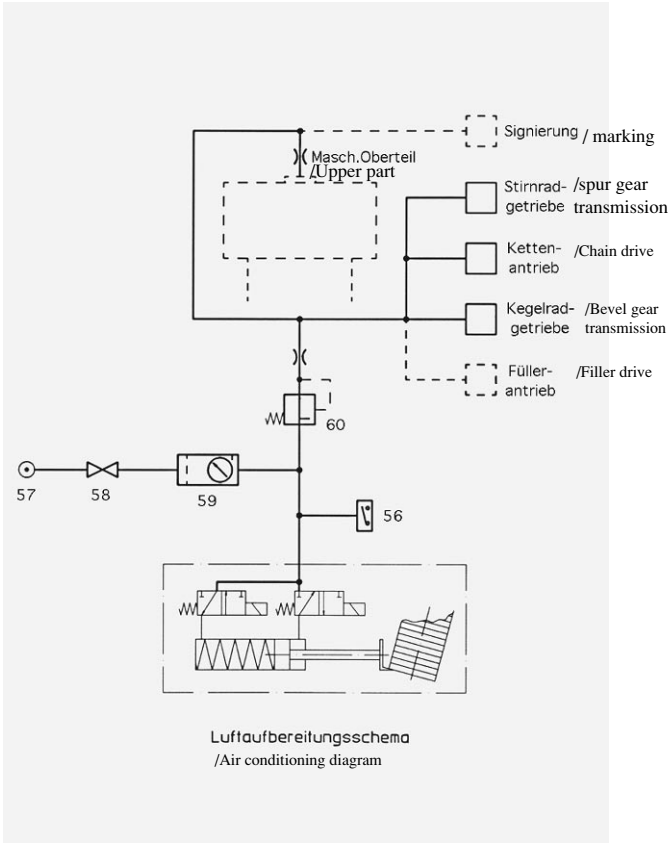
3.3 Compressed air connection

The pneumatic line is connected to the shut-off cock (58) at the hose connection. The air pressure should be not less than 4.5 bar (61)

The air pressure is monitored by the PE converter (56). If the air pressure drops below 4 bar, the machine will shut down and a fault will be indicated.

The water separator and the pressure reduction valve are attached to the machine in the form of a maintenance unit (59). The water separator is emptied automatically.





56 PE converter
57 Air connection
58 Shut-off cock
59 Maintenance unit
60 Pressure regulator
61 Manometer

5. Maintenance

5.1 Cleaning

The seaming machines can be equipped with an automatic washing system. The seamers must be washed at least every 8 hours, or when production is interrupted, at least for 15 minutes with water at a temperature of 80-90 °C. This applies particularly to sacchariferous products which may not dry up. The maximum pressure level for the washing process is 3 bar (45 psi, 300 kPa). Sacchariferous residues can lead to premature defects in the seals or cramping components.

In addition we recommend that it is additionally manually cleaned at least once a week with a brush depending on your hygiene requirements.

ATTENTION: The machine must be washed with hot water in operation. Weekly cleaning with neutral cleaning solutions (pH=7) is admissible.When using cleansing agents the machine must be cleaned immediately and thoroughly with clean water after a 15 minute working in period. These cleansing agents may not dry up. Cleansing or disinfectant solutions are best sprayed on manually. Under no circumstances may these solutions be applied with a pressure level of more than 1 bar (15 psi, 100 kPa).

If you would like to use non-neutral cleansing agents then you should first consult the Ferrum AG's customer service department. Alkaline and acidic cleansing agents can destroy the seals of the machine and cause consequential damage.

The selected neutral cleansing agents and disinfectants should not corrode nonferrous heavy metals, viton, silicone and NBR rubber.

Automatic cleaning with nozzle (option)

The feeding elements like central, can, lid and discharge turrets, seaming chucks and seaming plates may be cleaned automatically by means of slot nozzles aimed at these parts. Water con sumption approx. 45 litres/min. at 2.5 bar.

For machines with gassing systems, see the operating instructions for the gas control unit.

IMPORTANT: possibly separate washing program with filler

ATTENTION:
The seaming machine must be flushed every 4-8 hours with water when filling products that are liable to form solid residues.
Rotary shaft lip seals can be damaged by, e.g. crystal sugar deposits and ejector rods may stick.

5.1.1 Hot-water effusion (option)

This type of cleaning is carried out periodically for approximately 2 minutes in intervals of roughly 2 hours and prevents the machine from becoming greatly contaminated with microbes.
To this end water with a temperature of at least 80°C is required.
Water with a temperature of less than 80°C is directly added to the runoff until the thermostat releases the effusion. The desired effusion time can be individually set on the stored programme control.
The supply of water is identical to the supply of cleaning water.

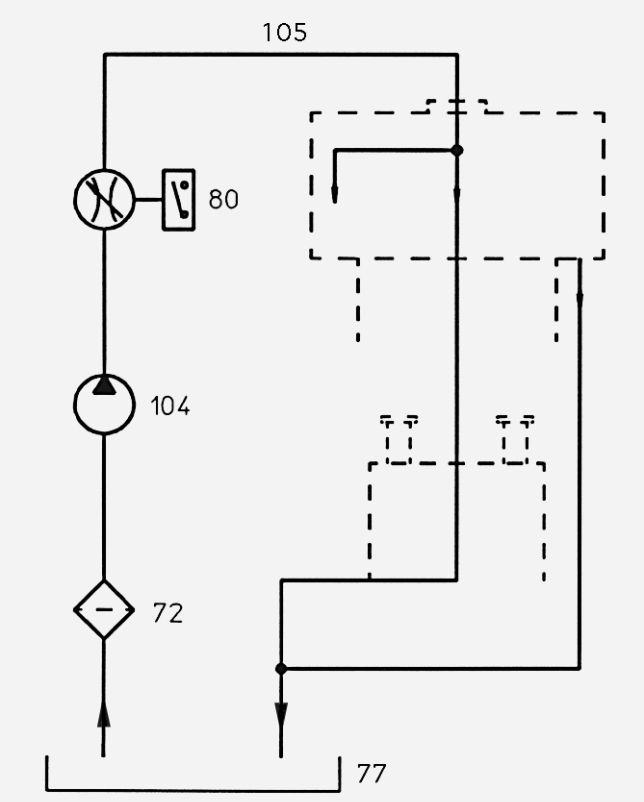
5.2 Greasing

All the bearings and gears in the lower housing of the machine are greased for life and thus require no maintenance.

5.2.1 Oil lubrication

The gears in the upper and middle part, and the lifter, knock-out and seaming cam are constantly lubricated by an oil circulation system.

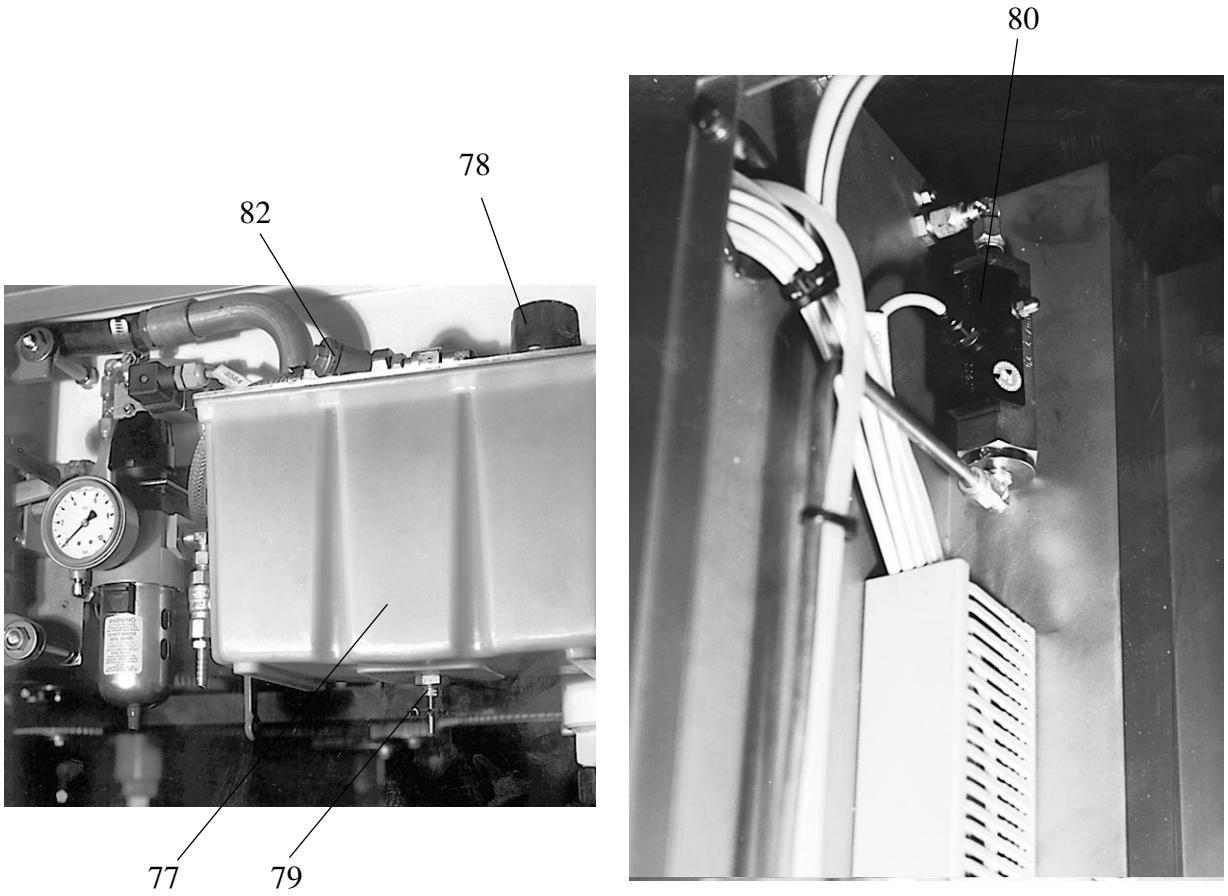
As soon as the machine starts turning, the oil pump (104) pumps oil via the main line into its upper part, where it is carried to the respective lubrication points. The flow of oil can be seen in the transparent hose (105). The oil flow monitor (80) built into the main line monitors the oil flow. Unless a certain volume of oil flows through the main line every 10 minutes or so, the machine is stopped automatically and the fault signalled on the control panel. (For remedy see Chapter 6).



Oelschmierungsschema
Oil lubrication diagram

- (77) oil tank
- (104) gear pump
- (72) oil filter
- (80) oil flow monitor

The oil level can be seen in the transparent oil tank (77).



The tank should be filled to about 1 cm below the lid before machine is started up. Oil should be added via the filling port(78) if the level is too low.

Oil content, total:	approx. 5.5 l
Suitable oils:	Food-compatible oils (100 cSt) e.g. Shell Cassida Fluid HF 100 Klüber 4 UH1 100
Oil used in factory:	Shell Cassida Fluid HF 100
Oil change:	- When an oil-water emulsion is formed (Oil loses transparency and becomes white) - At least once a year or after 2000 operating hours

The oil tank (77) can be emptied via the drain screw (79). Oil changes are best made about 1 hour after the machine is shut down.

The dirt filter element (82) should also be cleaned. Wash it out with commercially available cleaning agents (tri, petrol, etc.) and blow out from inside to outside with compressed air.

It is recommended that the oil tank (77) be cleaned from time to time when the oil is changed.

For this purpose, the outer shell must be removed and the oil tank taken off from the machine.

5.2.3 Oil change in marking device (99) (option)

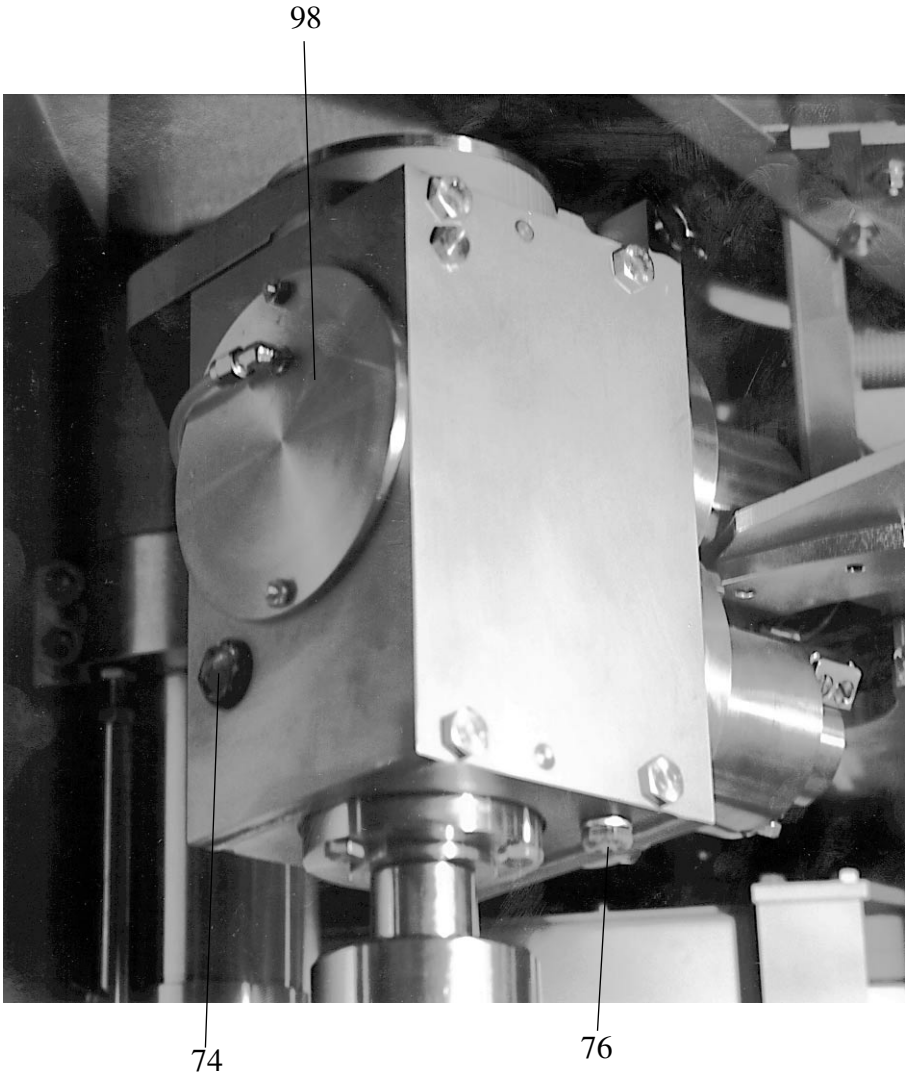
Intervals, oil quality and oil filling ex works as indicated in Chap. 5.2.1.

The housing is provided with 1 oil drain screw (76) and 1 oil filling lid (98).

The oil level can be checked through the oil viewing glass (74).

Oil level: middle of viewing glass

Oil volume: approx. 0.5 litres



5.2.4 Chain lubrication

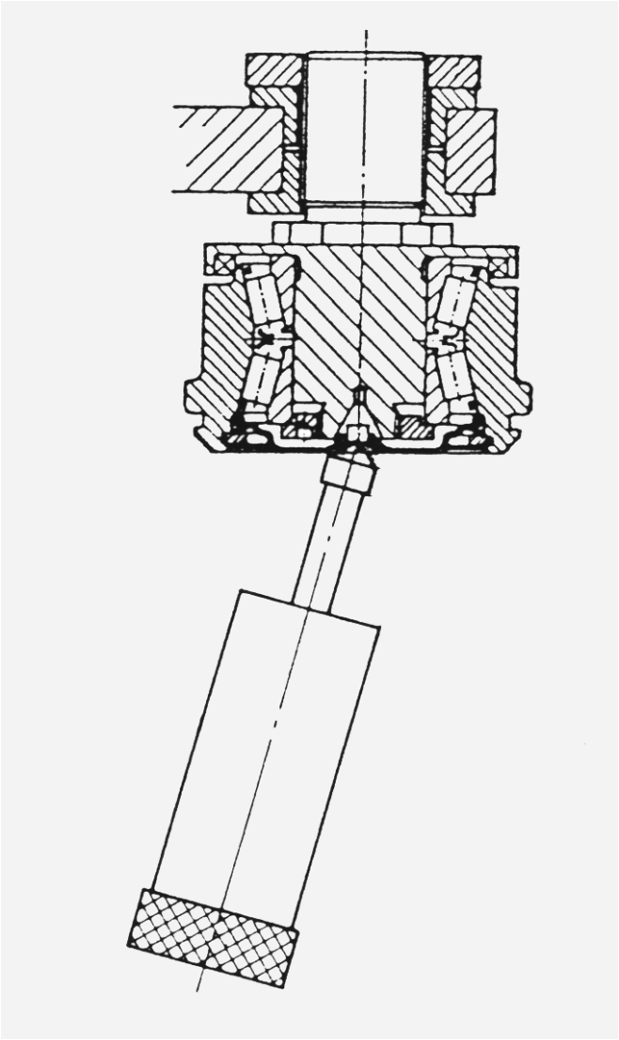
The feed chain should be sprayed or brushed with water-resistant oil once or twice a month after cleaning.

5.2.5 Seaming roll lubrication

The seaming rolls are sealed and must be greased with the grease gun supplied in the toolbox, once a day for wet operation and once a month for dry operation.

Suitable greases: Food-compatible greases (H1)
ASTM 265/295

- Shell Cassida Grease RLS 2
- Klüber Paraliq GA 343



5.2.6 Overpressure

A slight overpressure is maintained in all gears and gearboxes.

This is to prevent damp air entering the machine from the outside and causing rust.

The compressed air supply must **never** be interrupted.

5.3 Checks

5.3.1 Daily checks

- Can seam of all seaming stations
- Free rotation and minimum axial clearance of seaming rolls
- The seaming chucks and seaming rolls must not touch.
  This must be observed in particular in readjustment work, since otherwise the seaming roll pro files will be damaged.

5.3.2 Weekly checks

- All safety and emergency stop devices, mechanical and electrical
- Knock-out pads (30)
- Air conditioner unit (59), automatic water separator
- Check oil level in oil tank (77) and oil viewing glasses
- Check that oil is clean
- Check infeed chain is clean and moves easily
- Drain any water in the oil through the water drain screw (81) into the collection vessel until oil starts to flow.

5.4 Inspection of seam and tools

5.4.1 Test of seaming rolls

All seaming rolls must be tested briefly once per shift as follows:

5.4.1.1 Testing seaming rolls for smooth operation by briefly turning all seaming rolls at operating temperature manually.

Cause of sluggish seaming rolls:
In the majority of cases, water or product has entered the machine and the bearings are corroded.
Insufficient bearing clearance.

Measures:
Replace seaming roll seal and bearings.
Correct bearing clearance with shims. (Bearing clearance 0.02 - 0.04 mm)

5.4.1.2 Visual inspection of seaming rolls and seaming heads for mechanical damage in the profile area.

Symptoms:
Cracks or chipping in the profile area of the seaming rolls.

Measures:
Replace seaming rolls or seaming heads.

5.4.1.3 Tool wear

Symptoms:
Significant seaming parameter changes.
Dark hard material layer in seaming groove of seaming rolls worn.

Causes:
Seaming rolls or seaming heads worn.

Measures:
Replace seaming rolls or seaming heads.

5.4.2 Seaming test

Monitoring of the first operation must take place at least once a week or after resetting the seaming machine.

Inspection of the finished seam with a seam projector must take place at least once per shift at outputs up to 1500 cans/minute. At outputs above 1500 cans/minute, one inspection every 4 hours is recommended. Minimum one can must be inspected per station of the wearing machine.
A seam inspection is also necessary after machine faults and a change of cans or lids.
The correct seaming parameters are shown in the documents of the can manufacturer

6. Faults and their remedies

Any faults occurring in the seaming machine are indicated on the control panel.

Before the machine can be restarted, the fault must be rectified and the reset button pressed. Start up as described in Chap. 4.

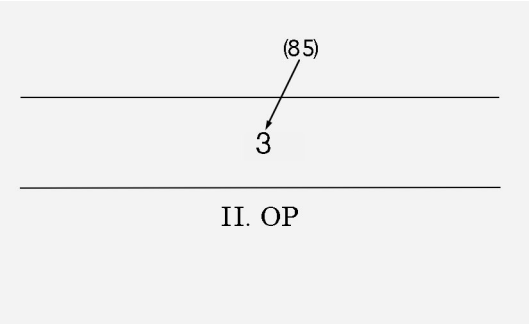
6.1 Faults which cause the machine to stop

Fault	Remedy
- Infeed chain Overload clutch disengaged	Pull infeed chain (110) forwards until the clutch reengages
- Discharge turret Overload clutch disengaged	Turn discharge turret (26) forwards until the clutch reengages
- Air pressure Air pressure below 4 bar	Adjust pressure reduction valve (60) to mini mum of 4.5 bar
- Oil circulation Machine does not start. Filter (82) clogged, Pump (104) or flow monitor (80) defective, no oil	 Check filter (82) and clean if necessary. Check pump (104), check oil level in tank (77) Check flow monitor (80)
- Safety doors open	Close right, left, front or rear safety doors Close hand wheel cover
- Main drive motor overloaded	Wait until electric motor has cooled down Check power consumption Check terminal connection
- Lid magazine No lids in magazine or lid upside down in stack.	Add lids or insert correctly Switching distance of sensor incorrectly adjusted
- Emergency stop button pressed	Free emergency stop button Press emergency stop button only in emergency
- Frequency converter see operating instructions for frequency converter	The separate operating instructions for the frequency converter describe the faults and their possible causes.
- Lid marking device	Marking device loose or swivelled out

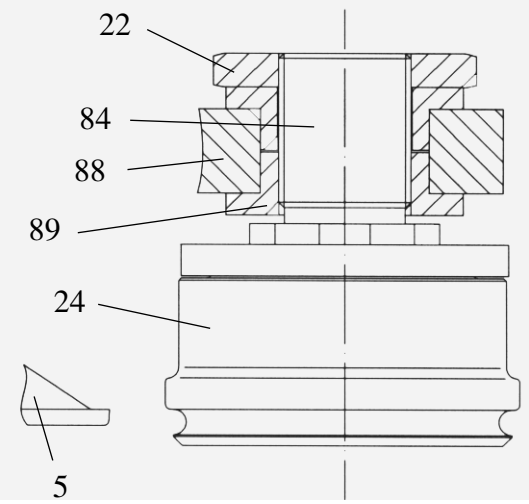
7. Adjustments

7.1 Adjustment of seam size

The seam size is adjusted by moving the seaming rolls (24). Proceed as follows to avoid any damage to the seaming chuck (5) and seaming roll (24).



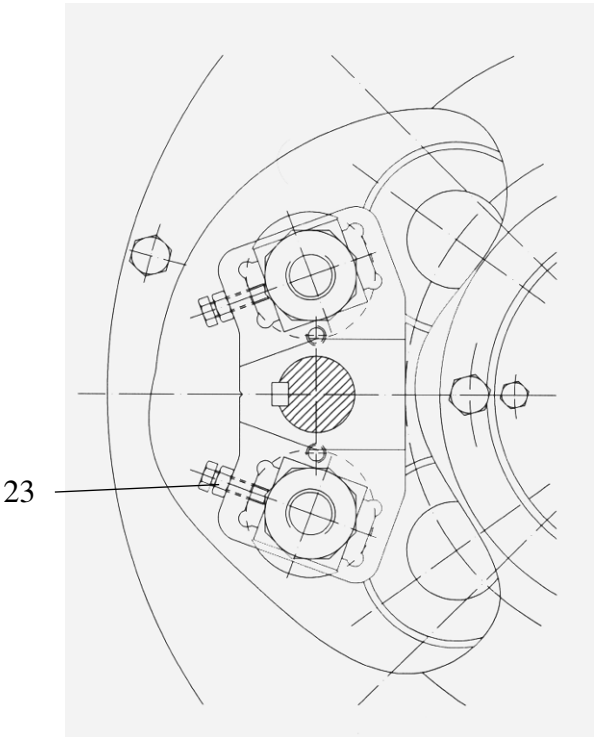
1. Turn the machine with the hand wheel (1) until the station number plate (85) on the lower rotor is in alignment with the "I. OP" plate.



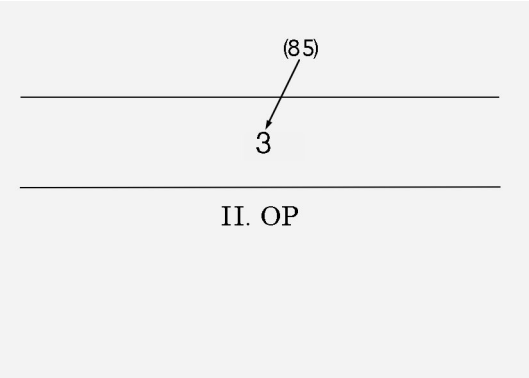
2. Slightly loosen the clamping screw (22) and pull back the seaming roll (24) with the seaming roll bolt (84) and the threaded slide (89). Turn the seaming roll bolt (84) about 1/6 of a revolution in a clockwise direction (lift). The seam size can be adjusted in this way..

3. Hold the wire gauge No. 1.5 between the groove of the seaming roll (24) and the seaming chuck (5). Turn the adjusting screw (23) to move the seaming roll (24) until the wire gauge can just be moved. Tighten the nut (22) slightly.

4. Carefully turn the seaming roll bolt (84) anticlockwise (lower) until the seaming roll (24) touches the seaming chuck (5) and can no longer be rotated. Then loosen approx. 1/12 of a revolution clockwise (lift) to produce a clearance of 0.05 - 0.1mm between the seaming roll (24) and the seaming chuck (5)



5. Having set the seaming roll (24) height, it is now time to set the width of the seam. The wire gauges supplied are used for this purpose. Hold these between the seaming roll (24) profile and the seaming chuck (5). Turn the adjusting screw (23) until the wire gauge can only just be moved. Once the roll has been properly adjusted, tighten the nut (22). An hexagonal wrench is used to hold the seaming roll bolt (84) to prevent the seaming roll from moving when the nut (22) is tightened. The nut locks the adjusting screw (23) in place.



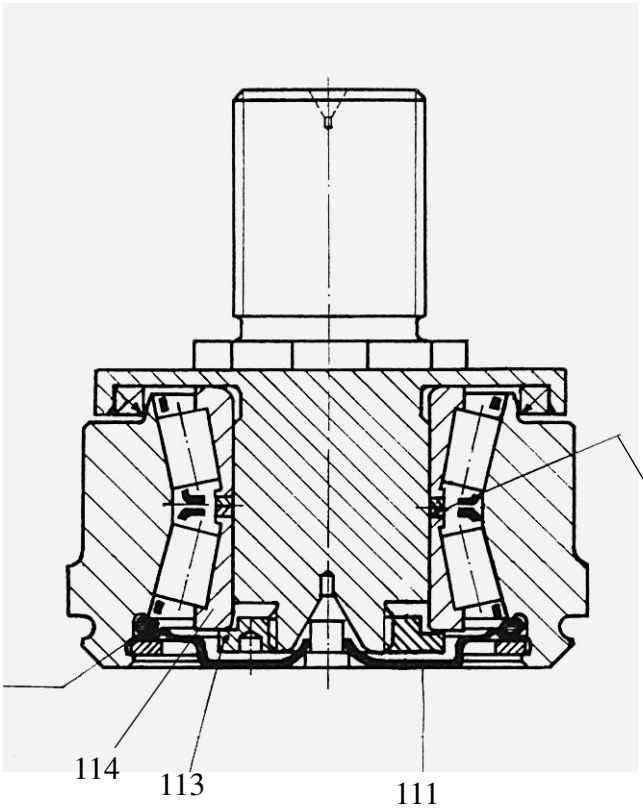
All "I. Op" rolls are adjusted in the same manner. The "II. Op" rolls are adjusted similarly, with the stator number plate (85) aligned with the "II. Op." plate. Wire gauge No. 1.0 should be used to adjust the height of the seaming roll (24). The clearance between the seaming chuck and the seaming roll should be approx. 0.1 - 0.15mm. For this reason, the seaming roll bolt (84) should be loosened by turning it approx. 1/6 of a revolution in a clockwise direction.

To change the rolls, remove the nut (22) completely. The roll is removed together with the threaded slide (89).

The new seaming roll is screwed into the threaded slide together with the seaming roll bolt and then inserted into the seaming lever. Readjustment is performed as described above.For safety reasons the seaming roll (24) is completely lifted to the top but in a way that the SW 36 open-end wrench (Art. No. 81715) supplied can just be removed.

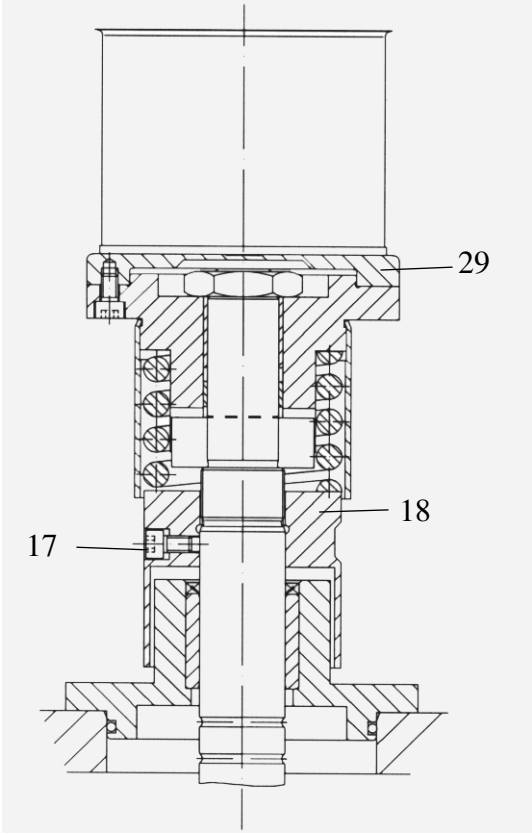
7.2 Adjustment of seaming roll clearance

Remove retaining ring (112) and take off cover (111). Unscrew adjusting screw (113). Take out inner part of bearing (114). Set required axial clearance using spacer washers (115). Fit the seaming roll and tighten the adjusting screw (13) The roll will turn easily with an axial clearance of approx. 0.05 - 0.1mm. Replace the cover (111) and the retaining ring (112), and fill the roll with grease. It should continue to turn easily.



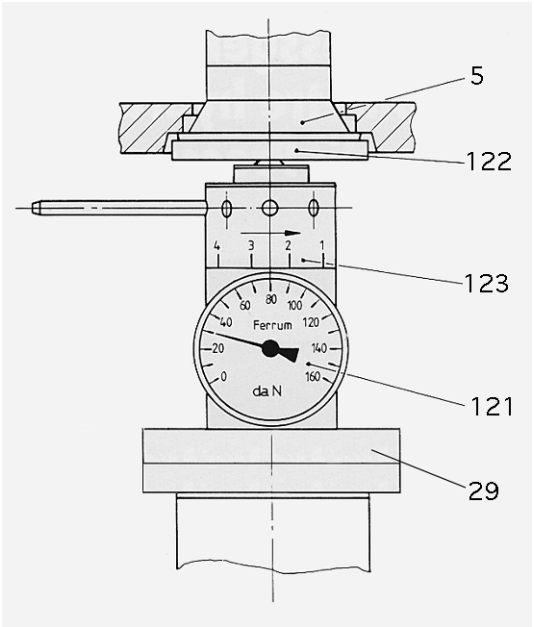
83071 2.5 thick
83072 0.1 thick
83332 0.05 thick

7.3 Adjustment of seaming plate pressure



If can/lid metal with a different hardness is used, it may be necessary to readjust the clamping pressure applied to the can for seaming. The adjustment is performed at 1. OP. Release the screw (17) and turn the adjusting nut (18) by hand or with an open-end wrench downwards (weaker) or upwards (stronger). Then the screw (17) must be tightened again. The seaming plate height is **not** changed by this adjustment.

7.3.1 Adjustment of seaming plate pressure with Ferrum dial gauge (option)



- Place the pressure gauge (121) with base (122) dependent on diameter of seaming chuck on the seaming plate (29).

- Turn the scale ring (123) in the direction of the arrow until the base (122) touches the seaming chuck (5).

Turn the scale ring (123) in the direction of the arrow until the deflection in the operating instructions is met.
1 revolution = 1mm
1 mark on scale = 0.1mm

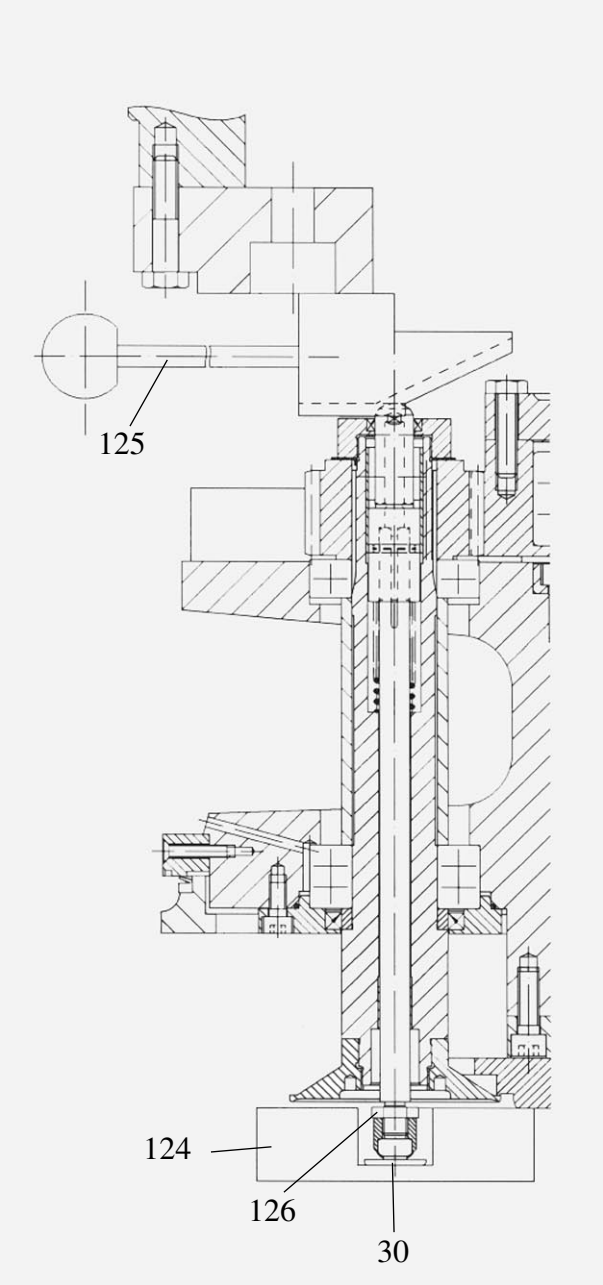
Read value on daN (1 daN = 1 kp)

Depending on the can height, it can be adjusted to the pressure gauge with a spacer placed between the pressure gauge (121) and the seaming plate (29).

7.4 Adjustment of knock-out pads

The knock-out pads (30) (left-hand thread) are adjusted in the factory to the lids used.

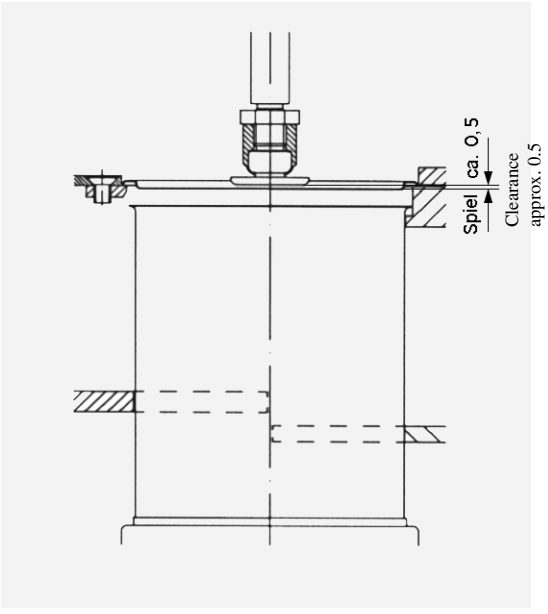
If the shape of the lid is changed to a large extent, or if the knock-out pads (30) are replaced, the knock-out pads must be readjusted. The gauge (124) supplied is according to with the value set in the factory.



The knock-out pads (30) are replaced and readjusted as follows:

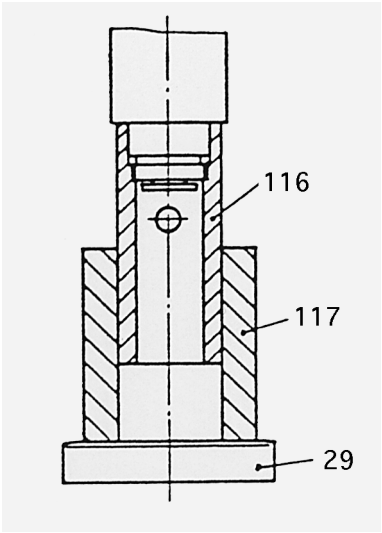
Adjustment through the opening on the top of the machine near the drive at the rear. Insert the tool (125) between the knock-out pad and the seaming cam. Loosen the nut (126) (left-hand thread) and adjust the knock-out pad (30) (left-hand thread) to the gauge.

The proper knock-out pad (30) height is established by inserting a lid in the lid guide. When the knock-out pad (30) reaches the lowest point of the knock-out cam, the clearance between the lid and the knock-out pad (30) should not be more than 0.5mm.



7.5 Adjustment of feeding elements

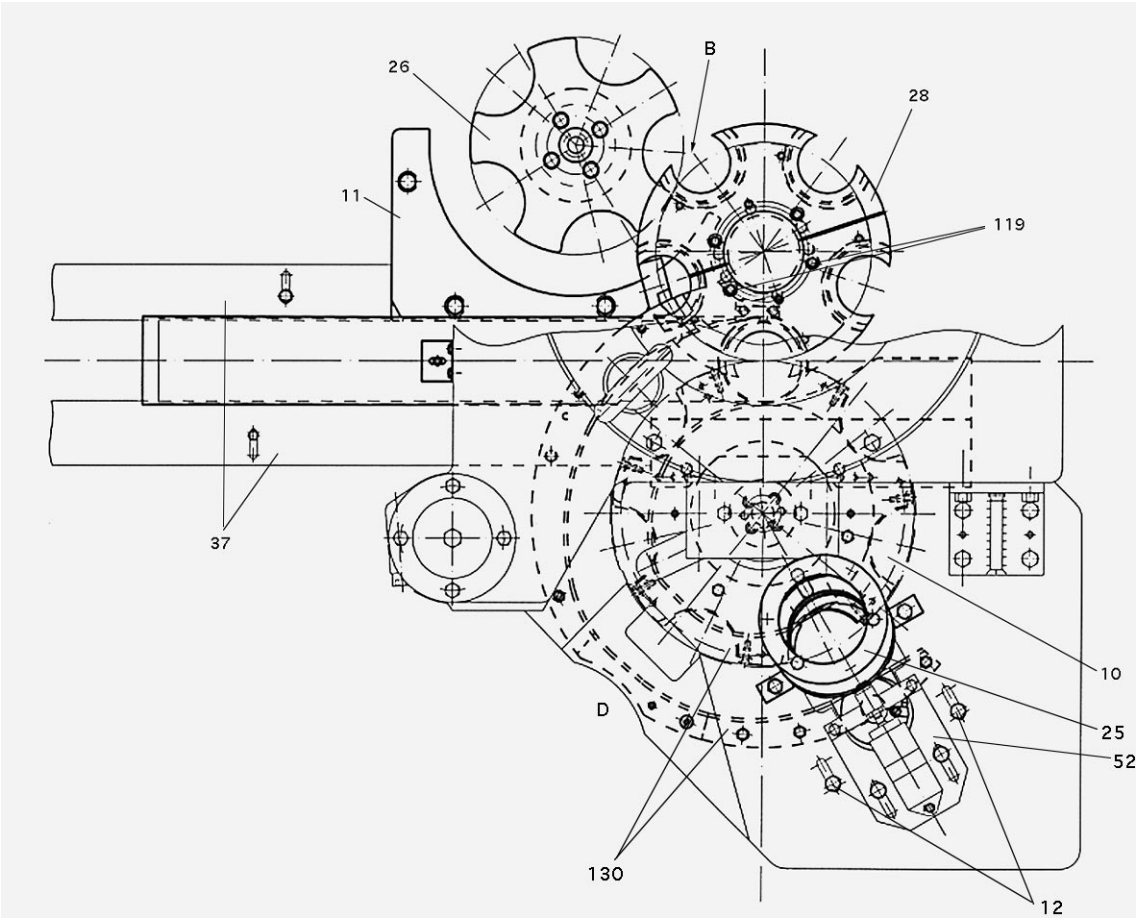
Important

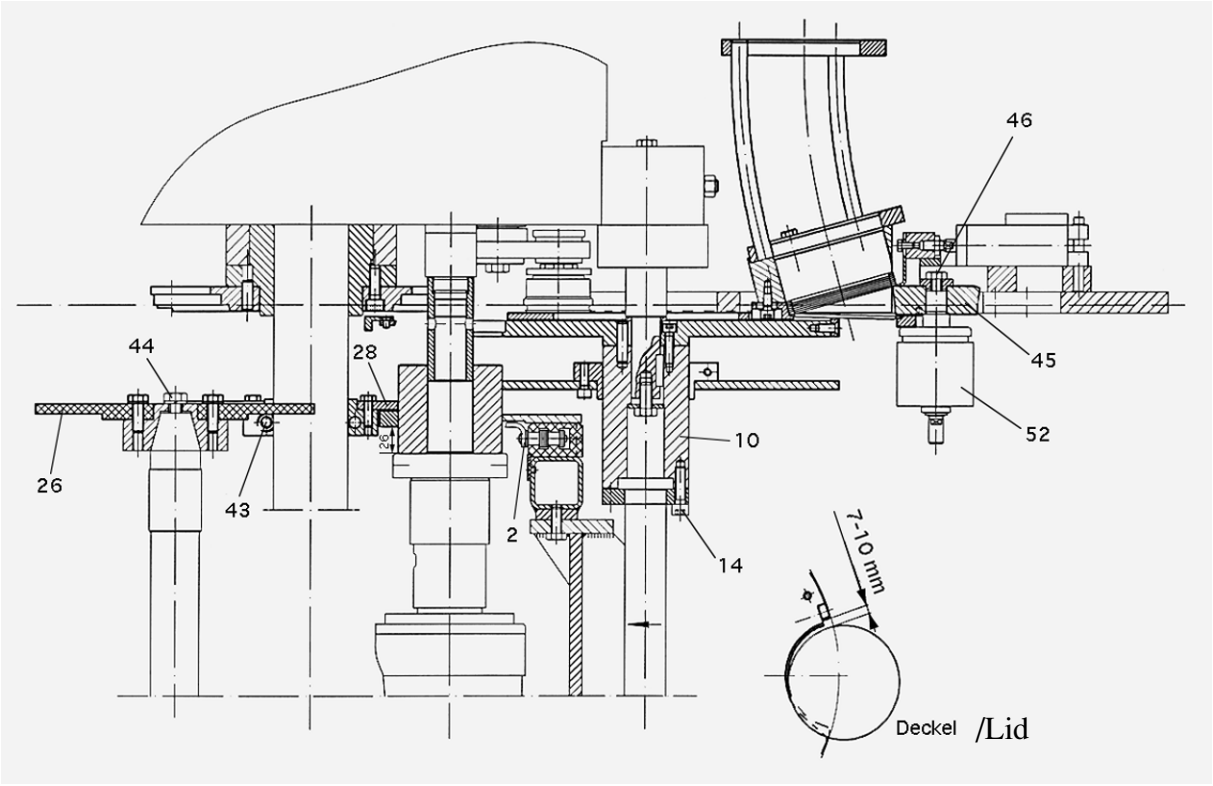


The feeding elements must be aligned precisely to prevent the product being spilled from the can or the can itself being damaged.

Loosen the seaming chuck (5) with the seaming chuck wrench and remove it. Fit the sleeve (116) for the new can diameter with the adjustment gauge (117).

The following feeding elements are adjusted with the adjustment gauge (117) fitted.





7.5.1 Central turret (28)

Loosen the clamping screw (43) to align the turret (28) with the adjustment gauge (117). The three holding screws (119) are loosened to centre one half precisely. Both halves must be centred.

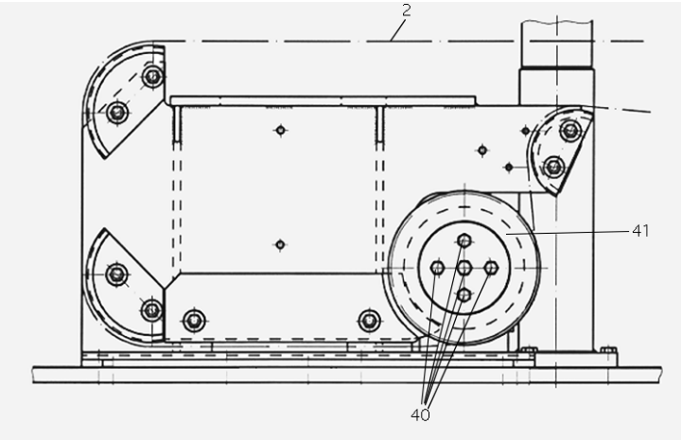
7.5.2 Discharge turret (26)

Slightly loosen the screw (44) and adjust the turret (26) to the cone.

7.5.3 Can lid feed turret, gassing rotor (10)

Loosen the screws (14). Rotate the machine and can lid feed turret as well as the gassing rotor (10) backwards so that the adjustment gauge is aligned precisely with the machine, lid turret and gassing rotor (10) axis. The lower can turret can likewise be adjusted by loosening the clamping screw on the hub.

7.5.4 Transfer chain (2)



Loosen the 5 clamping screws (40) on the big chain drive wheel (41).

Set the transfer chain (2) approx. 2 mm behind the can in case of a chain pitch of 152,4 and 161,9, and approx 5 mm in case of a chain pitch of 171,5, when the latter is on an axis with the central turret, the can lid turret or the gassing rotor.

7.5.5 Can guides at inlet and outlet

The can path (11) is set precisely with the gauge (117) fitted.

The can guides (37) on the feed table are adjusted with a can or the gauge (117).

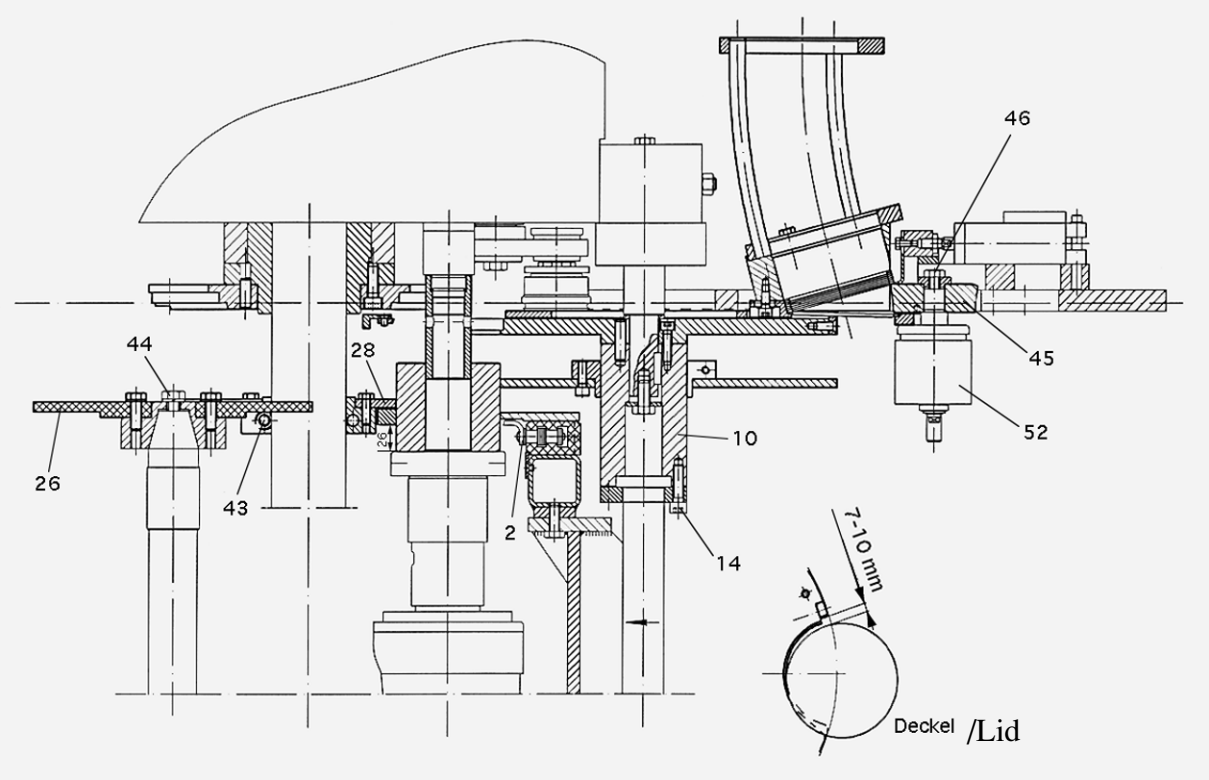
7.6 Adjustment of the separator disc

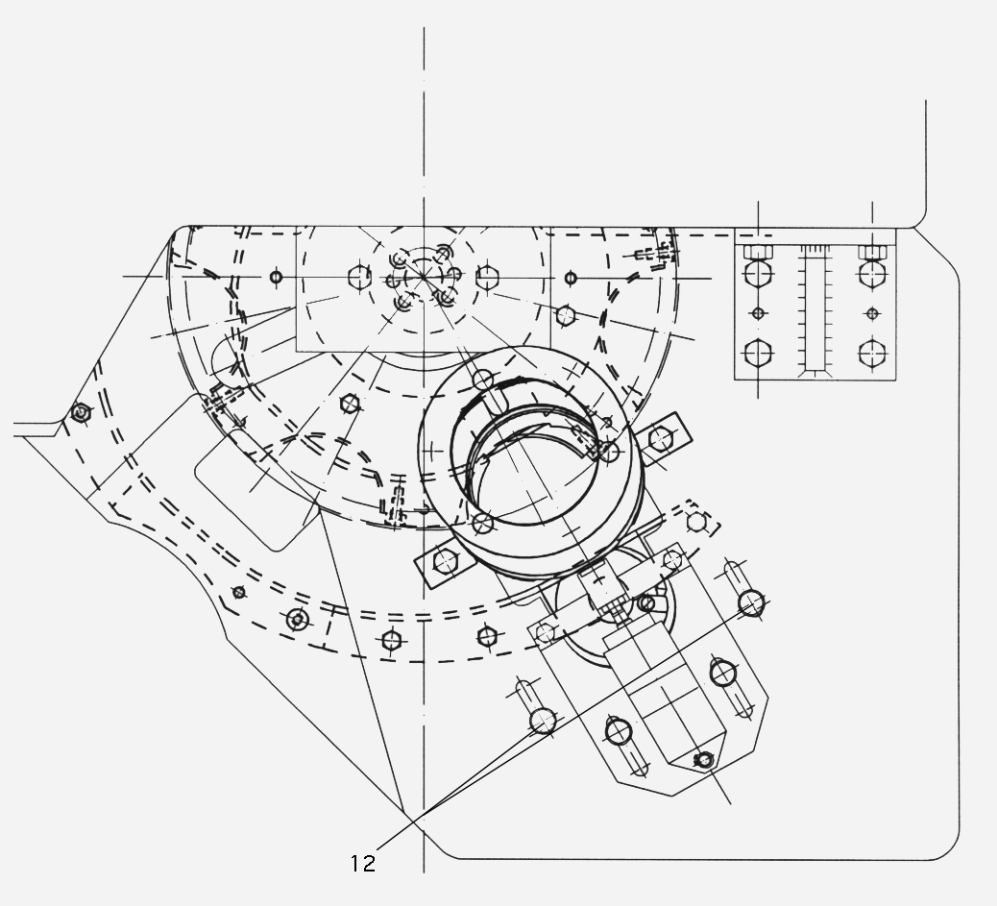
The destacking worm (45) cannot be adjusted unless the feeding elements have first been adjusted as described in Chap. 7.5.

The worm is set with respect to the lid feed tappet. Loosen the screw (46) and turn the disc (45) in the direction of movement. When the lid is released from the disc groove, the distance between the lid and the lid feed tappet must be about 7 - 10mm. When the machine rotates forwards and the lid feed tappet comes into contact with the rim of the lid, the separator disc must cover the lid edge.

Depending on the lid diameter, the lid must lie approx. 1 - 1.5mm on top of the disc. The adjustment is made as follows:

Loosen the 2 clamping screws (12), move support (52) and retighten clamping screws (12).


46
44
28
45
52
10
26
43
2
14
7-10 mm
Deckel /Lid


12

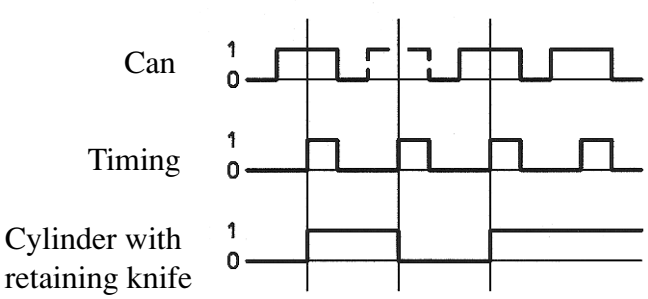
7.7 Lid release

The "no can / no lid" device is tripped and controlled electronically by a fast PLC. The timing and can signals are displayed optically by LED.

This adjustment cannot be made until the separator disc (45) has been set as described in Chap. 7.6.

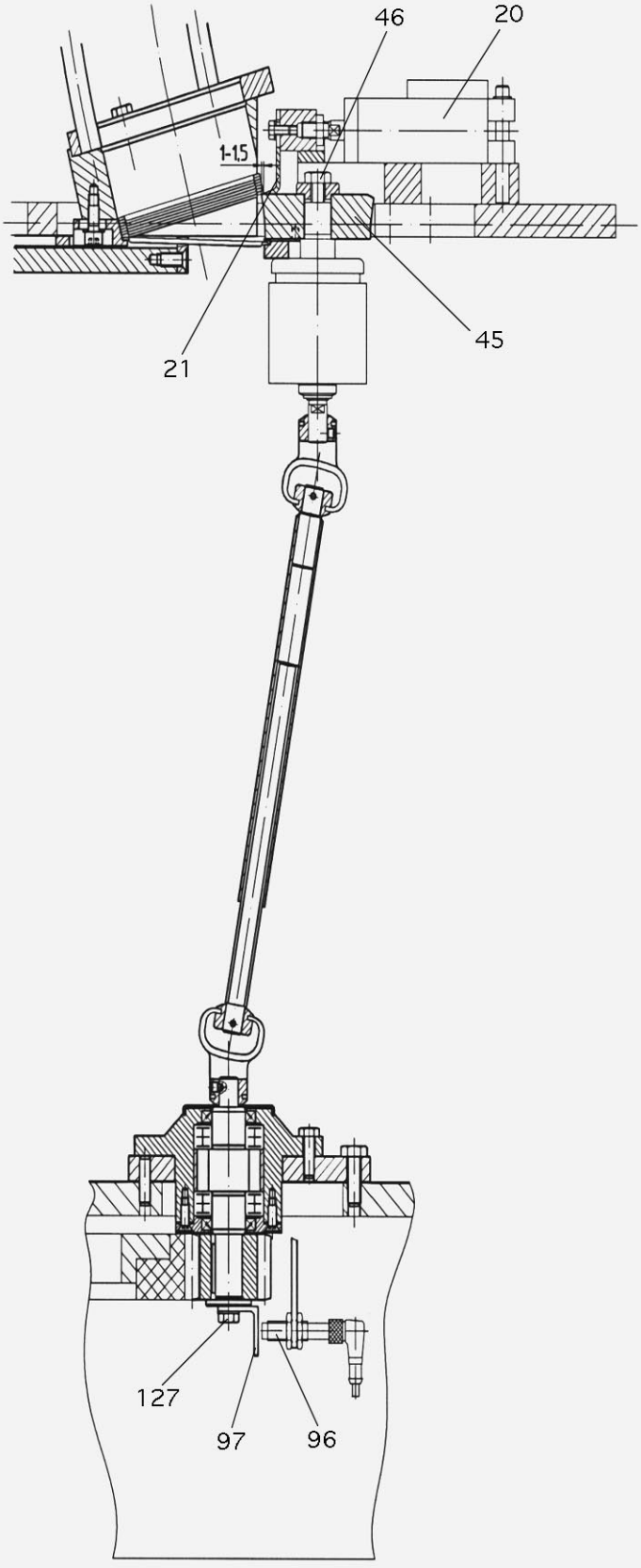
Rotate the machine with the hand wheel (1) until the separating knife (55) is approx. 10° beyond the lid-separator disc central axis. Slightly loosen the screw on the timer (97) and turn the timer in an anticlockwise direction until the LED on the timing sensor (96) lights up. Retighten screw on timer (97).

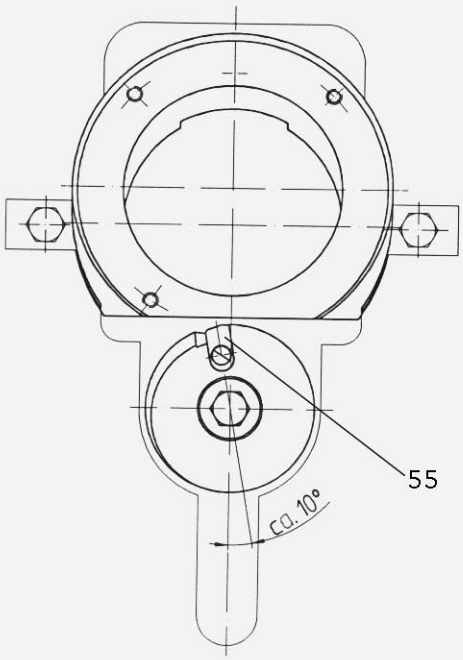
With the timer in this position, the can sensor (94) is secured on the infeed table to govern the release of lids for cans. The timing and can signals should follow the pattern below.

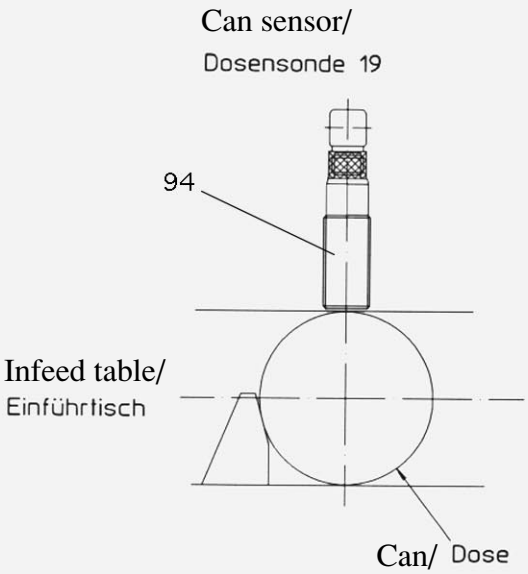


In this position, the cylinder (20) switches on and the retaining knife (21) releases the lid for destacking. If there is no can in front of the can sensor (94), the timing sensor (96) switches the cylinder off and the retaining knife holds the lids back.

The clearance between the can sensor (94) and the centre of the machine depends on the chain pitch and is set at the factory.


46
20
1-15
45
21
127
97
96


55
ca. 10°


Can sensor/
Dosensonde 19
94
Infeed table/
Einführtisch
Can/ Dose

8. Marking device (99)

1.Before setting the marking (99), all the feeding elements must be set as described in Chap. 7.5.

2.Slightly loosen the coupling on the drive shaft so that the marking shaft can be turned by hand.

3.Open the cover (98) and slightly loosen the clamping screw (128) on the spur gear.

4.Centre the marking shafts (103) using the gauge, with the marking device swung in, and tighten the screws (128) with the gauge in place.

5.Release a lid from the stack and feed it to the centre of the marking device using the hand wheel. Then tighten the clamping screw (50) on the drive shaft. Remove the lid.

6.To swing out the device, the coupling pin (129) is pulled out and turned about 90° to release the marking device from the drive shaft.

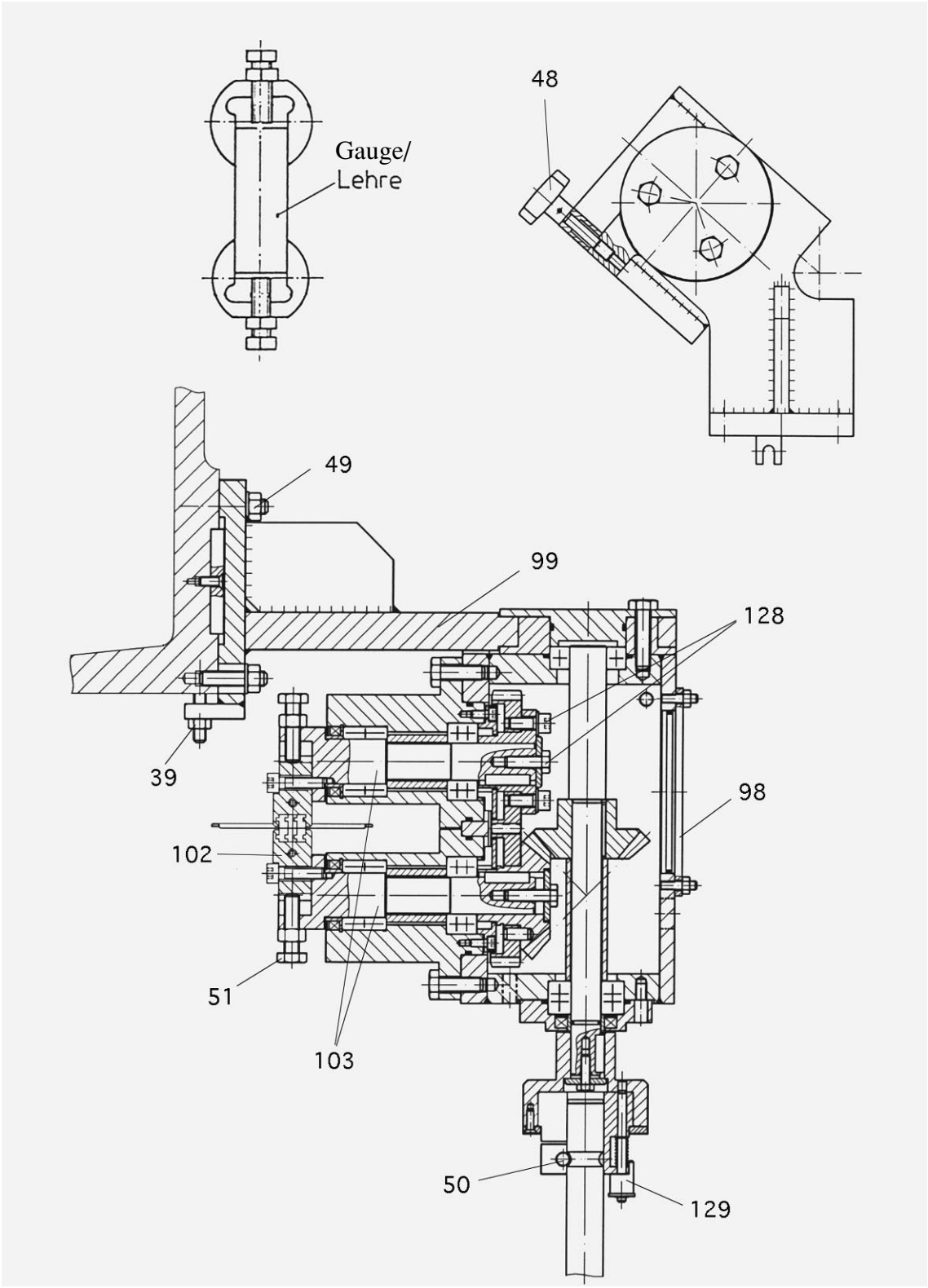
7.Loosen the clamping screw (48) and swing out the marking device (99). Fit and secure the marking sign holder (102) with built in signs. Turn the marking shaft (103) horizontally so that the signs point to the rear. In this position the device (99) is swung in to the marking shaft (103) manually and tightened in place with the screw (48). Re-engage the coupling pin (129) by turning the marking shaft.

8.Fine adjustment:
If the lid is not marked exactly in the middle, this can be reset by loosening the clamping screw (50)and turning the stamp shaft forwards or backwards as required. Retighten the clamping screw.

The adjusting screw (51) is used to set the embossing pressure.

The embossing height is adjusted to the lid using screws (39) and (49).

9.When the device is swung in and out, the marking shaft must always be horizontal and the signs must point to the rear.


Gauge/
Lehre
48
49
99
128
39
98
102
51
103
50
129

9. Adjustment to a different can height

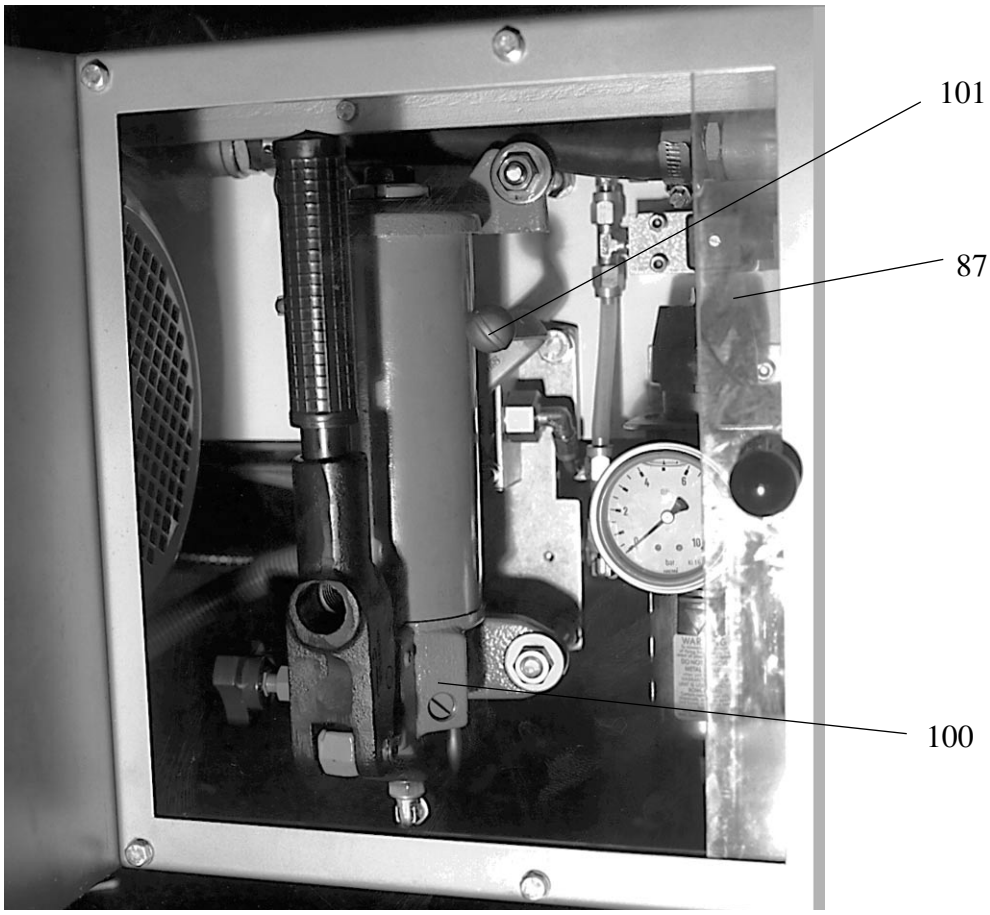
The clamping screws (7) must be loosened before moving the top part of the machine. And the clamping hub (107) of the can turret, if any, must be loosened by slackening the screw (106). A hydraulic hand pump (100) located under the cover (87) is used to adjust the height. A manually operated four-way valve (101) blocks the hydraulics in the middle position. The lever is moved down to reduce the can height and up to increase it.

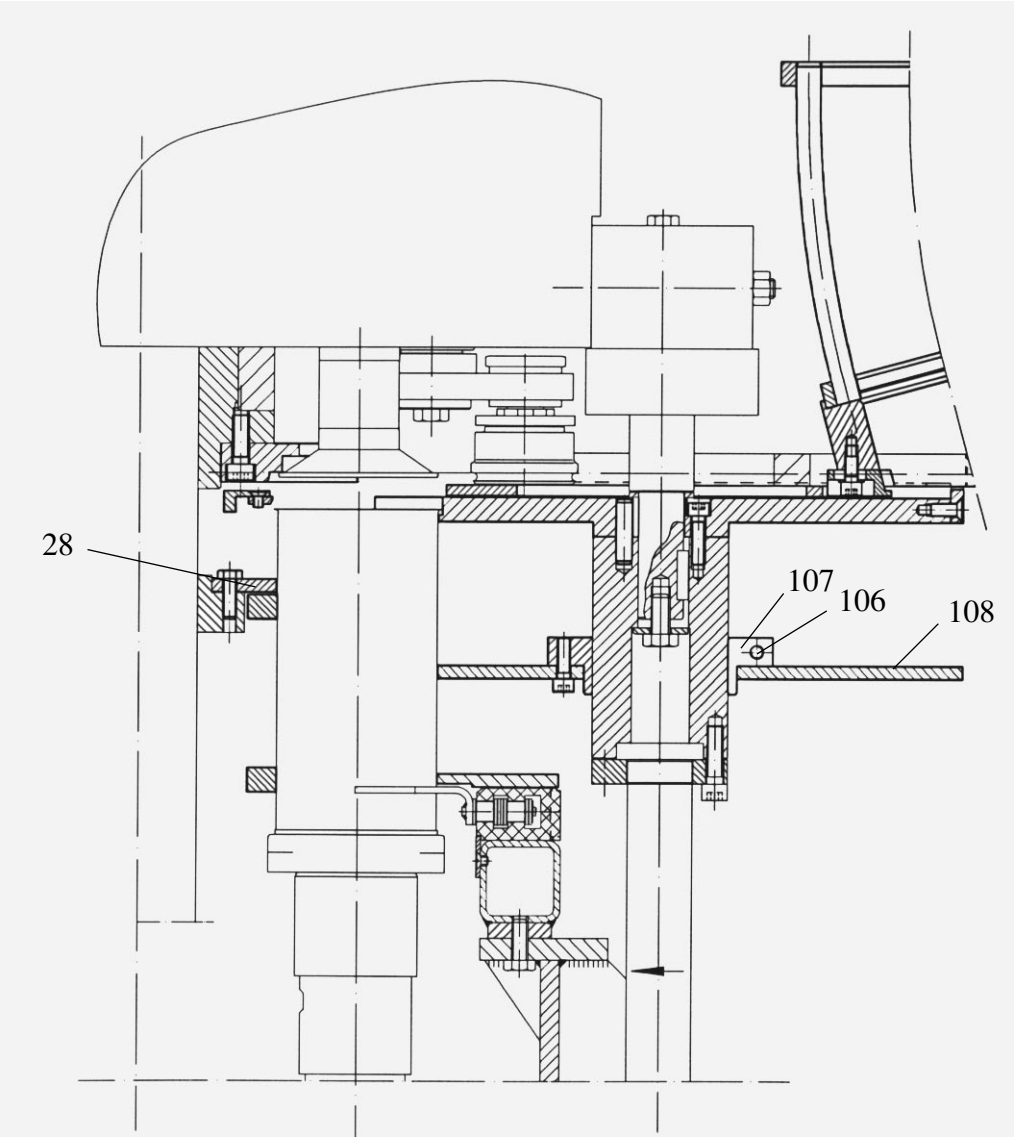
The height should be set 90° from the can feed in the direction of movement. The difference in height between the upper edge of the seaming chuck and the seaming plate should be equivalent to the can height minus approx. 1.5mm. In other words, the deflection should have a travel of approx. 1.5mm. Once the new can height has been set, the clamping screws (7) should be re-tightened. Then the clapping screws (108), is any, should be tightened. The adjusting gauge (91) can be adjusted to the height set.

Note: The seaming plate cam rises continuously by 0.7mm from the beginning to the end of the seaming process.

Where there is a large change in can height, the height of the central turret (28) must be changed and the can guide (11) replaced by a double can guide. In some cases, it will also be necessary to fit a second central turret and a second can turret.


7


101
87
100


28
107
106
108

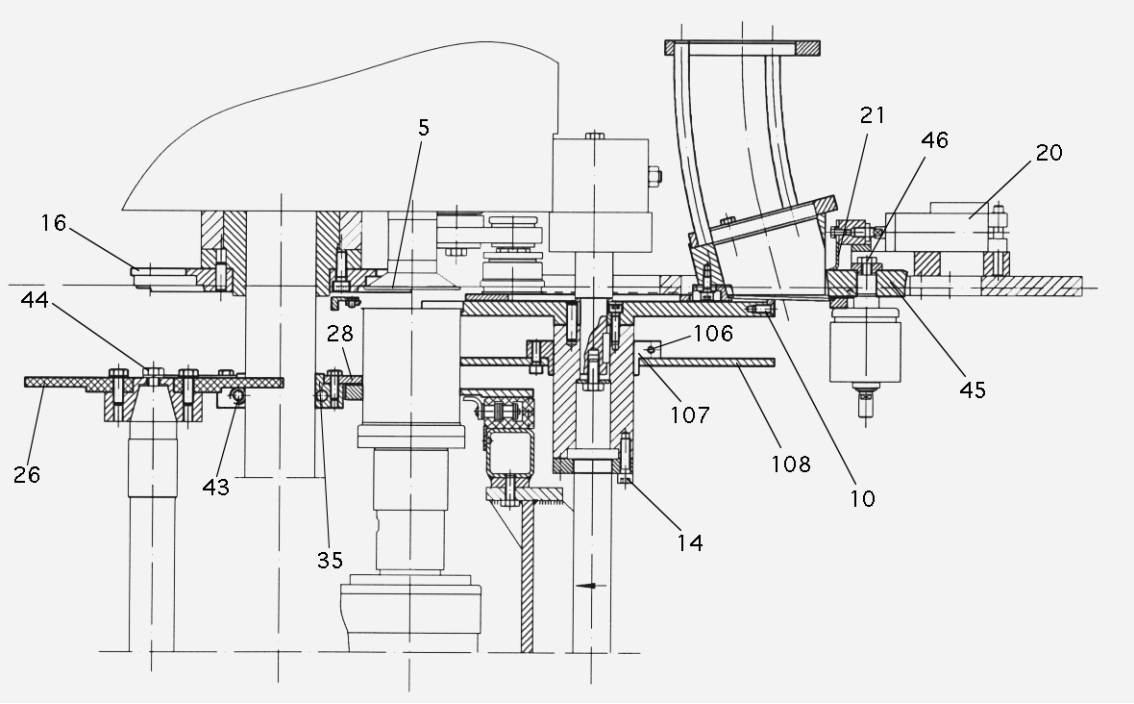
10. Adjustment to a different can diameter

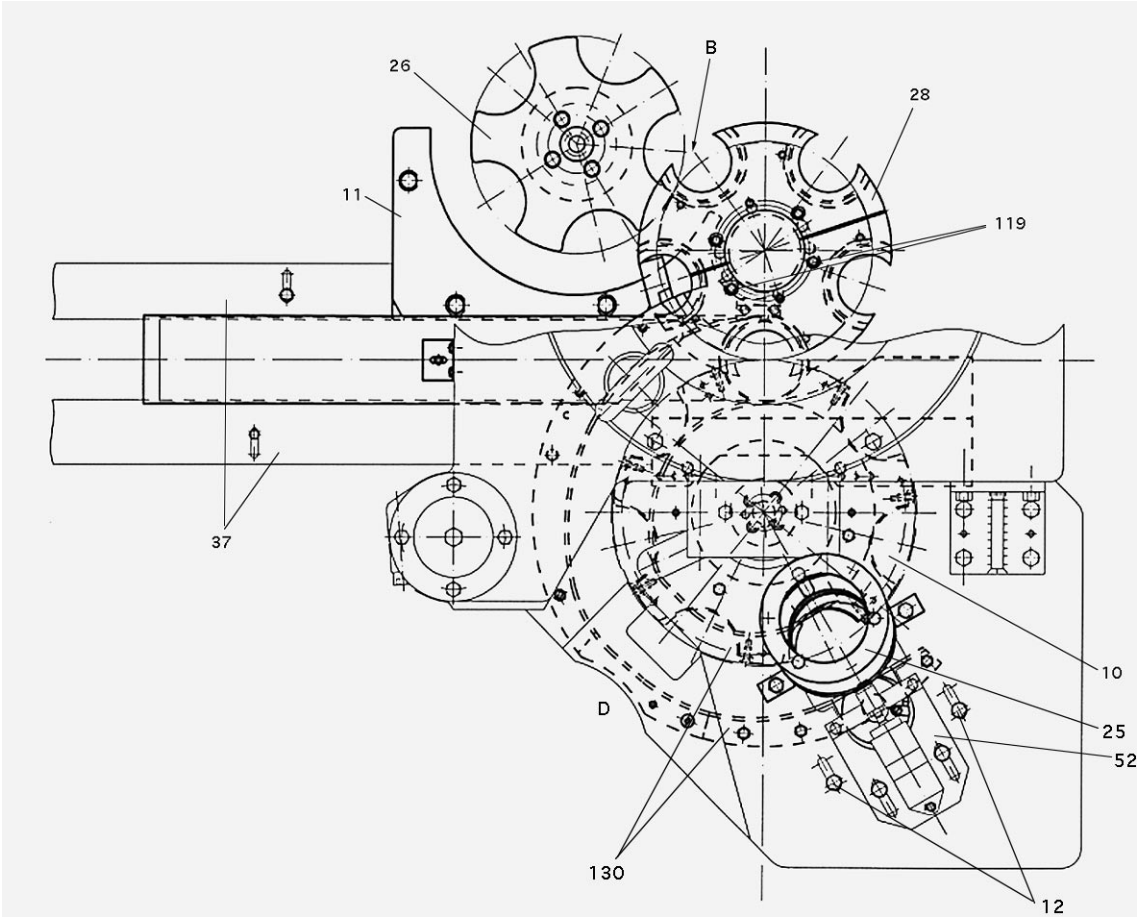
First the upper part of the machine is brought into the highest position hydraulically. See Chap. 8.

The following parts must be changed to handle a new can diameter:

- inner and outer can guides (130)
- lid magazine ring (25)
- gassing rotor / can lid turret (10)
- can turret (108)
- central turret (28)
- discharge turret (26)
- can guides (11) and (37)
- seaming chucks (5)
- seaming chuck bell (16)
- Set can guides on infeed and discharge table.

Then all feeding elements must be reset as described in Chapter 7.




26
B
28
11
119
37
10
D
25
52
130
12