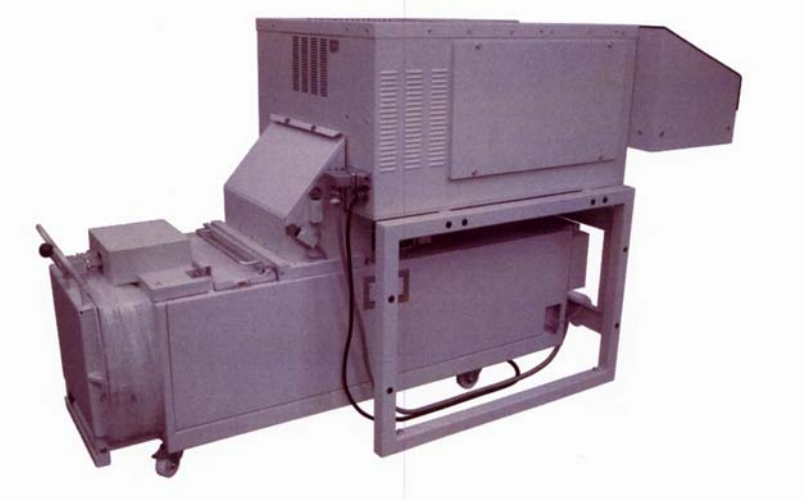
Security Engineered Machinery Co., Inc

OPERATIONAL & MAINTENANCE MANUAL

SEM Model 91501P-A



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Rev: 0

IMPORTANT SAFETY PRECAUTIONS

<< **The machine may not be operated by more than one person at any given time!**
The machine was designed for safe operation by "one person only".

<< **During the shredding process no other work may be performed on the machine (for example cleaning, etc.)!**

<< **The machine is not a toy, and is not suitable for use by children!**
The overall technical safety concept of this machine (dimensions, feed openings, emergency shutdown devices etc.) does not provide for any guarantee regarding hazard-free operation by children.

<< **Danger of injury! Keep all loose articles of clothing, ties, jewelery, long hair or other loose objects away from opening!**

<< **Danger of injury! Never insert fingers into opening!**

<< **In case of danger switch the machine off with the mains switch, or with the emergency switch, or unplug the machine!**

<< **Always unplug the machine from the mains power supply before opening the machine!**
Repairs may only be performed by trained personnel!

INSTALLATION

INSTALLATION SITE:
Before installation, make sure that three-phase electrical power is available at the installation site (see "TECHNICAL DATA" regarding required fusing at the mains outlet).
Note: Observe allowable surface loads for the respective floor. The machine has a total weight of up to **1326 kg**.

The machine may only be used for its intended purpose!
The machine's mains connection must be freely accessible!
The machine should only be operated in closed rooms within a temperature range of 10 to 40° C!

ASSEMBLY OF THE BASE (fig. 1 and 2):
1. Use the special key supplied to detach the Cross beam (23) from the two frames (21+22).
2. Detach the two frames (21+22) from the housing.
3. **Lift** the complete shredder, **turn** the two frames (21+22) through **180°** (pipe openings face downwards), and secure them to the housing using four bolts (M10x20) and spring washers for each frame.
4. Position the Cross beam (23) between the two frames below the table and secure it, using 2 bolts (M10x20) and spring washers for each one, to the frames.
5. **Set down** the complete unit and insert plastic plugs into the open bores of the base.

   The shredder must not be set down until all parts of the base have been bolted securely!
6. Compensate for unevenness in the floor with the levelling screw (20) (fig. 2).

ASSEMBLY OF THE TABLE (24) (Fig. 1):
1. Remove the hex nuts and spring washers from the 4 protruding bolts at the housing front panel.
2. Place the table on the conveyor belt (with the bolt ends protruding through the bores in the table), slide it home against the housing, and secure to the housing front panel using the previously removed nuts and spring washers.
3. To stabilize the table, the two hex bolts under the table must be screwed out upwards as far as possible and locked using the respective hex nuts.
4. Guide the power cord for the emergency stop bar (14) through the bush at the front of the left housing panel, and through the screwed joint on the bottom of the switch box. Connect the blue flexible cord to terminal 20 and the brown flexible cord to terminal 19.

   The work described in point „4", for the electrical connection of the emergency stop bar (14), must only be carried out by a qualified electrician!

ASSEMBLY OF THE GUARD PANELS (fig. 1):
Use the 6 flat-head screws (M6x12) to secure the two guard panels (25+26) at the left and right extremities of the table (24).

INSTALLATION OF THE HOPPER (44) (fig. 5):
1. Release the transport lock (binder) on the outlet flap (31) and fold the flap down.
2. Take the hopper (44) out of the press compartment, as shown, place over the filler opening and fix to the press from inside with the aid of the 7 hexagon socket screws M6x12.
3. Remove both switch covers (48). Fix the limit switch S8 (49) with 2 screws M4x40 and nuts M4 below the switch cam of the switch flap (47). Undo the threaded pin (51) (Allen key 2.5 mm), turn the cam into position and tighten the threaded pin again.
   Attention: the switch cam must be turned in such a way that with the switch flap hanging straight down, the switch pin of the switch is situated in the recess of the switch cam.
4. Fix the limit switch S9 (50) with 2 screws M4x40 and nuts M4 under the switch cam of the cover flap (27). Undo the threaded pin (51) (Allen key 2.5mm), turn the cam into position and tighten the threaded pin again.
   Attention: the switch cam must be turned so that when the cover flap is closed, the switch pin of the switch is situated in the recess of the switch cam.
5. Position the two switch covers (48) over the limit switches and fix each to the hopper with two screws M5x16 and nuts M5.

ASSEMBLY OF THE COMBINATION (fig. 2 and 3):
1. Push the baler under the shredder. Screw the shredder and the baler together with the aid of the two fixing brackets (42) provided with the shredder (fig. 2).
2. Secure the end of the chain of the baler safety switch activator (19) to the cross beam (23) of the shredder base, using the appropriate bores (fig. 3).
3. Insert the actuator (special key) of the safety switch activator (19) in the limit switch at the baler (fig. 3).
4. Insert and secure the connecting plug of the baler in the electrical outlet (18) at the housing rear panel (fig. 2).

INSTALLING THE STRAP ROLLS (fig. 4):
Remove the strap rolls (41), the strap roll holder (40) and accessories (strap lifter, pull cable and screws) from the baling chamber and insert the strap roll holder into the corresponding opening in the baler as shown. Place the left and right-hand strap rolls onto the strap roll holder with the strap ends pointing down.
The remainder of the procedure is described on page 7, "BALER OPERATION", under the heading "Replacing the Strap Rolls" and "Inserting the Straps for a New Bale".

INSTALLATION

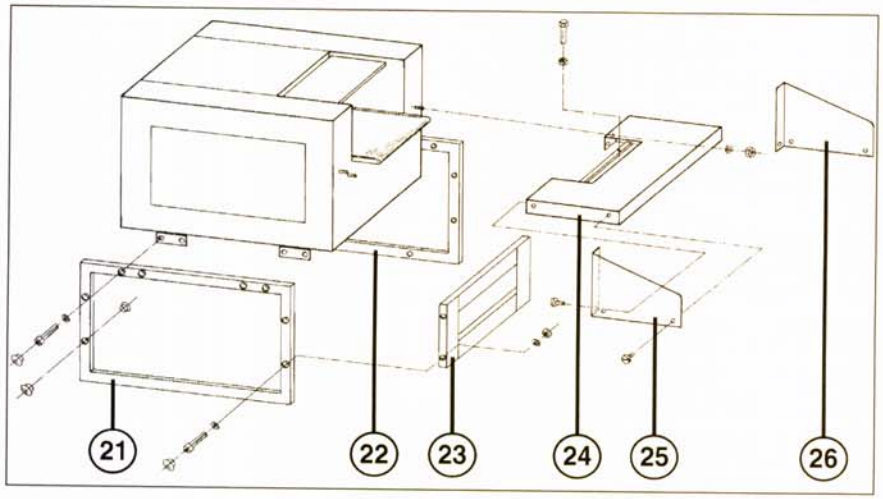


fig. 1

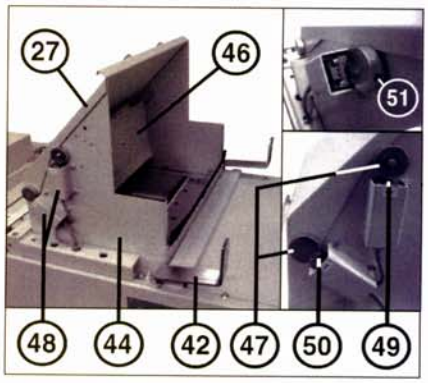


fig. 5

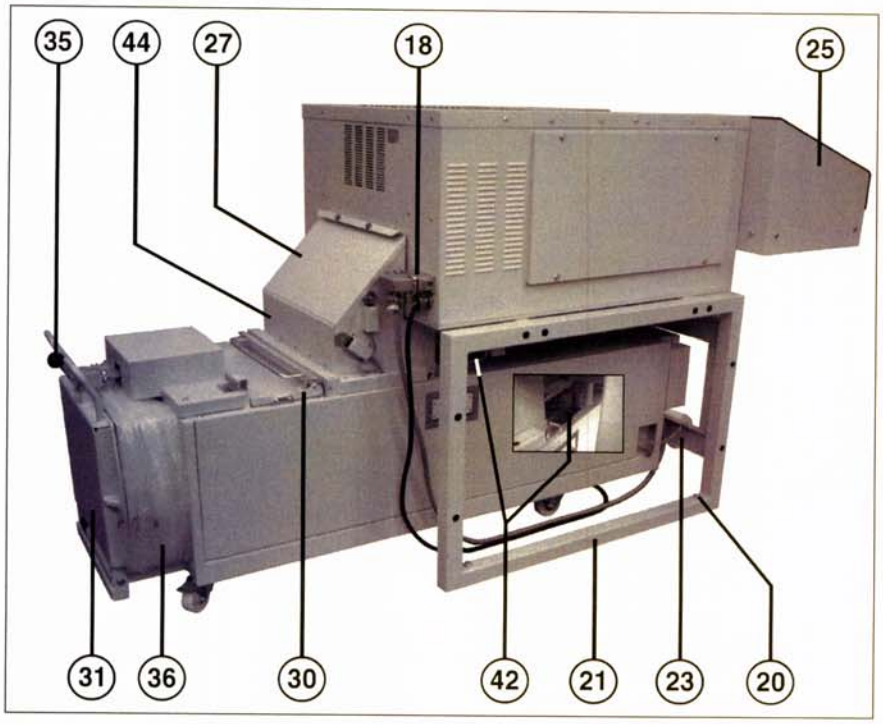


fig. 2

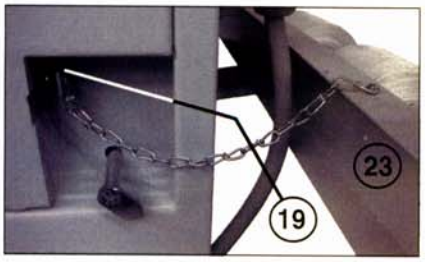


fig. 3

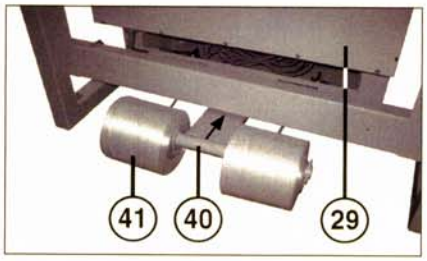


fig. 4

SUMMARY OF NUMBERED PARTS:

18 = **electrical outlet** (fig. 2)
19 = **safety switch activator** (fig. 3)
20 = **leveling screw** (fig. 2)
21 = **frame left** (fig. 1 nd 2)
22 = **frame right** (fig. 1)
23 = **cross beam** (fig.1 nd 2)
24 = **table** (fig. 1)
25 = **guard panel left** (fig. 1 nd 2)
26 = **guard panel right** (fig. 1)
27 = **cover flap** (fig. 2 and 5)
28 = **strap brake** (fig. 16 and 17)
29 = **switch cabinet** (fig. 4)
30 = **inlet flap** (fig. 2)
31 = **discharge flap** (fig. 2)
32 = **baling ram** (fig. 18)
33 = **strap lifter** (fig. 9 and 18)
34 = **strap end** (fig. 18)
35 = **locking lever** (fig. 2)
36 = **sack frame** (fig. 2 and 14)
37 = **strap hook** (fig. 14)
38 = **strap clamp** (fig. 14)
39 = **strap guide** (fig. 17)
40 = **strap roll holder** (fig. 4 and 17)
41 = **strap roll** (fig. 4 and 17)
42 = **angle bracket** (fig. 2)
43 = **oil dipstick** (fig. 19)
44 = **hopper** (fig. 5)
45 = **pull cable** (fig. 17)
46 = **switch flap** (fig. 5)
47 = **switch cam** (fig. 5)
48 = **switch cover** (fig. 5)
49 = **limit switch S8** (fig. 5)
50 = **limit switch S9** (fig. 5)
51 = **threaded pin** (fig. 5)

INITIAL START-UP

APPLICATIONS:
The **15.85 / 16.86** shredder/baler combination is a large-scale shredding system for the shredding and baling of large volumes of paper.
The system shreds cardboard and crumpled paper just as easily as it does flat paper.

The shredder may only be used for shredding paper and cardboard!
The shredding of other data media may result in bodily injury (e.g. due to splintering of hard materials etc.), or damage to the machine (e.g. destruction of the cutting system etc.).

Make sure that no loops occur when feeding strip material. Danger of injury!

MAINS CONNECTION:
a) Loop resistance within the mains power supply system at the installation site may not exceed 0.5 ohm.
b) The conductor cross-section of the power cable at the installation site must be laid out such that voltage does not drop more than 15% if the machine jams (the machine's blocking current is equal to 6 times nominal current).

CHECKING THE DIRECTION OF ROTATION:
1. Release the emergency stop bar (14) (fig. 7) at the shredder table (pull forward) and turn the mains switch on (1) (switch position "1").
2. Unlock the key switch (2) (fig. 6) and operate the „cutter forwards" pushbutton (3).
3. Check the direction of rotation of the shredder and reverse the poles at the mains plug if necessary.

The phases at the mains plug may only be reversed by properly trained personnel.

After all installation and connection work has been properly completed, the machine may be placed into service.

SHREDDER OPERATION

USING THE SHREDDER (Fig. 6):
Proceed as follows to switch the shredder on:
1. Insert the enclosed key into the key switch (2) and turn clockwise.
2. Operate the mains switch (1) to position „1". After a delay of 2 seconds, the „ready" (7) and „ram at rear" (11) indicator lights come on.
3. Operate the „cutter forwards" pushbutton (3). The cutter and conveyor belt start.
   The light of the „cutter forwards" display (6) comes on.
   Note: If, when the shredder is started, the baling ram (32) of the baler is not in its basic position (rearmost position), a compression stroke with following return stroke is carried out automatically before the cutter and conveyor belt start.

Attention: The system only functions if:
a) The emergency stop bar (14) is released (pull red bar at table forward)
b) The key switch (2) has been unlocked (turn key clockwise)
c) The mains switch (1) has been switched on (switch position "1")
e) The safety switch activator (19) (fig. 3) has been inserted into the safety switch at the baler
f) The inlet flap (30), the discharge flap (31) and the cover flap (27) are closed.

FEEDING MATERIAL TO THE SHREDDER:

The operator may not stand at a level higher than that of the machine when feeding material to the shredder!
Elevated surfaces in front of the machine (e.g. with pallets, crates etc.) are prohibited as regards required safety distance from the cutting system.

FEEDING STACKED PAPER:
Stacks of up to **550 sheets** of flat paper (depending upon type of paper) can be placed onto the running conveyor belt for transport to the cutting system, as well as crumpled paper and cardboard.
In order to prevent sudden overloading of the cutting system it is advisable to feed flat paper diagonally, i.e. corner first.

Never feed more than the maximum indicated quantity of paper to the shredder (see "TECHNICAL DATA")!
If too much paper nevertheless enters the cutting system at once, refer to "AUTOMATIC SWITCHING FOR OVERLOADED SHREDDER".

FEEDING WITH COMPLETE BINDERS!
Shredders equipped with a cutting system with 7.8 x 55 mm or 11.8 x 55 mm cutting width, can also be fed with complete binders (incl. metal parts). In this case the binder should be opened and the contents spread out equally.
Important note: The removing of the metal parts beforehand makes the recycling of the shredded material possible and ensures a longer life of the cutting system.

AUTOMATIC SWITCHING FOR OVERLOADED SHREDDER:
If the shredder should be „overfed", the unit rectifies the problem automatically, as follows:
1. The cutter jams.
2. Cutter and conveyor belt move backwards a short distance. The material being shredded is released.
3. The cutter and conveyor belt switch to forward operation. The material to be shredded is once again fed to the cutter.

This procedure is repeated automatically until all the material has been fed through and shredded.

JAM OUTLET:
If the space in the hopper (44) (fig. 2) is completely filled with cutting material due to a jam in the filler hole of the baler, the machine switches off when the cover flap (27) is raised (fig. 2). The display (9) "Jam outlet" flashes.
If this is the case, switch the machine off at the main switch (1), lift up the cover flap (27) and remove the material from the machine by hand. Then you can switch the machine on again and continue shredding.
Note: the machine can only be started when the cover flap (27) is closed.

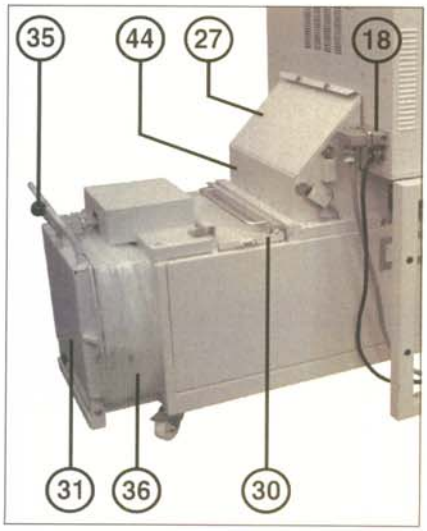


fig. 2

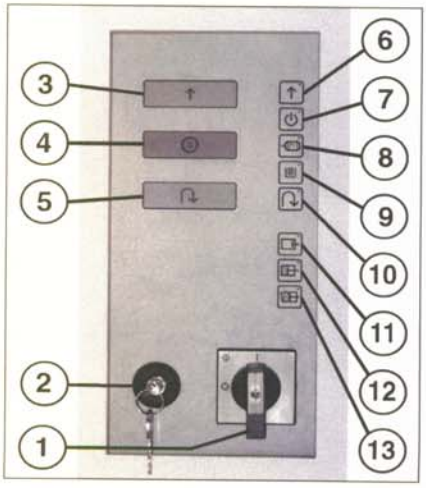


fig. 6

OPERATING ELEMENTS (Fig. 6, 7 und 8):

1 = **Mains switch (emergency stop) (fig. 6)**
This switch is used to switch the complete unit on and off (position „1" or „0").
The „ready" (7), and „ram at rear" (11) indicator lights **come on** to indicate correct function, or **flash** to indicate incorrect function.
Note: The lights come on after a delay of approx. 2 seconds (initializing routine for the microprocessor).

2 = **Key switch (fig. 6)**
This switch can be used to lock the unit (turn key to left) and so prevent unauthorized use.
Note: If the unit is locked when the mains switch (1) is switched on, the „ready" indicator light (7) **flashes** to indicate that the unit is **not ready for operation"**.

3 = **„Cutter forwards" pushbutton (fig. 6)**
When this button is operated, the cutter and conveyor belt start and the machine can be fed.
Note: If, when the shredder is started, the baling ram (32) of the baler is not in its basic position (rearmost position), a compression stroke with following return stroke is carried out automatically before the cutter and conveyor belt start.

4 = **„Stop cutter" pushbutton (fig. 6)**
When this button is operated, the shredder is switched off and the cutter and conveyor belt stop.

5 = **„Cutter reverse" pushbutton (fig. 6)**
When this button is operated, the cutter and conveyor belt operate in reverse.
Note: If the button is operated during forward operation, reverse operation will occur for at least 3 seconds, before forward operation resumes automatically.

6 = **„Cutter forwards" indicator light (fig. 6)**
a) Comes on when cutter and conveyor belt operate forwards.
b) Flashes when cutter and conveyor belt are switched from forwards operation to reverse operation, or if the baling ram was not in the basic position (rearmost position) when the „cutter forwards" pushbutton was operated.

7 = **„Ready" indicator light (fig. 6)**
Comes on (ready for operation) when
a) the mains switch (1) is switched on,
b) the key switch (2) is released,
c) the emergency stop bar (14) is pulled out, and
d) the actuator of the safety switch activator (19) is inserted in the limit switch at the baler (fig. 3).
Flashes (not ready for operation) when the mains switch is switched on if
a) the key switch (2) is locked, or
b) the emergency stop bar (14) is pressed, or
c) the actuator of the safety switch activator (19) is **not** inserted in the limit switch at the baler

8 = **„Malfunction - motor " indicator light (fig. 6)**
Flashes if the motor of the shredder or baler is overloaded and the installed thermostat has broken the circuit for full operation.
For further details see the „motor defect" section.

9 = **„Outlet jam" indicator light (fig. 6)**
Flashes if the space above the rear conveyor belt is completely filled with paper due to a jam of the inlet opening, and the unit has been switched off due to the raised cover flap (27).
For further details see the „outlet jam" section.

10 = **„Cutter reverse" indicator light (fig. 6)**
Comes on when the cutter and conveyor belt operate in reverse.

11 = **„Ram at rear" indicator light (fig. 6)**
a) Comes on if the baling ram (32) is in its basic position (rearmost position).
b) Flashes if the baling ram (32) is **not** in its basic position. In this case, operate the „cutter forwards" pushbutton (3) at the shredder, or the „ram reverse" pushbutton (17) at the baler.

12 = **„Bale ready" indicator light (fig. 5)**
Flashes when the bale volume has been achieved, and the bale must be bound and ejected. For further details see the „binding and ejecting the bale" section.

13 = **„Baler open" indicator lamp (fig. 6)**
Flashes if the inlet flap (30) or discharge flap (31) is open.
Note: If a door or flap is open the shredder cannot be started. The baling ram in the baler can, if the inlet flap is closed, still be operated **by inching**, forwards (to eject a bale), or in reverse (return stroke).

14 = **Emergency stop bar (fig. 7)**
Should it be necessary, for any reason, to switch off or stop the machine as quickly as possible, this can be achieved by pressing the emergency stop bar. To switch on again, release the bar (pull it out) and operate the „cutter forwards" pushbutton (3).

15 = **„Advance Ram" Key (compacting cycle) (fig. 8)**
If this key is pressed, the baling ram (32) is advanced (compacting cycle) and is then automatically retuned to its rear, home position.
Note: If the ram does not return to its home position, but rather continues to press against the bale, the bale must be tied off and then ejected (see "Tying Off and Ejecting the Bale").

16 = **„Stop Ram"or "Open Discharge Flap" Key (fig. 8)**
a) Stop Ram
If this key is activated briefly (less than 2 seconds), the baling ram (32) is stopped.
b) Open Discharge Flap
If the key is pressed and held (for at least 2 seconds), the baling ram travels a short distance in reverse and the locking lever (35) (fig. 2) is advanced a short distance (pressure relief at the discharge flap).
The discharge flap (31) can now be opened. This is necessary when the baler is holding the bale in the compacted condition.
Note: The discharge flap can only be opened after this key has been activated.

17 = **„Return Ram" Key (return stroke) (fig. 8)**
When this key is activated in the automatic operating mode, the baling ram (32) is returned to its rear, home position.

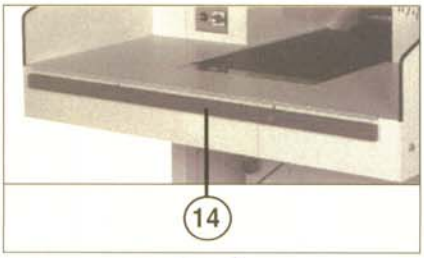


fig. 7

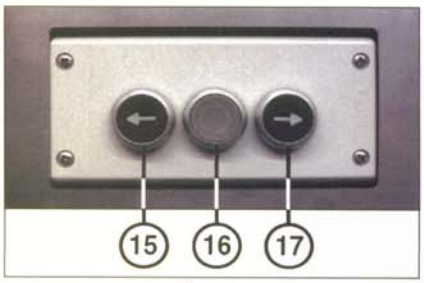


fig. 8

BALER OPERATION

USING THE BALER:
The strap brake (28) (fig. 16) must be closed (move lever to right).
Note: If baling is to be performed without subsequent tying off, refer to "EJECT INTO PLASTIC SACK WITHOUT TYING OFF".

FEEDING THE BALER VIA THE SHREDDER:
When the baling chamber and the inlet funnel are filled with material from the shredder, the compacting cycle is started:
The baling ram (32) advances, compacts the material and then returns to home position. The shredder may be fed while the baler is compacting.

FEEDING THE BALER MANUALLY:

Do not compact aerosol containers such as spray cans etc. (danger of explosion)!

Non-confidential materials can also be fed manually to the baler. Return the baling ram to its rear, home position if necessary (close the inlet flap and press the "Return Ram" key (17) (fig. 8)) and proceed as follows:

1. Open the inlet flap (30) (fig. 2).
2. Insert material into the baling chamber.
3. Close the inlet flap and activate the „Advance Ram" Key (15) (fig. 8).
   The baling ram (32) travels forwards (compacting cycle) and, when the compaction procedure is complete, returns to its home position. Feeding may now be continued.

EJECTING THE COMPLETED BALE:
When, after several compacting cycles, the baling ram (32) no longer returns to home position, but rather remains pressed against the bale, maximum bale volume has been reached. The bale must be tied off and ejected. A **horn** sounds to indicate this.
Confirm the „bale ready" mode by operating the „Stop Cutter" pushbutton (4) (fig. 6). The horn stops.
Note: The shredder cannot be started while the bale is being tied off and ejected (inlet and discharge flaps are open).
The bale can be ejected in three different ways, and then removed.

A) Tie off and eject **into** plastic sack (for small particles) (fig. 9, 10, 11, 12 and 13)
B) Tie off and eject **without** plastic sack (for large particles) (fig. 9, 10 and 12)
C) Eject into plastic sack **without** tying off (for small particles) (fig. 11 and 13)

Note: Suitable sacks and straps can be ordered at any time (see "ACCESSORIES).

TYING OFF THE BALE (fig. 9, 10, 12, 16):

1. Open the inlet flap (30).
2. Open the strap brake (28) (fig. 16).
3. Pull the straps to approximately 40 cm above the baling ram with the help of the strap lifters (33) and the included strap hook (fig. 9).
4. Firmly hold the straps and return the strap lifters to their original position.
5. Loosen the strap ends (34) which have been secured to the baler housing, knot them together with the respective straps pulled out in the preceding step (fig. 10) and cut the strap behind the knot with a pair of scissors (fig. 12).
6. Close the inlet flap (30).

OPENING THE DISCHARGE FLAP (31):

1. Press and hold the "Open Discharge Flap" key (16) for at least 2 seconds. The baling ram travels a short distance in reverse, and the locking lever (35) travels a short distance forward in order to relieve pressure at the discharge flap.
2. Slightly lift the locking lever (35).
3. Swing the discharge flap down.

A) TIE OFF AND EJECT INTO PLASTIC SACK (fig. 11 and 13):

1. Close the inlet flap (30).
2. Open the discharge flap (31).
3. Press and hold the "Advance Ram" key (15) (fig. 8). The completed, tied off bale is ejected into the plastic sack and is pushed onto the discharge flap (fig. 11).

   For reasons of safety, advance and reverse ram travel is only possible in inching operation when the discharge flap is open. The key must thus be pressed and held in order to eject the bale!
4. Remove the sack from the sack frame (36).
5. Fold the end of the sack together and seal with tape (fig. 13). The bale can now be removed.

B) TIE OFF AND EJECT WITHOUT PLASTIC SACK:
Same as described under "**A)**", except no plastic sack is used. The bale can be removed immediately after ejection.

C) EJECT INTO PLASTIC SACK WITHOUT TYING OFF (fig. 11 and 13):
Note: In this case, the tie-off straps which have been laid out inside the baling chamber must be removed and rolled back onto the strap rolls (41).

1. Close the inlet flap and open the discharge flap.
2. Press the bale into the plastic sack and onto the discharge flap by activating the "Advance Ram" key (15) (fig. 11).
3. Fold the end of the sack together and seal with tape (fig. 13). The bale can now be removed.
4. Return the baling ram to home position by pressing the "Return Ram" key (17) and close the inlet flap.
   Note: This is only possible in inching operation when the discharge flap is open.

INSTALLING A NEW PLASTIC SACK (fig. 15)
Note: If the bale is to be tied off, the straps must be laid out as described under "INSERTING STRAPS FOR A NEW BALE" before the sack is installed to the sack frame (36) (fig. 14) (does not apply for option "**C**").

1. Open the discharge flap and return the baling ram to its rear, home position. The inlet flap remains closed.
2. Push the sack bit by bit over the sack frame (36) until the entire sack has been mounted to the frame.
3. Close the discharge flap.

INSERTING STRAPS FOR A NEW BALE (fig. 14, 16 and 17):

1. Return the baling ram to home position by pressing the "Return Ram" key (17).
   Note: This is only possible in inching operation when the discharge flap is open.
2. Open the inlet flap.
3. Pull the straps out a distance equivalent to about one flap length, guide the strap ends from the inside over the strap hook (37), through the inlet opening and up to the strap clamps (38) (fig. 14). Secure the strap ends here by wrapping them twice around the clamps.
4. Close the strap brake (28) (fig. 16).
   Note: In order to allow for subsequent tying off of the bale, the strap brake must be closed before the compacting cycle.
5. Close the discharge flap (31), as well as the inlet flap (30), if the shredder is to be used.

Attention: In order to avoid damage to the straps, it is advisable to refrain from compacting bottles, glass or other objects with sharp edges such as sheet metal etc.

REPLACING THE STRAP ROLLS (41) (fig. 16, 17 and 18)

1. Close the inlet flap and advance the baling ram about **30 cm**.
2. Open the inlet flap and remove both strap lifters (33).
3. Open the strap brake (28) (fig. 16).
4. Insert the strap rolls (41) in to the strap roll holder (40) as shown, with the strap ends pointing down (fig. 17).
5. Secure the strap end to the loop on the included pull cable and feed the other end of the pull cable (45) (fig. 17) through the opening at the strap brake (28) and into the strap guide (39) (fig. 17). The strap can now be pulled through the strap guide with the pull cable, until it is visible within the baling chamber.
6. Loosen the strap end from the pull cable as shown, feed it through the strap lifter (33) and set the strap lifter back into place at the baling ram (32) (fig. 18).
7. Insert both straps as described under "INSERTING STRAPS FOR A NEW BALE" and close the strap brake (28) (fig. 16).
8. Close the discharge and the inlet flaps and return the baling ram to its rear, home position.

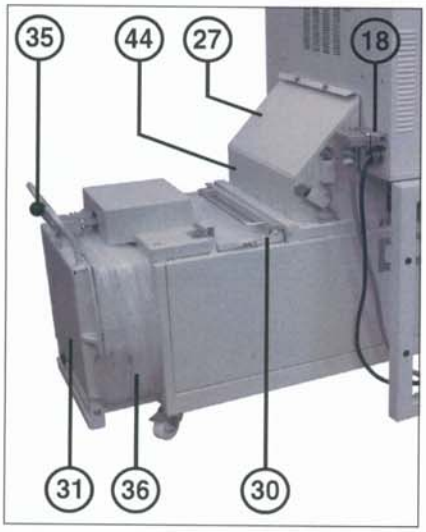


fig. 2

fig. 8

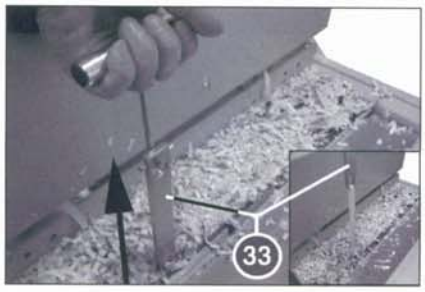


fig. 9

fig. 10

fig. 11

fig. 12

fig. 13

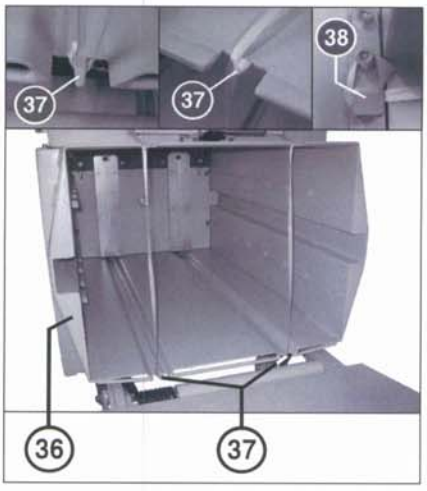


fig. 14

fig. 15

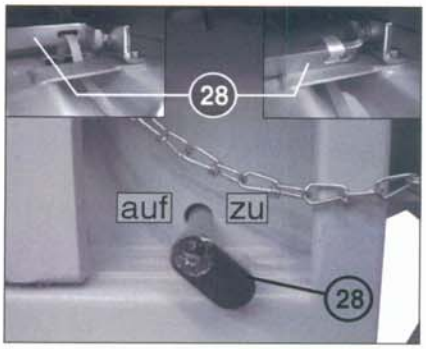


fig. 16

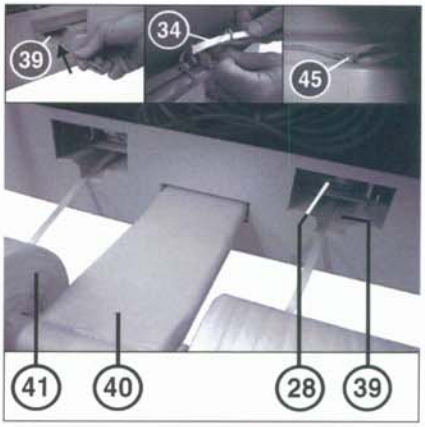


fig. 17

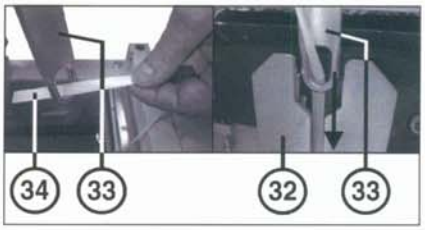


fig. 18

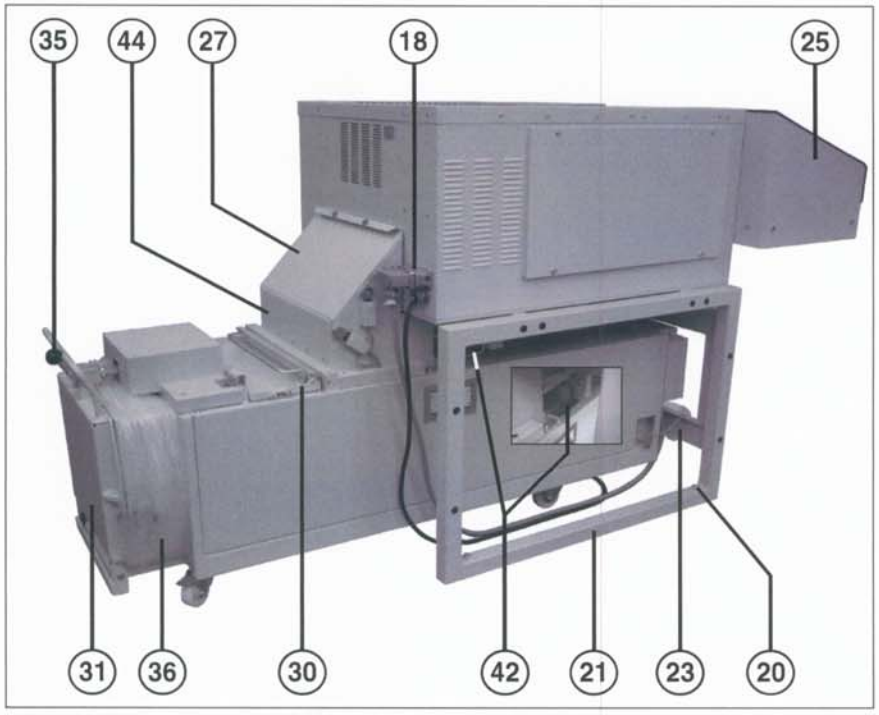


fig. 2

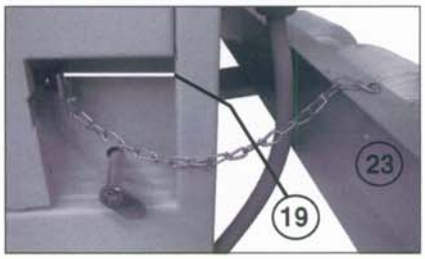


fig. 3

SUMMARY OF NUMBERED PARTS:

18 = **electrical outlet** (fig. 2)
19 = **safety switch activator** (fig. 3)
20 = **leveling screw** (fig. 2)
21 = **frame left** (fig. 1 und 2)
22 = **frame right** (fig. 1)
23 = **cross beam** (fig.1 und 2)
24 = **table** (fig. 1)
25 = **guard panel left** (fig. 1 und 2)
26 = **guard panel right** (fig. 1)
27 = **cover flap** (fig. 2 and 5)
28 = **strap brake** (fig. 16 and 17)
29 = **switch cabinet** (fig. 4)
30 = **inlet flap** (fig. 2)
31 = **discharge flap** (fig. 2)
32 = **baling ram** (fig. 18)
33 = **strap lifter** (fig. 9 and 18)
34 = **strap end** (fig. 18)
35 = **locking lever** (fig. 2)
36 = **sack frame** (fig. 2 and 14)
37 = **strap hook** (fig. 14)
38 = **strap clamp** (fig. 14)
39 = **strap guide** (fig. 17)
40 = **strap roll holder** (fig. 4 and 17)
41 = **strap roll** (fig. 4 and 17)
42 = **angle bracket** (fig. 2)
43 = **oil dipstick** (fig. 19)
44 = **hopper** (fig. 5)
45 = **pull cable** (fig. 17)
46 = **switch flap** (fig. 5)
47 = **switch cam** (fig. 5)
48 = **switch cover** (fig. 5)
49 = **limit switch S8** (fig. 5)
50 = **limit switch S9** (fig. 5)
51 = **threaded pin** (fig. 5)

fig. 7

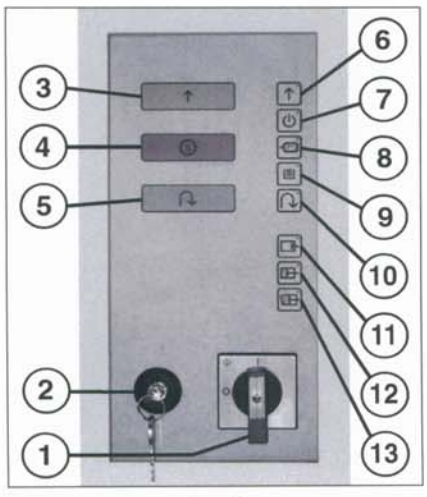


fig. 6

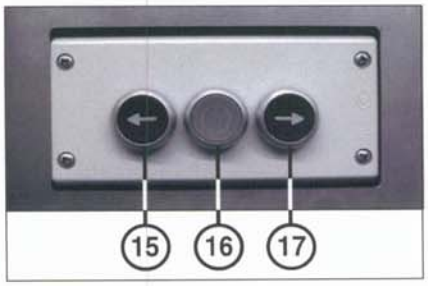


fig. 8

MALFUNCTIONS

MOTOR MALFUNCTIONS:

If the shredder or baler should become overloaded, an installed thermostat breaks the electrical circuit for full operation. The „malfunction - motor" indicator light (8) flashes.

While the overheated motor of shredder or baler is cooling down, both may still be operated by inching (shredder with reduced power - star connection), for example to return material to be cut.

The shredder may be operated with reduced power only to remove material, or for final shredding of material which has already been introduced. Other operation in this mode can lead to destruction of the motor.

After cooling (approx. 5-10 minutes) the light goes off and the unit can once again be operated at full power (delta connection).

Note: If, after the motor has cooled, the unit cannot be operated at full power (light (8) remains on), there is a defect in the machine. In this case our customer service must be contacted.

MALFUNCTIONS CHECKLIST:

If the system does not function, check the following points:

- is the **mains plug from the shredder** connected to the mains outlet?
- is the **connector plug from the baler** plugged into the outlet (18) at the shredder?
- has the **safety switch activator** (19) been inserted into the safety switch at the baler?
- has the **key switch** (2) been activated?
- is the **mains switch** (1) turned on?
- is the **emergency stop bar** (14) in the forward position?
  Pull red bar at table forward.
- is there a **paper jam** in the machine?
  Follow the instructions for "AUTOMATIC RESPONSE IN CASE OF OVERLOADING"
- are the **inlet flap** (30) and the **discharge flap** (31) at the baler closed?
- is the **cover flap** (27) at the shredder closed?
  See description under "OUTLET JAM".
- is one of the **motors** overloaded?
  See description under "MOTOR MALFUNCTIONS".
- has one of the **electrical phases** failed?
  Check the three line fuses at the mains outlet and replace if necessary.

If you still cannot isolate the fault or other faults are statable, the machine shouldn't be operated. Please report to / notify our customer service department.

If repairs are required, the mains plug must be removed from the electrical outlet before the machine is opened, and the mains switch must be turned off and locked into the off position with a pad lock.

MAINTENANCE

CUTTING SYSTEM MAINTENANCE:

After approximately **8 hours of continuous operation**, open the cover flap (27) and spray a modest amount of the included special oil onto the cutting system at the shredder.

GEARBOX MAINTENANCE:

The synchron-gears, as well as the chain wheels and drive chains must be **lubricated once per month**.

The mains switch (1) (fig. 6) must be turned off and the mains plug must be removed from the electrical outlet before opening the machine.

Proceed as follows:

1. Remove the right-hand side panel from the housing.
2. Use a brush or a grease gun to lubricate the above mentioned parts with a commercially available grease.
3. Replace the side panel and insert the mains plug into the electrical outlet. The machine can be placed back into service.

The machine may not be modified in any way. Operation of the machine is prohibited if modifications are undertaken.

ENERGY SAVING TIP:

Make sure that the machine is switched off overnight (turn mains switch (1) (fig. 6) to "0" position).

CHECKING THE OIL LEVEL (fig. 19):

Unscrew the dipstick (43) in order to check the oil level. The marking on the dipstick must be wetted with oil. If this is not the case, add oil.

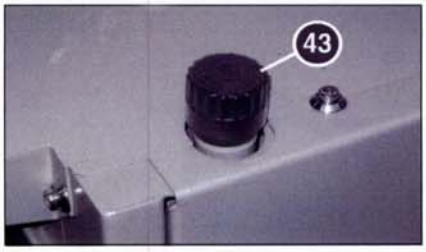


fig. 19

ACCESSORIES

Description	Best.-Nr.
Plastic sac, 600 x 490 x 1500 x 0,06 mm	**99969**
Bottle of oil, 125 ml	**99943**
Strap roll, 9 mm / 500 m	**80661**

Note: Please contact your dealer when ordering accessories and replacement parts.

DISPOSING

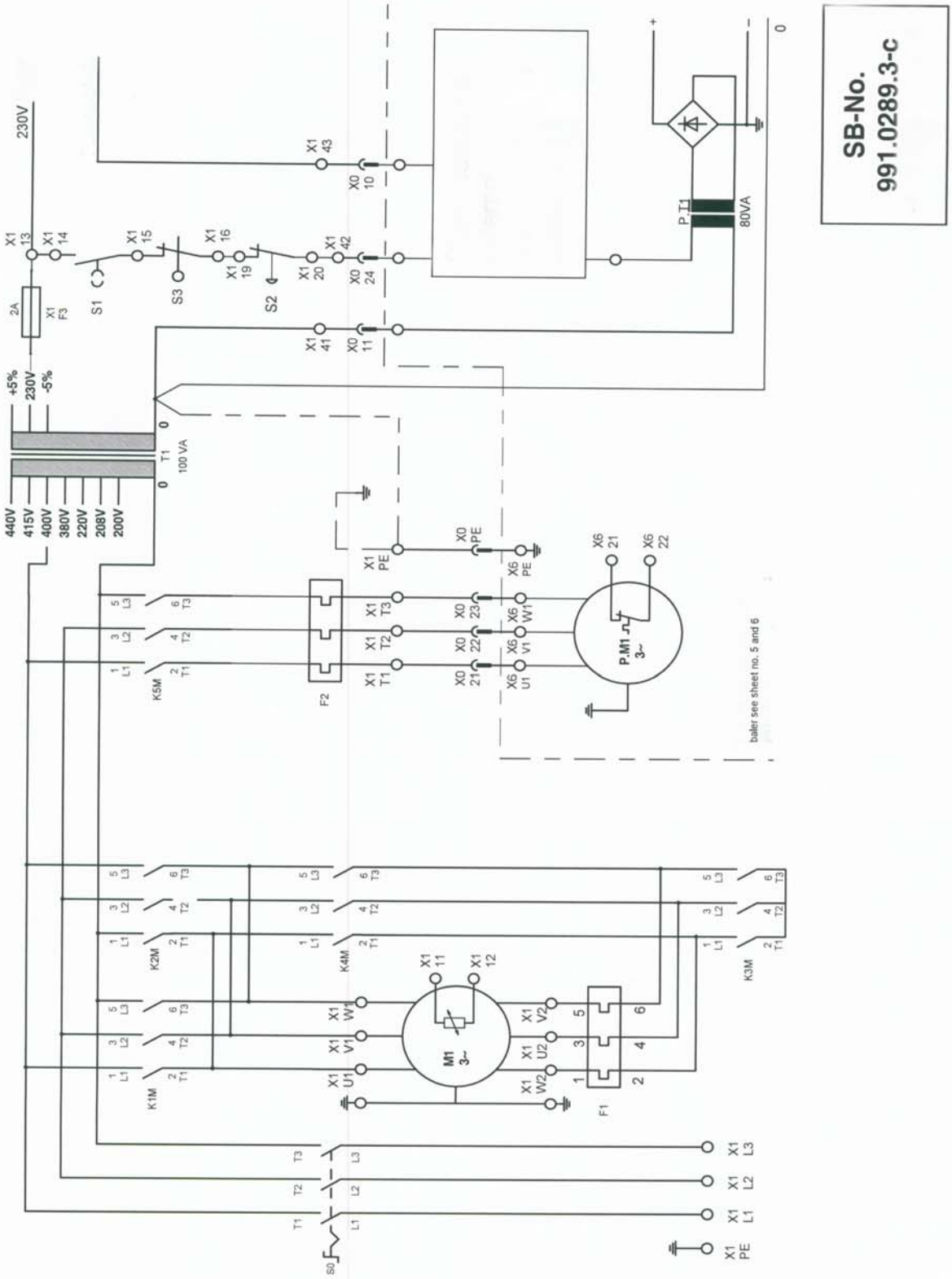
DISPOSING OF THE MACHINE:

Dispose of the machine in an environmentally sound fashion at the end of its useful service life. Do not dispose of any of the parts included in the machine or its packaging with household trash.

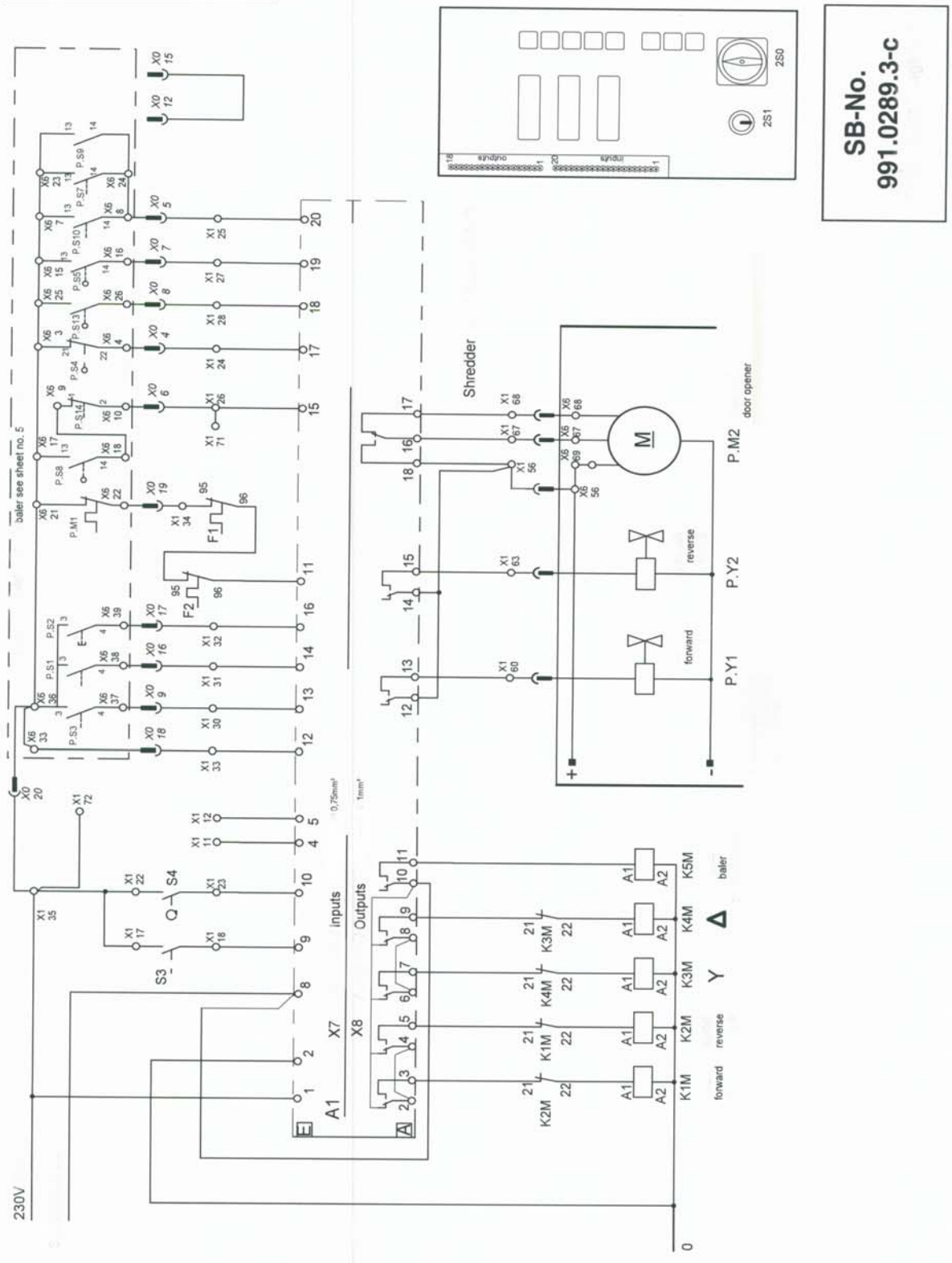
TECHNICAL DATA

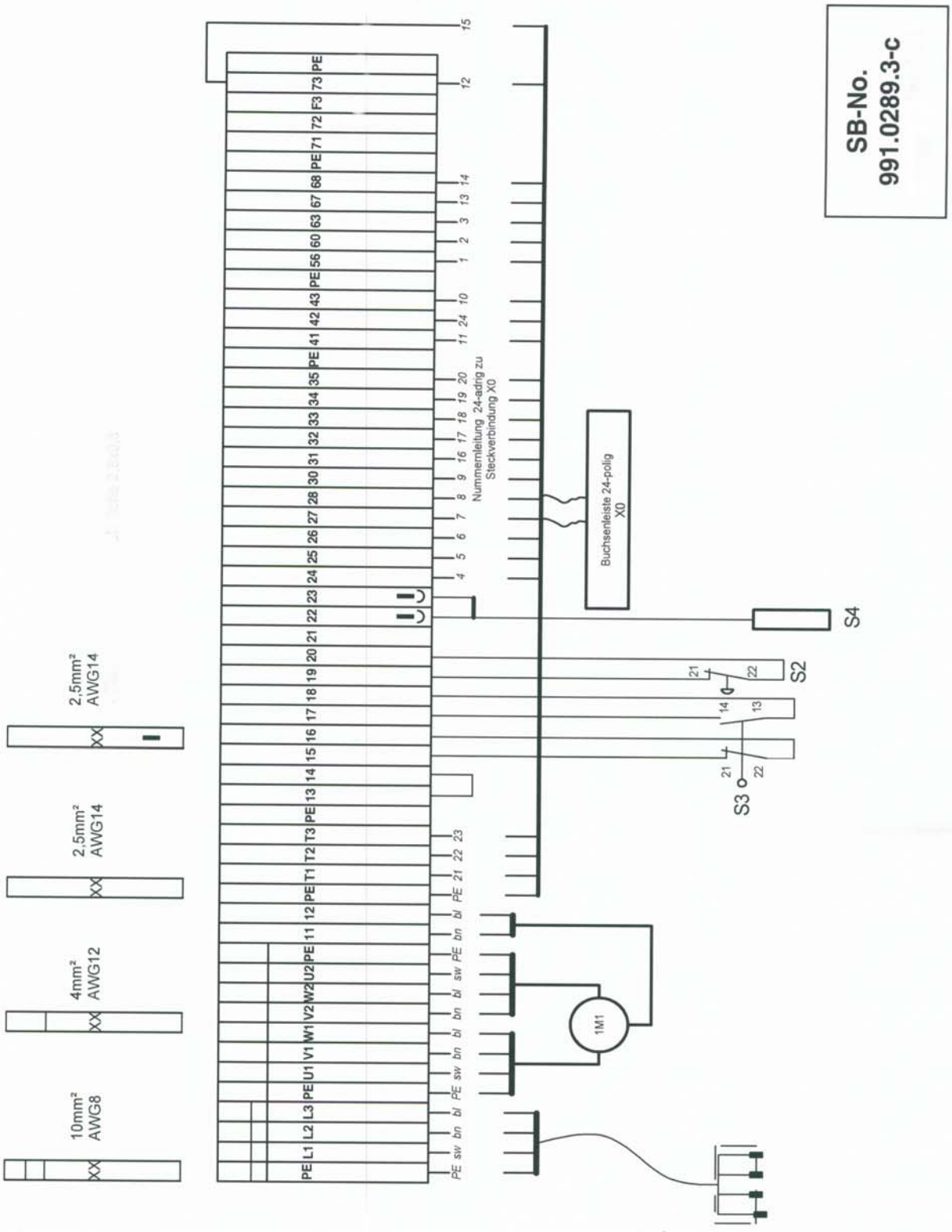
SHREDDER:	
Cutting Width:	11.8 x 55 mm
	7.8 x 55 mm
	3.8 x 55 mm
Cutting capacity:	
15.85:	
11.8 x 55 mm:	260-320 sheets (70 g/m²)
7.8 x 55 mm:	200-260 sheets (70 g/m²)
6 x 50 mm:	180-210 sheets (70 g/m²)
16.86:	
11.8 x 55 mm:	400-550 sheets (70 g/m²)
7.8 x 55 mm:	350-420 sheets (70 g/m²)
6 x 50 mm:	300-330 sheets (70 g/m²)
Working Width:	500 mm
Power:	
15.85:	5.5 kW
16.86:	7.5 kW
Weight:	
15.85:	approx. 696 kg
16.86:	approx. 726 kg
BALER:	
Press Force:	approx. 8 t
Power:	4 kW
Chamber Space:	570x460x1000 mm
Inlet opening:	570x340 mm
Machine Weight:	approx. 530 kg
Bale Weight:	approx. 60-80 kg
Bale Size:	500x600x750 mm
COMBINATION:	
Supply voltage:	400 V/ 50 Hz
	230 V/ 50 Hz
	415 V/ 50 Hz
	220 V/ 60 Hz
	200 V/ 50 Hz
	200 V/ 60 Hz
Pre-Fusing:	
(**gl** fuse, type 1 assignment)	
400 – 415V/50Hz:	35 A
220 – 230V/50HZ:	40 A
200V/50 – 60Hz:	63 A
Length:	2810 mm
Width:	1200 mm
Height:	1550 mm
Length with Open Discharge Flap:	3480 mm
Noise Level:	> 74 dBA
Overall Weight:	
15.85:	approx. 1226 kg
16.86:	approx. 1256 kg
(shredder and baler)	

WIRE DIAGHRAM



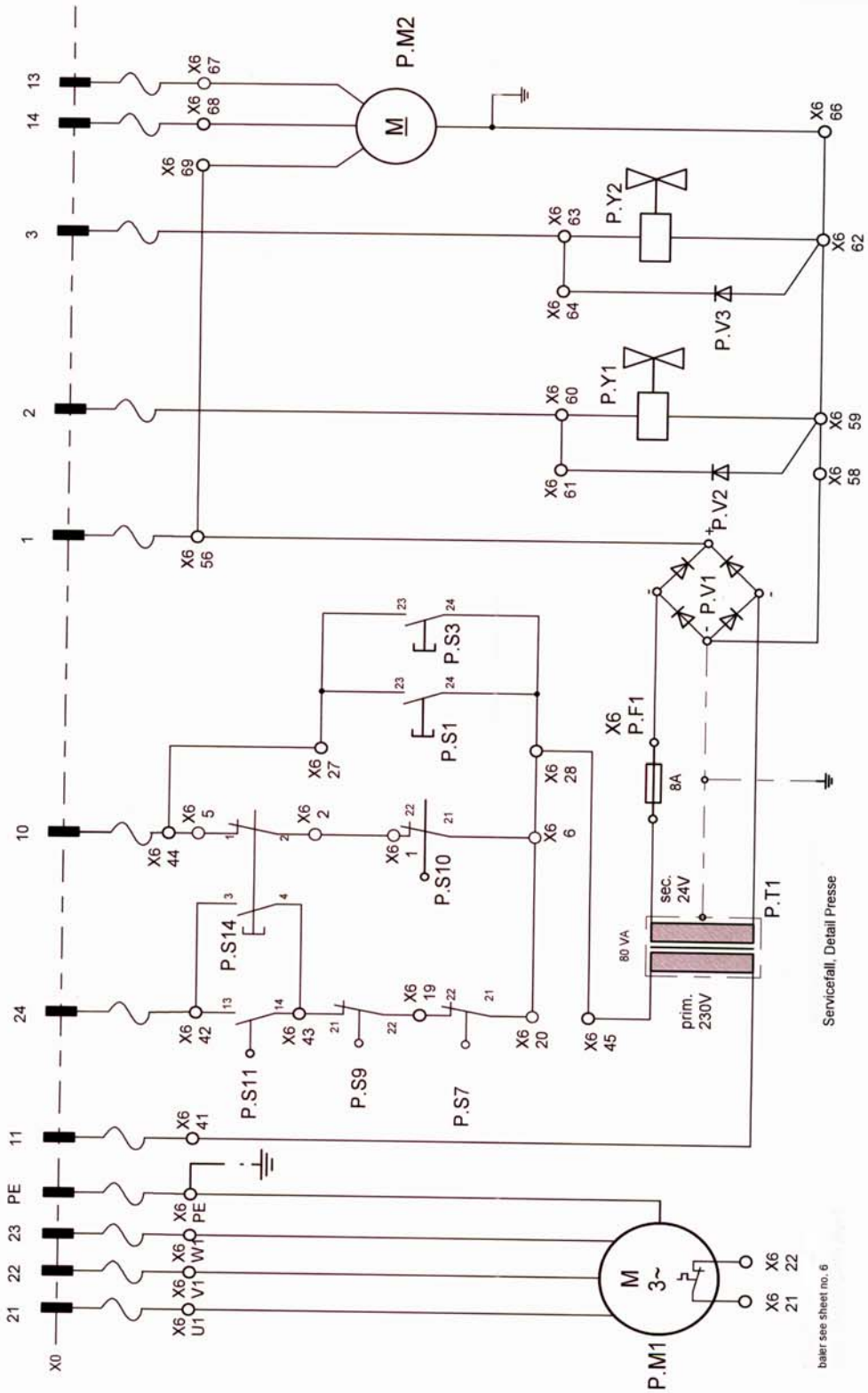
WIRING DIAGRHAM

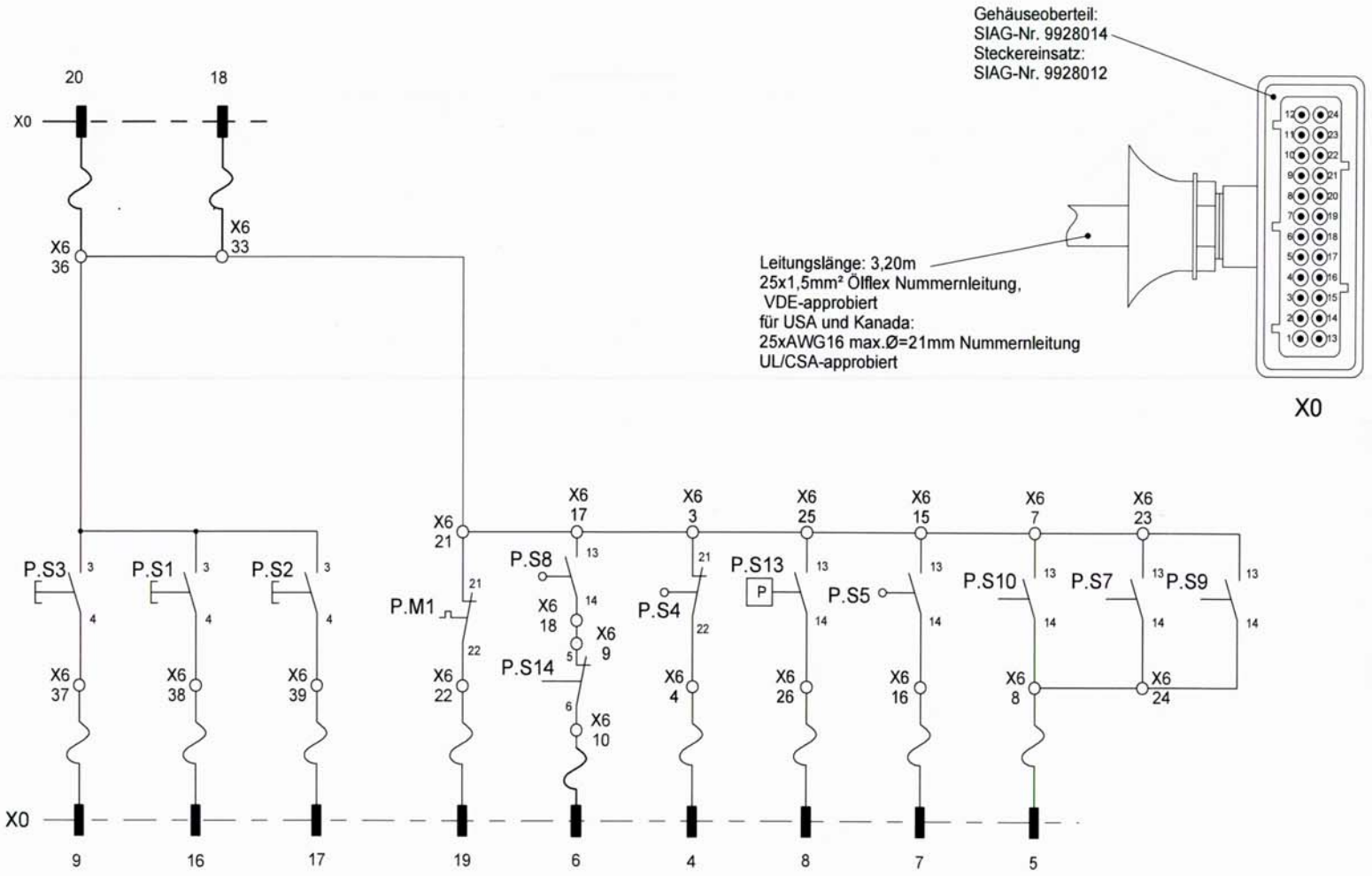




WIRING DIAGRAM

SB-No.
991.0289.3-c





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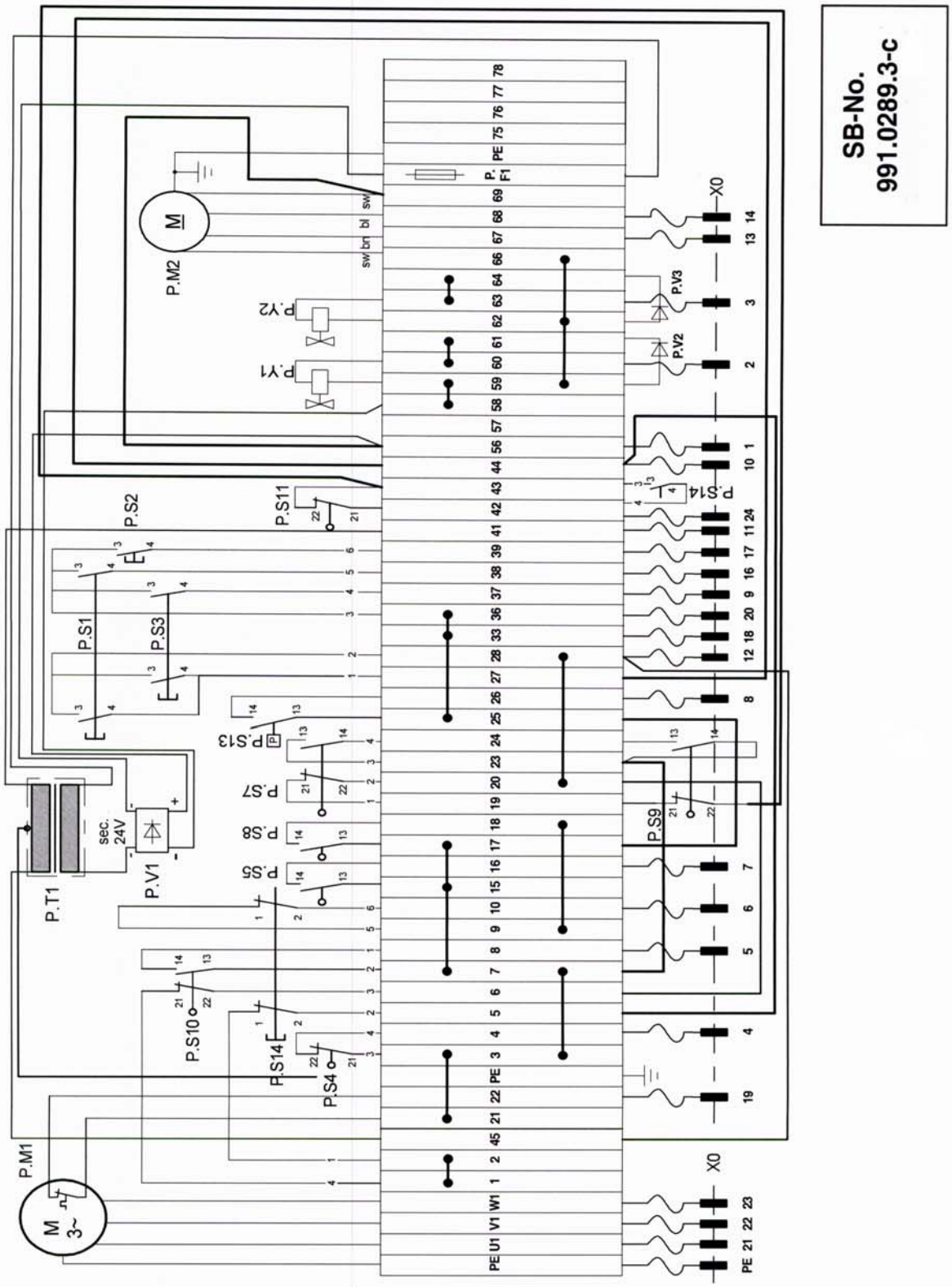
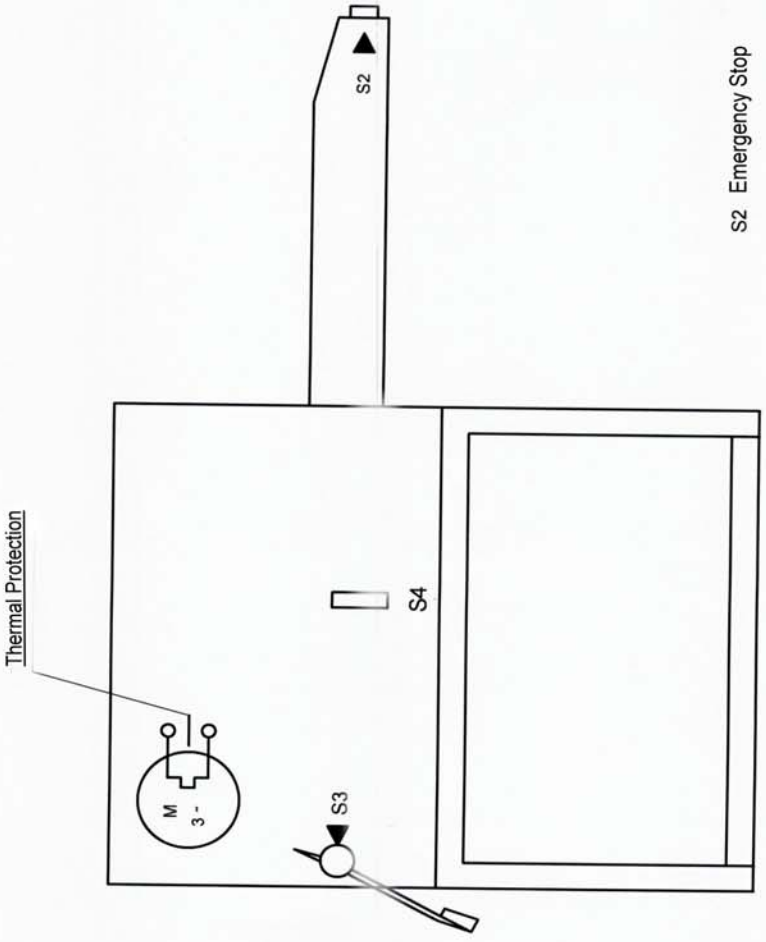

SB-No.
991.0289.3-c
P.M1
M
3~
P.M2
P.Y2
P.Y1
P.S2
P.S11
P.S1
P.S3
P.S13
P.S7
P.S8
P.S5
P.S10
P.S14
P.S4
P.T1
sec.
24V
P.V1
P.V3
P.V2
P.S9
P.S14
X0
X0
PE U1 V1 W1 1 2 45 21 22 PE 3 4 5 6 7 8 9 10 15 16 17 18 19 20 23 24 25 26 27 28 33 36 37 38 39 41 42 43 44 56 57 58 59 60 61 62 63 64 66 67 68 69 P. F1 PE 75 76 77 78
sw brt bl sw

WIRING DIAGRAM

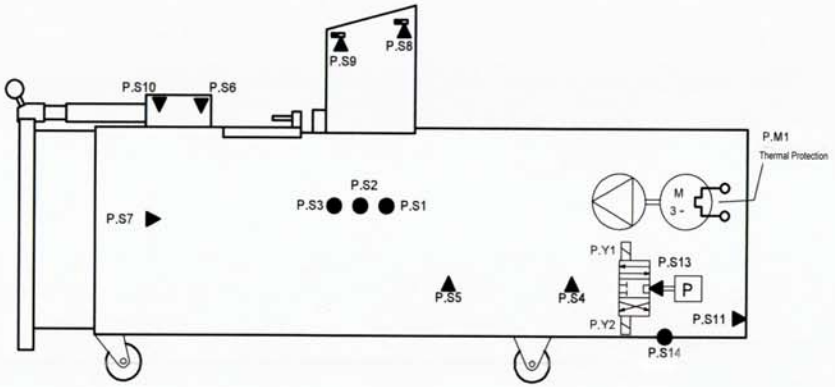
SB-No. 991.0289.3-c



S2 Emergency Stop

S3 Outlet Flap Open

S4 Rotation Speed Sensor



CAUUTION!

Two-hand-operation for service and repairs:

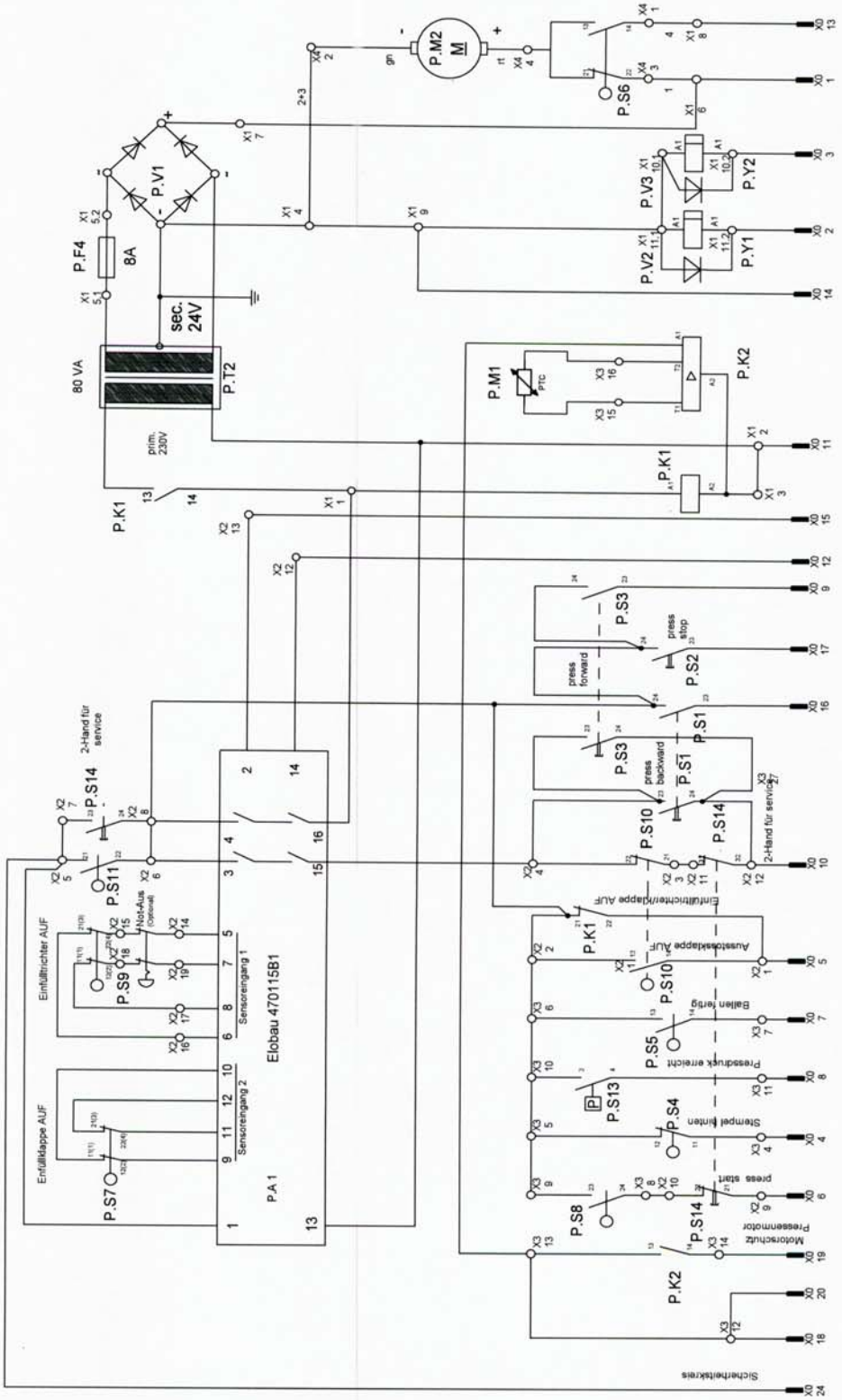
To activate the baling ram, the push-button P.S14 must be depressed with the free hand in addition to the push-botton P.S1 or P.S3.
During this operation, one person only may be allowed near the machine!

P.S1	push-button press ram reverse
P.S2	push-button press ram stop/ discharge flap open
P.S3	push-button press ram forward
P.S4	press ram rear
P.S5	bale ready
P.S6	discharge flap open
P.S7	loading flap open
P.S8	hopper full
P.S9	hopper cap open
P.S10	discharge flap opened
P.S11	safety switch "baler under shredder"
P.S13	max. pressure reached
P.S14	push-button for service
P.Y1	valve forward
P.Y2	valve reverse

SB-No.
991.0289.3-c

WIRING DIAGRAM

SB-No.
991.0289.3-c



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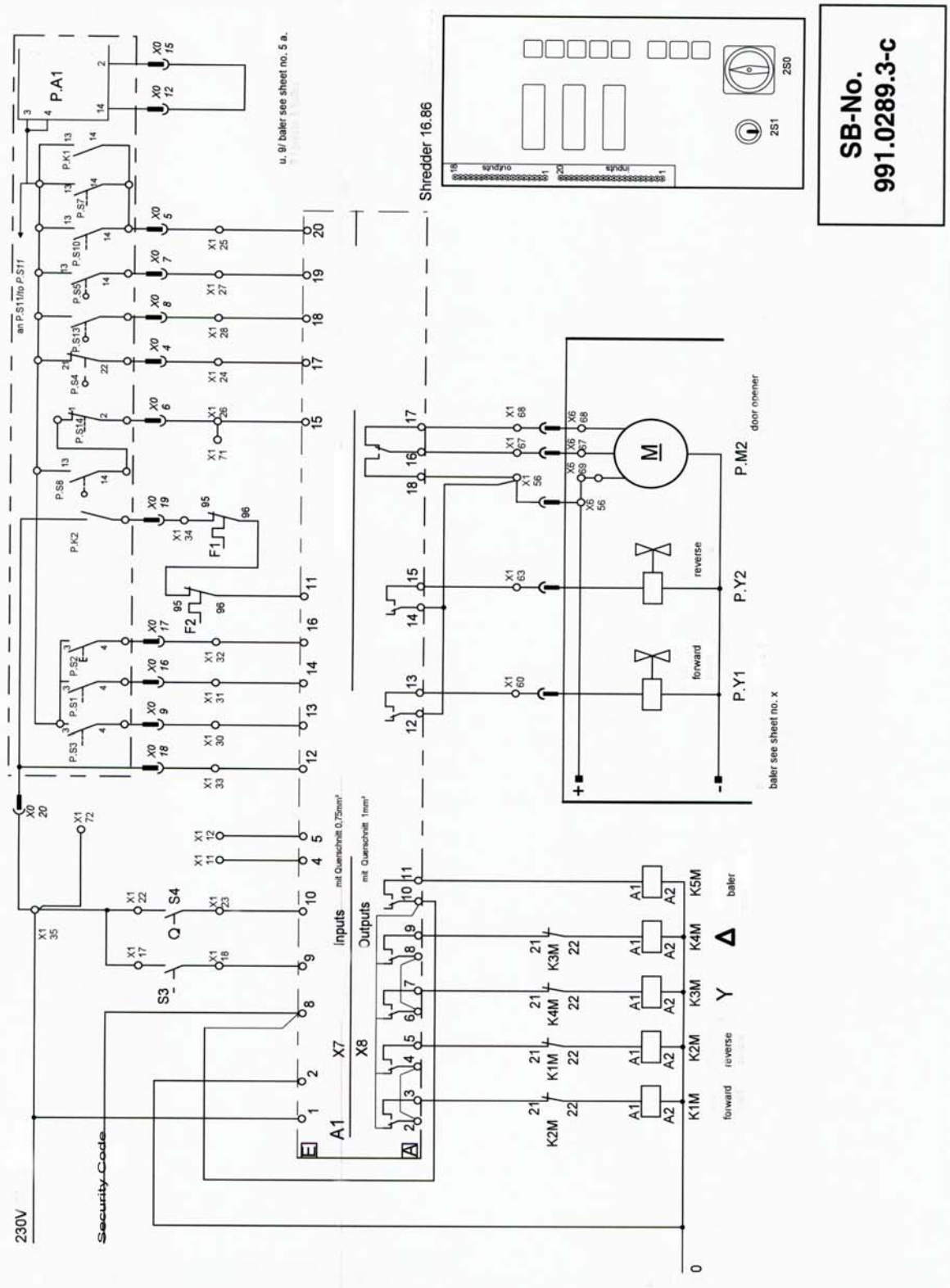

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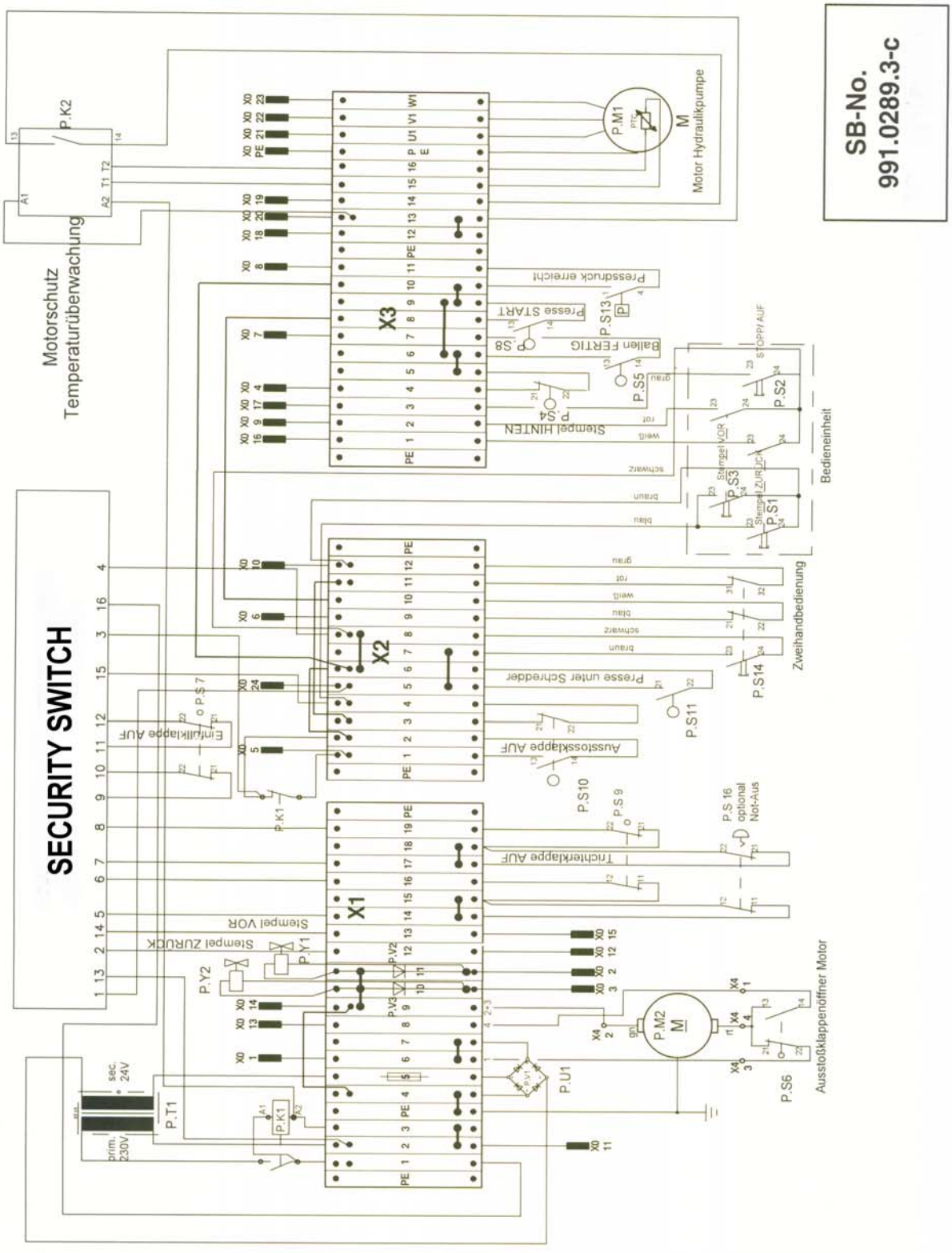

WIRING DIAGRAM