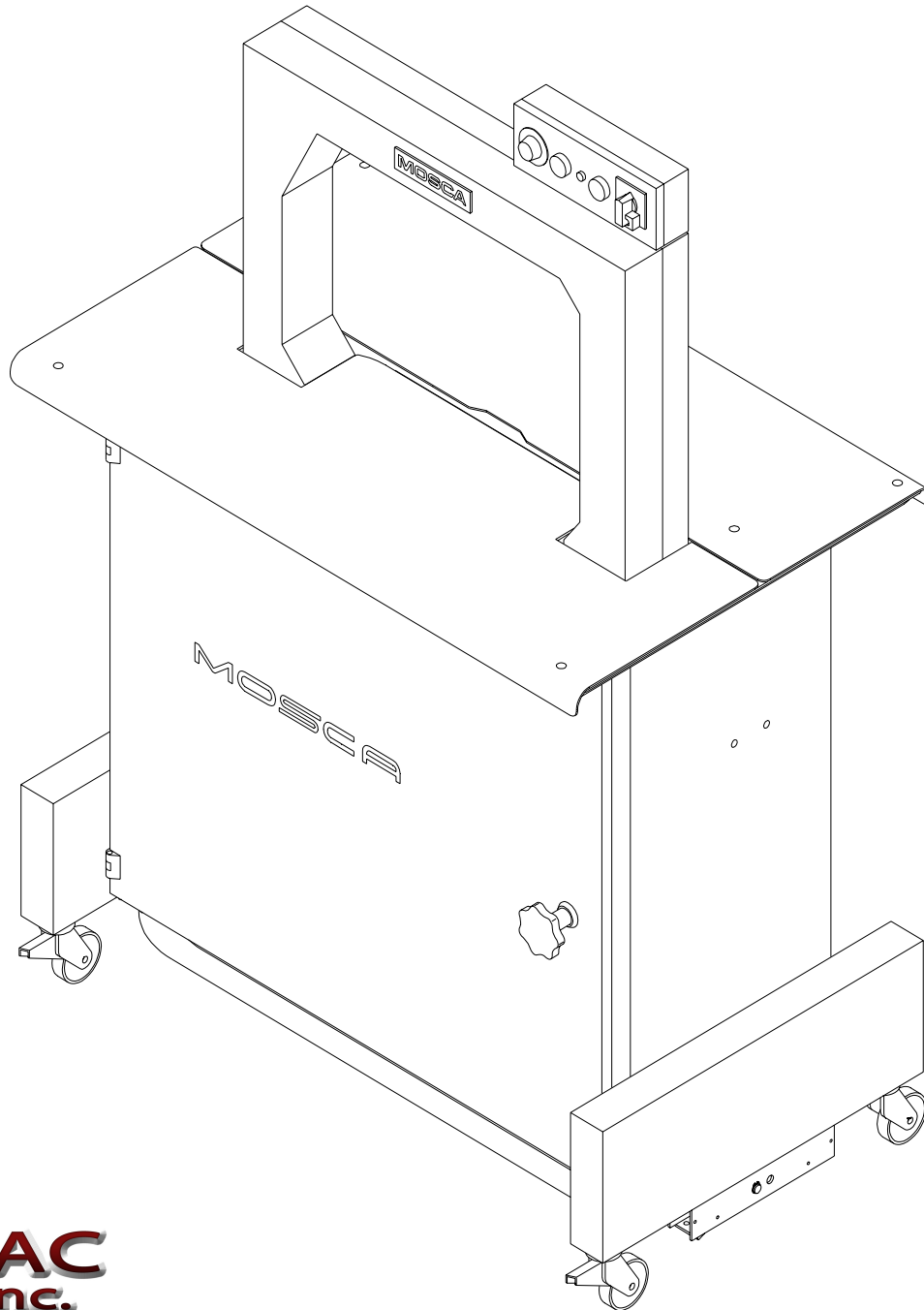


Operating and Service Manual

RO-MP-2 500x400

2000 v.1



TY PAC
Inc.

PO Box 425

Baldwinsville, NY 13027

800 356-8964 315 638-9431

FAX 315 638-9433



www.typac.net

info@typac.com

MOSCA

PACKAGING TECHNOLOGY

EAM-MOSCA Corp.



A. INTRODUCTION

1. Introduction and Safety Procedures	1.6 - 1.16
Application Principles	1.8
Machine Description	1.8
Machine and Operating Elements	1.9
General Safety Instruction	1.10
Safety Regulations for Specific Operational Phases	1.11
Precautions Against Particular Hazards	1.12
Safety Instructions	1.13
Safe Operating Principles	1.15
Description of Safety Arrangements	1.16
2. Operating and Technical Information	2.1 - 2.12
Technical Data	2.2
Electrical Data	2.3
Component Layout	2.4
Operating and Functional Description	2.6
Strap Spool Installing and Threading	2.8
Sequence of Operation	2.10
Sealer Sequence	2.11
3. Maintenance and Troubleshooting	3.1 - 3.16
Preventive Maintenance	3.1
Maintenance and Lubrication	3.2
Sealer Position Adjustments	3.4
Track Slide Plate Position	3.5
Solenoid Adjustments ME 2209 & ME 2136	3.6
Heater Adjustments	3.7
Knife Press-Bar Adjustment	3.8
Tension Relief Adjustment	3.9
Detailed Description of Strap Threading Process	3.10
Troubleshooting List	3.12
4. Shipping Procedures	4.1 - 4.2
Shipping Protection	4.1

● **WHEN REQUESTING SERVICE OR REPLACEMENT PARTS**

Included in this manual are assembly drawings with complete replacement parts lists. When requesting service please refer to the identification plate (detail at right), that is **found on or near the electrical component box**.

1. Contact EAM-MOSCA technical service department.
2. Give the Model #, Serial # and Year.
3. Give part number and complete description from the parts list.

MOSCA	
Maschinenfabrik Gerd Mosca GmbH Gartenstrasse 1 D-69429 Waldbrunn Germany Telefon 06274/932-0 Telefax 06274/932-240	
made in Germany	
Typ	
MODEL #	Nr. SERIAL #
Netzform	
VOLTAGE	
V, Stromart	
kW	
Hz	
A	Baujahr YEAR
Steuerspannung	Stromart
V	

B. PARTS IDENTIFICATION

Main Shaft Assembly	5-2
1620-0110-00 4/14/1997	
 Cam Shaft Assembly	 5-4
1620-0111-00 12/9/96	
 Upper Slide Plate Assembly	 5-6
1620-0120-00 4/7/1997	
 Sealer Knife-Gripper Assembly	 5-8
0101-013000-16 8/15/1997	
 Sealer Right Gripper Assembly	 5-10
0101-0130-17 8/21/1997	
 Sealer Left Gripper Assembly	 5-12
0401-0130-01 8/21/1997	

PARTS IDENTIFICATION (CONT'D)

Sealer Knife & Gripper Bars Assembly	5-14
1601-013000-16 3/5/1999	
Sealer Housing Assembly	5-16
1620-0140-00 4/14/1997	
Heater Assembly - 24V DC	5-18
0901-0160-00 5/22/1996	
Strap Feed Pull-Back, Tension Assembly	5-20
1699-016900-00 9/26/1997	
Heater Arm Assembly - 24V DC	5-24
2601-0170-00 8/24/1996	
Slide Plate Lever Assembly	5-26
1620-018000-00 10/28/1996	
Caster Frame Assembly	5-28
500 1620-021000-00 6/18/1998	
Foot Pedal Assembly	5-30
500 1620-0220-00 12/20/1995	
Side Panels & Rear Cover Assembly	5-32
500 1620-0230-00 1/30/1998	
Front Door & Extension Cover Assembly	5-34
500 1620-024000-00 6/3/1997	
Table Plate Assembly	5-36
500 1630-0250-00 5/29/1996	
Center Frame Assembly	5-38
500 1620-0260-00 11/27/1996	
Dispenser Assembly	5-40
1601-0310-00 10/6/1997	

PARTS IDENTIFICATION (CONT'D)

Dispenser Support Assembly	5-42
1620-032000-00 6/17/1996	
Accumulator Fill Assembly	5-44
1620-0710-00 2/19/1997	
Accumulator Assembly	5-48
500 1620-0730-00 6/19/1997	
Outer Strap Track Assembly	5-50
500/400 1621-0810-00 9/29/1997	
Inner Strap Track Assembly	5-52
500/400 1621-0820 5/31/99	
Strap Frame Cover Assembly	5-56
500/400 1621-0830-00 11/21/97	
Strap Track Opener Assembly	5-58
500/400 1621-0840-00 1/30/96	
Fan Assembly	5-60
1620-0850-00 7/7/97	
Electrical Components Assembly	5-62
1620-1100-00 12/3/97	
Control Panel Assembly	5-64
1620-1130-00 8/27/97	
Support Frame Assembly	5-66
500/400 1621-1401-00 2/12/1998	
Double Compactor Assembly	5-68
500/400 1621-1501-00 1/04/1999	
Photo Control	5-72
1511-0090-00 4/6/99	

INTRODUCTION & SAFETY PROCEDURES

APPLICATION PRINCIPLES

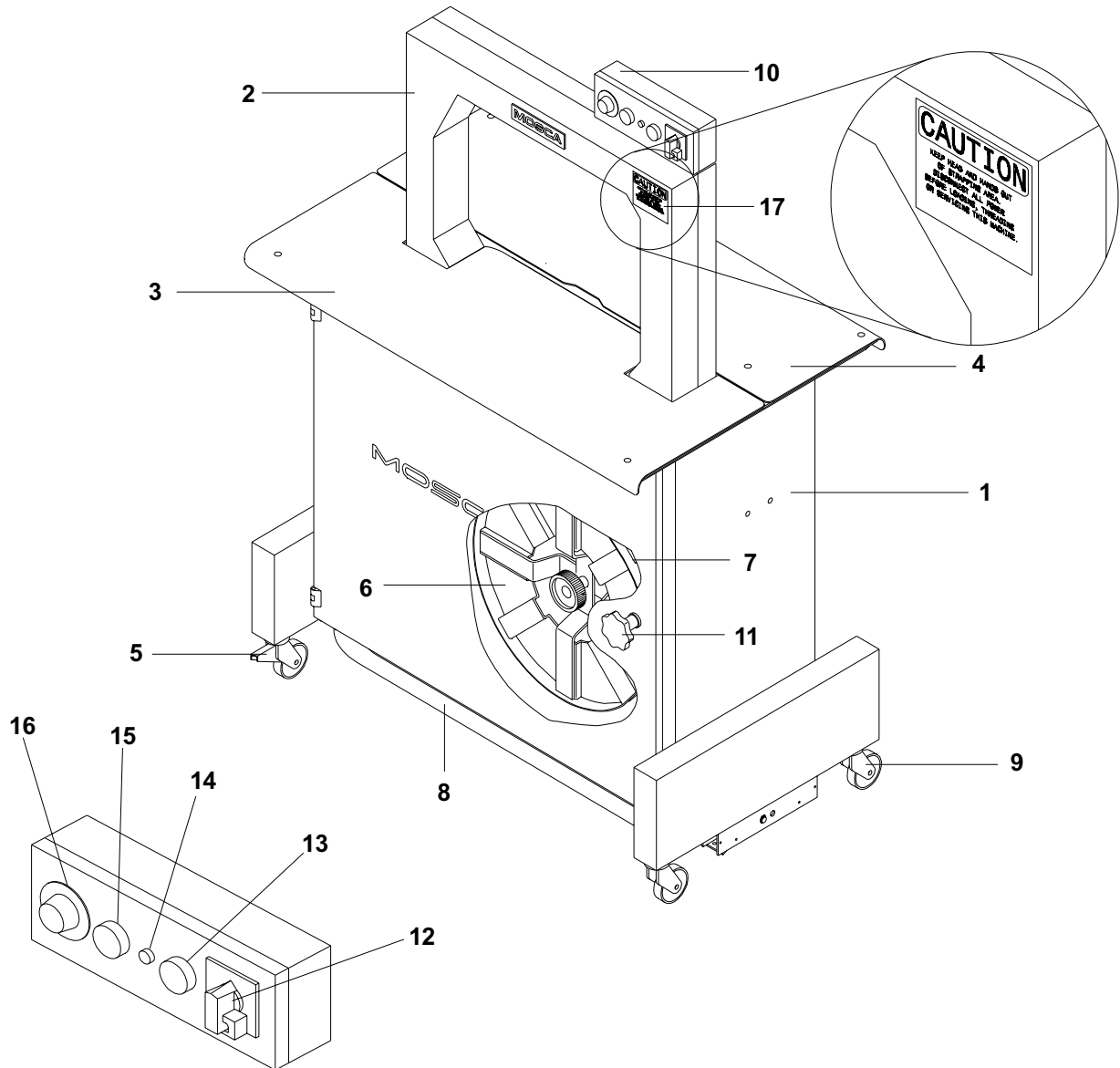
- An automatic strapping machine for bundles from sizes 15.7" x 11.8" (390mm x 290mm) to 65" x 39.4" (1640mm x 990mm).
- Best suited for all types of packages as in, printed materials, cartons, etc.

MACHINE DESCRIPTION

- Operator controlled strapping machine for polypropylene strapping.
- Light weight - operator friendly.
- Operator initiates strapping cycle by pressing foot switch pedal.
- Simple, safe, reliable, easy operating and handling.
- Processes cost-effective and environmentally friendly strapping.
- Strap tension electronically variable.
- Automatic strap loop ejection.
- Automatic strap end eject.
- Quick strap spool exchange.
- High cycle rate.
- Electronic heater temperature control.
- No wear, one piece, cam controlled strap track.
- Energy saving drives.
- Completely self-contained and portable.
- 2 Swivel casters with brakes for solid positioning and 2 fixed casters for stability.
- Strap width: 5mm fixed, 6-12mm adjustable.

INTRODUCTION & SAFETY PROCEDURES

MACHINE AND OPERATING ELEMENTS



- | | |
|------------------------------|--|
| 1. Machine Frame | 12. Main Switch |
| 2. Strap Track Frame | 13. Indicator - Machine On - (Optional Photo Control Switch) |
| 3. Front Table | 14. Weld Temperature Indicator |
| 4. Rear Table | 15. Illuminated Push Button - Soft Tension |
| 5. Roller Casters with Brake | 16. Potentiometer - Tension Adjustment |
| 6. Dispenser Cover | 17. Safety Warning Labels |
| 7. Strap Spool | |
| 8. Foot Pedal | |
| 9. Roller Caster | |
| 10. Control Panel | |
| 11. Door Knob | |

INSTRUCTION & SAFETY PROCEDURES

GENERAL SAFETY INSTRUCTIONS

Key Rules

- Before start-up, read the operating and safety instructions.
- Always keep the operation instructions within easy reach at the side of the machine/system.
- Observe the maintenance schedules specified or described in the operating instructions.
- The machine is built in accordance with state of the art technology and the accepted rules of industrial safety. Yet, danger to life and limb of the operator or third persons, as well as damage to the machine and other resources, may still occur.
- Operate this machine/system only while it is in perfect condition and in accordance with the specifications contained in this manual.
- Be aware of hazards and safety issues and adhere to these operating instructions.



Immediately correct any malfunction that could prove detrimental to safety, or have someone else correct it.

Organizational Measures

- In addition to the operating instructions, observe and teach generally applicable legal and other binding regulations for the prevention of accidents and for the protection of environment.
- All operating personnel must wear protective hair covering to contain long hair; no loose clothing or jewelry, including rings, may be worn. Injury may result from getting caught or pulled into the machinery.
- Whenever necessary, or as required by regulation, use personal protective gear.
- Observe all safety and warning labels on the machine.
- Maintain all safety and warning labels on the machine in legible condition.
- Do not let personnel with general training operate the machine/system, except under the constant supervision of an experienced operator.
- Any work on electrical components of the machine/system may be performed only by qualified electrician or by trained personnel under the direction and supervision of qualified electrician and in accordance with applicable electrical codes.

a
a

INTRODUCTION & SAFETY PROCEDURES

SAFETY REGULATIONS FOR SPECIFIC OPERATIONAL

PHASES

- Refrain from any work practice that may be unsafe.
- Make sure that the machine/system is operated in safe and good working order.



Do not operate the machine/system, unless all protective and safety devices, such as removable machine guards, emergency shut-off switches, and vacuum systems, are in place and in working order.

- At least once during each shift, you should check the machine for any external damages and defects. Any changes (including changes in performance) must promptly be reported to the competent department/person. If necessary, immediately stop and secure the machine.
- In case of a malfunction, the machine/system must be stopped and secured immediately. Promptly correct the malfunction or have it corrected.
- Before you put the machine/system in operation, make sure that no one is put at risk by the machine during start-up.
- Inform operating personnel before you begin to perform any special or maintenance work. Designate a supervisor.
- If necessary, clear and secure a space around the area where maintenance is being performed.
- Always tighten any screw connections which were loosened during maintenance and repair.
- Should safety devices have to be dismantled during set-up, maintenance or repairs, reassembly and inspection of the safety devices must ensue immediately after completion of such maintenance and repair work.
- Provide for the safe and environmentally friendly disposal of operating and auxiliary materials, as well as spare parts.
- Before moving a machine, always check that all accessories are securely stored.
- Discontinue any work practice that could destabilize the machine.
- Keep off conveyors and/or table tops..

INTRODUCTION & SAFETY PROCEDURES

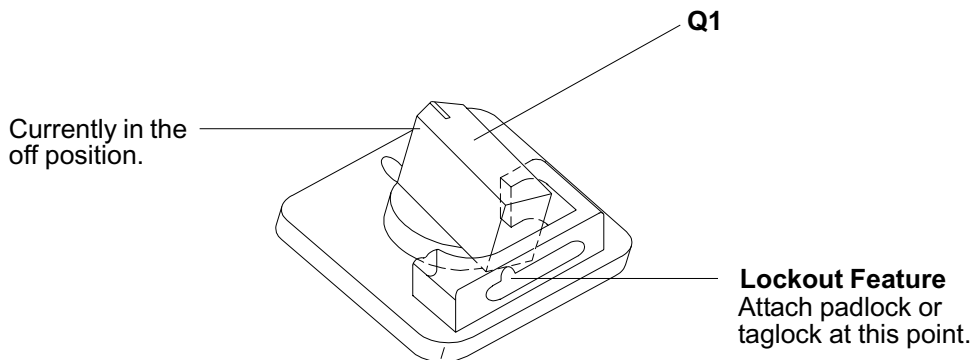
PRECAUTIONS AGAINST PARTICULAR HAZARDS

Electric Energy

- Use only original fuses with the specified amperage! If a breakdown of the electrical power supply should occur, the machine must be shut down immediately.
- Work on any electrical system or equipment, may be performed only by a qualified electrician or by trained personnel under the direction and supervision of a qualified electrician and in accordance with electrical codes.
- If so specified, machine and system components that are to be inspected, maintained or repaired must be switched to zero voltage. Any such disconnected components must first be examined for voltage leaks, then grounded and shorted, while adjoining voltage carrying components must be insulated.
- The electrical equipment of the system/machine must be inspected/tested regularly. Defects, such as loose connections or damaged cables must be eliminated.
- Should it become necessary to perform work on live components, a second person must be added to work the emergency shut-off switch or the master switch. Close off the work area with a red and white chain, and put up a warning sign.
Use only insulated tools.
- When working on high voltage units, disconnect from voltage, ground power supply cable and short components, such as capacitors with a grounding rod.
- Carefully remount and refasten any components that were disconnected during transport before returning the machine to service.
- Even minor changes in location require that the machine or the system be disconnected from each external energy source.
- Before the machine is returned to operation, it must be properly reconnected to its power source.



Lockout feature on Main Switch Q1 for safe work environment during maintenance.



Main Switch Detail

INTRODUCTION & SAFETY PROCEDURES

SAFETY INSTRUCTIONS



The following list of safety instructions must be read before operating the strapping machine or the strapping system.

Miscellaneous Instructions

- Please observe the accident prevention regulations as well as the safety and protection recommendations of the trade or professional associations.
- The machine may only be used in accordance with regulations.
- If safety changes should occur in the machine/system or its performance, the machine/system must be stopped immediately and the competent person/department must be informed of the problem.

Operation

- Machines may only be operated by trained personnel.
- Training of the customer's operating personnel is available by EAM-MOSCA customer service.
- The hazard zone is off limits.
- Keep off conveyors or table tops.
- Keep all safety and hazard warnings on the machine/system in legible condition.
- Do not reach into a machine that is running.
- Never step into or under lifting devices.
- After closing time, always shut the machine down by turning the main switch off.

Safety Devices

- Emergency-off switches must never be by-passed or deactivated.
- Safety devices, not included in the delivery, such as protective grids, must be installed by the customer in coordination with the competent employer's liability insurance association.
- Do not undertake any alterations, additions or modifications to the machine/system that could affect safety without authorization from the supplier. This also applies to the installation and the adjustment of safety devices and safety valves and to any machining of load-bearing parts.

INTRODUCTION & SAFETY PROCEDURES

SAFETY INSTRUCTIONS (CONT'D)

- Do not operate the machine/system unless all protective devices and security features, such as removable protection devices and emergency-off devices are in place and functional.
- If safety devices should have to be dismantled during set-up, maintenance, or repairs, reassembly and inspection of the safety devices must ensue immediately after completion of such maintenance and repair work.



The following list of safety instructions must be read before operating the strapping machine or the strapping system.

Repair

- Before any tune-up or repair work can be performed, the machine must be disconnected from the mains and secured against unauthorized reconnection.
- Tools and single components should not be placed on or in the machine.
- When replacing any parts of the system, components and larger units must be carefully attached to hoisting equipment in a way that precludes any hazard.
- Use only suitable and technically sound hoisting equipment as well as lifting devices with sufficient carrying capacity.
- Never stand or work under suspended loads.
- Components must meet the manufacturer's technical specifications. This is guaranteed when using genuine replacement parts from the manufacturer.
- Hydraulic and pneumatic installations may only be worked on by personnel specifically trained and experienced in the use of hydraulics and pneumatics.

Electrical Equipment

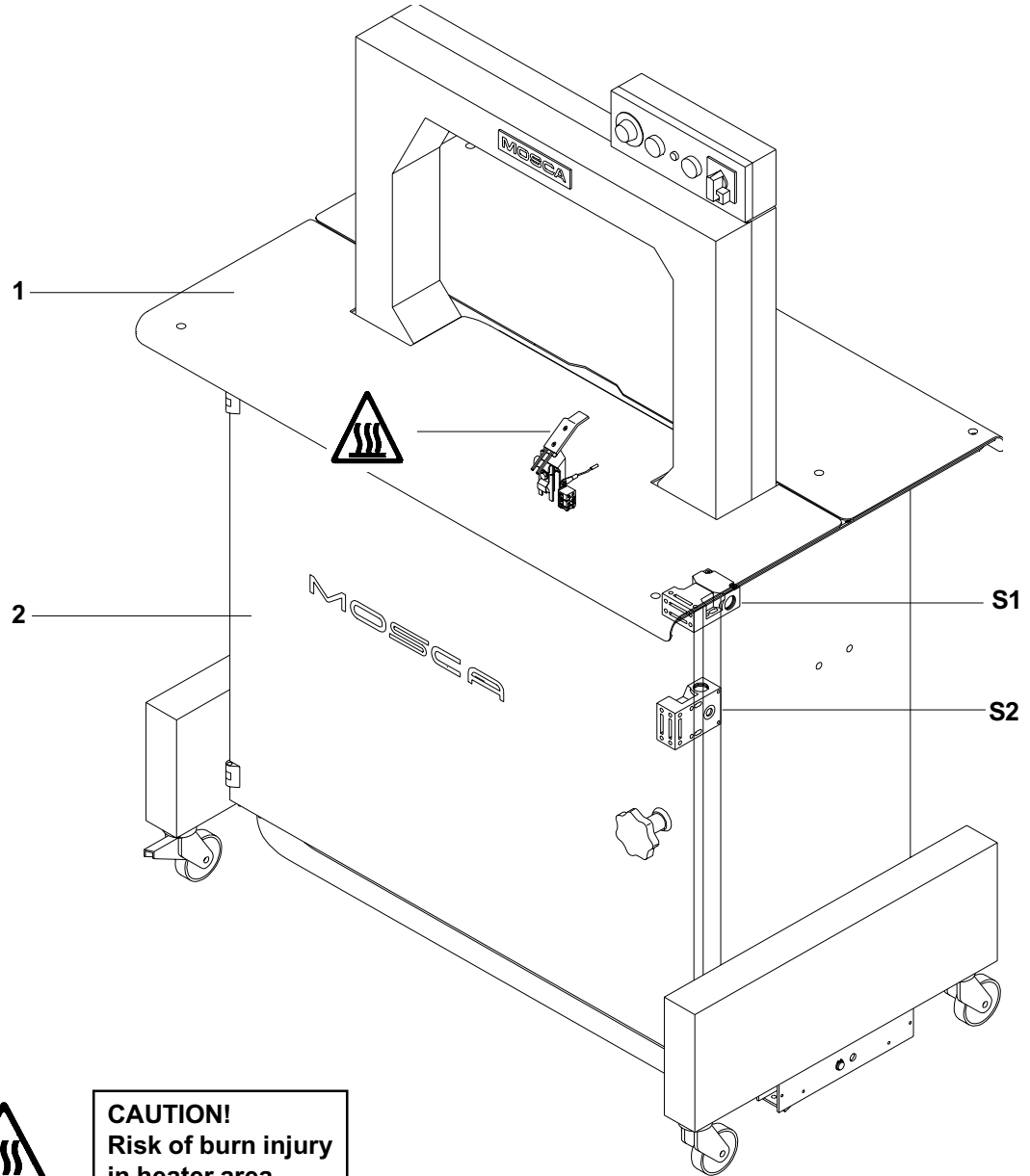
- Work on any electric installations of the machine/system may only be performed by a qualified electrician or by trained personnel under the direction and supervision of a qualified electrician and in accordance with electrical codes.
- Machine/system components undergoing maintenance or repairs must be disconnected from their power source and closed off.
- The electrical equipment of a machine/system must be inspected/tested regularly. Defects, such as loose connections, damaged cables, and defective devices must immediately be eliminated.
- If work needs to be done on live components, a second person must be added to work the emergency-off switch or the master switch.
- Close off the work area with a red and white safety chain and put up a warning sign.
Use insulated tools only!

INTRODUCTION & SAFETY PROCEDURES

SAFE OPERATING PRINCIPLES



Operate this machine with polypropylene strap only. Using other strapping can cause health risk.



CAUTION!
Risk of burn injury
in heater area.

- The pinch points are covered with the table top and in front with the door. Sides and rear have fixed panels.
- Lifting the table (1) or opening the door (2) 3-5mm, releases the safety interlock S1 and S2, respectively, which prevents cycling the machine.
- When moving the machine on level ground, make sure to release both caster brakes position the machine.

to

INTRODUCTION & SAFETY PROCEDURES

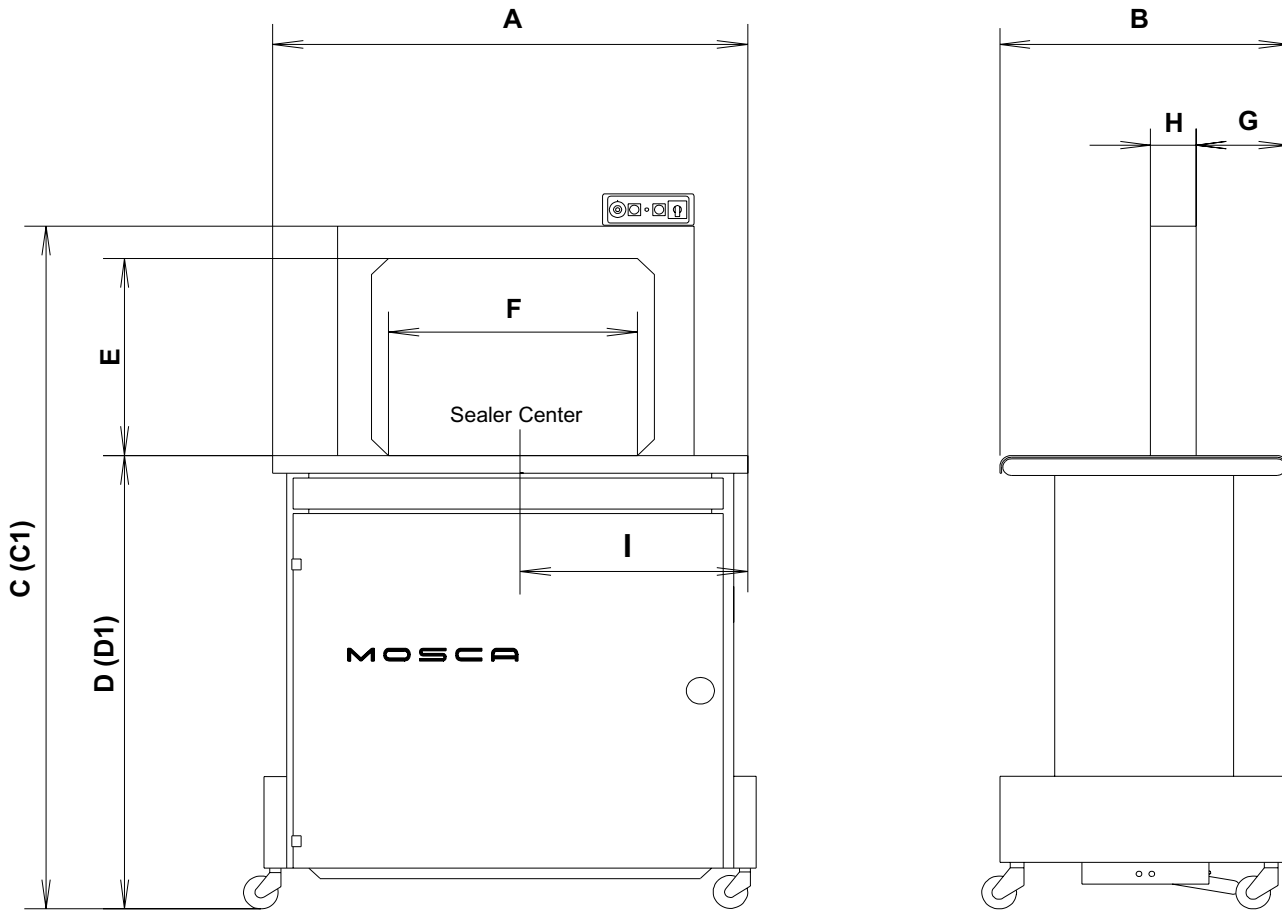
DESCRIPTION OF SAFETY ARRANGEMENTS

- With power on the machine and main switch Q1 on, the machine will be operational after approximately 1 minute of heat-up time.
- The machine operation is stopped by any of the following:
 - Opening the front door.
 - Opening the front table.
 - Blown fuses.
- For machines with the press option;
 - If a safety circuit is interrupted, the press returns to the up position.
- The heater is on as long as the main switch Q1 is on 1.

OPERATING AND TECHNICAL INFORMATION

OPERATING AND TECHNICAL INFORMATION

TECHNICAL DATA



Strap Weld : Thermal
 Strap Width : 5&6mm or 7-12mm
 Strap Tension : Infinitely variable or Soft Tension
 Strap Coil : 200mm Dia. and 280mm Dia.
 Strap Spool : Up to 6000m / 23,000ft.
 Weight : 135kg - 145kg
 Electric Power : 110V / 60Hz
 230V / 50Hz
 240V / 50Hz
 400V / 50Hz
 Noise Emission : 79db (A) Measured to
 DIN 45635 Part 27

Dimensions C1 and D1, are for low frame machines.

Work Area Width				
mm	400	500	600	800
A	875	875	875	875
B	590	590	590	590
C	1180-1285	1280-1385	1380-1485	1480-1585
C1	1105-1210	1205-1310	1305-1410	1405-1510
D	815-920	815-920	815-920	815-920
D1	740-845	740-845	740-845	740-845
E	300	400	500	600
F	400	500	600	800
G	185	185	185	185
H	110	110	110	110
I	405	405	405	405
Strap Cycle per Minute				
ca.	50	48	46	44

OPERATING AND TECHNICAL INFORMATION

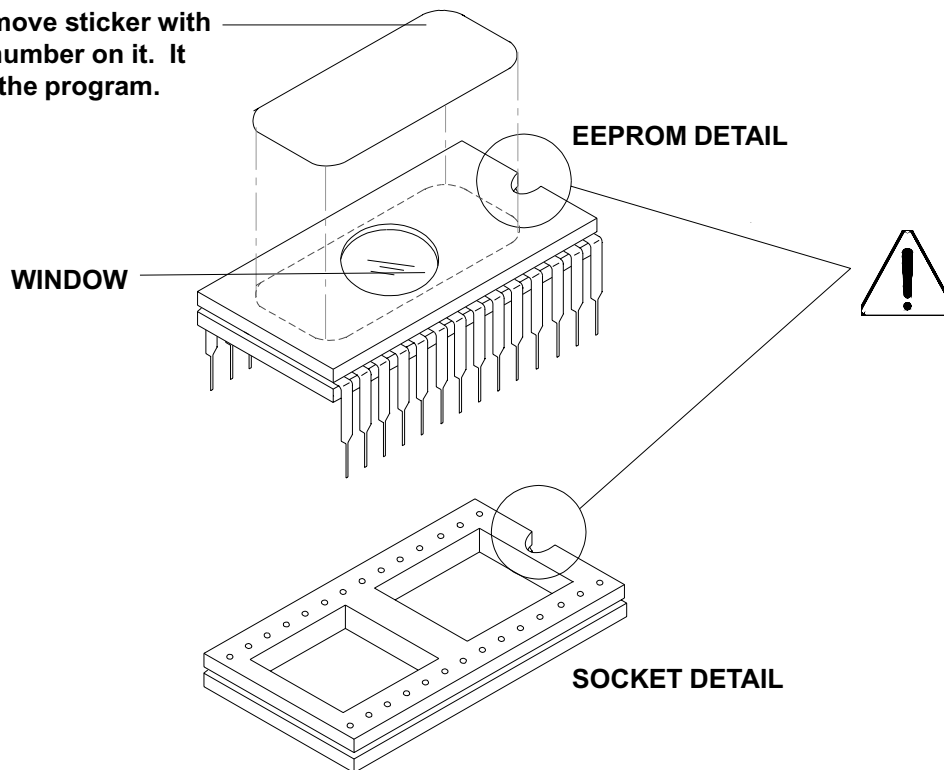
ELECTRICAL DATA

Electrical Power Line:	1~ + N + PE
Power output:	0.5 kW
Load Amperage:	2.4 Amp.- 4.8 Amp.
Voltage:	230V / 115 V.
Frequency:	50 / 60 Hz
Current type:	1 AC

Electrical Power Requirement

- The supply line for the machine must be a minimum 3 wire. 1.5mm (14AWG) 15A.
- The line protection fuse shall be not more than 15 Amp.
- The line connector shall be a grounded 3 pole (1~ + N + PE).
- The machine shall be operated only in a dry environment.

Do not remove sticker with program number on it. It will erase the program.

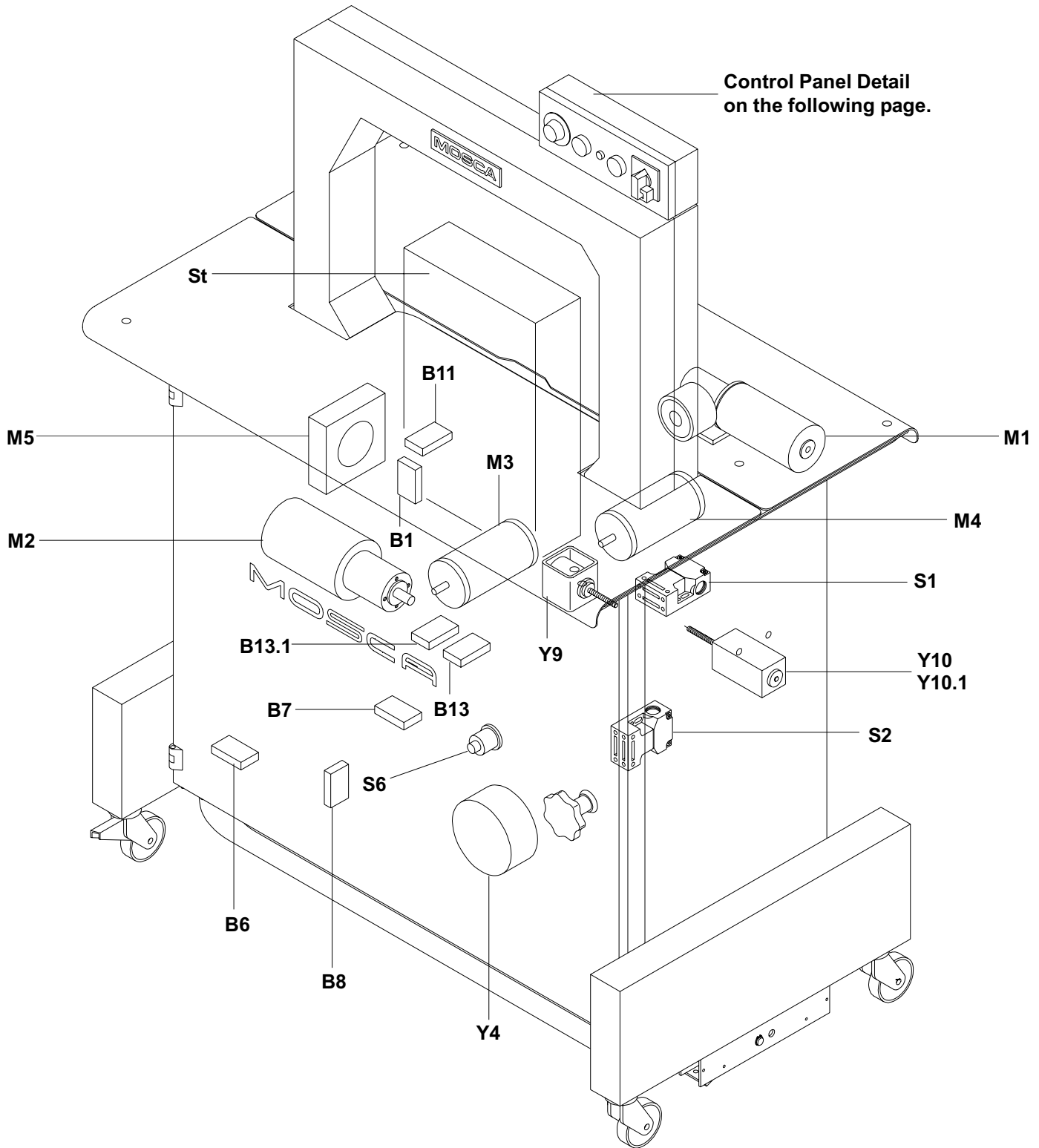


NOTE: The notch in EEPROM and Socket should be on the same side when inserting chip.

CAUTION: Pins on EEPROM can bend easily.

OPERATING AND TECHNICAL INFORMATION

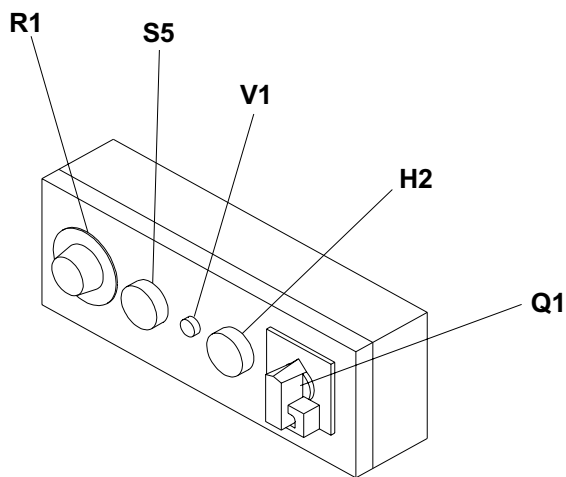
COMPONENT LAYOUT



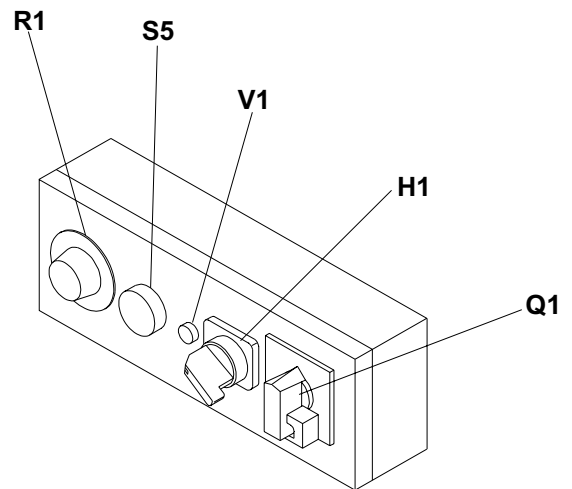
OPERATING AND TECHNICAL INFORMATION

COMPONENT LAYOUT

B1	Proximity Sensor - Strap Feed Stop
B6	Proximity Sensor - Foot Switch, Strap Feed, Cycle start Sealer to Home Position.
B7	Proximity Sensor - Strap End Sensing
B8	Proximity Sensor - Accumulator Fill
B11	Proximity Sensor - Strap Track and Slide Plate Closed
B13	Proximity Sensor - Sealer Home Position
B13.1	Proximity Sensor - Sealer Stop Position 1-2-3
S1	Safety Switch - Front Table
S2	Safety Switch - Front Door
S5	Illuminated Push Button - Soft Tension
S6	Push Button - Dispenser Brake Release
H1	Selector Switch - Photo Control Power On
H2	Indicator - Machine On
Q1	Main Switch
Y4	Dispenser Brake
Y9	Solenoid - Strap Threading
Y10	Solenoid - Strap Tension
Y10.1	Solenoid - Strap Pull-Back
M1	Strap Tension Motor
M2	Sealer Motor
M3	Accumulator Motor
M4	Strap Drive Motor
M5	Exhaust Fan
R1	Potentiometer
V1	Weld Temperature Indicator
St	Electrical Enclosure



Control Panel Detail



Control Panel with Photo Control Option

OPERATING AND TECHNICAL INFORMATION

OPERATING AND FUNCTIONAL DESCRIPTION (CONT'D)

4. Operate the foot switch, the strap will be fed into the strap track until proximity switch B1 is activated.
5. Place the package to be strapped on the table over the strap line and top slide plate.
6. When foot pedal is operated a second time, the sealer motor starts up until proximity sensor B13.1 is deactivated. The strap pull-back starts, until the selected tension is reached.
7. After the welding cycle is completed, the package is strapped. The strap track frame closes and the sealer moves into home position via. proximity sensor B13. The strap is automatically fed through the strap track and into sealer.
8. Remove the package from the machine. If the foot switch is operated again, a new strap cycle will begin.

NOTE: Refer to page 2.6 for the Component Layout.

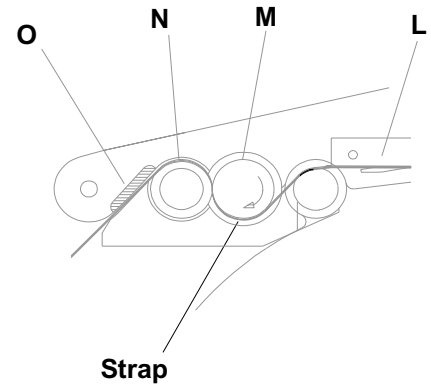
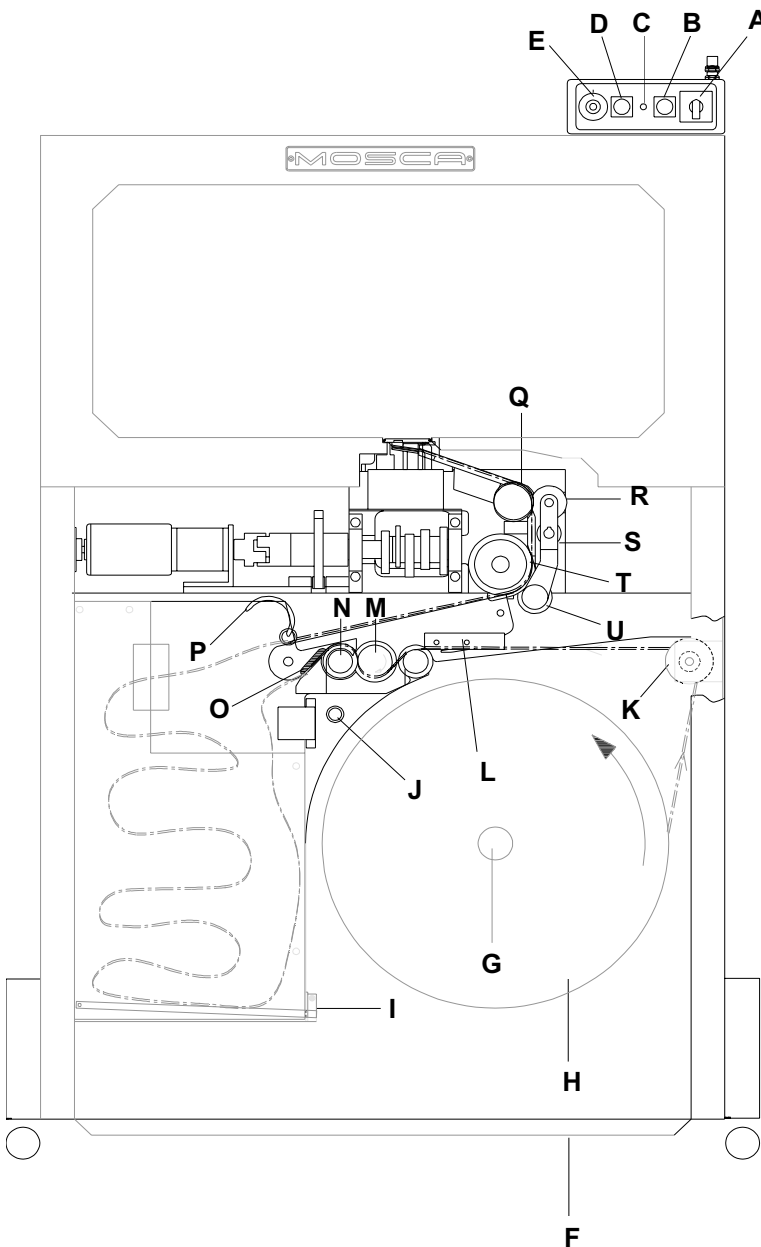
OPERATING AND TECHNICAL INFORMATION

STRAP SPOOL INSTALLING AND THREADING

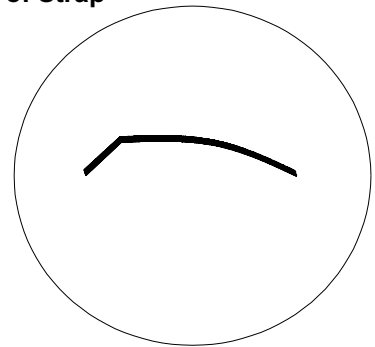
Threading Components

- A Main Switch
- B Machine On Indicator
- C Weld Temperature Indicator
- D Illuminated Push Button - Soft Tension
- E Strap Tension Potentiometer
- F Foot Pedal
- G Dispenser Knob
- H Dispenser Cover
- I Accumulator Fill Sensor
- J Dispenser Brake Release

- K Idler Roller
- L Strap End Sensor Guide
- M Feed Roller
- N Pressure Roller
- O Strap Guide Mark
- P Strap Threading Gate
- Q Tension Drive Roller
- R Tension Pressure Roller
- S Strap Drive Roller
- T Pressure Roller Lever
- U Pressure Roller



Detail of Strap



Bend the strap tip down before inserting.

OPERATING AND TECHNICAL INFORMATION

STRAP SPOOL INSTALLING AND THREADING (CONT'D)

Strap Threading

DO NOT TURN POWER OFF DURING THE THREADING PROCESS.

1. If machine is in threading position (strap track is open) proceed to step 3.
2. To set threading position, the machine must be cleared of any existing strap in the threading areas. To remove strap, cut strap between (L) and (K). Open the accumulator door, pull strap ONLY towards the left side wall of the machine. Not forward, or to the right where the strap will jam between the drive rollers. After strap removed, close door and press foot pedal once. The track will open and the feed motor will turn.

is

steps

With the machine in the threading position (the strap track will be open), follow these to install and thread a new spool of strap:

3. Open the front door of the machine.
4. Turn knob (G) counterclockwise, and remove dispenser cover (H).
5. Remove the old spool and all cardboard inserts and discard.
6. Place the new strap spool on the dispenser making sure that it unwinds in the counterclockwise direction.
7. Replace the dispenser cover (H) and tighten knob (G).
8. Remove all adhesive tape strips and other fastening material.
9. Press and hold push-button (J) to release the dispenser brake and unwind about 18 inches of strap from the spool.
10. Thread the end of the strap behind roller (K), and into strap threading guide (L).
11. The strap threading gate (P) will close automatically when the strap end passes through strap threading guide (L).

Note: If threading gate (P) does not close when the strap passes guide (L) or opens during the threading operation (the threading operation is limited to 30 seconds), remove the strap, close the front door and depress the foot pedal twice. Continue with step 10. If the machine will not enter the strap threading position, contact your supervisor for assistance.

until

12. When the strap presses against the pressure roller (N), turn the feed roller (M) clockwise (while continuing to apply pressure to the strap) and feed strap around the end appears somewhere in the red zone indicated by (O).
13. Close and secure the front door and depress the foot pedal.
14. Strap will then be fed into the feed rollers and then into the accumulator. When the accumulator is full, as indicated by sensor B8 (I), strap will feed around the track.

Note: A detailed description of the strap threading process is given on pages 3.10 & 3.11, along with inputs and outputs for strap threading troubleshooting

OPERATING AND TECHNICAL INFORMATION

SEQUENCE OF OPERATION

1. Position the bundle to be strapped over the center of the top slide plate.
2. Operate the foot pedal to start the first part of the sealer cycle, feeding the strap from the accumulator through the strap track and into the sealer.
3. Operate the foot pedal a second time to start the sealer. The right gripper will raise to clamp the top piece of strap, the strap track is opened, and the strap is pulled around the bundle. The unused strap is fed back into the accumulator.
4. When the strap tension is reached, the left gripper clamps the strap end and the slide plate moves back to allow the heater to move between the strap ends.
lower
5. As the knife-bar moves up, it cuts the strap, then presses the heater tongue between the strap ends melting the surfaces.
6. The knife-bar drops down, and the heater pulls out. The knife-bar then moves up a second time pressing both molten surfaces together to form a weld.
7. Once weld cooling is completed, the knife-bar and both grippers drop down. The top slide plate moves back ejecting the seal. The strap track closes and the slide plates move forward completing the cycle.
8. This completes the sealer cycle, with a strapped package. Once the strap track is closed, the strap is automatically fed into the sealer activating sensor B1 indicating the strap and sealer are ready.

Note: The machine has an automatic strap eject system. When the strap spool is empty, the machine ejects the remaining strap from the accumulator out of the strap track and onto the table.

OPERATING AND TECHNICAL INFORMATION

SEALER SEQUENCE

Operating the Sealer Manually

Since the sealer unit controls the strap tensioning, gripping, cutting, and welding of the strap, at times it is necessary to check the individual movements. All movements are cam operated-spring return, on one main cam shaft.

- To check proper operation of all sealer components, the operator may turn the sealer unit by hand. In order to do this, perform the following 2 steps, then follow the below sequence to troubleshoot machine.
 1. Turn off the main power switch.
 2. Turn knurled knob on sealer drive motor M2 in the direction of arrow indicated.

Sealer Sequence

1. At sealer neutral stop (home position), sensors B13 and B11 are activated, indicator lights are on.
2. The first action in the sealer is that the right gripper bar is lifted, clamping the top strap end against the top slide plate. Check strap to see if it is clamped tight.
3. The strap track opens to allow the strap to be pulled out. Make sure the track moves freely.
4. When the track is almost fully open, the sealer continues to drive until pullback position, sensor B13.1 is activated.
5. In pullback position, solenoid Y10.1 and strap motor M4 are activated to initiate pullback of the strap.
6. When pullback is completed, final tension is applied to the strap. Motor M1 and solenoid Y10 are activated.
7. When the tension cycle is complete, the left gripper bar moves up to clamp the bottom strap against the top plate (check to see if strap is clamped tight).
8. At the same time, the heater begins to move into the weld area.
9. When the bottom strap is clamped, the center knife-press bar starts to move up while the heater continues to move in between the top and bottom strap.
10. The lower slide plate is pulled back at the same time the heater moves into the sealing area. (The heater tongue should not contact the lower slide plate.)
11. As the knife-press bar moves up, it cuts the bottom strap and then presses the two strap ends firmly against the heater. Make sure the straps are clamped tight against the top plate.
12. After a short time, the knife-press bar moves down about 1/4" to allow the heater to move out. As the heater clears the bar, the knife-press bar moves up to press the two molted surfaces together to form a weld.

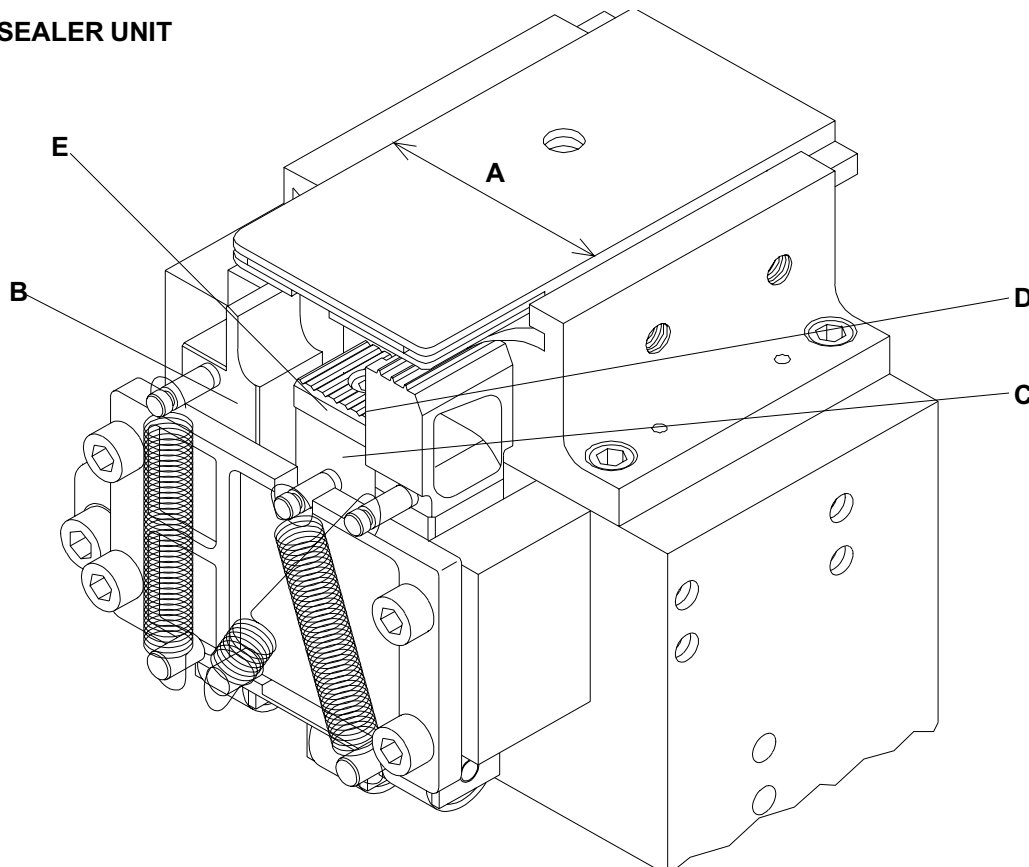
Note: It is very important that the knife-press bar moves down (pulled by the spring). If the bar sticks and can't free the heater tongue, it pulls the bottom strap out and when the bar comes up, the strap ends can be misaligned causing a break in the weld.

OPERATING AND TECHNICAL INFORMATION

SEALER SEQUENCE (CONT'D)

13. At the end of the seal and cooling time, the three bars are pulled down by their springs. Then the top slide plate is pulled back releasing the strap against the bundle.
14. The top and lower slide plates move forward and the track closes, activating sensor B11.
15. The sealer continues to drive until sensor B13 is activated, stopping the sealer shaft movement. (Home Position)
16. With sensors B11 and B13 activated, the strap drive motor M4 is activated to feed strap around the track.
17. Strap is fed around the track until sensor B1 is activated. At this point, the machine is ready to cycle.

SEALER UNIT



- A Top Slide Plate with Lower Slide Plate
- B Left Gripper (clamp)
- C Knife-Press Bar
- D Right Gripper-Cutting Edge
- E Knife

MAINTENANCE AND TROUBLESHOOTING

PREVENTIVE MAINTENANCE

1. Check all electrical plug-connections.
2. Make sure the supply line voltage matches machine voltage.
3. Check the P.C. board connections. Reseat the plugs periodically.



Do not force PC Board connectors when re-installing.

4. Clean the exhaust fan periodically.
5. Machines equipped with plug in relays, reseat relays periodically.
6. Check all proximity sensors; the mounting, the gaps, and clean when needed.
7. Check the temperature control setting. The heater temperature should be checked at the heater tongue tip at 260° C (500°F). If needed, adjust the temperature with the potentiometer on the controller R1.
8. Check all screws every 6 months and tighten when necessary.
9. Clean daily with an air hose or brush:
 - strap feed roller assembly
 - strap guide (with track open)
 - top and bottom slide plate assembly
 - grippers and knife-press bar
 - accumulator feed rollers
 - accumulator chamber
10. Clean out the inner strap track area periodically and lubricate the linkages with light oil.
11. Make sure to clean and lubricate regularly as per instruction. (See page 3.3 & 3.4)
12. After the initial 500 hours of operation and every 100-150 hours of operation there after, perform the following procedures.
 - Clean and lubricate top and bottom slide plates. Check the bumper ring, washer spring. Replace if worn.
 - Check B11 strap sensor finger and adjust if loose.
 - Remove the strap track front cover. Lubricate the strap track opener and strap swing linkages.
 - Clean and lubricate grippers and knife-press bars; remove the slide plate assembly, pull out the grippers and knife-press bar. Clean thoroughly, especially the the casting slots. Check wear marks and make sure the cam rollers are lubricated.
 - Clean and lubricate slide plates and guides.
13. Work on the electrical control system must only be done by qualified personnel.

and

track

corners of
free and



When cleaning the dust from the machine, don't hold the air nozzle directly on bearing seals-shield or knife-gripper bar sliding surfaces. You may force the dust into the bearing surface. Make sure to lubricate the cleaned areas.

MAINTENANCE AND TROUBLESHOOTING

MAINTENANCE AND LUBRICATION

Maintenance

- under
- With proper maintenance, the strapping machine will perform at its optimum level under standard operating conditions.
 - Keep the strap drive and sealer clean and free of paper, dust and strap pieces.
 - Clean out the following with a brush or blow out with air weekly;
 - The Accumulator and Accumulator Fill Drive .
 - The Strap Guides.
 - The Heater.
 - The Gripper Areas.

Lubrication

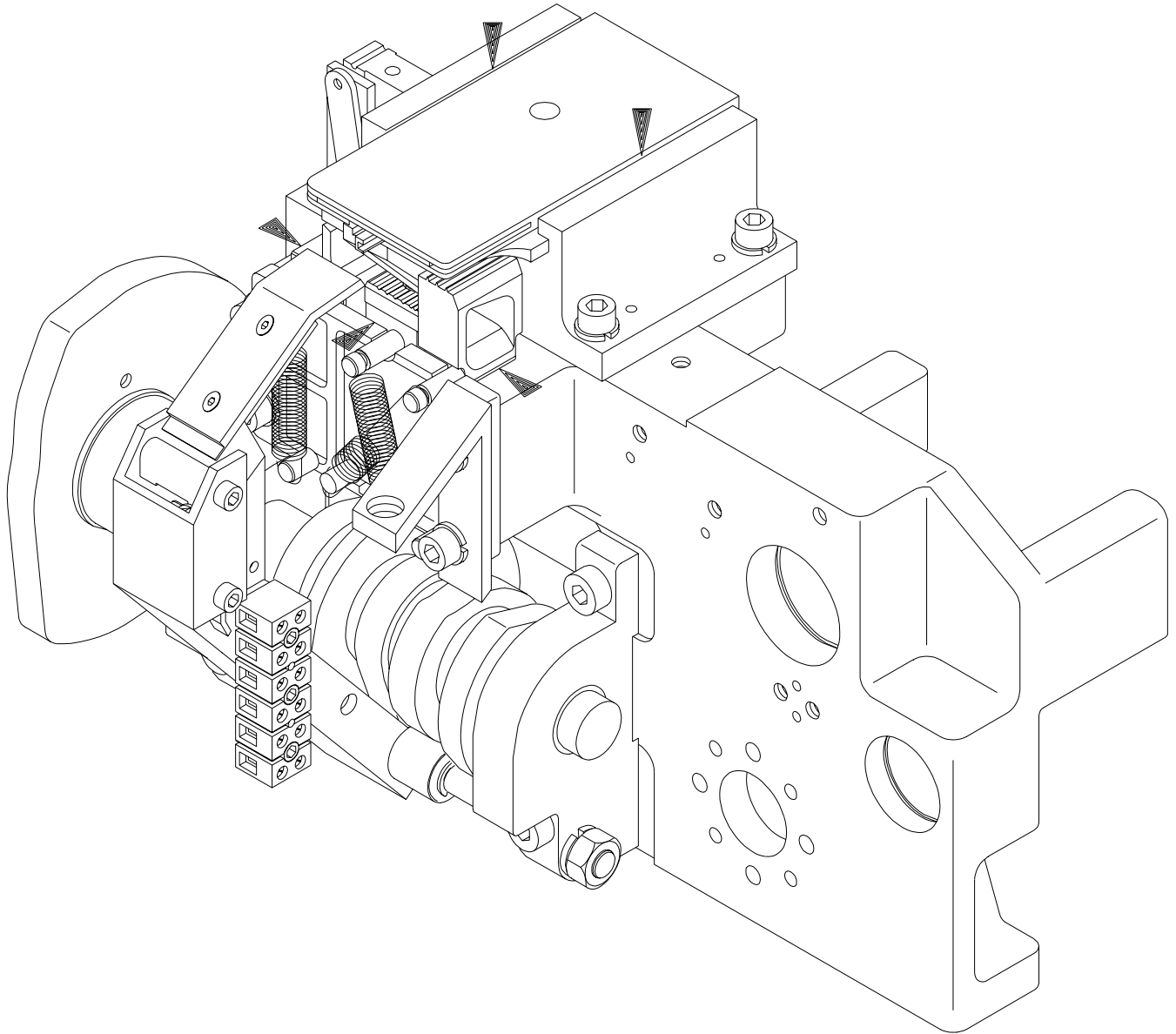
- The sealer gripper and slide plates should be lubricated weekly with light, clear, non-gumming oil.
- Track opener and track swing linkages should also be lubricated weekly.

MAINTENANCE INSTRUCTIONS

1. The temperature of the heater is measured on the heater tongue and should read 260°C or 500°F. Adjustment is made with the potentiometer on temperature control N1, found in the electrical enclosure box.
2. The exhaust fan must be cleared periodically.
3. Check the proximity sensors and photo controls for proper mounting and adjustment.
4. Keep the inside of the machine clean and look for possible damage to cables and switches.
5. Make sure only properly trained personnel (Electrician) will work on the control system.

MAINTENANCE AND TROUBLESHOOTING

MAINTENANCE AND LUBRICATION



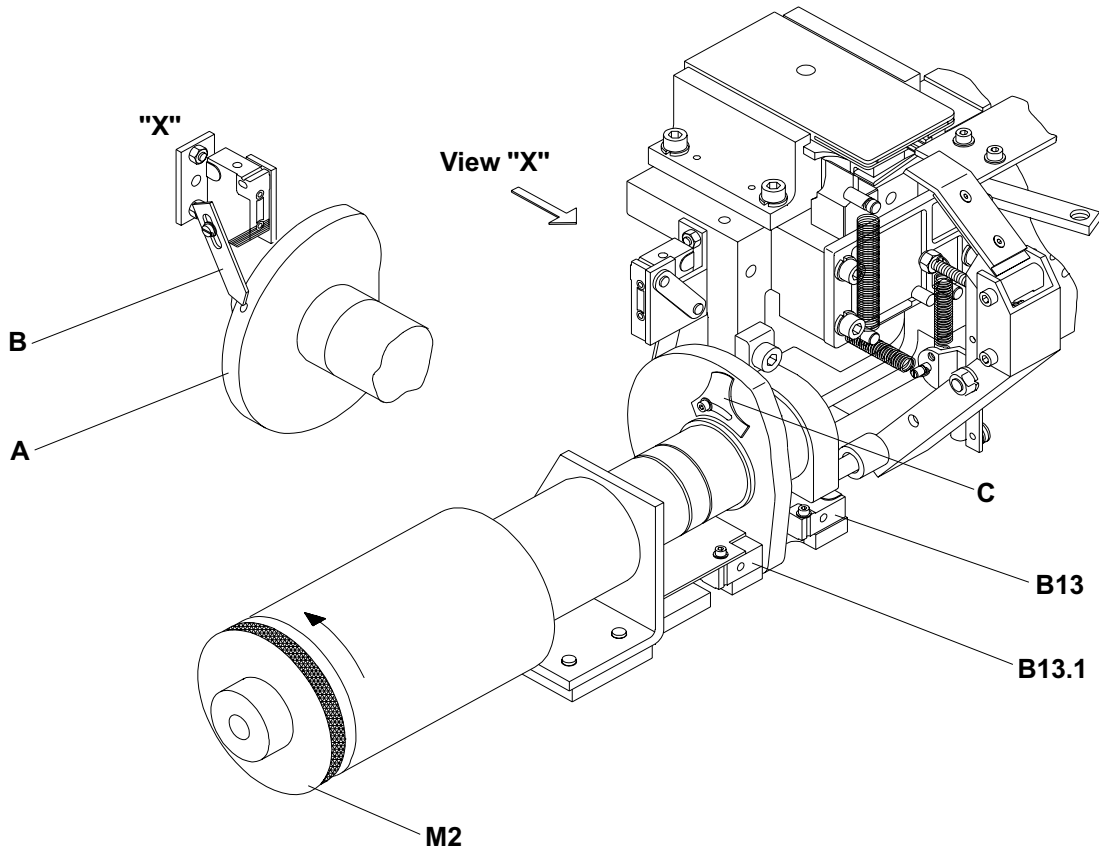
- Lubricate weekly with small doses: between grippers and knife-press bar, slide plates, and strap track assembly bushing.
- Use only, light-clear oil.
- All other assemblies are lubricated for life.
- Keep the strapping machine, especially the strap guides and sealer, in clean condition.
- Make sure that the lubricant does not get into any areas the strap travels through.
- Make sure to place slide plate lever pin in between forks of slide plate properly.
- Make sure sealer sensor flag(s) are not loose.
- Make sure upper slide plate shoulder bolt is not loose.
- Make sure gripper springs are not worn out.

MAINTENANCE AND TROUBLESHOOTING

SEALER POSITION ADJUSTMENT



Note: Sealer moves counterclockwise through positions 1-3, looking at the sealer from the left side.



- A** Track Opener Cam
- B** Sealer Position Pointer (points to dimple in cam) (Home position timing mark).
- C** Sealer Position Sensor Flag
- B13** Sealer Home Position Sensor
- B13.1** Sealer Tension Position and Weld Cooling Position
- M2** Hand Wheel Sealer Motor

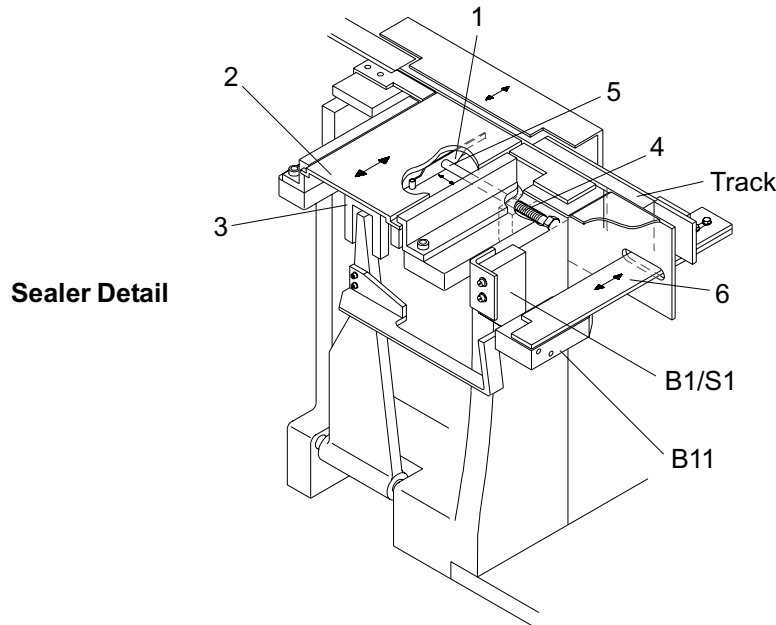
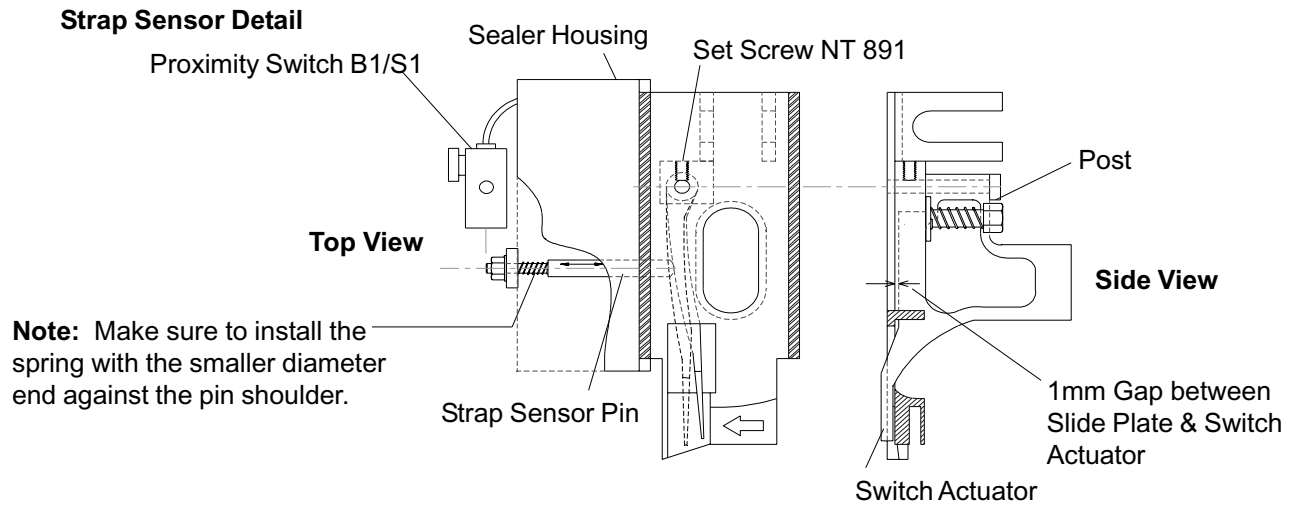
Sealer Home Position

1. The sealer home position is signaled by proximity sensor B13. The right gripper is at lowest position possible. The dimple on track opener cam A is lined up with pointer B.
 - Adjust the position by moving the B13 sensor flag.
2. The strap pull-back position is signaled by proximity sensor B13.1. The correct position is when the strap track is fully open and the heater starts to move toward the strap.
 - Adjust with the first sensor flag of B13.1.
3. The weld cooling position is also signaled by sensor B13.1. The correct position is, after the heater moves out, and the center knife-press bar moves up fully.
 - Adjust with the second sensor flag of B13.1

its
B.

MAINTENANCE AND TROUBLESHOOTING

TRACK SLIDE PLATE POSITION



Sealer Components

- 1 Strap Sensor Actuator
- 2 Top Slide Plate
- 3 Lower Slide Plate
- 4 Strap Sensor Spring
- 5 Strap Sensor Pin
- 6 Track Position Bracket
- B1/S1** Strap Sensor Proximity Switch
- B11** Slide Plates and "Track Closed" Proximity Sensor

Adjustments

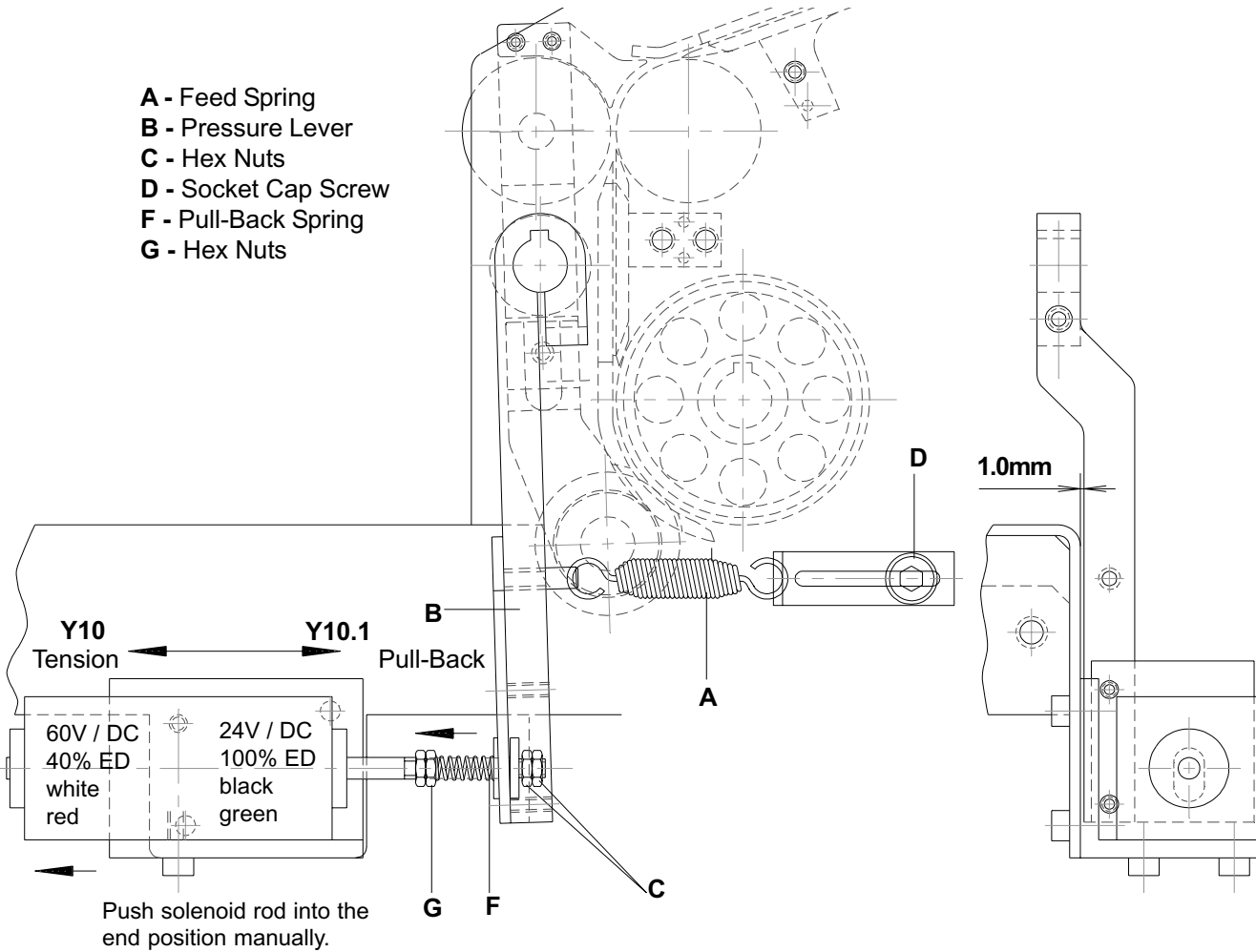
1. Adjust the strap sensor (B1/S1) to have light "on" when the strap sensor flag (1) is pushed toward the sensor, 2/3 of total travel distance.
2. Adjust the track position bracket (6), to have the light of (B11) off when the strap is open approximately 1/8" and the slide plates are fully closed.

track

MAINTENANCE AND TROUBLESHOOTING

SOLENOID ADJUSTMENTS Y10 & Y10.1 ME 2209 (High Tension) & ME 2136

- A - Feed Spring
- B - Pressure Lever
- C - Hex Nuts
- D - Socket Cap Screw
- F - Pull-Back Spring
- G - Hex Nuts



The Sealer must be in the home position with strap threaded in.

1. Feed - Adjust spring tension (A) to provide enough roller pressure to feed the strap, using socket cap screw (D).
2. Pull-back - Set pull-back pressure with spring (F) by adjusting the double lock nuts (G). The strap should pull around the top plate in the time set with S7. (without strap hangup)

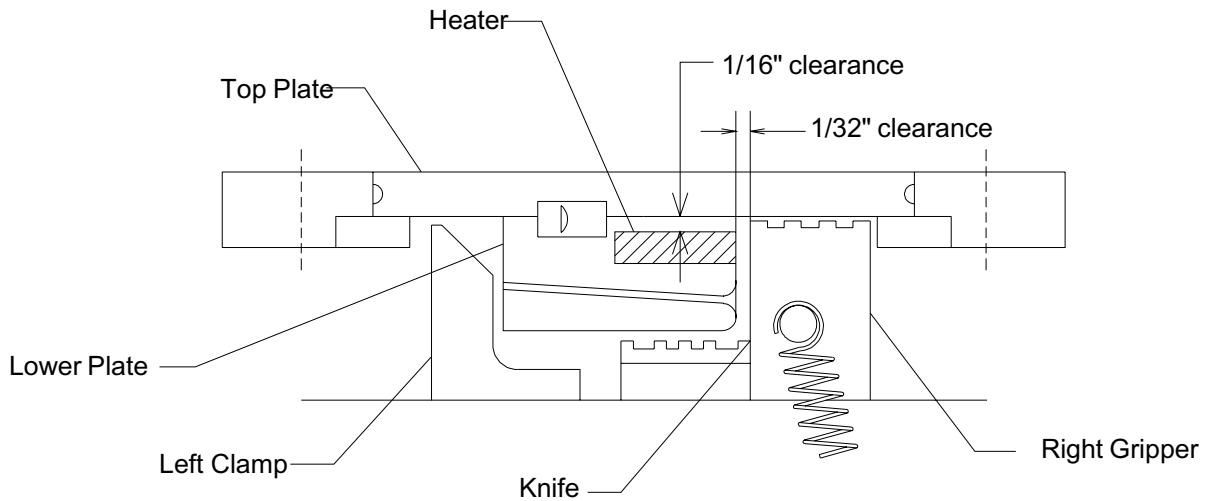
Note: The tension adjustment of the solenoid is made with the solenoid rod pushed fully to the left as indicated by the arrow.

3. Tension - This adjustment is made with the solenoid plunger fully bottomed out, push the lever (B) to the left. The solenoid plunger bottoms out. Turn double lock nuts (C) up against lever (B). Turn the double nuts clockwise an additional 1.5 revolutions.

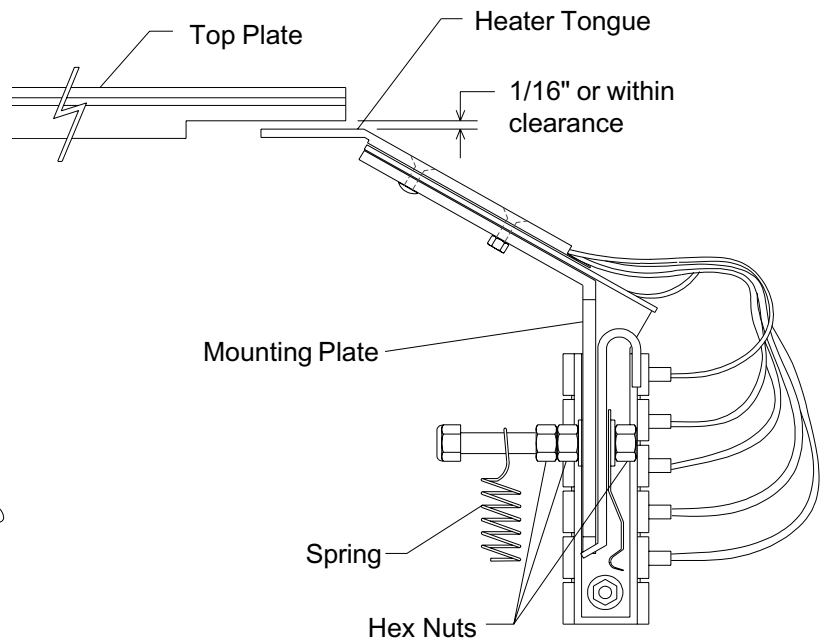
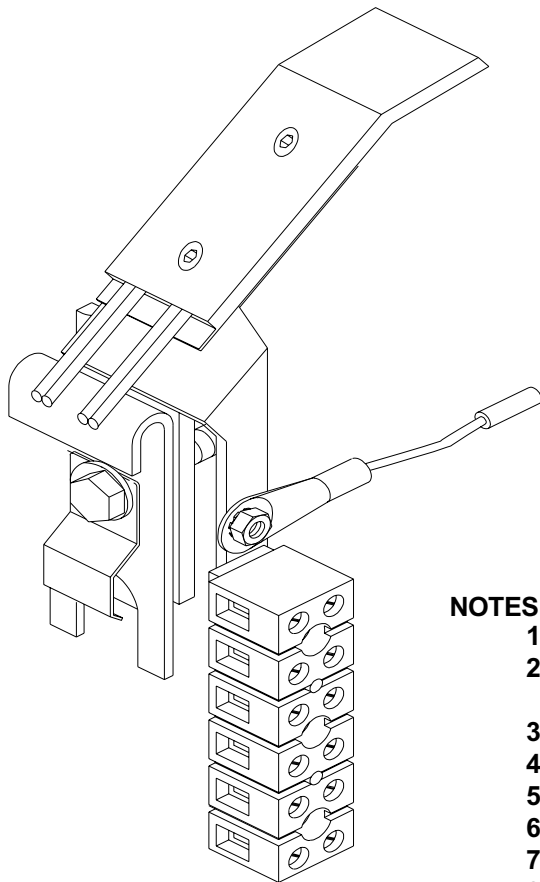
Note: When pushing the solenoid rod in-fast, the plunger bottoming sound should not be heard.

MAINTENANCE AND TROUBLESHOOTING

HEATER ADJUSTMENTS



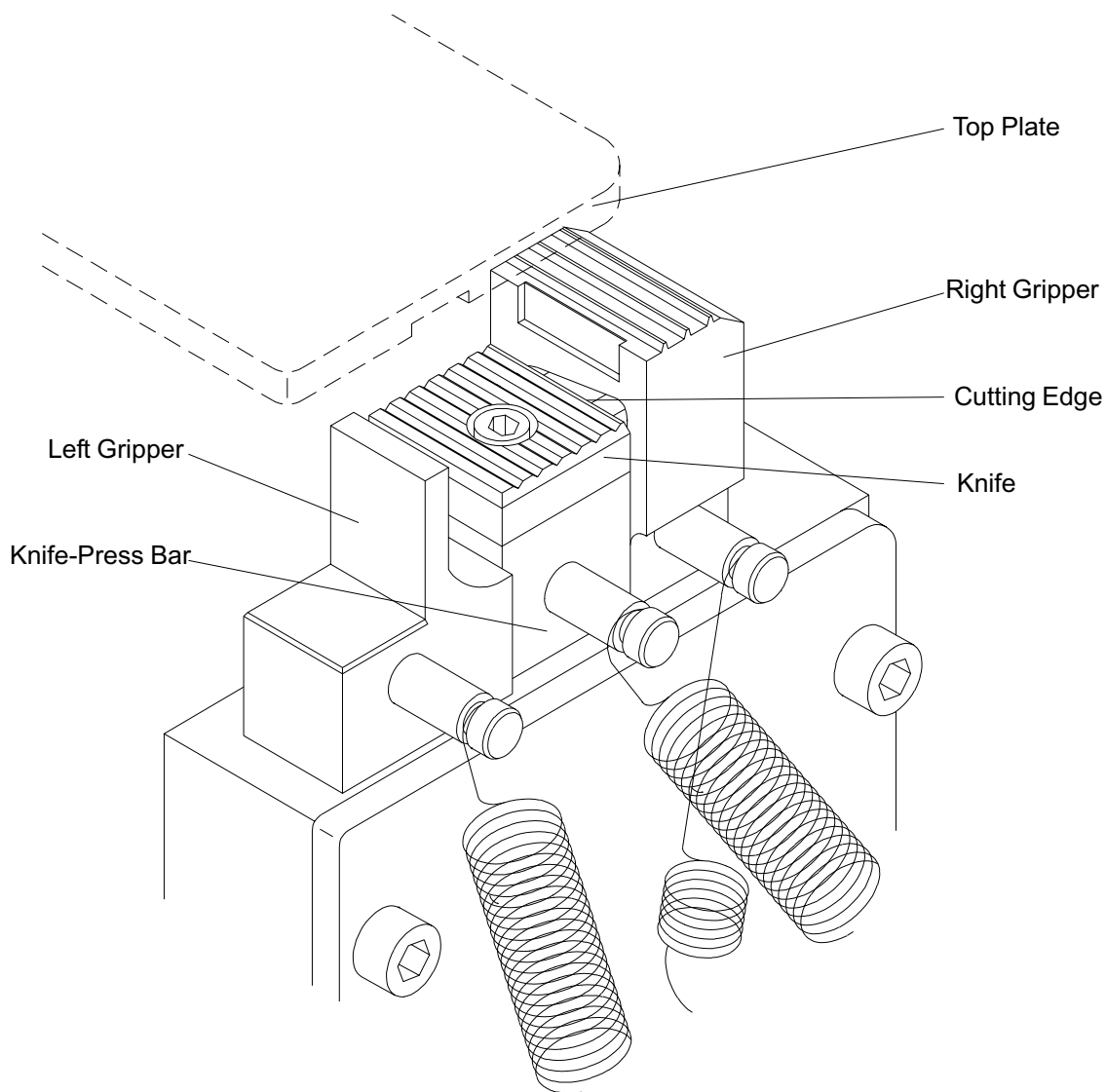
24V. Heater



- NOTES:** In order to adjust the heater to the above shown clearances:
1. Turn the machine power off.
 2. Turn the sealer motor using the white plastic hand wheel to bring the heater into the weld area.
 3. Remove the spring.
 4. Loosen the hex nuts in the mounting plate.
 5. Move the heater into the correct position and tighten the top nut.
 6. Turn the sealer motor to bring the heater out.
 7. Tighten both "hex nuts" firmly.
 8. Replace the spring.
 9. Make sure to check adjustment after tightening the "hex nuts".

MAINTENANCE AND TROUBLESHOOTING

KNIFE PRESS-BAR ADJUSTMENT

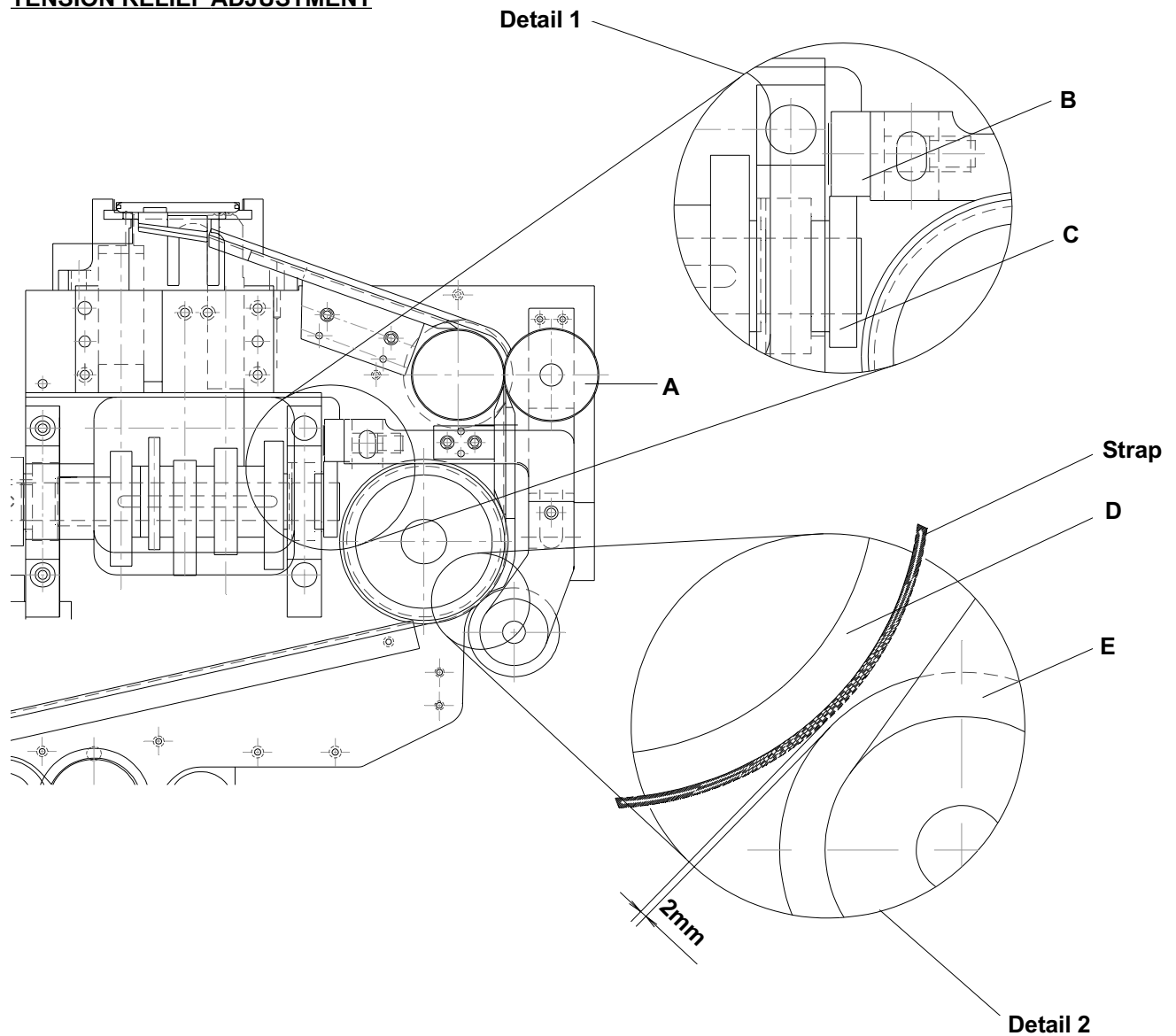


To Align knife edge against the Right Gripper:

1. Turn the sealer in reverse, to manually lift the knife-press bar to align both cutting edges.
2. Loosen the knife screw, then tighten the screw while lightly pressing the knife against the right gripper. Make sure the screw top is flush with the top of the knife.

MAINTENANCE AND TROUBLESHOOTING

TENSION RELIEF ADJUSTMENT



- To prevent strap end splitting during the strap cut-off, tension roller (A) must be lifted off the strap before cut-off.
- Turn the sealer to bring the high point of cam (C) to the cam roller (B).
- A 2mm space should be available between rollers (D) and (E) when roller (B) is pushed down making contact with cam (C).
- The strap should move freely between all rollers with the solenoid (Y10) energized.

MAINTENANCE AND TROUBLESHOOTING

DETAILED DESCRIPTION OF STRAP THREADING PROCESS

STRAP EJECTION Refer to page 2.8 for the Strap Threading Diagram.

- The RO-MP-2 machine is equipped with Auto-strap eject function when the strap spool is empty.
 - The machine will automatically recognize the strap spool has run out of strap, providing the correct Input/Output (I/O) orientation is achieved.
1. During operation of the machine, the accumulator fill sensor (I) will detect a low amount of strap and activate the accumulator drive assembly (M) and (N). Strap will be pulled from the strap spool to refill the accumulator chamber as needed. The machine will sense there is no strap remaining on the spool when the end of strap is pulled through point (L).
 2. When the end of the strap is pulled through point (L) and the strap end actuator flag has dropped down, the strap end sensor B7 input (E9) will be off and accumulator fill sensor B8 input (E6) will be on.
 3. The strap will then be pulled through the accumulator feed rollers, (M) and (N), into the accumulator chamber, and fed out onto table top area by the strap drive assembly for easy removal.

moved
motor

NOTE: The accumulator fill sensor B8, input (E6), must be on. If sensor B8 is not on, the machine will not pull strap through the accumulator feed rollers, sensing the accumulator is full of strap.

STRAP THREADING

- The RO-MP-2 machine is outfitted with a semi-automatic threading assembly.
 - To assist the feeding process, a feed gate (P) in the accumulator will drop down to direct strap through the accumulator to the strap drive. It is important to have the correct (I/O) orientation and to follow the correct procedure when trying to feed strap into the machine.
 - **Before strap threading, the machine must be cleared of any existing strap in the threading areas. To remove strap, cut strap between (L) and (K), open the accumulator door and remove all strap. When removing strap from the accumulator area, pull strap ONLY toward the left side wall of the machine, not forward.**
1. Close swing table top and front access door to ensure all safety switches are activated, input (E11) on. **Due to safety concerns, DO NOT operate the machine with the safety switches bypassed. If safety switches are bypassed, the strap threading sequence will not work properly.**
 2. Turn the main switch (A) on. **Do not turn machine power off during the threading operation. Once the heater reaches operating temperature, the weld temperature indicator (C) will remain lit.**
 3. Reset the machine memory by pressing the foot pedal (F) twice. As the machine memory is clearing, the green strap track will cycle open and close, then re-open followed by the strap drive motor (M4) running momentarily.

MAINTENANCE AND TROUBLESHOOTING

DETAILED DESCRIPTION OF STRAP THREADING PROCESS

CONT'D

STRAP THREADING CONT'D

- input
for
4. The (I/O) configuration should be as follows when the machine has completed resetting memory: sensor B13.1 input (E5), sensor B8 input (E6), N1 signal (E10), safety switches S1 & S2 input (E11), and output (A12) should all be "ON", threading to work properly.
 5. Turn knob (G) counterclockwise, and remove dispenser cover (H).
 6. Remove and discard any existing cardboard guide rings and spool tube.
 7. Place the new spool of strap on the dispenser holder making sure it unwinds in the counterclockwise direction.
 8. Replace the dispenser cover (H) and tighten knob (G) until it locks into place.
 9. Remove all adhesive strips and other fastening material.
 10. Push and hold button (J) to release the dispenser brake and unwind about 18 inches of strap from the top of the spool. **Make sure there is no twist in strap during threading procedure.**
 11. Thread the end of the strap behind roller (K), and into strap sensor guide (L). The threading gate (P) will close automatically once strap is inserted into guide (L) by activating sensor B7, input (E9). **If thread gate (P) does not close when strap is inserted, remove strap from guide (L), close front door and press foot pedal twice. Machine will run through a memory reset cycle as noted in step 3. ** If problem with threading gate (P) continues, check if accumulator fill sensor B8, input (E6) is on, and strap end sensor B7, input (E9) is off.**
 12. Continue to feed strap until a resistance to strap occurs. Apply pressure to strap while turning roller (M) and advance strap to red zone (O). **If strap threading gate opens during procedure, strap must be removed from strap end sensor guide (L), front door closed, and foot pedal (F) must be pressed twice. This will reset machine and continue with step 11. (The thread gate operation is limited to 30 seconds.)**
 13. Close and secure front door and press foot pedal (F) once. By operating the foot pedal, strap will be fed up to the strap drive.
 14. Once strap is fed up to strap drive, strap will continue feeding into accumulator assembly. When accumulator fill sensor B8, input (E6), is off, accumulator will be full of strap and strap drive motor (M4) will activate and feed strap around green strap track.
 15. Machine should be ready to operate. When machine is ready and sealer is in home position, the following (Input) configuration is needed to cycle machine: sensor input (E1), sensor B11, input (E2), sensor B1, input (E3), N1 signal, input (E10), safety switches S1 & S2 signal, input (E11), all need to be "ON". **Other inputs may be on, however, the inputs listed above NEED to be "ON" to operate machine.**

B13,

Refer to page 2.8 for Strap Threading Diagram.

MAINTENANCE AND TROUBLESHOOTING

TROUBLESHOOTING LIST

Trouble	Cause	Remedy
Strap not feeding through track arch.	The strap is twisted in the accumulator.	Remove the strap and re-thread according to diagram pg. 2.8. Make sure no twist exists.
	Strap is jammed between the carton disc and the spool cover.	Loosen dispenser cover, and free strap.
	Accumulator sensor flag does not move freely.	Remove all foreign particles from accumulator. Make sure the sensor flag moves freely.
	Spool unwinds in the wrong direction.	Remove the dispenser cover, and replace the spool so the strap unwinds in a counterclockwise direction. (see pg. 2.8)
	Strap feed roller does not advance strap.	Clean out upper and lower strap guides, and adjust feed pressure roller according to diagram. pg. 3.9
	The dispenser brake is too tight. (Check brake by using push button S6. Dispenser should spin freely while push button is pushed.)	Adjust the brake gap to 0.005 inches all around.
	The top slide plate is not in full forward position.	Sensor B11 is not on. Clean top slide plate assembly. Make sure sensor B11 is actuated 1/8" before full forward position.
	The track is not completely closed.	Clean out track assembly. Make sure sensor B11 is actuated just before the track is completely closed.
	The strap makes contact with the right gripper. (Home position). The track is too low.	Check the guide pins and bushings. Loosen the bridge screws and adjust the track exit point.
Grippers in sealer do not move down with the cams.	Clean and lubricate properly. Check springs for fatigue.	
Strap is pulled back, past the feed pull-back roller.	The strap sensor B1 is held "on" by the switch actuator flag, or sensor is bad.	Clean out area. Replace sensor if necessary.
	Right gripper not clamping strap or strap slips.	Check if right gripper and/or cam follower are worn. Check for up and down movement in the slide plate assembly.

MAINTENANCE AND TROUBLESHOOTING

TROUBLESHOOTING LIST (CONT'D)

Trouble	Cause	Remedy
The strap is pulled around the bundle, but is not tightening.	The tensioning roller slips on the strap.	1. Check if the motor is turning. 2. Check if the tension solenoid is pulling the lever to the left side. 3. Adjust the tension solenoid. See diagram pg. 3.6
Thread gate will not close. Gate closes when; -no strap in accumulator -B7 senses no strap -Strap feed takes longer than 10 seconds and the power is not off = Fault. -Turning power off after a fault signal will reset the fault.	The machine has not established a fault.	Close all doors and activate the foot pedal twice.
	B7 sensor actuator is not moving freely, and/or B7 sensor is bad.	Clean sensor area. Replace sensor B7 if bad.
	The solenoid to gate crank position is too low.	Adjust the two nuts to the right of the solenoid to allow for a higher crank position.
Sealer does not move to home position.	Safety switch s1 and/or S2 not operated. (Switch loose)	Make sure all tables and doors are closed to complete safety circuit.
	Slide plate lever not properly hooked into lower slide plate.	Make sure pin on slide plate arm is inserted between fork on lower slide plate.
	Proximity switch B13 loose or defective.	Adjust and secure sensor if necessary.
Motors do not start up.	Plug connections on motor cables are not plugged properly.	Check plug connections at motors.
	Strap is jammed in the strap guide.	Remove debris and clean area properly. If guide is removed, make sure guide does not bind with moving parts when re-installed.

MAINTENANCE AND TROUBLESHOOTING

TROUBLESHOOTING LIST (CONT'D)

Trouble	Cause	Remedy
Strap weld breaks apart or poor weld but holding.	The front swing table "strap guide" is out of alignment.	Adjust the swing table strap guide to the strap width.
	The knife-press bar does not move down when the heater moves out from in between the heated strap ends. The lower strap end is pulled out with the heater.	1. Make sure the knife-press bar moves freely. 2. Clean and lubricate the bar and slide area, check if the strap track contacts the right gripper when the gripper is in its up position. 3. Check the roll pin on the Knife Gripper assembly to see that it is not hindering the movement of the cam roller.
	The heater tongue needs cleaning and the temperature is too low.	1. Remove heater assembly when cool and clean with fine emery cloth. 2. Be careful not to bend the heater tongue. 3. Check heater for defects.
	The heater assembly is too tight in the arm pins. It cannot center itself properly between the two straps.	1. Make sure the heater assembly is loosely held (not binding) by the arm pins. 2. Turn the sealer to where the heater tongue is clamped between the knife-press bar and top slide plate. 3. Check and make sure the the heater is free to align itself properly.
	The heater arm spring is weak, does not pull the heater fully into the strap weld area.	Replace the spring.
	1. Temperature control plug is loose. 2. Temperature control is defective.	Plug in properly. Check if contacts are clean. Replace if defective.

MAINTENANCE AND TROUBLESHOOTING

TROUBLESHOOTING LIST (CONT'D)

Trouble	Cause	Remedy
Strap cycle not starting.	Proximity switch B6 loose or defective.	Adjust & secure if necessary. Sensor B6 should activate when foot pedal is pressed.
Strap is not threading in.	Proximity switch B7 is defective.	Replace sensor if necessary.
	Sensor flag of proximity switch B7 is jammed.	Remove debris and clean area. Sensor flag should freely drop down through cover.
	Feed-pullback position not adjusted properly.	See adjustments on page 3.6
	Threading solenoid Y9 or guide jammed.	Make sure thread gate moves and retracts freely. check position of strap guide from thread gate to fee pull-back drive roller.
	Machine is not in thread-in position (operate foot switch).	Reset machine and begin strap thread process. See page 2.8 or 3.10 for more detail.



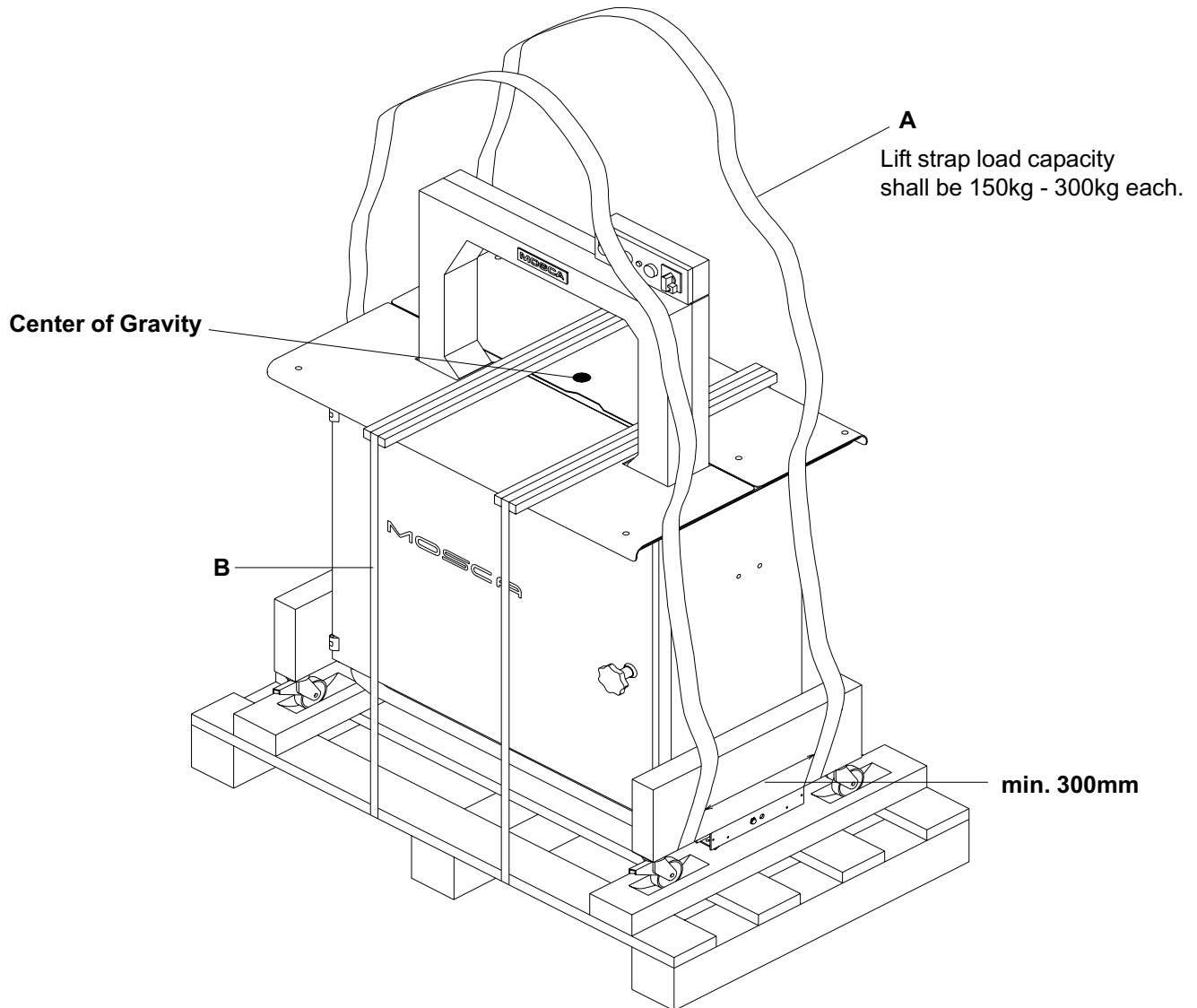
****For further help, please call the EAM-MOSCA service department.****

MAINTENANCE AND TROUBLESHOOTING

NOTES:

SHIPPING PROCEDURE

SHIPPING PROTECTION



- The strapping machine is shipped on a pallet. The machine is lifted on a pallet with a hoist using lift straps (A). For protection against moisture, the machine is wrapped inside a plastic foil.
- With straps (B), the machine is fastened to the pallet to prevent sliding.
Use Caution when cutting these straps. Use proper eye protection when cutting.
- Lift straps shall be used to lift the machine off the pallet.

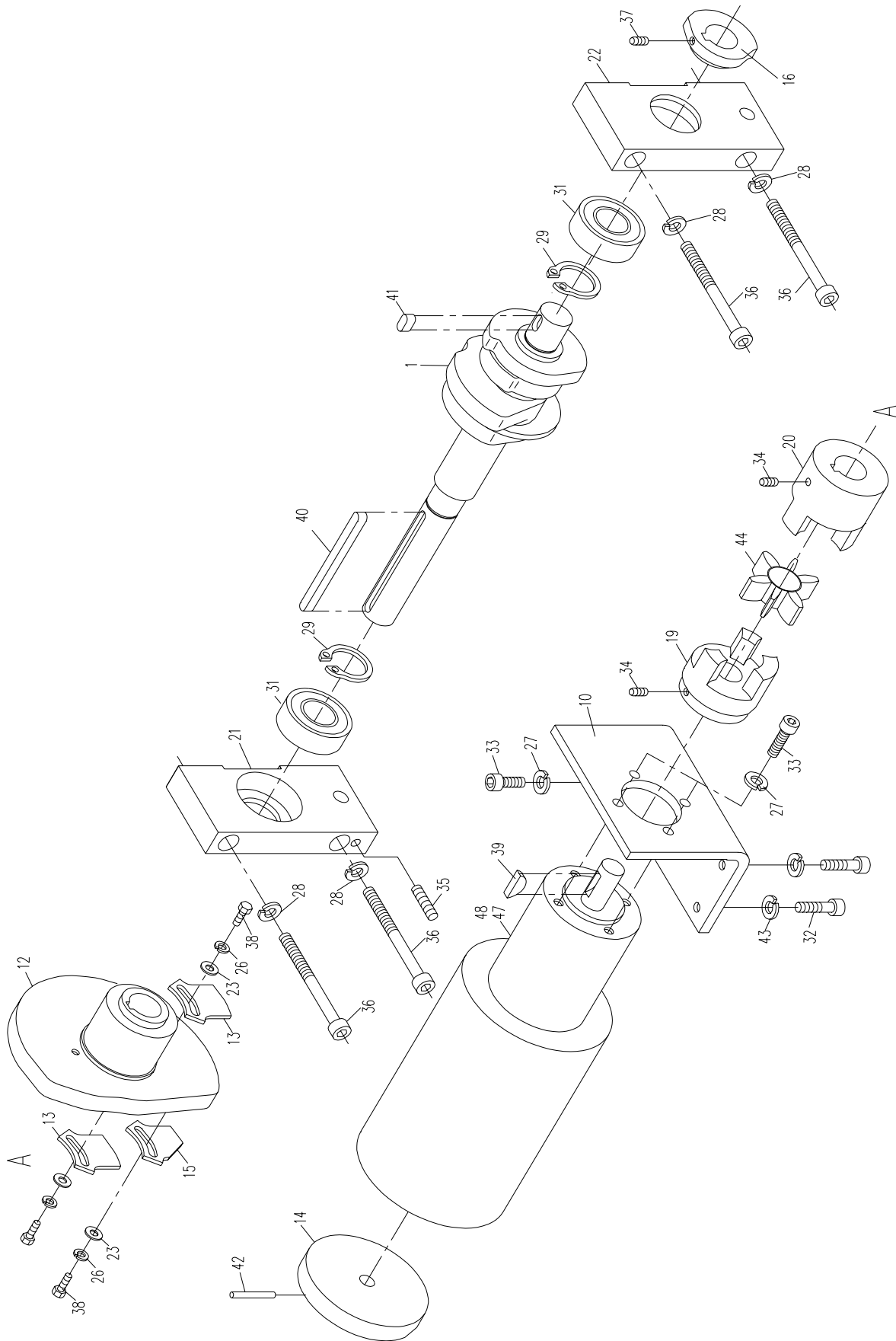


CAUTION: Care should be taken when cutting or disposing of metal strapping. Wear proper clothing including gloves and safety glasses. Dispose of loose strapping immediately.

PARTS IDENTIFICATION

MAIN SHAFT ASSEMBLY

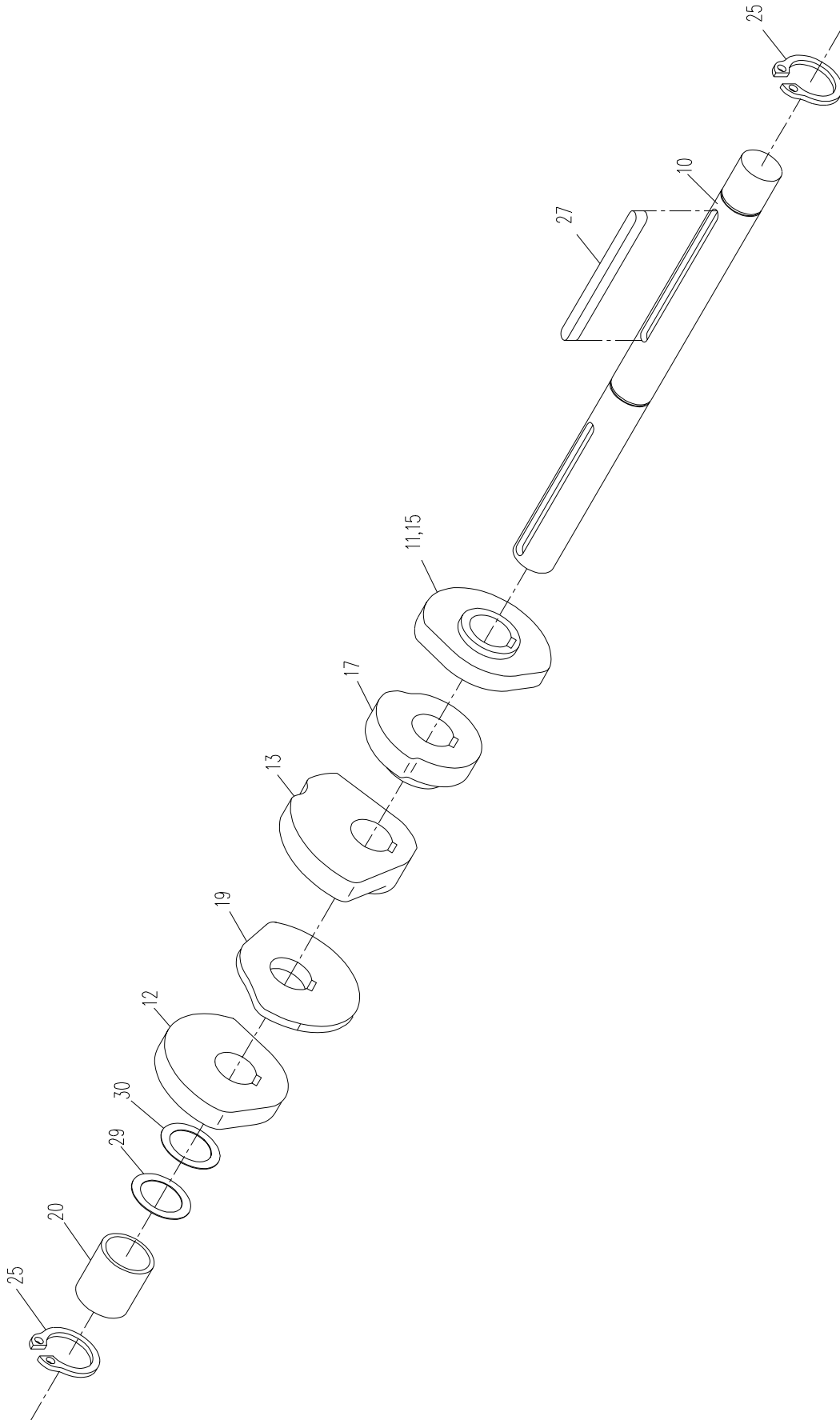
1620-0110-00 4/14/1997



MAIN SHAFT ASSEMBLY				
1620-0110-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-0111-00	Cam Set Assembly Complete	1	
10	1620-0110-10	Motor Bracket	1	
12	1620-0110-12	Strap Track Cam	1	
13	1620-0110-13	Sensor Flag	2	
14	1620-0110-14	Hand Adjustment	1	
15	1620-0110-15	Sensor Flag	1	
16	1620-0110-16	Cam	1	
19	2670-0110-19	Coupling	1	
20	2670-0110-20	Coupling	1	
21	0401-0110-11	Left Bearing Block	1	
22	0401-0110-12	Right Bearing Block	1	
23	NT 72	Washer	3	
26	NT 176	Lock Washer	3	
27	NT 74	Lock Washer	5	
28	NT 1672	Lock Washer	4	
29	NT 7	Snap Ring	2	
31	NT 9 **	Bearing	2	
32	NT 18	Socket Cap Screw	2	
33	NT 76	Socket Cap Screw	5	
34	NT 891	Set Screw	2	
35	NT 1008	Set Screw	1	
36	NT 259	Socket Cap Screw	4	
37	NT 872	Set Screw	1	
38	NT 475	Hex Screw	3	
39	NT 2445	Woodruff Key	1	
40	NT 36	Key	1	
41	NT 80	Key	1	
42	NT 999	Roll Pin	1	
43	NT 2222	Lock Washer	2	
44	NT 2129B02	Coupling Insert	1	
47	ME 1882	Motor (over 600mm)	1	
48	ME 2120	Motor (Up to 600mm)	1	

CAM SHAFT ASSEMBLY

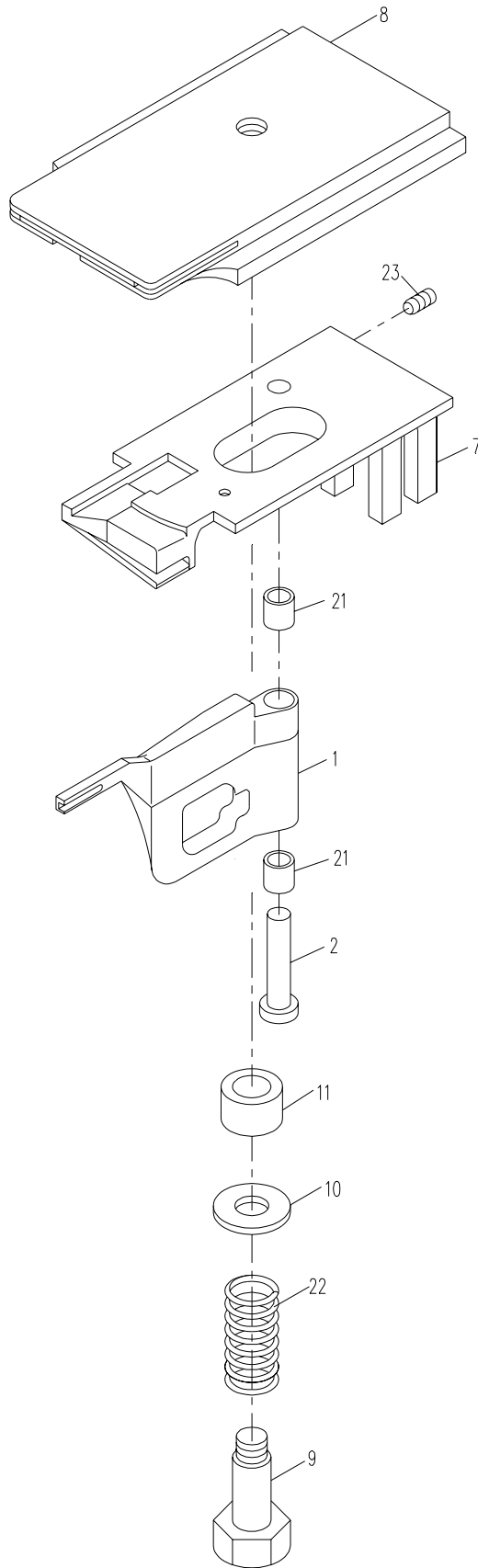
1620-0111-00 12/9/96



CAM SHAFT ASSEMBLY				
1620-0111-00				
Item	Part Number:	Description:	Qty:	Notes:
10	1620-0111-10	Shaft	1	
11	1620-0111-11	Slide Plate Cam (Cam 27)	1	5-6mm Strap
12	1620-0111-12	Left Gripper Cam (Cam 28)	1	
13	1620-0111-13	Knife Bar Cam (Cam 29)	1	
17	0120-0111-03	Right Gripper Cam (Cam 21)	1	
19	2902-010101-06	Heater Cam (Cam 38)	1	
20	2101-2110-09	Spacer Bushing	1	
25	NT 7	Retaining	2	
27	NT 36	Key	1	
29	NT 1582	Spacer	1	
30	NT 1067	Spacer	1	

UPPER SLIDE PLATE ASSEMBLY

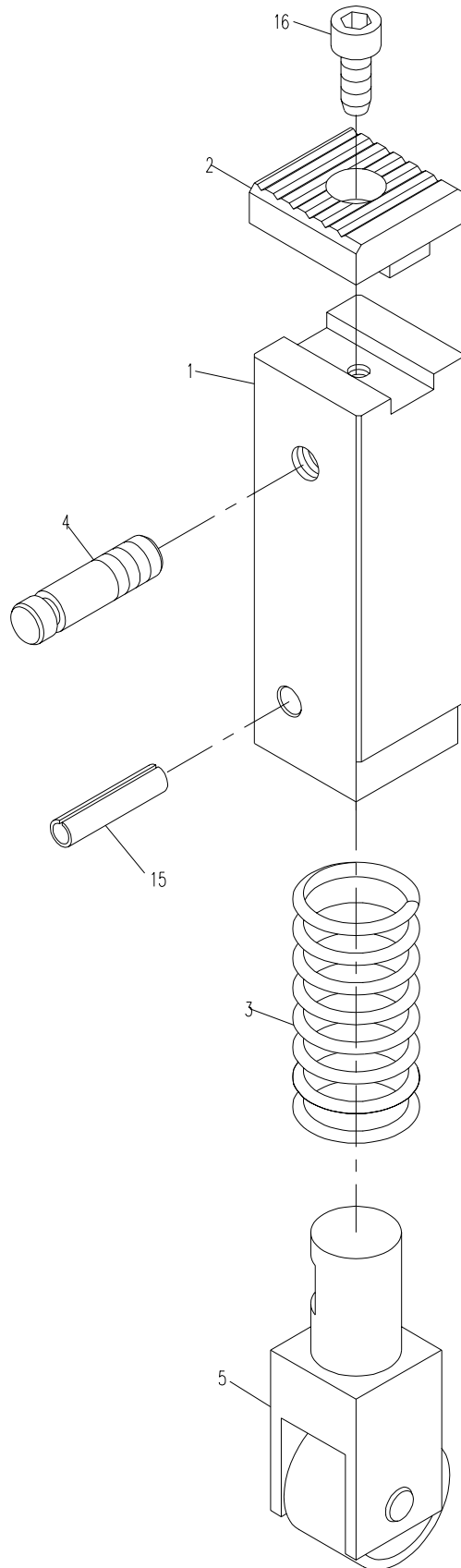
1620-0120-00 4/7/97



UPPER SLIDE PLATE ASSEMBLY				
1620-0120-00				
Item	Part Number:	Description:	Qty:	Notes:
1	2125-0120-01	Strap Sensor Flag	1	
2	2125-0120-02	Pin	1	
7	0101-0121-01	Lower Slide Plate	1	
8	0101-0120-01 **	Upper Slide Plate - Long	1	
9	0401-0120-04	Shoulder Bolt	1	
10	0401-0120-05	Washer	1	
11	0101-0120-05 **	Bumper	1	
21	NT 522	Du-Bushing	2	
22	NT 663 **	Compression Spring	1	
23	NT 891	Set Screw	1	

SEALER: KNIFE-GRIPPER ASSEMBLY

0101-013000-16 8/15/1997



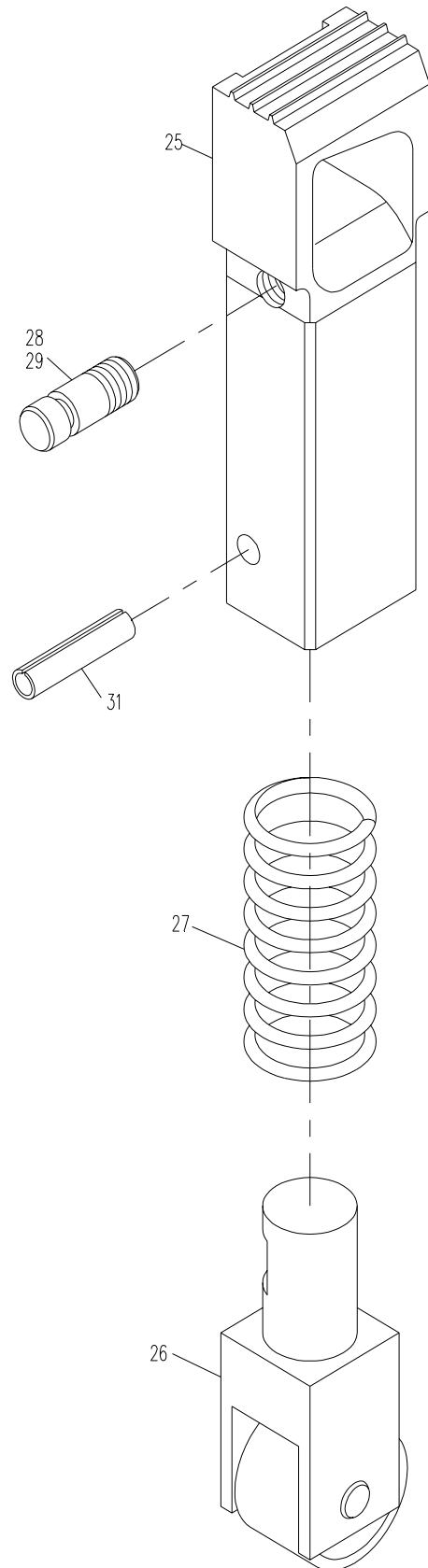
30.10.98 E.R.

Reinhardt Oktober 1998
Massstab 1 : 1

SEALER KNIFE-GRIPPER ASSEMBLY				
0101-013000-16				
Item	Part Number:	Description:	Qty:	Notes:
1	0101-013000-02	Knife Pressure Bar	1	
2	0101-013000-03 **	Knife	1	
3	0101-013000-08 **	Compression Spring	1	
4	0101-013000-10	Spring Pin	1	
5	0101-013000-20	Cam Roller Complete	1	
15	NT 181	Roll Pin	1	
16	NT 179	Socket Cap Screw	1	

SEALER RIGHT GRIPPER ASSEMBLY

0101-0130-17 8/21/1997



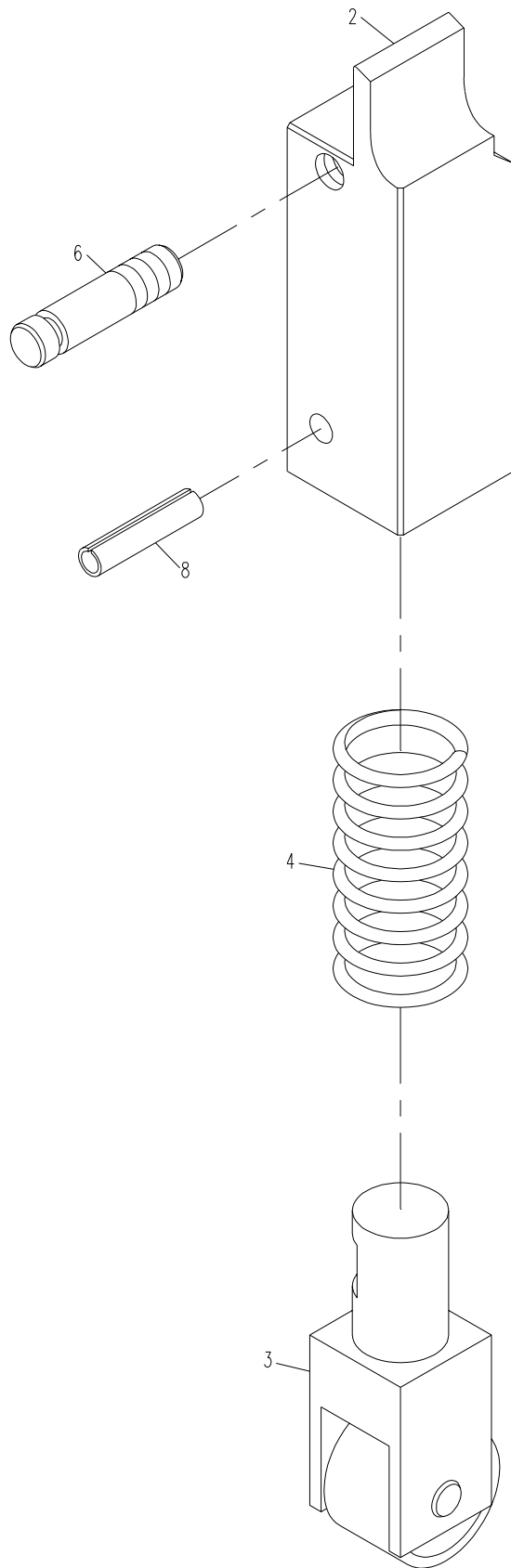
21.08.97 E.Re.

Reinhardt August
Massstab 1 : 1

SEALER RIGHT GRIPPER ASSEMBLY				
0101-013000-17				
Item	Part Number:	Description:	Qty:	Notes:
25	0101-013000-04	Right Gripper Bar	1	
26	0101-013000-20	Cam Roller Complete	1	
27	0101-013000-08 **	Compression Spring	1	
28	0101-013000-10	Spring Pin	1	
29	0101-013000-12	Spring Pin	1	
31	NT 181	Roll Pin	1	

SEALER LEFT GRIPPER ASSEMBLY

0401-0130-01 8/21/1997



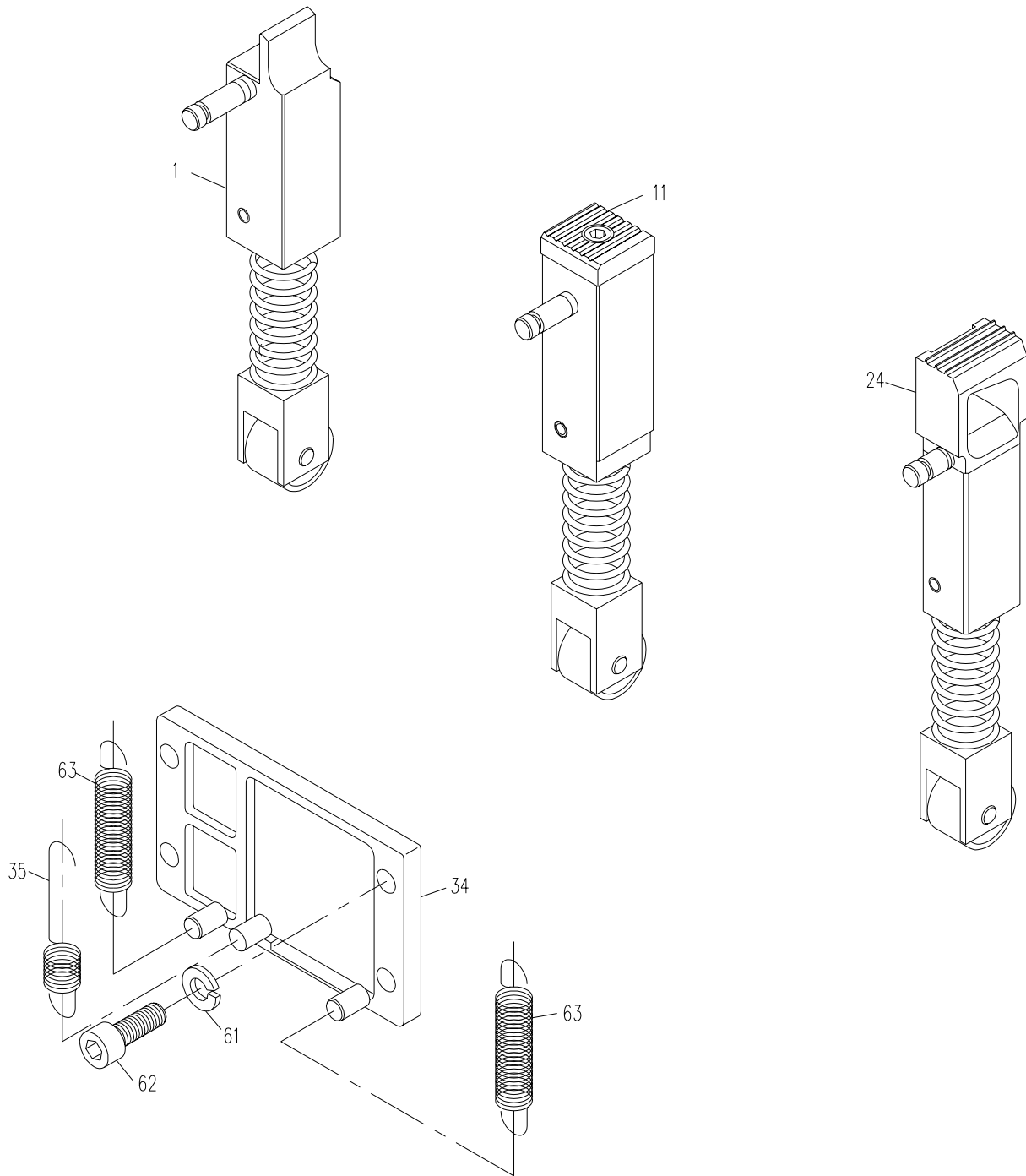
21.08.97 E.R.

Reinhardt August 1997
Massstab 1 : 1

SEALER LEFT GRIPPER ASSEMBLY				
0401-0130-01				
Item	Part Number:	Description:	Qty:	Notes:
2	0101-013000-01	Left Gripper Bar	1	
3	0101-013000-10	Cam Roller Complete	1	
4	0101-013000-08 **	Compression Spring	1	
6	0101-013000-10	Spring Pin	1	
8	NT 181	Roll Pin	1	

SEALER KNIFE & GRIPPER BARS ASSEMBLY

1601-013000-16 3/5/1999



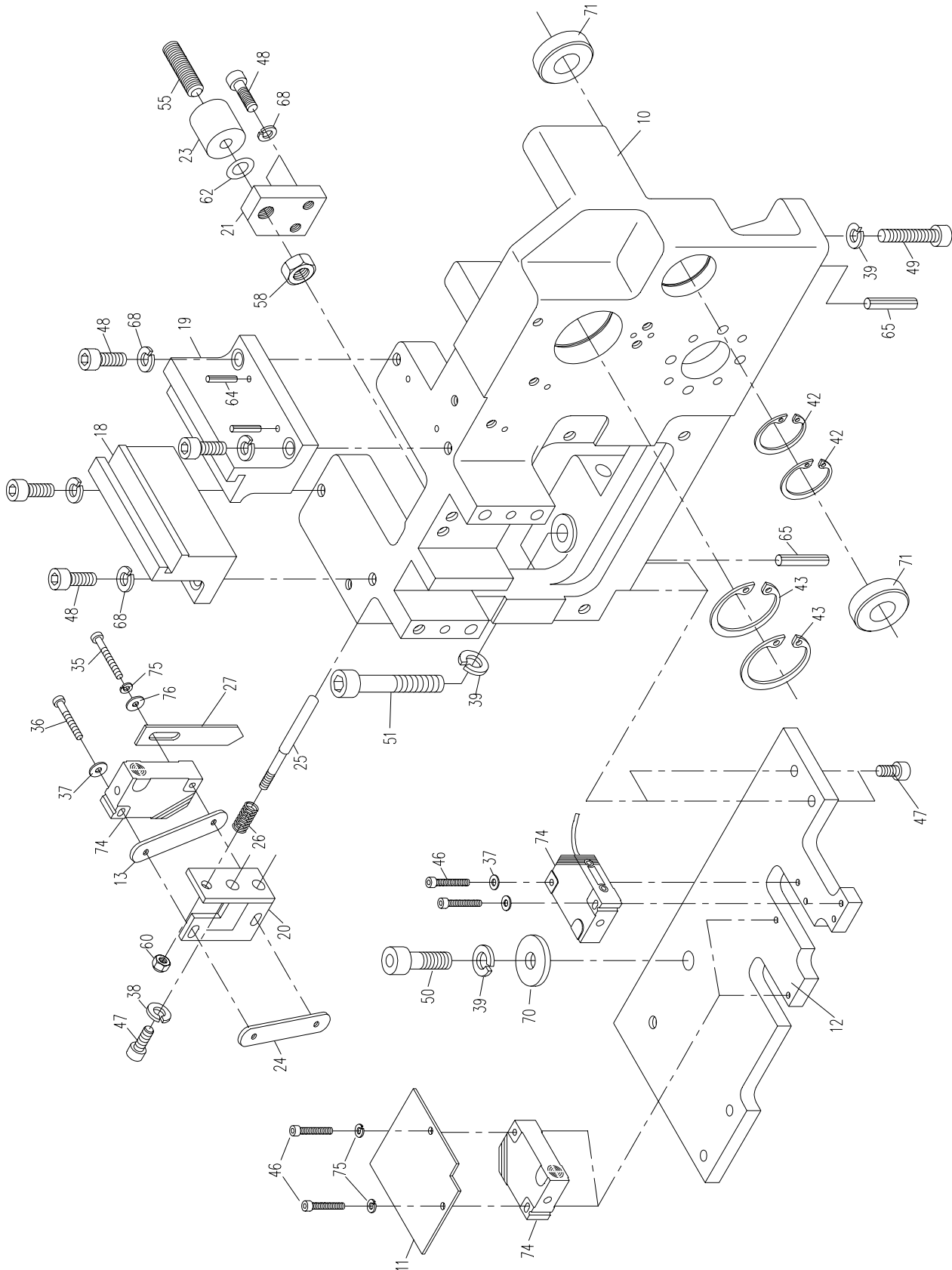
15.08.1997 E.R.

Reinhardt April 1997
Masstab 1 : 2

SEALER KNIFE & GRIPPER BARS ASSEMBLY				
1601-013000-16				
Item	Part Number:	Description:	Qty:	Notes:
1	0401-013000-01	Left Gripper Complete	1	
11	0101-013000-16	Knife Pressure Bar Complete	1	
24	0101-013000-17	Right Gripper Complete	1	
34	0101-013000-13	Cover Plate	1	
35	0101-013000-14 **	Tension Spring	1	
61	NT 66	Lock Washer	4	
62	NT 22	Socket Cap Screw	4	
63	NT 567 **	Tension Spring	2	

SEALER HOUSING ASSEMBLY

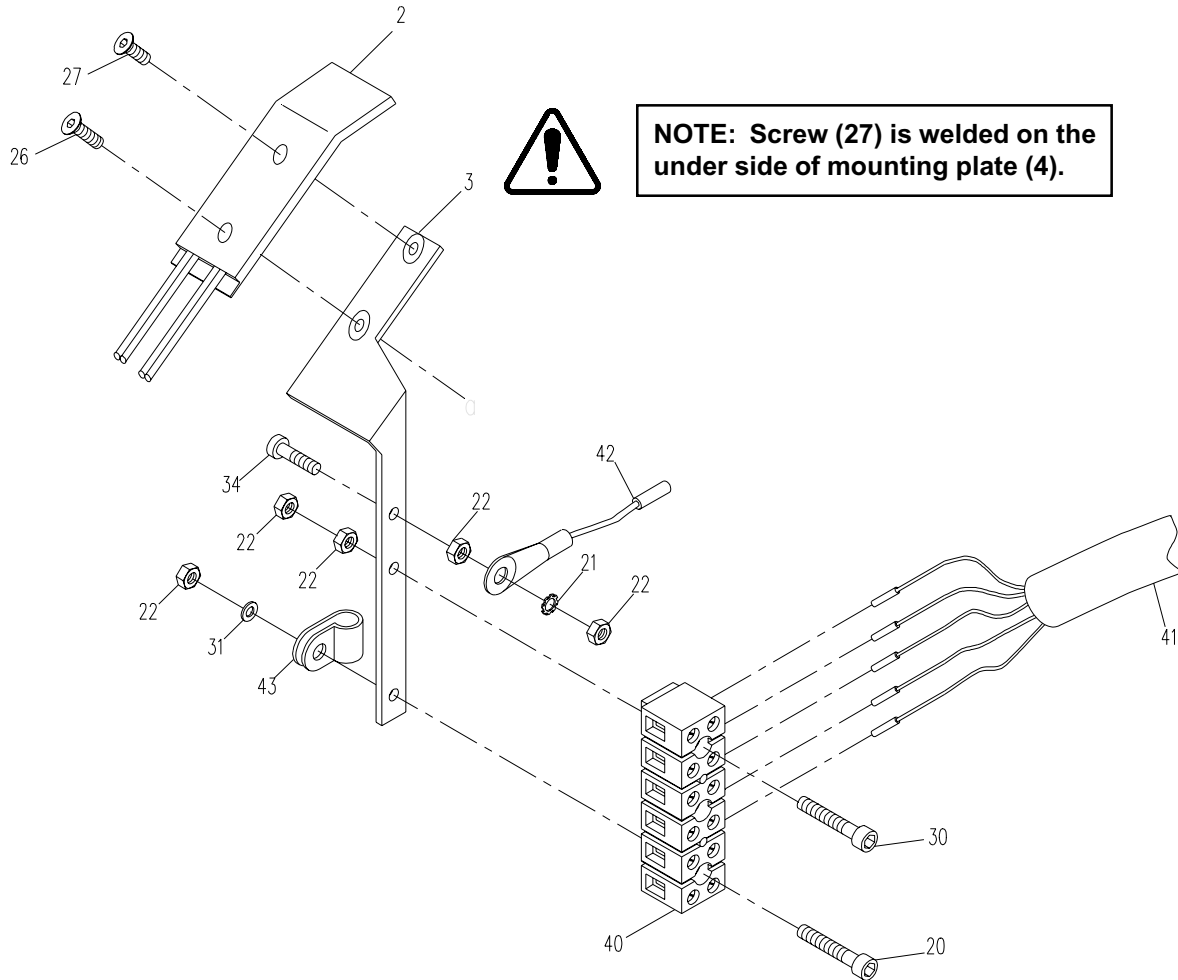
1620-0140-00 4/14/97



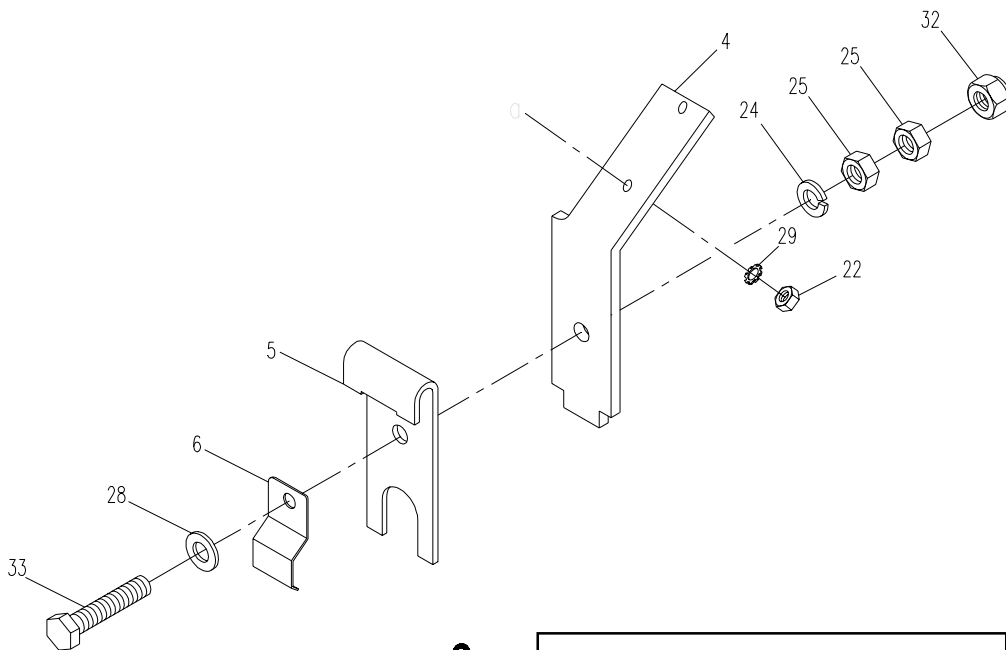
SEALER HOUSING ASSEMBLY				
1620-0140-00				
Item	Part Number:	Description:	Qty:	Notes:
10	1620-0140-10	Sealer Housing	1	
11	1620-0140-11	Sensor Plate	1	
12	1620-0140-12	Base Plate	1	
13	1620-0140-13	Spacer Plate	1	
18	2125-0100-10	Left Gib	1	
19	2125-0100-11	Right Gib	1	
20	2125-0100-13	Sensor Support Angle	1	
21	2125-0100-14	Bumper Plate	1	
23	0401-0100-01	Poly. Bumper	1	
24	0401-0100-03	Nut Plate	1	
25	0401-0100-04	Sensor Pin	1	
26	0401-0100-05 **	Compression Spring	1	
27	0401-0800-27	Pointer	1	
35	NT 473	Socket Cap Screw	1	
36	NT 523	Socket Cap Screw	1	
37	NT 32	Washer	2	
38	NT 74	Lock Washer	2	
39	NT 61	Lock Washer	3	
42	NT 995	Internal Snap Ring	2	
43	NT 564	Internal Snap Ring	2	
46	NT 874	Socket Cap Screw	4	
47	NT 18	Socket Cap Screw	4	
48	NT 171	Socket Cap Screw	6	
49	NT 81	Socket Cap Screw	1	
50	NT 141	Socket Cap Screw	1	
51	NT 163	Socket Cap Screw	1	
55	NT 502	Set Screw	1	
58	NT 16	Hex Nut	1	
60	NT 474	Nylock Nut	1	
62	NT 454	Spacer	1	
64	NT 111	Roll Pin	2	
65	NT 233	Roll Pin	2	
68	NT 1672	Lock Washer	6	
70	NT 82	Washer	1	
71	NT 1353 **	Bearing	2	
74	ME 2247 **	Proximity Sensor	3	
75	NT 533	Lock Washer	3	
76	NT 870	Washer	2	

HEATER ASSEMBLY - 24V. DC

0901-0160-00 5/22/96



NOTE: Screw (27) is welded on the under side of mounting plate (4).

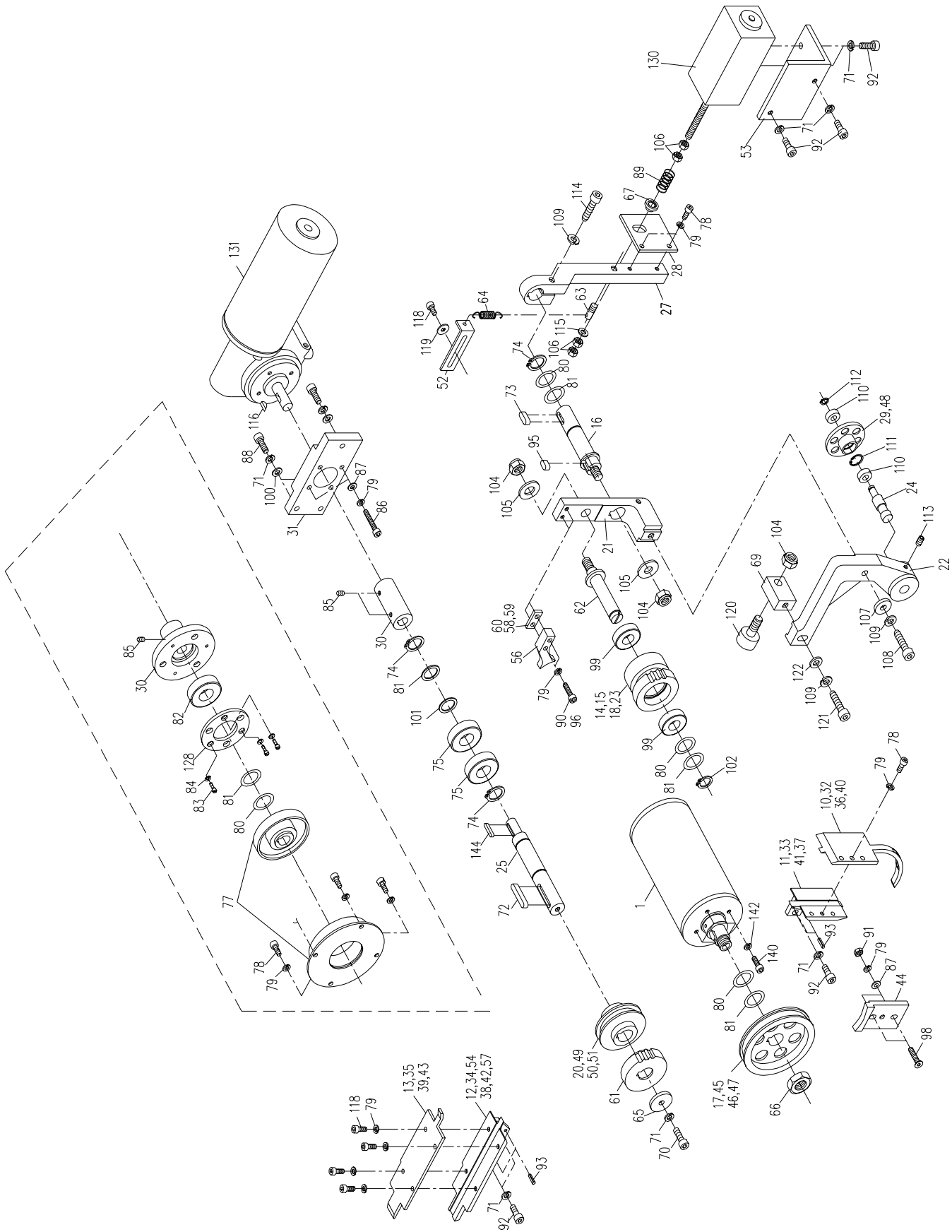


NOTE: Heater assembly does not include Terminal Wire No. 41.

HEATER ASSEMBLY				
0901-0160-00				
Item	Part Number:	Description:	Qty:	Notes:
1	0901-0160-00 **	Heater Assembly	1	
2	2601-0150-09	Heating Plate	1	
3	0901-0160-01	Terminal Plate	1	
4	2601-0150-03	Mounting Plate	1	
5	2601-0150-04	Support Plate	1	
6	2601-0150-06	Leaf Spring	1	
20	NT 874	Socket Cap Screw	1	
21	NT 450	Star Washer	1	
22	NT 33	Hex Nut	6	
24	NT 74	Lock Washer	1	
25	NT 48	Hex Nut	2	
26	NT 2132 VA	Flat Head Screw	1	
27	NT 2170 VA	Flat Head Screw	1	
28	NT 12	Washer	1	
29	NT 774	Star Washer	2	
30	NT 449	Socket Cap Screw	1	
31	NT 32	Washer	1	
32	NT 535	Nylock Nut	1	
33	NT 1569	Hex Screw	1	
34	NT 879	Socket Cap Screw	1	
40	ME 193	Terminal Block	1	
41	ME 1884A110	Terminal Wire	1	
42	ME 1978	Ground Connector	1	
43	ME 661	Wire Clamp	1	

STRAP FEED PULL-BACK, TENSION ASSEMBLY

1699-016900-00 9/26/97



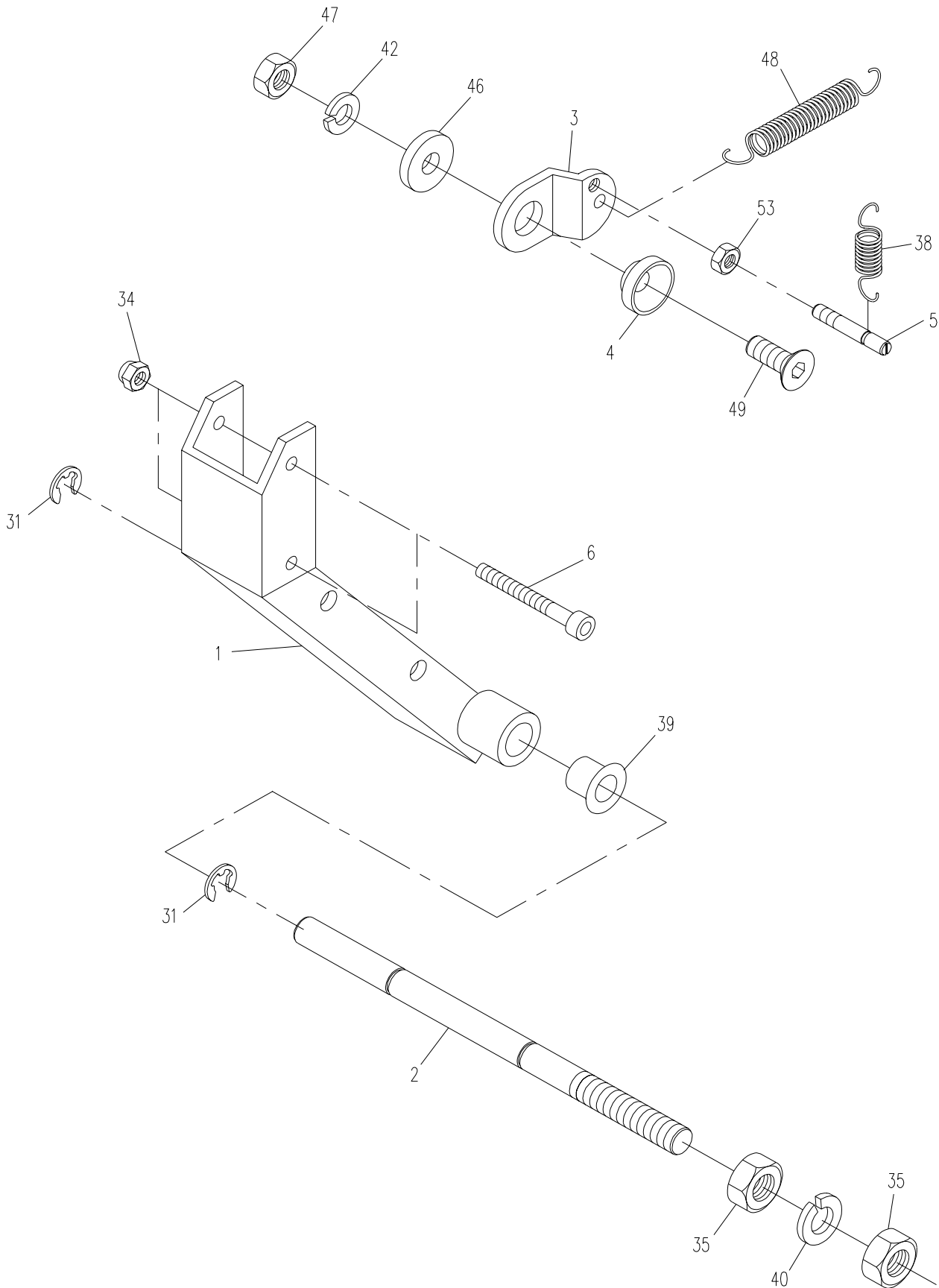
STRAP FEED PULL-BACK, TENSION ASSEMBLY				
1699-016900-00 (5mm Strap)				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-016100-00	Brushless Motor with Adapter	1	
10	1620-0160-10	Lower Strap Guide Cover	1	5-6mm Strap
11	1620-0160-11	Lower Strap Guide	1	5-6mm Strap
13	1620-0160-61	Upper Strap Guide Cover	1	5-6mm Strap
14	1620-0160-14	Gear	1	5-6mm Strap
16	1620-0160-16	Pilot Shaft	1	
17	1620-0160-17	Feed Wheel	1	5-6mm Strap
18	1620-0160-18	Gear	1	
20	1699-0165-69 **	Tension Roller	1	5-6mm Strap
21	1620-0160-21	Pivot	1	
22	1620-0160-72	Roller Lever	1	
24	1620-0160-77	Shaft for Roller Lever	1	
25	1699-0161-10	Shaft	1	
27	1620-0160-27	Clamp Bar	1	
28	1620-0160-28	Solenoid Plate	1	
29	1699-0163-29	Pressure Roller	1	5-6mm Strap
30	1699-0161-11	Spacer	1	
31	1620-0160-31	Motor Support	1	
44	1620-0160-44	Strap Guide Block	1	
52	1620-0160-52	Adjustment Angle	1	
53	1620-0160-71	Solenoid Angle Support	1	
56	1620-0160-56	Strap Guide Block	1	
57	1620-0160-57	Upper Strap Guide	1	5mm Strap
60	1620-0160-60	Spacer Plate	1	
61	0101-0140-12	Gear	1	
62	0101-0141-03	Threaded Bolt	1	
63	0401-0710-04	Spring Pin	1	
64	0401-0121-02 **	Tension Spring	1	
65	0101-0140-48	Retaining Washer	1	
66	NT 2321	Hex Nut	1	
67	0401-0142-03	Spring Guide	1	
69	1620-0160-70	Cam Roller Support Block	1	
70	NT 76	Socket Cap Screw	1	
71	NT 74	Lock Washer	11	
72	NT 1899	Key	1	
73	NT 545	Key	1	
74	NT 24	Retaining Ring	3	
75	NT 278 **	Bearing	2	
77	NT 677A0210	Clutch Coil	1	
78	NT 1706	Socket Cap Screw	7	
79	NT 176	Lock Washer	19	
80	NT 489	Spacer	0	
81	NT 327	Spacer	0	
82	NT 1353 **	Bearing	1	
83	NT 433	Socket Cap Screw	3	
84	NT 1107	Rib Washer	3	
85	NT 891	Set Screw	1	
86	NT 276	Socket Cap Screw	4	
87	NT 72	Washer	6	
88	NT 76	Socket Cap Screw	3	
89	NT 685 **	Compression Spring	1	

STRAP FEED PULL-BACK, TENSION ASSEMBLY				
1699-016900-00 (5mm Strap)				
Item	Part Number:	Description:	Qty:	Notes:
90	NT 23	Socket Cap Screw	2	
91	NT 13	Hex Nut	2	
92	NT 8	Socket Cap Screw	8	
93	NT 2150	Roll Pin	4	
95	NT 80	Key	1	
96	NT 92	Socket Cap Screw	2	
98	NT 987	Flat Head Screw	2	
99	NT 389 **	Bearing	2	
100	NT 12	Washer	3	
101	NT 717	Spacer	0	
102	NT 101	Retaining Ring	1	
104	NT 458	Nylock Nut	3	
104	NT 15	Washer	2	
106	NT 325	Hex Nut	4	
107	NT 339	Washer	1	
108	NT 6	Socket Cap Screw	1	
109	NT 66	Lock Washer	3	
110	NT 1636 **	Bearing	2	
111	NT 2325	Retaining Ring	1	
112	NT 520	Retaining Ring	1	
113	NT 649	Set Screw	1	
114	NT 6	Socket Cap Screw	1	
115	NT 2328	Washer	1	
116	NT 2261	Woodruff Key	1	
118	NT 95	Socket Cap Screw	5	
119	NT 309	Washer	1	
120	NT 568	Cam Roller	1	
121	NT 171	Socket Cap Screw	1	
122	NT 339	Washer	1	
128	ME 892A02	Clutch Armature	1	
130	ME 2136	Double Solenoid	1	
131	ME 2170	Motor 60 V. DC	1	
140	NT 92	Socket Cap Screw	4	
142	NT 176	Lock Washer	4	
144	NT 1839	Key	1	

NOTES:

HEATER ARM ASSEMBLY - 24 V. DC

2601-0170-00 8/24/96

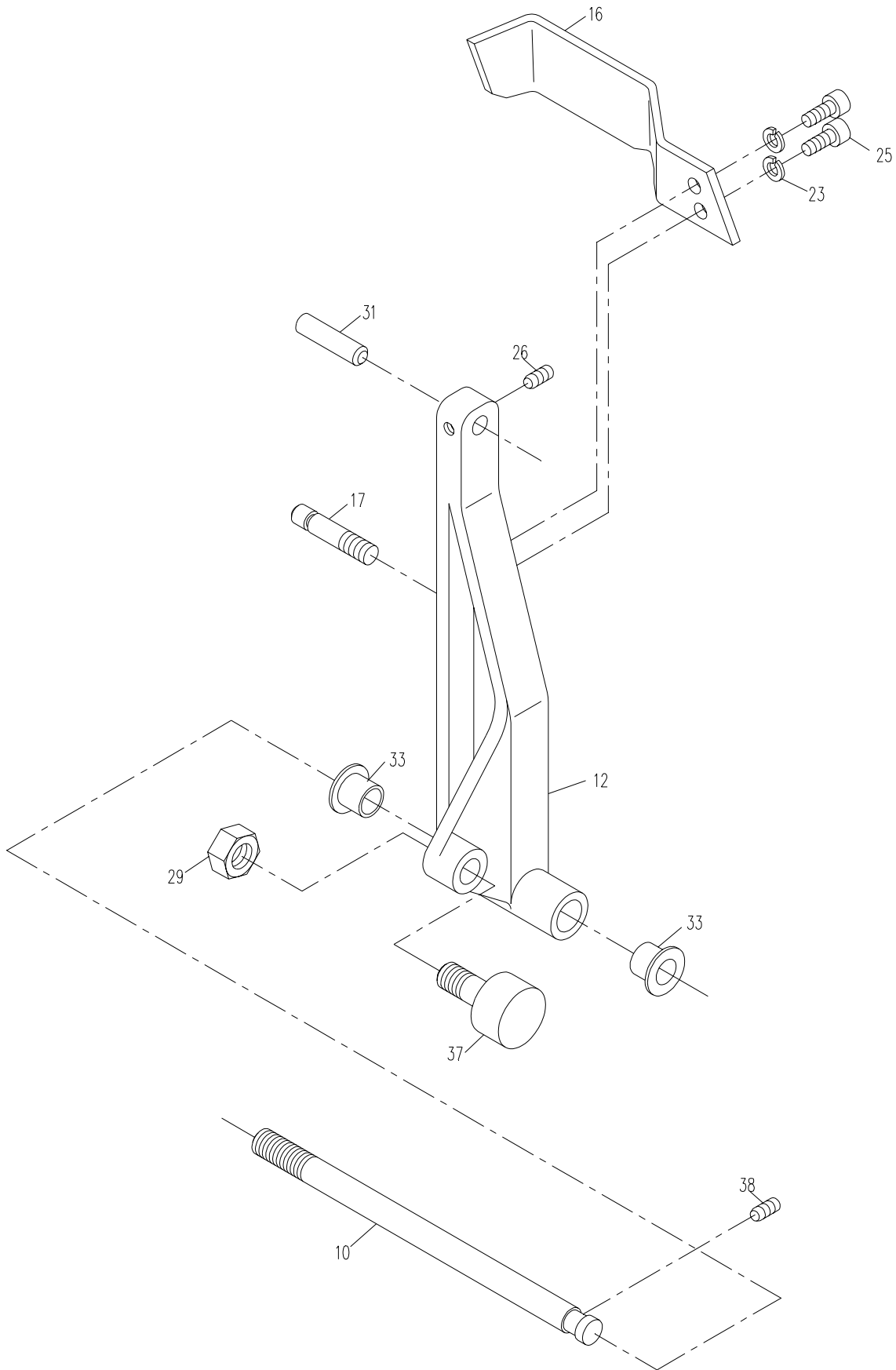


5/21/1997 GHB

HEATER ARM ASSEMBLY				
2601-0170-00				
Item	Part Number:	Description:	Qty:	Notes:
1	26001-0171-00	Heater Arm Complete	1	
2	2601-0170-08	Arm Shaft	1	
3	0101-0151-03	Spring Bolt	1	
4	0101-0151-04	Bushing	1	
5	0101-0151-05	Spring Pin	1	
6	0101-0151-06	Socket Cap Screw	2	
31	NT 406	Snap Ring	2	
34	NT 474	Nylock Nut	2	
35	NT 16	Hex Nut	2	
38	NT 2203 **	Tension Spring	1	
39	NT 1634	Collar Bushing	2	
40	NT 61	Lock Washer	1	
42	NT 66	Lock Washer	1	
46	NT 339	Flat Head Screw	1	
47	NT 14	Hex Nut	1	
48	NT 1923 **	Tension Spring	1	
49	NT 69	Flat Head Screw	1	
53	NT 13	Hex Nut	1	

SLIDE PLATE LEVER ASSEMBLY

1620-018000-00 10/28/96

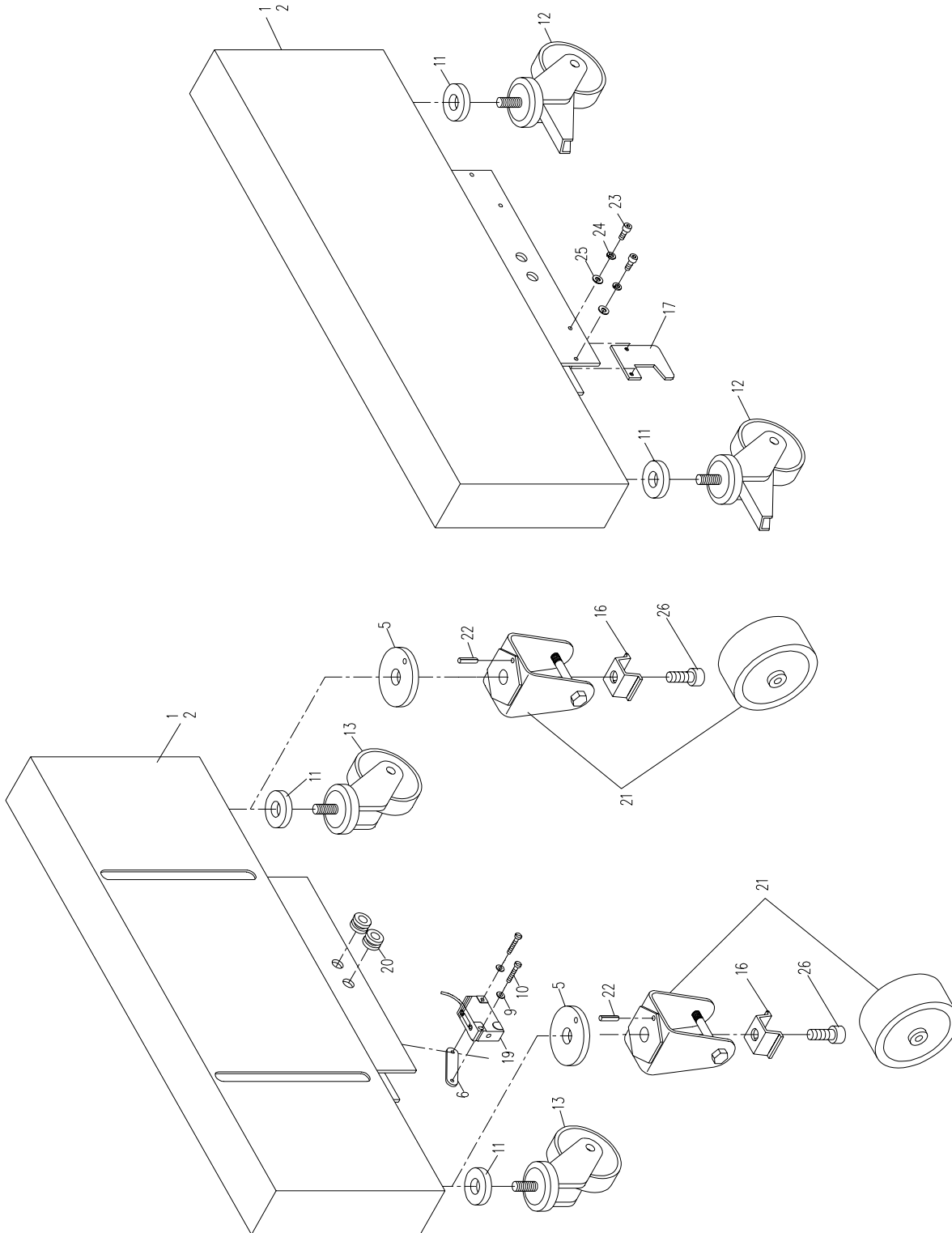


SLIDE PLATE LEVER ASSEMBLY				
1620-018000-00				
Item	Part Number:	Description:	Qty:	Notes:
10	1620-0180-10	Shaft	1	
12	1620-0180-12	Slide Plate Lever	1	
16	0401-0121-01	Sensor Flag	1	
17	0101-0130-11	Spring Pin	1	
23	NT 176	Lock Washer	2	
25	NT 1706	Socket Cap Screw	2	
26	NT 891	Set Screw	1	
29	NT 16	Hex Nut	1	
31	NT 555	Dowel Pin	1	
33	NT 1634	Flange Bushing	2	
37	NT 568	Cam Follower	1	
38	NT 29	Set Screw	1	

CASTER FRAME ASSEMBLY

500-600-800-1000 MACHINES 1620-021000-00 6/18/1998

April 1995 Th.C.
Gece., Juni 98 Weiss
Massstab 1:5

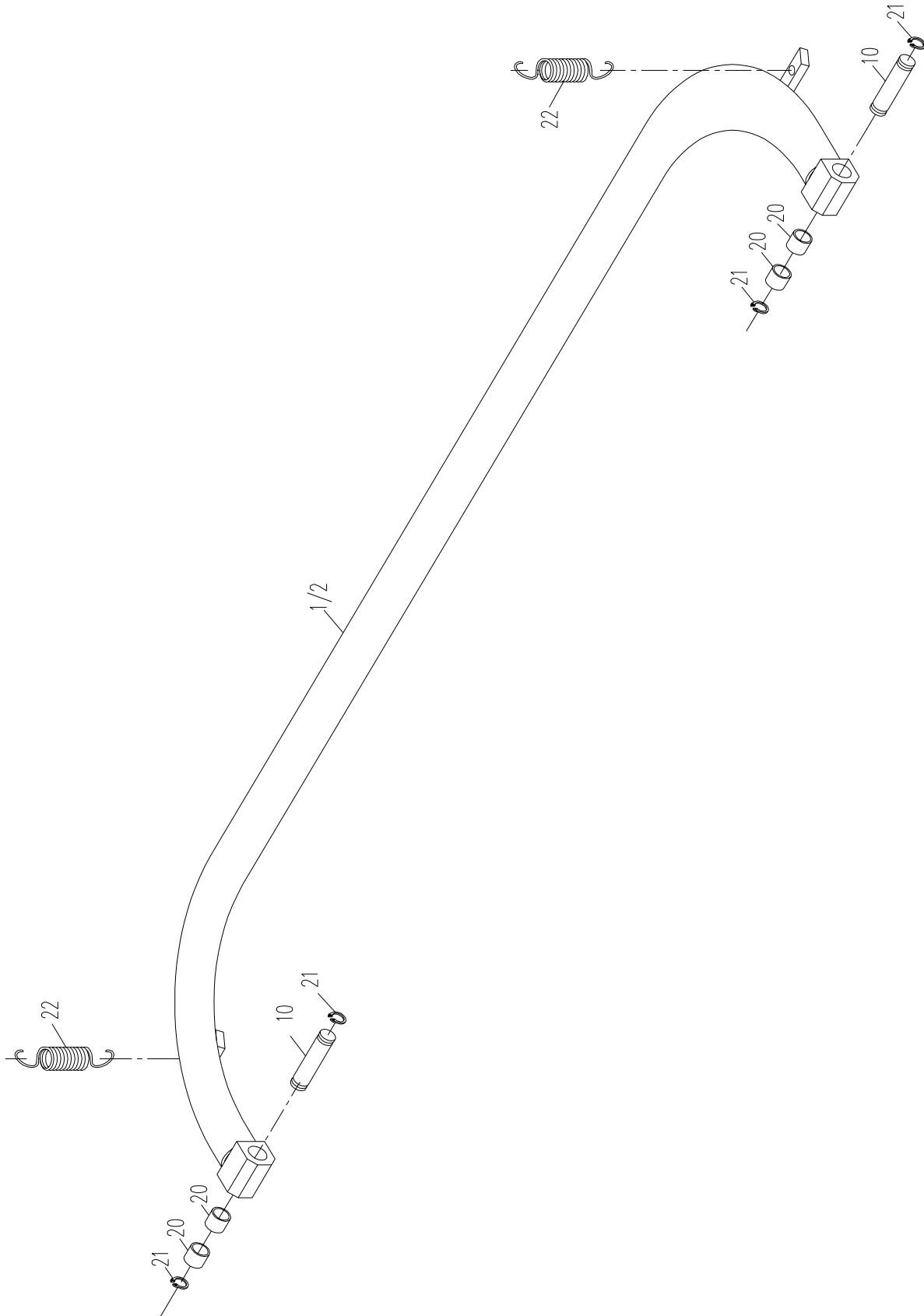


18.06.1998 H.W.

CASTER FRAME ASSEMBLY				
500, 600, 800, 1000 MACHINES 1620-021000-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-021100-00	Frame Assembly Right	2	
2	1699-0201100-10	Frame Assembly Left	2	
5	1699-020100-10	Washer	2	
6	0401-010000-03	Nut Plate	1	
9	NT 32	Washer	2	
10	NT 490	Socket Cap Screw	2	
11	1620-021000-10	Washer	4	
12	NT 2364	Caster with Brake	2	
13	NT 2412	Caster without Brake	2	
16	1620-021000-16	Caster Reinforcement	2	
17	1620-021000-17	Restriction Plate	1	
19	ME 2247 **	Proximity Sensor	1	
20	ME 1444	Bushing 8mm	1	
21	NT 2412	Caster Non-Swivel	2	
22	NT 64	Roll Pin	2	
23	NT 1706	Socket Cap Screw	2	
24	NT 176	Lock Washer	2	
25	NT 72	Washer	2	
26	NT 647	Socket Cap Screw	2	

FOOT PEDAL ASSEMBLY

500-600-800 MACHINES 1620-0220-00 12/20/95

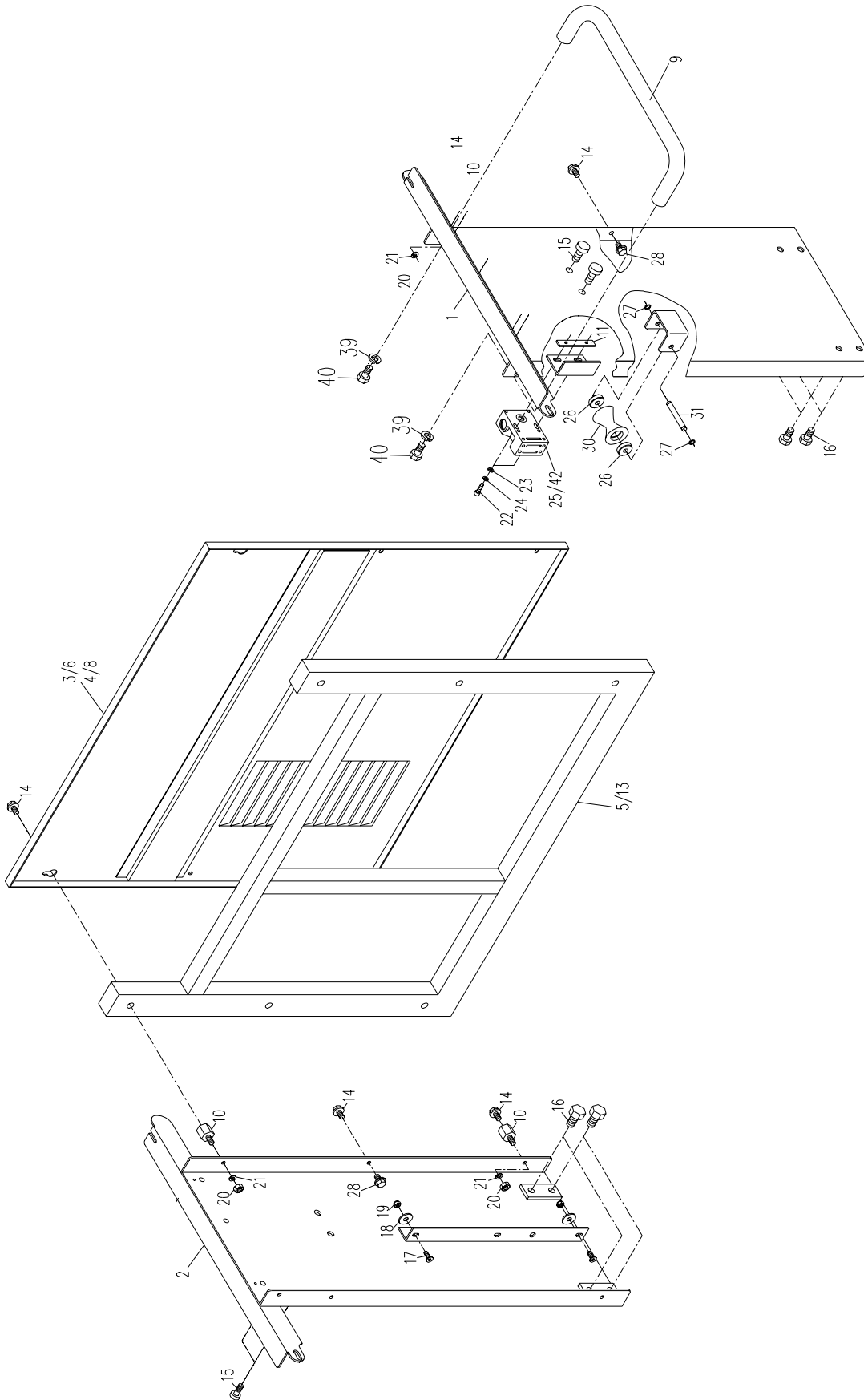


FOOT PEDAL ASSEMBLY				
500 & 600 1620-0220-00				
800 1630-0220-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-0221-00	Foot Rail Assembly 500 & 600	1	
2	1630-0221-00	Foot Rail Assembly 800	1	
10	1601-0220-10	Shaft	2	
20	NT 1039	Bushing 8mm	4	
21	NT 43	Retaining Ring	4	
22	NT 697 **	Tension Spring	2	

SIDE PANELS & REAR COVER ASSEMBLY

500-600-800 MACHINES 1620-0230-00 1/30/98

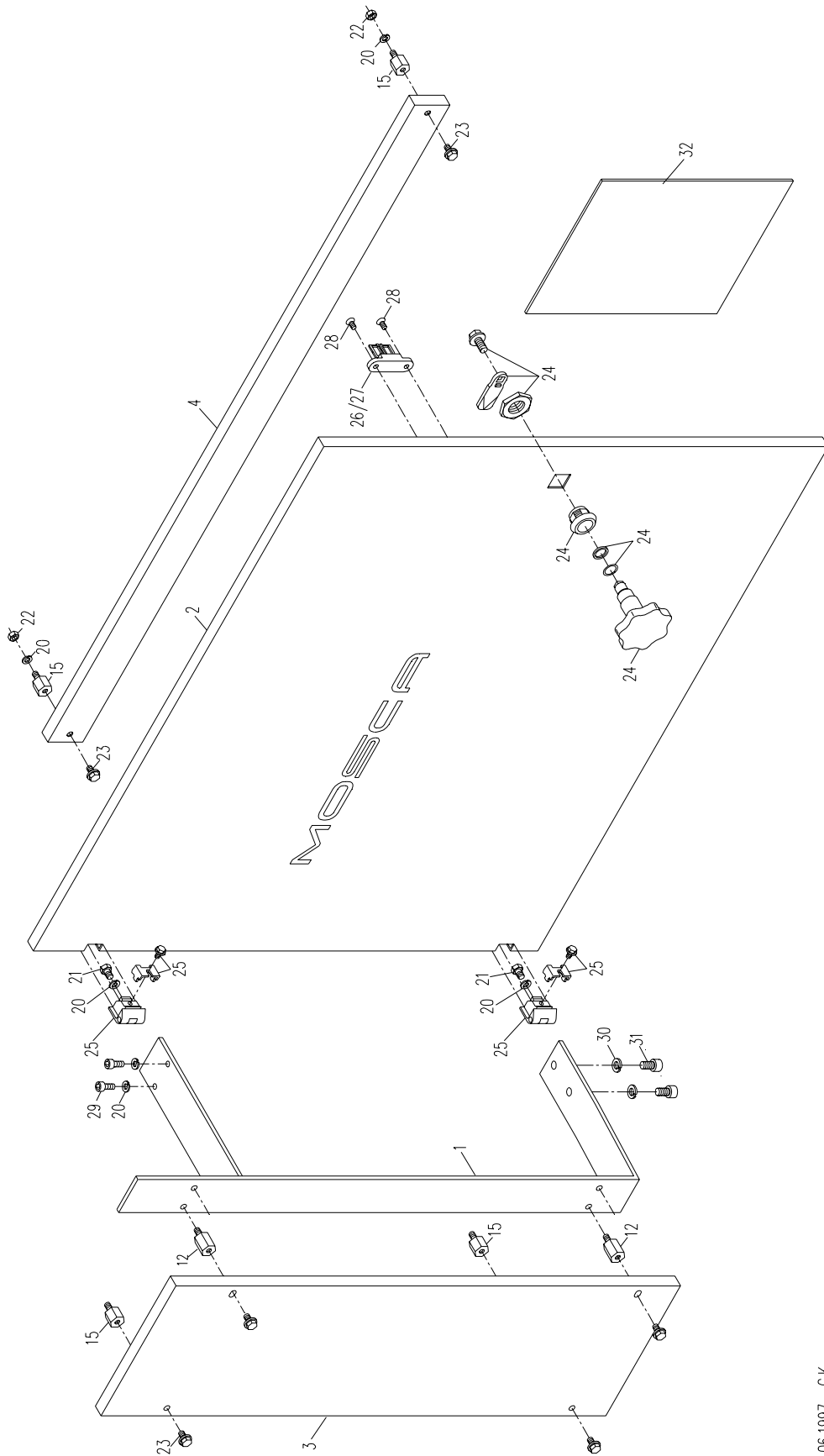
November 1995 Th. G.
genend. Aug. 1997 Weiss
Massstab 1:10



SIDE PANELS & REAR COVER ASSEMBLY				
500 & 600 1620-0230-00				
800 1630-0230-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-0231-00	Right Side Plate Assembly	1	
2	1620-0232-00	Left Side Plate Assembly	1	
3	1620-0233-00	Rear Cover Assembly	1	500 & 600
4	1620-0234-00	Rear Cover Roller Assembly	1	500 & 600
5	1620-0236-00	Support Bar	1	500 & 600
6	1630-0233-00	Rear Cover Assembly	1	800
8	1630-0234-00	Rear Cover Roller Assembly	1	800
9	NT 2623	Hand Rail	1	
10	2101-1200-22	Stand Off	6	
11	1620-0230-11	Nut Plate	1	
13	1630-0235-00	Support Bar	1	800
14	NT 737	Lock Bolt	6	
15	NT 2108	Button Head Screw	4	
16	NT 228	Hex Screw	8	
17	NT 1124	Flat Head Screw	2	
18	NT 822	Washer	2	
19	NT 535	Nylock Nut	2	
20	NT 14	Hex Nut	6	
21	NT 66	Lock Washer	6	
22	NT 290	Socket Cap Screw	2	
23	NT 12	Washer	2	
24	NT 74	Lock Washer	2	
25	ME 1823	Safety Switch	1	Schmersal ()
26	NT 46	Bearing	2	
27	NT 3	Retaining Ring	2	
28	NT 738	Lock Bolt	1	
30	0401-0200-37	Dispenser Idler Roller	1	
31	0401-0200-38	Shaft	2	
39	NT 87	Lock Washer	2	
40	NT 228	Hex Screw	2	
42	ME 2587	Safety Switch	1	Bernstein ()

FRONT DOOR & EXTENSION COVER ASSEMBLY

500-600 MACHINES 1620-0240-00 6/3//97



Dezember 1995 E.Reinhardt
Maßstab 1 : 6

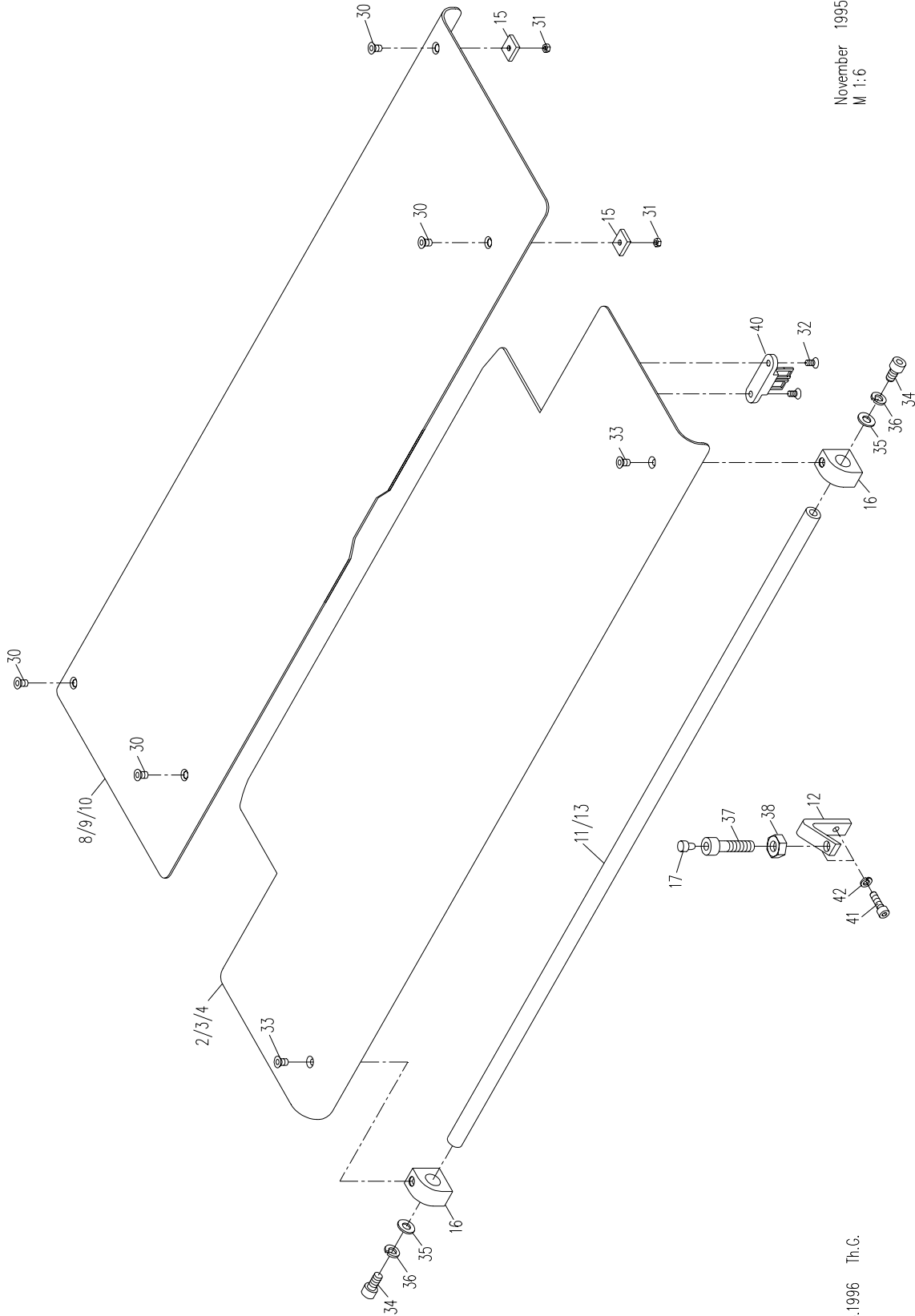
03.06.1997 C.K.

FRONT DOOR & EXTENSION COVER ASSEMBLY				
500 & 600 1620-0240-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-0241-00	Front Door Complete	1	
10	1620-0240-10	Support Bar	1	
11	2101-1200-22	Stand Off	2	
14	NT 737	Lock Screw	2	
15	NT 1209D	Lock Complete with Knob	1	
16	NT 1764	Door Hinge	2	
17	ME 1825 **	Safety Switch Actuator	1	Schmersal ()
19	NT 571	Flat Head Screw	2	
20	NT 66	Lock Washer	4	
21	NT 175	Hex Screw	2	
22	NT 14	Hex Nut	2	
23	ME 1191	Vinyl Data Pocket	1	
24	ME 2683 **	Safety Switch Actuator	1	Bernstein ()

TABLE PLATE ASSEMBLY

500-600- 800 MACHINES 1630-0250-00 5/29/96

November 1995 Th.G.
M 1:6

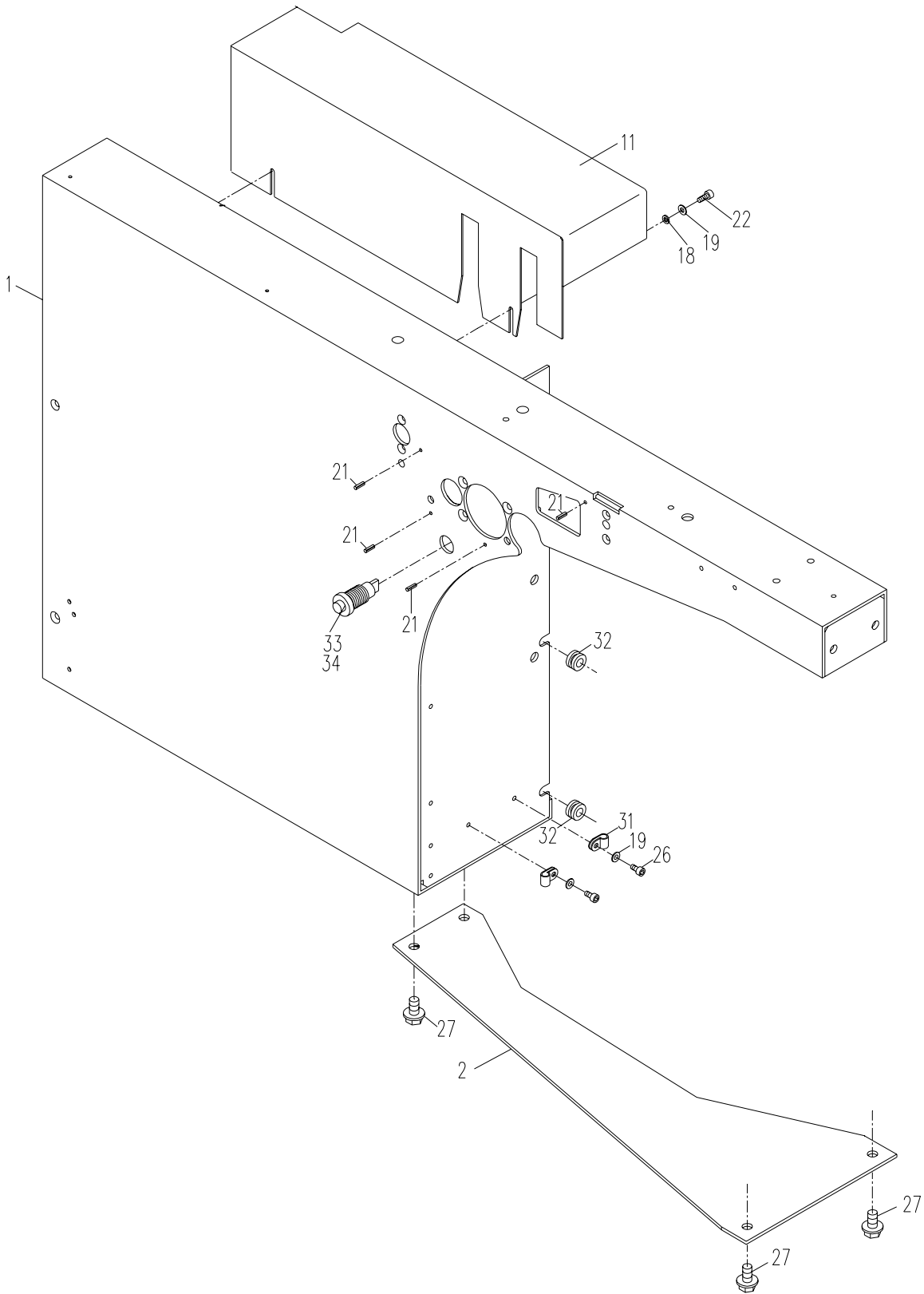


29.05.1996 Th.G.

TABLE PLATE ASSEMBLY Corning				
1630-0250-00-A				
Item	Part Number:	Description:	Qty:	Notes:
4	1630-0251-00	Front Table Plate 800	1	
10	1630-0250-10	Rear Table Plate 800	1	
12	1622-0250-11	Table Support	1	
13	1630-0250-11	Shaft 800	1	
15	0401-0210-09	Nut Plate	4	
16	0120-0200-12	Hinge Block	2	
17	0101-0100-17	Table Bumper	1	
30	NT 439	Flat Head Screw	4	
31	NT 535	Nylock Nut	4	
32	NT 571	Flat Head Screw	2	
33	NT 390	Flat Head Screw	2	
34	NT 81	Socket Cap Screw	2	
35	NT 15	Washer	2	
36	NT 61	Lock Washer	2	
37	NT 266	Socket Cap Screw	1	
38	NT 239	Hex Nut	1	
40	ME 1825	Switch Actuator	1	
41	NT 171	Socket Cap Screw	2	
42	NT 66	Lock Washer	2	

CENTER FRAME ASSEMBLY

500-600 MACHINES 1620-0260-00 11/27/96



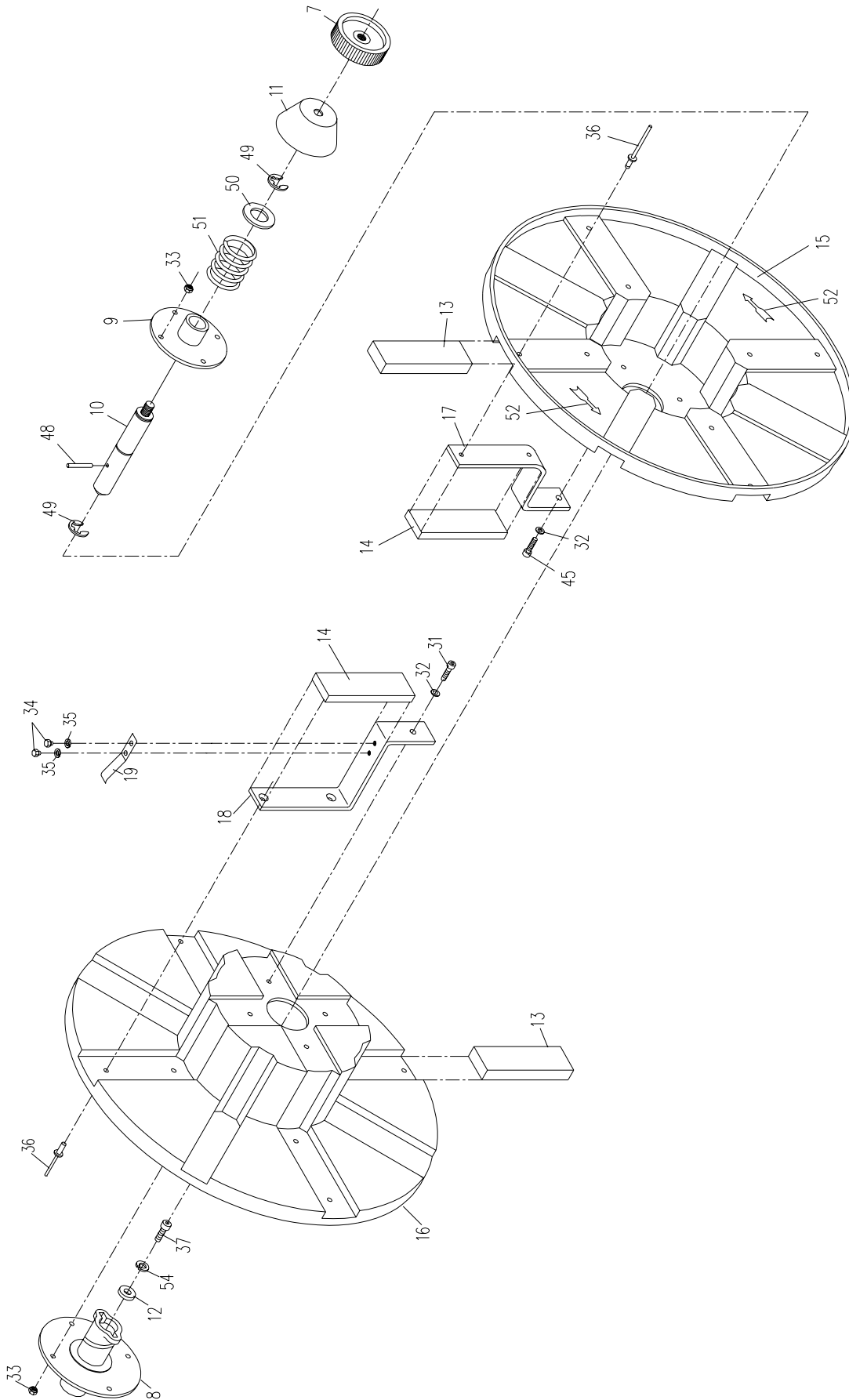
18.01.1996 Th.G.

August 1995, Th.G.
Masstab 1:7

CENTER FRAME ASSEMBLY				
500 & 600 1620-0260-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-0261-00	Frame Complete	1	
2	1620-0262-00	Support Plate Complete	1	
11	1620-0260-11	Cover	1	
18	NT 176	Lock Washer	4	
19	NT 72	Washer	2	
21	NT 180	Roll Pin	4	
22	NT 179	Socket Cap Screw	2	
26	NT 95	Socket Cap Screw	2	
27	NT 1149	Lock Screw	4	
31	ME 1356	Cable Clamp	2	
32	ME 1444	Bushing 8mm	2	
33	ME 1791	Push Button	1	
34	ME 771	Cover	1	

DISPENSER ASSEMBLY

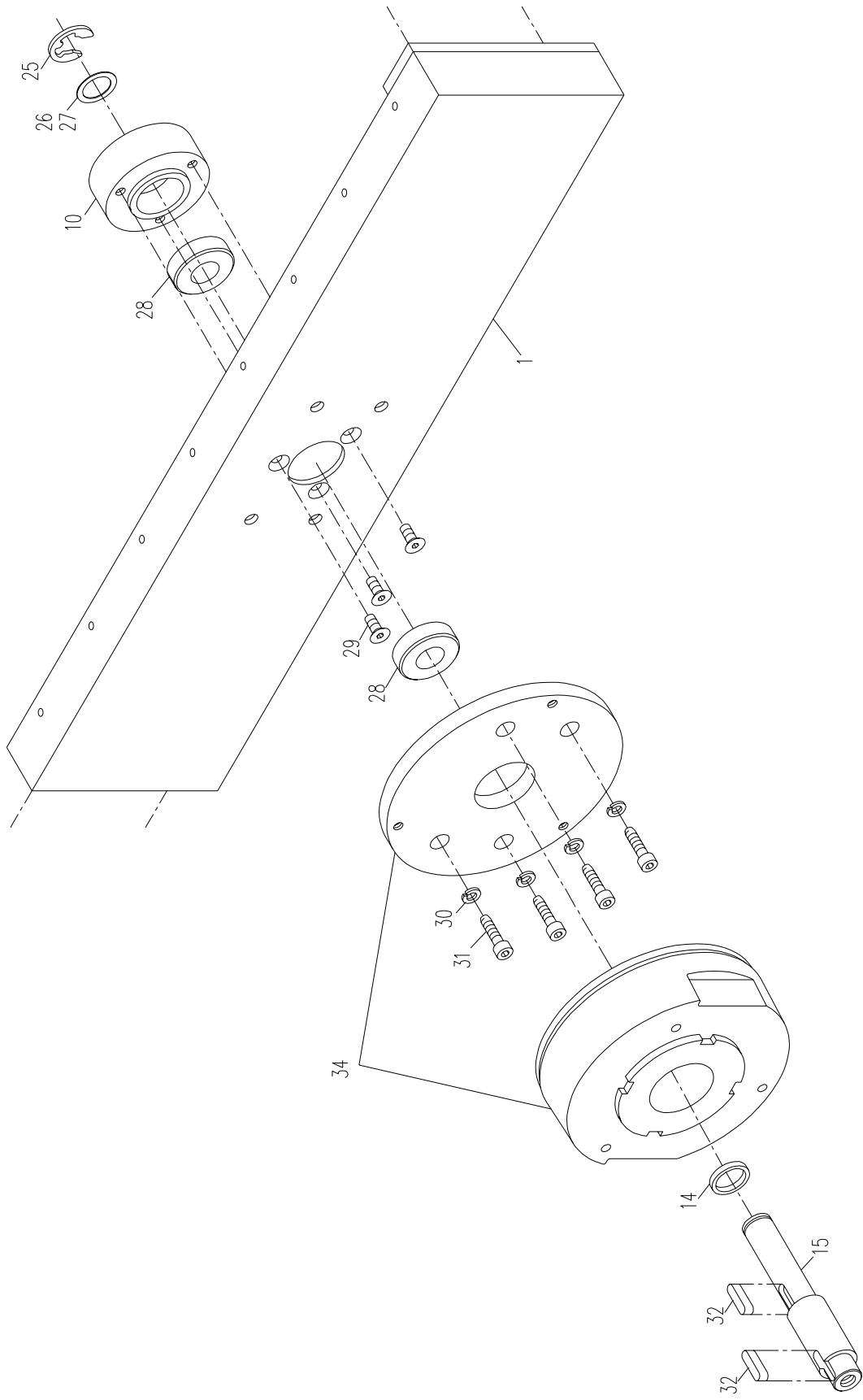
1601-0310-00 10/6/97



DISPENSER ASSEMBLY				
1601-0310-00				
Item	Part Number:	Description:	Qty:	Notes:
7	1601-0310-09	Knob	1	
8	1601-0310-10	Bayonet Plate	1	
9	1601-0310-11	Guide Bushing	1	
10	1601-0310-12	Bayonet Shaft	1	
11	1601-0310-13	Bell Housing	1	
12	1601-0310-15	Washer	1	
13	0101-0300-19	Dispenser Foam Pad - Thick	8	
14	1601-0310-17	Dispenser Foam Pad - Thin	8	
15	1601-0310-18	Front Disc	1	
16	1601-0310-19	Rear Disc	1	
17	1601-0310-20	Front Brace	4	
18	1601-0310-21	Rear Brace	4	
19	1601-0310-22	Leaf Spring	4	
31	NT 184	Socket Cap Screw	8	
32	NT 12	Washer	8	
33	NT 535	NyLock Nut	8	
34	NT 932	Hex Screw M5x6	8	
36	NT 1398	Rivet	16	
37	NT 81	Socket Cap Screw	1	
48	NT 1397	Dowel Pin	1	
49	NT 50	Snap Ring	2	
50	NT 993	Washer	1	
51	NT 660	Compression Spring	1	
52	NT 612	Arrow	4	
54	NT 61	Lock Washer	1	

DISPENSER SUPPORT ASSEMBLY

1620-032000-00 6/17/96



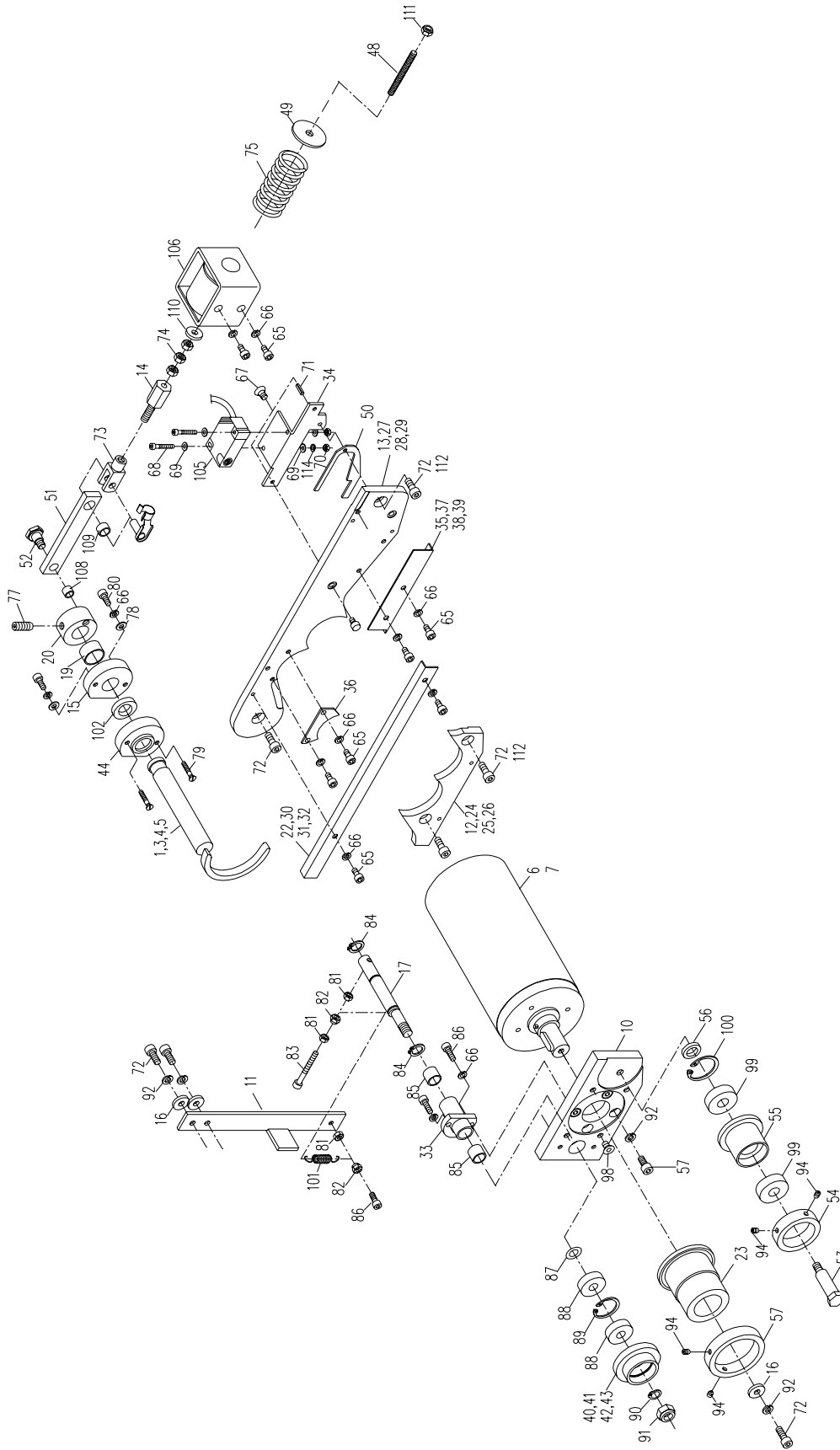
November 1995 E.Reinhardt
Masstab 1 : 4

29.11.1995 E.R.

DISPENSER SUPPORT ASSEMBLY				
1620-032000-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-0321-00	Brake Support Complete	1	
10	1620-0320-10	Bearing Block	1	
14	0401-0300-08	Spacer Ring	1	
15	0401-0300-07	Shaft	1	
25	NT 102	E-clip	1	
26	NT 681	Spacer Ring	1	
27	NT 717	Spacer Ring	1	
28	NT 192	Bearing Block	2	
29	NT 85	Flat Head Screw	3	
30	NT 74	Lock Washer	4	
31	NT 8	Socket Cap Screw	4	
32	NT 35	Key	2	
34	ME 46E00	Brake (KEB)	1	

ACCUMULATOR FILL ASSEMBLY

1620-0710-00 2/19/97



August 1995 Th.G.
Massstab 1:5

01.02.1996 Th.G.

ACCUMULATOR FILL ASSEMBLY				
1620-0710-00 (5-6mm Strap)				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-0711-00	Strap Threading Gate Complete	1	5-6mm Strap
6	1620-0716-00	Motor 60 V. DC (DUNKER)	1	
7	1620-071700-00	Motor 60 V. DC (GEFEG)	1	
10	1620-0710-10	Motor Support	1	
11	1620-0710-11	Stop Bar	1	
12	1620-0710-12	Strap Guide	1	5-6mm Strap
13	1620-0710-13	Strap Guide	1	5-6mm Strap
14	1620-0710-14	Stand Off	1	
15	1620-0710-15	Flanged Bearing Housing	2	
16	0101-0140-48	Spacer Washer	1	
17	1620-0710-17	Eccentric Shaft	1	
19	1620-0710-19	Spacer Ring	1	
20	1620-0710-20	Adjustment Collar	1	
22	1620-0710-22	Strap Cover	1	5-6mm Strap
23	1620-0710-23	Drive Roller	1	
33	1620-0710-33	Flanged Bushing Housing	1	
34	1620-0710-34	Sensor Bracket	1	
35	1620-0710-35	Strap Guide	1	5-6mm Strap
36	1620-0710-36	Cover Plate	1	
40	1620-0710-40 **	Pressure Roller	1	5-6mm Strap
44	1620-0710-44	Bushing	1	
48	1699-0162-12	Threaded Rod	1	
49	2601-0700-20	Retaining Washer	1	
50	2601-0730-16	Auto Feed Sensor Actuator	1	
51	2601-0700-17	Connecting Link	1	
52	0401-0810-23	Shoulder Bolt	1	
53	0401-0710-12	Shoulder Bolt	1	
54	0401-0710-11	Collar	1	
55	0401-0710-10	Guide Roller	1	
56	0401-0710-18	Spacer Ring	1	
57	0401-0710-09	Collar	1	
65	NT 95	Socket Cap Screw	8	
66	NT 176	Lock Washer	12	
67	NT 939	Flat Head Screw	2	
68	NT 877	Socket Cap Screw	2	
69	NT 32	Washer	2	
70	NT 339	Hex Nut	2	
71	NT 2150	Roll Pin	1	
72	NT 8	Socket Cap Screw	7	
73	NT 532	Clevis with Safety	1	
74	NT 48	Hex Nut	3	
75	NT 1361	Compression Spring	1	
77	NT 642	Set Screw	1	
78	NT 72	Washer	2	
79	NT 871	Flat Head Screw	2	
80	NT 1706	Socket Cap Screw	2	
81	NT 13	Hex Nut	3	
82	NT 474	Nylock Nut	1	
83	NT 117	Socket Cap Screw	1	
84	NT 43	Retaining Ring	2	
85	NT 52	DU-Bushing	2	

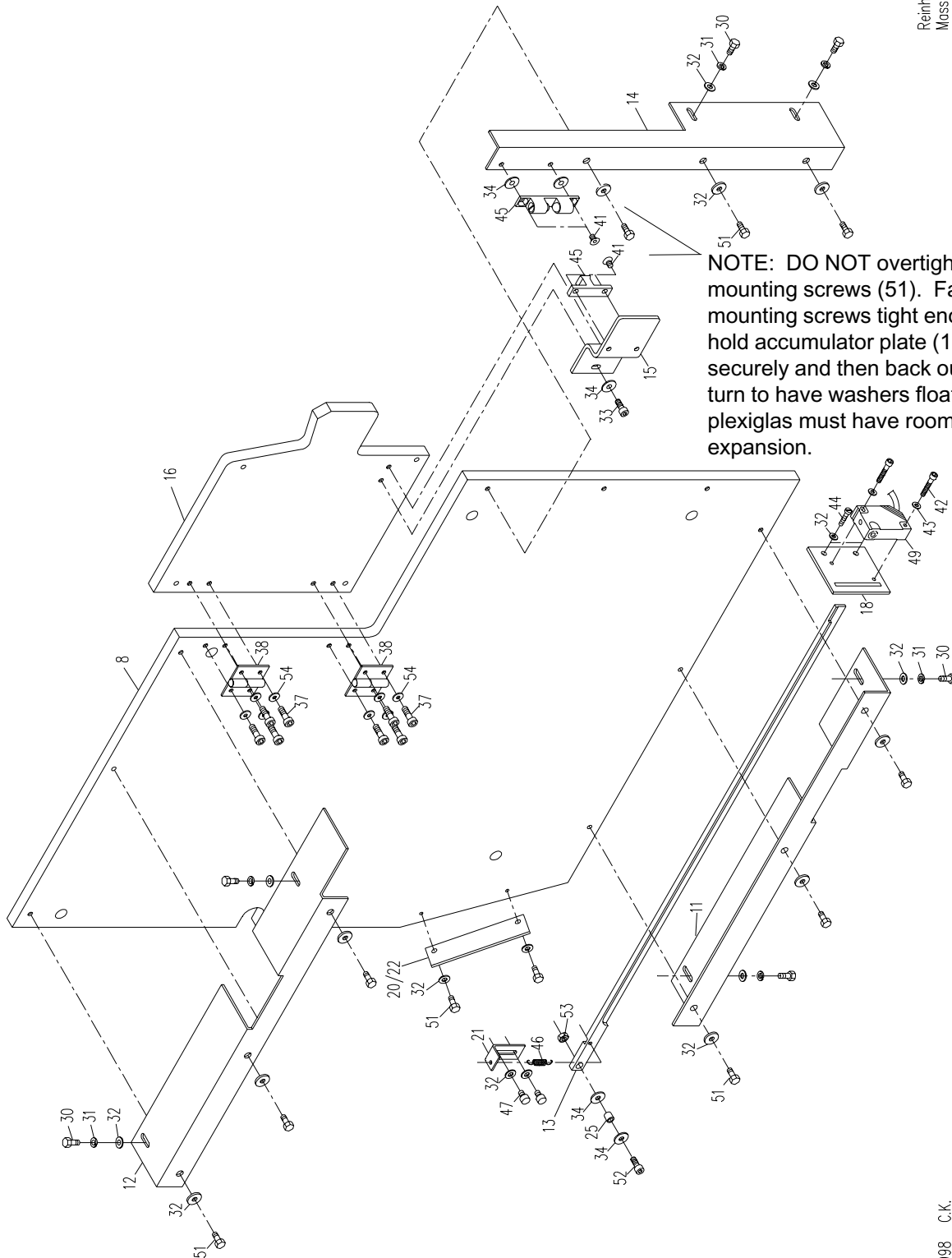
ACCUMULATOR FILL ASSEMBLY				
1620-0710-00 (5-6mm Strap)				
Item	Part Number:	Description:	Qty:	Notes:
86	NT 92	Socket Cap Screw	3	
87	NT 461	Spacer	1	
88	NT 46 **	Bearing	2	
89	NT 45	Snap Ring	1	
90	NT 3	E-Clip	1	
91	NT 458	Nylock Nut	1	
92	NT 74	Lock Washer	3	
94	NT 973	Set Screw	4	
97	NT 556	Socket Cap Screw	8	
98	NT 85	Flat Head Screw	3	
99	NT 156 **	Bearing	2	
100	NT 344	Snap Ring	1	
101	NT 1509 **	Tension Spring	1	
102	NT 2324	Bearing	1	
105	ME 2247	Proximity Sensor	1	
106	ME 1247 **	Solenoid 24 V. DC	1	
108	NT 757	Bushing	1	
109	NT 699	Bushing	1	
110	NT 2292	Washer	1	
111	NT 445	Nylock Nut	1	
112	NT 76	Socket Cap Screw	4	
114	NT 533	Lock Washer	2	

NOTES:

ACCUMULATOR ASSEMBLY

500-600 MACHINE 1620-0730-00 6/19/97

Reinhardt, November 1997
 Masstab 1:5

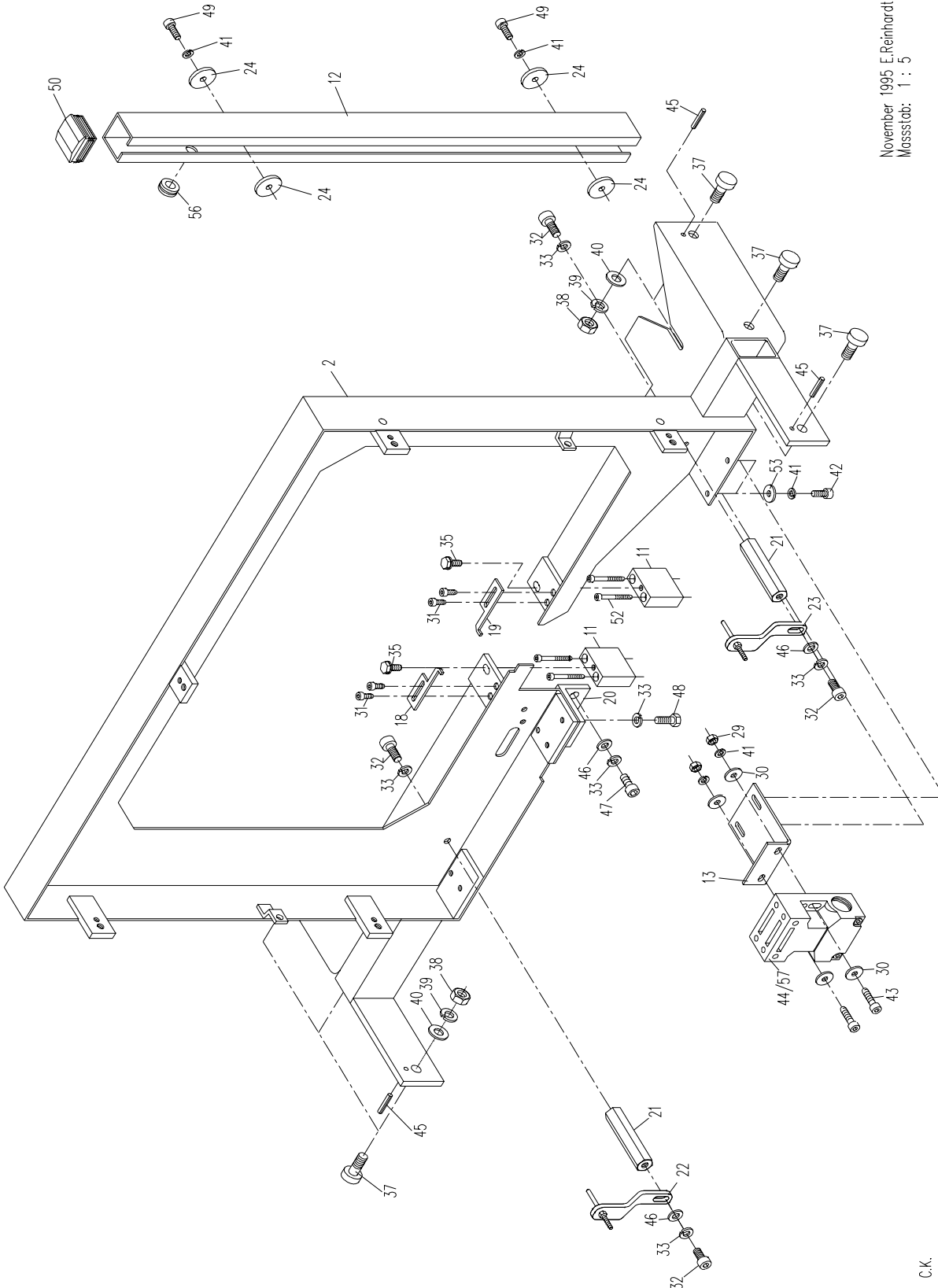


07.10.1998 C.K.

ACCUMULATOR ASSEMBLY				
500 & 600 1620-0730-00				
Item	Part Number:	Description:	Qty:	Notes:
8	1620-073000-10	Accumulator Front Cover 10mm Thick	1	
9	1620-073000-11	Accumulator Door 10mm Thick	1	
10	1620-072000-10	Accumulator Front Cover 8mm Thick	1	
11	1620-072000-11	Accumulator Door 8mm Thick	1	
12	1620-072000-12	Right Support Angle	1	
13	1620-072000-13	Bottom Support Angle	1	
14	1620-072000-14	Top Support Angle	1	
15	1699-072100-15	Latch	1	
17	1620-072000-17	Sensor Actuator Lever	1	
18	1620-072000-18	Proximity Sensor Bracket	1	
21	1620-072000-21	Spring Adjustment Angle	1	
22	1620-073000-22	Support Angle for 10mm Cover	1	
22	1620-0720-22	Support Angle for 8mm Cover	1	
25	0401-070000-19	Bushing	1	
30	NT 653	Hex Screw	8	
31	NT 176	Lock Washer	6	
32	NT 72	Washer	12	
33	NT 27	Socket Cap Screw	1	
34	NT 309	Washer	5	
37	NT 2644	Socket Cap Screw	8	
38	NT 692	Hinge	2	
41	NT 939	Flat Head Screw	4	
42	NT 691	Socket Cap Screw	2	
43	NT 32	Washer	2	
44	NT 95	Socket Cap Screw	2	
45	NT 1211	Latch Support	1	
46	NT 2331 **	Tension Spring	1	
47	NT 162	Socket Cap Screw	2	
49	ME 2247	Proximity Sensor	1	
51	NT 2643	Hex Screw	11	
52	NT 203	Socket Cap Screw	1	
53	NT 13	Hex Nut	1	
54	NT 870	Washer	8	

OUTER STRAP TRACK ASSEMBLY

500/400 MACHINE 1621-0810-00 9/29/97



November 1995 E.Reinhardt
Massestab: 1 : 5

29.09.1997 C.K.

OUTER STRAP TRACK ASSEMBLY				
500/400 1621-0810-00				
Item	Part Number:	Description:	Qty:	Notes:
2	1621-0811-00	Outer Strap Track 500/400	1	
11	1620-0810-16	Spacer	2	
12	1621-1140-10	Cable Channel 500/400	1	
13	1620-0810-13	Safety Switch Support Plate	1	
18	1601-0800-25 **	Left Stripper	1	
19	1601-0800-56 **	Right Stripper	1	
20	1601-0800-23	Support Angle	1	
21	1601-0800-07	Spacer Bolt	2	
22	1601-0810-60 **	Ejector Pin Bracket Complete	1	
23	1620-0810-60 **	Ejector Pin Bracket Complete	1	
24	0101-0140-48	Washer	4	
29	NT 48	Hex Nut	2	
30	NT 12	Washer	4	
31	NT 41	Socket Cap Screw	4	
32	NT 44	Socket Cap Screw	4	
33	NT 66	Lock Washer	6	
35	NT 1773	Lock Screw	2	
37	NT 2108	Button Head Screw	6	
38	NT 16	Hex Nut	6	
39	NT 61	Lock Washer	6	
40	NT 15	Washer	6	
41	NT 74	Lock Washer	6	
42	NT 8	Socket Cap Screw	2	
43	NT 184	Socket Cap Screw	2	
44	ME 1823	Safety Switch	1	Schmersal ()
45	NT 503	Roll Pin	4	
46	NT 19	Washer	4	
47	NT 322	Socket Cap Screw	1	
48	NT 1	Hex Screw	1	
49	NT 76	Socket Cap Screw	2	
50	NT 1109	Frame Cap	1	
52	NT 2365	Socket Cap Screw	4	
53	NT 822	Washer	2	
56	ME 2131	Grommet	1	
57	ME 2587	Safety Switch	1	Bernstein ()

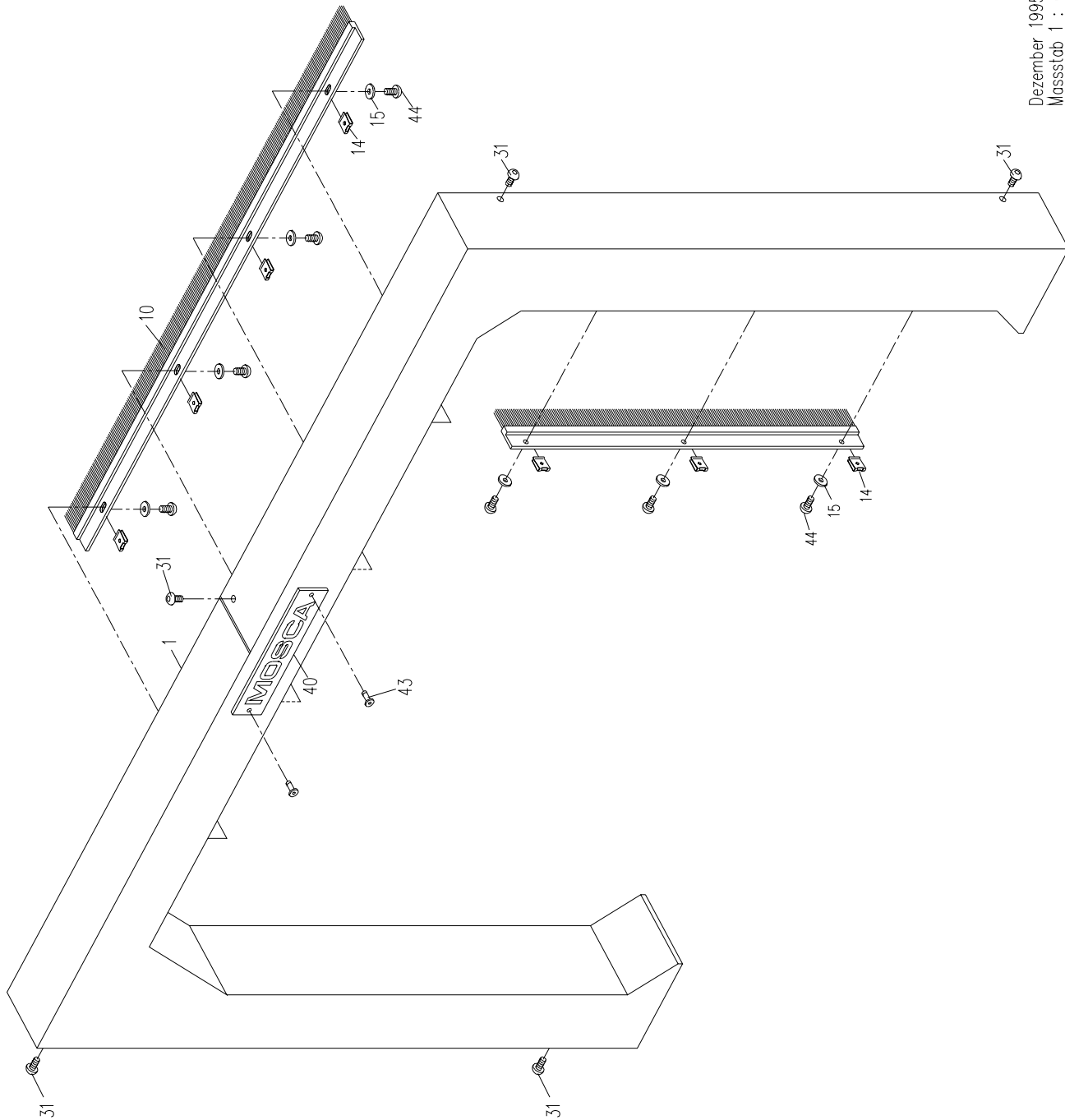
INNER STRAP TRACK ASSEMBLY				
500/400 1621-0820-00 (5-6mm Strap)				
Item	Part Number:	Description:	Qty:	Notes:
1	1603-0810-01	Inner Strap Track Frame 500/400	1	
2	1621-0821-00	Right Bar Assembly 500/400	1	
11	1620-0820-11	Collar	2	
13	1621-0820-13	Strap Track 500/400	1	5-6mm Strap
15	1620-0820-15	Bottom Strap Guide Left	1	5-6mm Strap
17	0401-0810-21	Frame Link	4	
18	0401-0810-25	Bolt	4	
19	0401-0810-22	Pivot Plate	4	
20	0401-0810-32	Bearing Block	2	
21	0401-0810-44	Bushing	2	
22	0401-0810-27	Bottom Strap Guide - Right	1	
23	0401-0810-28	Center Strap Guide - Right	1	
24	0401-0810-26	Top Strap Guide - Right	1	
25	0401-0810-47	Top Strap Guide - Left	1	
27	0401-0810-36	Track Sensor Bracket	1	
28	0401-0810-31	Bridge	1	
29	1601-0810-31	Left Bar Assembly Complete	1	
30	0401-0810-20	Top Link	3	
31	0401-0810-24	Shoulder Bolt	3	
32	0401-0810-17	Bearing Block	2	
33	1601-0810-60	Ejector Pin Bracket Complete	2	
35	1601-0810-41	Connecting Rod	1	
36	0401-0810-45	Track Alignment Angle	10	
37	0701-0810-09	Heater Cover Plate	1	
39	0401-0810-23	Shoulder Bolt	12	
46	NT 19	Washer	4	
47	NT 346	Socket Cap Screw	2	
48	NT 1402	Flat Head Screw	4	
49	NT 691	Socket Cap Screw	2	
50	NT 5	Flat Head Screw	2	
51	NT 162	Socket Cap Screw	2	
52	NT 176	Lock Washer	2	
53	NT 72	Washer	2	
54	ME 2247	Proximity Sensor	1	
55	NT 322	Socket Cap Screw	2	
56	NT 1051	Flat Head Screw	2	
57	NT 44	Socket Cap Screw	2	
58	NT 13	Hex Nut	10	
59	NT 1706	Socket Cap Screw	10	
60	NT 98	Socket Cap Screw	4	
61	NT 94	Hex Screw	4	
62	NT 74	Lock Washer	8	
63	NT 12	Washer	4	
64	NT 637	Retaining Ring	4	
65	NT 348	Dowel Pin	2	
66	NT 474	Nylock Nut	10	
67	NT 309	Washer	10	
68	NT 1604	Flat Head Screw	10	
69	NT 699	DU-Bushing	8	
70	NT 25	DU-Bushing	3	

INNER STRAP TRACK ASSEMBLY				
500/400 1621-0820-00 (5-6mm Strap)				
Item	Part Number:	Description:	Qty:	Notes:
71	NT 64	Roll Pin	3	
72	NT 66	Lock Washer	4	
73	NT 664 **	Tension Spring	2	
75	NT 2282	Heater Warning Sign	1	

NOTES:

STRAP FRAME COVER ASSEMBLY

500/400 MACHINE 1621-0830-00 11/21/97



Dezember 1995 E.Reinhardt
Masstab 1 : 6

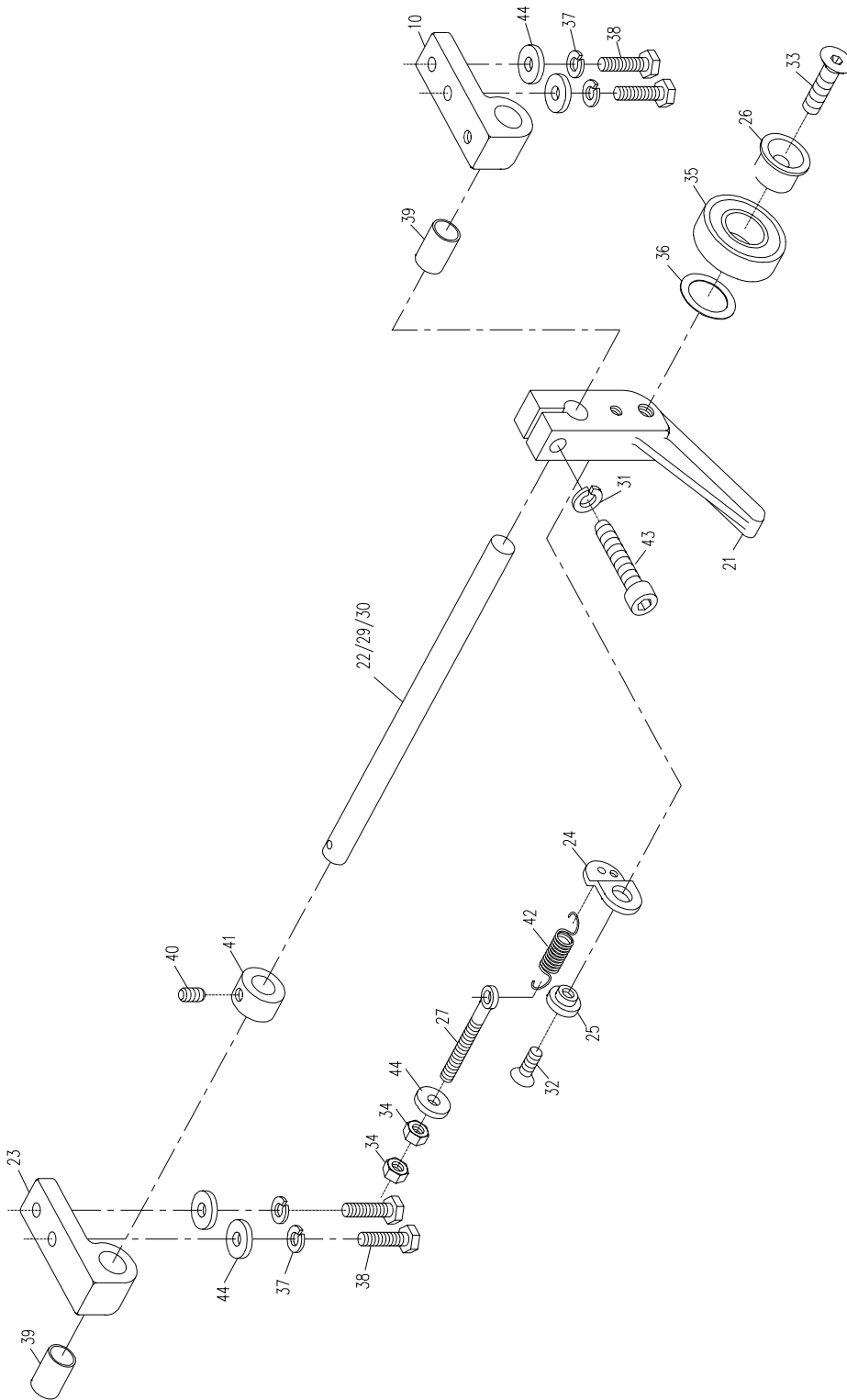
21.11.1997 E.R.

STRAP FRAME COVER ASSEMBLY				
500/400 1621-0830-00				
600/500 1622-0830-00				
800/400 1631-0830-00				
Item	Part Number:	Description:	Qty:	Notes:
2	1621-0831-00	Track Cover Assembly 500/400	1	
3	1622-0831-00	Track Cover Assembly 600/500	1	
4	1631-0831-00	Track Cover Assembly 800/400	1	
8	1621-0830-13	Brush 500/400	1	
9	1622-0830-10	Brush 600/500	1	
10	1630-0830-10	Brush 800/400	1	
12	1621-0830-11	Brush 500/400	1	
13	1622-0830-11	Brush 600/500	1	
14	NT 2597	Brush Clip	6	
15	NT 797	Washer	6	
16	1621-0830-11	Brush 800/400	1	
31	NT 1051	Buttonhead Screw	5	
40	NT 1815	Manufacturer's Sign	1	
43	NT 1814	Rivet	2	
44	NT 2596	Lock Screw	6	

STRAP TRACK OPENER ASSEMBLY

500/400 MACHINE 1621-0840-00 1/30/96

Juni 1995 Th.G.
Massstab 1:2

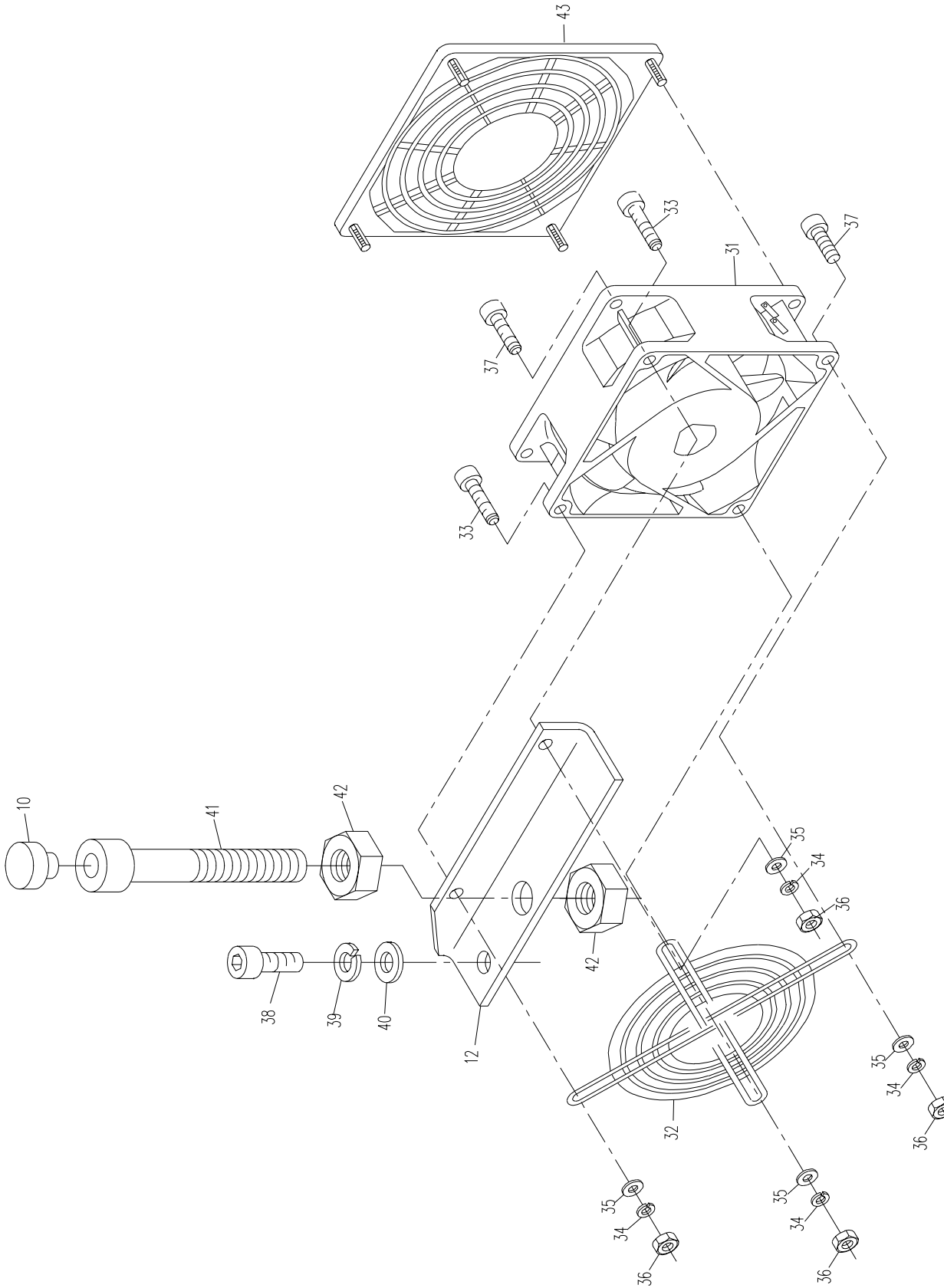


30.01.1996 Th.G.

STRAP TRACK OPENER ASSEMBLY				
500/400 1621-0840-00				
600/500 1622-0840-00				
800/400 1630-0840-00				
800/600 1630-0840-00				
Item	Part Number:	Description:	Qty:	Notes:
10	1620-0840-10	Bearing Block	1	
21	0401-0820-01	Track Opener Arm	1	
22	1608-0820-02	Track Opener Shaft 800/400 & 800/600	1	
23	0401-0820-03	Bearing Block	1	
24	0101-0151-03	Pivot Block	1	
25	0101-0151-04	Bushing	1	
26	0401-0820-13	Flange Bushing	1	
27	0401-0820-14	Eye Bolt	1	
29	1603-0820-02	Track Opener Shaft 500/400	1	
30	1602-0820-02	Track Opener Shaft 600/500	1	
31	NT 61	Lock Washer	1	
32	NT 198	Flat Head Screw	1	
33	NT 497	Flat Head Screw	1	
34	NT 14	Hex Nut	2	
35	NT 424 **	Bearing	1	
36	NT 514	Spacer	1	
37	NT 66	Lock Washer	4	
38	NT 185	Hex Screw	4	
39	NT 1205	Bushing	2	
40	NT 581	Set Screw	1	
41	NT 694	Collar	1	
42	NT 696 **	Tension Spring	1	
43	NT 141	Socket Cap Screw	1	
44	NT 339	Washer	5	

FAN ASSEMBLY

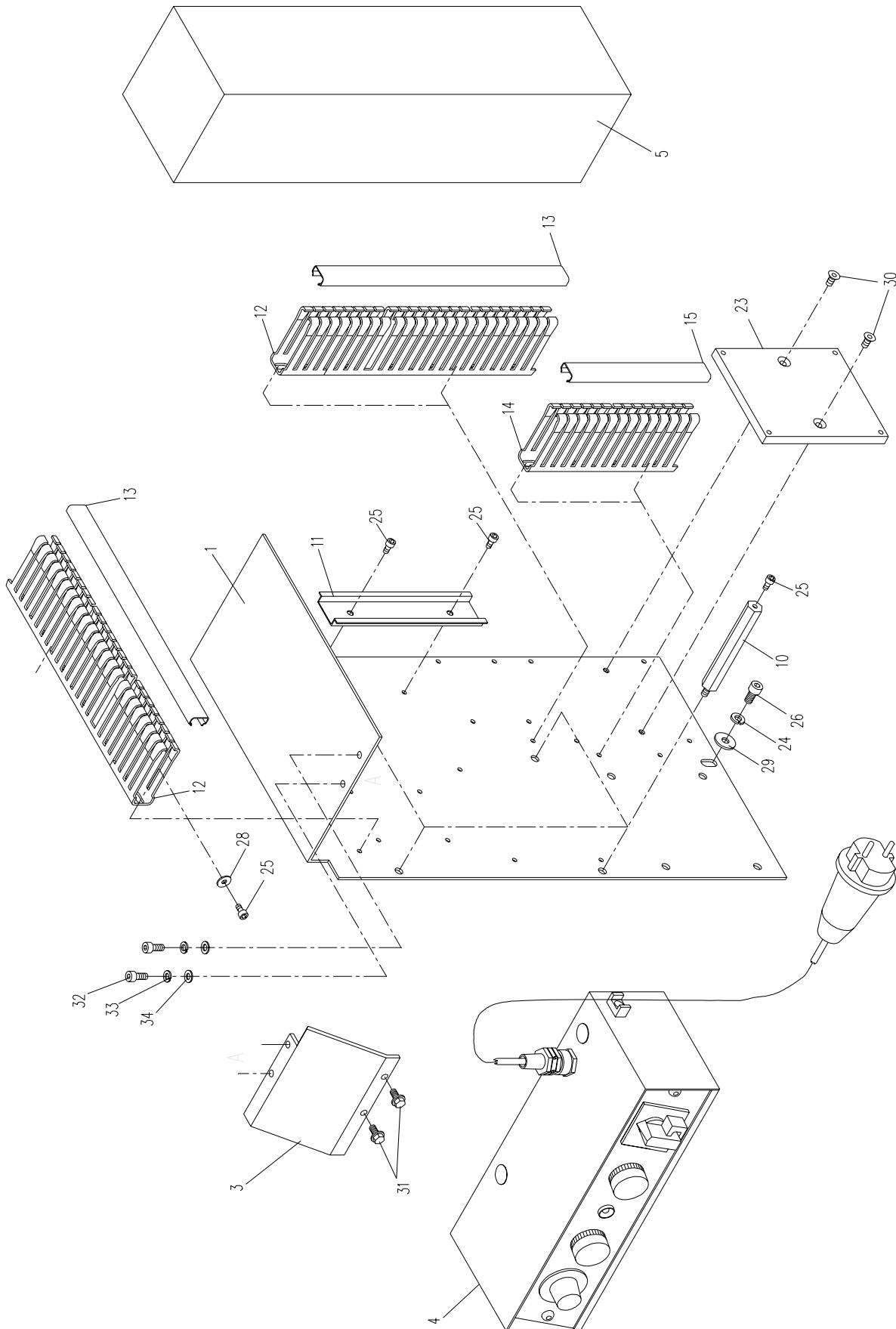
1620-0850-00 7/7/97



FAN ASSEMBLY				
1620-0850-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-0851-00	Fan Bracket Complete	1	
10	0101-0100-17 **	Bumper	1	
31	ME 1759	Fan 24 V. DC	1	
32	ME 1249	Fan Guard	1	
33	NT 203	Socket Cap Screw	2	
34	NT 176	Lock Washer	4	
35	NT 72	Washer	4	
36	NT 13	Hex Nut	4	
37	NT 27	Socket Cap Screw	2	
38	NT 22	Socket Cap Screw	1	
39	NT 66	Lock Washer	1	
40	NT 19	Washer	1	
41	NT 1048	Socket Cap Screw	1	
42	NT 239	Hex Nut	1	
43	ME 1449	Fan Guard	1	

ELECTRICAL COMPONENTS ASSEMBLY

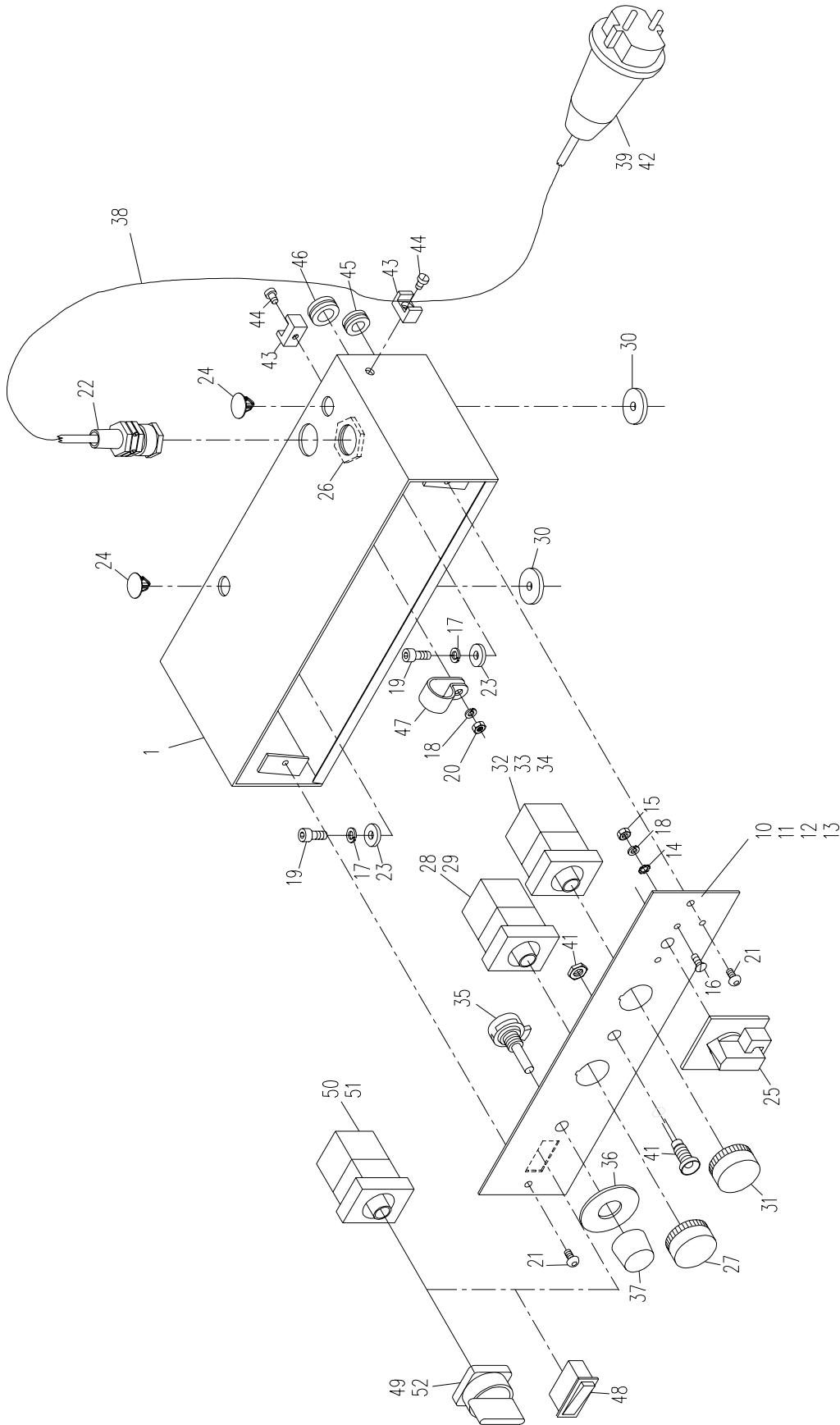
1620-1100-00 12/3/97



ELECTRICAL COMPONENTS ASSEMBLY				
1620-1100-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1620-110000-25	Base Plate Complete	1	
3	1620-1102-00	Cover	1	
4	1620-1130-00	Control Panel Assembly	1	
5	1620-1150-00	Enclosed Components Assembly	1	
10	1620-1100-10	Stand Off	4	
11	1620-1100-24	Din Rail	1	
12	1620-1100-12	Cable Channel	2	
13	1620-1100-13	Cable Channel Cover	2	
14	1620-1100-14	Cable Channel	1	
15	1620-1100-15	Cable Channel Cover	1	
23	1620-1100-23	Adapter Plate	1	
24	NT 66	Lock Washer	2	
25	NT 95	Socket Cap Screw	14	
26	NT 322	Socket Cap Screw	2	
28	NT 309	Washer	8	
29	NT 339	Washer	2	
30	NT 1124	Flat Head Screw	2	
31	NT 1050	Lock Screw	2	
32	NT 8	Socket Cap Screw	2	
33	NT 74	Lock Washer	2	
34	NT 12	Washer	2	

CONTROL PANEL ASSEMBLY

1620-1130-00 8/26/97



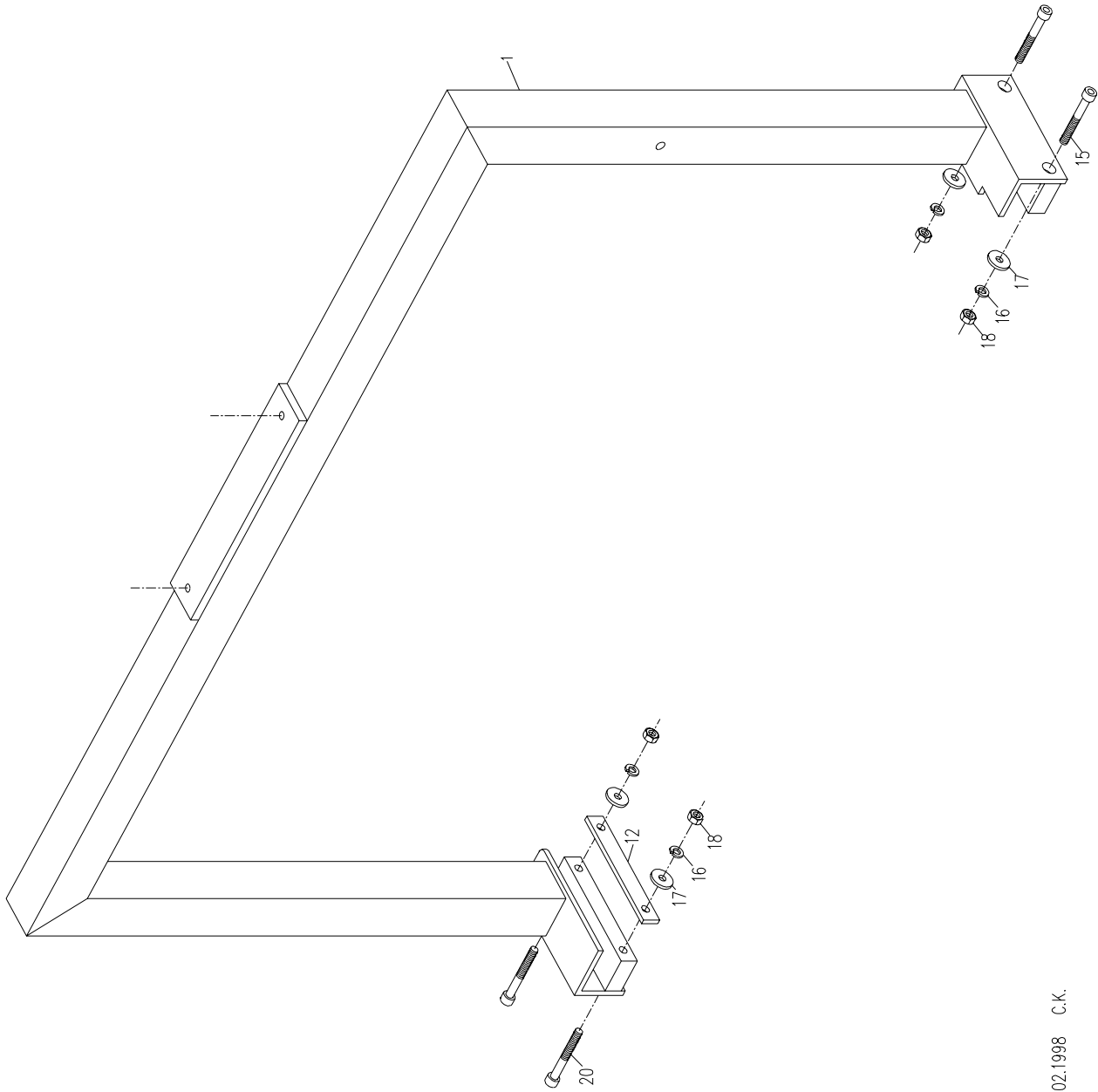
CONTROL PANEL ASSEMBLY**1620-113000-00**

Item	Part Number:	Description:	Qty:	Notes:
1	1620-113100-00	Control Panel Cover Assembly	1	
10	1620-113000-10	Control Panel Face Plate	1	
14	NT 806	Star Washer	1	
15	NT 13	Hex Nut	1	
16	NT 146	Flat Head Screw	1	
17	NT 74	Lock Washer	2	
18	NT 176	Lock Washer	2	
19	NT 8	Socket Cap Screw	2	
20	NT 13	Hex Nut	1	
21	NT 2332	Countersunk Screw	2	
22	ME 457	Cable Connector	1	
23	NT 822	Washer	2	
24	ME 952	Snap Plug	2	
25	ME 2555	Main Switch	1	
26	ME 456	Hex Nut (Metal)	1	
27	ME 278 A	Illuminated Push Button	1	
28	ME 52 A	Illuminated Push Button Base	1	
29	ME 1842 **	Bulb 24 V.	1	
30	0101-0140-48	Retaining Washer	2	
31	ME 55 A	Pilot Light	1	
32	ME 90 A	Light Base	1	
33	ME 266 **	Bulb 130 V.	1	
34	ME 314 A	Light Base	1	
35	ME 1668	Potentiometer	1	
36	ME 1128	Dial Plate	1	
37	ME 1129	Knob	1	
38	ME 2615	Power Line Cable	1	
39	ME 1797	Plug	1	
41	ME 1665 A	L.E.D.	1	
42	ME 1813	Plug	1	
43	ME 1682	Cable Clip	1	
44	NT 41	Cheese Head Screw	1	
45	ME 2131	Cable Grommet	1	
46	ME 2130	Cable Grommet	1	
47	ME 666	Cable Clamp	1	
48	ME 1680	Counter (optional)	1	
49	ME 121 A	Selector Switch - 3 Position (optional)	1	
50	ME 1934	Illuminated Push Button Base 3 Pos. (opt.)	1	
51	ME 98 A	Push Button Base - 2 Position	1	
52	ME 100 A	Selector Switch - 2 Position	1	

SUPPORT FRAME ASSEMBLY

500/400 1621-1401-00 2/12/1998

Reinhardt April 1997
Massstab 1 : 7

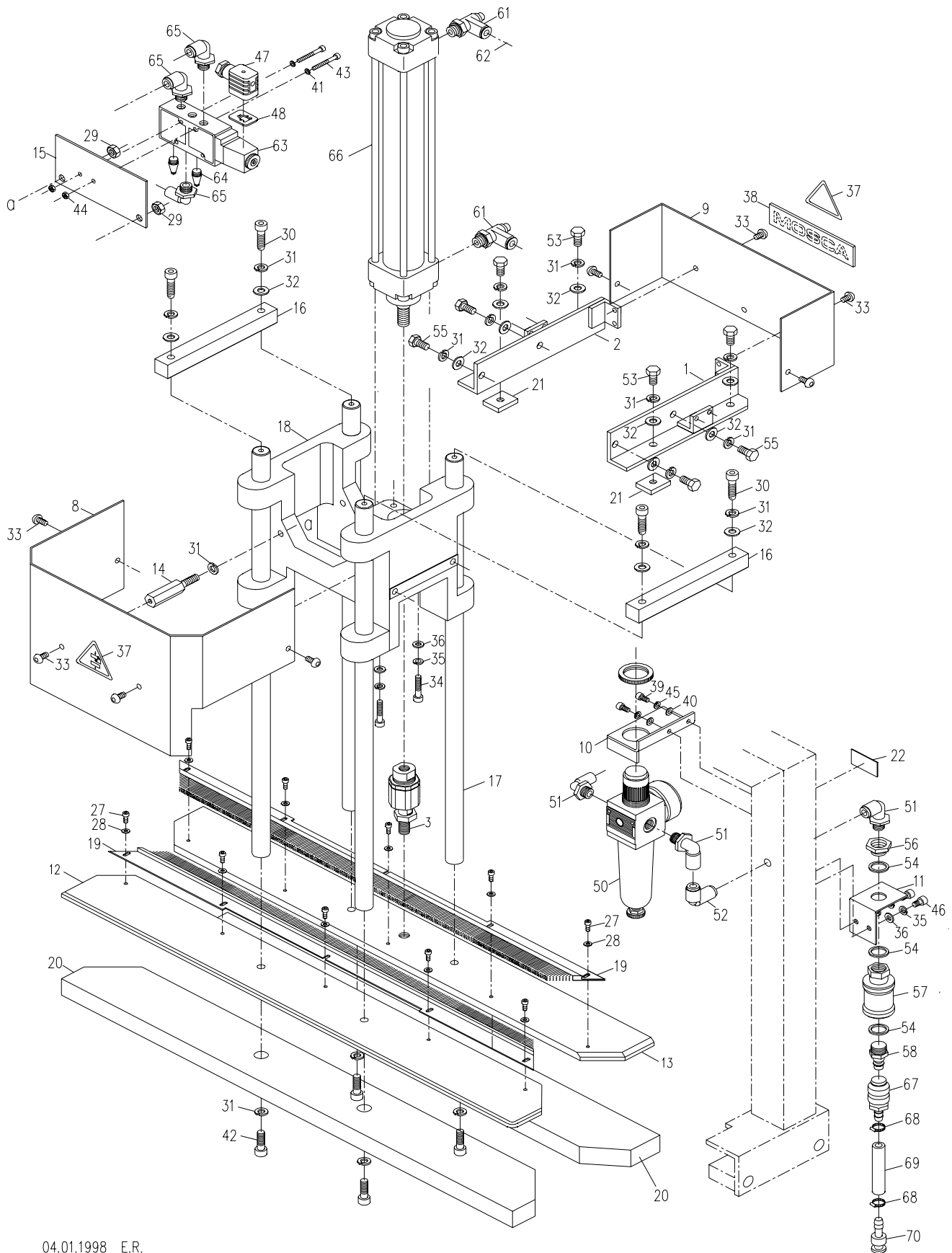


12.02.1998 C.K.

SUPPORT FRAME ASSEMBLY				
500/400 1621-1401-00				
Item	Part Number:	Description:	Qty:	Notes:
5	1621-140110-00	Frame	1	
12	1621-140100-12	Nut Plate	1	
15	NT 261	Socket Cap Screw	2	
16	NT 61	Lock Washer	4	
17	NT 82	Washer	4	
18	NT 16	Hex Nut	4	
20	NT 815	Socket Cap Screw	2	

DOUBLE COMPACTOR ASSEMBLY

500/400 1621-1501-00 1/04/1998



04.01.1998 E.R.

Reinhardt April 1997
Massstab 1 : 7

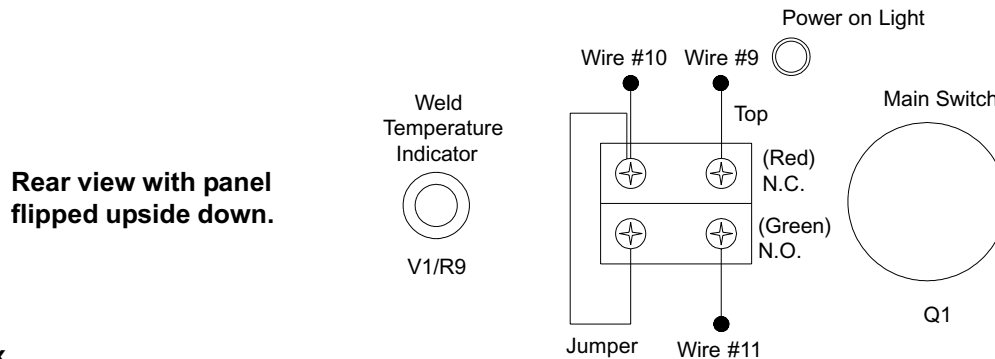
DOUBLE PRESS ASSEMBLY (OPTIONAL)				
400/300 1620-1501-00				
500/400 1621-1501-00				
Item	Part Number:	Description:	Qty:	Notes:
1	1622-150110-00	Right Press Block Support	1	
2	1622-150120-00	Left Press Block Support	1	
3	1622-150130-00	Alignment Coupling 400/300	1	
8	1622-150100-08	Press Block Cover	1	
9	1622-150100-09	Press Block Cover	1	
12	1630-150100-12	Press Plate Front	1	
13	1630-150100-13	Press Plate Rear	1	
14	1622-150100-14	Stand Off	2	
15	1622-150100-15	Solenoid Valve Bracket	1	
16	3105-120000-02	Press Rod Connector	2	
17	1620-150100-17	Press Rod 400/300	4	
18	3105-120000-01	Press Block	1	
19	1620-150100-19	Brush 400/300	2	
20	1620-150100-20	Press Pad 400/300	2	
21	0502-0220-24	Nut Plate	2	
22	1622-150100-22	Shield	1	
27	NT 27	Socket Cap Screw	6	
28	NT 72	Washer	6	
29	NT 16	Hex Nut	2	
30	NT 268	Socket Cap Screw	4	
31	NT 61	Lock Washer	16	
32	NT 15	Washer	12	
33	NT 2368	Buttonhead Screw	8	
34	NT 144	Socket Cap Screw	4	
35	NT 66	Lock Washer	4	
36	NT 19	Washer	6	
37	NT 2444	Warning Sign	2	
38	NT 674	Manufacturer's Plate	1	
39	NT 927	Socket Cap Screw	2	
40	NT 309	Washer	2	
41	NT 176	Lock Washer	4	
42	NT 141	Socket Cap Screw	4	
43	NT 117	Socket Cap Screw	2	
44	NT 13	Hex Nut	2	
45	NT 49	Hex Screw	4	
46	NT 302	Hex Screw	4	
47	ME 837	Coil Plug	1	
48	ME 836	Coil Plug Gasket	1	
49	NP 143	Alignment Coupling 500/400	1	
50	NP 547	Filter Regulator	1	
51	NP 176G	Angle Connector	1	
52	NP 32	Angle Connector	1	
53	NP 30	Seal Ring	1	
54	NP 18	Seal Ring	2	
55	NP 266	T- Connector G 1/4"	1	
56	NP 16	Reducer Bushing	1	
57	NP 17	Hand Shut-Off Valve	1	
58	NP 237	Hose Connector	1	
59	NP 29	Angle Connector	1	
60	NP 121	Quick Disconnect	1	

DOUBLE PRESS ASSEMBLY (OPTIONAL)				
400-300 1620-1501-00				
500/400 1621-1501-00				
Item	Part Number:	Description:	Qty:	Notes:
61	NP 2 C	Angle Connector	2	
62	NP 24 C	Tubing	3	
63	NP 458C01	Solenoid Valve w/Coil	1	
64	NP 267	Muffler	2	
65	NP 379 G	Angle Connector	3	
66	NP 1	Air Cylinder, 40 x 200 400/300	1	
67	NP 21	Quick Disconnect	1	
68	NP 156	Hose Clamp	2	
69	NP 46	Hose 8 x 3	5	
70	NP 19	Quick Disconnect	1	
71	0219-040000-13	Press Rod 500/400	4	
72	0401-130000-03	Brush 500/400	2	
73	1621-150100-20	Press Pad 500/400	2	
74	NP 36	Air Cylinder, 40 x 320 500/400	1	

RO-MP2 PHOTO CONTROL 1999

1511-0090 4/6/1999

1. Remove H1 (selector switch) completely. (see diagram page 2.5) Diagram shown below is found under H1 selector switch.
2. Drill 7.5mm hole next to right side of "power on" label for new smaller "power on" light.
3. Hook Indicator lens up to T2 and T4 on main switch.
4. Install switch and switch body where H1 used to be, with red toward back.
5. Wire according to illustration.
6. Install label on front panel on top of existing Mosca label.



Electrical Box

1. Locate cable from control panel and install wires to the following:
 - wire #11 - Plug X11 Terminal 7
 - wire #9 - Plug X11 Terminal 5
 - wire #10 - Plug X6 Terminal 9
2. Install photo wires to the following on X6:
 - Black - Plug X6 Terminal 9 with wire #10.
 - Brown - Plug X6 Terminal 7.
 - Blue and Orange - Plug X6 Terminal 8.
3. Run wires from the bottom of plugs X11 and X6 to the following:
 - Plug X11 Terminal 7 to E7 on P.C. Board.
 - Plug X11 Terminal 5 to E4 on P.C. Board
 - Plug X6 Terminal 7 to 31
 - Plug X6 Terminal 8 to 20

Photo Control

1. Mount on right side of machine in front of cable tube.
2. Drill (2) 2.5mm holes for photo control and use 3mm tap. (Keep photo at least 2mm off of table)
3. Use (2) 3 x 22mm screws that are included with the photo control for mounting photo. Add 4mm wide washers (as needed) between the photo control and machine frame to properly align the photo and reflector. Grind off screw ends if they are not flush with the track frame.

Reflector Bracket

1. Mount bracket on left side of machine so it sits at least 2mm above table top.
2. Drill (2) 3.3mm holes into side of track frame; Partially countersink holes and then tap 4mm.
3. For 500/400 machines or smaller, the reflector must be diagonally cut on the corner for access to the table mounting screw.
4. Install Bracket using 4 x 8mm flat head screws.
5. Make sure front table top does not hit screws when it is lifted up.

RO-MP-2 PHOTO CONTROL 1999				
1511-0090				
Item	Part Number:	Description:	Qty:	Notes:
1	ME 1851	Photo Control	1	
2	1023-0644	Indicator	1	
3	ME 121A	3 Position Switch	1	
4	ME 160A	Switch Body	1	
6	ME 1151	Reflector Tape	1	
7	1036-0057	Reflector Bracket	1	
8	1039-0003	Name Plate	1	
9	NT 5	Flat Head Screw 4 x 8mm	2	
10	ME 1374	Insulated Wire Tip (Red)	2	
11	ME 1372	Insulated Wire Tip (Gray)	2	
12	ME 1043	Insulated Wire Tip (White)	3	
13	ME 1435	Connector	4	
14	1025-0403	Wire #18 (Blue)	4 Ft.	

