

Instructions and Parts List

ScotchTM
BRAND

3M-Matic 1AF Automatic Case Sealer

Model 17800

IMPORTANT
It is recommended you immediately order the spare parts listed on page 26. These parts are expected to wear through normal use, and should be kept on hand to minimize production delays.

Service Instructions

To Our Customers:

This is the "3M-Matic"/"AccuGlide"/"Scotch"/"Opta-Pak" brand Equipment you ordered. It has been set up and tested in the factory with "Scotch" Brand tapes. If any problems occur when operating this equipment, and you desire a service call, or phone consultation, call the 3M National Service Center on 1-800/328 1390 (Twin Cities Metro Area call 731 6507). Please provide the customer support coordinator with the machine number and serial number. If you have a technical question that does not require an immediate response, you may Fax it to 612/731 6650.

Replacement Parts

Order parts by **part number**, **part name**, **quantity required**, **machine name**, **number** and **type number**.

Replacement parts and parts prices available from:

Dispenser Parts
Route 4, Box 5B
Amery, WI 54001
715/268 8126 (WI)
800/344 9883 (Outside WI)
FAX# 715/268 8153

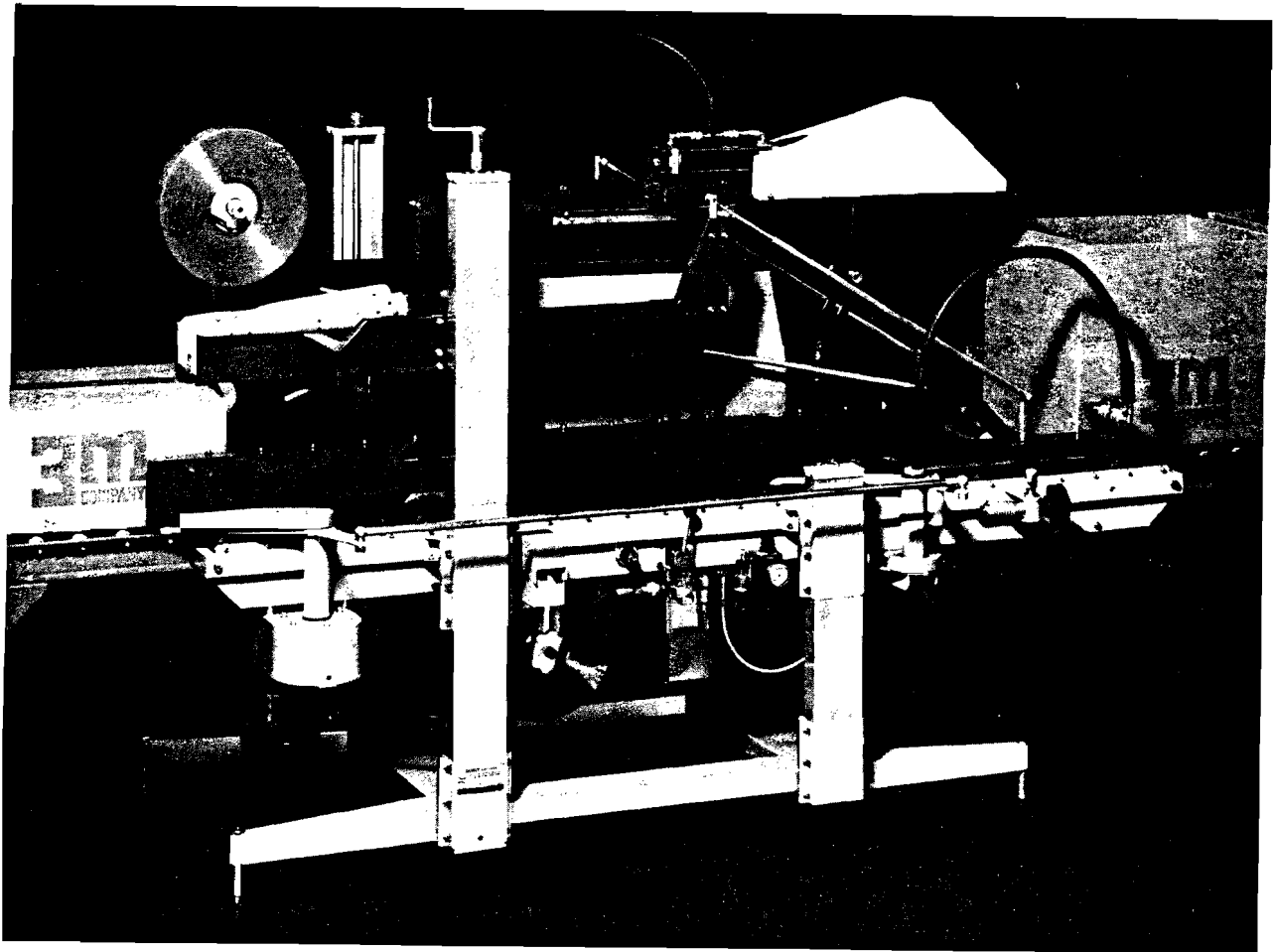
3M Packaging Systems Division

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St. Paul, MN 55144-1000



INSTRUCTION MANUAL
1AF AUTOMATIC CASE SEALER
MODEL 17800

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1AF AUTOMATIC CASE SEALER - MODEL 17800

DESCRIPTION

The "SCOTCH" Brand 3M-Matic 1AF Automatic Case Sealer is designed to accept filled Regular Slotted Containers from an existing conveyor, automatically separate the boxes, fold the top flaps and apply a "C" clip of tape to the top and bottom center seam of the box. The Automatic Case Sealer will handle one box size per set-up.

RECEIVING AND HANDLING

After the machine has been uncrated, examine the Case Sealer for damage that might have occurred during transit. If damage is evident, file a damage claim immediately with the transportation company and also your 3M Representative.

Spare parts, tools, and oil can are provided in a small plastic case. Remove and keep with the Case Sealer for use in set-up, operation, and maintenance.

Several machine components are tied down to prevent damage during transit. Remove these before proceeding with following set-up instructions.

WARRANTY

IMPORTANT NOTICE TO PURCHASER: The following is made in lieu of all warranties, expressed or implied, including the implied warranties of merchantability and fitness for purpose: The only obligation of the seller and manufacturer of "Scotch" Brand equipment shall be to repair or replace any mechanical part proved to be defective, provided the defect occurs within 90 days after date of purchase, and the so-purchased item is returned immediately to the 3M factory or to an authorized service station designated by the manufacturer. NEITHER SELLER NOR MANUFACTURER SHALL BE LIABLE EITHER IN TORT OR IN CONTRACT FOR ANY LOSS OR DAMAGE, DIRECT, INCIDENTAL, OR CONSEQUENTIAL, ARISING OUT OF THE USE OF OR THE INABILITY TO USE THE "Scotch" BRAND EQUIPMENT. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

"Scotch" is a registered trademark for the pressure-sensitive tapes and dispensers of 3M, St. Paul, Minnesota 55144-1000.

SPECIFICATIONS

1) Power Requirements:

115V, 60 Hz., 4 A.

70 PSIG [585 kPa gauge pressure], 2.5 SCFM [4.25 m³/h 21°C, 101 kPa] maximum at maximum cycle rate.

A pressure regulator-filter-lubricator is included.

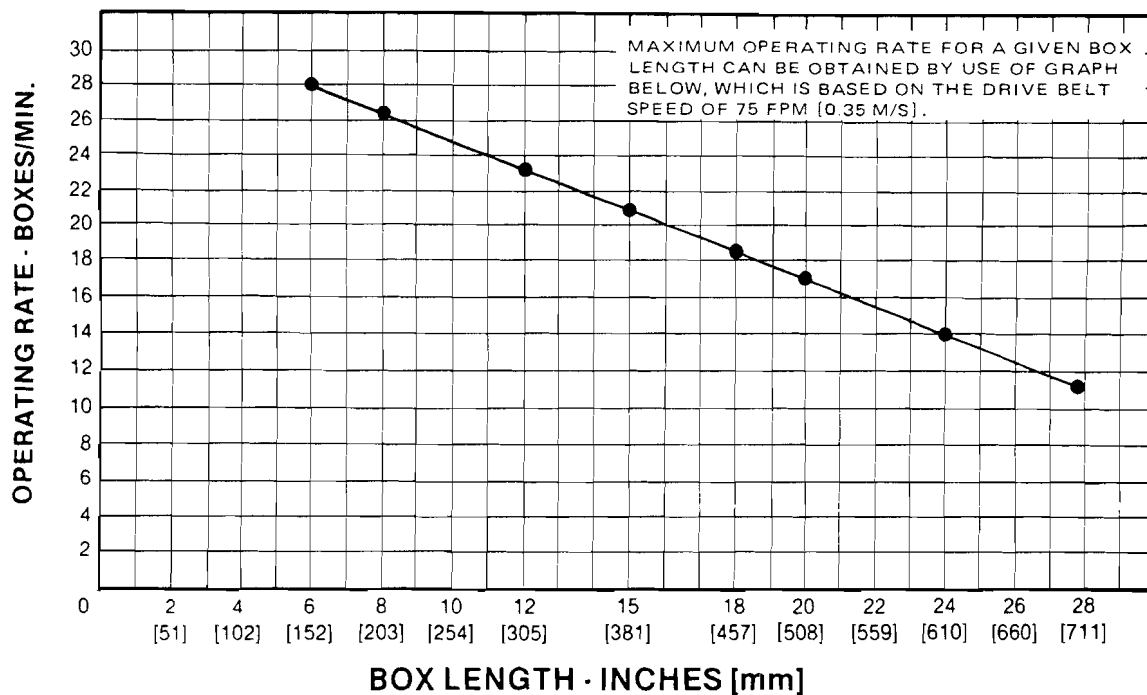
2) Machine Dimensions:

A. Length	- 80.7 inches [2050 mm]
B. Width	- 37 inches [940 mm]
C. Height	- 62.9 inches [1600 mm]
D. Bed Length	- 76.8 inches [1950 mm]
Bed Width	- 22.1 inches [650 mm]
Bed Height	- 24.6 inches [625 mm]
E. Weight	- 441 pounds [200 kg] uncrated
	- 776 pounds [352 kg] crated

(Specifications continued on next page.)

SPECIFICATIONS (CONTINUED)

3) Operating Rate:



4) Operating Conditions:

Use in dry, relatively clean environments at 40° to 105°F [5° to 40°C] with clean, dry boxes.

IMPORTANT SAFEGUARD

Machine should not be washed down or subjected to conditions causing moisture condensation on components.

5) Tape:

"SCOTCH" Brand Pressure-sensitive Film Box Sealing tapes.

6) Tape Width:

1-1/2 inches or 36 mm minimum to 2 inches [50 mm] maximum.

7) Tape Roll Diameter:

Up to 14 inches [355 mm] maximum on a 3 inch [76.2 mm] diameter core.
(Accommodates "SCOTCH" Brand Film tapes - 1,000 yard rolls.)

8) Box Board:

125 to 275 P.S.I. bursting test, single wall A, B, or C flute.

(Specifications continued on next page.)

SPECIFICATIONS (CONTINUED)

9) Box Weight and Size Capacities:

A. Box weight, filled - up to 65 pounds [30 kg]

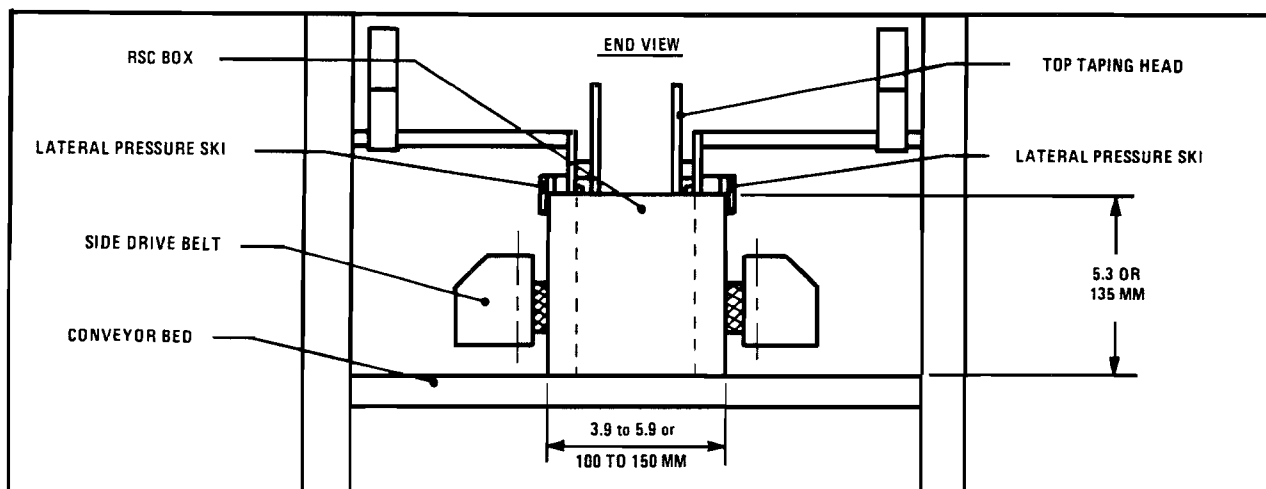
B. Box size:

	<u>Minimum</u>	<u>Maximum</u>
Length -	5.9 inches or 150 mm	27.5 inches or 700 mm
Width -	*3.9 inches or 100 mm	20.5 inches or 520 mm
Height -	**3.9 inches or 100 mm	19.5 inches or 500 mm

* For box width less than 5.9 inches or 150 mm, the minimum box height is 5.3 inches or 135 mm and the lateral pressure skis must be removed as discussed on page 17.

* Without removing the lateral pressure skis, the minimum box height is 6.71 inches or 170 mm for any box widths in range listed above.

** For box heights less than 6.71 inches or 170 mm, the minimum box width is 5.9 inches or 150 mm and the lateral pressure skis, must be removed as discussed on page 17.



NOTE: The Case Sealer can accommodate most boxes within the size range listed above. However, if the box length (in direction of seal) to box height ratio is .6 or less, then several boxes should be test run to assure proper machine performance.

DETERMINE THE BOX LIMITATIONS BY COMPLETING THIS FORMULA:

$$\frac{\text{BOX LENGTH IN DIRECTION OF SEAL}}{\text{BOX HEIGHT}} \text{ MUST BE GREATER THAN } .6$$

Any box ratio approaching this limitation should be test run to assure performance.

SET-UP INSTRUCTIONS

It is recommended that the LAF Case Sealer be set-up and tried before placing it in the production line. This approach will allow your thorough review and familiarization with the LAF before putting it in production where time for set-up, adjustments, and operator training usually becomes limited.

The following instructions are presented in the order recommended for setting up and installing the Case Sealer, as well as for learning the operating functions and adjustments. Following them step by step will result in your thorough understanding of the machine and an installation in your production line that best utilizes the many features built into the Case Sealer.

HEIGHT ADJUSTMENT CRANK

The height adjustment crank handle, located as shown in figure 1, comes disassembled for shipping purposes. The crank handle can be installed at the top of either frame column for customer operating convenience. To put the handle into operating position, loosen the locking screw and install the handle as shown in figure 1. Tighten the locking screw on the flat of the shaft to secure the handle.

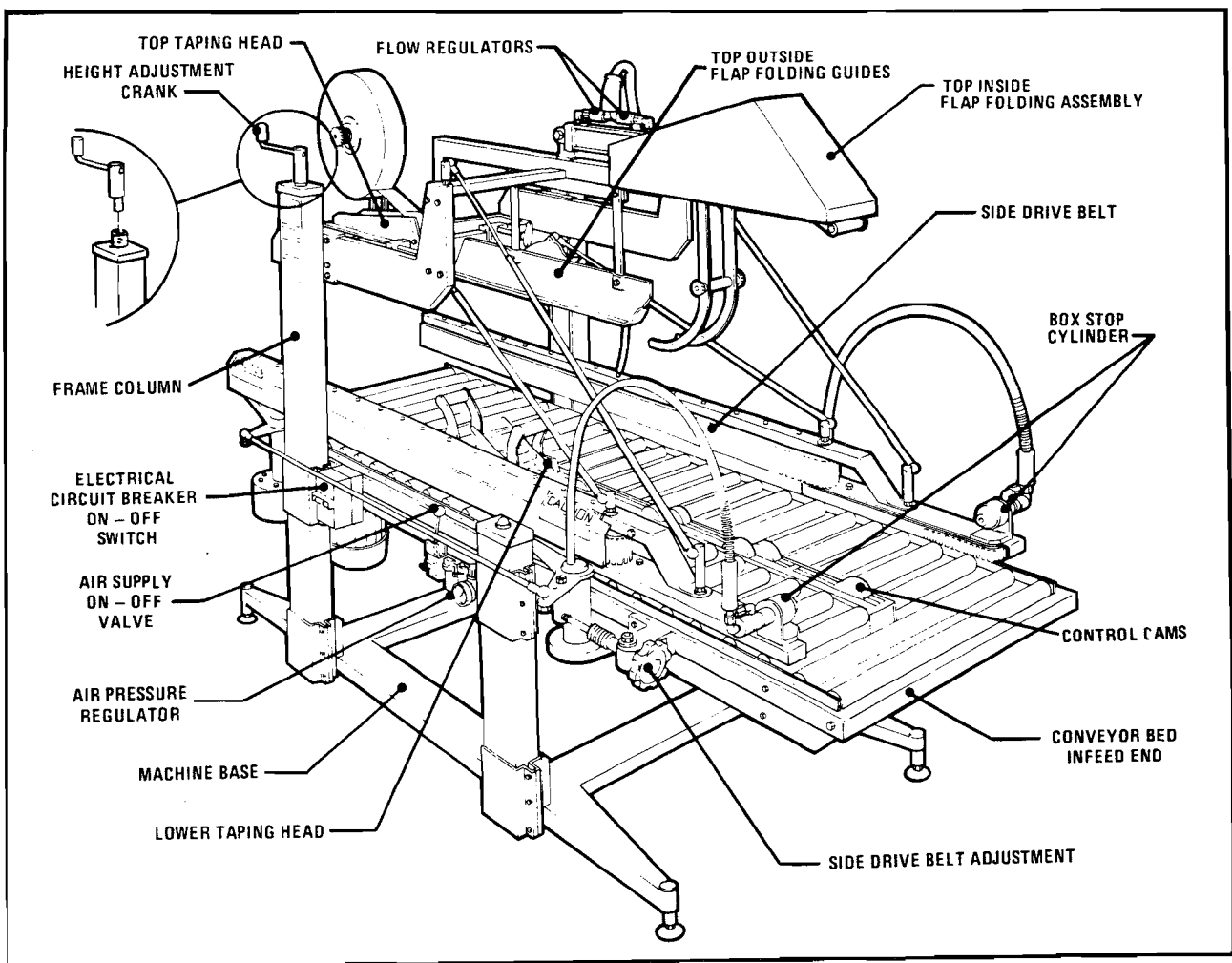


FIGURE 1 SET-UP INSTRUCTIONS - BOX SEALER COMPONENTS - LEFT FRONT VIEW

SET-UP INSTRUCTIONS (CONTINUED)

MACHINE LEVELING

The base is equipped with four leveling pad feet, as shown in figure 2, which can be used to level the machine or to adjust to an uneven floor once it is placed in the production line. Each foot is adjustable as follows:

- 1) Loosen the M6 x 10 socket head lock screw with hex socket wrench provided in tool kit.
- 2) Using same wrench inserted in hex socket in the top of the foot assembly, the foot pad can be extended by turning the wrench counter-clockwise, retracted by turning the wrench clockwise. The maximum extension of the foot pad is 1 inch [25 mm].
- 3) After adjusting pad extension to level machine, lock in place by tightening M6 x 10 socket head lock screw.

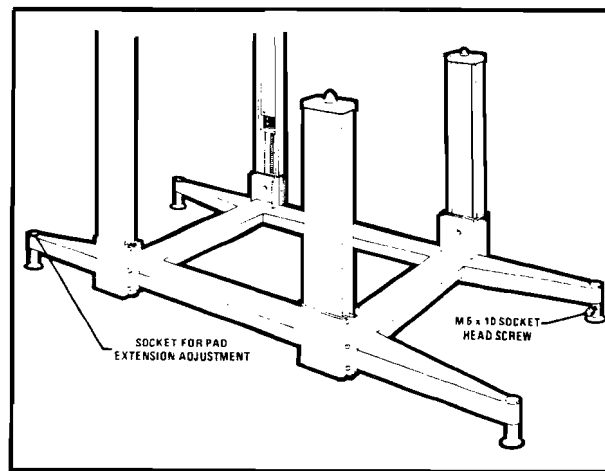


FIGURE 2 - MACHINE LEVELING

PRODUCTION LINE INSTALLATION GUIDE

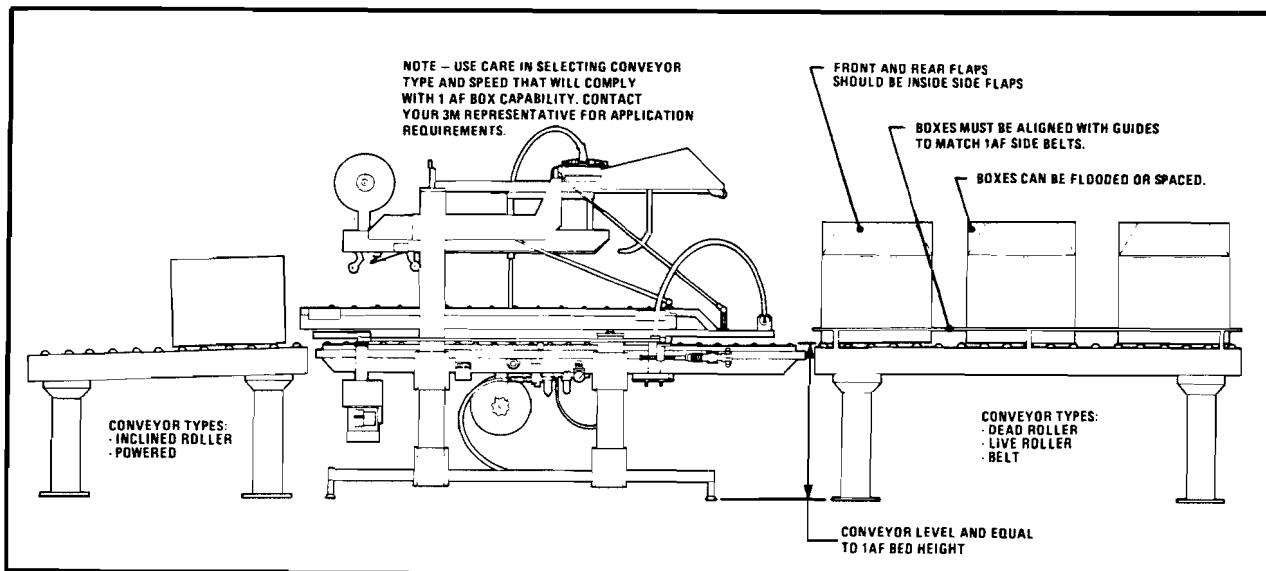


FIGURE 3 - CONVEYOR SYSTEMS

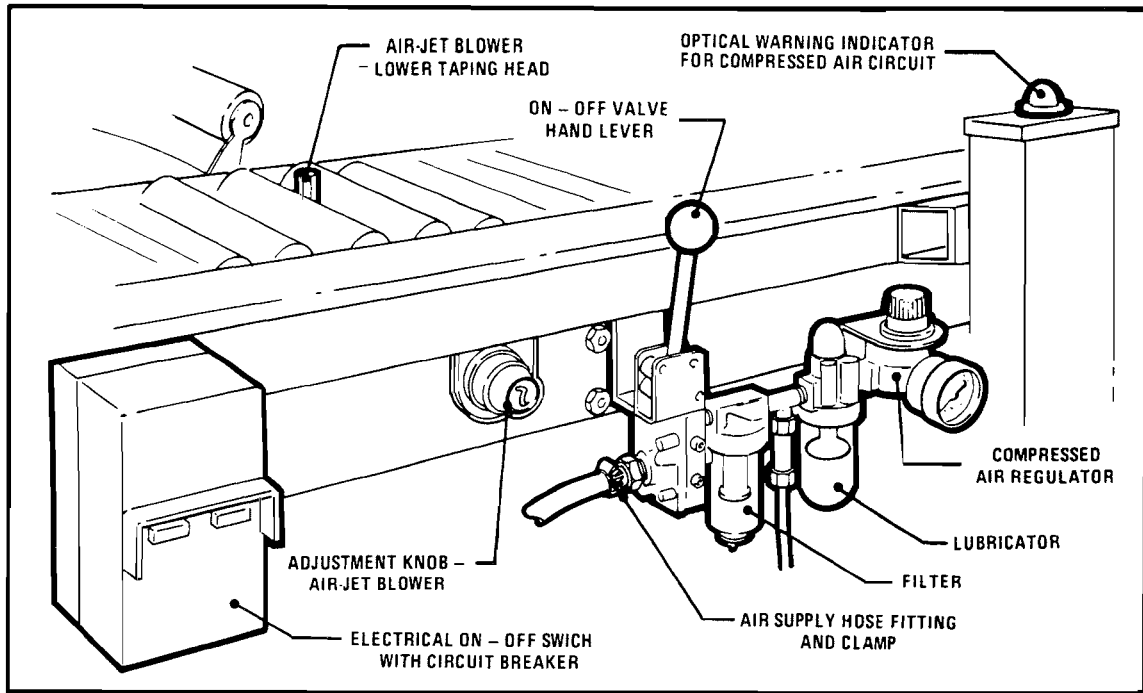


FIGURE 4 - ELECTRICAL - PNEUMATIC CONNECTIONS

ELECTRICAL CONNECTION

The electrical control box, shown in figure 4, contains the "ON-OFF" switch with pre-set circuit breaker. It is installed at the factory as shown but can be moved to the opposite side of the main conveyor for customer operating convenience. A standard three conductor power cord with plug is provided at the back of the electrical control box for 115 Volt, 60 Hz, 4 amp electrical service. The electrical power supply is turned "ON" by pressing the Green button, "OFF" by pressing the Red button. Before the power cord is plugged into a 115 Volt, 60 Hz outlet, make sure the Red button is depressed and that all packaging materials and tools are removed from the machine.

PNEUMATIC CONNECTION

The Case Sealer requires a 70 PSIG [585 kPa gauge pressure], 2.5 SCFM [4.25 m³/h 21°C, 101 kPa] compressed air supply. As illustrated in figure 4, an on/off valve, filter, lubricator, and regulator are provided to service the air supply. This control can be relocated to the other side of the main conveyor with the electrical controls.

The air supply line should be connected to the hand lever operated on/off valve by means of the union fitting and hose clamp provided on the lower left side of the on/off valve as illustrated. The customer supplied air hose should be slipped over the union ferrule and clamped tightly in place.

If another type of connector between the air supply line and on/off valve is desired, the union fitting and/or elbow can be removed and replaced with desired connector. The on/off valve inlet port has 1/8-28 British standard female threads.

Before energizing the air supply line, check to be sure that the air lubricator has an adequate supply of oil in the bowl. If necessary, fill the bowl to the level indicated with SAE #5 NON-DETERGENT oil or light weight spindle oil rated 100 SSU at 100° F. [38° C]. Oil can be added by removing filler capscrew or bowl. After filling, replace capscrew or bowl and securely tighten.

SET-UP INSTRUCTIONS (CONTINUED)

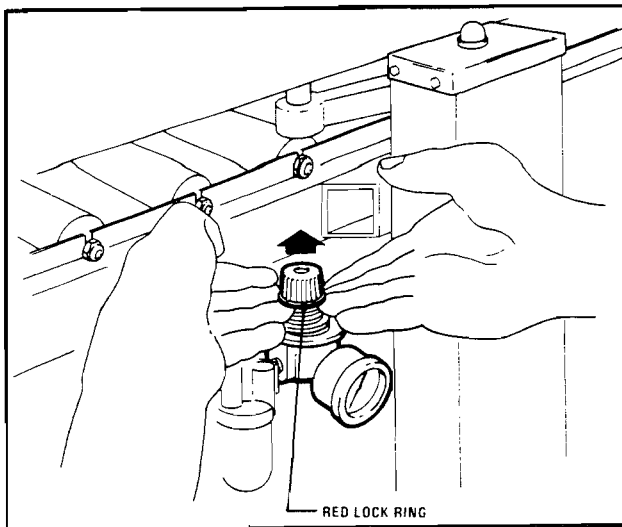


FIGURE 5 - REGULATOR LOCKING RING

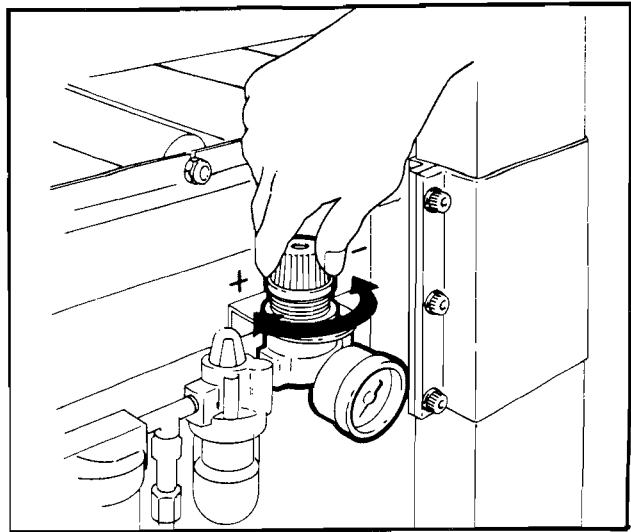


FIGURE 6 - PRESSURE REGULATOR

PNEUMATIC CONNECTION - continued

The hand lever is utilized to turn the air supply to the pneumatic components on and off once the air supply line is connected and energized. The air supply is turned on when the lever is pushed left, off when the lever is pulled right. Always turn the valve off by pulling the lever right when the air supply line is being connected or disconnected.

The air pressure regulator has a red lock ring behind the adjustment knob, as shown in figure 5. The red lock ring should be pulled toward the knob to unlock the knob for air pressure adjustments, pushed back against the regulator body to lock the knob after adjustment if desired.

PNEUMATIC COMPONENTS

Optical Warning System

The Case Sealer is equipped with an optical warning system to indicate in "RED" when the compressed air circuit is energized. An optical warning indicator, as shown in figure 4, is located on top of the short frame column on either side of the conveyor bed.

Air-jet Blower

The air-jet blower, shown in figure 4, is provided for holding the leading end of the tape leg, on the bottom taping head, to the applying roller. This has been preset at the factory.

The air flow is controlled by the regulator adjustment knob shown in figure 4.

SET-UP INSTRUCTIONS (CONTINUED)

Tape Loading

The taping heads have been pre-set to accommodate 2 inch [50 mm] wide tape rolls. To apply 1-1/2 inch or 36 mm, 1-3/4 inch or 42 mm wide tapes, refer to "Adjustments" Section for set-up information. Two temporary threading needles are shipped in threaded position for initial tape loading convenience.

Two red plastic threading needles are provided with the spare parts and tools included with the IAF Case Sealer. A threading diagram is located on the taping heads. However, it is recommended that the more detailed instructions and sketches in this manual be referred to the first few times the unit is loaded and until the operator becomes thoroughly familiar with the tape loading operation.

IMPORTANT SAFEGUARDS

- 1) BOTH THE TOP AND BOTTOM TAPING HEADS UTILIZE EXTREMELY SHARP KNIFE BLADES ON THE ORANGE CUTTER LEVER ASSEMBLY AND WHICH ARE LOCATED UNDER THE GREY PLASTIC BLADE GUARD WHICH HAS THE "CAUTION - SHARP KNIFE" LABEL. BEFORE WORKING WITH THE TAPING HEADS OR ATTEMPTING TO LOAD THE TAPE, REFER TO FIGURE 7 AND IDENTIFY THE BLADE LOCATION. KEEP HANDS OUT OF THESE AREAS EXCEPT AS NECESSARY TO SERVICE THE TAPING HEADS.
- 2) NEVER MANUALLY PUSH THE APPLYING ROLLER ARM DOWN AS THIS WILL RETRACT THE BLADE GUARD AND PUT YOUR HAND IN MOTION TOWARDS THE TEETH OF THE SHARP KNIFE BLADES. REFER TO FIGURE 7 AND IDENTIFY THE APPLYING AND BUFFING ROLLERS. WHEN NECESSARY TO MANUALLY ACTUATE THE TAPE APPLYING MECHANISM, ALWAYS PUSH THE BUFFING ROLLER ARM AS IT WILL NOT DIRECT YOUR HAND TOWARDS THE KNIFE BLADE TEETH.
- 3) NEVER ATTEMPT TO WORK ON THE TAPING HEADS OR LOAD TAPE WHEN THE BOX DRIVE BELTS ARE RUNNING.
- 4) NEVER ATTEMPT TO REMOVE BOXES FROM THE EXIT END OF MACHINE WHILE MACHINE IS RUNNING.

Blade Oiler Pad

The taping heads are equipped with a blade oiler pad that provides a film of oil on the cut-off blade to reduce adhesive build-up. Locate the oiler pad attached to the blade guard assembly, shown in figure 7, and apply SAE #30 non-detergent oil as needed. DO NOT SATURATE.

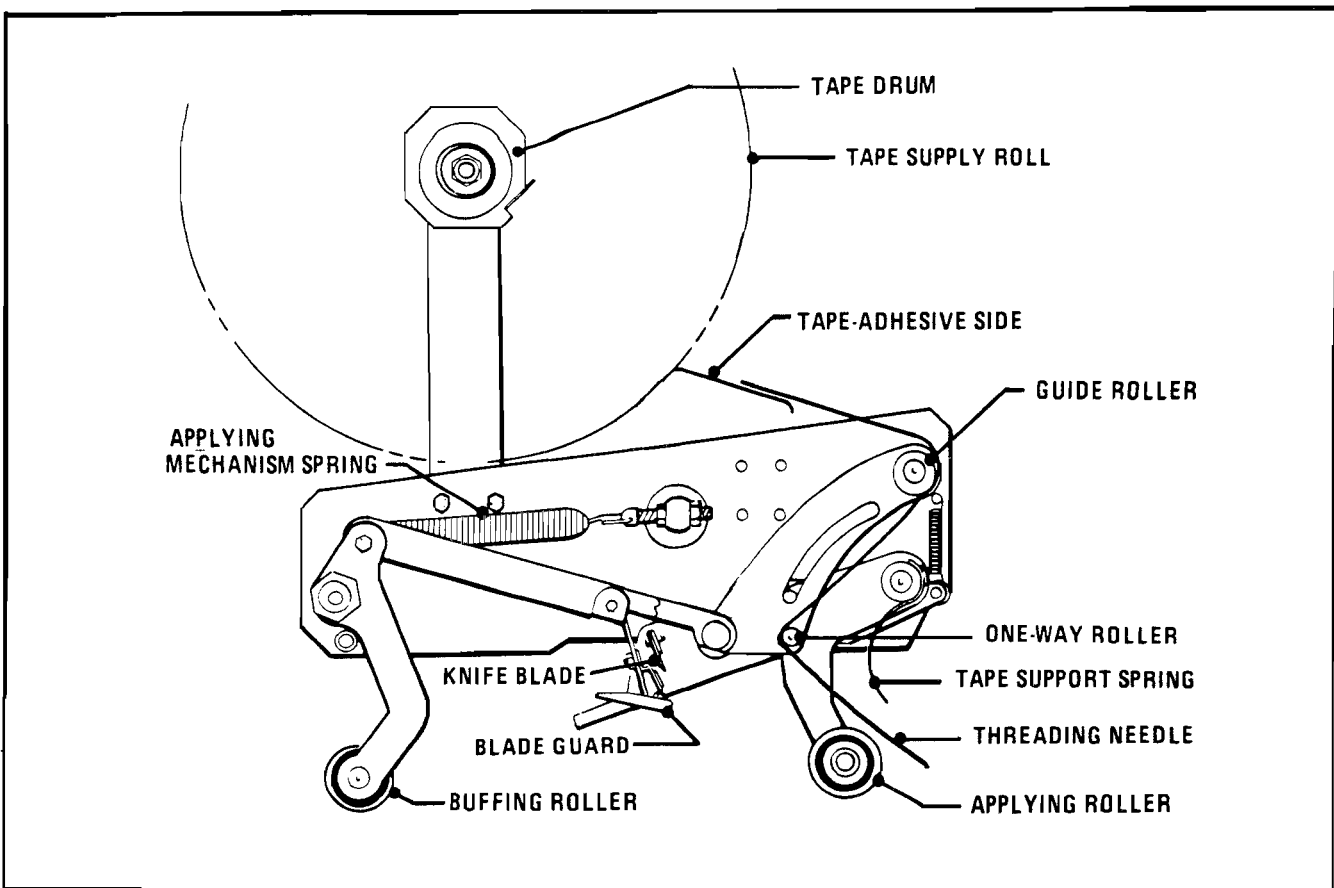


FIGURE 7 - TAPE THREADING DIAGRAM - TOP TAPING HEAD - LEFT SIDE VIEW

Tape Loading - Top Taping Head

WARNING - NEVER ATTEMPT TO WORK ON THE TAPING HEADS OR LOAD TAPE WHEN THE BOX DRIVE BELTS ARE RUNNING. PERSONNEL INJURY OR EQUIPMENT DAMAGE CAN POTENTIALLY RESULT.

- 1) It is first necessary to raise the top taping head. Utilize the height adjustment crank to move the top taping head to the fully raised position.
- 2) With the temporary threading needle already in position, as shown in figure 7, follow the tape loading procedure from figure 7C to complete the tape threading.
- 3) For subsequent tape loading operation, use the red plastic threading needle and follow the loading procedures from figure 7A to complete the tape threading

Tape Loading - Bottom Taping Head

The bottom taping head is loaded and threaded in the same manner as the top taping head.

For ease in loading, first remove the bottom taping head from the conveyor bed and follow the top taping head tape loading procedure.

SET-UP INSTRUCTIONS (CONTINUED)

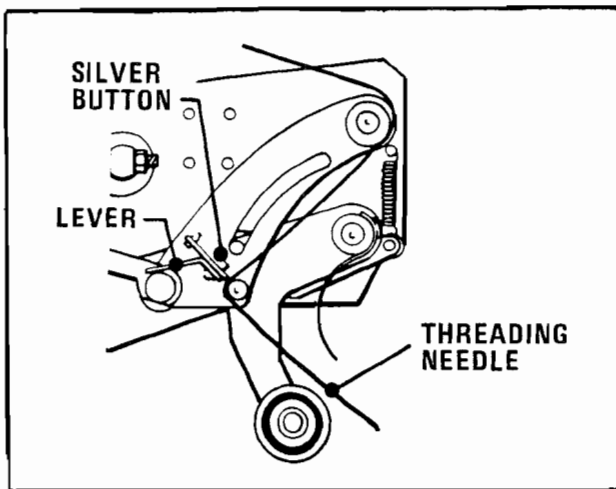


FIGURE 7A

For units with external anti-back
up spring for one way roller
(Ser. Nos. 1AF-1001 thru 1029)

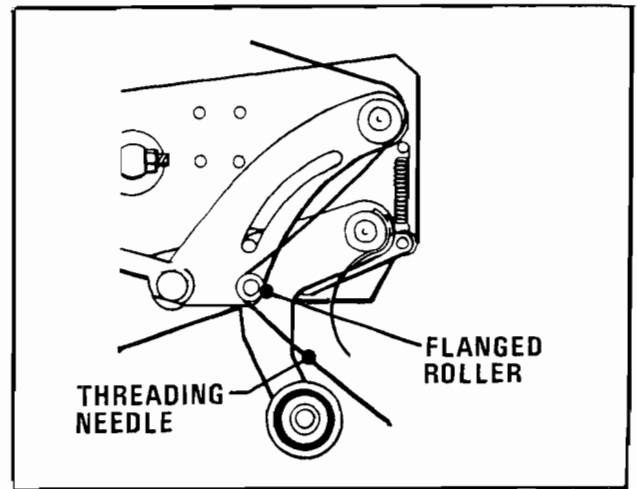


FIGURE 7B

For units with flanged one way roller
using internal one way clutch.
(Ser. Nos. 1AF 1030 and up)

FIGURES 7A & 7B - Insert red plastic needle downward around one-way roller as illustrated in figures above. For units using external anti-back up device, illustrated in Figure 7A, press spring away from roller by utilizing silver button or lever allowing needle to pass between tip of spring and roller.

Figure 7C - Place tape roll on drum to dispense tape from bottom of roll toward guide roller with tape adhesive side up. Seat tape roll fully against back flange of drum. Adhere tape lead end to upper end of threading needle as shown.

WARNING - USE CARE WHEN WORKING NEAR BLADES AS BLADES ARE EXTREMELY SHARP. IF CARE IS NOT TAKEN, SEVERE INJURY TO PERSONNEL COULD RESULT.

Figure 7D - Manually turn tape roll to create slack tape while pulling threading needle through tape applying mechanism until tape is in alignment with applying roller.

Excess tape can be cut with a scissors or knife at applying roller, or as shown, by manually depressing buffering roller arm to expose knife blade and then passing tape across knife blade. Allow buffering roller to slowly return to its rest position after cutting tape so that tape end will stay on applying roller.

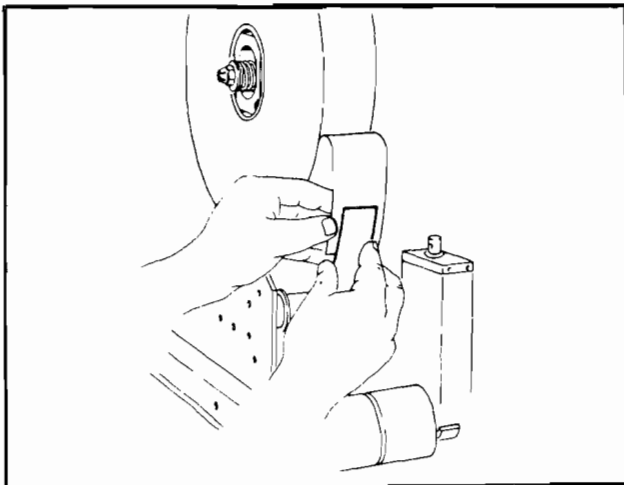


FIGURE 7C - LOAD TAPE ROLL

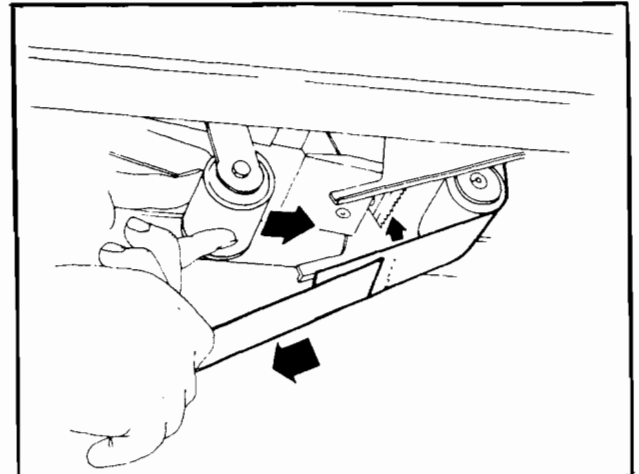


FIGURE 7D - TAPE CUT-OFF

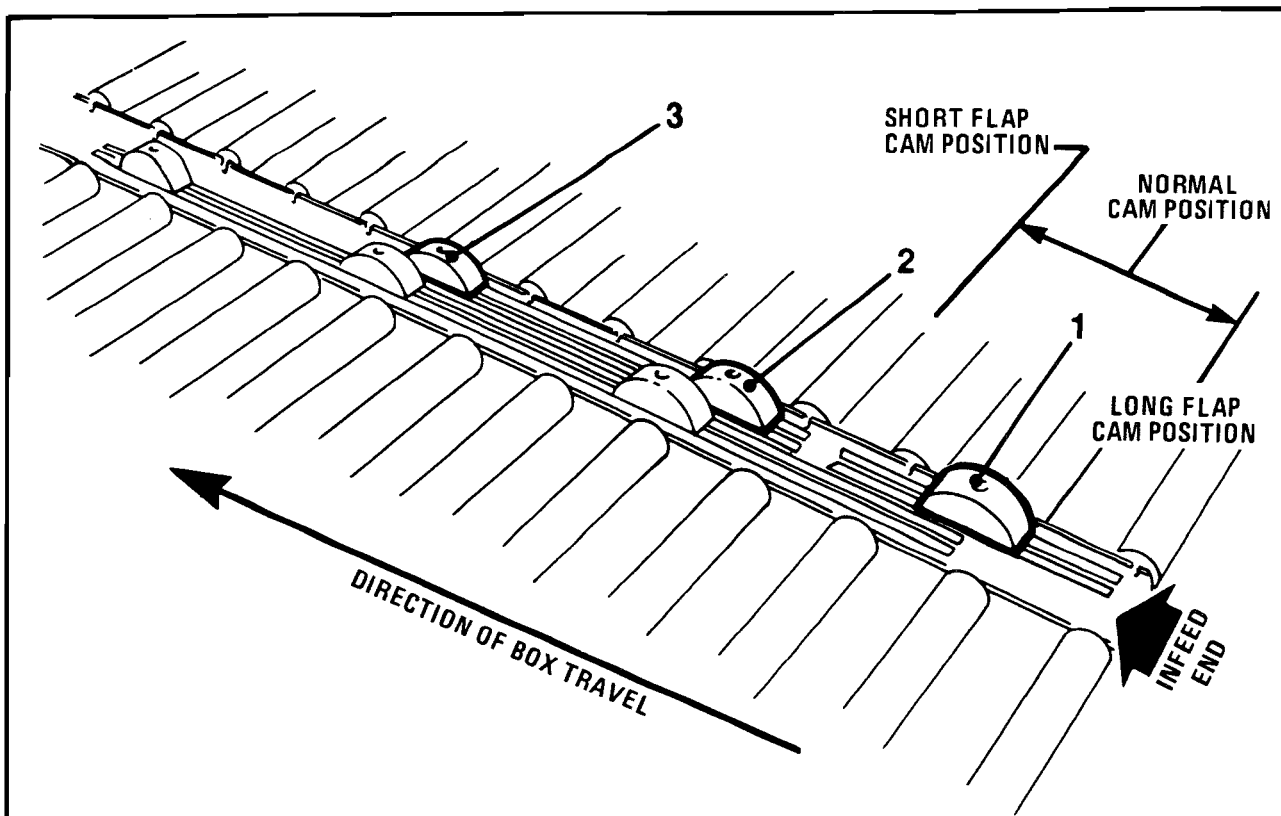


FIGURE 8 - INSIDE FLAP FOLDER CAMS

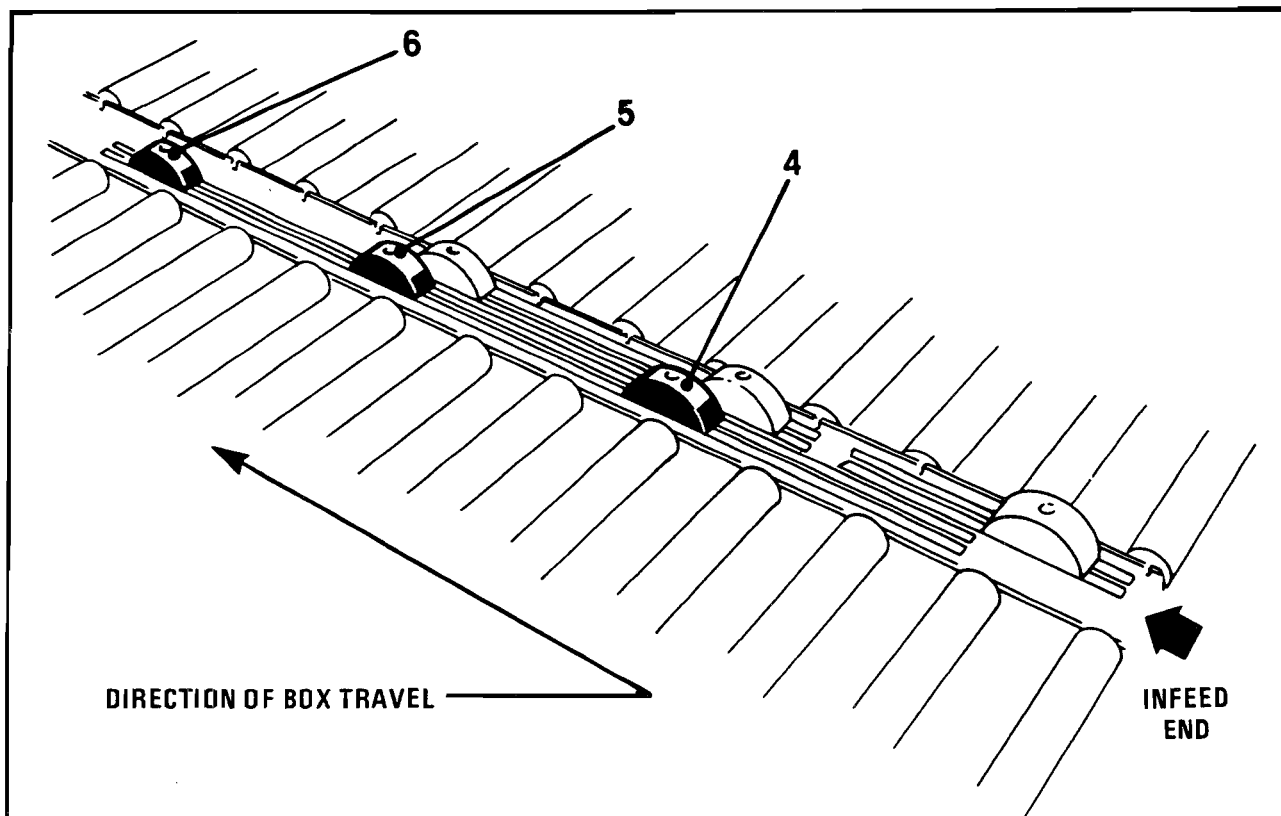


FIGURE 9 - BOX STOP CAMS

Inside Flap Folder Cams - Refer to Figure 8

Cams #1, #2 and #3 control the rear box flap folding mechanism as a function of box position in the following sequence:

1. Box contacting cam #1 prepares circuit.
2. Box contacting cams #2 and #3 and still holding cam #1 further prepares circuit.
3. Box releasing cam #1 actuates mechanism to fold trailing box flap.
4. Box releasing cams #2 and #3 returns mechanism to rest position.

These cams are preset and do not require adjustment for normal box sizes. Cam #1 can be adjusted along its mounting bar to accommodate boxes with relatively short or long flaps, as shown in figure 8.

Inside Flaps Folder Air Cylinder Regulators - Refer to Figure 1

Flow regulators are located on the ports of the air cylinder that powers the flap folding assembly. These control the speed with which the flap folder assembly extends and retracts. The regulator on the clevis end of the cylinder controls the return speed and the regulator on the rod end of the cylinder controls the flap folding speed. The movement speed is decreased by screwing the regulator knurled collar clockwise, increased by screwing the regulator knurled collar counter-clock wise.

Box Stop Cams - Refer to Figure 9

Cams #4, #5 and #6 are used to control the infeed of boxes to the case sealer. When a box passing through the machine is in contact with one or all of these cams, the infeed control cylinders located at the box entry end of the machine are extended, blocking the next box in line from entering the case sealer. As the trailing end of the box in the machine comes off of the last cam, #6, the infeed control cylinders retract and allow the next box to enter the machine for flap folding and sealing.

Adjustment of these cams for various box sizes is covered in the following section.

SET-UP INSTRUCTIONS (CONTINUED)

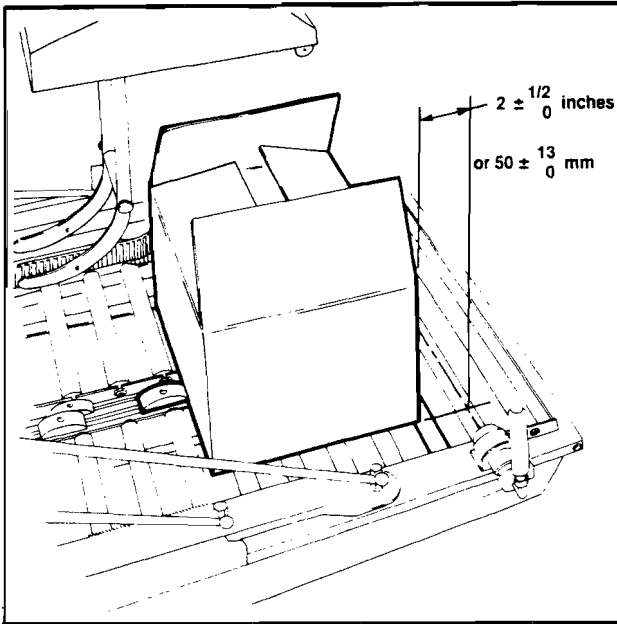


FIGURE 10 - BOX POSITION I
BOX STOP CAM ADJUSTMENT

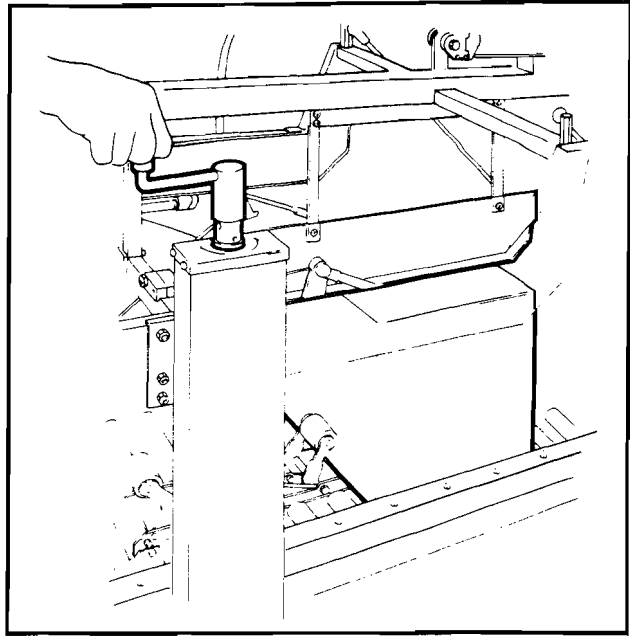


FIGURE 11 - BOX POSITION II
FLAP SEPARATOR

BOX SET-UP

Box Position I - Refer to Figure 10.

Place a product filled box on the infeed conveyor bed with the top flaps folded as shown.

Position the box $2 \pm \frac{1}{2}$ inches or $50 \pm \frac{13}{0}$ mm past the center line between the infeed control cylinders.

Locate box stop cam #4 against the lower front edge of the box and secure in position.

Box lengths under 12.6 inches or 320 mm

Position cam #6 19.6 inches or 500 mm from center line between the infeed control cylinders and secure in position.

Set cam #5 equal distance between cams #4 and #6.

Box lengths over 12.6 inches or 320 mm

Position cams #5 and #6 against cam #4 and secure.

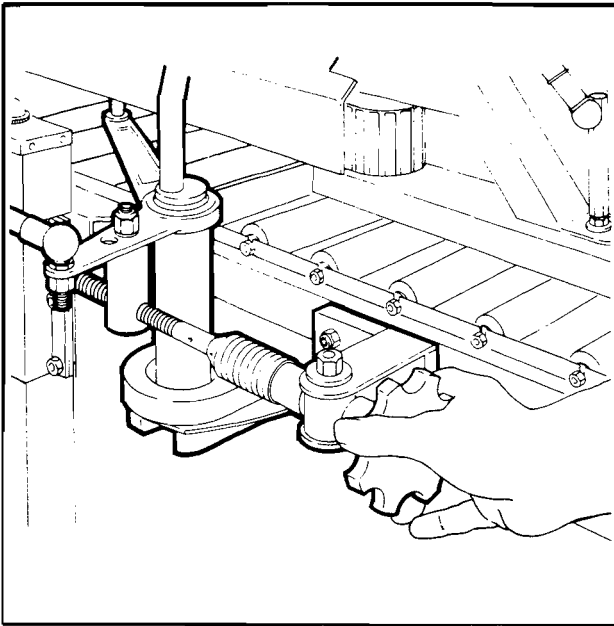


FIGURE 12 - BOX POSITION II
SIDE DRIVE BELTS

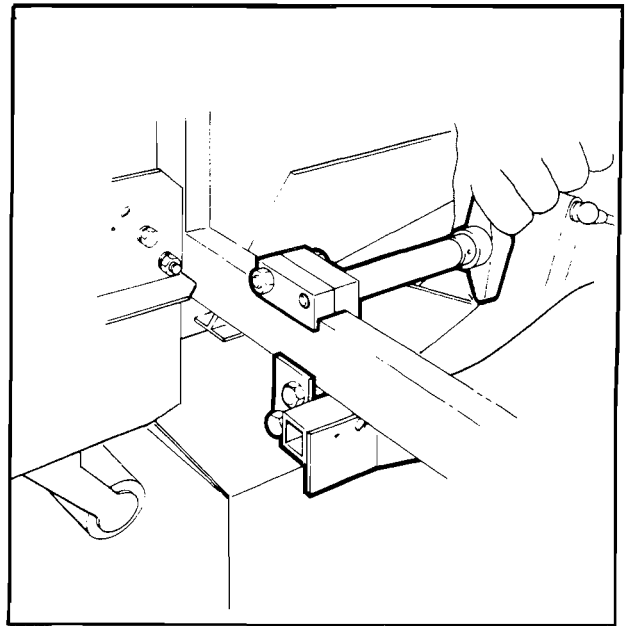


FIGURE 13 - BOX POSITION III
PRESSURE SKIS

Box Position II - Refer to Figures 11 and 12.

Manually move the box forward on the conveyor bed to contact the lower taping head applying roller.

With the box reasonably centered, lower the top flap folding assembly by means of the height adjustment crank shown in figure 11.

The flap separator must contact and hold the top box flaps fully closed.

Position both side drive belts against the sides of the box to fully center the box on the conveyor bed. The side drive belts are adjusted by means of the side adjustment wheel shown in figure 12.

Box Position III - Refer to Figure 13.

Manually move the box forward until the top taping head applying roller is in contact with the front of the box.

Loosen the pressure ski locking knob and locate the pressure ski on both sides of the top taping head against the leading top edge of the box. Tighten both locking knobs to secure the pressure ski setting.

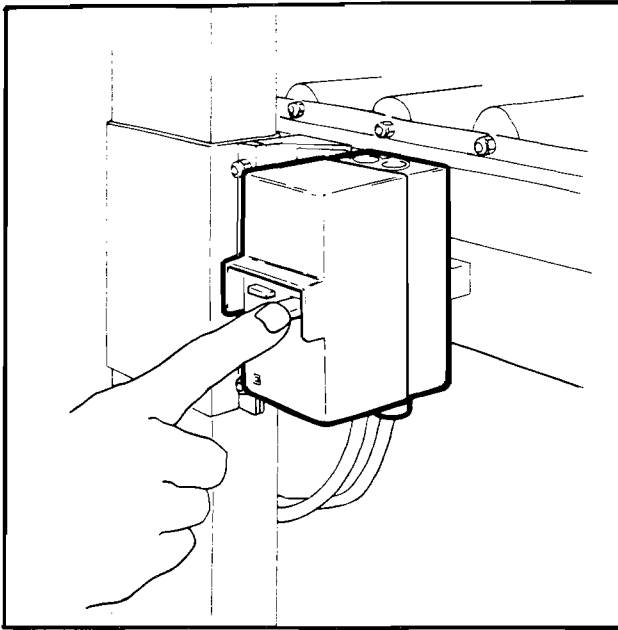


FIGURE 14 - ON-OFF SWITCH

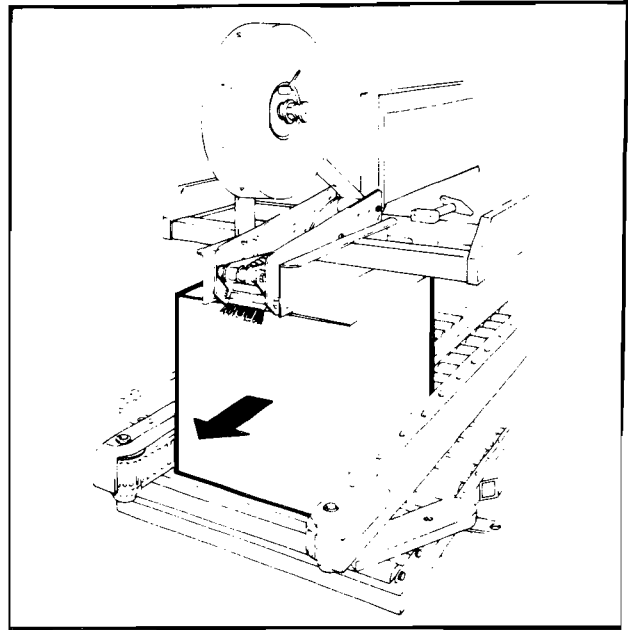


FIGURE 15 - DRIVE BELTS CONVEY BOX

Caution - Be sure all packaging materials and tools are removed from the machine before operating.

Press the electrical switch to "ON" to start the side drive belts to remove the set-up box from the case sealer.

If the box is hard to move under the top head or is crushed, raise the top head slightly.

If the box movement is jerky or stops under the top head, move the side drive belts in slightly to add more pressure between the box and drive belts.

Move the air valve hand lever right to "OFF" position, and connect the main air supply line.

Push the hand lever left to energize the pneumatic components and the case sealer is ready for operation.

SPECIAL USE SET-UP INSTRUCTIONS

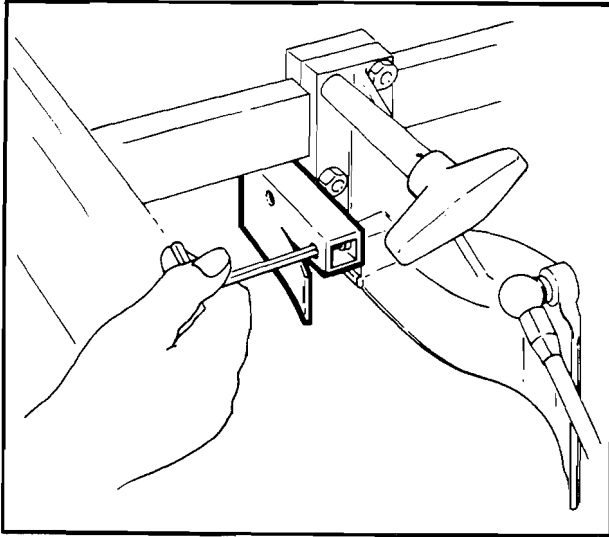


FIGURE 16
LOOSEN LATERAL PRESSURE SKI

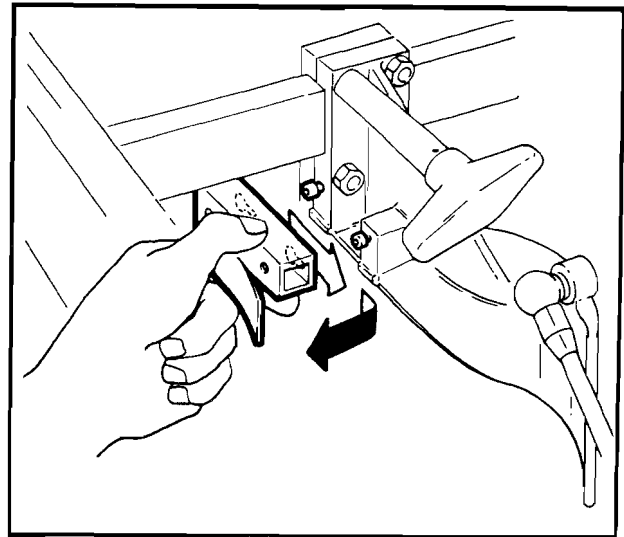


FIGURE 17
REMOVE LATERAL PRESSURE SKI

BOX WIDTH AND HEIGHT CAPACITY - MINIMUM (See specifications on page 4)

The minimum box width and height capacity can be obtained by removing the lateral pressure skis on either side of the top taping head. Refer to figures 16 and 17 and loosen the two socket head screws with the hex socket wrench provided in the tool kit. Slide the lateral pressure ski fully forward in the key slot and remove. Tighten to secure the socket head screws.

SHORT BOX LENGTHS 5 7/8 to 9 7/8 inches [150 to 250 mm]

The stop shaft on the front flap folding system can be relocated, as shown in figure 18, for short boxes to increase Case Sealer operating rate.

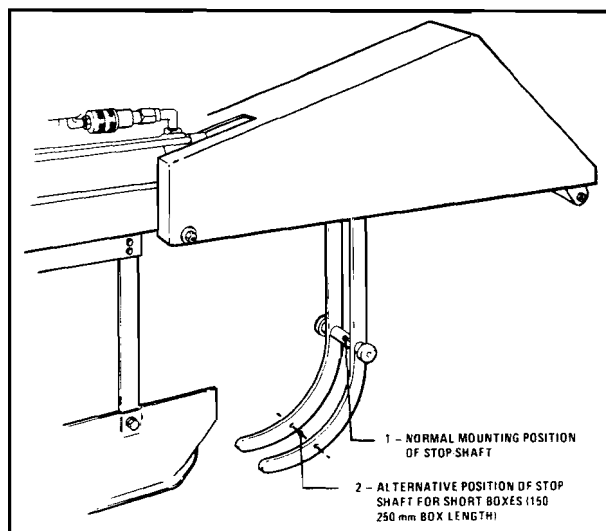


FIGURE 18 - STOP SHAFT -
FRONT FLAP FOLD SYSTEM

ADJUSTMENT INSTRUCTIONS

Metal Tape Drum Assembly

In addition to holding the tape supply roll, the tape drum assembly provides adjustable friction brake to prevent tape roll over travel and provides adjustment for tape web alignment as follows:

1) FRICTION BRAKE - Refer to Figure 19.

Adjustable by turning the self-locking nut on the shaft to vary compression of the spring. Clockwise turning of nut increases braking force to prevent tape roll over travel, counter-clockwise turning decreases braking force. Adjust to minimum drag that prevents excessive tape roll over travel.

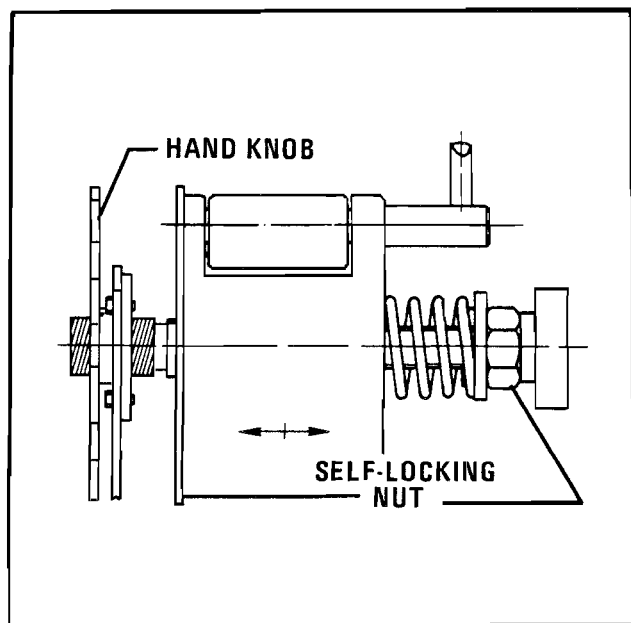


FIGURE 19 - TAPE DRUM FRICTION BRAKE

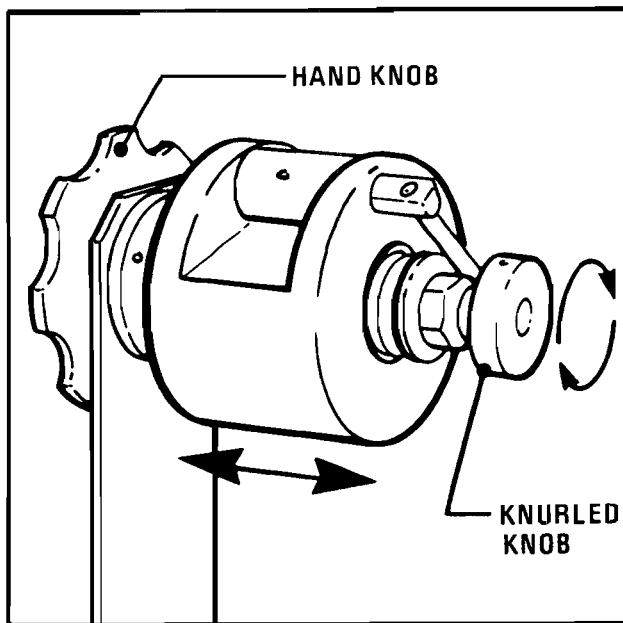


FIGURE 20 - DRUM TAPE ALIGNMENT

2) TAPE WEB ALIGNMENT - Refer to Figure 20

The tape drum assembly on each taping head is preset to accommodate 2 inch [50 mm] wide tape, but is adjustable to provide alignment of narrower tapes. If adjustment is necessary to center the tape width on the center-line of the taping head (and therefore box center seam), adjustment as follows:

- a) Loosen hand knob (figure 19) behind tape drum on tape drum shaft.
- b) Turn tape drum shaft in or out by means of knurled knob on end of shaft to center the tape web.
- c) Tighten hand knob.

No other components require adjustment for tape web alignment.

ADJUSTMENT INSTRUCTIONS

Plastic Tape Drum Assembly

In addition to holding the tape supply roll, the tape drum assembly provides adjustable friction brake to prevent tape roll over travel and provides adjustment for tape web alignment as follows:

1) Friction Brake - Refer to Figure 19A.

Adjustable by turning the self-locking nut on the shaft to vary compression of the spring. Clockwise turning of nut increases braking force to prevent tape roll over travel, counter-clockwise turning decreased braking force. Adjust to minimum drag that prevents excessive tape roll over travel.

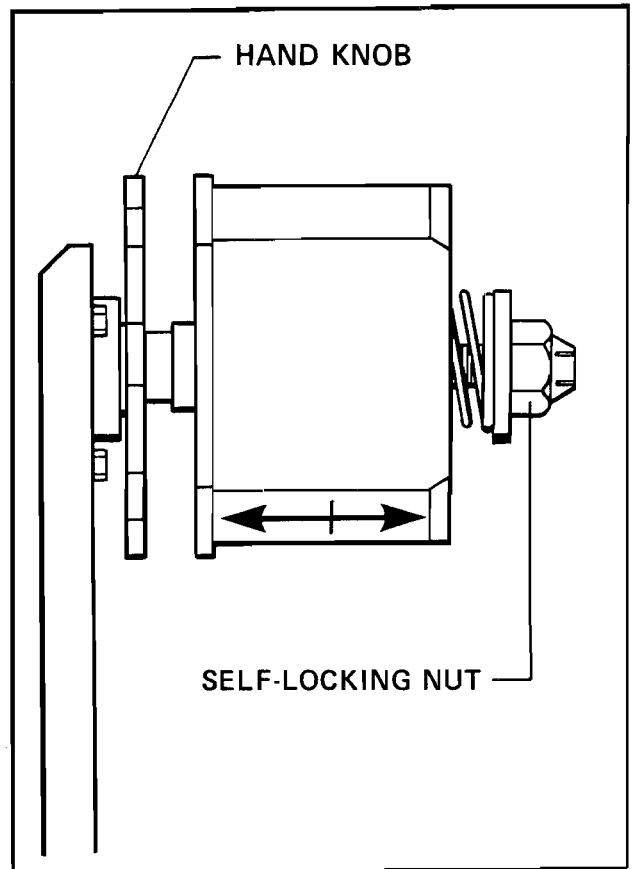


FIGURE 19A

2) Tape Web Alignment - Refer to Figure 20A.

The tape drum assembly on each taping head is preset to accommodate 2 inch [50 mm] wide tape, but is adjustable to provide alignment of narrower tapes. If adjustment is necessary to center the tape width on the centerline of the taping head, (and therefore box center seam), make adjustment as follows:

- Loosen hand knob behind tape drum on tape drum shaft.
- Turn tape drum shaft in or out to center the tape web.
- Tighten hand knob to secure the adjustment.

No other components require adjustment for tape web alignment.

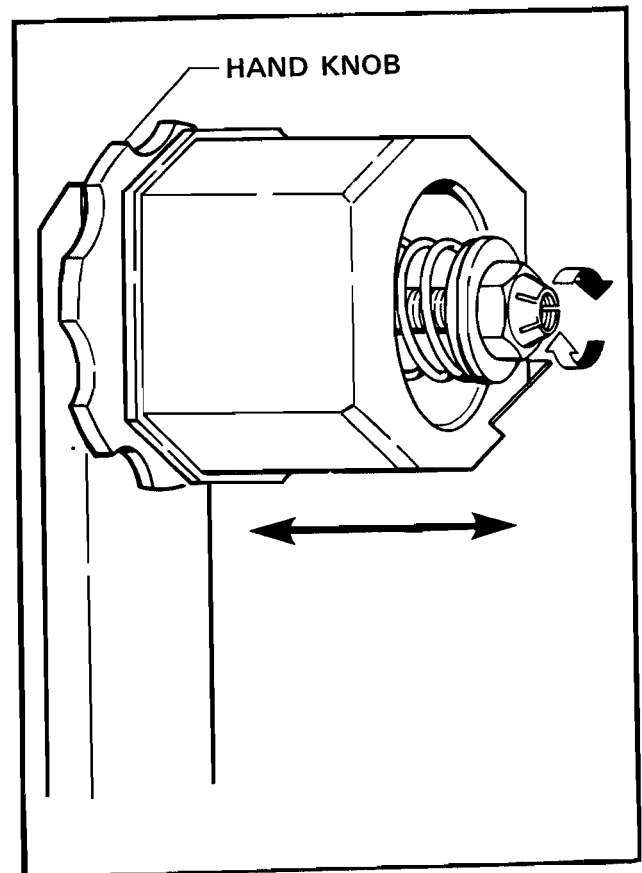


FIGURE 20A

TAPE SUPPORT SPRING

The S-shaped tape support spring, shown in figure 7, holds the lead end of tape in a controlled position at the applying roller. Its position is adjustable by loosening the phillips head screw on the mounting shaft, moving the spring by pivoting it around the shaft, and tightening the phillips head screw. The spring position should be adjusted so its tip is approximately 1/8 to 1/4 inch [3 to 6 mm] away from the tape when it is stretched straight between the one-way roller and applying roller.

APPLYING MECHANISM SPRING

The applying mechanism spring, shown in figure 7, controls applying and buffing roller pressure on the box and returns the mechanism to the rest position. The spring pressure is preset for normal operation but is adjustable by means of the mounting screw.

Decrease spring pressure by adjusting mounting screw as shown in figure 21.

Increase spring pressure by adjusting mounting screw as shown in figure 22.

MAINTENANCE

This Case Sealer has been designed for long, trouble free service. The machine will perform best when it receives routine maintenance and cleaning. Machine components that fail or wear excessively should be promptly repaired or replaced to prevent damage to other portions of the machine or to the product.

TOOL KIT

Since the Case Sealer utilizes metric fasteners, a tool kit consisting of open end and hex socket wrenches is provided with the machine. Retain these for set-up, adjustment, and maintenance work.

An oil can for lubrication is also provided as a convenience item for your preventive maintenance program.

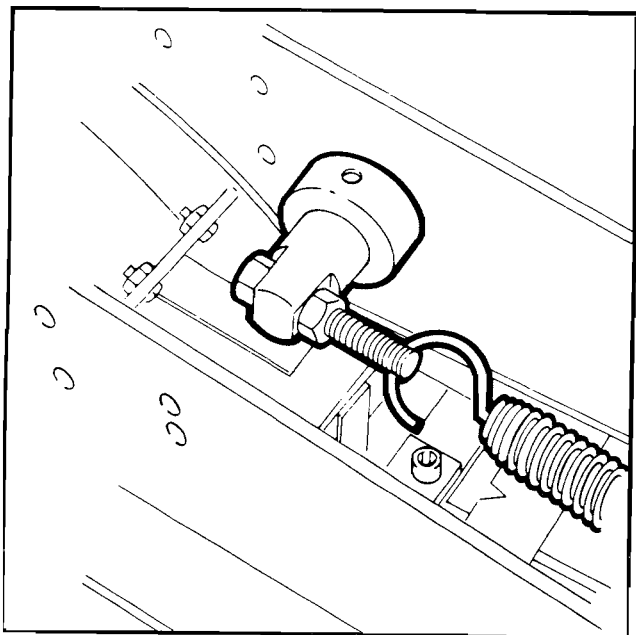


FIGURE 21 - DECREASE SPRING PRESSURE

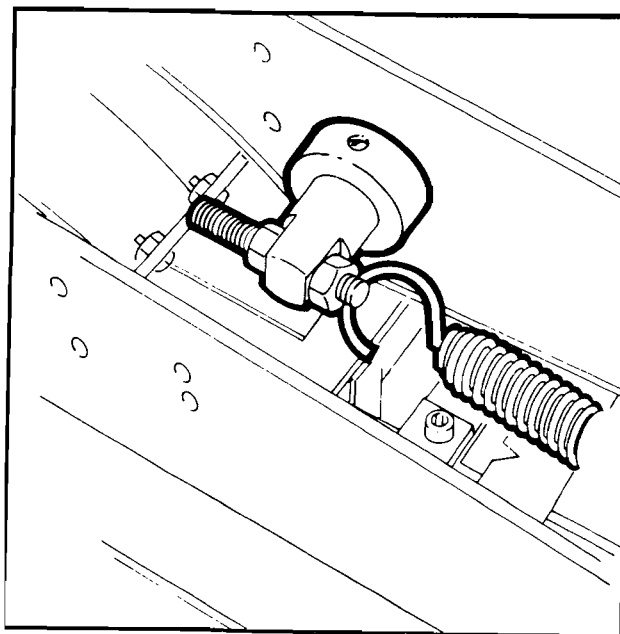


FIGURE 22 - INCREASE SPRING PRESSURE

MAINTENANCE (CONTINUED)

WARNING - TURN OFF ELECTRICAL POWER AND AIR SUPPLY AND DISCONNECT POWER CORD FROM ELECTRICAL SUPPLY BEFORE BEGINNING MAINTENANCE. IF POWER CORD IS NOT DISCONNECTED, SEVERE INJURY TO PERSONNEL COULD RESULT. USE CARE WHEN REPLACING BLADES AS BLADES ARE EXTREMELY SHARP. IF CARE IS NOT TAKEN, SEVERE INJURY TO PERSONNEL COULD RESULT.

BLADE REPLACEMENT: Refer to yellow pages, Parts Illustrations, Figure 14.

- 1) Loosen, but do not remove, the blade screws (14-13) and washers (14-14) holding the blade. Remove the old blade.
- 2) Position the new blade with the beveled side AWAY FROM the blade holder as shown in Figure 14. Tighten the blade screws (with one washer next to the screw head as shown).

NOTE: Position blade at angle as shown in Figure 23 (one end of cutting edge 1/8 inch [3 mm] lower). Blade setting must not interfere with blade guard.

The same steps are followed on the Top and Bottom Taping Heads. Connect the main power supply.

Cut-Off Blade:

Should tape adhesive build-up occur, carefully wipe clean with oily cloth.

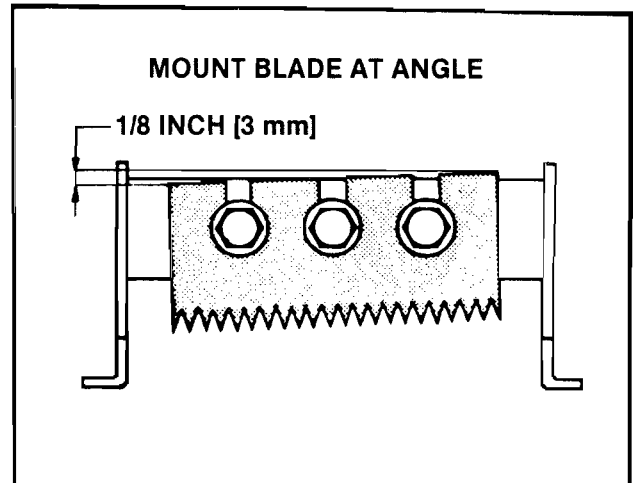


FIGURE 23 - BLADE REPLACEMENT

Cleaning of the Machine

CAUTION - NEVER ATTEMPT TO REMOVE DIRT BY BLOWING IT OUT WITH COMPRESSED AIR. THIS CAN CAUSE THE DIRT TO BE BLOWN INSIDE THE MOTOR, AND SLIDING SURFACES. DIRT IN THESE AREAS CAN CAUSE SERIOUS EQUIPMENT DAMAGE. NEVER WASH DOWN OR SUBJECT EQUIPMENT TO CONDITIONS CAUSING MOISTURE CONDENSATION ON COMPONENTS. SERIOUS EQUIPMENT DAMAGE COULD RESULT.

Regular slotted containers produce a great deal of dust and paper chips when processed or handled in equipment. If this dust is allowed to build up on machine components, it can cause component wear and overheating of drive motor. The dust build up can best be removed from the machine by a shop vacuum. Depending on the number and type of boxes sealed in the Case Sealer, this cleaning should be done approximately once per month. If the boxes sealed are dirty, or if the environment in which the machine operates is dusty, cleaning on a more frequent basis may be necessary. Excessive dirt build up that cannot be removed by vacuuming should be wiped off with a damp cloth.

LUBRICATION - PNEUMATIC SYSTEM

Maintain SAE #5 NON-DETERGENT oil or light weight spindle oil rated 100 SSU at 100°F. [38°C] at the proper level in the air line lubricator bowl. Oil can be added by removing filler capscrew or bowl, as shown in figure 24A. After filling, replace capscrew or bowl and securely tighten. Adjust socket head set screw in top of oiler, shown in figure 24B, to meter out one drop of oil per 10 to 12 machine cycles. Counter-clockwise turning of screw decreases rate of oil drops, clockwise turning increases rate of oil drops.

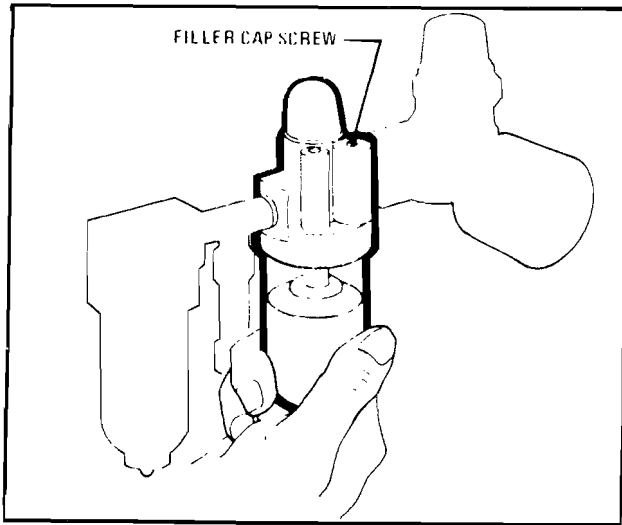


FIGURE 24A - AIR LINE LUBRICATOR

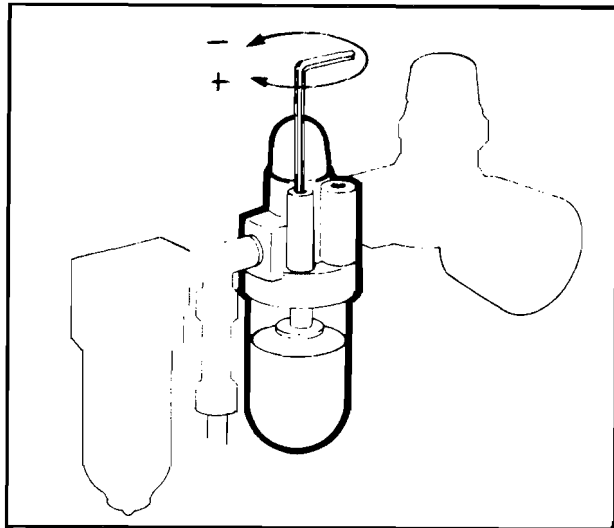


FIGURE 24B - AIR LINE OR REGULATOR

AIR LINE FILTER

Periodically check the air line filter, shown in figure 25, to drain water and clean as necessary. Do not allow the water to go above the filter element.

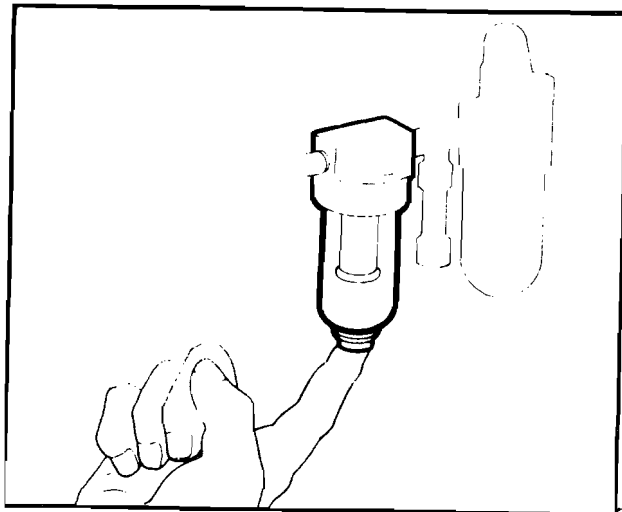


FIGURE 25 - AIR LINE FILTER

Lubrication

Like most other equipment, the Case Sealer must be properly lubricated to insure long, trouble/free service. Most of the machines bearings are permanently lubricated and sealed and do not need to be greased. The drive motor is also permanently lubricated and should not require additional lubrication. The timing belt/pulley transmission does not require any lubrication.

Figures 26-27 and similar labels on the machine illustrate the taping head and frame points which should be lubricated every 250 hours of operation. The oil can supplied with the Case Sealer can be utilized to lubricate the rotating and pivoting points noted by the arrows with SAE #30 non-detergent oil. Apply light coat of SAE #30 non-detergent oil to roller chain drive (figure 27) between timing belt/pulley transmission and box drive belt shaft. At the same time, a small amount of multipurpose grease should be applied to the end of each spring where the loop is secured at an eyelet, post, or hole.

CAUTION - WIPE OFF EXCESS OIL AND GREASE: IT WILL ATTRACT DUST AND DIRT WHICH CAN CAUSE PREMATURE EQUIPMENT WEAR AND JAMMING. TAKE CARE THAT OIL AND GREASE ARE NOT LEFT ON THE SURFACE OF ROLLERS AROUND WHICH TAPE IS THREADED, AS IT CAN CONTAMINATE THE TAPE'S ADHESIVE.

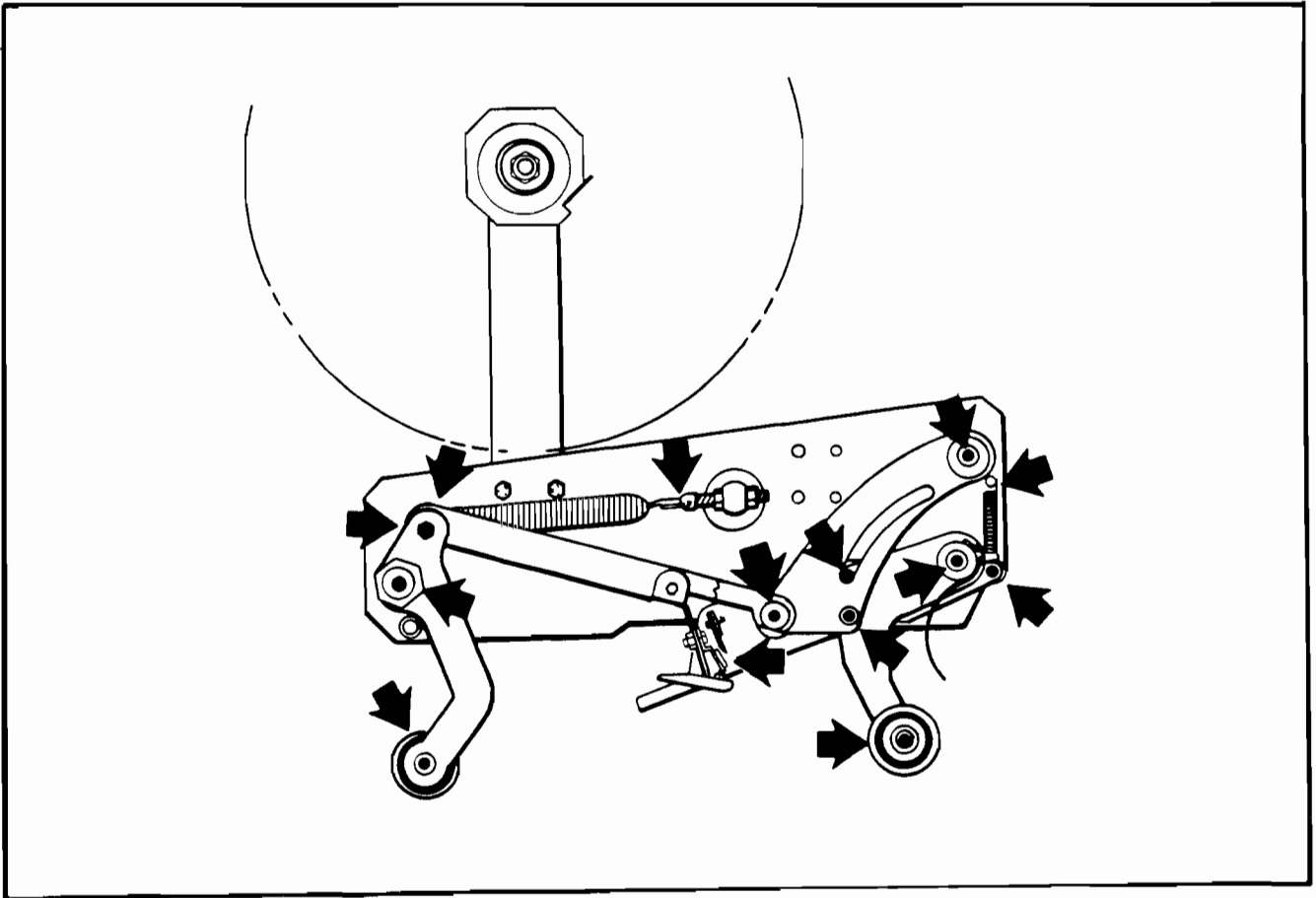


FIGURE 26 - TAPING HEADS LUBRICATION POINTS

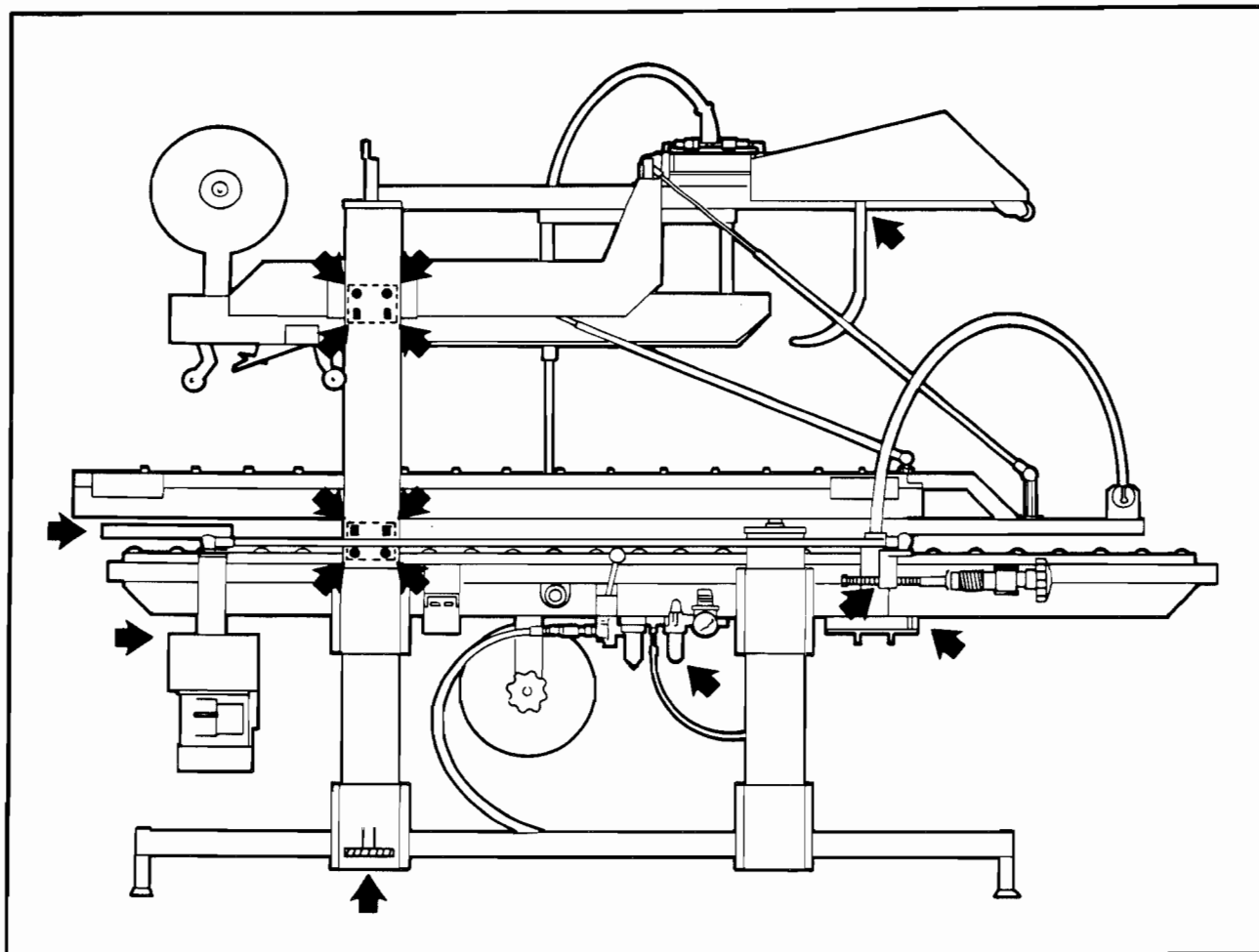


FIGURE 27 - FRAME LUBRICATION POINTS

MAINTENANCE (CONTINUED)

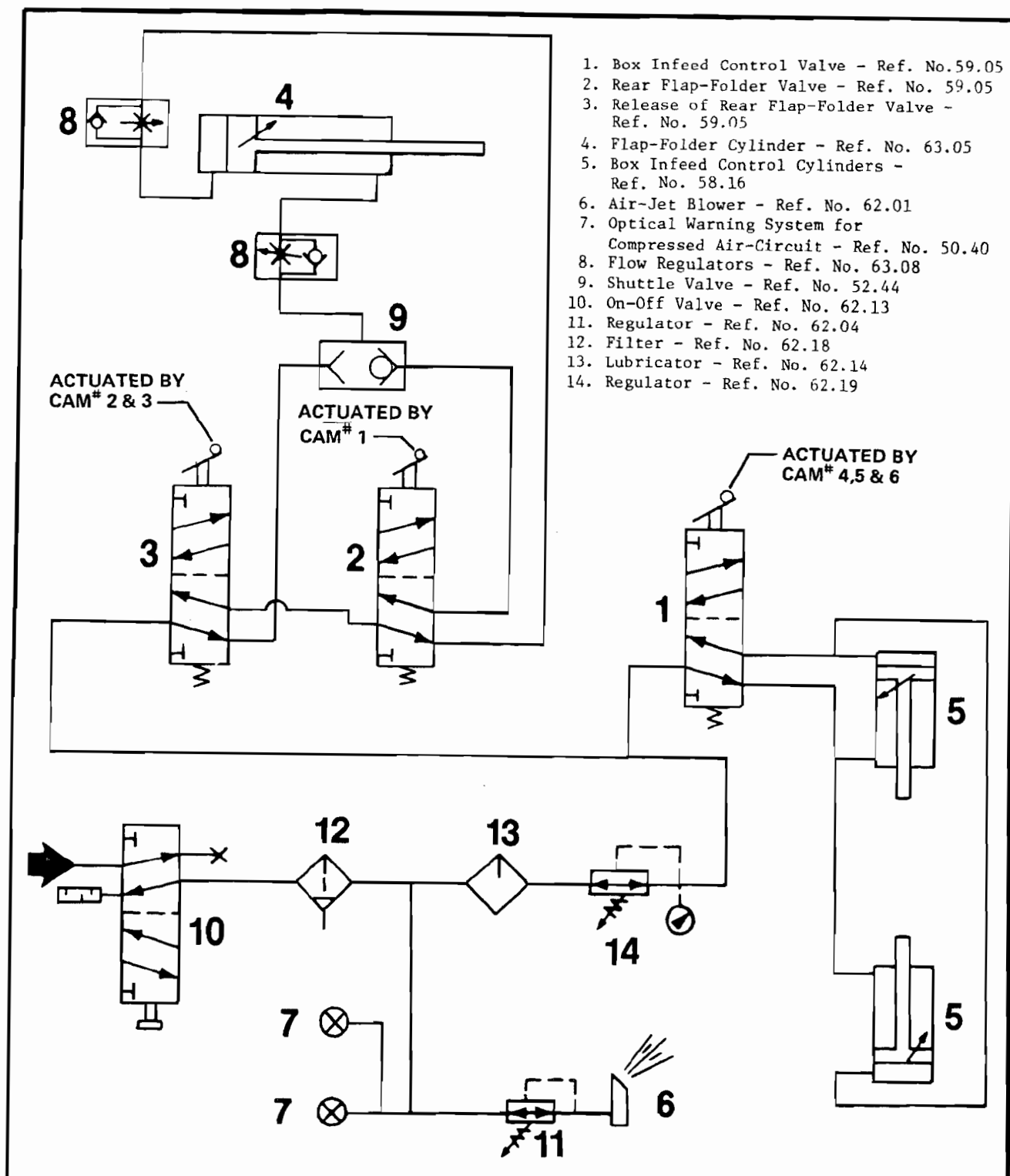


FIGURE 28 - PNEUMATIC SCHEMATIC

PNEUMATIC SCHEMATIC

Figure 28 illustrates the pneumatic system of the Case Sealer. Adjustments for the components are covered in the "Pneumatic Component Controls" and "Lubrication" sections. A similar pneumatic schematic is mounted on the machine.

MAINTENANCE (CONTINUED)

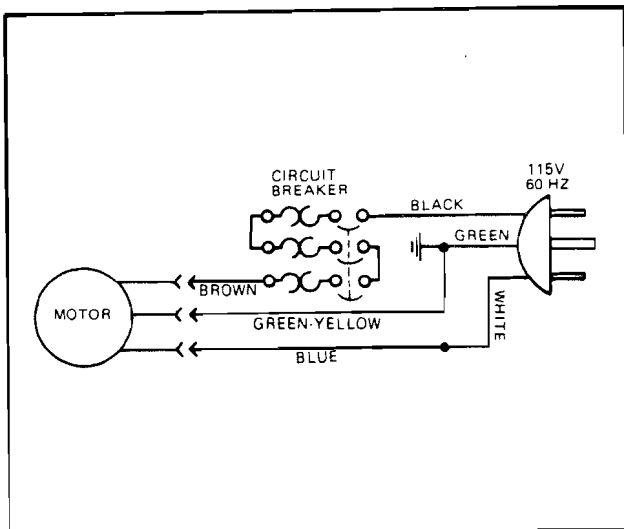


FIGURE 29 - ELECTRICAL SCHEMATIC

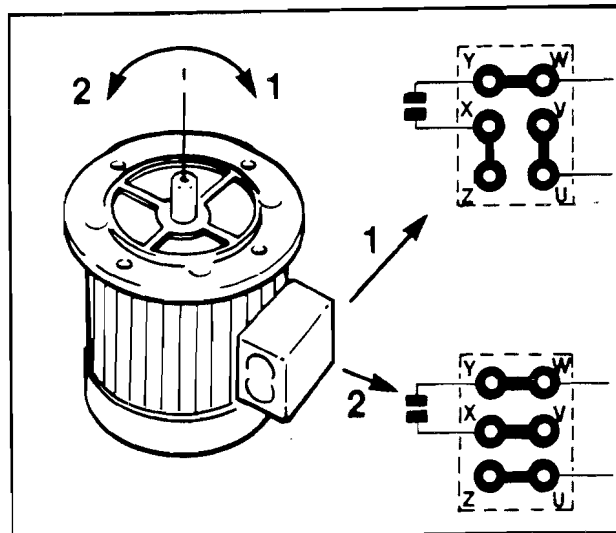


FIGURE 30 - MOTOR

ELECTRICAL SCHEMATIC

WARNING - TURN OFF ELECTRICAL POWER AND AIR SUPPLY AND DISCONNECT POWER CORD FROM ELECTRICAL SUPPLY BEFORE BEGINNING MAINTENANCE. IF POWER CORD IS NOT DISCONNECTED, PERSONNEL COULD BE EXPOSED TO DANGEROUS VOLTAGES. SEVERE INJURY OR EQUIPMENT DAMAGE COULD RESULT.

The electrical system of the Case Sealer is illustrated in figure 29. The motor may be reversed by removing the terminal cover and relocating the jumper strips as illustrated in figure 30. No adjustments to the electrical system are required.

CIRCUIT BREAKER

The Case Sealer is equipped with a circuit breaker which trips the "On-Off" switch to "OFF" position. Located inside the electrical control box on the side of the main frame just below the conveyor bed, the circuit breaker has been pre-set for 4 amps and requires no further maintenance. Should the circuit breaker be replaced, check the calibrated amp setting before installation. Remove the front cover on the electrical box from the under side as shown in figure 31 and set the amp setting (A) at 4 amps.

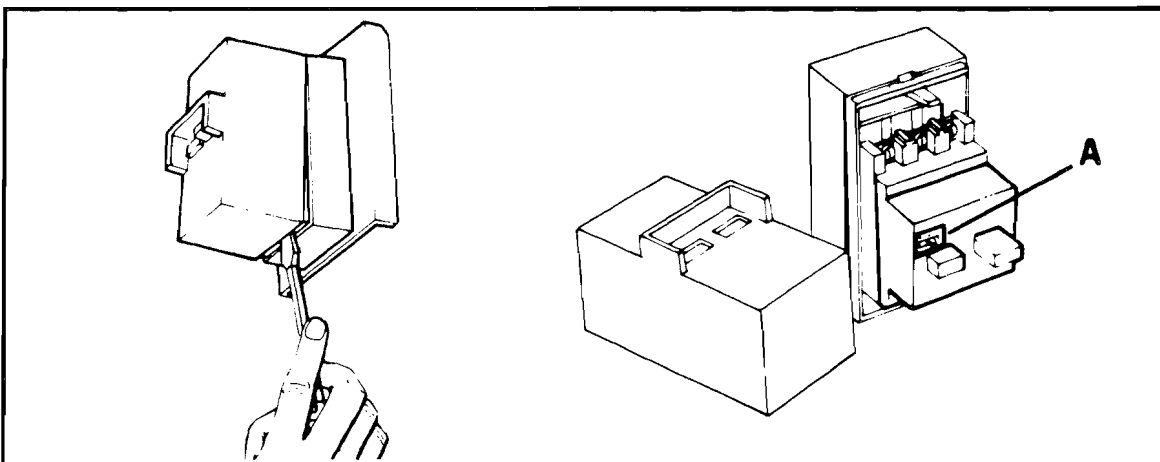


FIGURE 31 - ELECTRICAL CONTROL BOX - CIRCUIT BREAKER

REPLACEMENT PARTS & SERVICE INFORMATION

SPARE PARTS

A set of spare parts that will periodically require replacement due to normal wear is supplied with the Case Sealer. The set includes the following which should be reordered as consumed to keep the Case Sealer in production:

Quantity	Ref. No.	3M Part No.	Description
1	13-02	78-8017-9119-1	Spring-Main, Top Head, Zinc Pl.
1	13-20	78-8017-9424-5	Spring-Main, Bottom Head
4	14-10	78-8017-9136-5	Spring - Cutter
2	14-12	78-8017-9173-8	Blade - 2.5 inch/65 mm

In addition to the above minimum spare parts, it is suggested that the following spare parts be maintained depending on duty being served:

Quantity	Ref. No.	3M Part No.	Description
2	57-12	78-8023-2295-4	Driving-Belt Main
2	57-13	78-8023-2296-2	Driving-Belt Infeed
1	11-19	78-8017-9272-8	Spring-Tape Support
1	15-08	78-8017-9140-7	Roller-Buffering
1	11-11	78-8017-9101-9	Roller - Applying
1	64-34	78-8023-2437-2	Holder - Spring

HOW TO ORDER REPLACEMENT PARTS

- 1) Order parts by part number, part name, machine catalog number, model number and part quantity required.

Minimum billing on parts orders will be \$10.00.

Replacement part prices available on request.

- 2) Replacement parts and part prices available direct from:

Dispenser Parts/3M
P O Box 33900
St. Paul, MN 55133

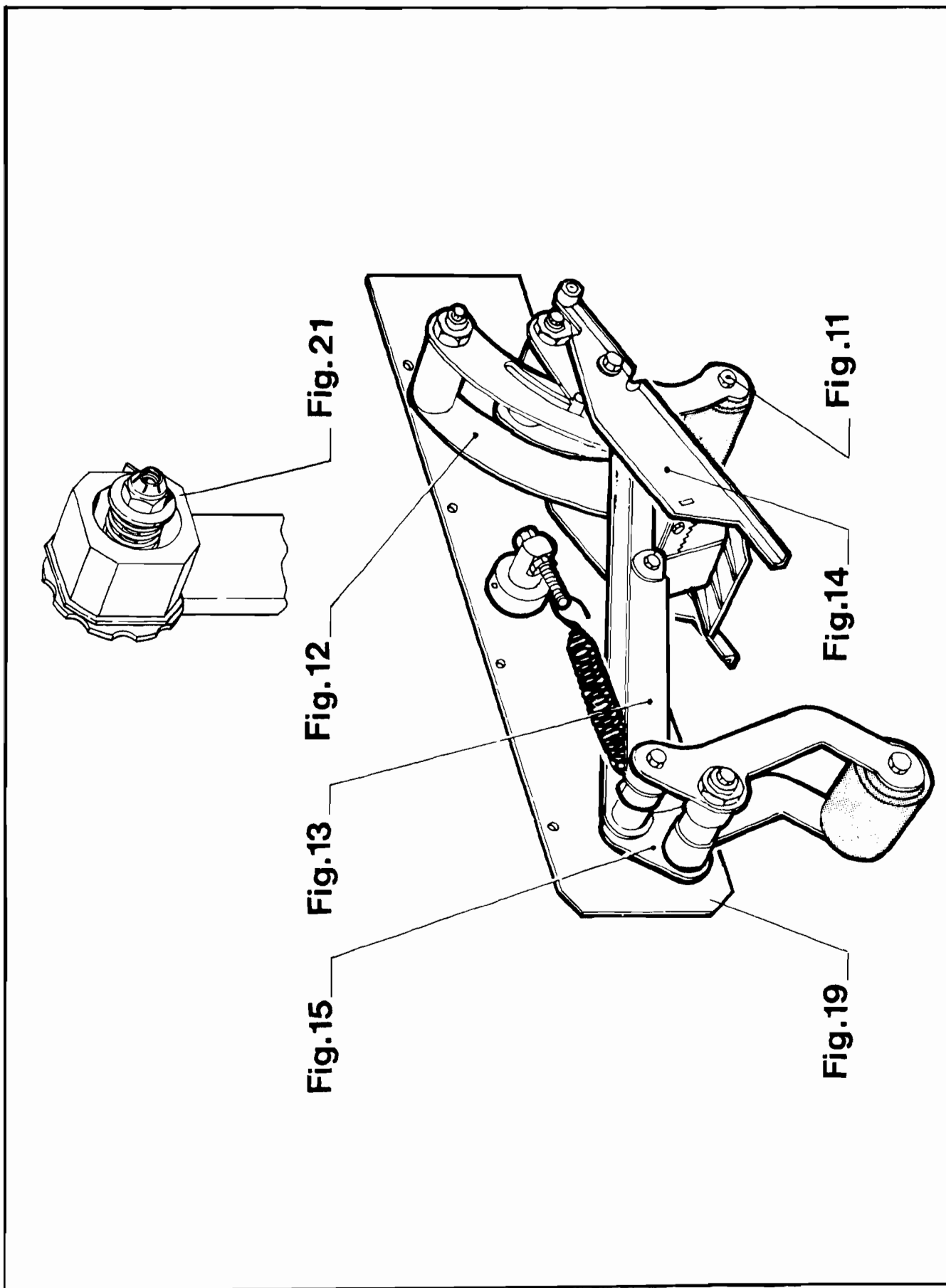
- 3) Refer to the front of the instruction manual for branch repair service information.

1AF AUTOMATIC CASE SEALER
Model 17800
TAPING HEAD ASSEMBLIES

- 1) Refer to Taping Head Assemblies figures to find all the parts illustrations identified by figure numbers.
- 2) Refer to the figure or figures to determine the individual parts required and the parts reference number.
- 3) The replacement parts list, that follows each illustration, includes the part number and part description for the parts in that illustration.

NOTE - The complete description has been included for standard fasteners and some commercially available components. This has been done to allow obtaining these standard parts locally, should the customer elect to do so.

- 4) Refer to page 26 of "Maintenance - Parts Orders and Service Information" section of this manual for replacement parts ordering information.



Taping Head Assemblies

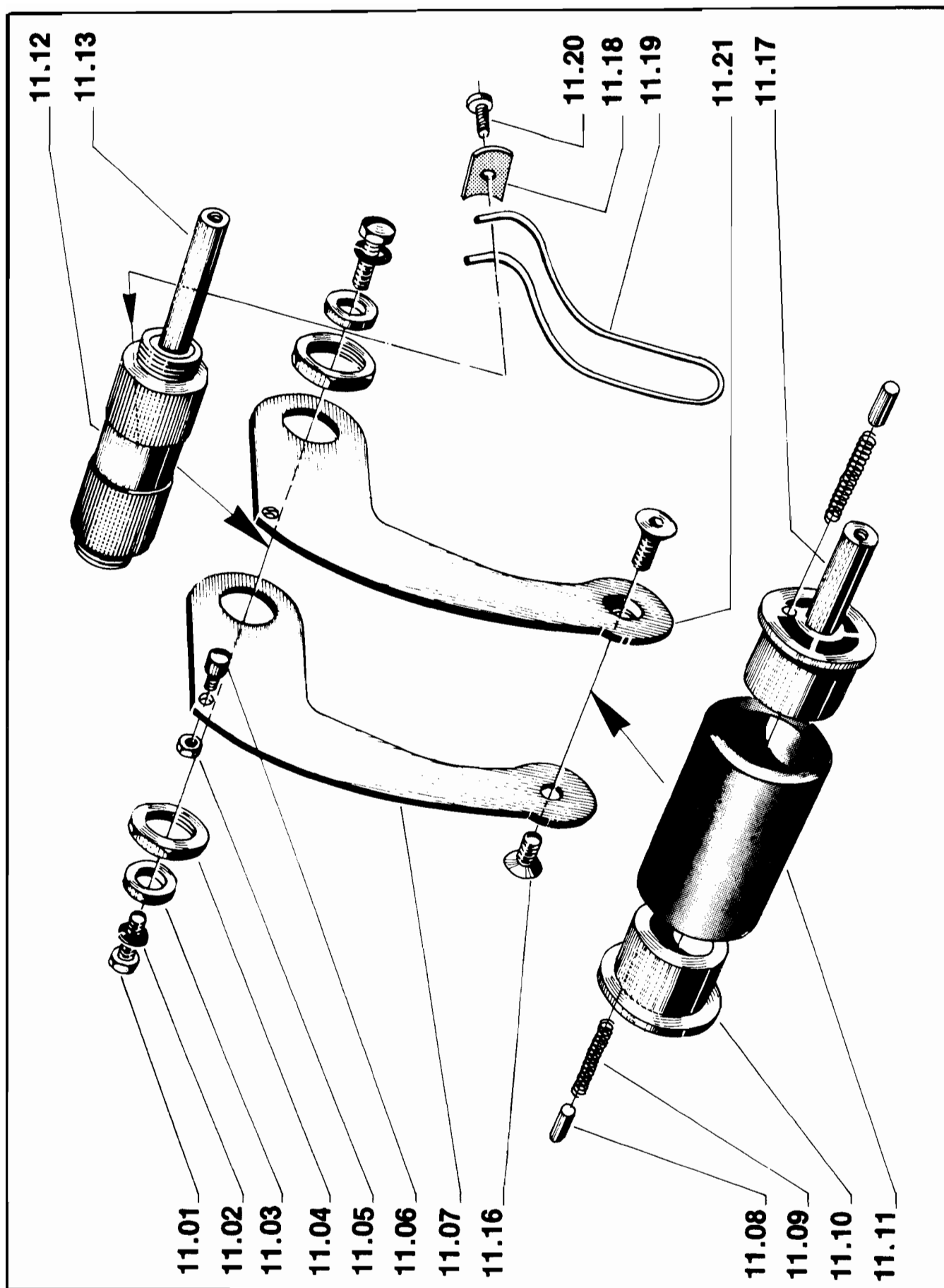
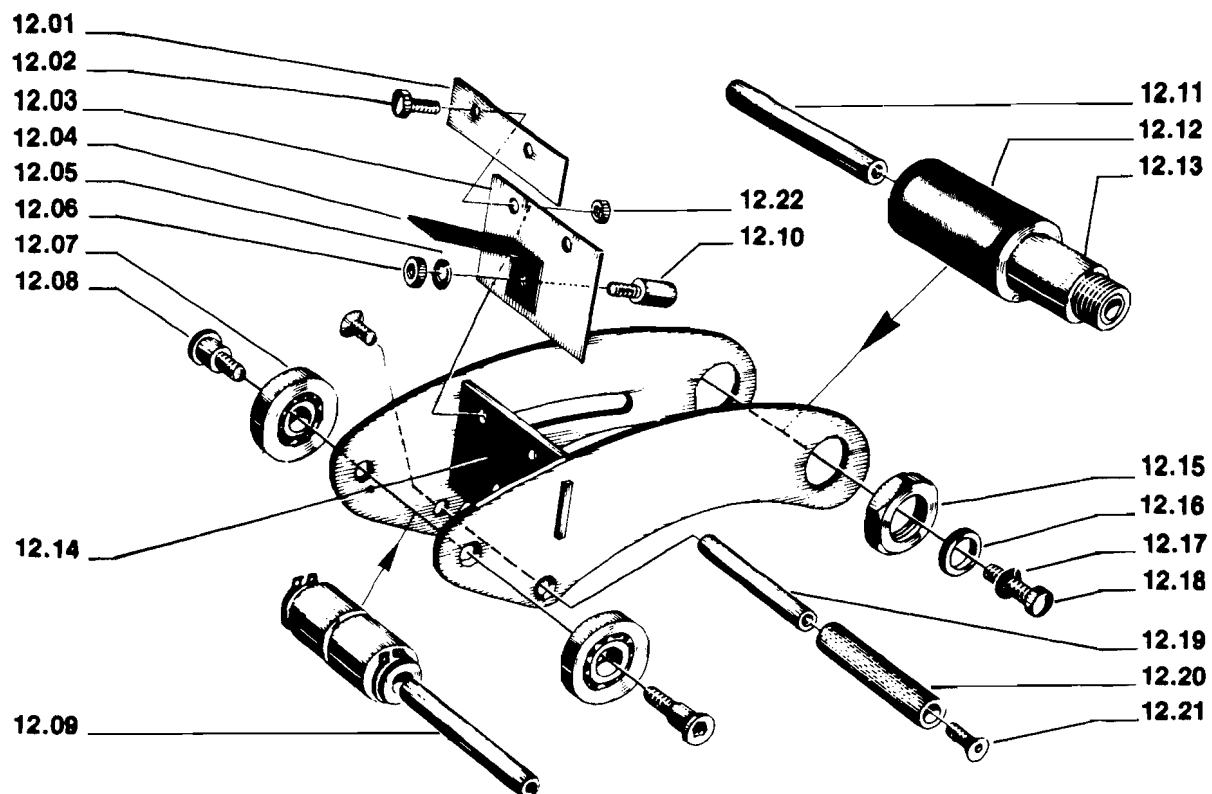
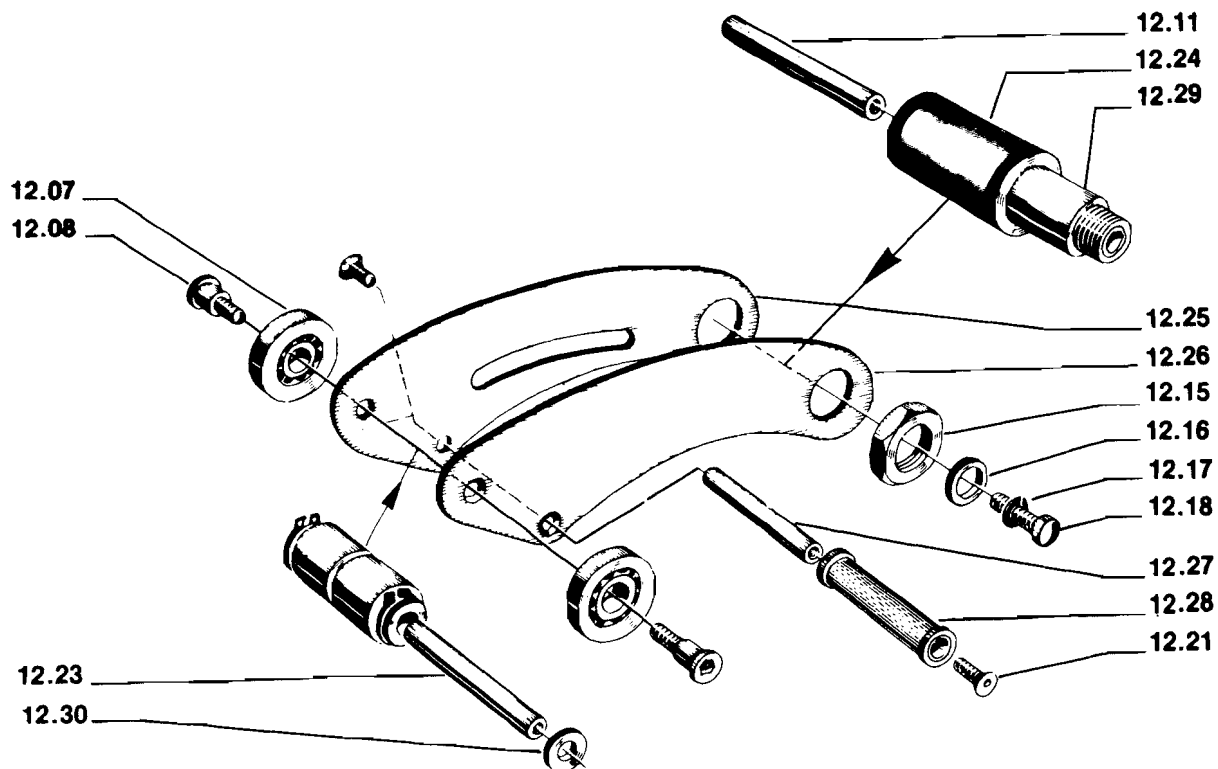


Figure 11

REF. No.	3M PART No.	DESCRIPTION
11-01	78-8032-0375-7	Screw - Metric, M6 x 16, Hex Hd. Cap, Steel, Nick. Pl., DIN 933-5.6
11-02	78-8010-7435-8	Washer - Metric, Lock, Spr., Steel M6
11-03	78-8017-9095-3	Spacer
11-04	78-8017-9096-1	Nut - Special M18 x 1
11-05	78-8010-7417-6	Nut - Metric, Hex, Steel, M5
11-06	78-8017-9097-9	Pin - Follower
11-07	78-8017-9076-3	Arm - Applying Roller, Right Side
11-08	78-8017-9098-7	Pin - Friction, 5mm
11-09	78-8017-9100-1	Spring - Friction
11-10	78-8017-9099-5	Bushing - Applying Roller
11-11	78-8017-9101-9	Roller - Applying
11-12	78-8017-9102-7	Spacer Assembly - Applying Roller Arms
11-13	78-8017-9109-2	Shaft - 10 x 90mm
11-16	78-8017-9162-1	Screw - Allen FH, M6 x 12
11-17	78-8017-9105-0	Shaft - 10 x 66mm
11-18	78-8017-9364-3	Clamp - Tape Support Spring
11-19	78-8017-9272-8	Spring - Tape Support
11-20	78-8017-9257-9	Screw - Phillips Head, M4 x 10
11-21	78-8017-9430-2	Arm - Applying Roller, Left Side



FOR UNITS WITH KNURLED ONE-WAY ROLLER (12-20) USING EXTERNAL ANTI-BACK-UP LEAF SPRING (12-03).



FOR UNITS WITH FLANGED ONE-WAY ROLLER (12-28) USING INTERNAL ANTI-BACK-UP BEARING.

Figure 12

REF. No.	3M PART No.	DESCRIPTION
12-01	78-8017-9178-7	Stiffener - Spring
12-02	78-8010-7157-8	Screw - Hex Head, M4 x 10
12-03	78-8017-9083-9	Spring - Leaf
12-04	78-8017-9168-8	Lever - Spring Release
12-05	78-8005-5735-3	Washer - Metric, Lock, Spr., Steel M5
12-06	78-8010-7417-6	Nut - Metric, Hex, Steel, M5
12-07	78-8017-9082-1	Bearing - Special 30mm
12-08	78-8017-9106-8	Screw - Bearing Shoulder
12-09	78-8017-9107-6	Shaft - 10 x 54mm
12-10	78-8017-9108-4	Button - Spring Release
12-11	78-8017-9109-2	Shaft - 10 x 90mm
12-12	78-8017-9110-0	Roller Assembly - Tape Guide
12-13	78-8017-9113-4	Shaft Assembly - Tape Guide Roller
12-14	78-8017-9115-9	Arm Assembly - One-way Roller
12-15	78-8017-9169-6	Nut - M18 x 1
12-16	78-8017-9095-3	Spacer
12-17	78-8010-7435-8	Washer - Metric, Lock, Spr., Steel M6
12-18	78-8032-0375-7	Screw - Metric, M6 x 16, Hex Hd. Cap, Steel, Nick. Pl., DIN 933-5.6
12-19	78-8017-9116-7	Shaft - 8 x 54mm
12-20	78-8017-9117-5	Roller - One-way Knurled
12-21	78-8017-9170-4	Screw - Phillips FH, M4 x 8
12-22	78-8010-7416-8	Nut - Metric Hex Stl., M-4
12-23	78-8018-7847-7	Shaft - 10 x 57 mm.
12-24	78-8018-7848-5	Roller Assembly - Tape Guide
12-25	78-8018-7849-3	Side Plate - w/Slot - One Way Roller Right.
12-26	78-8018-7850-1	Side Plate - One Way Roller Left.
12-27	78-8018-7851-9	Shaft - 8 x 57 mm.
12-28	78-8018-7852-7	Roller Assembly - One Way - Knurled.
12-29	78-8018-7853-5	Shaft Assembly - Tape Guide Roller.
12-30	78-8018-7854-3	Spacer - 16 ϕ /10,5 ϕ x1,5 mm thk.

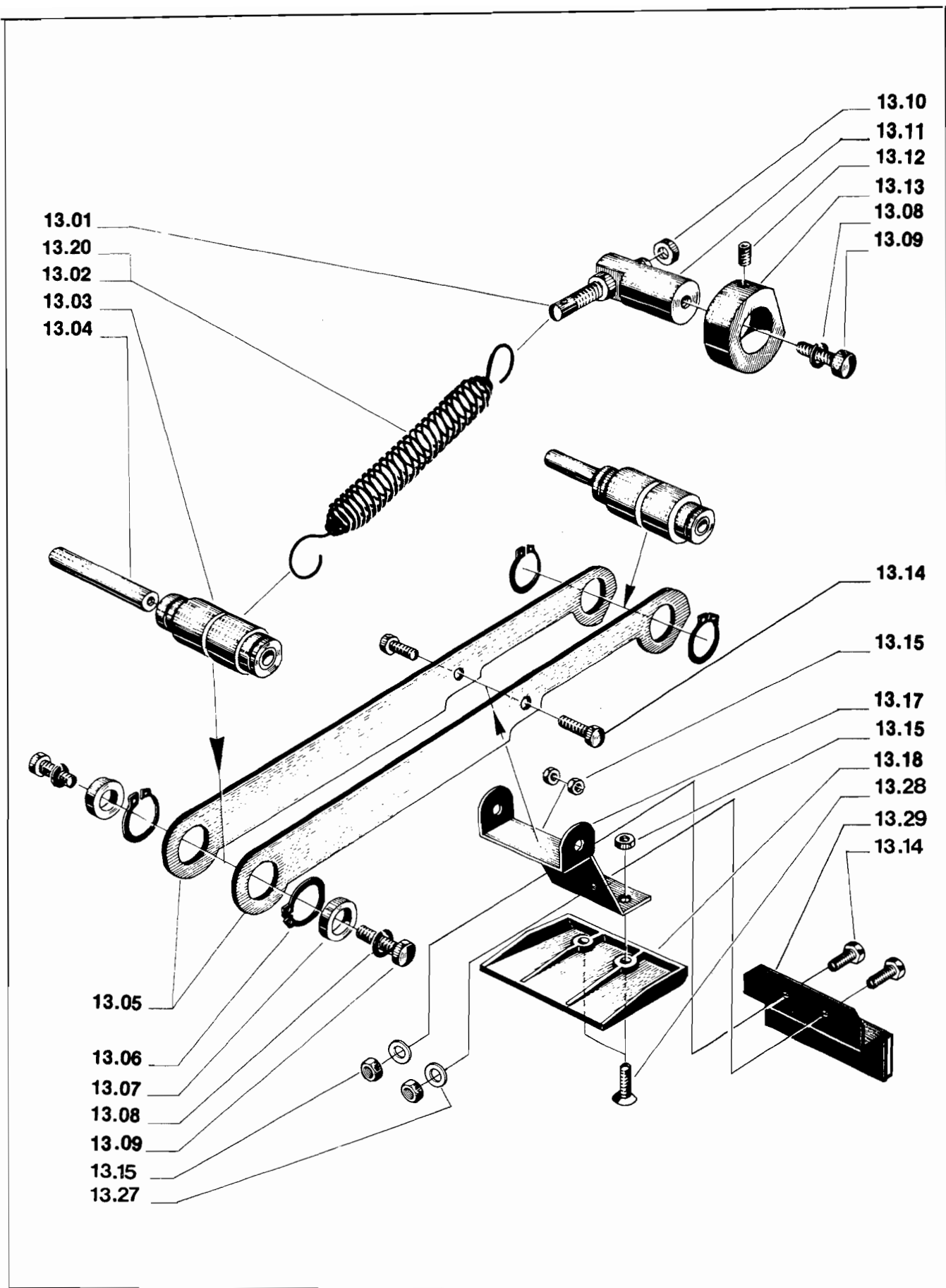


Figure 13

REF. No.	3M PART No.	DESCRIPTION
13-01	78-8017-9118-3	Screw - Spring Tensioner
13-02	78-8017-9119-1	Spring - Main, Top Head, Zinc Pl.
13-03	78-8017-9120-9	Roller Assembly - Grooved
13-04	78-8017-9105-0	Shaft - 10 x 66mm
13-05	78-8017-9122-5	Lever
13-06	78-8017-9171-2	Ring - Snap for 18mm
13-07	78-8017-9123-3	Spacer
13-08	78-8010-7435-8	Washer - Metric, Lock, Spr., Steel M6
13-09	78-8032-0375-7	Screw - Metric, M6 x 16, Hex Hd. Cap, Steel, Nick. Pl., DIN 933-5.6
13-10	26-1000-1347-8	Nut - Metric Hex Stl., M8
13-11	78-8017-9124-1	Holder - Main Spring
13-12	78-8005-4230-6	Screw - Set, Allen M6 x 10
13-13	78-8017-9125-8	Collar - Retainer
13-14	78-8010-7163-6	Screw - Hex Head, M5 x 10, Nick. Pl. DIN 933-8.8
13-15	78-8010-7417-6	Nut - Metric, Hex, Steel, M5, Nick. Pl.
13-16	78-8005-5735-3	Washer - Metric, Lock, Spr., Steel M5
13-17	78-8017-9126-6	Bracket - Blade guard
13-18	78-8017-9127-4	Guard - Blade
13-20	78-8017-9424-5	Spring, Main, Bottom Head
13-27	78-8005-5741-1	Washer, Plain - M5
13-28	26-0001-5862-1	Screw - Allen Fl. Hd. M5 x 12
13-29	78-8052-6285-0	Blade - Oiler

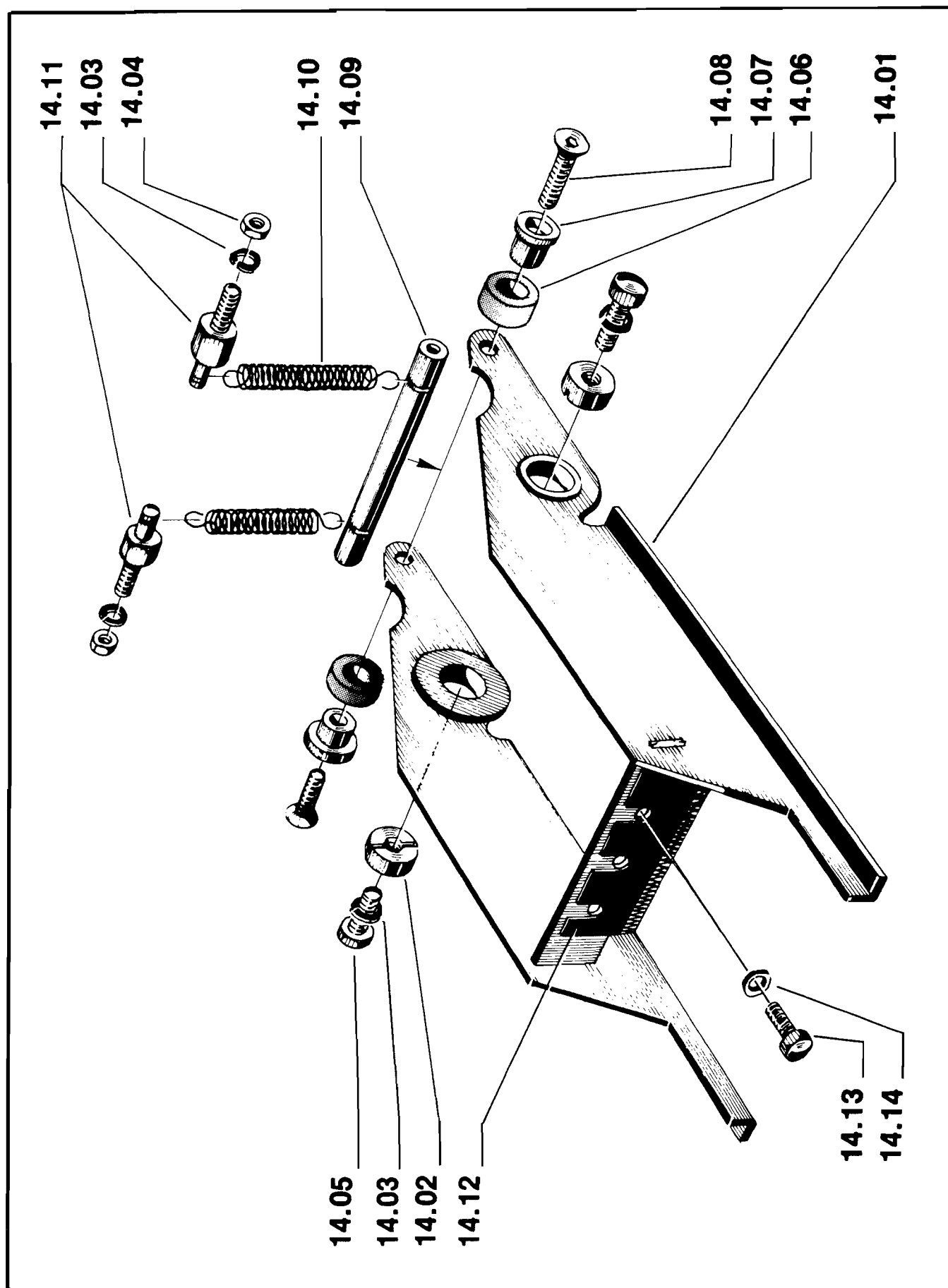


Figure 14

REF. No.	3M PART No.	DESCRIPTION
14-01	78-8017-9128-2	Lever Assembly - Cutter
14-02	78-8017-9132-4	Pivot - Cutter Lever
14-03	78-8010-7435-8	Washer - Metric, Lock, Spr., Steel - M6
14-04	78-8010-7418-4	Nut - Metric, Hex, Steel, M6
14-05	78-8010-7169-3	Screw - Metric, M6 x 12, Hex Hd. Cap, Steel, Nick. Pl., DIN 933-8.8
14-06	78-8017-9133-2	Bumper
14-07	78-8017-9134-0	Bushing - Bumper
14-08	78-8017-9172-0	Screw - Allen FH, M5 x 20
14-09	78-8017-9135-7	Pin - Spring Holder
14-10	78-8017-9136-5	Spring - Cutter
14-11	78-8017-9137-3	Holder - Cutter Spring
14-12	78-8017-9173-8	Blade - 2,56 inch/65mm
14-13	78-8010-7163-6	Screw - Metric, M5 x 10, Hex Hd. Cap, Steel, Nick. Pl., DIN 933-8.8
14-14	78-8005-5741-1	Washer - Metric, Plain, Steel, M5

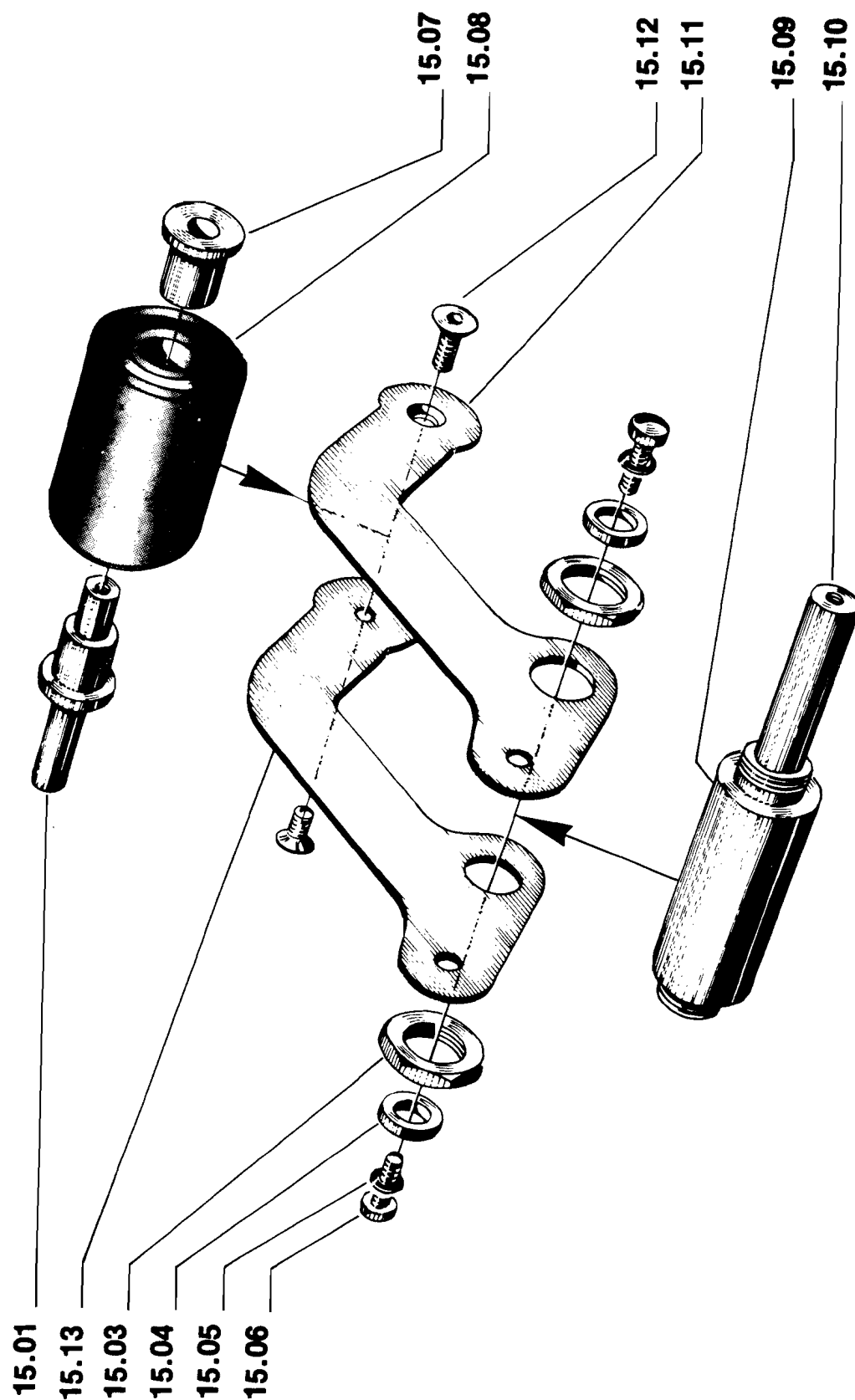


Figure 15

REF. No.	3M PART No.	DESCRIPTION
15-01	78-8017-9105-0	Shaft - 10 x 66mm
15-02	78-8017-9138-1	Arm - Buffing Roller
15-03	78-8017-9096-1	Nut - Special, M18 x 1
15-04	78-8017-9095-3	Spacer
15-05	78-8010-7435-8	Washer - Metric, Lock, Spr. Steel - M6
15-06	78-8032-0375-7	Screw - Metric, M6 x 16, Hex Hd. Cap, Steel, Nick. Pl., DIN 933-8.8
15-07	78-8017-9139-9	Bushing - Buffing Roller
15-08	78-8017-9140-7	Roller - Buffing
15-09	78-8017-9141-5	Spacer Assembly - Buffing Roller Arms
15-10	78-8017-9109-2	Shaft - 10 x 90mm
15-11	78-8018-7608-3	Arm - Buffing Roller, Right
15-12	78-8017-9162-1	Screw - Allen FH, M6 x 12.
15-13	78-8018-7609-1	Arm - Buffing Roller, Left

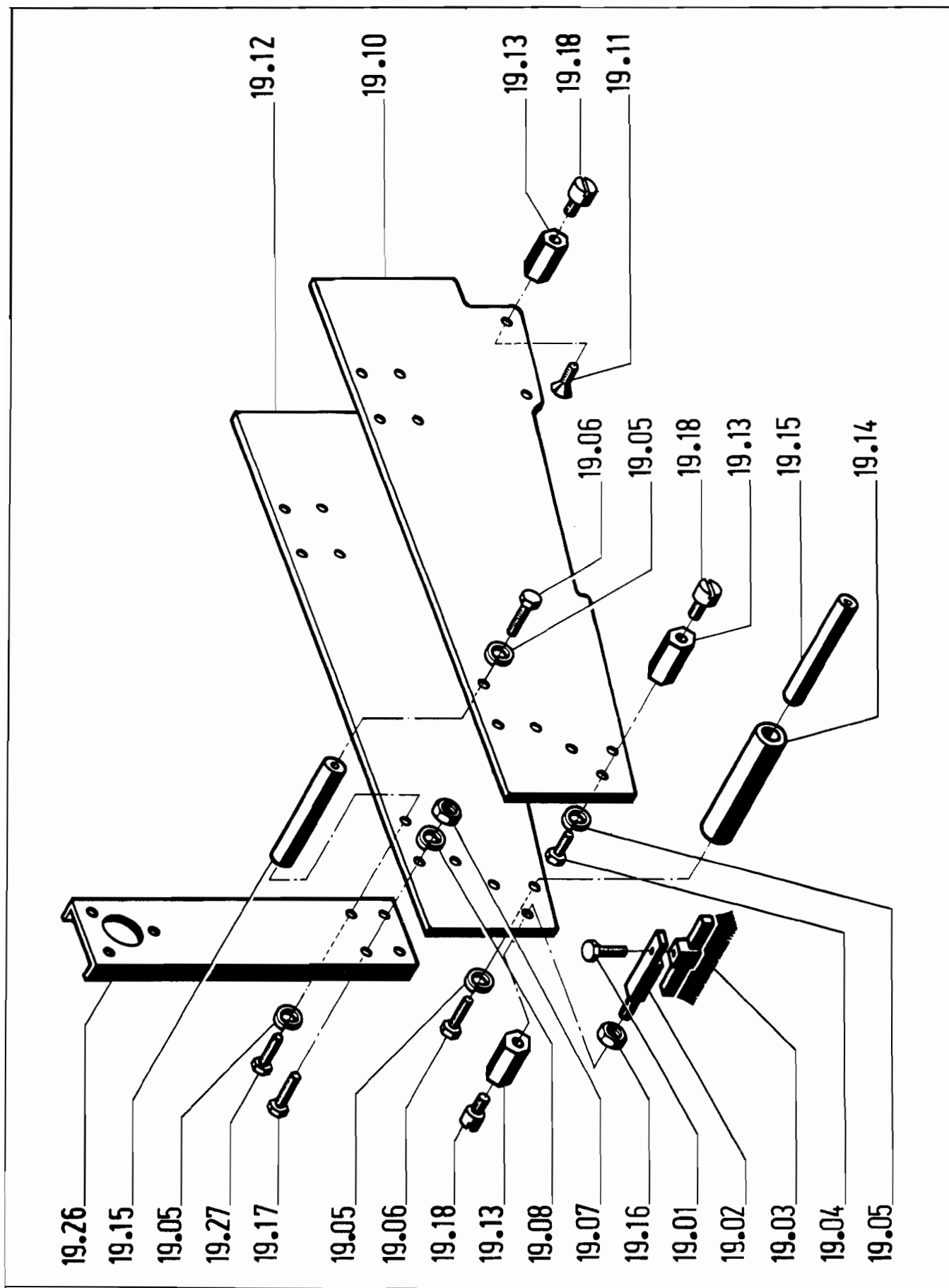


Figure 19

REF. No.	3M PART No.	Description
19-01	78-8010-7163-6	Screw - Metric, M5 x 10, Hex Hd. Cap. Steel, Nick. Pl., DIN 933-8.8
19-02	78-8018-7746-1	Support - Brush
19-03	78-8018-7617-4	Brush - Assembly - Buffing
19-04	78-8010-7169-3	Screw - Metric, M6 x 12, Hex Hd. Cap. Steel, Nick. Pl., DIN 933-8.8
19-05	78-8010-7435-8	Washer - Metric, lock, Spr., Steel, M6.
19-06	78-8032-0375-7	Screw - Metric, M6 x 16, Hex Hd. Cap Steel, Nick.Pl., DIN 933-5.6
19-07	78-8010-7417-6	Nut - Metric, Hex, Steel, M5
19-08	78-8005-5735-3	Washer - Metric. Lock, Spr. Steel, M5
19-10	78-8018-7721-4	Sideplate - Left
19-11	78-8017-9162-1	Screw - Allen FH, M6 x 12.
19-12	78-8018-7722-2	Sideplate - Right.
19-13	78-8018-7723-0	Spacer - Hexagonal.
19-14	78-8017-9148-0	Bumper - Buffing Arm.
19-15	78-8017-9109-2	Pin - 10 x 90 mm.
19-16	78-8010-7418-4	Nut - Metric, Hex. Steel, M6.
19-17	78-8018-7798-2	Screw - Metric, M5 x 15, Hex Hd. Cap, Nick. Pl.
19-18	78-8023-2270-7	Screw - Mounting, Bottom Head.
19-26	78-8046-8301-5	Bracket - Tape Drum
19-27	78-8010-7193-3	Screw - Metric, M6 x 20, Hex Hd.

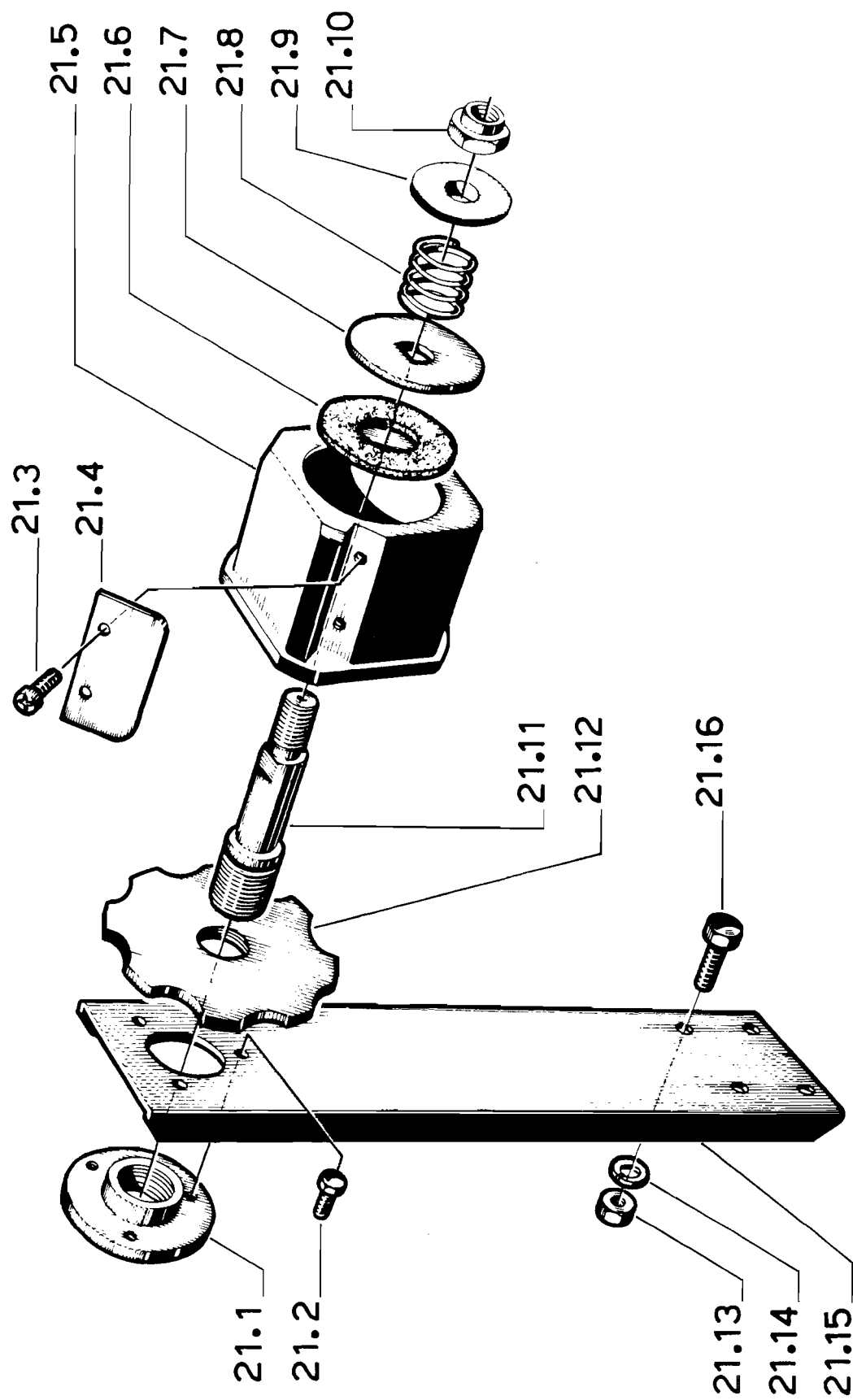


Figure 21

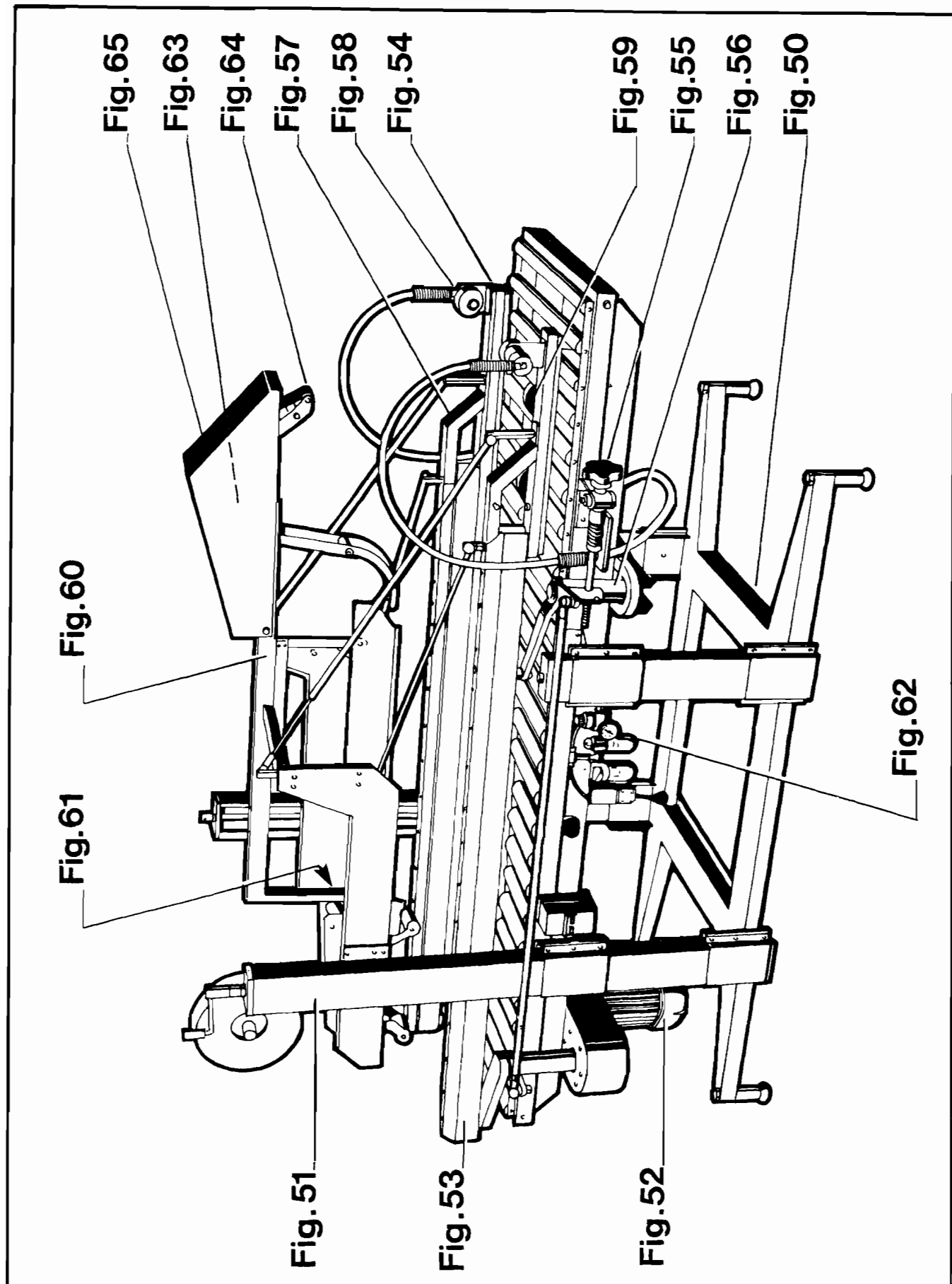
REF. NO.	3M PART NO.	DESCRIPTION
21-01	78-8017-9090-4	Flange - Tape Drum Shaft. Support
21-02	78-8010-7157-8	Screw - Hex Head M4x10
21-03	26-1002-5753-9	Screw - Self Tapping
21-04	78-8052-6268-6	Leaf Spring
21-05	78-8052-6269-4	Tape Drum
21-06	78-8052-6270-2	Washer - Friction
21-07	78-8052-6271-0	Washer - Tape Drum
21-08	78-8017-9071-4	Spring
21-09	78-8017-9094-6	Washer - Spring Holder
21-10	78-8017-9077-1	Nut - Self Locking M10
21-11	78-8052-6272-8	Shaft - Tape Drum
21-12	78-8017-9091-2	Plate - Locking, Tape Drum Shaft
21-13	78-8010-7417-6	Nut - Metric, Hex, Steel, M5
21-14	78-8005-5735-3	Washer - Metric, Lock Spr.St., M5
21-15	78-8046-8301-5	Bracket - Tape Drum
21-16	78-8018-7798-2	Screw - Metric, M5x14, Zinc Pl.

1AF AUTOMATIC CASE SEALER
MODEL 17800
FRAME ASSEMBLIES

- 1) Refer to Frame Assemblies figure to find all parts illustrations identified by figure numbers.
- 2) Refer to the figure or figures to determine the individual parts required and the parts reference number.
- 3) The replacement parts list, that follows each illustration, includes the part number and part description for the parts in that illustration.

NOTE - The complete description has been included for standard fasteners and some commercially available components. This has been done to allow obtaining these standard parts locally, should the customer elect to do so.

- 4) Refer to page 26 of "Maintenance - Parts Orders and Service Information" section of this manual for replacement parts ordering information.



Frame Assemblies

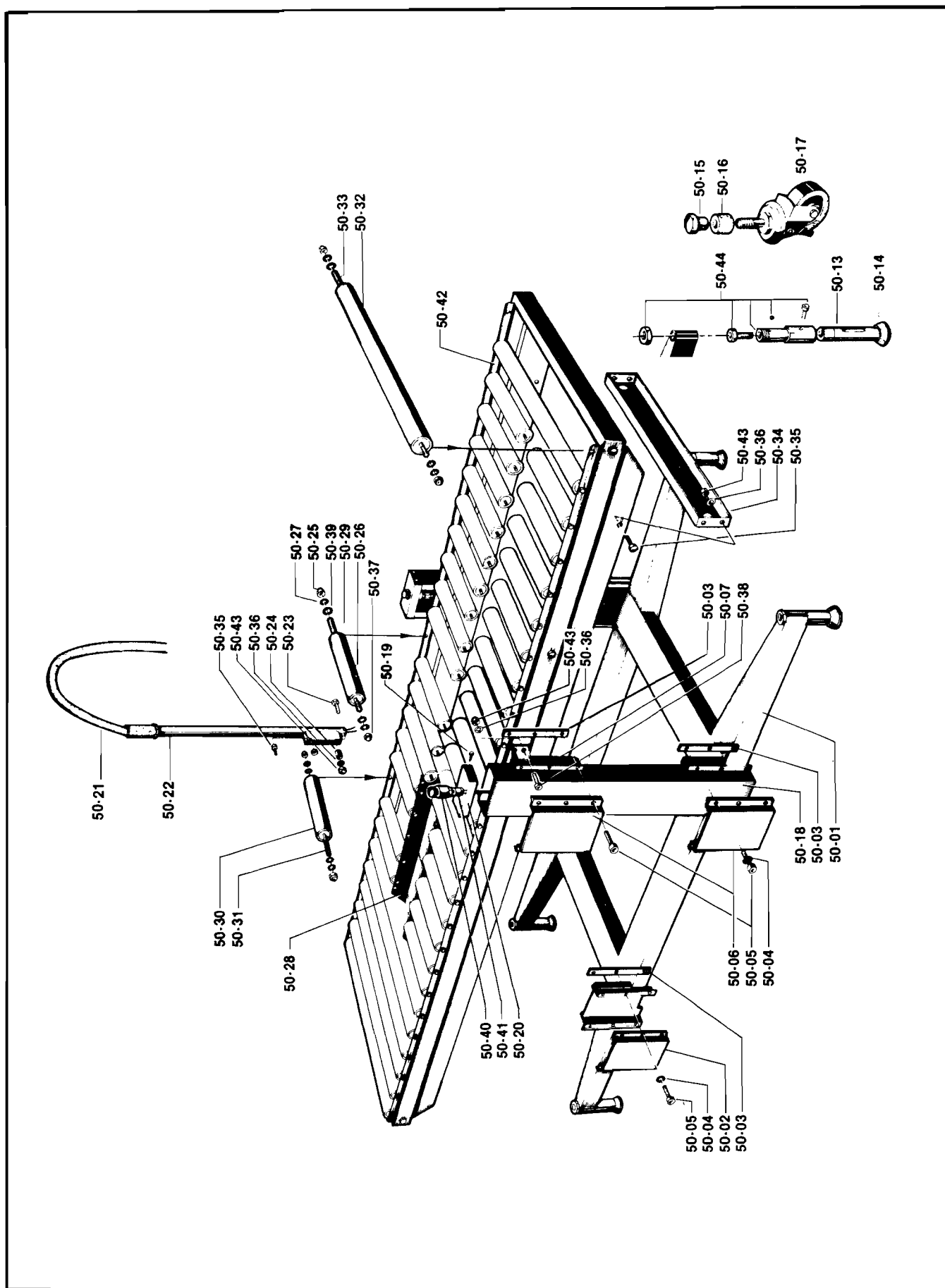


Figure 50

REF. No.	3M PART No.	DESCRIPTION
50-01	73-8023-2443-0	Base Weldment Assembly - Box Sealer.
50-02	78-8017-9420-3	Bracket - Column Clamping, Base.
50-03	78-8017-9181-1	Plate - Threaded.
50-04	78-8018-7799-0	Washer - Special, M6.
50-05	78-8010-7210-5	Screw - Soc. Hd, Hex Soc Dr, M6x20, Nick. Pl.
50-06	78-8017-9182-9	Bracket - Column Clamping.
50-07	78-8018-7857-6	Bracket - Column Clamping, Back.
50-13	78-8017-9189-4	Shaft - Foot.
50-14	78-8017-9212-4	Pad - Foot.
50-15	78-8017-9261-1	Nut - Special.
50-16	78-8017-9214-0	Bushing - Rubber.
50-17	78-8017-9262-9	Caster - W/Wheel Lock.
50-18	78-8018-7858-4	Column - Short.
50-19	78-8017-9265-2	Screw - Self-tapping, 3,5x10, Nick, Pl.
50-20	78-8018-7859-2	Cover - Column, Top.
50-21	78-8018-7860-0	Sleeving - 19mm Diameter, 1800mm Long.
50-22	78-8018-7861-8	Holder Weldment Assembly - Sleeving.
50-23	78-8017-9327-0	Screw - Hex Hd, M6x30, Nick Pl.
50-24	78-8018-7862-6	Spacer - 7 ϕ / 20 ϕ x 17mm thk.
50-25	78-8017-9311-4	Nut - Self-locking, M5, Nick Pl.
50-26	78-8018-7863-4	Roller - Conveyor, 32 ϕ x244mm.
50-27	78-8005-5741-1	Washer - Metric Plain Stl Nick Pl, 5mm.
50-28	78-8018-7864-2	Frame - Bottom Taping Head.
50-29	78-8018-7865-9	Shaft - For 32 ϕ x244mm Roller.
50-30	78-8018-7866-7	Roller - Conveyor, 32x206mm.
50-31	78-8018-7867-5	Shaft - For 32 ϕ x206mm Roller.
50-32	78-8017-9215-7	Roller - Conveyor 32 ϕ x562mm.
50-33	78-8018-7868-3	Shaft - For 32 ϕ x562mm Roller.
50-34	78-8018-7869-1	Crossmember.
50-35	78-8010-7169-3	Screw - Hex Hd, M6x12, Nick Pl.
50-36	26-1000-0010-3	Washer - Plain Metric, Nick Pl. 6mm.
50-37	78-8010-7417-6	Nut - Metric, Hex, Stl, Nick Pl. M5.
50-38	78-8032-0383-1	Screw - Soc Hd, Hex Soc, Dr, M6x16, Nick Pl.
50-39	78-8017-9330-4	Washer - 6,5 ϕ / 16 ϕ x 2mm thk.
50-40	78-8018-7870-9	Lamp - Air Connecting Control.
50-41	78-8017-9267-8	Connector - 1/8", Straight, For 6mm Tubing.
50-42	78-8018-7871-7	Weldment Assembly - Conveyor.
50-43	78-8017-9307-2	Nut - Self - Locking, M6, Nick Pl.
50-44	78-8018-7665-3	Bushing - Foot - Assembly.

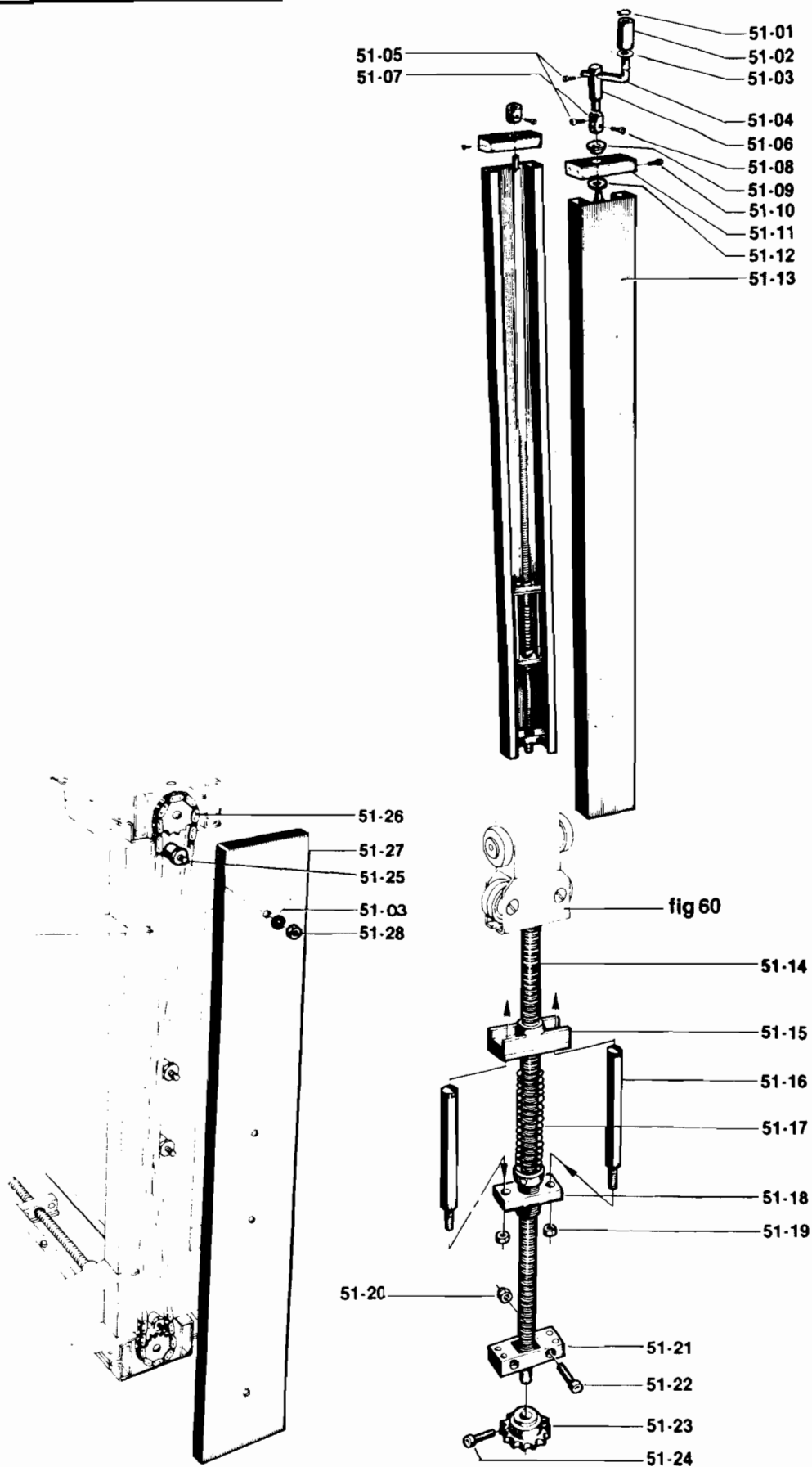


Figure 51

REF. No.	3M PART No.	DESCRIPTION
51-01	78-8017-9360-1	Ring - Snap, For 8mm Shaft.
51-02	78-8017-9359-3	Handle.
51-03	78-8017-9318-9	Washer - Plain, Metric, 8mm, Nick Pl.
51-04	78-8017-9362-7	Crank.
51-05	78-8018-7872-5	Screw - Soc Hd, Hex Soc, M6x12, Nick, Pl.
51-06	78-8018-7873-3	Shaft - Handle.
51-07	78-8018-7724-8	Collar - Handle Attachment.
51-08	78-8032-0379-9	Screw - Soc Hd, Hex Soc, Dr, M4x16, Nick Pl.
51-09	78-8017-9354-4	Bushing - Flanged.
51-10	78-8017-9265-2	Screw - Self - Tapping, 3,5x10, Nick Pl.
51-11	78-8017-9363-5	Cover - Column Top.
51-12	78-8018-7726-3	Washer - Special.
51-13	78-8017-9366-8	Column.
51-14	78-8018-7727-1	Screw - Height Adjustment
51-15	78-8018-7728-9	Nut - Height Adjustment
51-16	78-8018-7729-7	Pin - Anchor
51-17	78-8018-7732-1	Spring - Top Head Pressure.
51-18	78-8018-7731-3	Plate - Threaded.
51-19	78-8010-7418-4	Nut - Metric, Hex, Stl, M6, Nick Pl.
51-20	78-8017-9307-2	Nut - Self - Locking, M6, Nick Pl.
51-21	78-8017-9399-9	Block - Support.
51-22	78-8017-9327-0	Screw - Soc Hd, Hex Soc, Dr, M6x30, Nick Pl.
51-23	78-8017-9355-1	Sprocket.
51-24	78-8010-7201-4	Screw - Soc Hd, Hex Soc, Dr, M4x35, Nick Pl.
51-25	78-8017-9357-7	Spacer.
51-26	78-8018-7874-1	Chain - 3/8" Pitch 167 Pitch Long.
51-27	78-8018-7875-8	Cover - Chain Box.
51-28	78-8017-9313-0	Nut - Self - Locking, M8, Nick Pl.

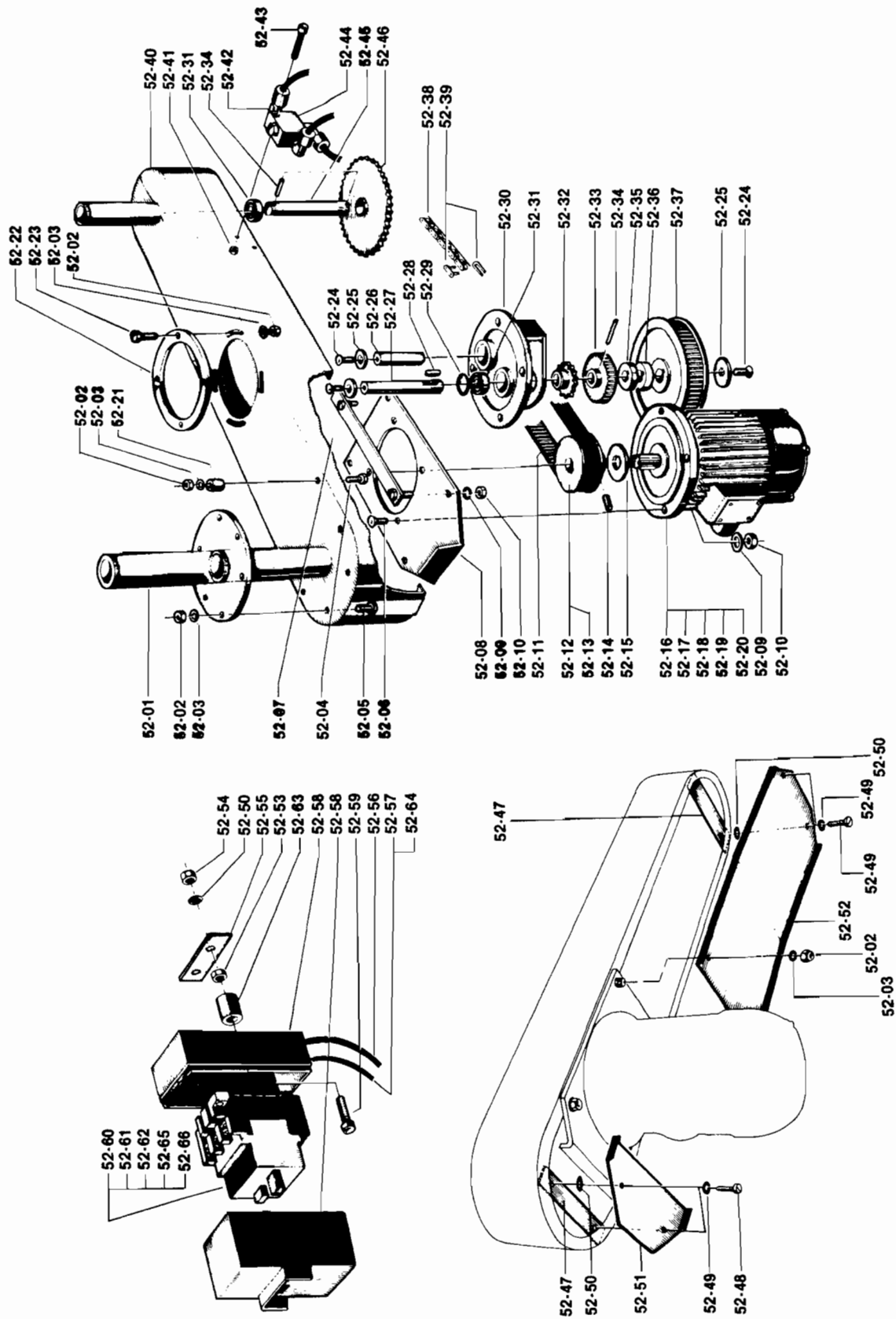


Figure 52

REF. No.	3M PART No.	DESCRIPTION
52-01	78-8023-2444-8	Tube - Flanged.
52-02	78-8017-9307-2	Nut - Self - Locking., M6, Nick Pl.
52-03	26-1000-0010-3	Washer - Plain Metric, Nick Pl. 6mm.
52-04	78-8018-7876-6	Screw - Hex Hd, M6x30, Nick Pl.
52-05	78-8018-7877-4	Screw - Hex Hd, M6x18, Nick Pl.
52-06	78-8018-7878-2	Screw - Hex Soc, M8x20, Nick Pl.
52-07	78-8018-7879-0	Bar - Motor Holder.
52-08	78-8018-7880-8	Support - Motor.
52-09	78-8017-9318-9	Washer - Plain Metric, Nick Pl. 8mm.
52-10	78-8017-9313-0	Nut - Self - Locking, M8, Nick Pl.
52-11	78-8018-7881-6	Belt - Timing, 210L050.
52-12	78-8018-7882-4	Pulley - Timing 13 Teeth, for 50 Hz Motor.
52-13	78-8018-7883-2	Pulley - Timing 11 Teeth, for 60 Hz Motor.
52-14	78-8018-7884-0	Set Screw - Hex Soc, M6x6.
52-15	78-8018-7885-7	Spacer - Motor.
52-16	78-8018-7886-5	Motor - 110V, 60Hz, Single Phase.
52-17	78-8018-7887-3	Motor - 220V, 50Hz, Single Phase.
52-18	78-8018-7888-1	Motor - 240V, 50Hz, Single Phase.
52-19	78-8018-7889-9	Motor - 220 / 380 V, 50Hz, 3-Phase.
52-20	78-8018-7890-7	Motor - 215 / 440 V, 50Hz, 3-Phase.
52-21	78-8018-7891-5	Spacer - Motor Box To Frame.
52-22	78-8018-7892-3	Disc - Reverse Unit.
52-23	78-8010-7210-5	Screw - Hex Hd. M6x20, Nick Pl.
52-24	78-8017-9065-6	Screw - Allen, FH, M6x16mm.
52-25	78-8018-7893-1	Washer - Special.
52-26	78-8018-7894-9	Shaft - Short.
52-27	78-8018-7895-6	Shaft - Long.
52-28	78-8017-9064-9	Key - 5x5x15 mm.
52-29	78-8017-9419-5	Ring - Snap for 32 mm Hole.
52-30	78-8018-7896-4	Casting - Reverse Unit.
52-31	26-1000-4350-9	Bearing 6002 - 2RS.
52-32	78-8018-7897-2	Sprocket - 14 Teeth, 3/8" Pitch.
52-33	78-8018-7898-0	Gear - 24 Teeth, 2mm Pitch.
52-34	78-8018-7899-8	Pin Roll 4x28mm.
52-35	78-8018-7900-4	Spacer - 15 ϕ / 22 ϕ x 8mm Thk.
52-36	78-8018-7901-2	Spacer - 15 ϕ / 22 ϕ x 9mm Thk.
52-37	78-8018-7902-0	Pulley - Timing, Reverse Unit, 36 Teeth.
52-38	78-8018-7903-8	Chain - 3/8" Pitch, 91 Pitch Long.
52-39	78-8018-7904-6	Connecting - Link - 3/8" Pitch Chain.
52-40	78-8018-7905-3	Housing.
52-41	78-8017-9309-8	Nut - Self - Locking, M4, Nick Pl.
52-42	78-8017-9269-4	Elbow - 90° - 1/8" for 6mm Tubing.
52-43	78-8018-7906-1	Screw - Soc Hd, Hex Soc, M4x30, Nick Pl.
52-44	78-8018-7907-9	Shuttle Valve
52-45	78-8018-7908-7	Shaft.
52-46	78-8018-7909-5	Sprocket - 44 Teeth, 3/8" Pitch.
52-47	78-8018-7910-3	Bracket - Safety Guard.
52-48	78-8018-7911-1	Screw - Self - Tapping, 3,5x15, Nick Pl.
52-49	78-8018-7912-9	Washer - Plain - Metric, Nick Pl. 4mm.
52-50	78-8005-5741-1	Washer - Plain - Metric, Nick Pl. 5mm.
52-51	78-8018-7913-7	Guard - Safety Left.
52-52	78-8018-7914-5	Guard - Safety Right.
52-53	78-8010-7417-6	Nut - Hex, Nick Pl. M5.
52-54	78-8017-9311-4	Nut - Self - Locking, M5, Nick Pl.
52-55	78-8018-7915-2	Clamp - Wire.
52-56	78-8018-7916-0	Cord - 5 Conductor - 0,8m. Long.
52-57	78-8018-7917-8	Power - Cord - U.S.
52-58	78-8017-9422-9	Switch Box - Plastic, Siemens.
52-59	78-8018-7918-6	Screw Soc Hd, Hex Soc, M5x50.
52-60	78-8018-7919-4	Switch - On - Off, Siemens, 2G, 1 + 1,6 A.
52-61	78-8017-9421-1	Switch - On - Off, Siemens, 2H, 1,6 + 2,5 A.
52-62	78-8023-2215-2	Switch - On - Off, Siemens, 2I, 2,5 + 4 A.
52-63	78-8018-7862-6	Spacer - 7 ϕ / 20 ϕ x 17 mm Thk.
52-64	78-8023-2217-8	Power - Cord - European.
52-65	78-8017-9403-9	Switch - On-Off Siemens, 2 K, 4 + 6,3 A.
52-66	78-8023-2452-1	Switch - On-Off Siemens, 2 F, 0,63 - 1,0 A.

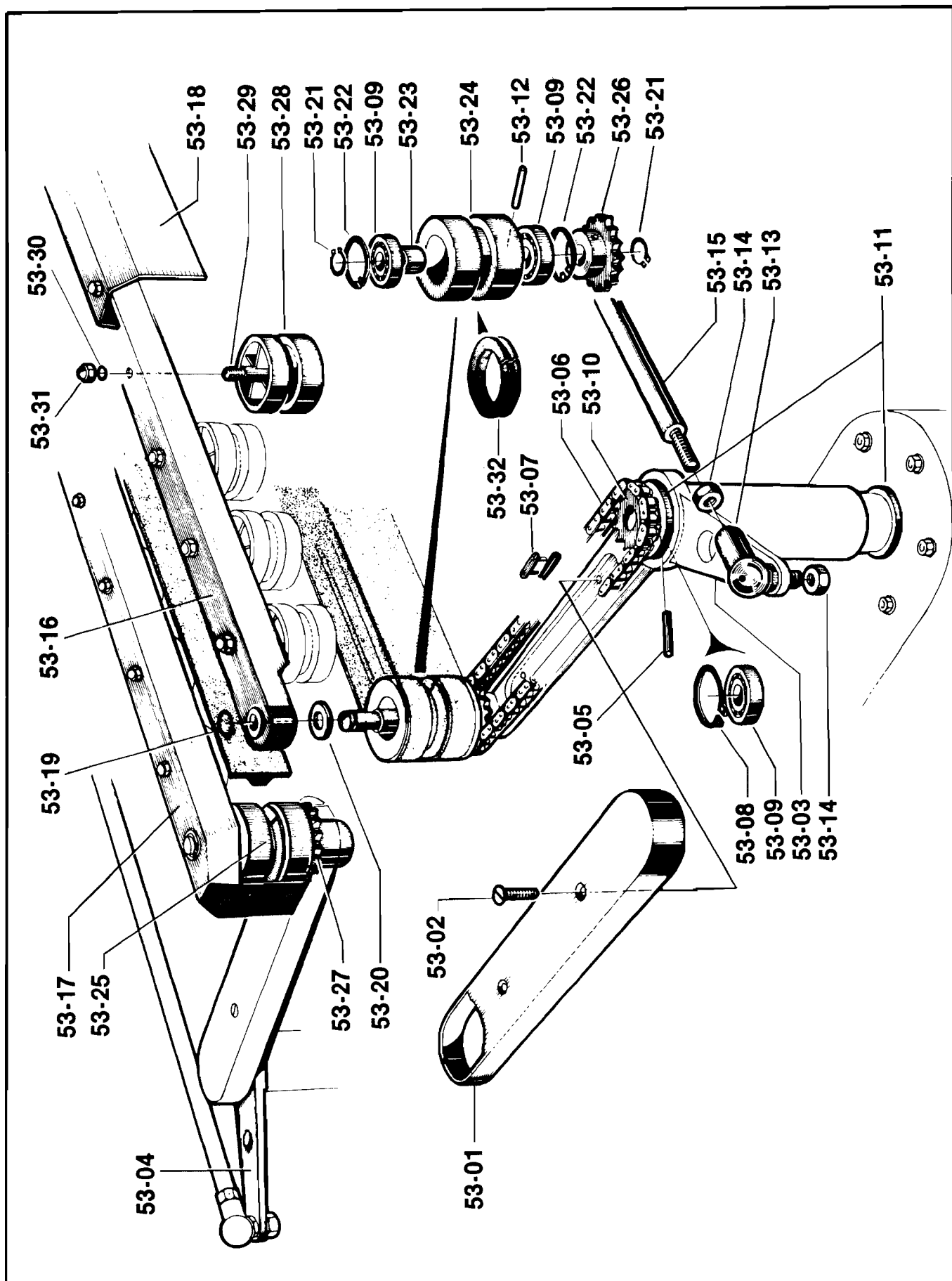


Figure 53

REF. No.	3M PART No.	DESCRIPTION
53-01	78-8023-2218-6	Guard - Driving Chain, Plastic.
53-02	78-8023-2219-4	Screw - M6x30, Nick Pl.
53-03	78-8023-2220-2	Arm - Left Side.
53-04	78-8023-2221-0	Arm - Right Side.
53-05	78-8023-2222-8	Pin - Roll, 4 ϕ x28mm Long.
53-06	78-8023-2223-6	Chain - 3/8" Pitch, 67 Pitch Long.
53-07	78-8018-7904-6	Connecting Link - 3/8" Pitch Chain.
53-08	78-8023-2225-1	Ring - Snap for 38mm Shaft.
53-09	26-1000-4350-9	Bearing - 6002 - 2RS.
53-10	78-8023-2226-9	Sprocket - 14 Teeth - 3/8" Pitch.
53-11	78-8023-2227-7	Bushing - Flanged.
53-12	78-8010-7458-0	Pin - Roll, 3 ϕ x10mm Long.
53-13	78-8023-2228-5	Pivot - Assembly.
53-14	78-8023-2229-3	Nut - Hex, M10x1, Nick Pl.
53-15	78-8023-2230-1	Bar - Adjustment.
53-16	78-8023-2231-9	Support - Roller.
53-17	78-8023-2232-7	Guard - Driving Belt, Right Side.
53-18	78-8023-2233-5	Guard - Driving Belt, Left Side.
53-19	78-8023-2234-3	Ring - Snap for 12 mm Shaft.
53-20	78-8017-9059-9	Washer - Metric Flat 12 mm, Nick Pl.
53-21	78-8017-9079-7	Ring - Snap for 15 mm Shaft.
53-22	78-8023-2454-7	Ring - Snap for 34 mm Hole.
53-23	78-8023-2235-0	Spacer - Driving Pulley.
53-24	78-8023-2236-8	Pulley - Driving Left Side.
53-25	78-8023-2237-6	Pulley - Driving Right Drive.
53-26	78-8023-2238-4	Sprocket - Driving Pulley - Left Side, 14 Teeth, 3/8" Pitch.
53-27	78-8023-2239-2	Sprocket - Driving Pulley - Right Side, 14 Teeth, 3/8" Pitch.
53-28	78-8023-2240-0	Roller - Plastic.
53-29	78-8023-2241-8	Shaft - Plastic Roller.
53-30	26-1000-0010-3	Washer - Plain Metric, 6mm, Nick Pl.
53-31	78-8017-9310-6	Nut - Cap, M6, Nick, Pl.
53-32	78-8023-2242-6	Ring - Driving Belt Pulley, Teflon.

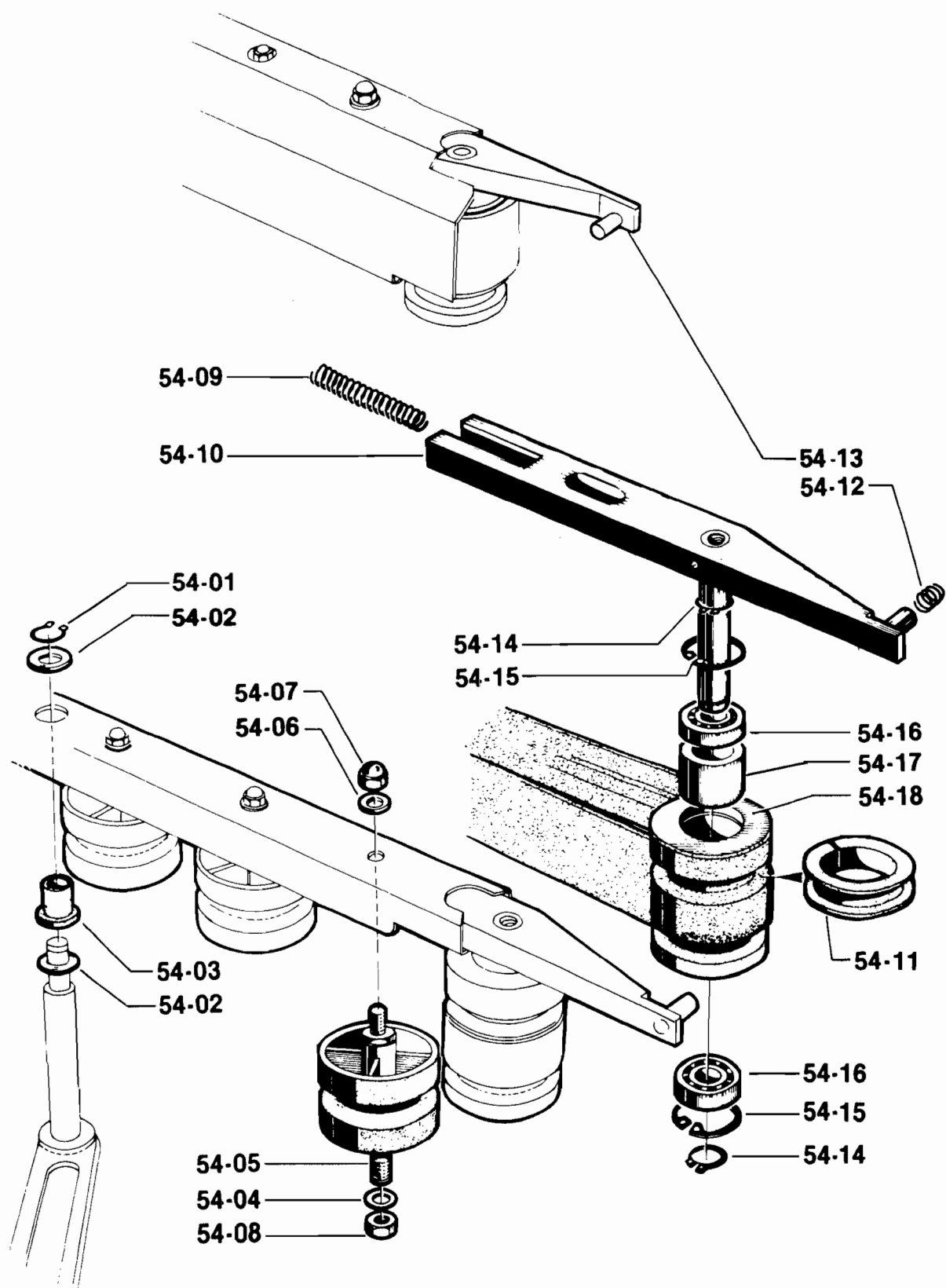


Figure 54

REF. No.	3M PART No.	DESCRIPTION
54-01	78-8023-2243-4	Ring - Snap for 12mm Shaft.
54-02	78-8017-9059-9	Washer - Flat for M12 Screw, Din 125A.
54-03	78-8023-2244-2	Bushing - Flanged.
54-04	78-8017-9330-4	Washer - 6,5 ϕ /16 ϕ x2mm Thk.
54-05	78-8023-2245-9	Shaft - Plastic Guiding Roller.
54-06	78-8017-9318-9	Washer - Plain, Metric, 8mm, Nick Pl.
54-07	78-8023-2246-7	Nut - Cap, M8.
54-08	78-8017-9307-2	Nut - Self - Locking, M6' Nick Pl.
54-09	78-8023-2247-5	Spring - Upper Driving Belt Tensioning.
54-10	78-8023-2248-3	Support - Upper Driving Belt Tensioning, Left.
54-11	78-8023-2249-1	Ring - Belt Guiding - Teflon.
54-12	78-8023-2250-9	Spring - Holding - Up.
54-13	78-8023-2251-7	Support - Upper Driving Belt Tensioning, Right.
54-14	78-8017-9079-7	Ring - Snap for 15mm Shaft.
54-15	78-8023-2454-7	Ring - Snap for 34mm Hole.
54-16	26-1000-4350-9	Bearing - 6002 - 2RS.
54-17	78-8023-2252-5	Spacer - Double Pulley.
54-18	78-8023-2253-3	Pulley - Double.

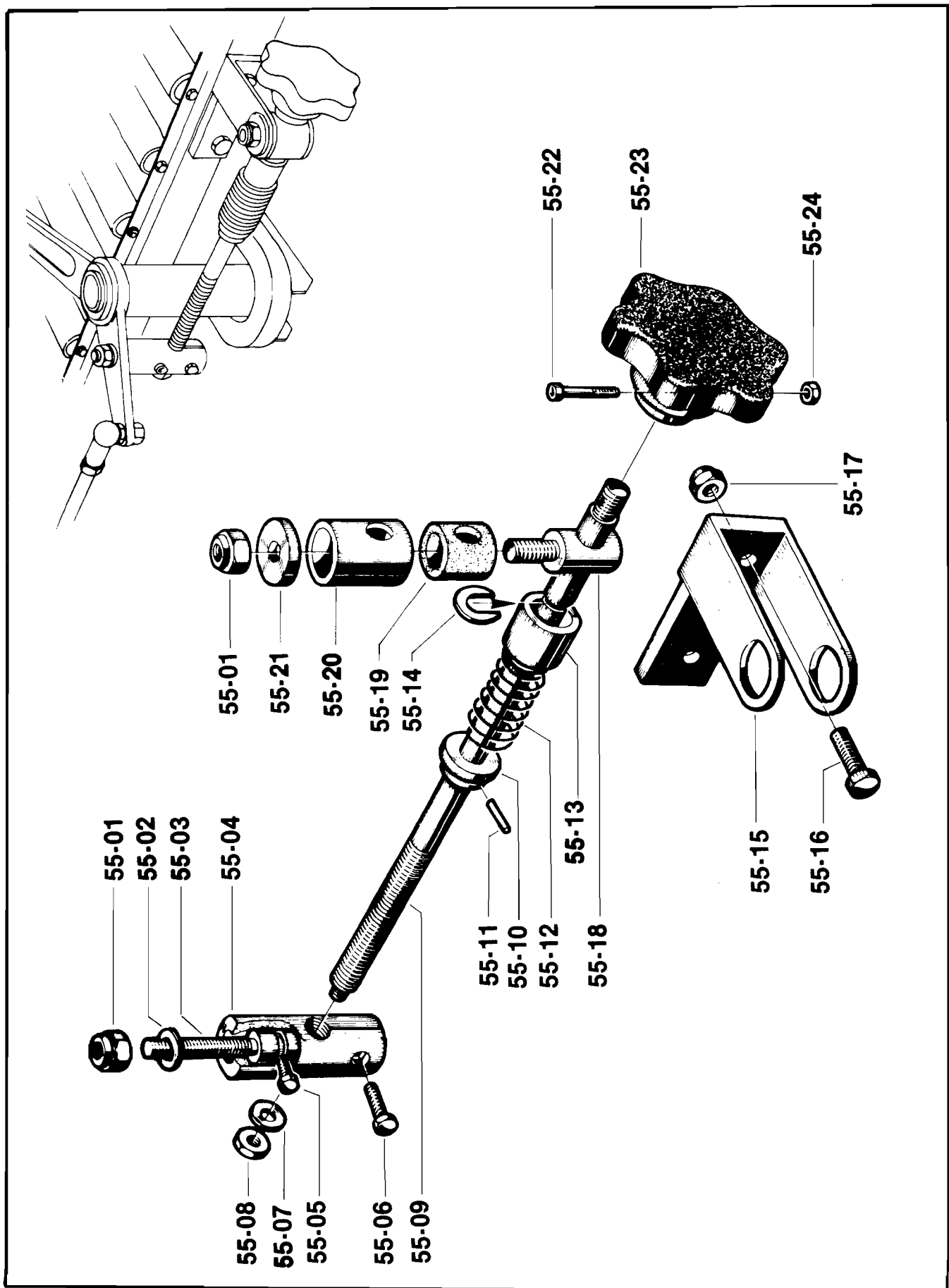


Figure 55

REF. No.	3M PART. No.	DESCRIPTION
55-01	78-8017-9077-1	Nut - Self - Locking, M10, Nick Pl.
55-02	78-8017-9319-7	Washer - Flat, 10mm, Nick Pl.
55-03	78-8023-2254-1	Shaft - Threaded.
55-04	78-8023-2255-8	Block - Lateral Adjustment, Nylon.
55-05	78-8023-2256-6	Screw - Hex Hd, M5x10, Nick Pl.
55-06	78-8010-7210-5	Screw - Soc. Hd, Hex Soc, M6x20, Nick Pl.
55-07	78-8017-9318-9	Washer - Flat, 8mm, Nick Pl.
55-08	78-8017-9312-2	Nut - Hex, M8, Nick Pl.
55-09	78-8023-2257-4	Screw - Lateral Adjustment.
55-10	78-8023-2258-2	Holder - Spring, Lateral Adjustment.
55-11	78-8023-2259-0	Pin - Roll, 4øx28mm Long.
55-12	78-8023-2260-8	Spring - Lateral Adjustment.
55-13	78-8023-2261-6	Bushing.
55-14	78-8023-2262-4	Stop - Ring.
55-15	78-8023-2263-2	Support - Bracket.
55-16	78-8017-9301-5	Screw - Hex Hd M8x25, Nick Pl.
55-17	78-8017-9313-0	Nut - Self - Locking, M8, Nick Pl.
55-18	78-8023-2264-0	Shaft - Threaded.
55-19	78-8023-2265-7	Bushing - Aluminium.
55-20	78-8023-2266-5	Bushing - Nylon.
55-21	78-8023-2267-3	Washer - 10,5ø/30øx4mm Thk.
55-22	78-8023-2268-1	Screw - Soc Hd, Hex Soc, M4x30, Nick Pl.
55-23	78-8023-2269-9	Handle - Lateral Adjustment.
55-24	78-8010-7416-8	Nut - Metric, Hex, M4, Nick Pl.

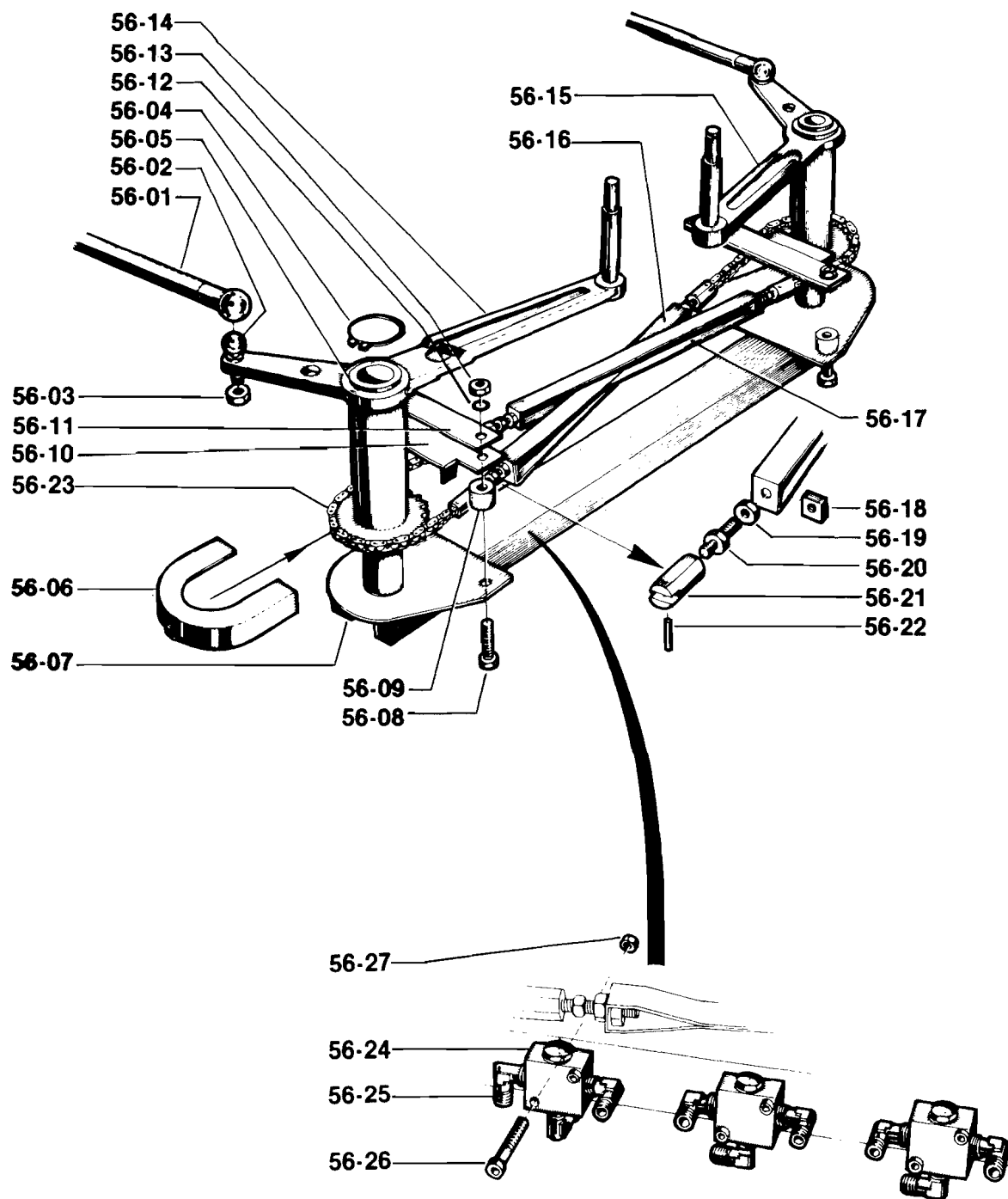


Figure 56

REF. No.	3M PART No.	DESCRIPTION
56-01	78-8023-2230-1	Bar - Adjustment.
56-02	78-8023-2271-5	Ball - Pivot, M10xl.
56-03	78-8023-2272-3	Nut - Hex, M10xl, Nick Pl.
56-04	78-8023-2273-1	Ring - Snap for 38mm Shaft.
56-05	78-8023-2274-9	Bushing - Flanged.
56-06	78-8023-2275-6	Guard - Plastic.
56-07	78-8023-2276-4	Crossmember.
56-08	78-8023-2277-2	Screw - Hex Hd, M6x35, Nick Pl.
56-09	78-8023-2278-0	Spacer - 7ø/20øxl8,5mm Thk.
56-10	78-8023-2279-8	Guard.
56-11	78-8023-2280-6	Spacer - Plate, 25x160x6mm Thk.
56-12	26-1000-0010-3	Washer, Plain, Flat, Nick Pl, 6mm.
56-13	78-8017-9307-2	Nut - Self - Locking, Nick Pl M6.
56-14	78-8023-2281-4	Lever - Right Side.
56-15	78-8023-2282-2	Lever - Left Side.
56-16	78-8017-9244-7	Connecton Weldment Assembly - Chain, Closed.
56-17	78-8017-9243-9	Connector Weldment Assembly - Chain, Open.
56-18	78-8023-2283-0	Nut - Square M8.
56-19	78-8017-9312-2	Nut - Hex, Nick Pl, M8.
56-20	78-8017-9242-1	Rod - Threaded.
56-21	78-8017-9241-3	Holder - Chain.
56-22	78-8023-2455-4	Pin - Roll 3øxl4mm Long.
56-23	78-8023-2284-8	Chain - 3/8" Pitch, 38 Pitch Long.
56-24	78-8017-9285-0	Distributor - Air.
56-25	78-8017-9269-4	Elbow - 90°, 1/8", For 6mm Tubing.
56-26	78-8023-2285-5	Screw - Hex Hd, Nick Pl, M4x30.
56-27	78-8017-9309-8	Nut Self - Locking, Nick Pl, M4.

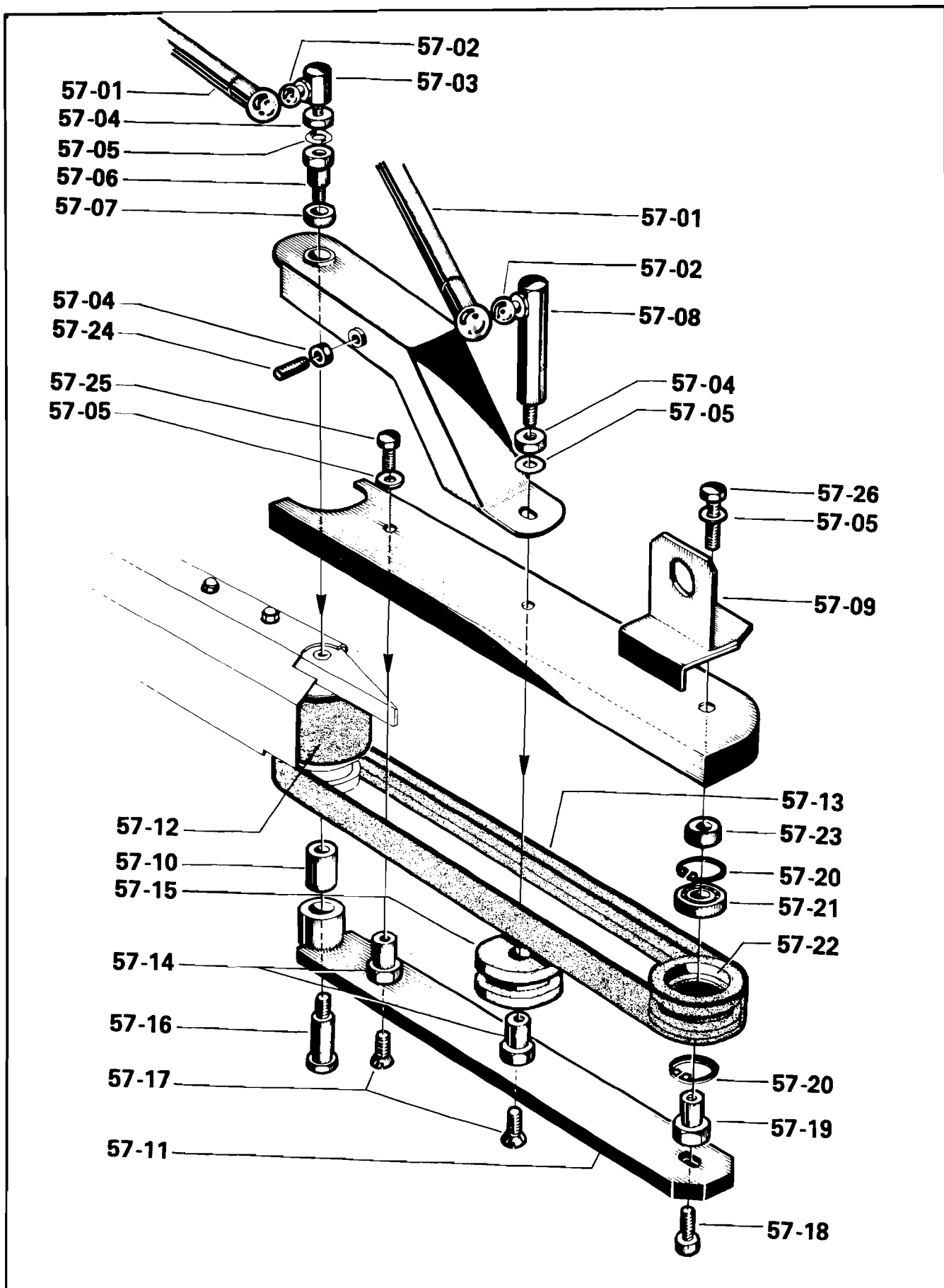


Figure 57

REF No.	3M PART No.	DESCRIPTION
57-01	78-8023-2286-3	Bar - Flap Guiding , External, Assembly
57-02	78-8023-2287-1	Ball - Pivot - M8.
57-03	78-8023-2288-9	Post - Hex.
57-04	78-8017-9312-2	Nut - Hex, Nick Pl, M8.
57-05	78-8017-9318-9	Washer - Metric Plain Flat, Nick Pl 8mm.
57-06	78-8023-2289-7	Stud.
57-07	78-8023-2290-5	Spacer - 14 ϕ /20 ϕ x4,5mm Thk.
57-08	78-8023-2291-3	Post - Hex.
57-09	78-8023-2292-1	Support - Air Cylinder.
57-10	78-8023-2293-9	Bushing - Brass.
57-11	78-8023-2294-7	Bar - Roller, Mounting.
57-12	78-8023-2295-4	Driving - Belt Main.
57-13	78-8023-2296-2	Driving - Belt Infeed.
57-14	78-8023-2297-0	Stud.
57-15	78-8023-2298-8	Pulley - Infeed Belt, Plastic.
57-16	78-8023-2299-6	Shoulder Bolt.
57-17	78-8023-2300-2	Screw - FH, Hex Soc, M8x20, Nick Pl.
57-18	78-8023-2301-0	Screw - Soc Hd, Hex Soc, M8x12, Nick Pl.
57-19	78-8023-2302-8	Stud.
57-20	78-8017-9419-5	Ring - Snap For 32 mm Hole.
57-21	26-1000-4350-9	Bearing - 6002 - 2RS.
57-22	78-8023-2303-6	Pulley - Infeed Belt, Aluminium.
57-23	78-8023-2304-4	Spacer.
57-24	78-8023-2305-1	Set Screw - Hex Soc, M8x20.
57-25	78-8023-2306-9	Screw - Hex Hd, Nick Pl, M8x12.
57-26	78-8023-2307-7	Screw - Hex Hd, Nick Pl, M8x25.

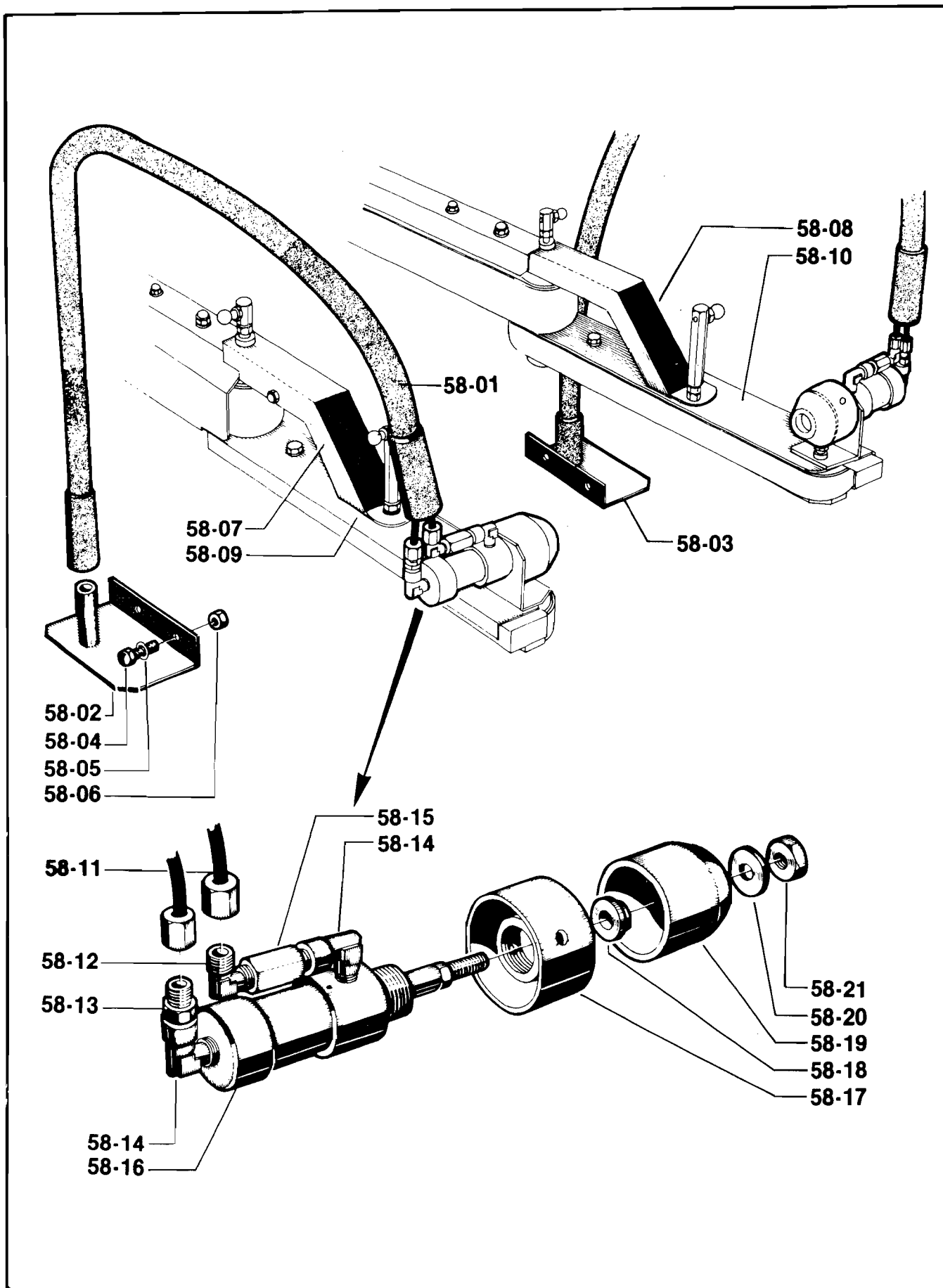


Figure 58

REF. No.	3M PART No.	DESCRIPTION
58-01	78-8023-2456-2	Sleeving - 19mm Diameter, 1280mm Long.
58-02	78-8023-2308-5	Support - Sleeving, Left Side.
58-03	78-8023-2309-3	Support - Sleeving, Right Side.
58-04	78-8017-9324-7	Screw - Hex Hd, Nick Pl, M8x15.
58-05	78-8017-9318-9	Washer - Plain Metric, Nick Pl, 8mm.
58-06	78-8017-9313-0	Nut - Self - Locking, Nick Pl, M8.
58-07	78-8023-2310-1	Guard - Left Side.
58-08	78-8023-2311-9	Guard - Right Side.
58-09	78-8023-2312-7	Guard - Infeed Belt Left.
58-10	78-8023-2313-5	Guard - Infeed Belt Right.
58-11	78-8023-2314-3	Tubing - 6mm, 4 meters Long.
58-12	78-8017-9269-4	Elbow - 90°, 1/8" For 6mm Tubing.
58-13	78-8017-9267-8	Connector - 1/8", Straight, For 6mm Tubing.
58-14	78-8017-9427-8	Elbow - 90°, 1/8" Male x 1/8" Female.
58-15	78-8023-2315-0	Spacer - Union 1/8" - 1/8".
58-16	78-8023-2316-8	Cylinder - Air, 25øx20mm Stroke.
58-17	78-8023-2317-6	Mounting Collar - Air Cylinder.
58-18	78-8023-2318-4	Bushing.
58-19	78-8023-2319-2	Stop - Rubber.
58-20	78-8023-2320-0	Washer - 8,5ø/22øx2mm Thk.
58-21	78-8017-9312-2	Nut - Hex, Nick Pl, M8.

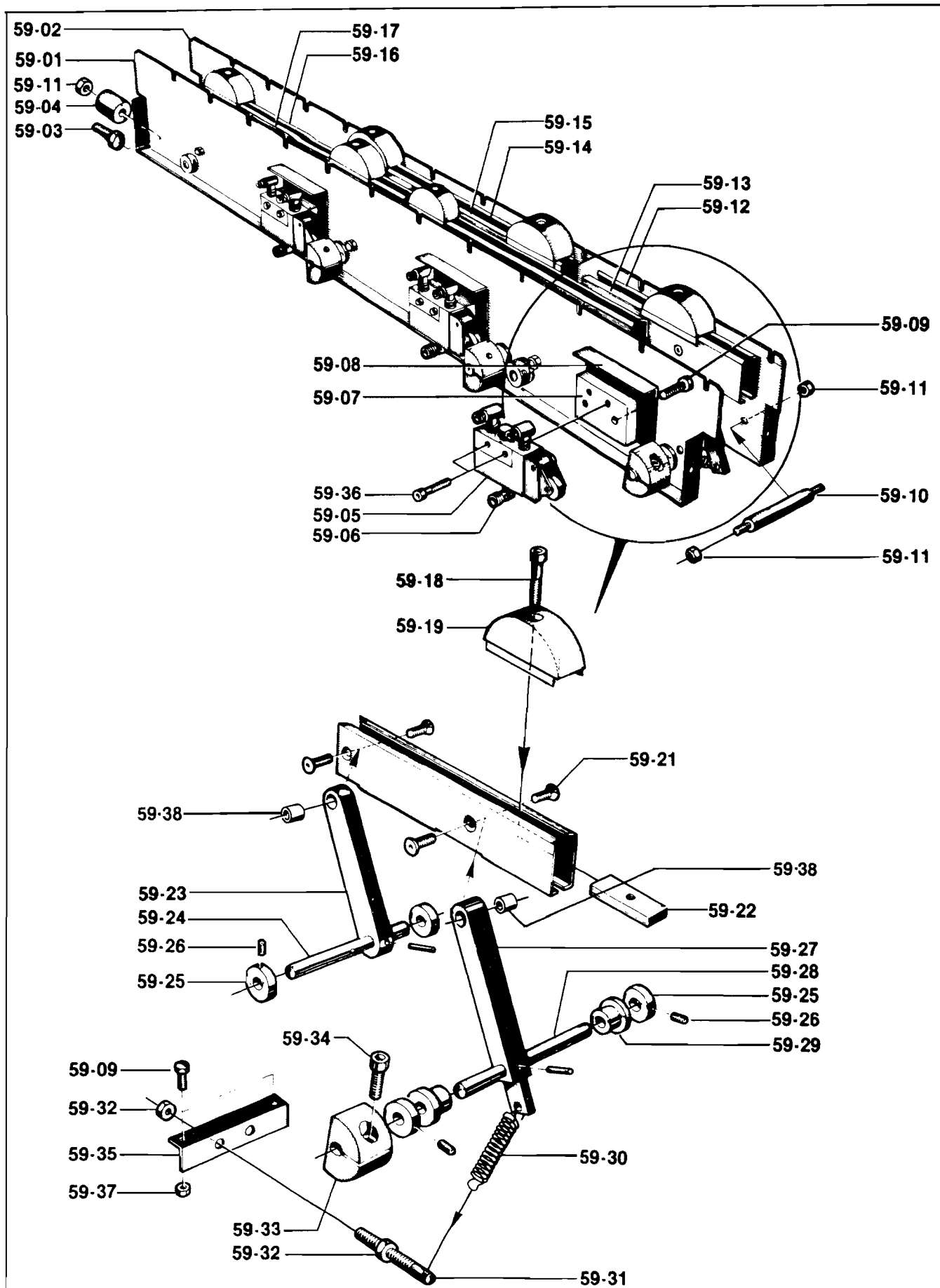


Figure 59