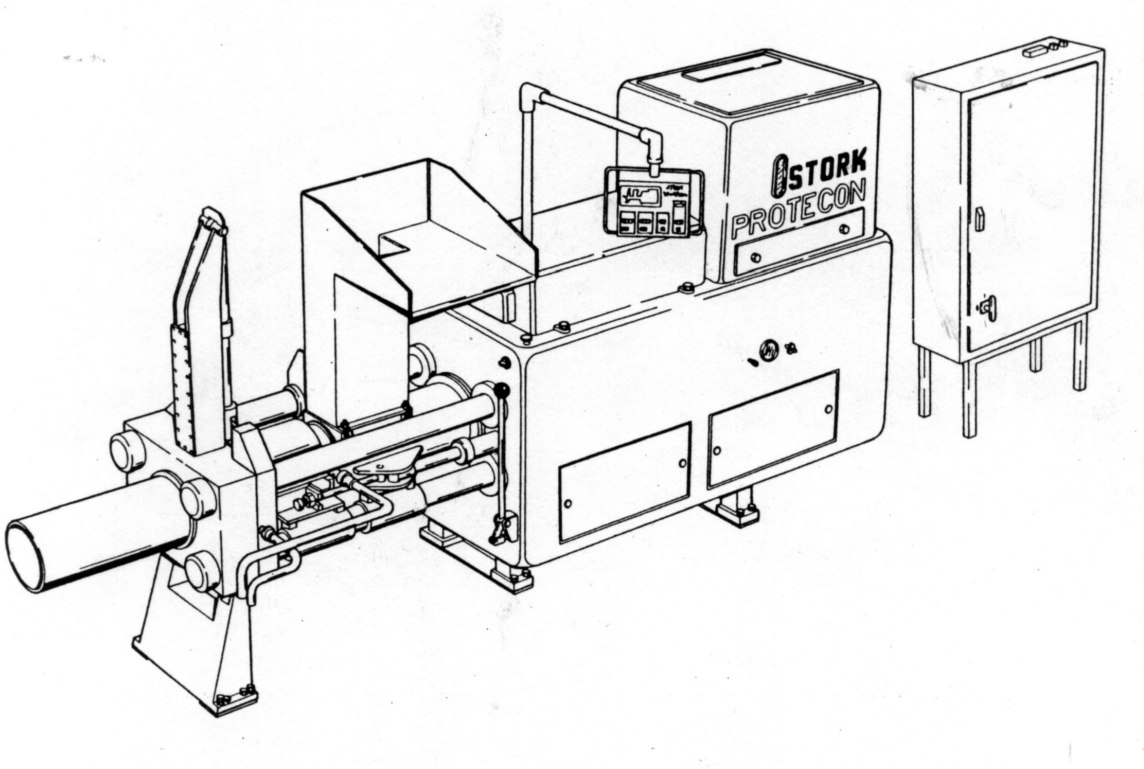
USER'S MANUAL

MPD 30 E



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1 TABLE OF CONTENCE

1INTRODUCTION

1. INTRODUCTION

1.1. General

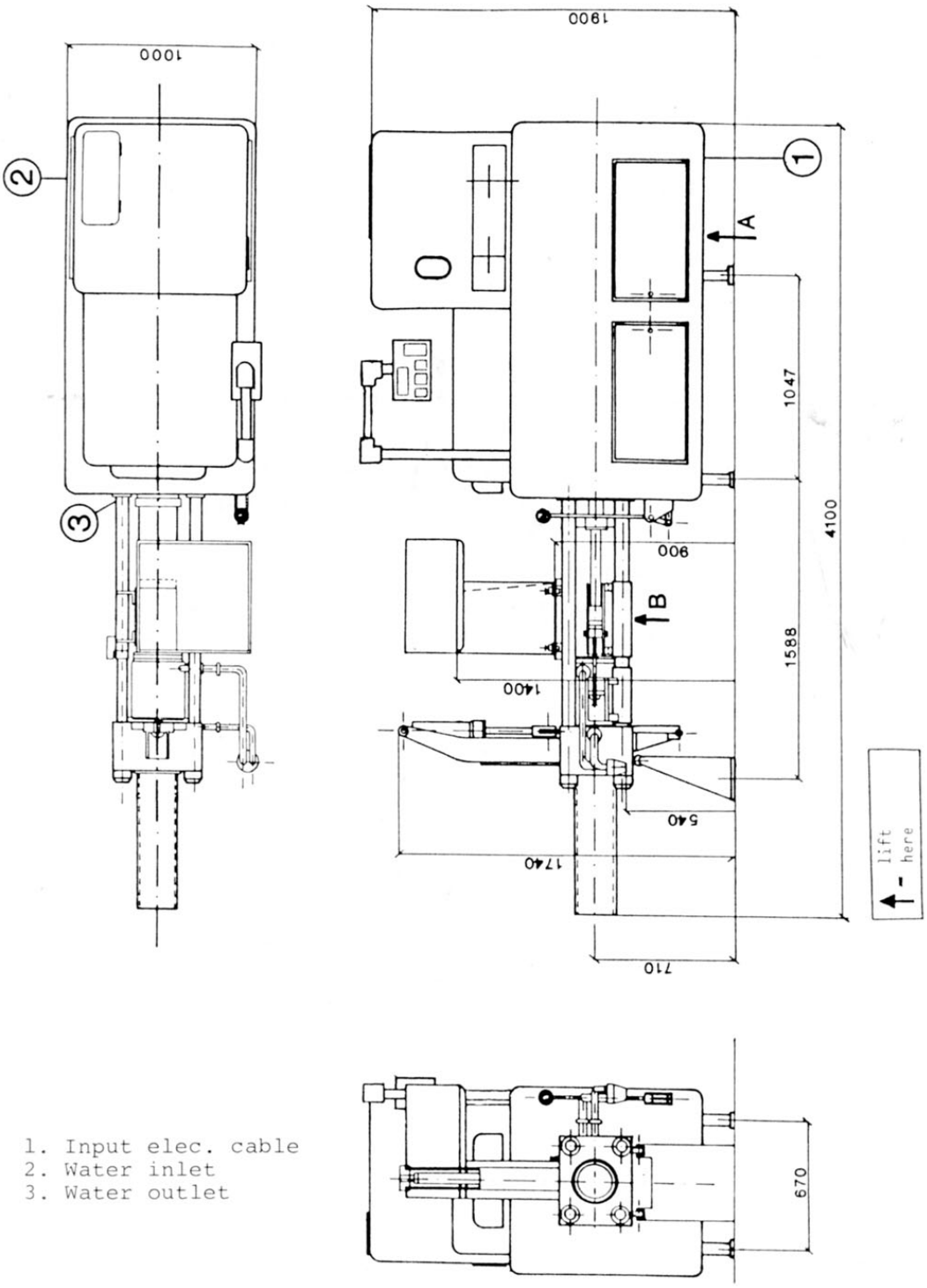
This operator's manual will provide the user with all necessary information for operation, cleaning and routine maintenance of the MRS bone press.

The manual has been drawn up for the standard machine and may not be used to support any claims with regard to specification of machines actually delivered.

Stork Protecon reserves the right to modify this book or the machine without previous notice.

For adjustments, maintenance operations or repairs not described in this manual, the customer is advised to call in a Stork Protecon service engineer.

GENERAL DIMENSIONS Fig. 1.1.



1. Input elec. cable
2. Water inlet
3. Water outlet

1.2. Machine dimensions

See fig. 1.1.

Length : 4100 mm.
Width : 1000 mm.
Height : 1900 mm.

1.3. Technical data MRS-30E

The technical data shown below are for the standard machine.
Deviations are possible in certain countries.

Main dimensions	: length : 4100 mm
	: width : 1000 mm
	: height : 1900 mm
Weight	: approx. 3000 kg.
Weight of transport frame	: approx. 200 kg.
Power	: 30 kW/40 HP
Voltage	: 220/380/415/500V
Motor current	: 101/60/55/44A
Start fuse Y △	: 125/63/63/50A
Start fuse direct	: 125/80/80/63A
Cable cross section 4 x	: 50/25/25/16 mm²
Using cables with vult or nwpk specifications	: 35/16/16/10 mm² Frequency : 50 Hz.
Fuse	: 36 Amp. (slow)
Cooling water connection	: ½" (or hose nipple)
Cooling water consumption	: 750 litres/hour with max. input temperature of 10° C.
Cooling water outlet	: 15 mm dia.
Pressure max.	: 280 bar.
Capacity of oil system	: 400 litres
Maximum oil temperature	: 50° C.
Room temperature	: + 12° C.
Temperature of raw material	: between +2° and +5° C

RECOMMENDED OIL:

Chevron EP hydraulic oil 46

For equivalents see section 4.2.3.

1.4. Installation

It is the customer's responsibility to ensure that a suitable factory floor area is prepared for the machine before de livery and that, on delivery, the machine is positioned in accordance with the instructions below.

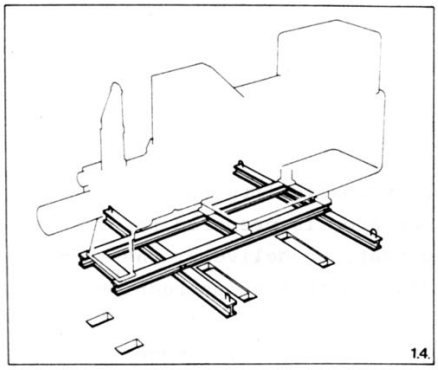
For machine dimensions see fig. 1.1. (page 1-2).

Water and electricity should be available and connected to the machine.

Actual commissioning (machine settings and first start-up) may only be undertaken by an engineer from Stork Protecon.
The customer should not attempt to start or commission the machine himself as this will invalidate the warranty.

1.4.1. Preparation of floor

Construct holes in the floor as indicated in fig. 1.2. Make sure that allowance is made for minimum clearance distances from walls or other machinery for operating, cleaning and maintenance purposes.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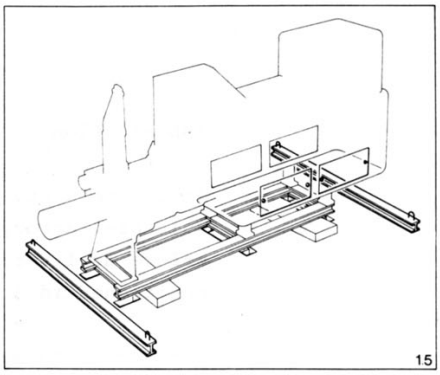
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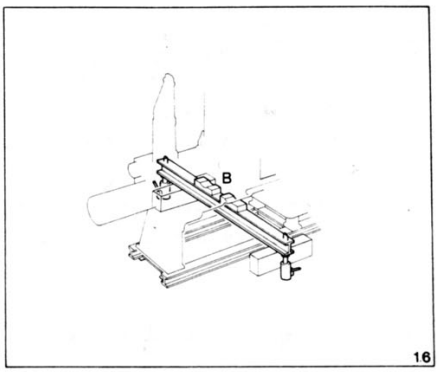
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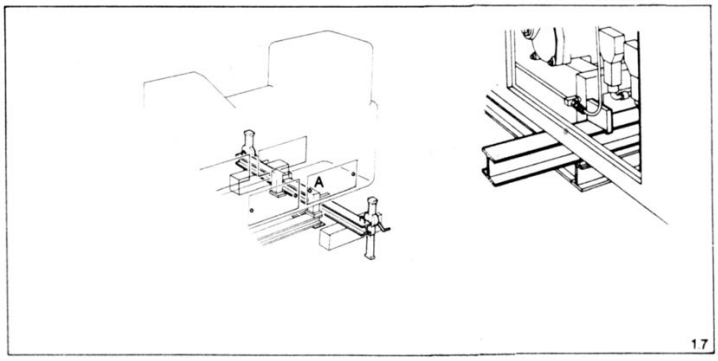

A
17

1.4.2. Positioning (fig. 1.3.).

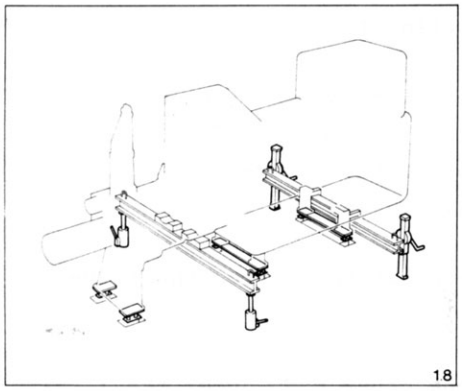
- Lift or ride the machine (including transport frame, see fig. 1.4.) into position above the holes (fig. 1.5 and 1.6).

- Remove the cross beams from the frame (fig. 1.6.).

- Position one cross beam under the lifting point (B) in fig. 1.7., placing wooden blocks between the cross beam and the filling chamber to guard against damage. (see also fig. 1.1.). Place the other cross beam under lifting point (A) (fig. 1.7.)

- Place jacks under the cross beams as illustrated in fig. 1.7.

- Unscrew the transport frame from the machine and raise the machine until the transport frame can be removed from beneath the machine.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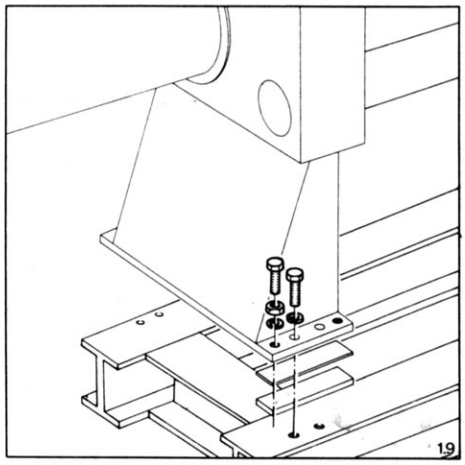
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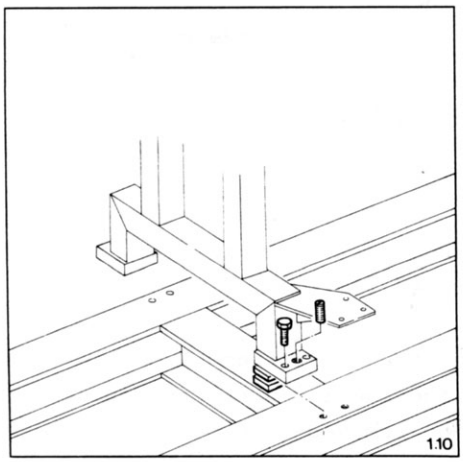

1.10

As the machine incorporates electronic controls, correct operation can only be achieved if there is a constant voltage electricity supply.
If your local supply is subject to voltage fluctuation, a suitable power supply unit should be fitted to provide a stabilised voltage.

Contact Stork Protecon for further information.

Connect electricity and cooling water to the machine but do not start the machine until the Stork Protecon installation engineer arrives.

If existing floor structures allow, it is also possible to leave the machine on the transport frame and concrete the whole of the frame into or on the floor.

1.5. Commissioning

Further installation of the machine should be undertaken by a Stork Protecon engineer.

The customer should not attempt to start or commission the machine himself as this will invalidate the warranty.

2 MACHINE FUNCTIONS

2 DESCRIPTION OF MACHINE FUNCTIONS.

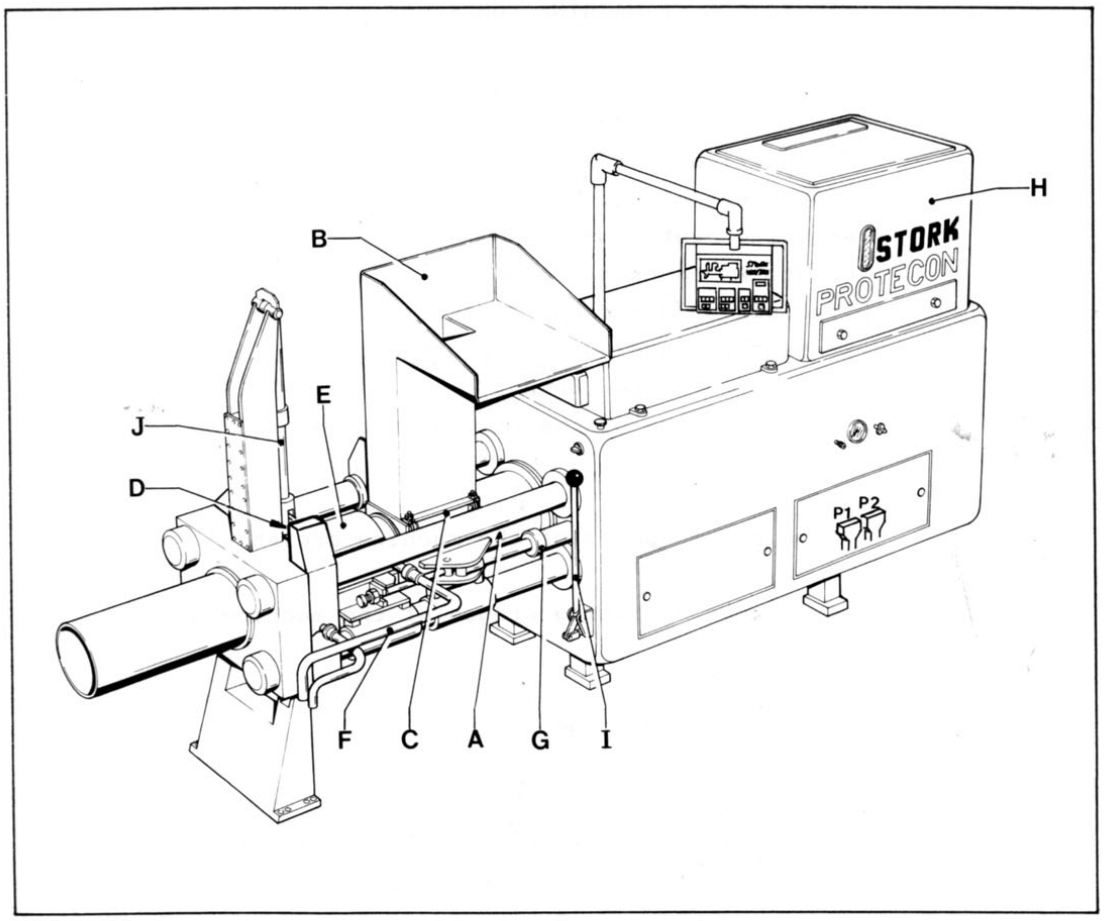


Fig. 2.1. Main components

A ram
B filler hopper
C filling chamber
D bone slide
E pressure chamber
F meat outlet pipes
G hydraulic cylinder
H hydraulic pump unit
I hand pump
J hydraulic cylinder of bone slide

2. DESCRIPTION OF MACHINE FUNCTIONS

After normal manual deboning of meat carcasses, meat still remains on the bone.
The function of the Stork Protecon MRS meat press is to provide efficient, high speed, automated separation of the remaining meat from the bones.
The Stork mechanical deboning system operates on the principle of differential extraction under pressure exerted by a hydraulically actuated ram, at an operating pressure of up to 280 bar.
The temperature of the raw material should be between + 2° C and + 5° C.

The main components of the machine are shown in fig. 2.1.

The various operating stages of the machine are detailed below.

2.1. Filling stage

At this stage the ram (A) is retracted so that bones from the filler hopper (B) fall into the filling chamber (C).
The bone slide (D) is in the lowered position.
The ram is then moved forward at differential pressure (i.e. expelled oil returns to the hydraulic cylinder on the pistonside) and pushes the bones into the pressure chamber (E).

N.B. For differential extraction the maximum pressure achievable is 150 bar.

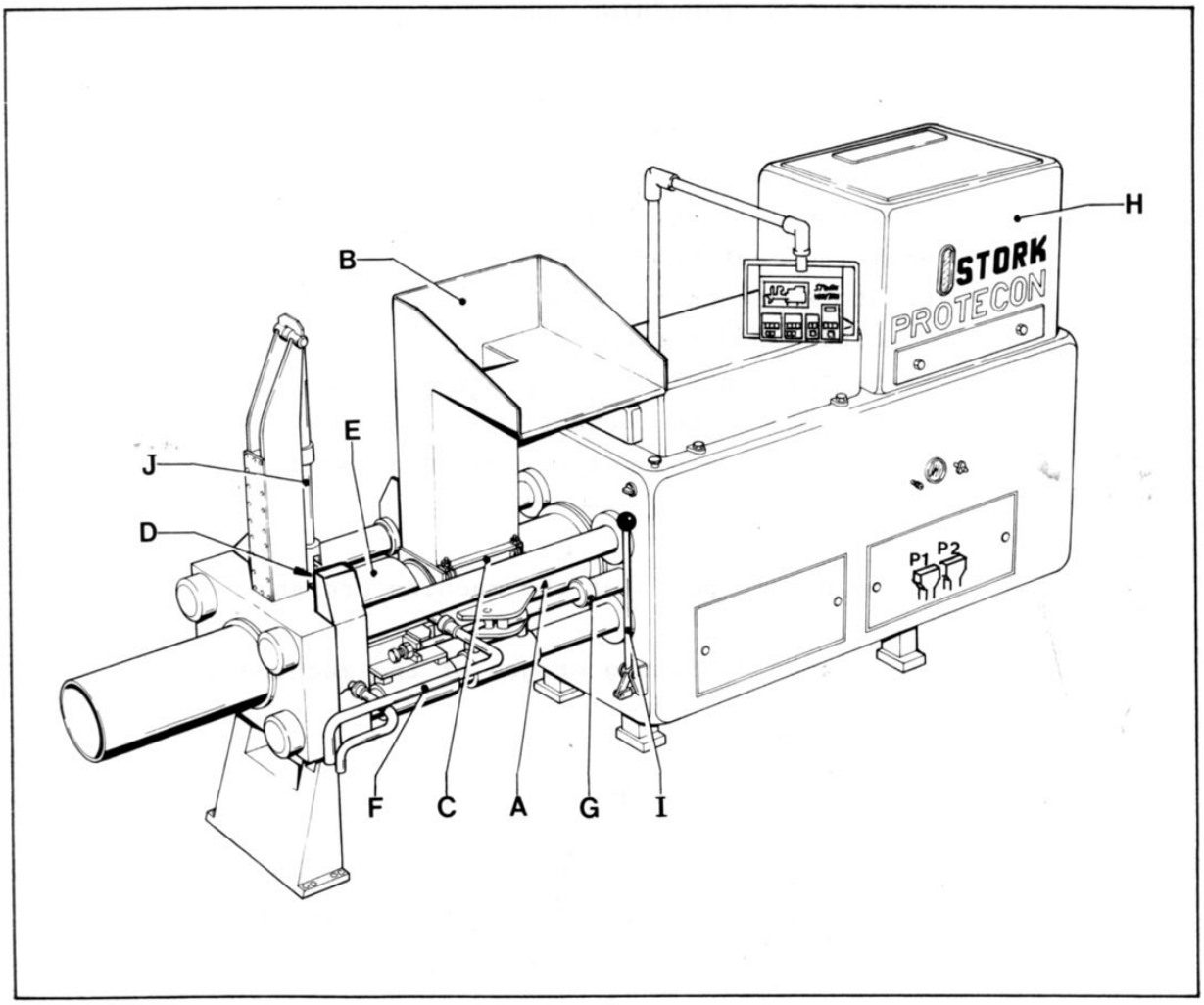


Fig. 2.1. Main components

A ram
B filler hopper
C filling chamber
D bone slide
E pressure chamber
F meat outlet pipes
G hydraulic cylinder
H hydraulic pump unit
I hand pump
J hydraulic cylinder of bone slide

2.3. Expansion stage

After the pre-set pressing time, the system pressure falls off to zero.
The rate at which the pressure falls off has been electronically adjusted in the factory (VT 2,000 + SV 1). This allows the pressure to fall off progressively via valve no. 19 (factory sealed).

The bone slide is then raised until a hole in the bone slide (with a diameter equal to that of the pressure chamber opening) is positioned opposite the pressure chamber opening thereby forming an exit route for the bone residue.

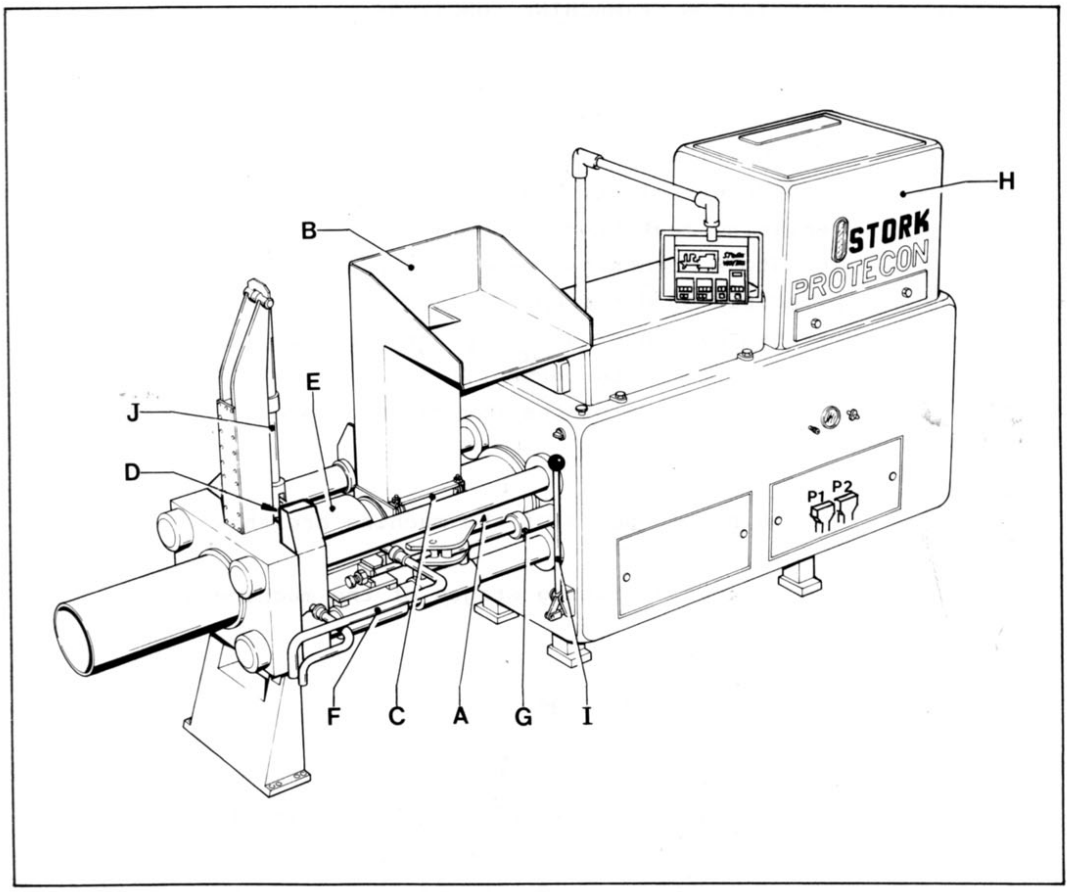


Fig. 2.1. Main components

A ram
B filler hopper
C filling chamber
D bone slide
E pressure chamber
F meat outlet pipes
G hydraulic cylinder
H hydraulic pump unit
I hand pump
J hydraulic cylinder of bone slide

2.4. Bone-ejection stage

With the bone slide in its upper position, a proximity switch is actuated, which allows the ram to move forward to the mechanical stop, ejecting the bone residue through the hole in the bone slide into either a chute.
At the end of its stroke the ram stops marginally short of the bone slide. This produces a sudden rise in pressure which triggers the second of the two pressure switches (P2) at approximately 120 bar, signalling the bone slide to descend, cutting off the bone residue which is partly still in the bone slide.

BREAKDOWN INDICATION

Breakdown 1 = Thermal cut-out of machine
Breakdown 2 = Thermal cut-out of cooling pump
Breakdown 3 = Thermostat + float
Breakdown 4 = Machine stop
Breakdown 5 = Filler hopper
Breakdown 6 = Pressostat P1
Breakdown 7 = Pressostat P2
Breakdown 8 = Lower proximity detector ini. 1
Breakdown 9 = Upper proximity detector ini. 2

OPERATING SEQUENCE AFTER BREAKDOWN

1. Remedy breakdown
2. Press machine-reset control
3. Press machine-on control
4. Press machine-reset control

TIME ADJUSTMENT

Set time as follows:

Pressing time	PB-4
Stroke adjustment	PB-3
- Time (diminuation)	PB-0
+ Time (prolongation)	PB-1

Input 0	- Time
Input 1	+ Time
Input 2	Waiting time (breaker)
Input 3	Stroke adjustment
Input 4	Pressing time
Input 5	Motor on
Input 6	Motor off
Input 7	Machine on
Input 8	Machine off
Input 9	Reset
Input 10	Manual control
Input 11	Manual control:slide up
Input 12	Manual control:slide down
Input 13	Manual control:ram back
Input 14	Manual control:ram out
Input 15	Hopper/safety device bone slide/removal of conveyor
Input 16	Pressostat P2
Input 17	Pressostat P1
Input 18	Thermostat/float
Input 19	ELM.-125 Voltage control valve 1
Input 20	Thermal cut-out of main-motor
Input 21	Thermal cut-out of circulation pump
Input 22	Proximity detector ini. 1
Input 23	Proximity detector ini. 2
Input 24	Breaker motor on
Input 25	Breaker motor off
Input 26	Breaker machine on
Input 27	Breaker machine off
Input 28	Machine cleaning position
Input 29	Thermal cut-out of breaker motor
Input 30	Thermal cut-out of feeding conveyor motor
Input 31	Switch foremost conveyor
Input 32	Return switch
Input 33	Cleaning position switch
Input 34	Cover safety device
Input 35	LDU up
Input 36	LDU stop
Input 37	LDU down
Input 38	Thermal cut-out of LDU
Input 39	Pressure chamber switch

N.B.: Input = E

Output 48	Electric control valve SV1 (KL1)
Output 49	Magnetic valve pilot SV2 (KL2)
Output 50	Magnetic valve pilot SV3 (KL3)
Output 51	Magnetic valve pilot SV4 (KL4)
Output 52	Magnetic valve pilot SV5 (KL5)
Output 53	Magnetic valve pilot SV6 (KL6)
Output 54	Magnetic valve pilot SV7 (KL7)
Output 55	Magnetic valve pilot SV8 (KL8)
Output 56	Magnetic valve pilot SV9 (KL9)

N.B.: Output = A

3OPERATING INSTRUCTIONS

3. OPERATING INSTRUCTIONS

3.1. Safety

- only fully trained personnel should be allowed to operate the machine.

- do not insert fingers of objects into any part of the machine during operation.

- the push-button-box for manual operation of the machine should only be used by technical staff.

Failure to observe these safety rules can lead to serious injury.

3.2. **Operator control panel** (see fold-out diagram at the end of this section, page 3-11).

For ease of identification, in fig. 3.1. we have added the identification numbers used in the electrical diagrams.

The panel comprises four sections:

At **top left**
there is an outline illustration of the machine, behind which a number of lights are mounted.
When illuminated, these lights indicate the following:

CL9 upper proximity detector ini. 2 on
CL10 lower proximity detector ini. 1 on
CL11 filler hopper closed
CL12 blinking hopper open
CL7 motor on
CL4 motor thermal cut-out tripped
CL13 warning for oil temperature
CL14 pressostat P1 actuated
CL15 pressostat P2 actuated
CL5 pressure chamber blocked
CL6 manual control connected

At **bottom left**
There are the controls for the bone press.
These consists of indicator lamps and push buttons with the following functions:

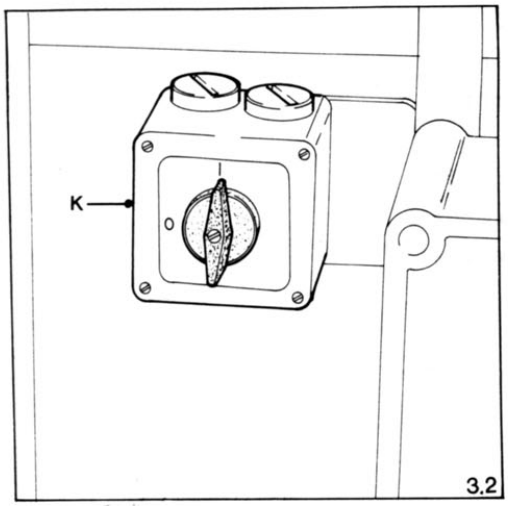
CL8 lamp, motor on
CL12 lamp, motor off
PB5 switch, motor on
PB6 switch, motor off

CL1 lamp, machine on
CL1 lamp, machine off
PB7 switch, machine on
PB8 switch, machine off
CL3 lamp, machine reset
PB9 switch, machine reset

At **bottom centre**
there are indicator lamps and push buttons for the bonebreaker AF10 and the lift LDU (not covered in this manual).

At **bottom right**
there are push-buttons and indicatorlamps for setting and adjusting the timing of the various machine functions as follows:

PB4 mode-selection key, pressing time
CL20 mode-selection indicator, pressing time
PB3 mode-selection key, return adjustment
PB2 mode-selection key, waiting time (breaker)
CL22 mode-selection indicator, waiting time (breaker)
CL21 mode-selection indicator, return adjustment
PB1 increase time
PB0 decrease time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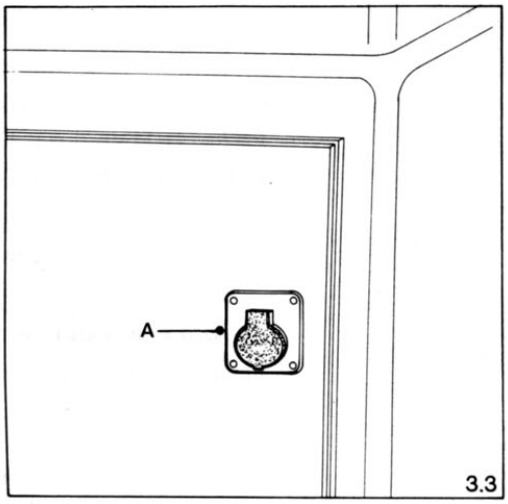
3.2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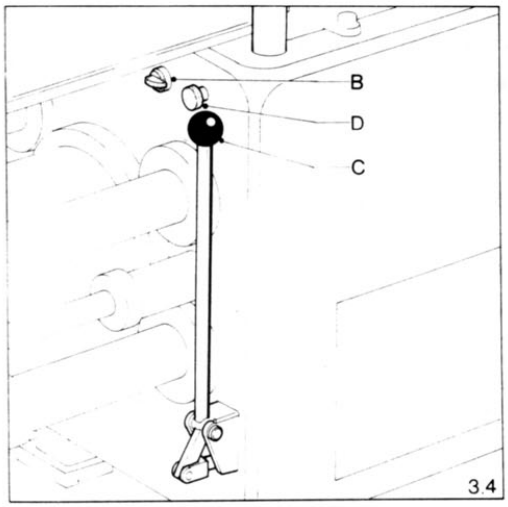
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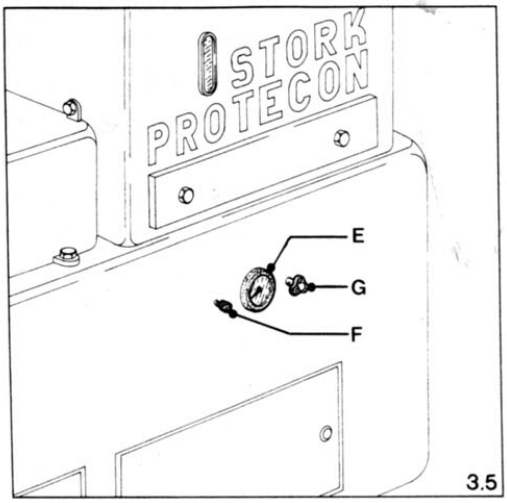
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PROTECON
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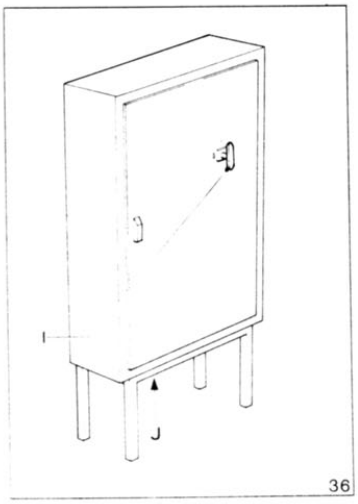
3.5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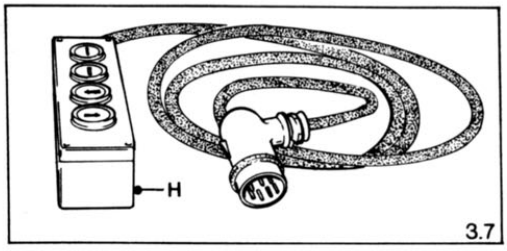

H
3.7

At **center right**
there is a display which shows the time in one-tenth of a second while the adjustments listed above are being made.
It also provides a numerical indication of fault situations (see section 2.8).

In addition to the main control panel, the following controls are also incorporated:

- work switch WS1 (K) (fig. 3.2.).

- socket for insertion of plug of push-button-box for manual control (A) (fig. 3.3.).

- rotary-switch WS2 (B) for selecting filling chamber forward or backward when using handpump (fig. 3.4.).

- hand-pump (C) for operating clenching cylinders during cleaning (fig. 3.4.).

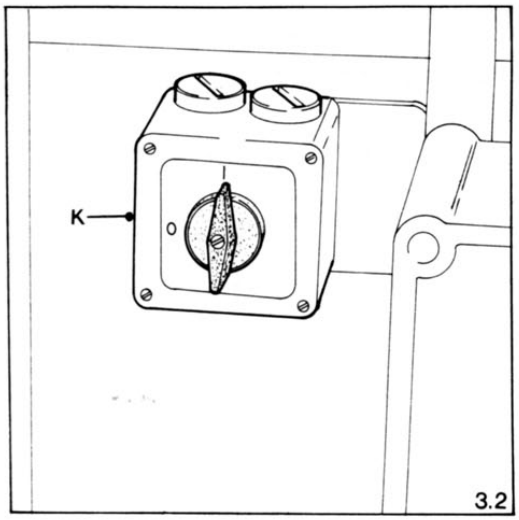
- emergency stop button ES1 (D) (fig. 3.4.).

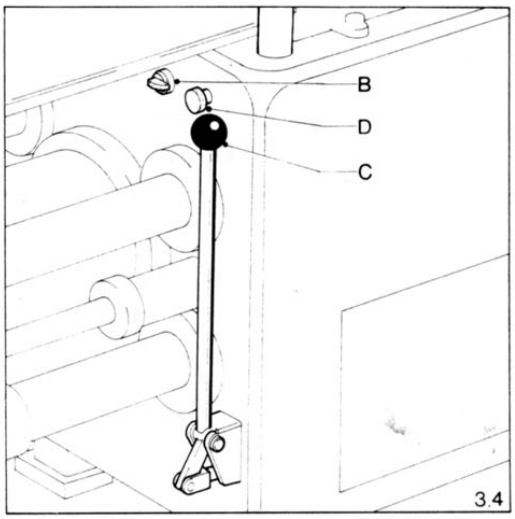
- pressure gauge (E), shut-off valve (F) and adjusting knob (G) for checking, and adjusting system pressure (fig. 3.5.).

- main switch (I) (fig. 3.6.).

- connector for lift, bone-breaker and conveyor (J) (fig. 3.6.).

- push-button-box (H) for manual operation (fig. 3.7.).


K
3.2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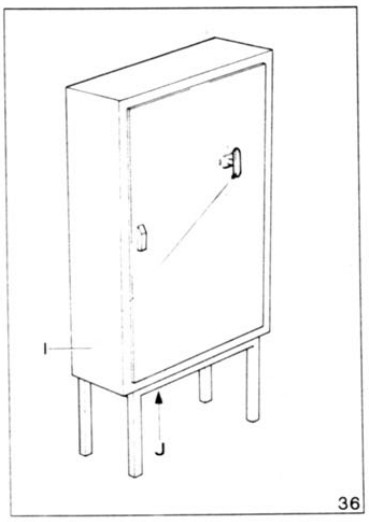
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J
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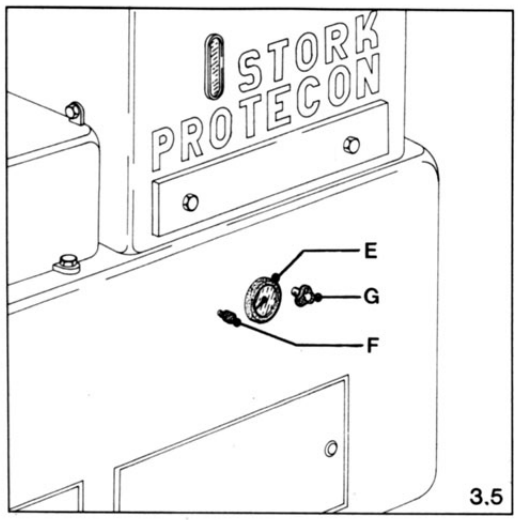
3.3. Start-up

The initial settings for machine operation will be made by the Stork Protecon engineer.

Once these adjustments have been made the start-up procedures (which should be carried out in the sequence shown) are as follows:

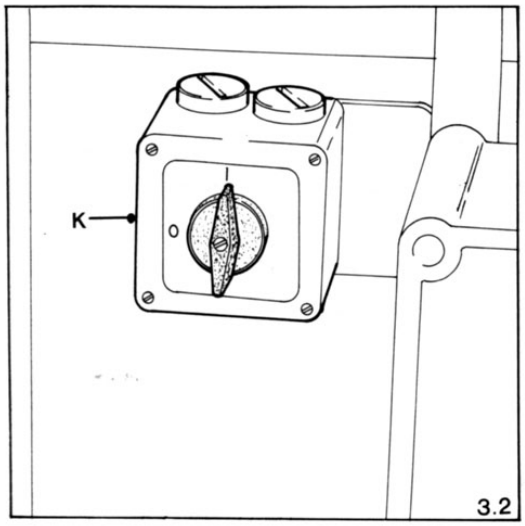
- check that work switch WS1 (K) is in vertical position.
- check that main switch (I) is on (in vertical position).
- start motor (push button PB5).
- check that the filler hopper is in the closed position (lamp CL11 should be on).
  When the hopper is open the lamp will blink.
- check that the bone slide is in the lowered position. (lamp CL10 on).
- check that the push-button-box is not connected (lamp CL6 should not be on).
- check that rotary switch WS2 B (fig. 3.4) is at horizontal (automatic) position.
- switch machine on (switch PB7).
- "reset" the machine (switch PB9).


STORK
PROTECON
E
G
F
3.5

The automatic cycle will now operate.

- check that bones are feeding correctly into the filler hopper.

- open stop cock (F) of pressure gauge (E) and check that during the pressing stage the system operating pressure is at 280 bar.
  Adjust if necessary, using knob (G).
  Re-close cock (F) (fig. 3.5.).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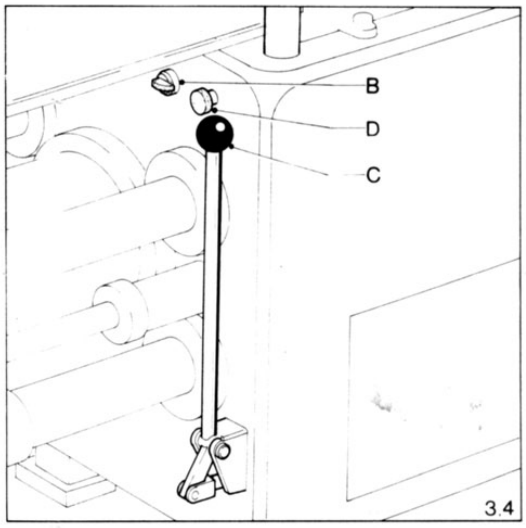
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3.4

3.4. Shut-down procedures

3.4.1. Emergency stop

For the location of the emergency stop button (ES1) see fig. 3.4. item D. Striking the emergency stop button will shut down the complete line instantly. This also applies to emergency stop buttons fitted to the bone-breaker and lift.

To restart after emergency stop, return to section 3.3 (manual operation).

3.4.2. Normal shut-down

- stop the machine (switch PB8). The machine will then complete its current cycle until the ram is in the fully retracted position.
- then switch off the motor (push button PB6).
- at the end of each working day or shift clean the machine thoroughly in accordance with the procedures outlined in section 4.1.
- switch off the work switch WS1 (K) (fig. 3.2.).

3.5. Running adjustments

3.5.1. Pressing time and stroke adjustment (=retraction time).

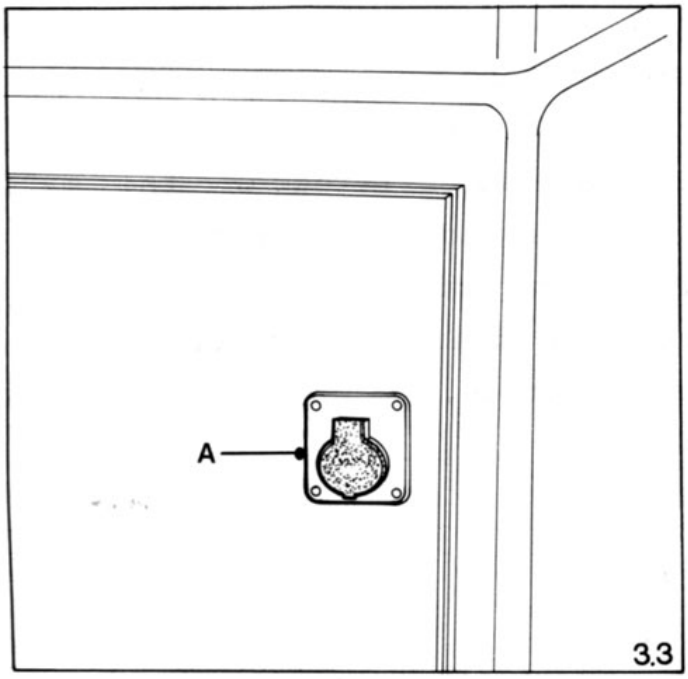
These can be set and adjusted using the section of the control panel at bottom right.
Lamp CL20 or CL21 will light up to show which selection "mode" you are in i.e. either PB4 (pressing) or PB3 (return stroke).
Then press + or - (PB1 or PB0) to increase or decrease the time of that function - in steps of one tenth of a second.
The setting can be read in the display above this section.

The pressing time depends on the kind of product.
The adjustment time of the return stroke starts at the moment at which the bone slide starts to travel downwards from its raised position.

If the machine is switched off, the above settings are retained.

3.5.2. Ram pause / partial fill

Increasing the adjustment time of the return stroke more than necessary will make the ram pause at its rear position.
Similarly partial filling of the machine can be achieved by shortening the adjustment time of the return stroke so that the ram does not reach its fully retracted position.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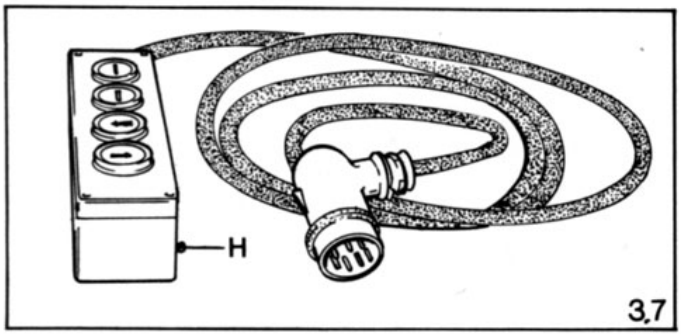

H
3.7

3.6. Manual operation

If the bone slide stops at any position other than its fully lowered position, it will be necessary to move the bone slide to the lower position by manual operation.

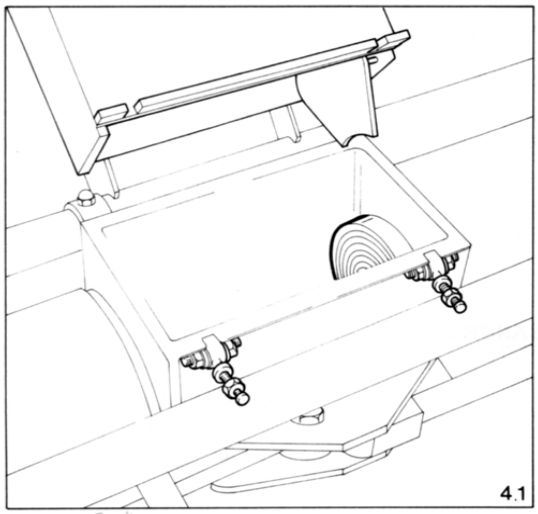
Open de filling hopper before using the manual operation push-button-box.

This push-button-box (H) (fig. 3.7) is connected to the machine via the socket illustrated in fig. 3.3. item A and provides four functions:

- bone slide raise
- bone slide lower
- ram forward
- ram retract.

N.B. For the mouvements of the bone slide the maximum pressure is 280 bar, whereas it is 150 bar (differentially) for the ram.

4. CLEANING AND ROUTINE MAINTENANCE.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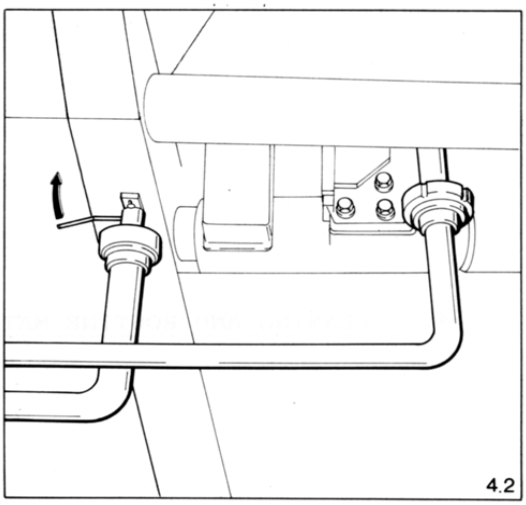
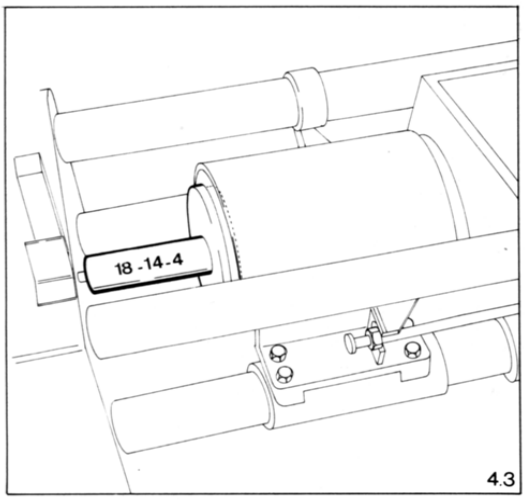
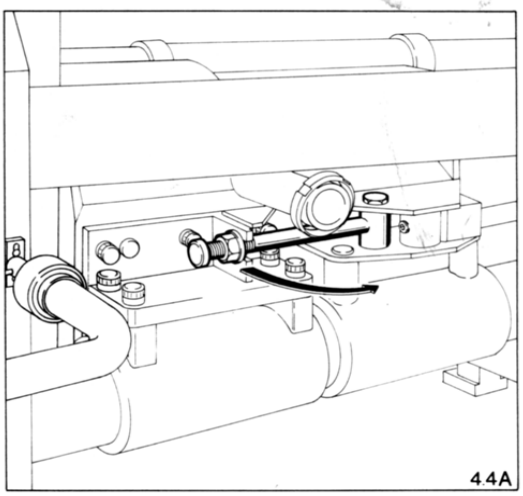
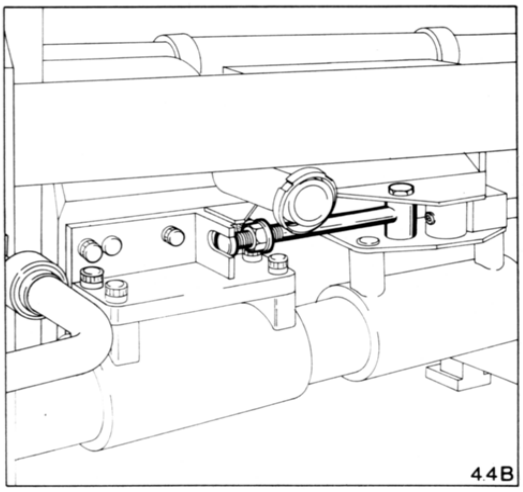

4.2



4.3


4.4A

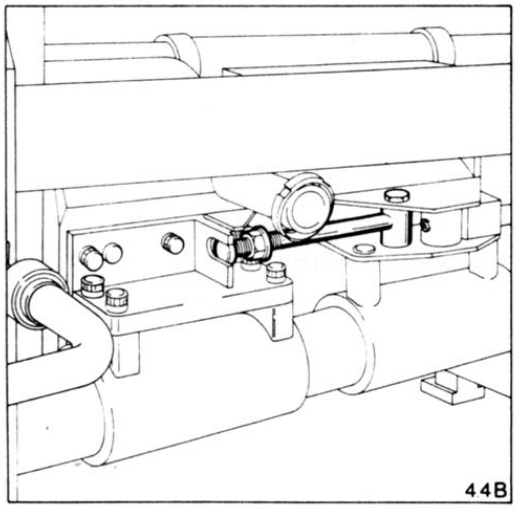

4.4B

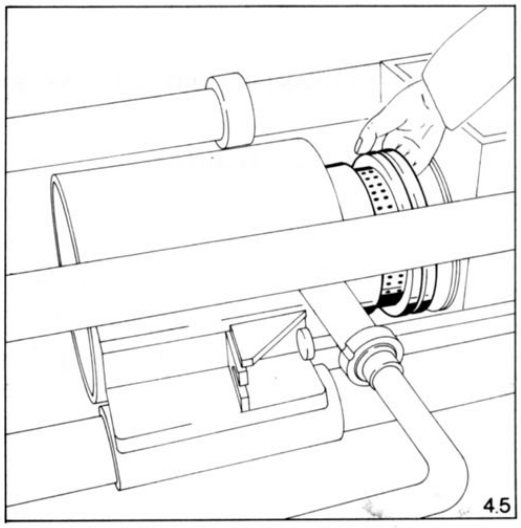
4. CLEANING AND ROUTINE MAINTENANCE

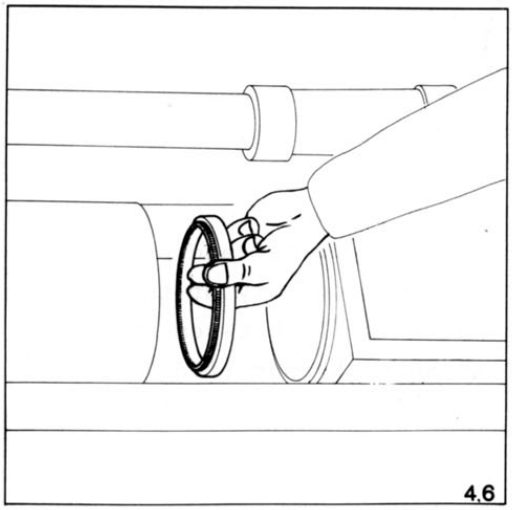
4.1. Cleaning

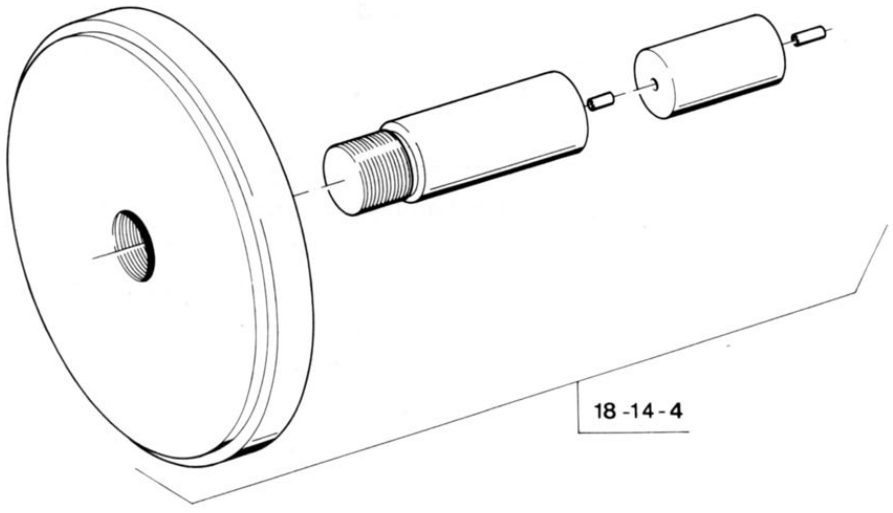
Cleaning should be undertaken daily after production has stopped. Mains and work switches should be on. It is important to follow the cleaning instructions in the sequence given below:

- open the filling hopper (fig. 4.1.).
- remove meat outlet pipes, spring and bushing (fig. 4.2.).
- turn rotary switch above hand pump lever (fig. 3.4. item B) to vertical position.
- operate the hand-pump lever (fig. 3.4., item C) to retract the filling chamber and pressure chamber until base section only of the special tool (no. 18-14-4) will fit between the bone slide and the pressure chamber (fig. 4.3.).
- using the spanner provided, release the pull rods connecting the filling chamber to the pressure chamber (fig. 4.4.A).
  Swing the rods out of the yokes on the pressure chamber.
- retract the filling chamber further by means of the hand pump until the pull rods can be swung back to butt against the yokes on the pressure chamber (fig. 4.4.B). At this point there is a gap between the pressure chamber and the filling chamber.
- remove the meat scraping ring


4.4B


4.5


4.6


18-14-4

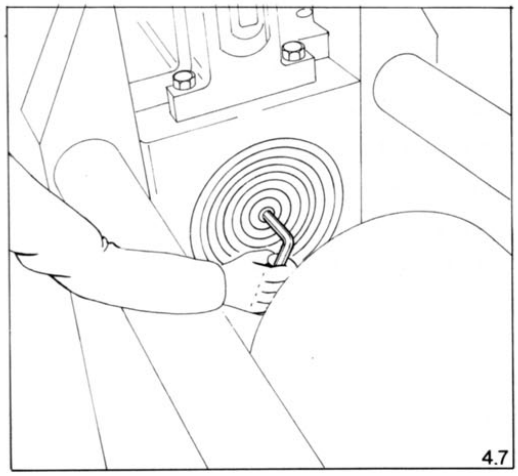
- turn the rotary knob above the hand-pump to the horizontal position and operate the hand pump to push the filling chamber and pressure chamber towards the bone slide.
  Continue to pump until the guide bushing emerges from the pressure chamber (fig. 4.5.).

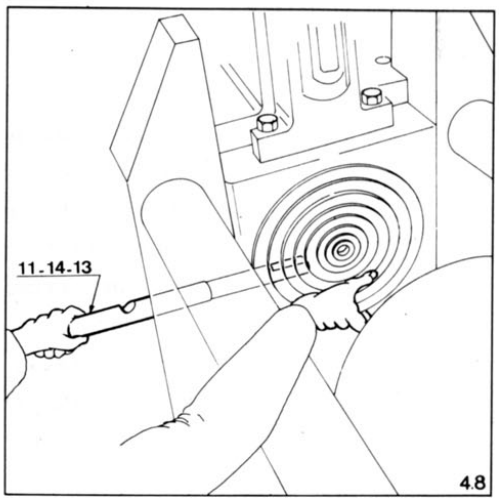
- Occasionally it may be necessary to butt the pull rods, not against the yokes (fig. 4.4.B) but against the front face of the pressure chamber in order to push the guide bushing completely out of the pressure chamber.Taking care not to damage the chamber face.

- As the opening between the chamber is not large enough to remove the guide bushing, the filling chamber must be pumped back again by turning the rotary knob to vertical and operating the hand pump. **Remove the guide bushing take care not to let it fall!**

- pump the filling chamber forwards again until the pull rods can be reconnected and then pump both chambers back until the extension can be fitted to special tool 18-14-4 (see fig. 4.23). Release the pull rods again and retract the filling chamber.

- pump the filling chamber forwards until the filling chamber pull rods butt against the yokes on the pressure chamber and then continue to pump until the filter rings are forced out of the pressure chamber into the space between pressure and filling chambers. As the filter rings emerge, lift them out one by one by hand, **taking care to prevent them from falling** (fig. 4.6.).


4.7



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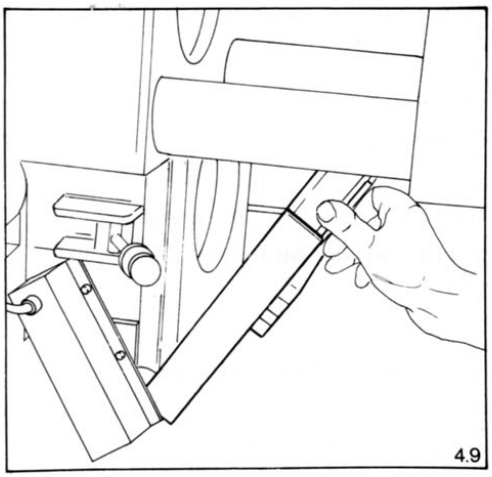
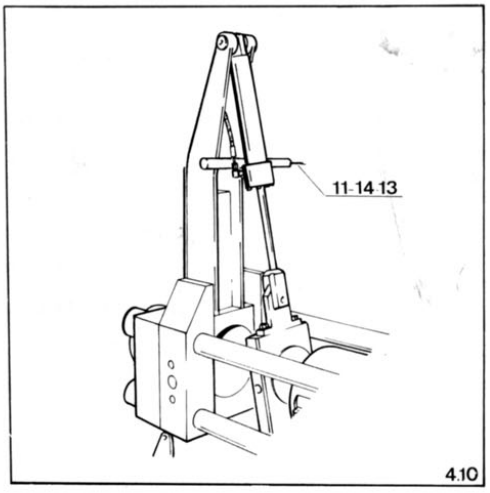
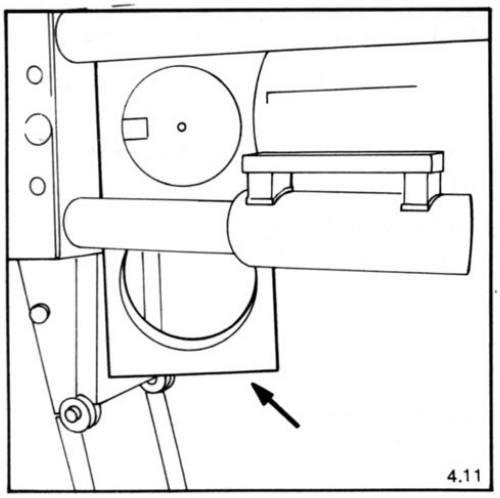
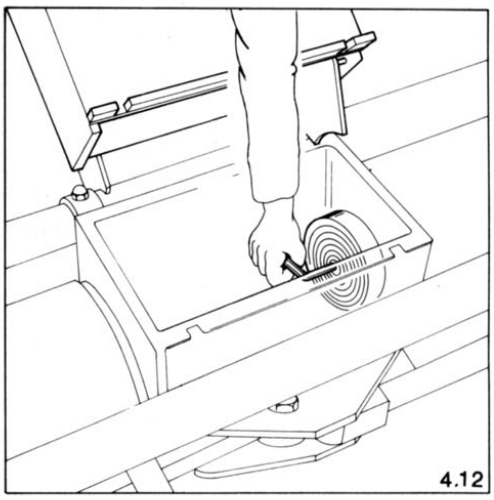

4.9



4.10


4.11


4.12

- Link the pressure chamber to the filling chamber by means of the pull rods and pump both units back until there is sufficient room for removing the filters from the bone slide and for placing the bone slide transversely between the rear block and the pressure chamber.

- remove the ring-securing bolt from the bone slide with an Allen key (fig. 4.7).

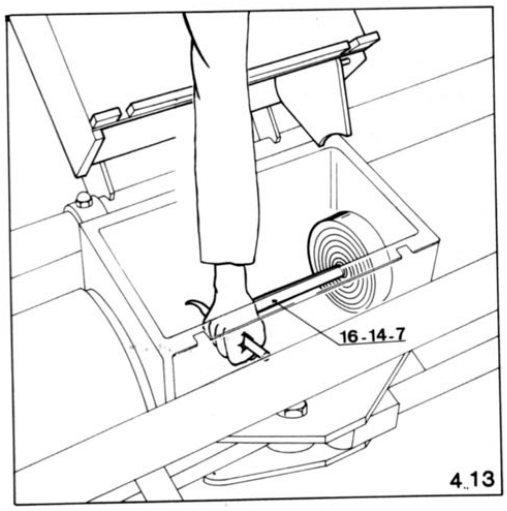
- take special tool 11-14-13 and insert the end with one flat side into the meat discharge hole (fig. 4.8.) support the filter rings with one hand and turn the special tool.
  This pushes the rings outwards.

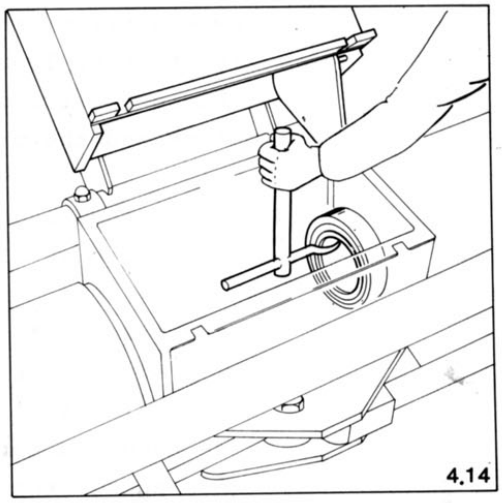
- loosen the bone-slide guard (fig. 4.9.).

- position the special removal tool 11-14-13 between the bone-slide piston rod and the support post and push the bone slide out of the guide (fig. 4.10).

- turn the bone slide through 90° (fig. 4.11). Remove bones from bone slide and bone discharge chute using the special hook 11-14-12.

- the filter guide disc on the ram is now located in the filling chamber. Remove the ring-securing bolt from the ram head with an Allen key (fig. 4.12).


16-14-7
4.13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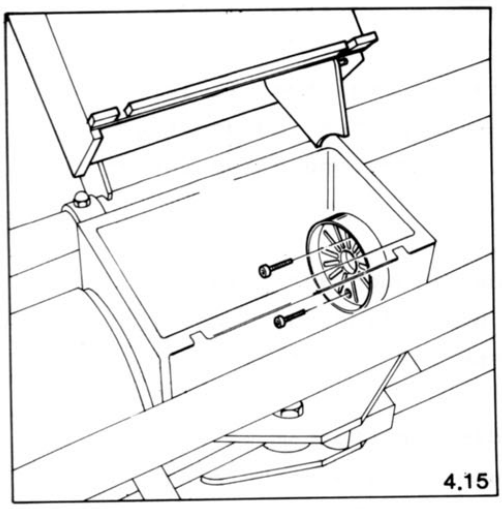
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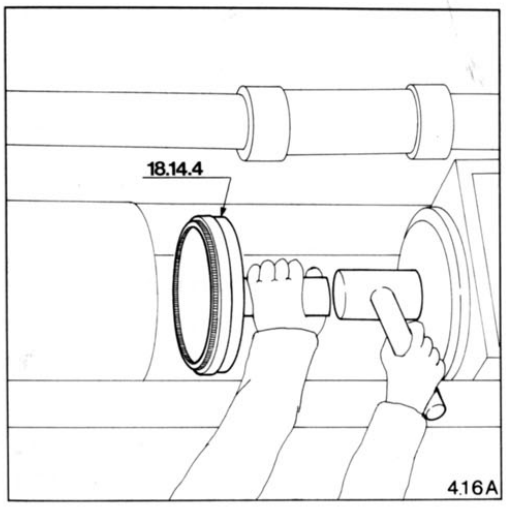

18.14.4
4.16A

Remove the centre filter ring from the ram head by hand. If it is too stiff, screw the special tool 16-14-7 into the filter ring and remove (fig. 4.13).

- If necessary loosen the other filter rings with the hook at the other end of this special tool and remove the filter rings (fig. 4.14).

- remove the two recessed-head bolts from the guide disc on the ram head and remove the disc from the filling chamber (fig. 4.15).

- clean pressure ring, all filters and the guide bushing and disc thoroughly using a stiff brush and soapy water. Rinse and re-assemble in reverse sequence. The pressure ring, filter rings and guide disc should be re-assembled in the pressure chamber by hand using special tool no. 18-14-4 and the plastic hammer. (fig.4.16a). Make sure that the parts are in the right order and positions indicated in fig. 4.16b.

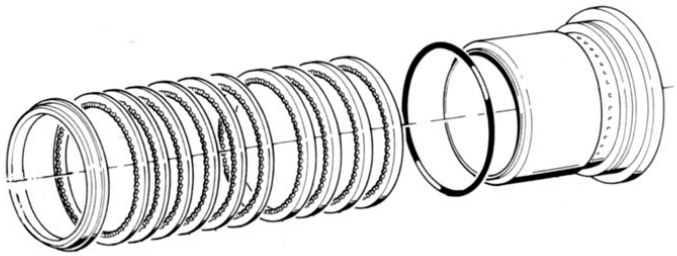
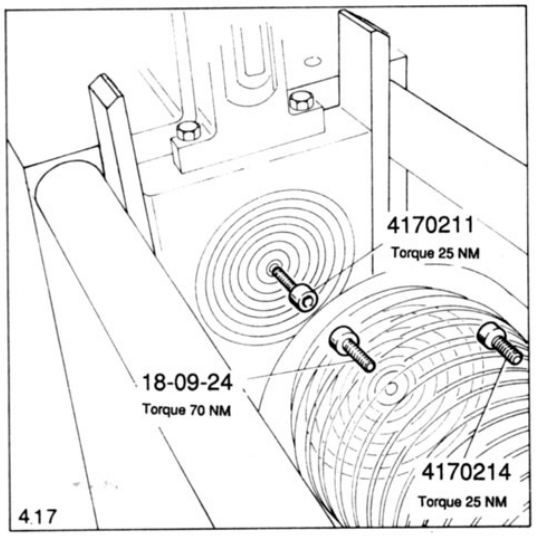


Fig. 4.16b.


4170211
Torque 25 NM
18-09-24
Torque 70 NM
4170214
Torque 25 NM
4.17

- rub the bone slide on both sides with food-grade grease so that it is lubricated for the first cycle (further lubrication is provided by the products themselves). Suitable food-grade greases are:
  Chevron poly FM grease 2 (can)
  and Contivema 823 FM (cartridge)

- check that the pull rods are correctly connected between pressure and filling chamber.

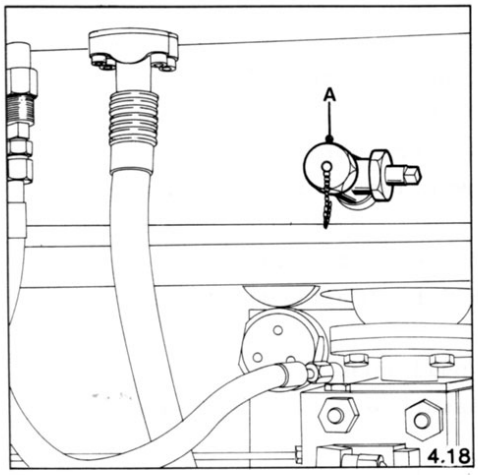
- with the rotary switch in the horizontal position, operate the hand pump until the pressure chamber touches the bone slide.

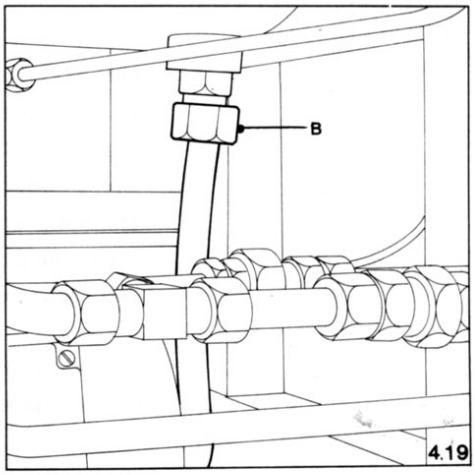
N.B. 1.

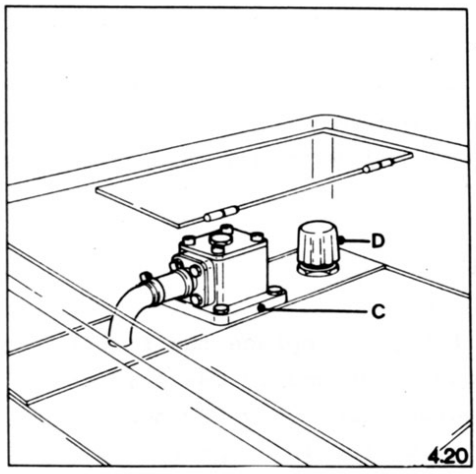
The filter rings in the ram head and on the bone slide should be secured very firmly with the Allen key by tapping the key with the plastic hammer supplied.

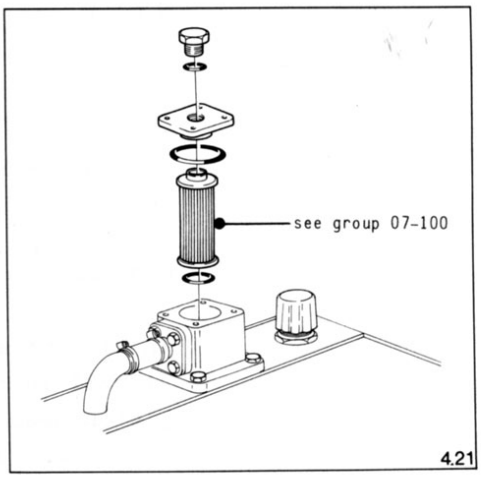
N.B. 2. (fig. 4.17).

In view of metal fatigue, replace the filter bolts 4170211 in the bone slide and 18-09-24 in the piston head and guide disc every 500 hours of operation. See fig. 09-100 in chapter 7.


A
4.18


B
4.19


D
C
4.20


see group 07-100
4.21

4.2. Hydraulic system

4.2.1. Hydraulic oil

The hydraulic oil must be replaced after the first 1000 hours service, and thereafter once a year (assuming an 8 hour working day), or 2000 hours.

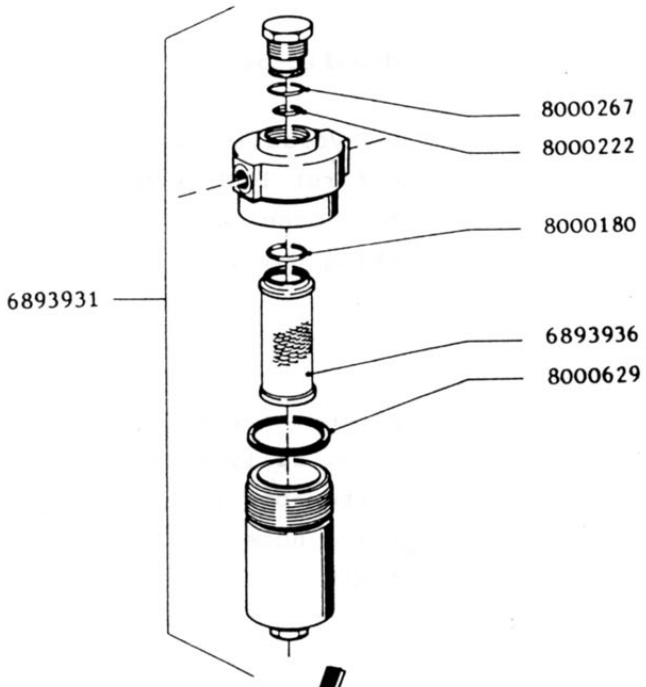
When draining the oil proceed as follows:

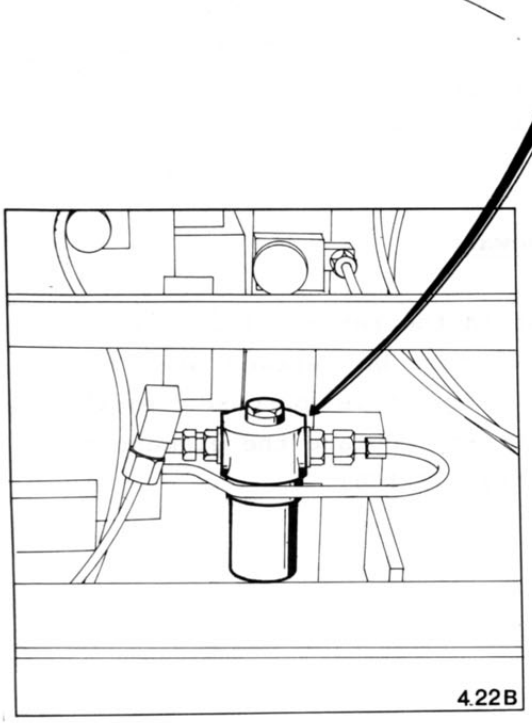
- place the ram in the starting position (i.e. fully retracted) using the pus-button-box if necessary.
- fix a hose to the outlet pipe near the drain cock (fig. 4.18 item A).
- open the drain cock and allow the spent oil to flow into a suitable container.
- now drain the cylinder on the rodside of the piston by unscrewing the coupling (fig. 4.19 item B).

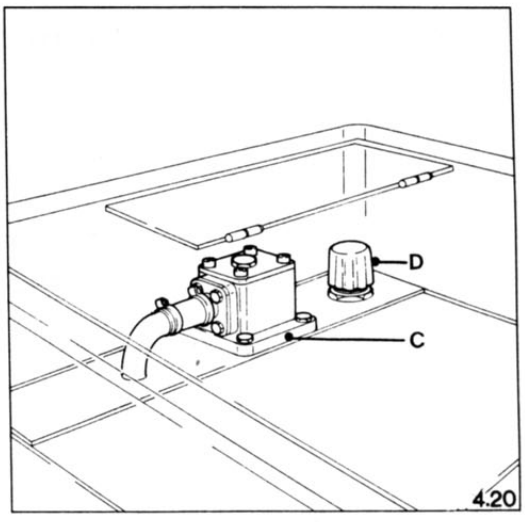
4.2.2. Filter renewal

The element in the return filter (fig. 4.20 item C) must be renewed when the oil is changed. For this purpose remove the filter cover and replace the element fig. 4.21 (see fig. 07-100).

Fig.4.22A


8000267
8000222
8000180
6893931
6893936
8000629


4.22B


D
C
4.20

Before refilling the tank with fresh oil the high-pressure filter (fig. 4.22A) must be cleaned.
For this purpose remove the filter cover and withdraw the cartridge.
Clean the cartridge in a degreasing agent and replace.
For high pressure filter location see fig. 4.22B).

4.2.3. Refilling oil tank

- tighten the coupling on the rodside of the piston.
- close the drain-cock.
- with the ram still in the starting position, fill the tank via the filler opening (fig. 4.20 item D) until the oil-level sight-glass indicates full. Then replace the cover.
- operate the bone press for one cycle.
- check the oil level again and add more oil until the oil-level sight-glass again indicates full. Care should be taken to ensure that no dirt falls into the fresh hydraulic oil during filling.

The hydraulic system is factory-filled with:
Chevron EP hydraulic oil 46.

Suitable equivalent oils from other suppliers are as follows:

BP : HLP-46

Castrol: Hy-spin AWS 46

Esso : Nuto H-46

Fina : Hydran-46

Mobil : DTE-25

Shell : Tellus oil 46

Texaco : Rando oil HD46

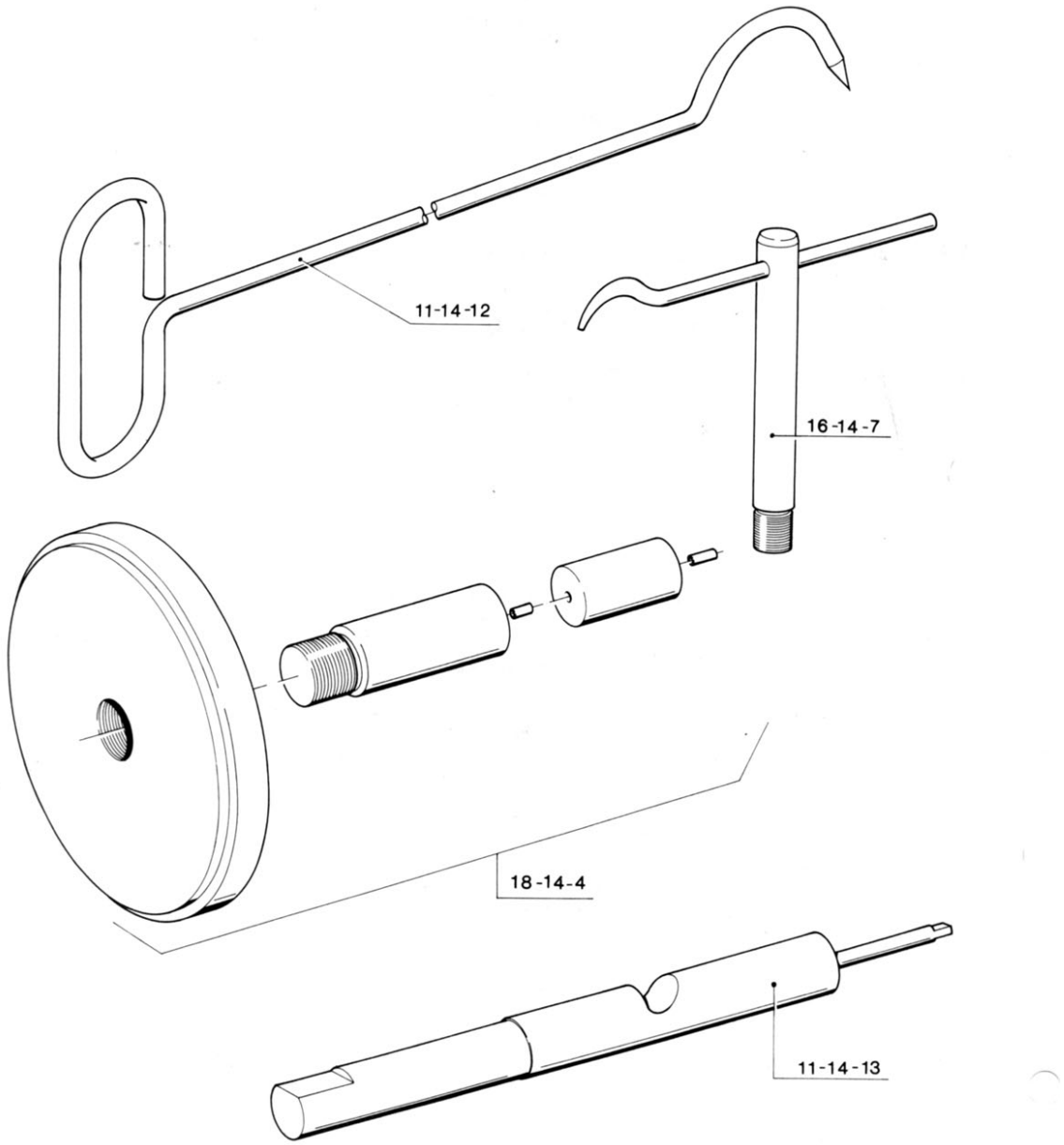
Gulf : Harmonie 46 AW (E)

Aral : Vitam GF 46

Caltex : Rando oil HD 46.

The system capacity is approximately 350 ltr.

Fig. 4.23



4.3. Special tools

See fig. 4.23.

5TROUBLE SHOOTING

5. TROUBLE SHOOTING

Faults reported via the display:

No.	Fault indicated	Remedy
1	machine thermal protection tripped	check cause and reset
2	cooling pump thermal protection tripped	check cause and reset
3	hydraulic oil low or temperature excessive	check cause and correct
4	filler hopper open	close hopper
5	push-button-box connected	remove push-button connector
6	pressure-switch 1 not actuated	check switch and replace if necess.
7	pressure-switch 2 not actuated	check switch and replace if necess.
8	bone slide not in lowered position	check for obstruction. Reset slide "manually".
9	bone slide not in raised position	check for obstruction. Reset slide "manually".

6ORDERING SPARE PARTS

ORDERING SPARE PARTS

Before ordering establish to which group the required pa belongs by referring to Table 00-000. This will then refer you t the appropriate parts list containing the part required.

Turn to the list referred to and you will find required pa listed with a part number (second column, headed "number"). To order, quote the part number, the description and the quantit of parts required. In addition also quote your machine seri number and machine type from the plate on the body of yo machine.

EXAMPLE

You require an eye bolt for the filling hopper.
Table 00-000 is consulted and you find that you are referred t fig. 13-100. Consult fig. 13-100 and you will find the eye bo has partnumber "16-13-08" (ref. 8).

Your order should therefore state:

Machine serial no.: .....
Description : eye bolt
Partnumber : 16-13-08
Quantity : one
Machine type : MRS-30