INSTRUCTIONS AND PARTS LISTS

"SCOTCH" BRAND 3M-MATIC

7R RANDOM BOX SEALER

MODEL 278

Packaging Systems Division 3M COMPANY
3M CENTER • SAINT PAUL, MINNESOTA 55101

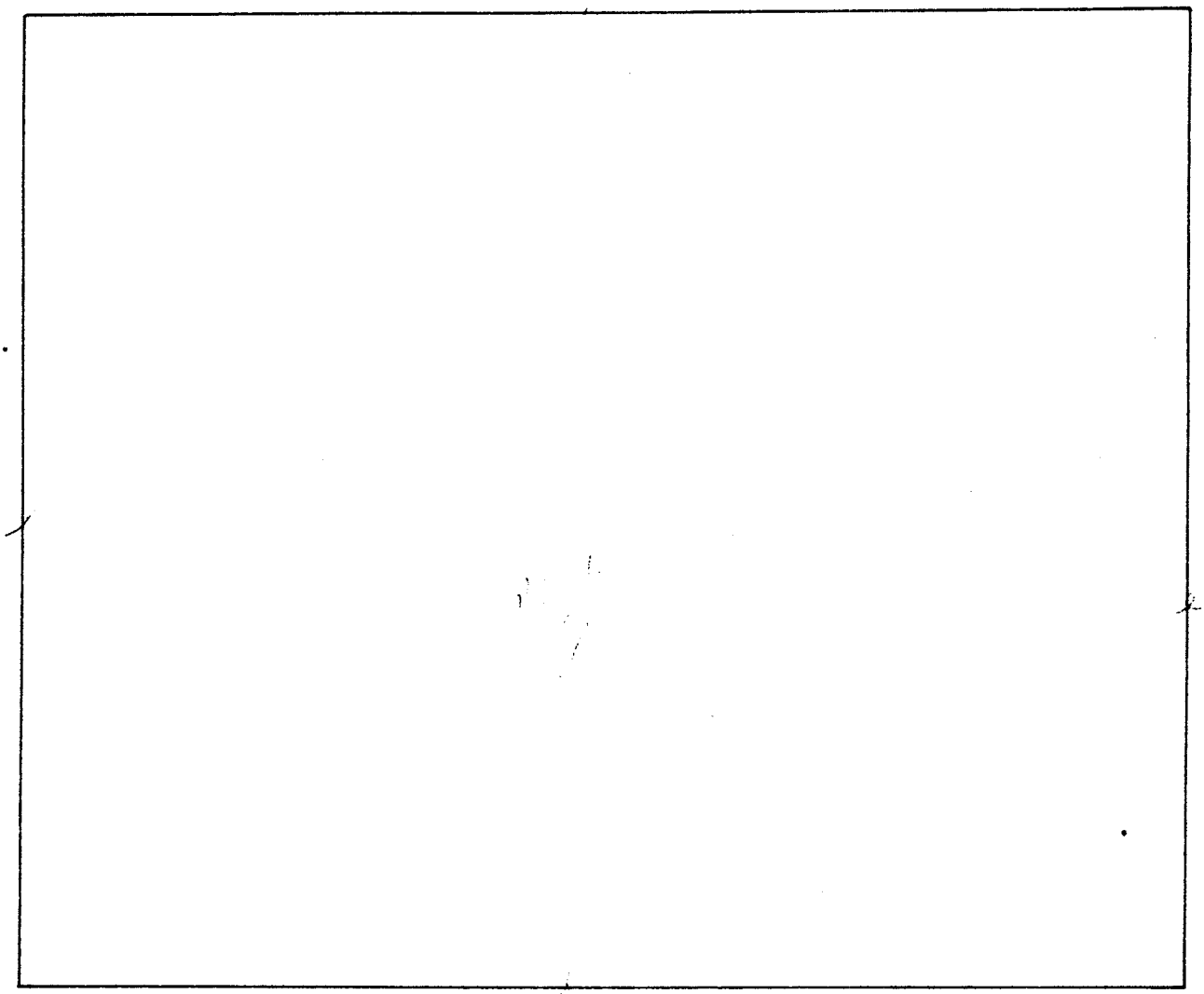
34-7004-7218-5

INSTRUCTION MANUAL
7R RANDOM BOX SEALER
MODEL 278

TABLE OF CONTENT

(7R RANDOM BOX SEALER TABLE OF CONTENT CONTINUED ON NEXT PAGE)

TABLE OF CONTENT (Continued)



CAT. NO. 7R RANDOM BOX SEALER - MODEL 278

DESCRIPTION

The 7R Box Sealer is designed to apply a "C" clip of pressure sensitive tape to the top and bottom center seams of regular slotted containers. The 7R will automatically adjust itself to a wide range of random box sizes (see box size specifications). The box size range of operation can be manually adjusted for runs of uniform size boxes or to minimize cycle time for random size boxes.

RECEIVING AND HANDLING

After the machine has been uncrated, examine the Box 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 Company Representative.

Spare parts, tools, and oil can are provided in a small plastic case. Remove and keep with Box 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: The only obligation of the manufacturer and seller 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 manufacturer nor seller shall be liable for any loss or damage, direct 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", "SCOTCHPAR" and "SCOTCHPRO" are registered trademarks for the pressure-sensitive tapes and dispensers of 3M Company, St. Paul, Minnesota 55101.

SPECIFICATIONS

1) Power Requirements:

115V, 60 Hz., 5 A.
70 PSIG [584 kPa], 2.5 SCFM [4.25 m3/h] maximum at maximum random cycle rate.
A pressure regulator-filter-lubricator is included.

2) Machine Dimensions:

	Overall Dimensions	For Shipping Purposes
A. Length	- 65.7 inches [1667 mm]	40.2 inches [1021 mm]
B. Width	- 28.6 inches [727 mm]	
C. Height	- 48.8 inches [1240 mm]	
D. Conveyor Bed Height	- Adjustable up and down from factory set height of 24.6 inches [625 mm]. Refer to Box Height Capacity Chart as affected by conveyor bed height, page 4, for further specifications.	
E. Weight	- 330 pounds [150 kg] uncrated 420 pounds [190 kg] crated	

(Specifications continued on next page.)

3) Operating Rate:

Up to 12 boxes per minute depending on box size, weight, and operator capability.
Higher rates are possible through box size range of fixed size adjustments provided.

4) Operating Conditions:

Use in dry, relatively clean environments at 40° to 120° F [4.4° to 48.9° C] with clean, dry boxes.

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 or 48 mm maximum.

7) Tape Roll Diameter:

Up to 14 inches [355.6 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.

9) Box Weight and Size Capacities:

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

B. Box size:

	MINIMUM	MAXIMUM
Length -	6.0 inches or 150 mm	unlimited
Width -	5.6 inches or 140 mm	20.7 inches or 525 mm
Height -	*5.2 inches or 130 mm	**19.8 inches or 500 mm

* Minimum box height of 4 inches or 100 mm can be attained by removing knife guards and reducing height of top taping head bumpers as discussed on page 23.

** Maximum box height of 26 inches or 660 mm can be attained by using Auxiliary Tape Roll Mount Attachment, P/N 78-8017-9417-9, on bottom taping head and lowering roller conveyor bed as discussed on page 21.
Refer to Box Height Capacity Chart as affected by conveyor bed height, page 4, for further specifications.

(Specifications continued on next page.)

Box Weight and Size Capacities (Continued)

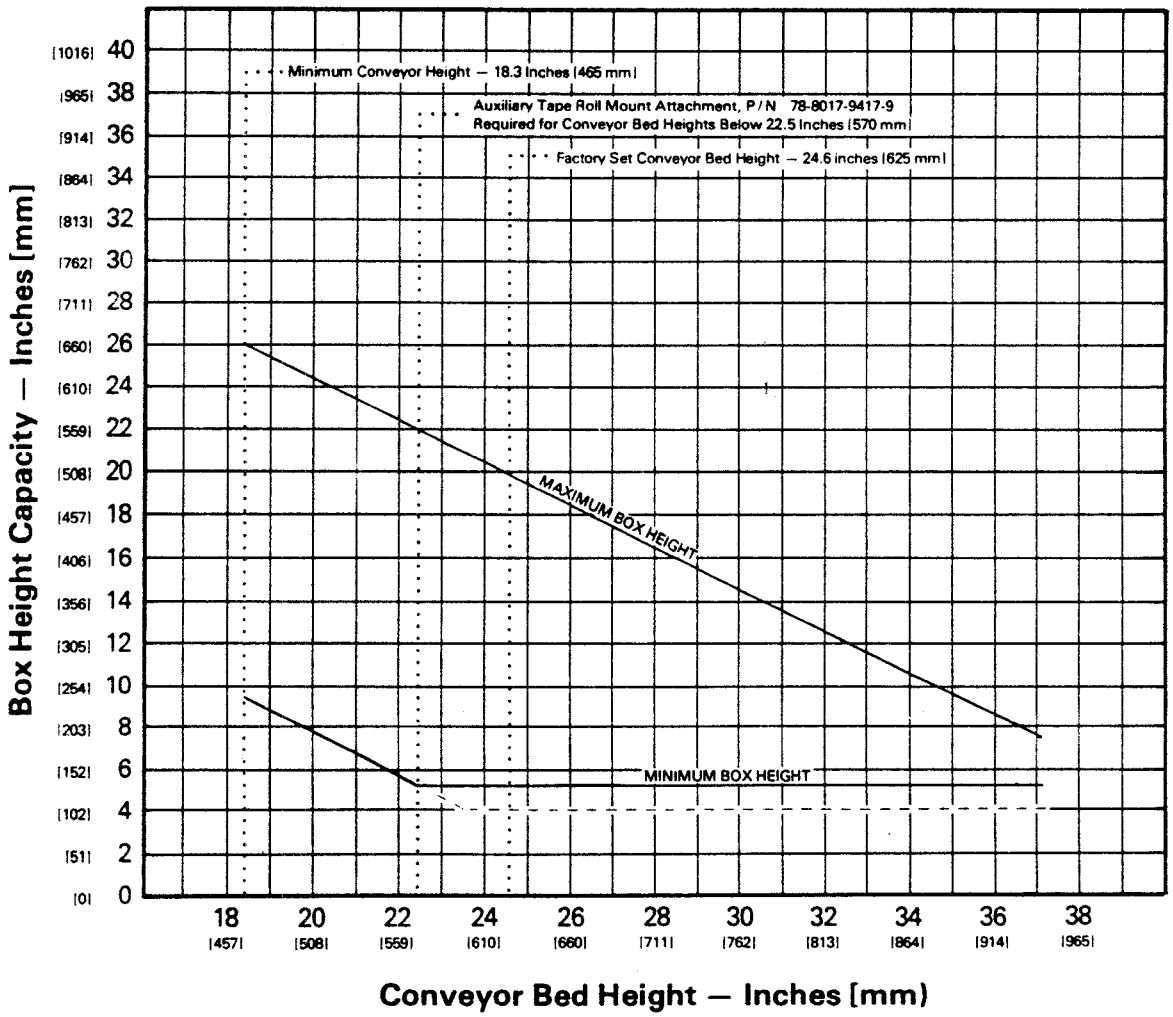
NOTE: The Box Sealer can accommodate most boxes within the size range listed above. However, if the box length (in direction of seal) to box height ratio is less than .5, several boxes should be test run to assure proper machine performance.

DETERMINE THE BOX LIMITATIONS BY COMPLETING THIS FORMULA:

$$\frac{\text{BOX LENGTH IN DIRECTION OF SEAL}}{\text{BOX HEIGHT}} \quad \text{MUST BE GREATER THAN} \quad .5$$

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

10) Box Height Capacity As Affected By Conveyor Bed Height



SET-UP INSTRUCTIONS

It is recommended that the Box Sealer be set-up and tried before placing it in the production line. This approach will allow your thorough review and familiarization with the unit before subjecting it and operating personnel to a production situation 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 Box Sealer, as well as for learning the operating functions. 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 Box Sealer.

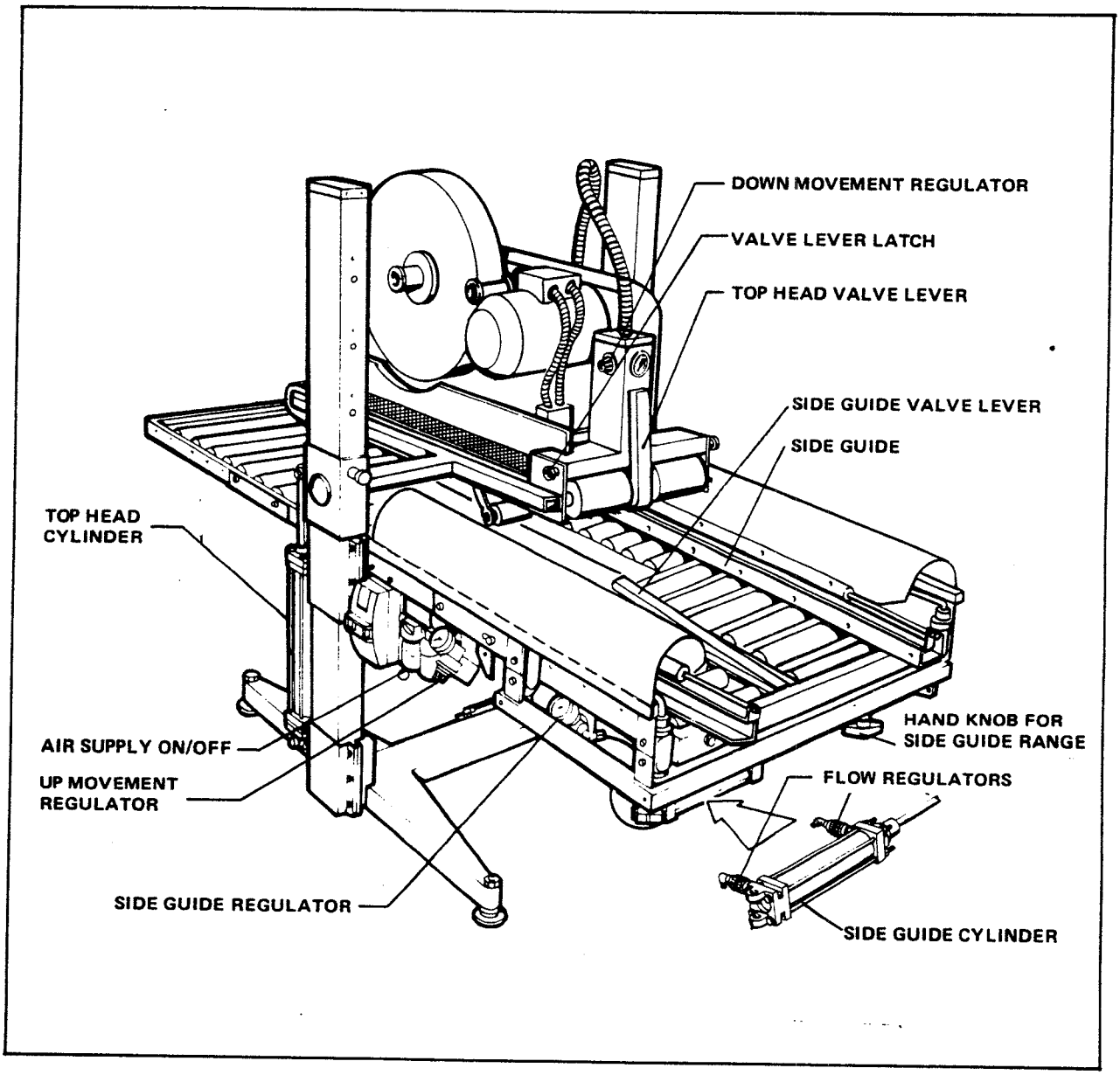


FIGURE 1 SET-UP INSTRUCTIONS - BOX SEALER COMPONENTS - LEFT FRONT VIEW

INFEED AND DISCHARGE CONVEYORS

The infeed and discharge conveyors are folded down for shipment purposes, as shown in figure 2 and using figures 3-5 as a guide, should be erected as follows:

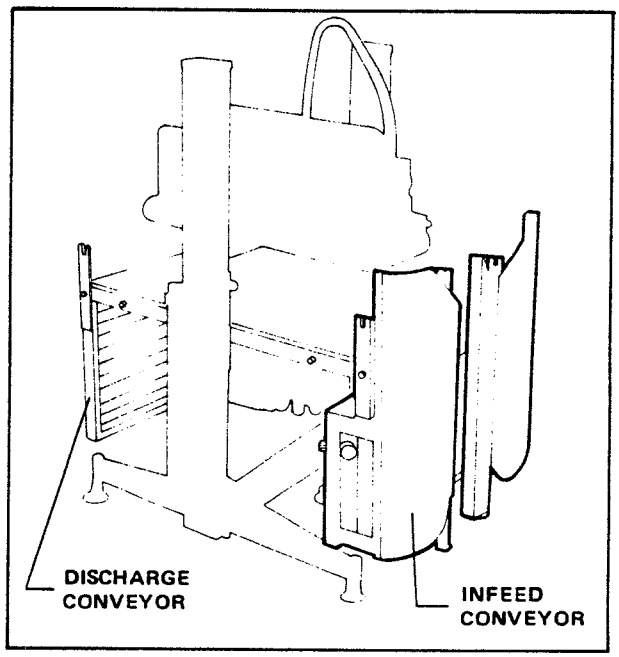


FIGURE 2 - INFEED & DISCHARGE CONVEYOR SET-UP

DISCHARGE CONVEYOR

Loosen the two M8 x 20 socket head screws on each side of the conveyor frame. The conveyor can then be pivoted up with the slotted brackets inserted under the heads of the inside screws. Tighten screws to hold conveyor in erected position.

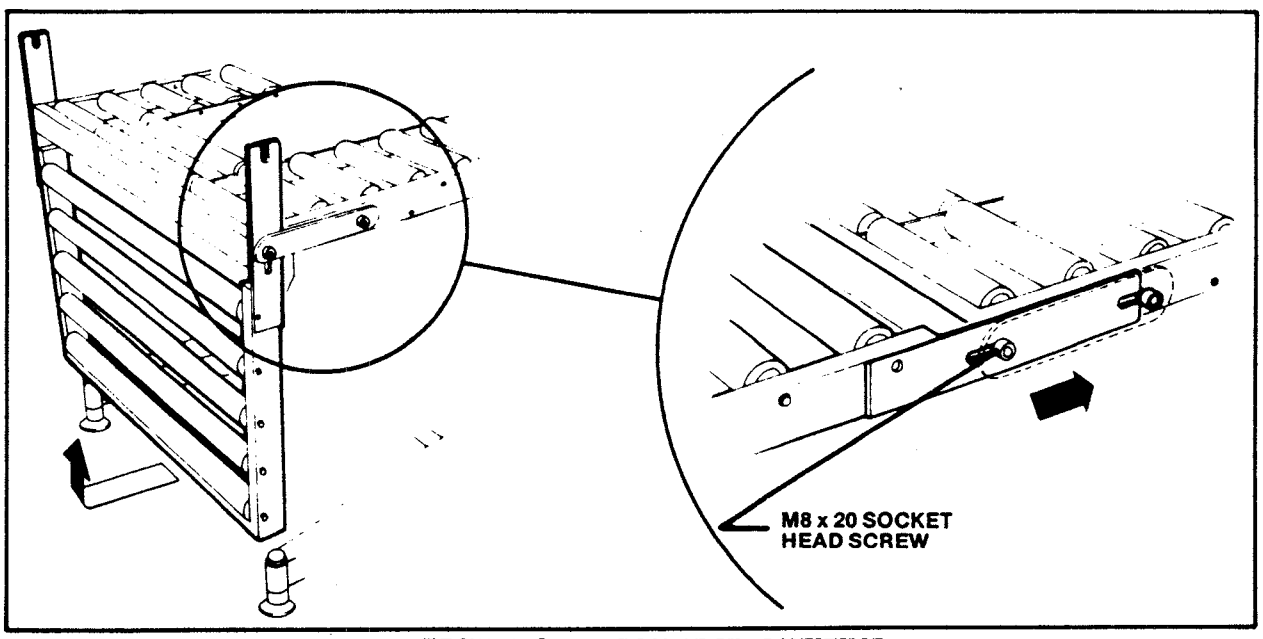


FIGURE 3 - DISCHARGE CONVEYOR

INFEED CONVEYOR - Before erecting the infeed conveyor, it is necessary to open the side guides which are shipped in the closed position to minimize crate size. Manually open side guides by lifting both simultaneously allowing them to pivot to the open position.

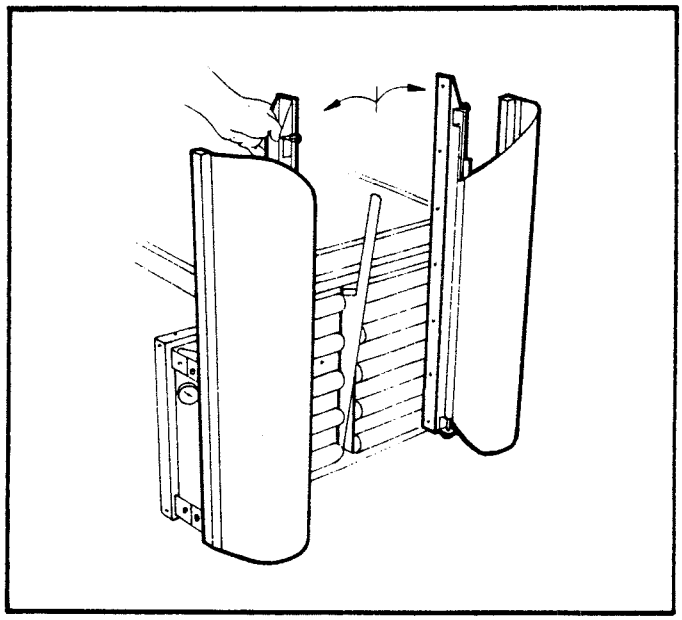


FIGURE 4 - INFEED SIDE GUIDES

Loosen the two M8 x 20 socket head screws on each side of the conveyor frame. The infeed conveyor can then be pivoted upwards, the slotted brackets inserted under the heads of the inside screws, and held in place by tightening screws. If resistance is felt when pivoting the conveyor up, check to be sure that air tubing on underside of infeed conveyor is not catching on bottom taping head.

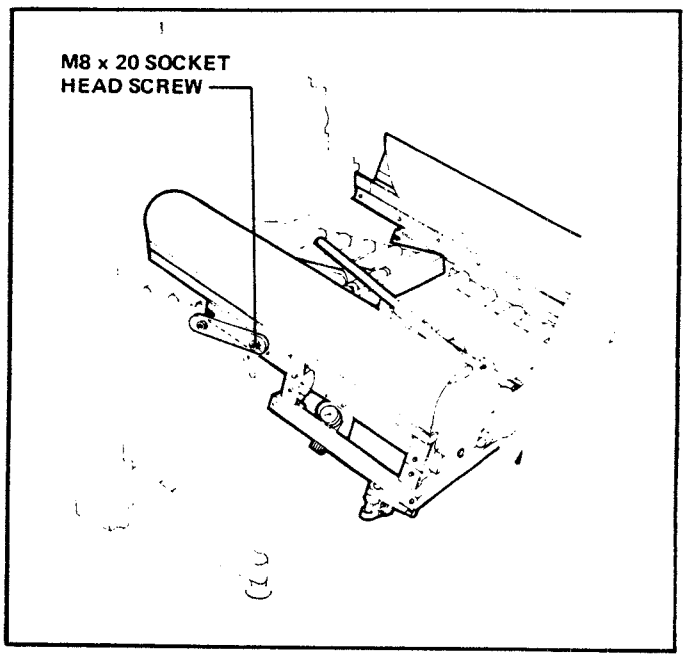


FIGURE 5 - INFEED CONVEYOR SET-UP

MACHINE LEVELING

The base is equipped with four leveling pad feet, as shown in figure 6, 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 by 1/4 turn 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.

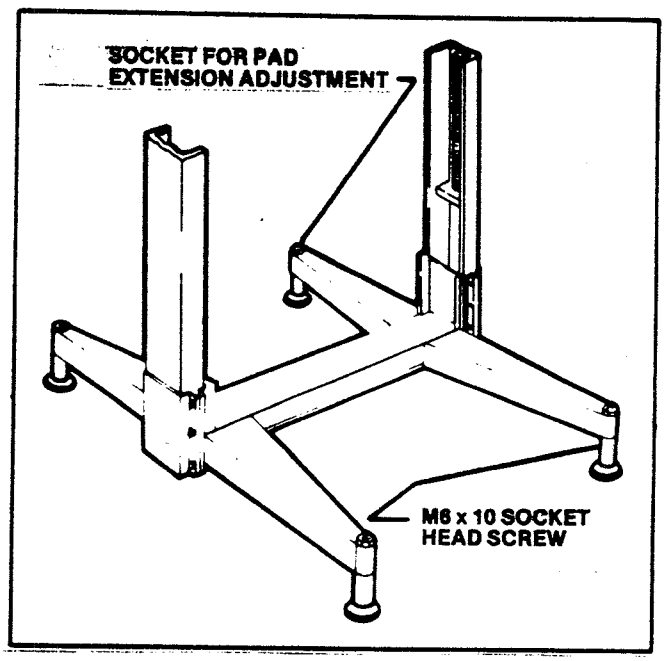


FIGURE 6 - MACHINE LEVELING

ELECTRICAL CONNECTION

The electrical control box, shown in figure 7, contains the "ON-OFF" switch with pre-set circuit breaker and can be located on either 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, 5 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.

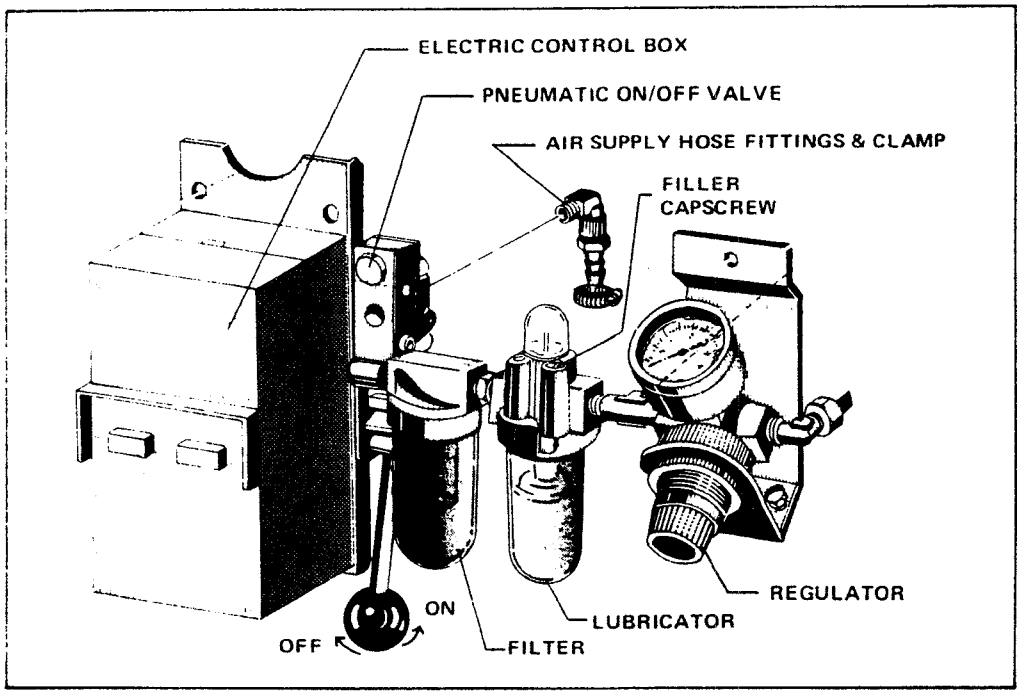


FIGURE 7 - ELECTRICAL - PNEUMATIC CONNECTIONS

PNEUMATIC CONNECTION

The Box Sealer requires a 70 PSIG [584 kPa], 2.5 SCFM [4.25 m^3/h] compressed air supply. As illustrated in Figure 7 , an on/off valve, filter, lubricator, and regulator are provided to service the air supply.

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 inner 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 1/8-27 NPT female threads.

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 back, off when the lever is pulled forward. Always turn the valve off by pulling the lever forward when the air supply line is being connected or disconnected.

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.

Remove all packaging materials and tools from the machine. Turn the valve off by pulling the hand lever forward, and connect the air line. Check that the air lubricator bowl is filled before the air supply is energized. Push the hand lever back to energize the pneumatic components.

PNEUMATIC COMPONENT CONTROLS

In addition to the hand lever operated on/off valve described in the preceeding "Pneumatic Connection" section, the pneumatic components have several controls and settings which will be covered in this section.

To provide independent adjustment of the side guide and top taping head movements, the air supply is routed through the main filter-lubricator assembly and then split into two separate circuits. Both the side guide and top taping head circuits have controls and settings as follows (refer to figures 8 - 11).

NOTE: All air pressure regulators discussed below have a red lock ring behind the adjustment knob, as shown in figure 8. 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.

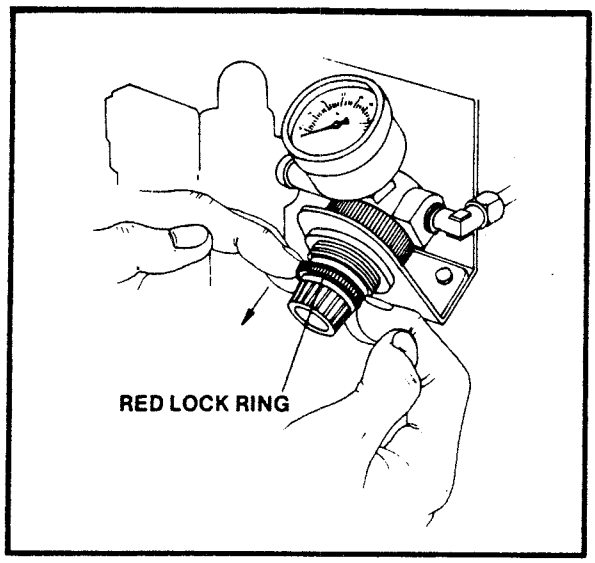


FIGURE 8 - REGULATOR LOCKING RING

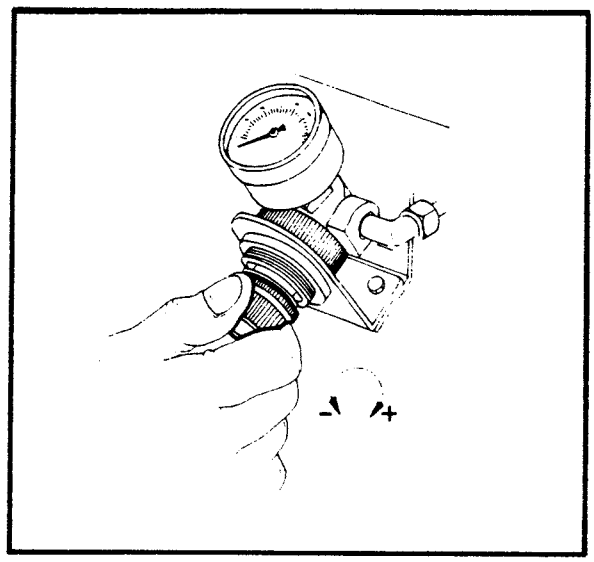


FIGURE 9 - PRESSURE REGULATOR

SIDE GUIDE MOVEMENT CIRCUIT

1) Air Pressure Regulator (Item 1, Fig. 10) - Set nominally at 50 PSIG [3.5 Kg/cm^2], but adjust according to weight of the boxes being sealed to provide adequate pressure to positively center the boxes, but low enough to allow easy pushing of the boxes under the top taping head. This operator function takes place with the side guides pressing against box.

]) Air Cylinder Flow Regulator (Refer to Figure 1) - Flow regulators are located on the ports of the air cylinder that powers the side guides. These control the speed with which the side guides close and open. The regulator on the clevis end of the cylinder controls the closing speed and the regulator on the rod end of the cylinder controls the opening speed. The movement speed is decreased by screwing the regulator knurled collar towards the cylinders, increased by screwing the regulator knurled collar away from the cylinder.

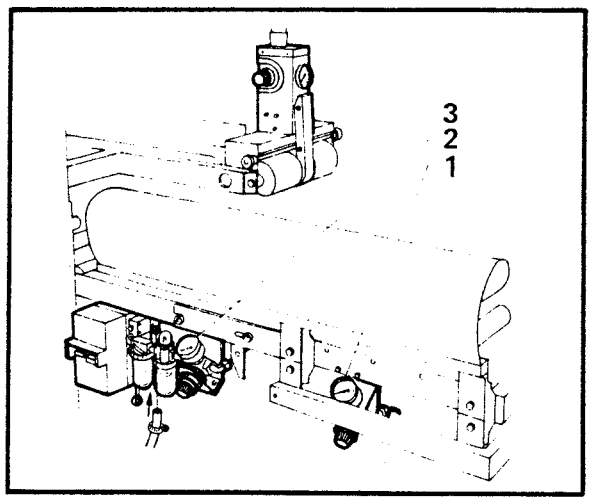


FIGURE 10 - PNEUMATIC REGULATORS

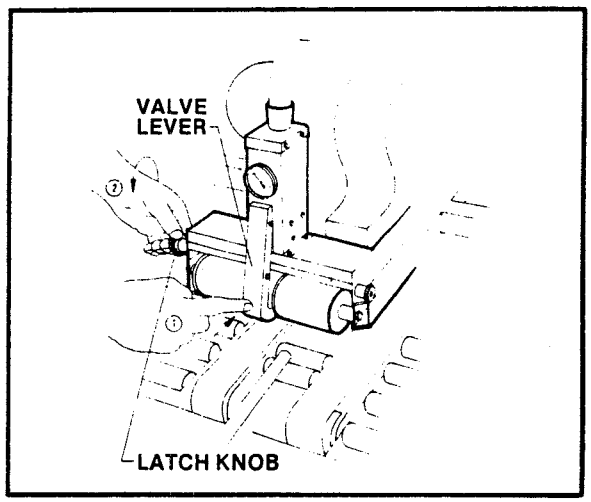


FIGURE 11 - VALVE LEVER LATCH

TOP TAPING HEAD MOVEMENT CIRCUIT

1) "Up" Movement Air Pressure Regulator (Item 2, Figure 10) - Set at 70 PSIG [5 Kg/cm^2] to power the "up" movement of the top taping head.

2) "Down Movement Air Pressure Regulator (Item 3, Figure 10) - Set nominally at 25 PSIG [1.75 Kg/cm^2] to control "down" movement of top taping head and the top taping head pressure exerted against the box. The regulator setting is changed as necessary for the boxes being sealed to provide adequate top taping head pressure against the box top to positively convey the boxes through the machine. If the boxes stop or hesitate while being conveyed, decrease the regulator pressure which will increase the top taping head pressure on the box for more friction between the box and drive belts. Adjust setting as necessary to get continuous movement of boxes through machine.

   For boxes which are fully packed with products that support the top flaps, the adjustment of this regulator is not critical since the boxes can support the pressure of the top taping head at a wide range of regulator settings. However, if underfilled or fragile boxes are being sealed, this regulator can be used to set the top taping head pressure to a minimum that is still adequate to positively convey the box and to prevent damage of boxes.

TOP TAPING HEAD VALVE LEVER LATCH (Refer to Figure 11)

To hold the top taping head at the fully raised position for tape threading and maintenance, a latch is provided to hold the valve lever closed. To engage the latch, manually rotate the knob (2) on either side of the valve lever forward and hold there, manually depress valve lever (1), and then release knob. Top taping head will then be held at the fully raised position. To release latch, manually rotate the knob forward and then release. Top taping head will then decend.

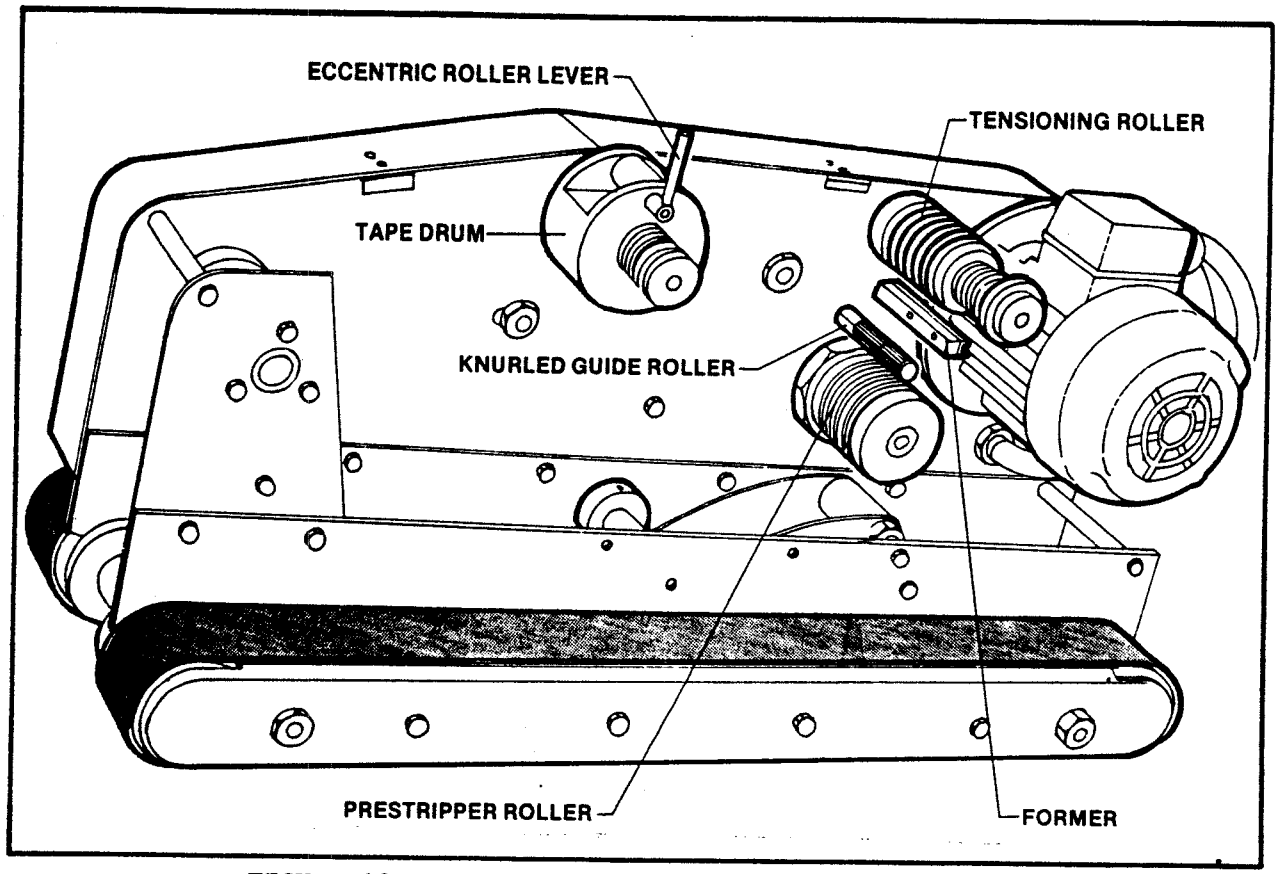


FIGURE 12 - TAPE SUPPLY AND CONTROL COMPONENTS

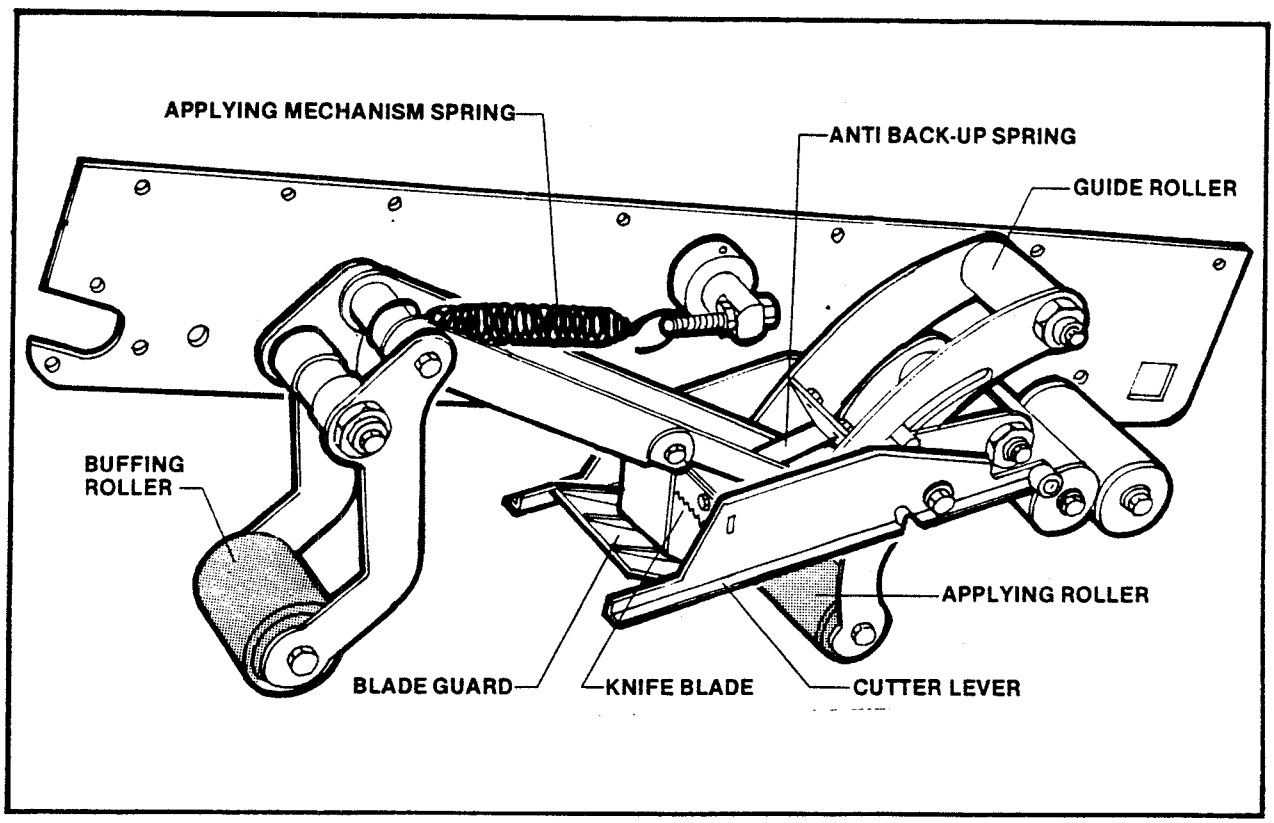


FIGURE 13 - TAPE APPLYING MECHANISM

TAPING HEAD FUNCTIONS

The Box Sealer utilizes two unique taping heads which perform two primary functions:

A. Application of C-shaped tape seals by box actuated mechanism.

B. Conveyance of box through tape applying mechanism by motor powered drive belts.

To clarify and provide a thorough discussion of the taping heads and their functions, the following sections initially discuss the tape applying components followed by the box conveying components.

TAPE APPLYING COMPONENTS

Figures 12 and 13 illustrate the tape applying components utilized on the top and bottom taping heads. The tape supply and control components are readily visible on both the taping heads. The tape applying mechanism is somewhat hidden between the taping head side plates and drive belts. Visually locate these components on both the top and bottom taping heads of the Box Sealer.

CAUTION - IMPORTANT SAFETY NOTES

1) BOTH THE TOP AND BOTTOM TAPING HEADS UTILIZES 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, 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. 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. MACHINE DAMAGE OR OPERATOR INJURY CAN POTENTIALLY RESULT.

TAPE LOADING

The taping heads have been pre-set to accommodate 2 inch or 48 mm wide tape rolls. To apply 1-1/2 inch or 36 mm or 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 were provided with the spare parts and tools included with the Box Sealer. Obtain these for continued use in the tape loading operation. For operator assistance, a threading diagram has been applied to 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 until the operator becomes thoroughly familiar with the tape loading operation.

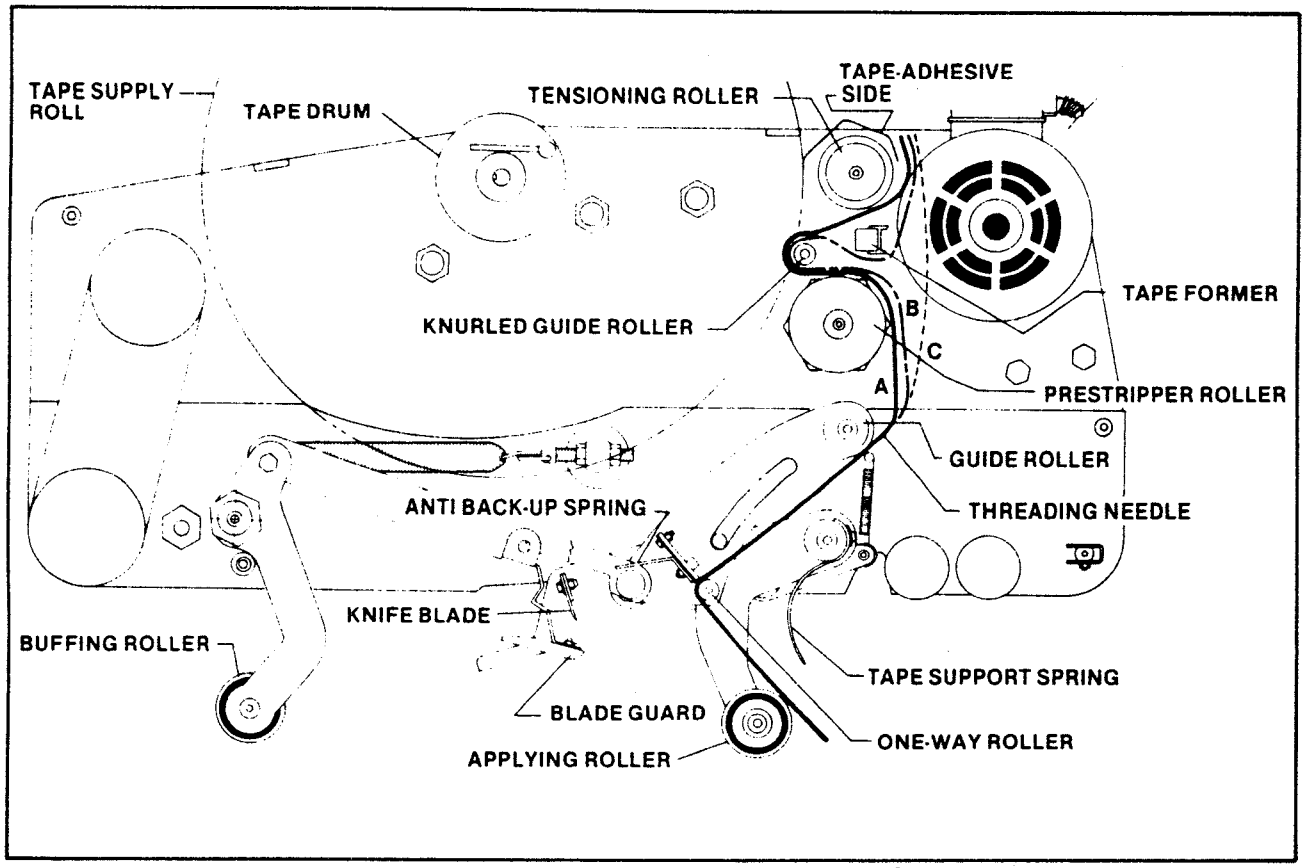


FIGURE 14 - TAPE THREADING DIAGRAM - TOP TAPING HEAD - LEFT SIDE VIEW

TAPE LOADING - TOP TAPING HEAD

After taking note of the safety precautions outlined on the preceeding page, load the top taping head with tape as follows:

1) To load tape, it is first necessary to raise the top taping head. Utilize the top taping head lever latch to raise the top taping head to the fully raised position.

2) With the temporary threading needle already in position, as shown in figure 14, follow the tape loading procedure from figure 14C to complete the tape threading with this exception; thread tape around tensioning roller, former, knurled guide roller and prestripper roller in one of three paths depending on the type tape and application.

   Path A - For "Scotchpar" tapes: No's. 353, 355, 359, 3510, 3523, and 3533

   Path B - For "Scotchpar" tapes: No's. 371, 373 and 375

   Path C - Optional path to bypass prestripper roller for use with "Scotchpar" tapes and rigid boxes due to higher tape tension at the applying roller.

3) For subsequent tape loading operations, use the red plastic threading needle and follow the loading procedures from figure 14A to complete the tape threading.

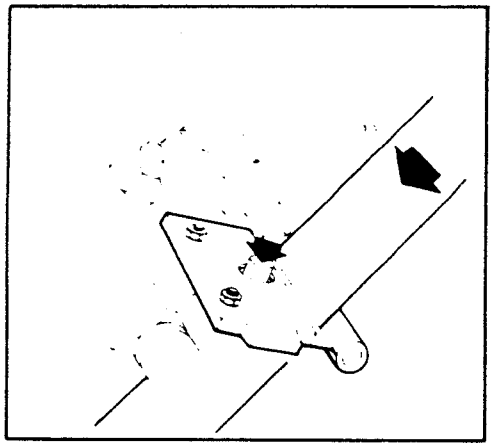


FIGURE 14A

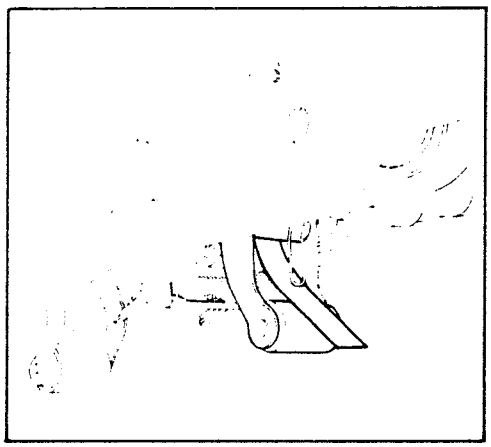


FIGURE 14B

Figure 14A - Insert red plastic needle downward between one-way roller and anti-back-up spring. Press spring away from roller by utilizing silver button or lever on spring as designated by arrow.

Figure 14B - Thread lower end of needle around front side of applying roller, as shown, between support spring and applying roller. Thread upper end of needle around guide roller and through path A, B or C as shown in figure 14.

Figure 14C - Turn eccentric roller lever inward to rest against tape drum shaft and place tape roll on drum to dispenser tape from bottom of roll toward guide roller with tape adhesive side up. Seat tape roll fully against back flange of drum and turn roller lever outward to secure tape roll. Adhere tape lead end to upper end of threading needle as shown.

Figure 14D - Manually turn tape roll to create slack tape while pulling threading needle through tape applying mechanism until needle is through and 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 buffing roller arm to expose knife blade and then passing tape across knife blade. Allow buffing roller to slowly return to its rest position after cutting tape so that tape end will stay on applying roller.

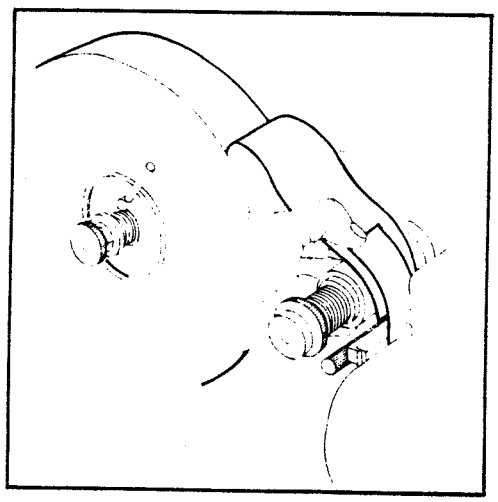


FIGURE 14C

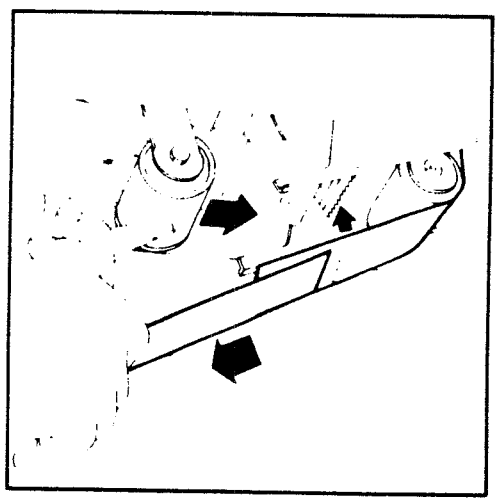


FIGURE 14D

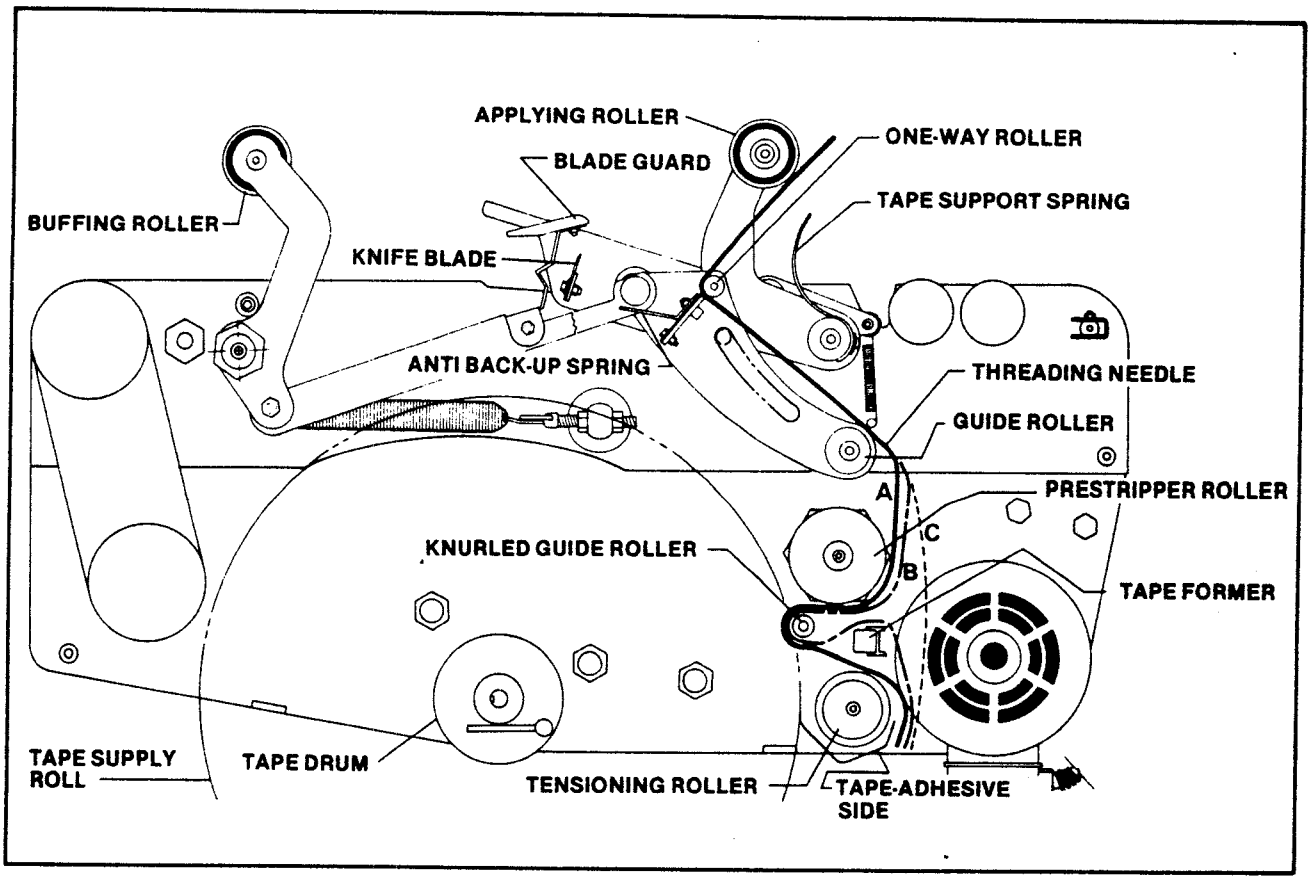


FIGURE 15 TAPE THREADING DIAGRAM - BOTTOM TAPING HEAD - LEFT SIDE VIEW

TAPE LOADING - BOTTOM TAPING HEAD

Noting the knife blade safety precautions, load the bottom taping head with tape as follows:

1) With the temporary threading needle already in position, as shown in figure 15, follow the tape loading procedure from figure 15C to complete the tape threading with this exception; thread tape around tensioning roller, former, knurled guide roller and prestripper roller in one of three paths depending on the type tape and application.

   Path A - For "Scotchpar" tapes: No's. 353, 355, 359, 3510, 3523, and 3533

   Path B - For "Scotchpro" tapes: No's. 371, 373 and 375

   Path C - Optional path to bypass prestripper roller for use with "Scotchpar" tapes and rigid boxes due to higher tape tension at the applying roller.

2) For subsequent tape loading operations, use the red plastic threading needle and follow the loading procedures from figure 15A to complete the tape loading.

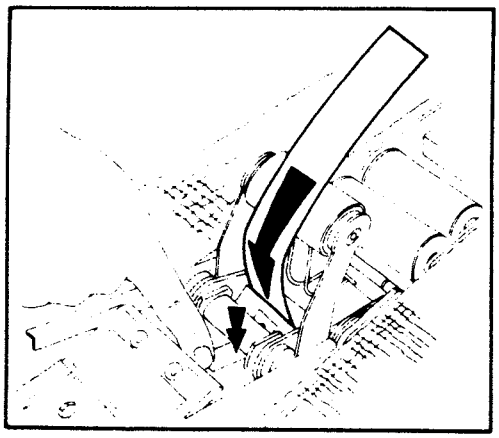


FIGURE 15A

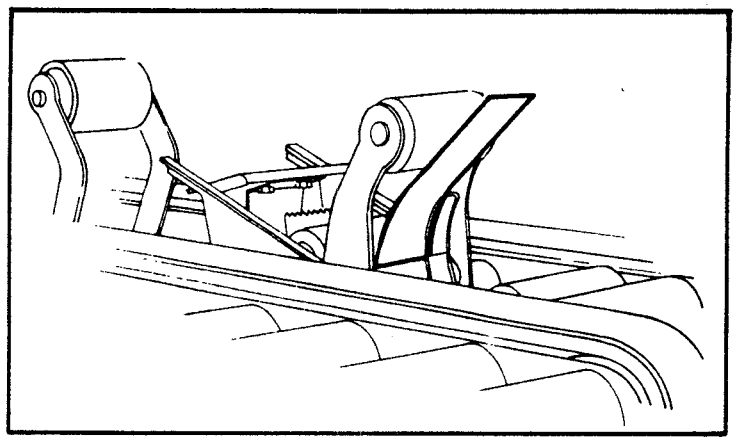


FIGURE 15B

Figure 15A - Bottom taping head is threaded in same manner as top taping head, except, insert red plastic needle from top downward between one-way roller and anti-back-up spring. Pivot spring away from roller by lightly pushing on lever as designated by arrow.

Figure 15B - Thread upper end of needle between support spring and applying roller as shown. Thread lower end of needle around guide roller as shown in figure 15 and through path A, B or C.

Figure 15C - Place tape roll fully onto tape drum to dispense tape toward tensioning roller adhesive side down. Turn eccentric roller lever outward to secure tape roll. Adhere tape lead end to lower end of threading needle as shown.

Figure 15D - Manually turn tape roll to create slack tape while pulling threading needle through tape applying mechanism until needle is through and 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 buffing roller arm to expose knife blade and then passing tape across knife blade. Allow buffing roller to slowly return to its rest position after cutting tape so that tape end will stay on applying roller.

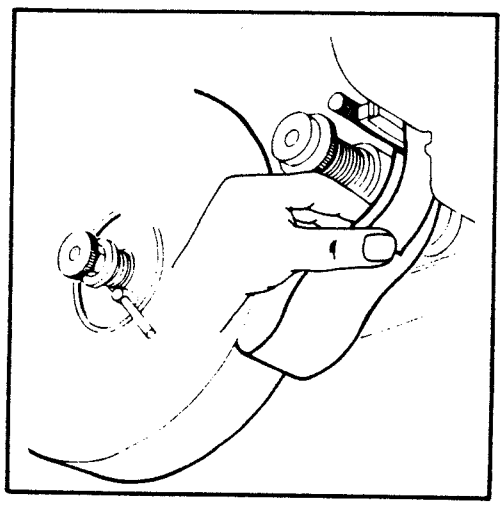


FIGURE 15C

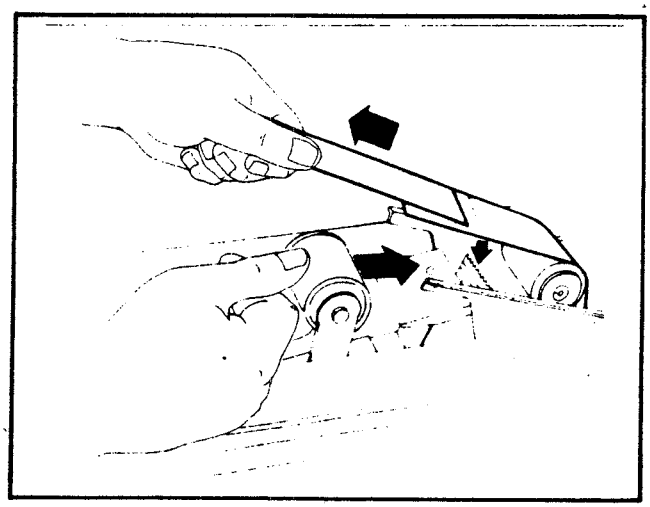


FIGURE 15D

PNEUMATIC COMPONENTS FUNCTIONS

The air supply powers movement of the side guides and top taping head to automatically adjust the Box Sealer to the box size being sealed as follows (refer to Figures 16-18):

1) A valve lever in the center of the infeed roller conveyor actuates movement of the side guides. When the operator pushes a box onto the infeed conveyor, as shown in figure 16, the lever is depressed causing the air cylinder powered side guides to move inward, therefore centering the box.

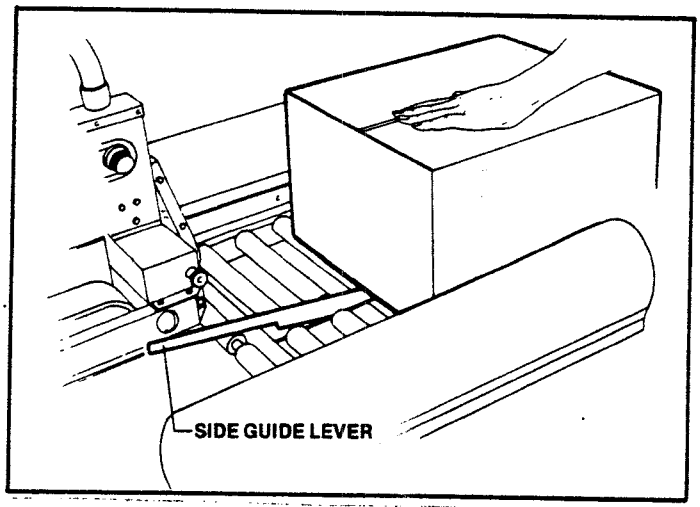


FIGURE 16 - SIDE GUIDE VALVE LEVER

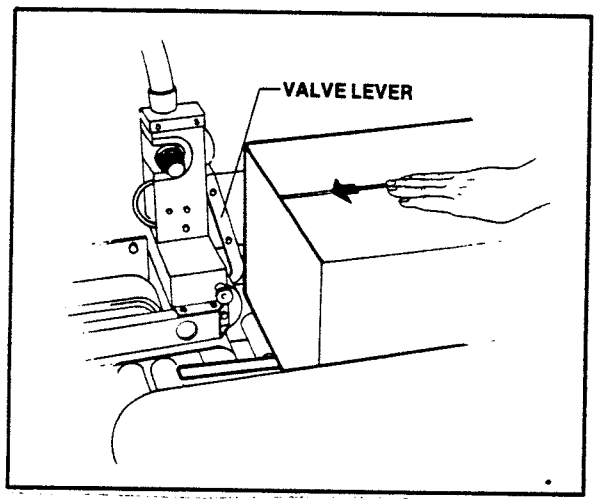


FIGURE 17-TOP TAPING HEAD VALVE LEVER

2) Once the box is centered by the side guides, the operator pushes the box against the valve lever on the top taping head, as shown in figure 16, causing the top taping head to be raised by two air cylinders. The top taping head will continue to rise above the box height so the operator can insert the box underneath the top taping head drive belts.

3) Once the box is pushed under the top taping head, the top taping head valve lever is released causing the top taping head to descend onto the box top, as shown in figure 18, allowing the drive belts to convey the box through the top and bottom taping heads for application of the tape seals.

4) As the box is conveyed through the machine, the side guide valve lever is released causing the side guides to return to their full open position, ready for insertion of the next box.

5) Once the box is conveyed from under the top taping head, the top taping head descends to its rest position, ready for insertion of the next box.

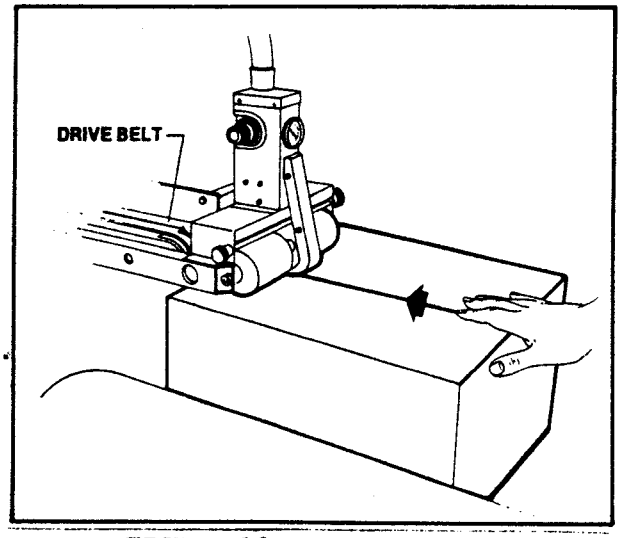


FIGURE 18 - DRIVE BELTS

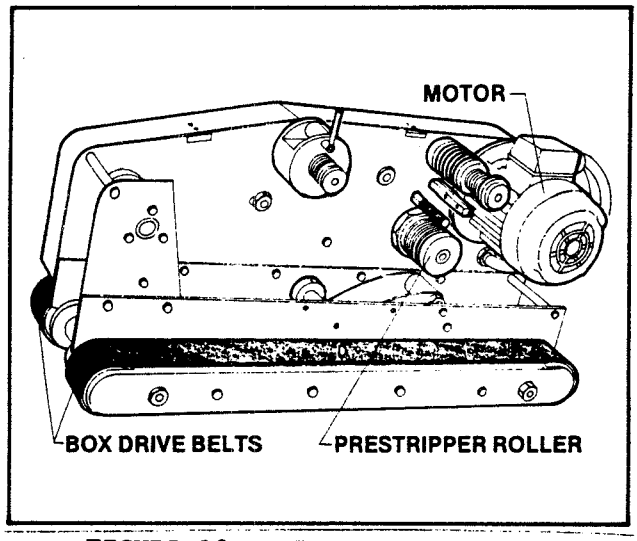


FIGURE 19 - UPPER TAPING HEAD DRIVE COMPONENTS

ELECTRICAL COMPONENT FUNCTIONS

The electrical supply powers, by means of a motor and timing belt drive on both the top and bottom taping heads, the box drive belts and tape prestripper roller shown in Figure 19 which perform the following functions:

1) A pair of box drive belts on both the top and bottom taping heads convey the box through the taping head components for application of the tape seals.

2) The tape prestripper roller helps pull tape from the tape supply roll so tape is presented to the applying rollers under low tension, thereby assuring a uniform tape seal.

At this point it is recommended that the side guide and top taping head valve levers be manually actuated to understand the functions described above. Depressing the side guide valve lever causes the side guides to close, releasing the valve lever causes the side guides to open. Depressing the top taping head valve lever causes the top taping head to rise, releasing the valve lever causes the top taping head to descend.

Once the pneumatic component functions are understood, it is recommended that the electrical supply also be turned on and pre-taped boxes fed through the Box Sealer following the pneumatic component sequence 1 through 5. This will insure that the operating sequence and powered component functions are understood.

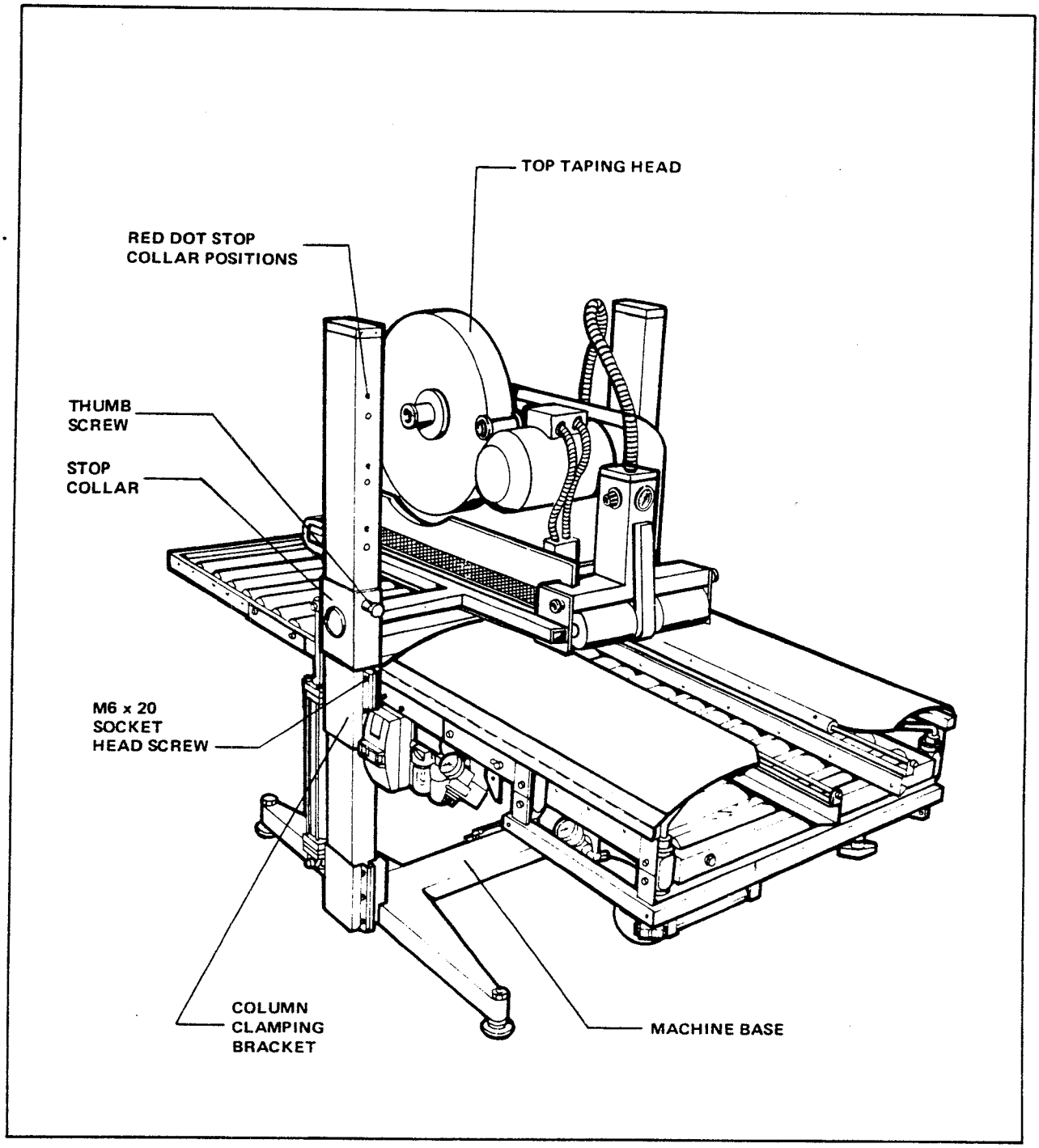


FIGURE 20 - CONVEYOR HEIGHT, BOX HEIGHT RANGE, AND BOX WIDTH RANGE

CONVEYOR BED HEIGHT LOCATION - The conveyor bed height can be located up and down on the two vertical frame columns to match production line conveyor heights, to present the boxes at a comfortable level for the operator, or to provide additional box height capacity. The setting is made as follows, but before proceeding, review the affect on box height capacity comments immediately following this set-up procedure (refer to Figure 6):

1) Raise top taping head and hold at fully raised position by means of top taping head valve lever latch (See "Pneumatic Component Controls" Section).

2) Completely loosen the thumb screw on the top taping head stop collar on each frame column so the collars move freely up and down.

3) Utilizing two additional personnel or blocking up conveyor to prevent it from dropping, loosen the six M6 x 20 socket head screws of the column clamping bracket on each side of the conveyorbed with socket wrench provided in the tool kit. Loosen only enough to allow movement of the conveyor bed up and down on the frame columns.

4) Raise or lower conveyor bed to desired height and measure on each side to insure that both sides have been raised or lowered equally. Measurements should be made from the top of the machine base to the conveyor bed rather than from the floor.

5) Secure the column clamping brackets against the frame columns by tightening the M6 x 20 socket head screws. Recheck measurements to be sure that each side of conveyor frame is equidistant from the machine base.

6) Top taping head can then be released to normal rest position.

BOX HEIGHT CAPACITY (as affected by Conveyor Bed Height)

The conveyor bed height discussed above also affects the box height capacity of the Box Sealer since the conveyor bed is being adjusted in relationship to the top taping head adjustment range as well as the base. Before making any adjustments of the conveyor bed height, review the box heights to be sealed and determine how the conveyor bed height will affect the capacity of the Box Sealer, by means of the specification chart on page 4, so the Box Sealer can be properly set-up for your box sealing application:

1) As shown by the chart, if the conveyor bed is lowered more than 2 inches [50.8 mm], the maximum tape roll diameter capacity for the bottom taping head is reduced. Therefore, the Auxiliary Tape Roll Mount Attachment, P/N 78-8017-9417-9, described in attachments section of manual should be used to reposition the tape roll. With this attachment, the conveyor bed can be lowered to a height of 18.3 inches [465 mm] to provide a maximum box height capacity of 26 inches [660 mm].

2) Also, if the conveyor bed height adjustments, necessary to provide the box height capacity required, makes it impossible to utilize the adjustment to match production line conveyor heights, it is recommended that the operation conveyor bed height be established by placing the Box Sealer on a pedestal.

BOX HEIGHT RANGE - The operating range of the top taping head can be adjusted to minimize its movement to the range of box heights being sealed. Therefore, the operating speed can be significantly increased. The range is established by limiting the lowest position of the top taping head through positioning the top taping head stop collars shown in Figure 21 at different levels on the frame columns. After establishing the minimum box height to be sealed, position the collars as follows:

1) Completely loosen the thumb screws on both top taping head stop collars.

2) Feed the minimum height box into the Box Sealer and while it is still being conveyed under the top taping head, shut off the electrical power so the box is stopped under the top taping head thereby establishing the lowest position required for your application.

3) Raise the stop collars to the red dot position just below the stopped position of the top taping head.

4) Align the top edge of the stop collars with the center of the red dot and tighten the thumb screw so it fits into the hole on the frame column.

5) Be sure to adjust both stop collars.

6) Turn on the electrical power to complete conveying of the box through the Box Sealer. The top taping head will then descend to the lowest position necessary to accommodate your range of box heights.

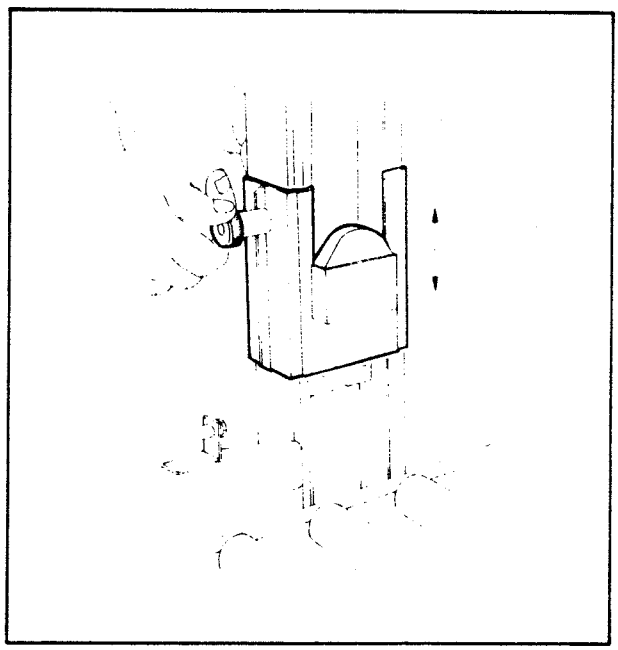


FIGURE 21 - STOP COLLAR

BOX HEIGHT CAPACITY - Minimum - The minimum box height capacity can be reduced to 4 inches or 100 mm by removing the blade guard assembly (figure 22) from both taping heads and removing the lower portion (cut off at horizontal mark) of the rubber bumper (figure 23) on both side columns of the main frame.

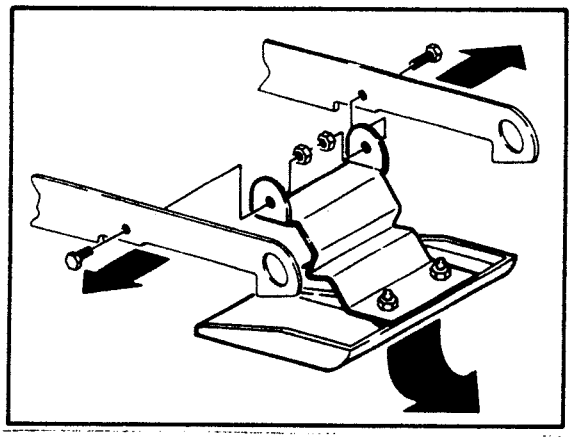


FIGURE 22 - BLADE GUARD

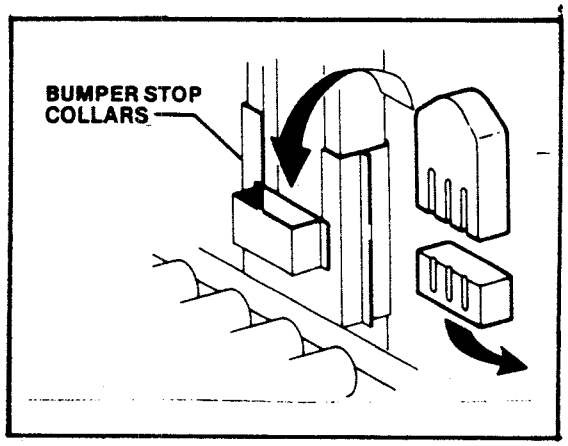


FIGURE 23 - RUBBER BUMPER

BOX HOLDING FEATURE - The side guides can be used as an effective holder for empty boxes to facilitate their packing. Once the operator squares up the box and folds the bottom flaps, it can be placed on the infeed conveyor to actuate the closing of the side guides. The side guides will then positively hold the empty box in an open condition for packing. Once the box is filled, the operator merely closes the top flaps and inserts the box under the top taping head for application of top and bottom tape seals. This feature makes the infeed conveyor a very effective box filling station which should be considered when determining the position of the Box Sealer in your production line.

BOX WIDTH RANGE - The operating range of the side guides can be reduced to minimize their movement to the range of box widths being sealed. Therefore, the operating speed can be significantly increased. The range is established by limiting the open position of the side guide air cylinder. After establishing the maximum box width, position the side guides as follows (refer to Figures 24 and 25):

1) Turn off the air supply by means of the hand lever operated on/off valve.

2) Loosen the hand knob, shown in figure 24, on the air cylinder rod which is located under the infeed conveyor.

3) Place the widest box to be sealed on the infeed conveyor between the side guides.

4) Manually move the side guides to within approximately 1 inch [25 mm] of each side of the box when the box is centered on the infeed conveyor, as shown in figure 25. Do not push against box sides as some clearance is necessary for feeding boxes onto infeed conveyor.

5) While holding side guides in this position, push hand knob to the right (away from air cylinder body) as far as possible and securely tighten.

6) The air supply can then be turned on to make the side guides operational in the range necessary for your box widths.

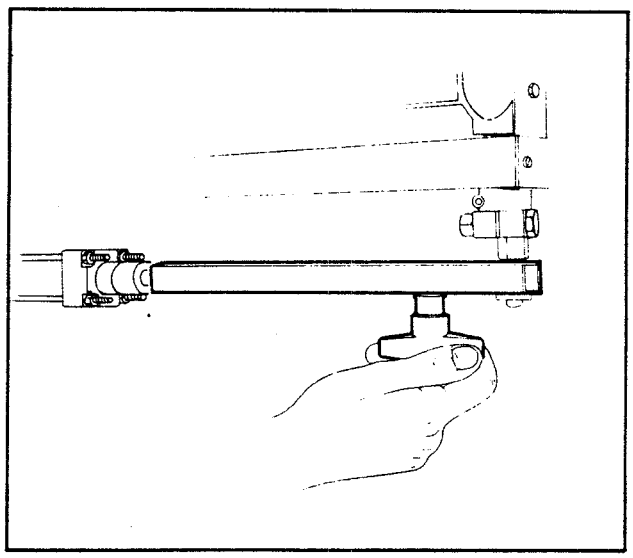


FIGURE 24 - HAND KNOB

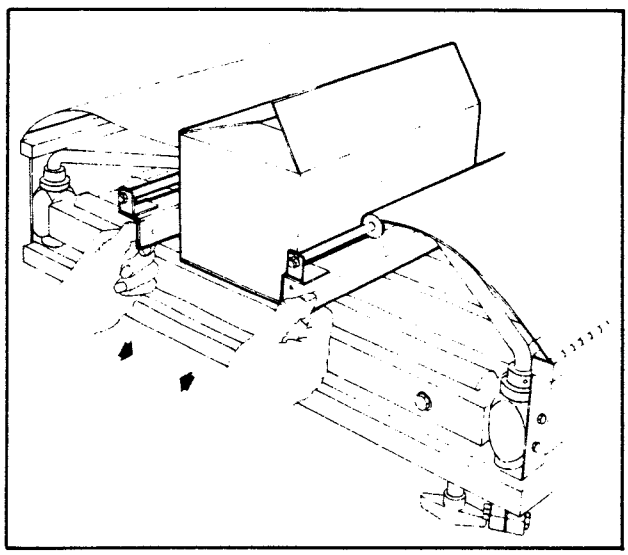


FIGURE 25 - SIDE GUIDES

ADJUSTMENT INSTRUCTIONS

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 26.
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.

2) TAPE WEB ALIGNMENT - Refer to Figure 27.
The tape drum assembly on each taping head is preset to accommodate 2 inch or 48 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:
a) Loosen jam nut or hand knob (figure 26) 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 jam nut or hand knob.
No other components require adjustment for tape web alignment.

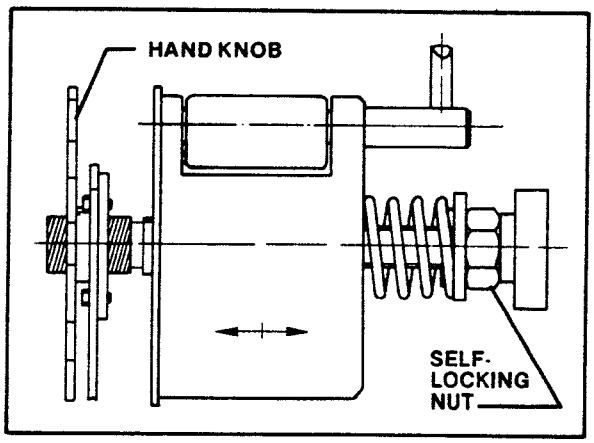


FIGURE 26

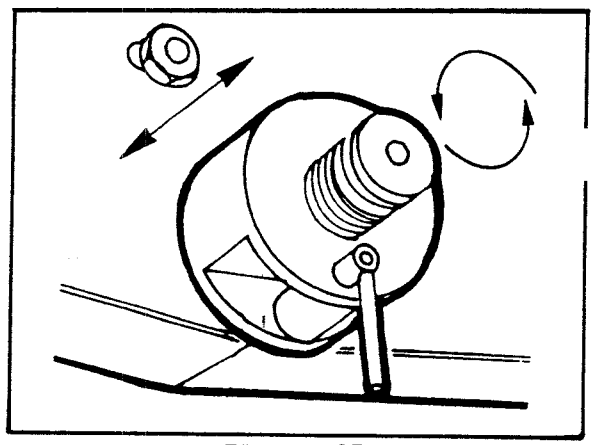


FIGURE 27

TENSIONING ROLLER ASSEMBLY

The tape web tension is controlled by the adjustment of the friction brake by means of the knurled nut (figure 28) which varies compression of the spring. Clockwise turning of the knurled nut increases the tape web tension, counter-clockwise turning decreases the tape web tension. Adjust as necessary to obtain consistent alignment of tape through the tape applying mechanism, consistent position of the tape end at the applying roller, and tight, uniform tape seals on boxes.

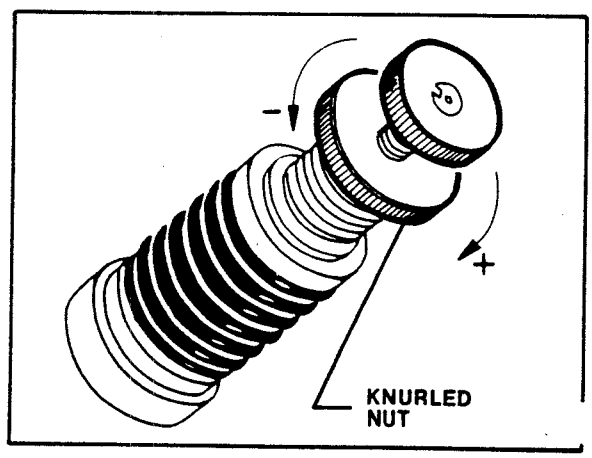


FIGURE 28

TAPE FORMER

Threading of "Scotchpro" tapes around the sharp corner of the former, as shown in figures 14 & 15, minimizes curling of the tape end at the applying roller. If the tape end curls away from the applying roller, increase the tape web tension by adjusting the tensioning roller until curling is minimized and the tape end is consistently and uniformly applied to the boxes.

The former can be turned 180° to utilize both sharp corners before replacement. Spare formers are included in the parts provided with the Box Sealer.

TAPE SUPPORT SPRING

The S-shaped tape support spring, shown in figures 14 & 15, 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, shown in figure 13, 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 29.

Increase spring pressure by adjusting mounting screw as shown in figure 30.

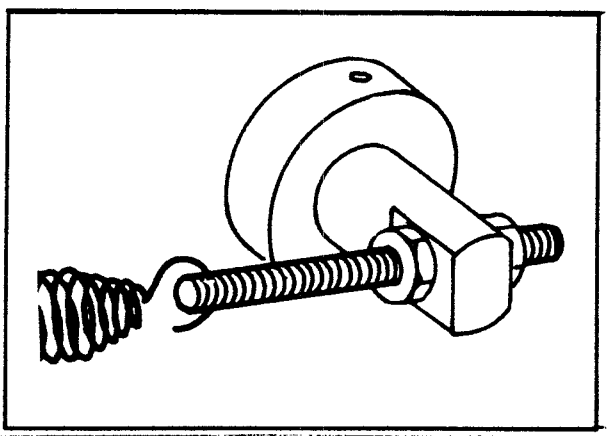


FIGURE 29

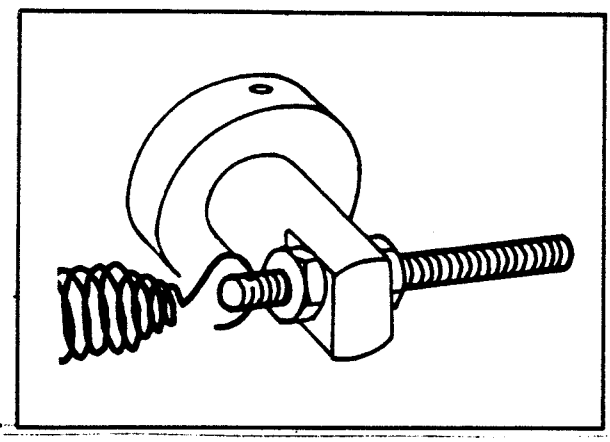


FIGURE 30

BOX DRIVE BELTS

The two continuously moving box drive belts, provided on both the top and bottom taping heads, convey boxes through the tape applying mechanism. The box drive belts are powered by the electric motor through a timing belt/roller chain transmission.

The only adjustment that might be required for these components during normal operation is tracking of the box drive belts. The box drive belts should run or track on the center of the pulleys at each end of the taping head. The idler pulleys on the infeed end of the taping head are mounted on pivoting shafts which are adjusted to obtain proper tracking of the box drive belts. Figure 31 illustrates the adjustment components which are the same for both taping head.

1) Loosen the jam nut on the adjustment.

2) Turning adjustment screw clockwise will pivot the idler pulley away from the rear drive pulley causing the drive belt to track toward the taping head side plate.

3) Turning adjustment screw counter-clockwise will pivot the idler pulley toward the rear drive pulley causing the drive belt to track away from the taping head side plate.

4) Adjust until the drive belt tracks on the center of the idler pulley and lock adjustment screw in place by tightening the jam nut.

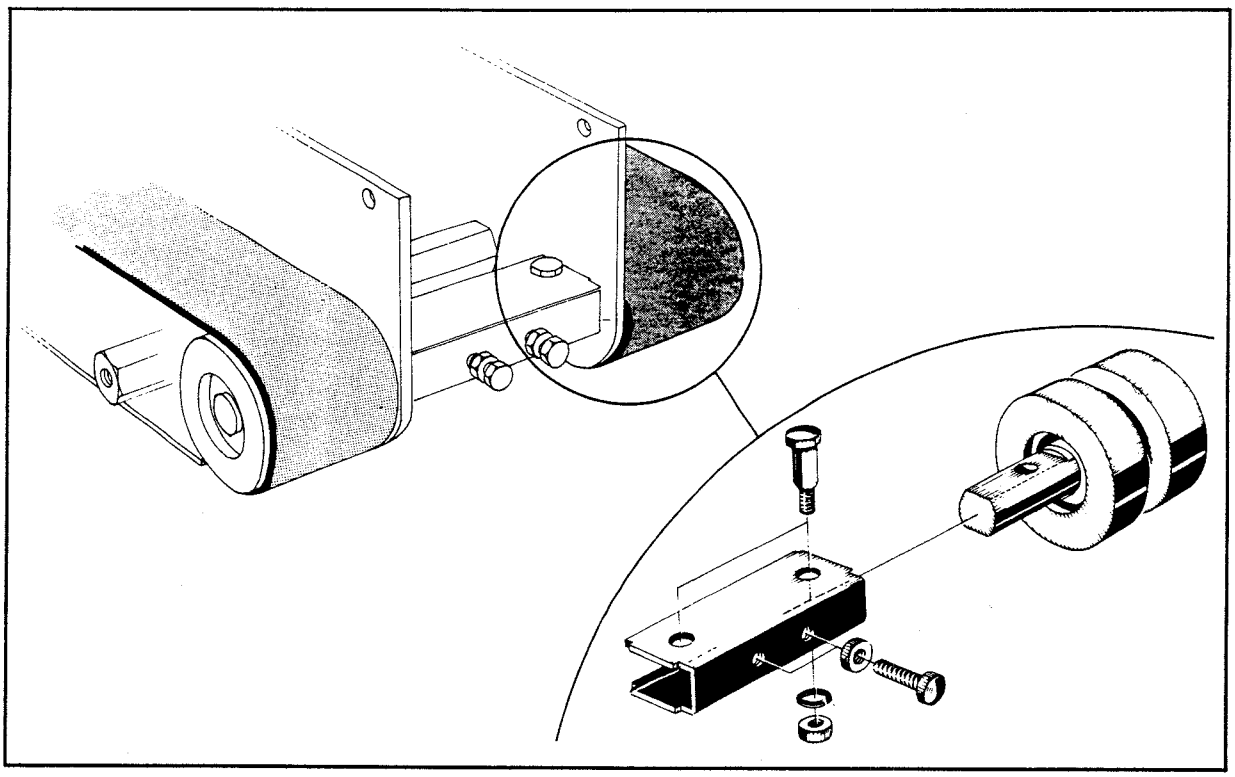


FIGURE 31 - BOX DRIVE BELTS - TAPING HEADS

MAINTENANCE

This Box 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.

CAUTION - IMPORTANT SAFETY NOTES

1) TURN OFF AIR AND ELECTRICAL POWER SUPPLIES BEFORE STARTING MAINTENANCE.

2) DISCONNECT POWER CORD FROM ELECTRICAL SUPPLY BEFORE STARTING MAINTENANCE.

3) IF DESIRABLE TO KEEP TOP TAPING HEAD RAISED FOR MAINTENANCE WORK, UTILIZE STOP COLLARS ON EACH FRAME COLUMN AT TOP RED DOT POSITION. BEFORE TURNING OFF AIR SUPPLY, RAISE TOP TAPING HEAD TO FULLY RAISED POSITION AND HOLD THERE BY MEANS OF TOP TAPING HEAD VALVE LEVER LATCH. POSITION BOTH STOP COLLARS AT TOP RED DOT POSITION BY MEANS OF THUMB SCREW. RELEASE TOP TAPING HEAD VALVE LATCH SO HEAD DESCENDS TO STOP COLLARS WHERE IT WILL BE MECHANICALLY HELD IN RAISED POSITION. AIR SUPPLY CAN THEN BE TURNED OFF BEFORE STARTING MAINTENANCE.

TOOL KIT

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

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

CLEANING OF THE MACHINE

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 Box 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. Never attempt to remove dirt by blowing it out with compressed air. This can cause the dirt to be blown inside the machine transmission, motor, and sliding surfaces. Gritty dirt in these areas can cause serious damage.

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 32. After filling, replace capscrew or bowl and securely tighten. Adjust socket head set screw in top of oiler, shown in figure 33, 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.

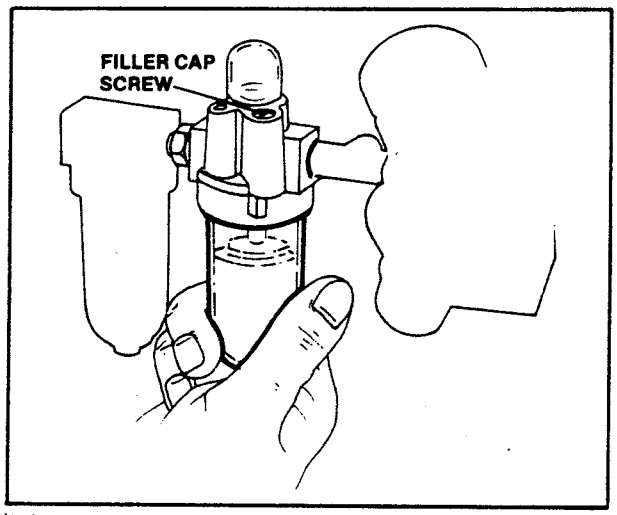


FIGURE 32 - AIR LINE LUBRICATOR

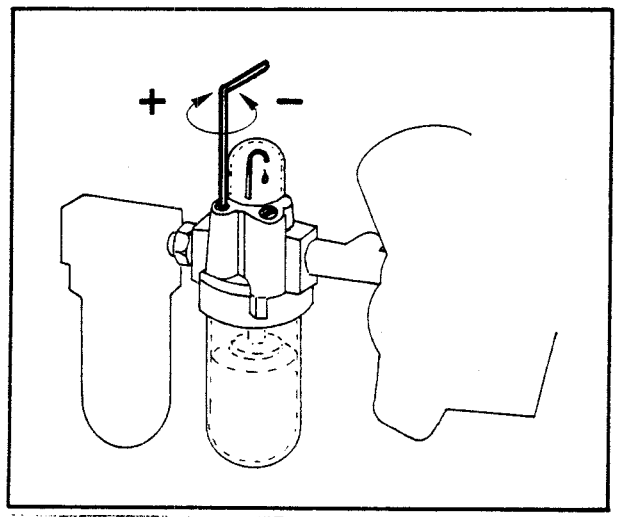


FIGURE 33 - AIR LINE OR REGULATOR

AIRLINE FILTER

Periodically check the air line filter, shown in figure 34, to drain water and clean as necessary. Do not allow the water to go above the filter element.

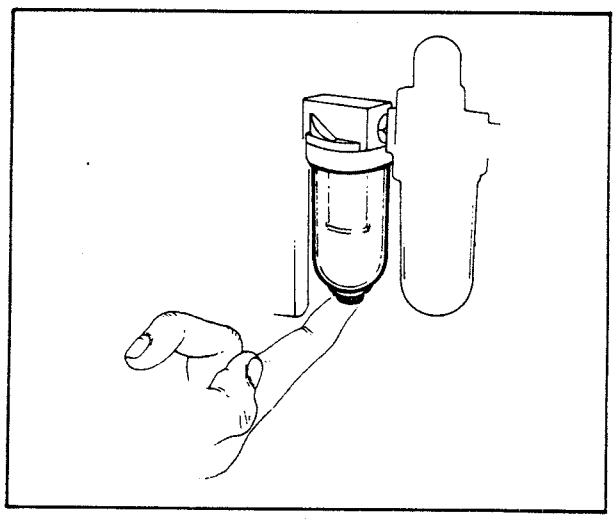


FIGURE 34 - AIR LINE FILTER

MECHANICAL LUBRICATION

Like most other equipment, the Box 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.

Figure 35 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 Box 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 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.

Be sure to wipe off excess oil and grease as it will attract dust and dirt which can cause premature 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.

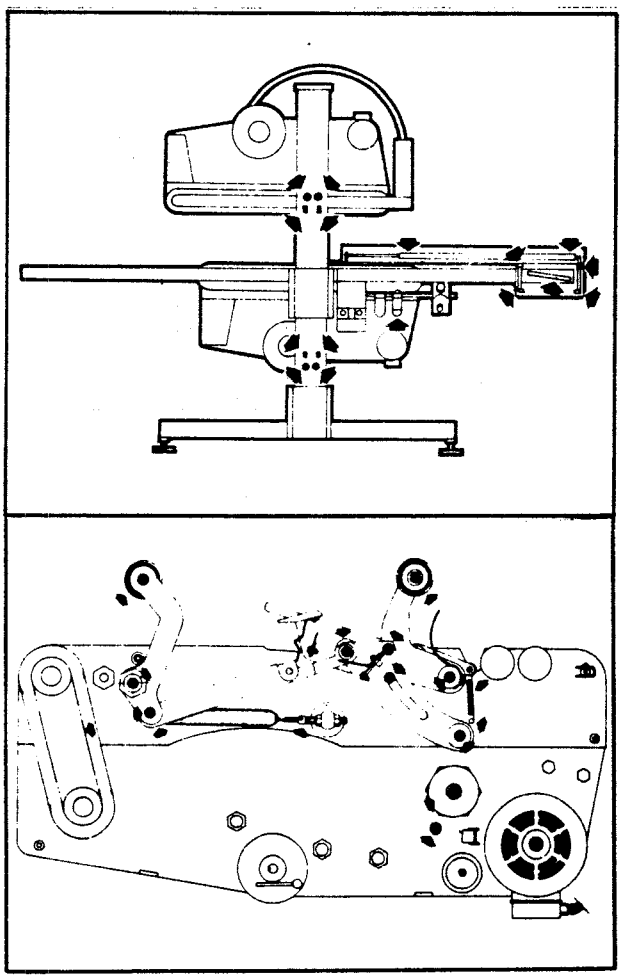


FIGURE 35 - LUBRICATION POINTS

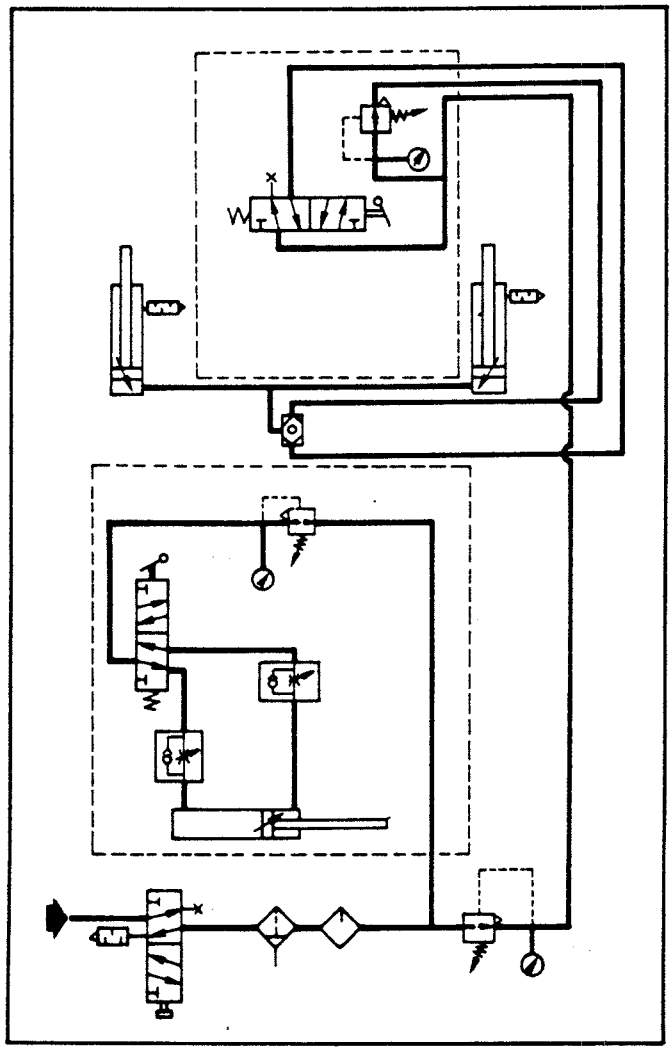


FIGURE 36

PNEUMATIC SCHEMATIC

Figure 36 illustrates the pneumatic system of the Box Sealer. Adjustments for the components are covered in the "Pneumatic Component Controls" and "Lubrication" sections. A similar pneumatic schematic is mounted on the machine.

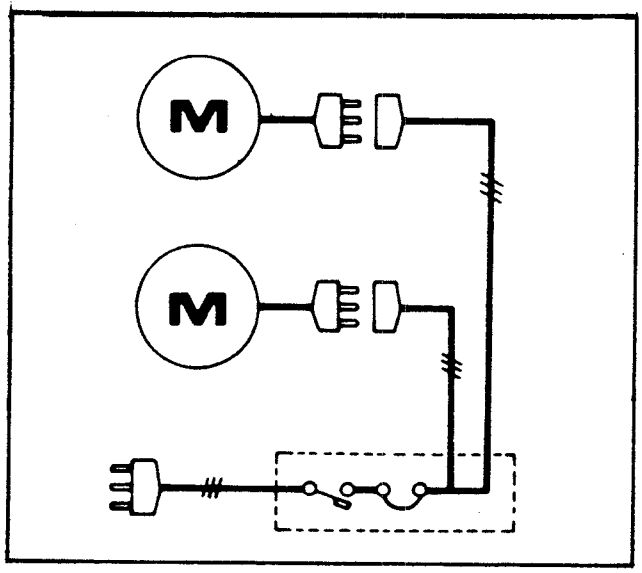


FIGURE 37

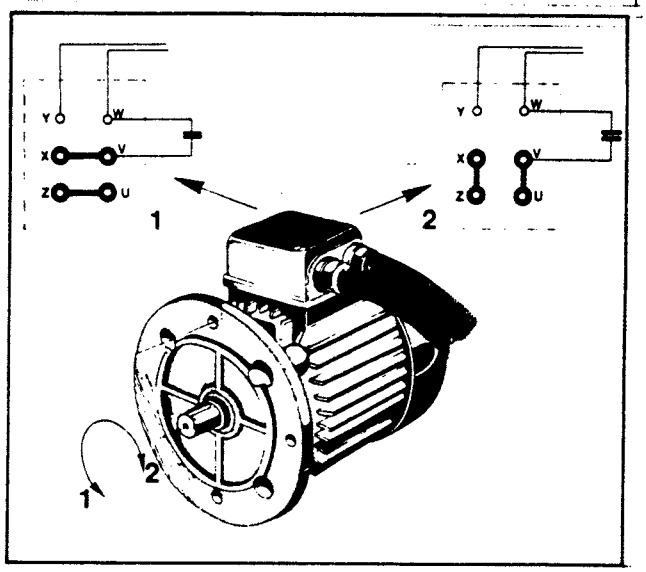


FIGURE 38

ELECTRICAL SCHEMATIC

Figure 37 illustrates the electrical system of the Box Sealer. A similar electrical schematic is mounted on the machine. The motor condenser, which is under the plastic cover on the backside of the lower taping head, is illustrated in figure 38. No adjustments to the electrical systems are required.

CIRCUIT BREAKER

The Box 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 5 amps and requires no further maintenance. Should the circuit breaker be replaced, check the amp setting before installation. Remove the front cover on the electrical box from the under side as shown in figure 39 and set the amp setting (A) at 5 amps.

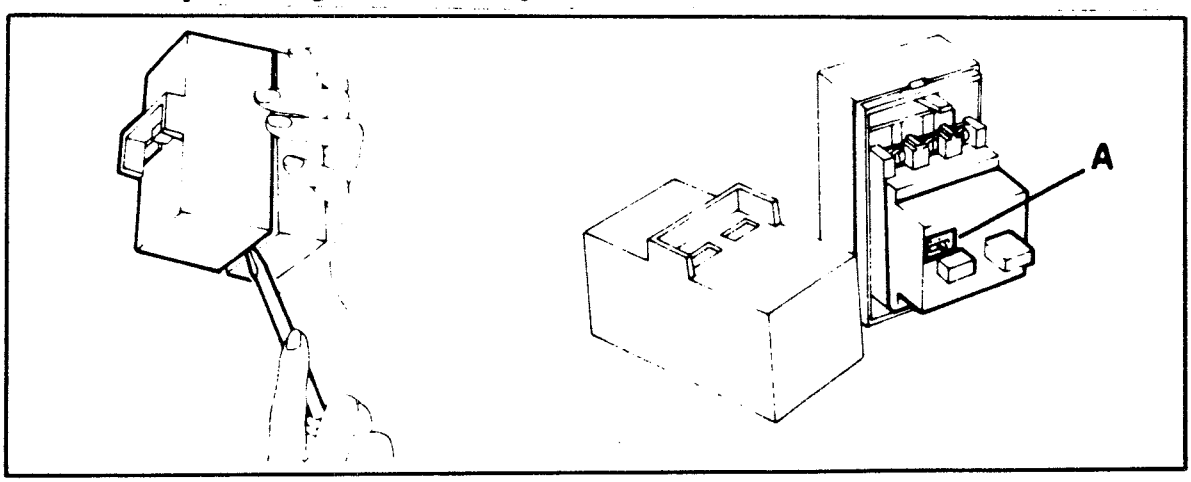


FIGURE 39

SPARE PARTS

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

Quantity	Ref. No.	3M Part No.	Description
2	9-13	78-8017-9072-2	Former - Tape
1	13-02	78-8017-9119-1	Spring-Main, Top Head, Zinc Pl.
1	13-20	78-8017-9424-5	Spring-Main, Button Head
4	14-10	78-8017-9136-5	Spring - Cutter
2	14-12A	78-8017-9173-8	Blade - 2.2 inch/56 mm (preferred)

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
1	2-01	78-8001-7176-7	Belt-Timing 225L050
5	5-06	78-8017-9062-3	Washer - O-Ring 150 mm
2	8-10	78-8017-9049-0	Belt - Box Drive
7	9-21	78-8017-9175-3	Washer, O-Ring, 138 mm
1	11-19	78-8017-9272-8	Spring-Tape Support
1	15-08	78-8017-9140-1	Roller - Buffing

HOW TO ORDER REPLACEMENT PARTS

1) Order parts by part number, part name, machine catalog number, model number and part quantity required.
(Order form attached to back cover of manual.)

$2.00 handling charge for all parts orders under $5.00.

Replacement part prices available on request.

2) Replacement parts and part prices available direct from:

3M Company, Tape Dispenser Parts
P. O. Box 33900, St. Paul, Minnesota 55133

3) Repair service available direct from 3M Branch Offices.
Refer to the front of the instruction manual for branch service information.

CONSUMER BLADE DISCOUNT

Consumer orders for 100 - 199 blades (one blade per quantity) will receive a 10% discount. Consumer orders for 200 or more blades (one blade per quantity) will receive a 25% discount.

ATTACHMENTS

Additional information on the attachments listed below is included with the manual.

Part Number	Attachment Name
78-8017-9417-9	Auxiliary Tape Roll Mount Attachment
78-8017-9160-5	Caster Attachment

TAPING HEAD ASSEMBLIES

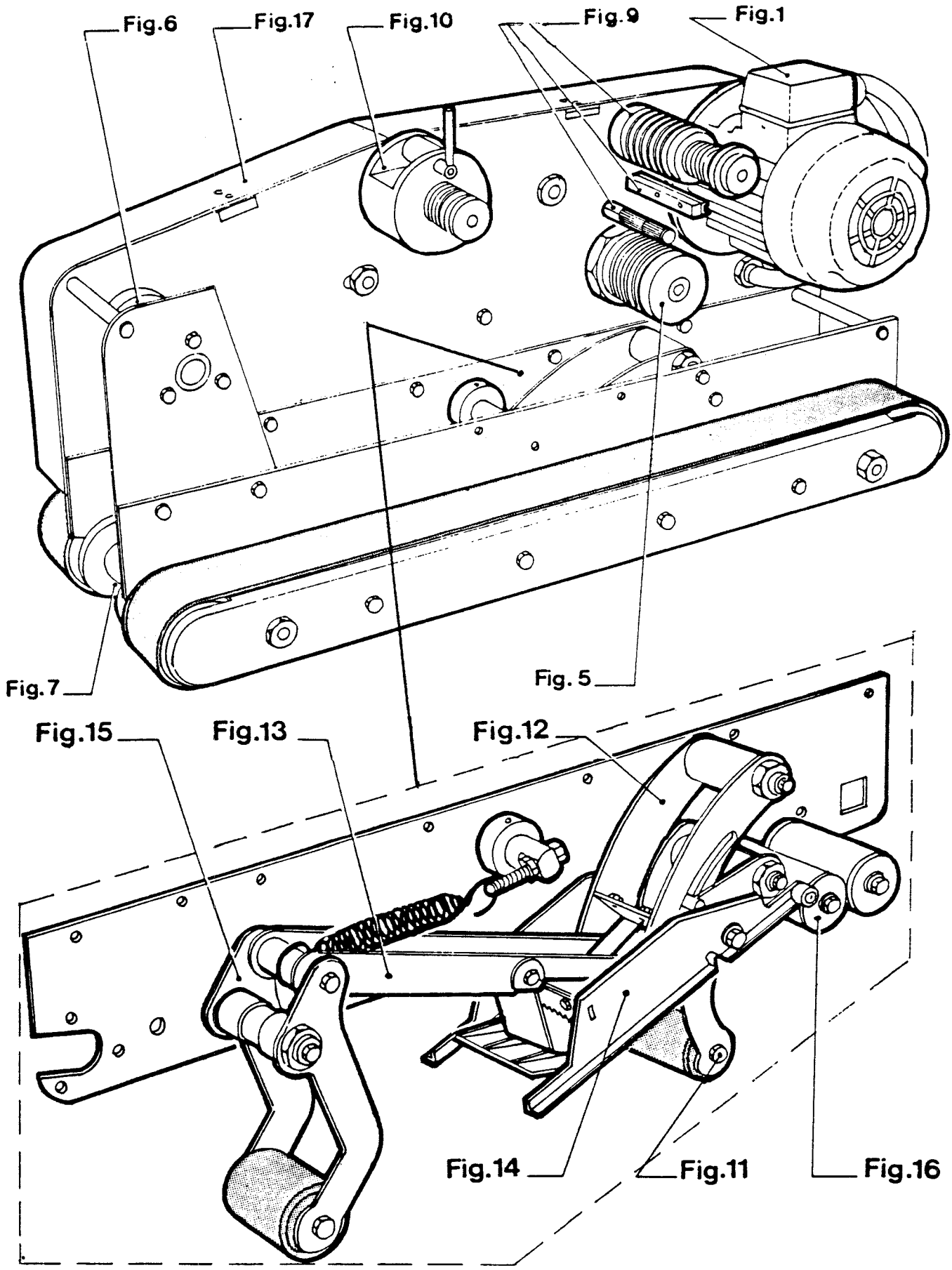
1) Refer to Taping Head Assemblies figures to find all the parts illustrations identified by figure numbers.

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 33 of "Maintenance - Parts Orders and Service Information" section of this manual for replacement parts ordering information.



TAPING HEAD ASSEMBLIES

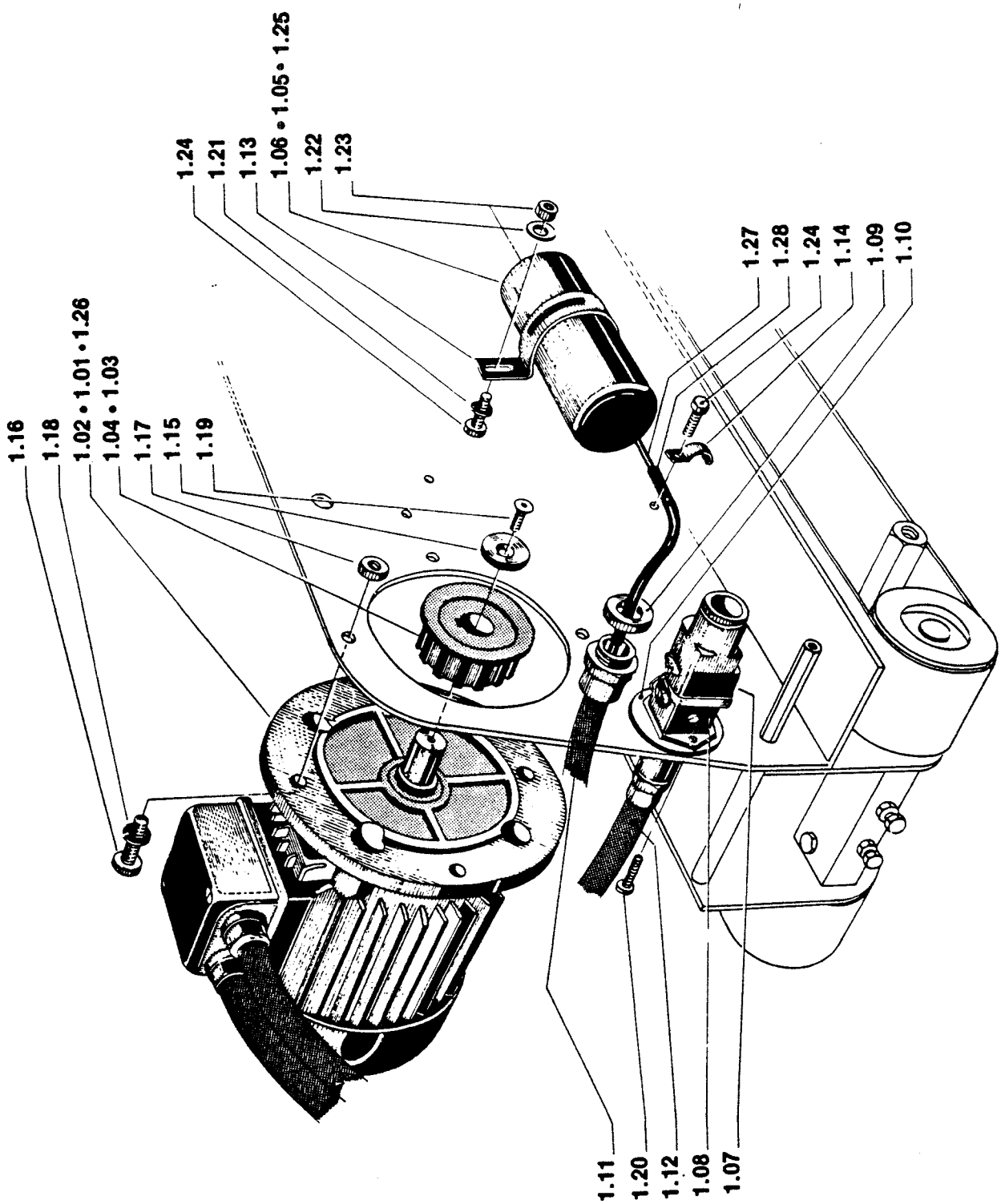

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FIGURE 1

REF. NO.	3M PART NO.	DESCRIPTION
1-01	78-8017-9008-6	Motor - Single Phase, 220V, 50 Hz, 0.18 HP, Type B5
1-02	78-8017-9009-4	Motor - Single Phase, 110V, 60 Hz, 0.18 HP, Type B5
1-03	78-8017-9010-2	Pulley - Timing belt for 220/240 V motor, Z-14
1-04	78-8017-9011-0	Pulley-Timing belt for 110 V motor Z-12
1-05	78-8017-9163-9	Condenser - 5 MFD, 240V, 50 Hz
1-06	78-8017-9012-8	Condenser - 20 MFD, 110V, 60 Hz
1-07	78-8017-9013-6	Plug
1-08	78-8017-9014-4	Receptacle
1-09	78-8017-9015-1	Nut
1-10	78-8017-9016-9	Washer - Insulating
1-11	78-8017-9164-7	Sleeving - Length 30cm
1-12	78-8017-9165-4	Sleeving - Length 23.5cm
1-13	78-8017-9166-2	Clip - Condenser
1-14	78-8017-9167-0	Clip - Cable
1-15	78-8017-9033-4	Washer - 20mm
1-16	78-8017-9301-5	Screw - Hex Head M8 X 25
1-17	26-1000-1347-8	Nut - Hex regular pitch, A/STL, Metric DIN Std M8 Dia. 1.25P NI PL DIN 934-8
1-18	78-8005-5736-1	Lockwasher - for M8 screw
1-19	78-8017-9161-3	Screw - Allen FH M4 X 10
1-20	78-8017-9425-2	Screw-Self-tapping, 8 x 13 mm
1-21	78-8010-7435-8	Washer - Metric, Lock Spr. Stl. M6
1-22	26-1000-0010-3	Washer - Metric, Plain, Stl, M6
1-23	78-8010-7418-4	Nut - Metric, Hex, Stl., M6
1-24	78-8010-7193-3	Screw - Metric, M6 X 20 Hex Hd. Cap, Stl. Black Zinc, DIN 933-8.8,
1-25	78-8017-9056-5	Condenser - 6.3 Mfd.
1-26	78-8017-9057-3	Motor - Single Phase, 240V, 50 Hz., 0.18 HP, B5
1-27	78-8017-9369-2	Cable Assembly-Motor to Condenser
1-28	78-8017-9371-8	Sleeving - Plastic

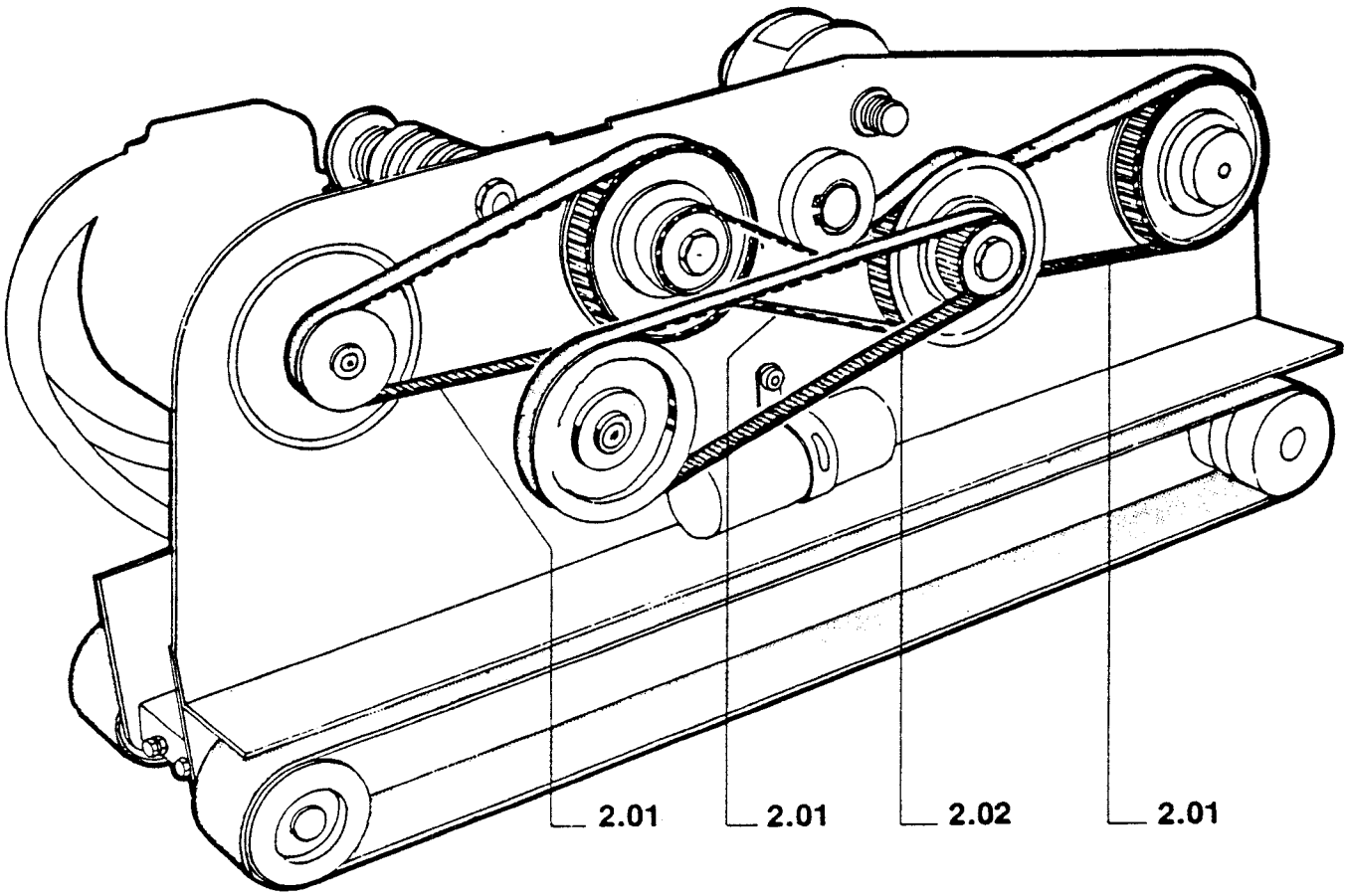

FIGURE 2

REF. NO.	3M PART NO.	DESCRIPTION
2-01	78-8001-7176-7	Belt - Timing, 225L050
2-02	12-7997-4978-8	Belt - Timing, 255L050

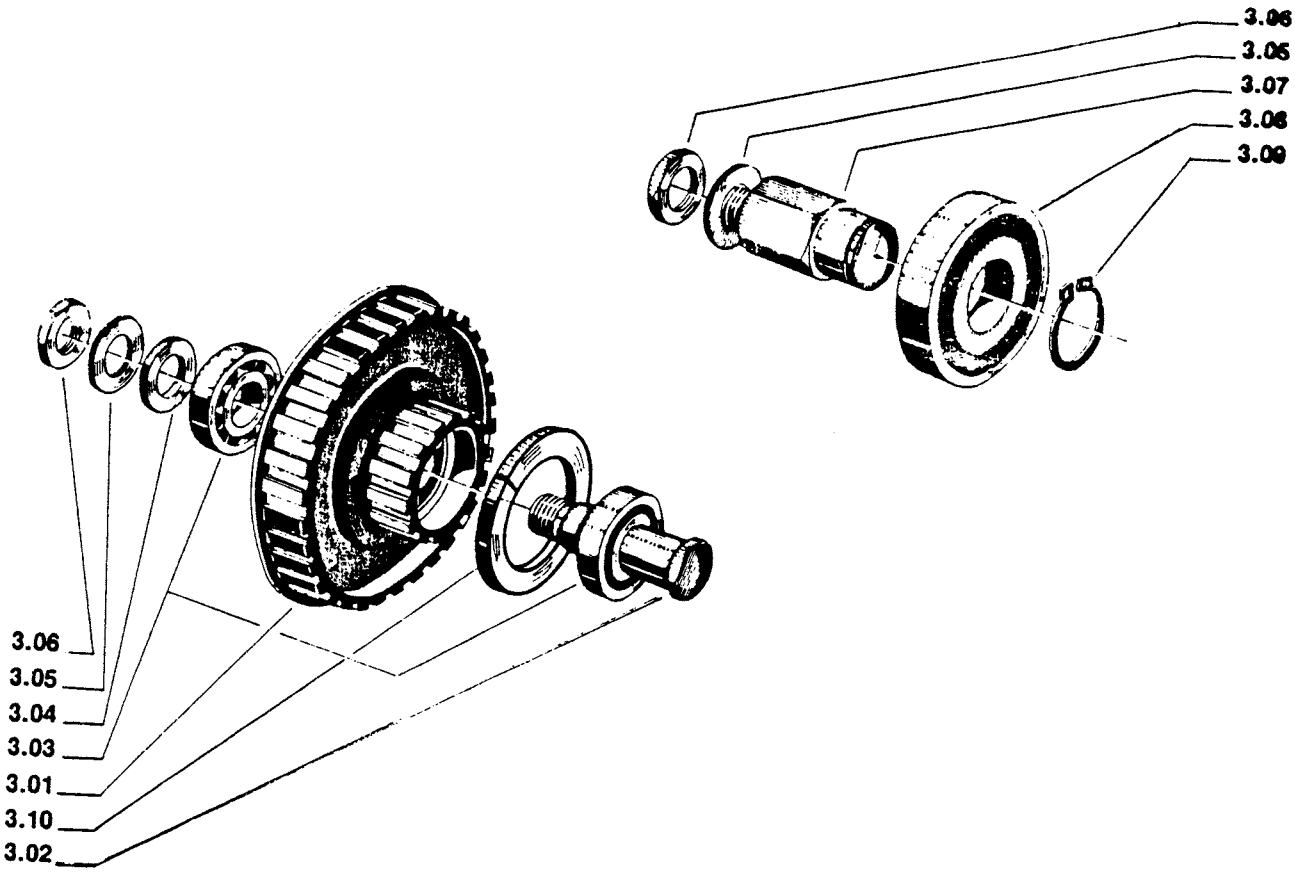

FIGURE 3

REF. NO.	3M PART NO.	DESCRIPTION
3-01	78-8017-9019-3	Pulley - Timing Belt, Z-32/14
3-02	78-8017-9020-1	Shaft - Pulley
3-03	26-1000-4350-9	Bearing - #6002-2RS
3-04	78-8017-9021-9	Washer - Special, 25mm X 12mm
3-05	78-8017-9059-9	Washer - Flat for M12 Screw DIN 125A
3-06	78-8017-9022-7	Nut - Special, M12 X 1
3-07	78-8017-9023-5	Shaft - Tensioning
3-08	78-8017-9060-7	Bearing - 6304 - 2RS
3-09	78-8017-9061-5	Snap ring - for 20mm Shaft
3-10	78-8017-9025-0	Washer - Nylon

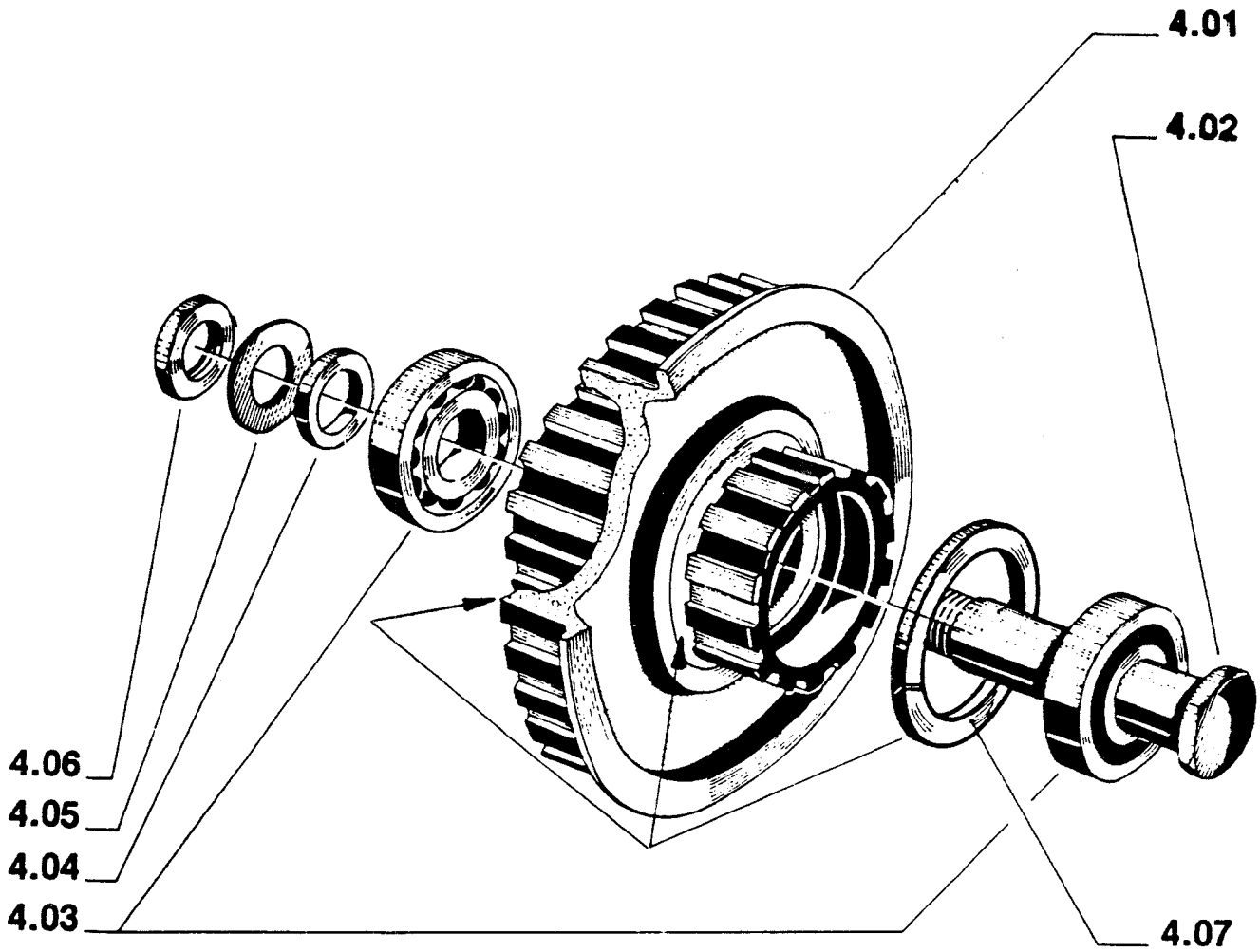

FIGURE 4

REF. NO.	3M PART NO.	DESCRIPTION
4-01	78-8017-9024-3	Pulley - Timing Belt, Z-14/32/14
4-02	78-8017-9026-8	Shaft - Pulley
4-03	26-1000-4350-9	Bearing - 6002-2RS
4-04	78-8017-9021-9	Washer - Special, 25mm X 12mm
4-05	78-8017-9059-9	Washer - For M12 Screw DIN 125A
4-06	78-8017-9022-7	Nut - Special, M12 X 1
4-07	78-8017-9023-0	Washer - Nylon

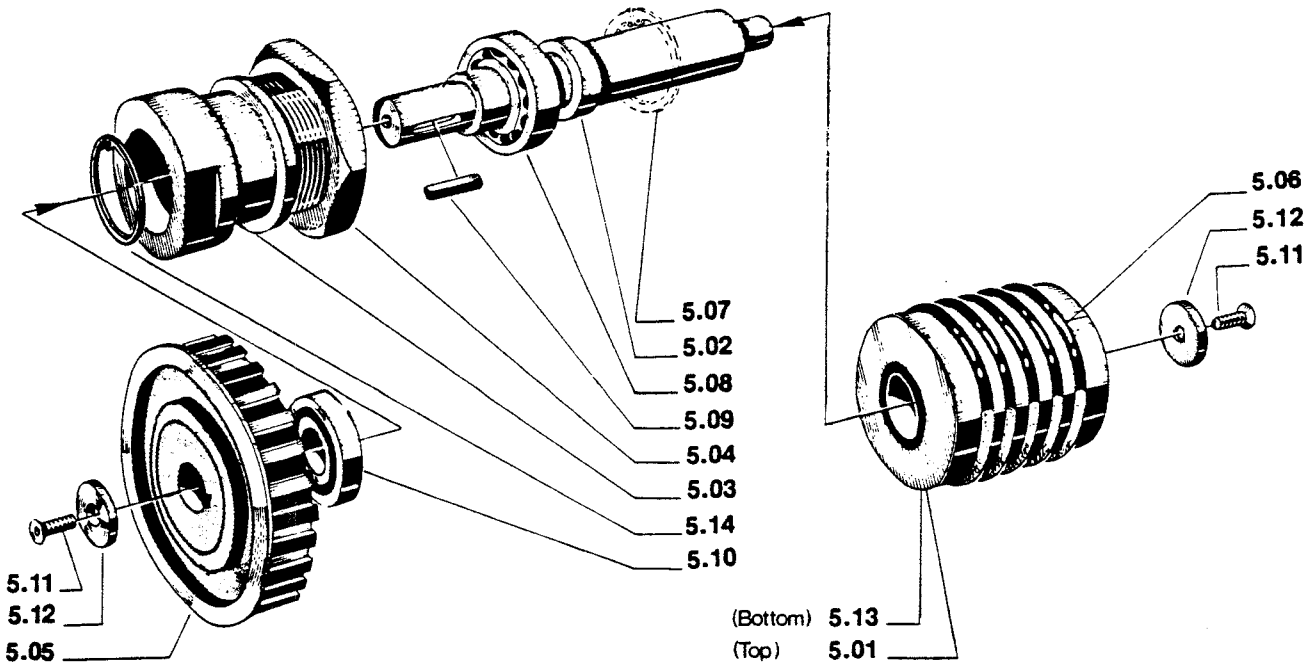

FIGURE 5

REF. NO.	3M PART NO.	DESCRIPTION
5-01	78-8017-9027-6	Roller Assembly - Tape Prestripper, Top Head
5-02	78-8017-9029-2	Shaft - Tape Prestripper
5-03	78-8017-9030-0	Hub - Eccentric Prestripper
5-04	78-8017-9031-8	Nut - Hub Attachment
5-05	78-8017-9032-6	Pulley - Prestripper Z-28
5-06	78-8017-9062-3	Washer - O-Ring 150mm
5-07	78-8017-9058-1	Ring - Snap for 35mm Hole (used on early models only, not required)
5-08	26-1000-6036-2	Bearing - 6003-2RS
5-09	78-8017-9064-9	Key - 5 X 5 X 15mm
5-10	26-1000-4350-9	Bearing - 6002-2RS
5-11	78-8017-9161-3	Screw - Allen FH M4 X 10
5-12	78-8017-9033-4	Washer - 20mm
5-13	78-8017-9034-2	Roller Assembly - Tape Prestripper, Bottom Head
5-14	78-8017-9419-5	Ring - Snap for 32mm Hole

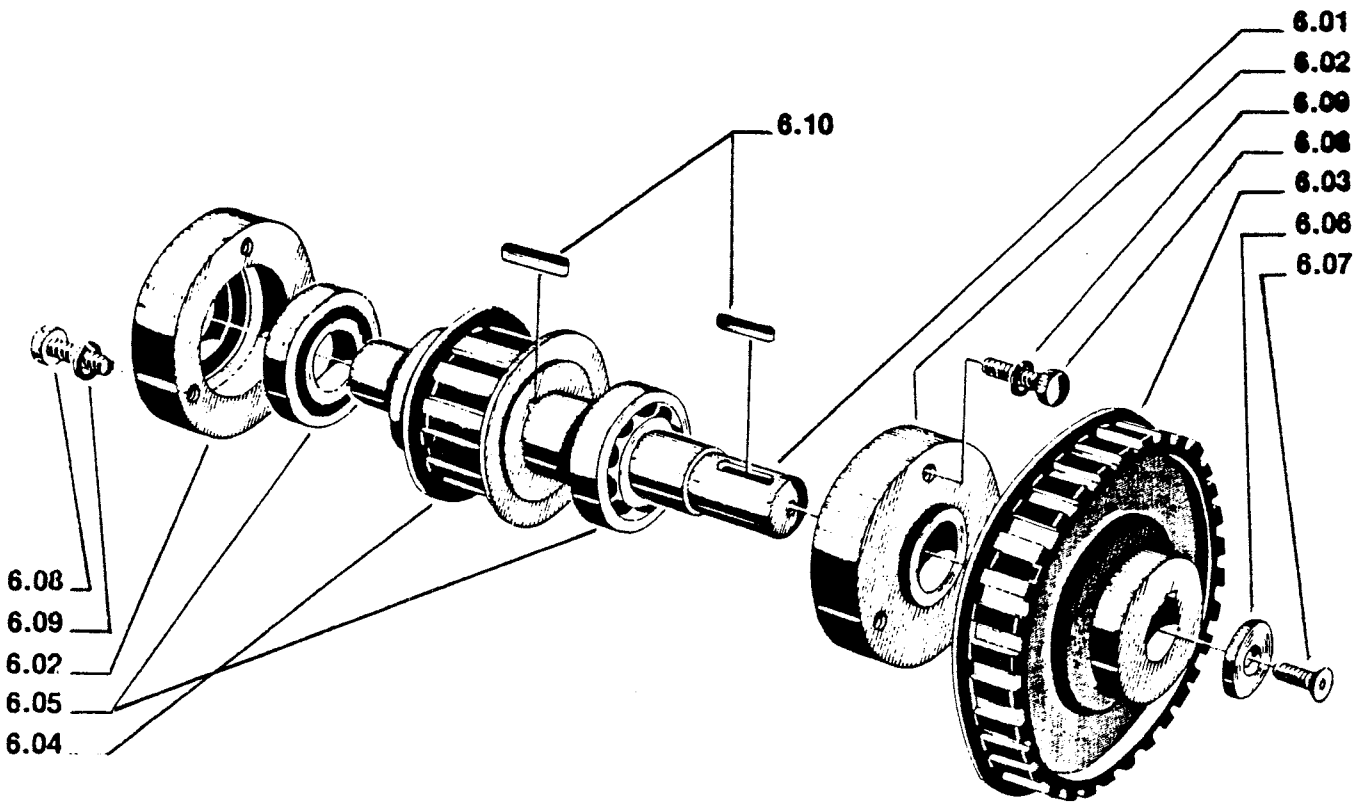

FIGURE 6

REF. NO.	3M PART NO.	DESCRIPTION
6-01	78-8017-9035-9	Shaft - Transmission
6-02	78-8017-9036-7	Hub - Shaft Support
6-03	78-8017-9037-5	Pulley - Timing Belt, Z-32
6-04	78-8017-9038-3	Pulley - Timing Belt, Z-14
6-05	26-1000-6036-2	Bearing 6003-2RS
6-06	78-8017-9033-4	Washer - 20mm
6-07	78-8017-9161-3	Screw - Allen FH M4 X 10
6-08	78-8032-0375-7	Screw - Metric, M6 X 16, Hex Hd. Cap, Steel, Nick Pl., DIN 933-5.6
6-09	78-8010-7435-8	Washer - Metric, Lock, Spr., M6
6-10	78-8017-9064-9	Key - 5 X 5 X 15mm

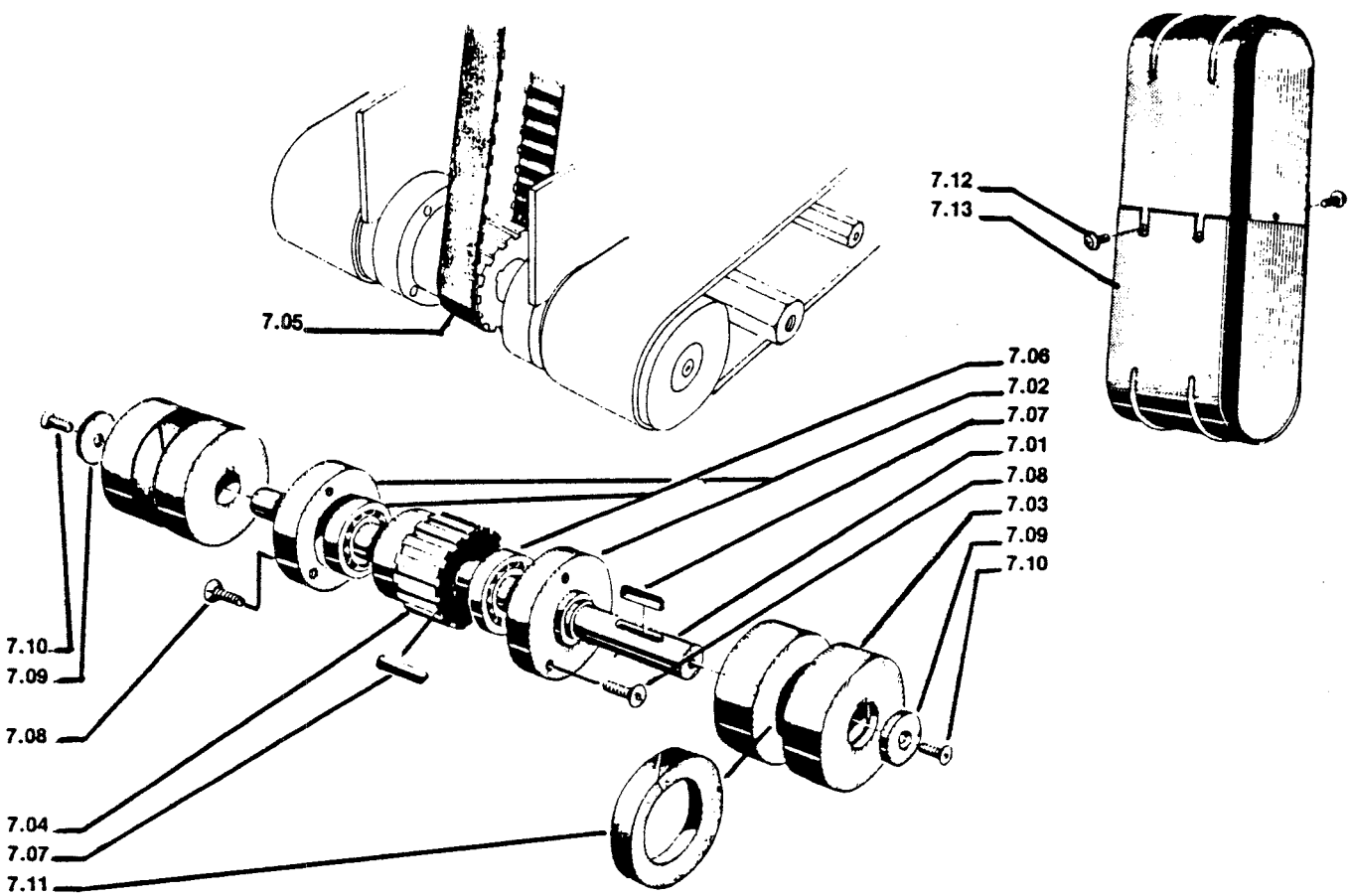

FIGURE 7

REF. NO.	3M PART NO.	DESCRIPTION
7-01	78-8017-9039-1	Shaft - Drive Pulley
7-02	78-8017-9036-7	Hub - Shaft Support
7-03	78-8017-9040-9	Pulley - Keyed
7-04	78-8017-9041-7	Pulley - Timing Belt, Z-16
7-05	12-7996-1361-2	Belt - Timing, 187L075
7-06	26-1000-6036-2	Bearing 6003-2RS
7-07	78-8017-9064-9	Key - 5 X 5 X 15mm
7-08	78-8017-9065-6	Screw - Allen FH M6 X 16
7-09	78-8017-9033-4	Washer - 20mm
7-10	78-8017-9161-3	Screw - Allen FH M4 X 10
7-11	78-8017-9043-3	Ring - Friction
7-12	78-8017-9066-4	Screw - Special M5 X 10
7-13	78-8017-9044-1	Guard - Belt

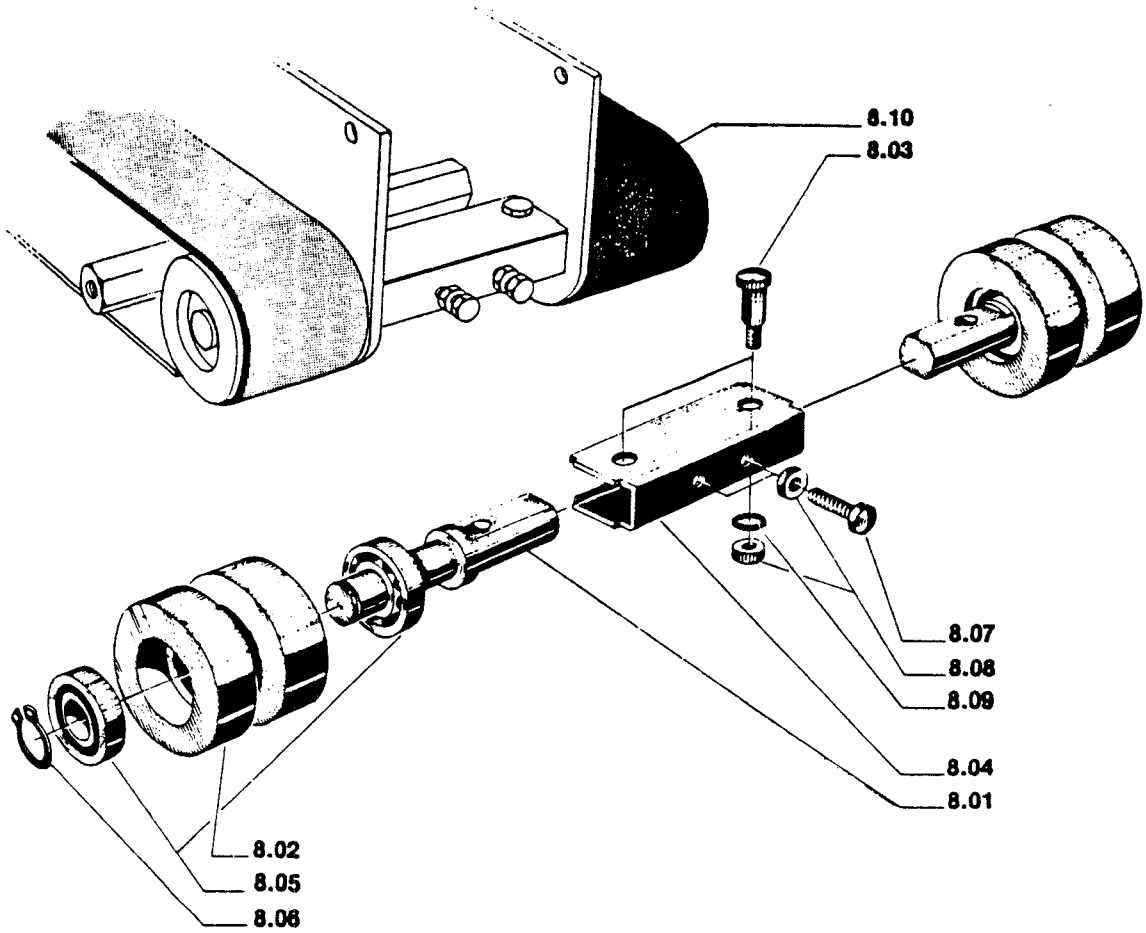

FIGURE 8

REF. NO.	3M PART NO.	DESCRIPTION
8-01	78-8017-9045-8	Shaft - Idler Pulley
8-02	78-8017-9046-6	Pulley - Grooved
8-03	78-8017-9047-4	Screw - Shoulder, M6
8-04	78-8017-9048-2	Bracket - Pivot
8-05	26-1000-4350-9	Bearing - 6002- 2RS
8-06	78-8017-9079-7	Ring - Snap for 15mm Shaft
8-07	78-8010-7193-3	Screw - Metric, M6 X 20, Hex Hd. Cap, Steel, Black Zinc, DIN 933-8.8
8-08	78-8010-7418-4	Nut - Metric, Hex, Steel, M6
8-09	78-8010-7435-8	Washer - Metric, Lock, Spr., Steel, M6
8-10	78-8017-9049-0	Belt - Box Drive

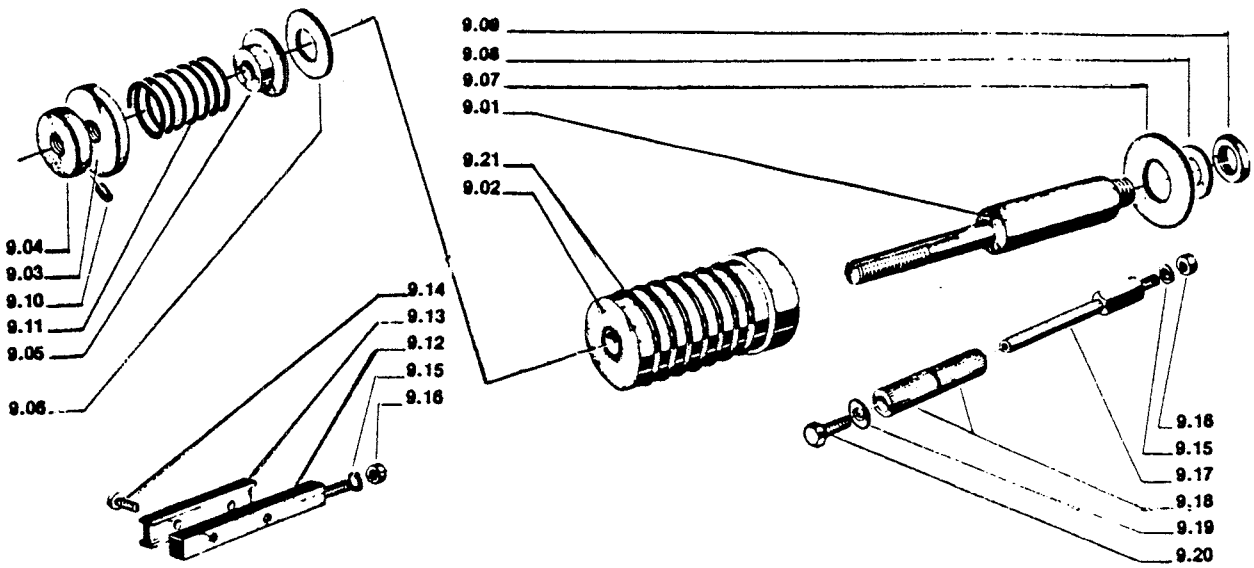

FIGURE 9

REF. NO.	3M PART NO.	DESCRIPTION
9-01	78-8017-9050-8	Shaft - Tensioning Roller
9-02	78-8017-9051-6	Roller Assembly - Tensioning
9-03	78-8017-9053-2	Nut - Round, Adjusting
9-04	78-8017-9054-0	Nut - Round, Locking
9-05	78-8017-9055-7	Holder - Friction Washer
9-06	78-8017-9067-2	Washer - Friction, 30mm
9-07	78-8017-9068-0	Washer - Friction, 44mm
9-08	78-8017-9069-8	Washer - 20mm
9-09	78-8017-9022-7	Nut - Special, M12 X 1
9-10	78-8017-9073-0	Screw - Set, Allen M4 X 8
9-11	78-8017-9071-4	Spring
9-12	78-8017-9084-7	Mount - Tape Former
9-13	78-8017-9072-2	Former - Tape
9-14	78-8017-9070-6	Screw - Phillips Head M4 X 10
9-15	78-8010-7435-8	Washer - Metric, Lock, Spr., Steel M6
9-16	78-8010-7418-4	Nut - Metric, Hex, Steel, M6
9-17	78-8017-9085-4	Shaft - Knurled Roller
9-18	78-8017-9086-2	Roller - Knurled
9-19	78-8017-9018-5	Washer - Metric, Plain, Steel, M4 (Special)
9-20	78-8010-7157-8	Screw - Hex Head M4 X 10
9-21	78-8017-9175-3	Washer - O-Ring 138mm

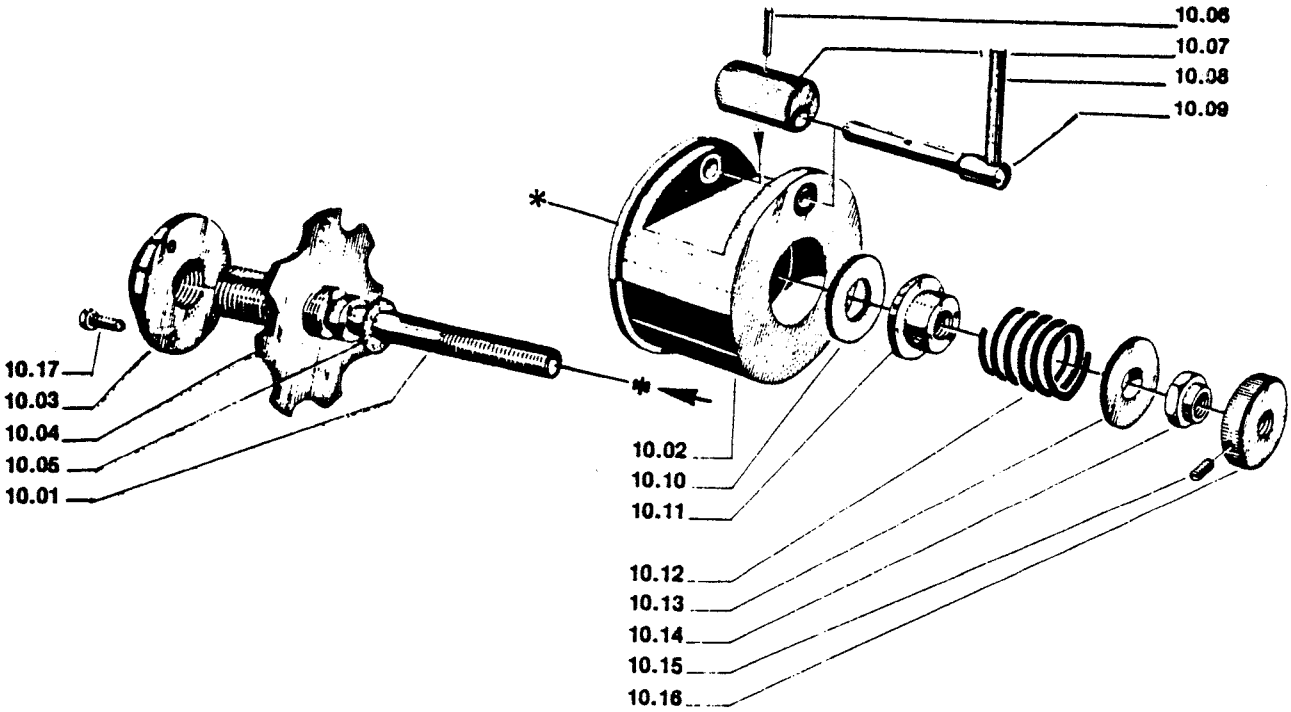

FIGURE 10

REF. NO.	3M PART NO.	DESCRIPTION
10-01	78-8017-9087-0	Shaft - Tape Drum
10-02	78-8017-9088-8	Drum Assembly - Tape
10-03	78-8017-9090-4	Flange - Tape Drum Shaft - Support
10-04	78-8017-9091-2	Plate - Locking, Tape Drum Shaft
10-05	78-8017-9074-8	Washer - Nylon 15mm
10-06	78-8017-9017-7	Pin - Roll 3 X 16mm
10-07	78-8017-9092-0	Roller - Eccentric
10-08	78-8017-9075-5	Pin - Roll 5 X 50mm
10-09	78-8017-9093-8	Pivot - For Eccentric Roller
10-10	78-8017-9067-2	Washer - Friction, 30mm
10-11	78-8017-9055-7	Holder - Friction Washer
10-12	78-8017-9071-4	Spring
10-13	78-8017-9094-6	Washer - Spring Holder
10-14	78-8017-9077-1	Nut - Self-Locking, M10, Nick. Pl.
10-15	78-8017-9073-0	Screw - Set, Allen Head M4 X 8
10-16	78-8017-9080-5	Nut - Round
10-17	78-8010-7157-8	Screw - Hex Head M4 X 10

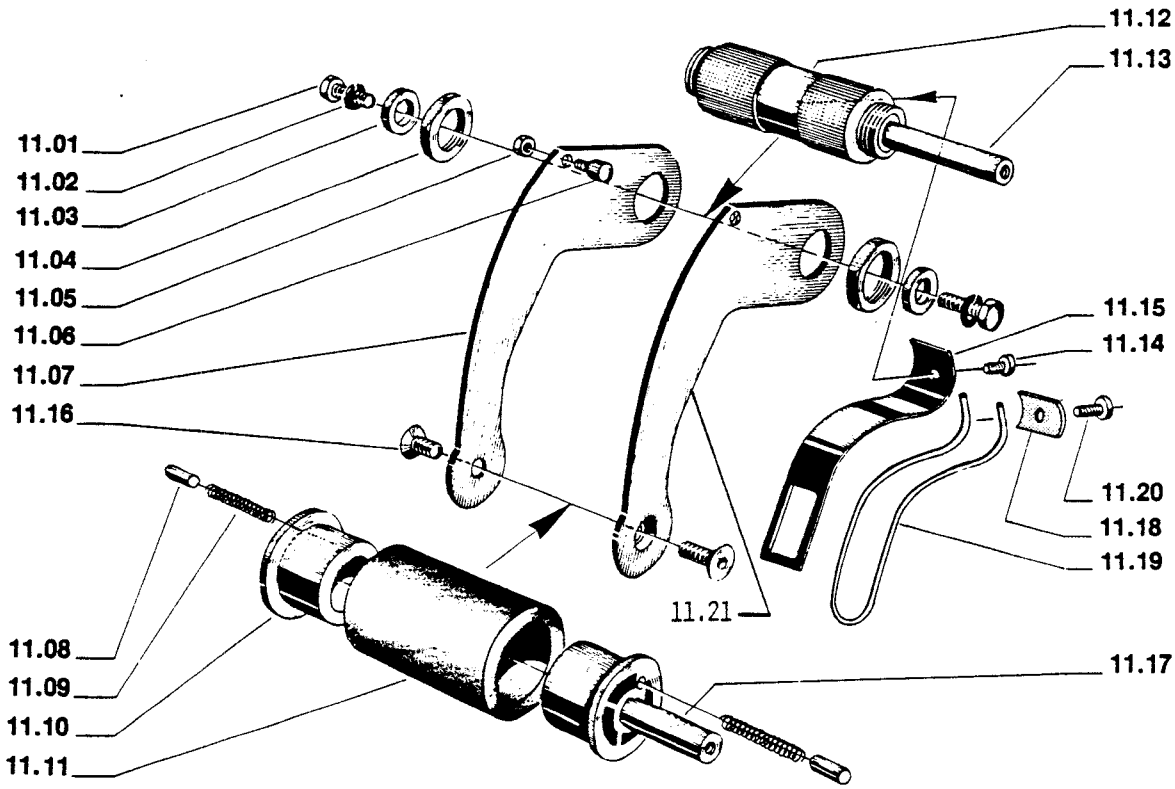

FIGURE 11

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	78-8017-9078-9	Shaft - 10 X 90mm
11-14	78-8017-9081-3	Screw - Phillips Head, M4 X 6
11-15	78-8017-9104-3	Spring - Tape Support (Replaced by items 11-18, 11-19, 11-20)
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

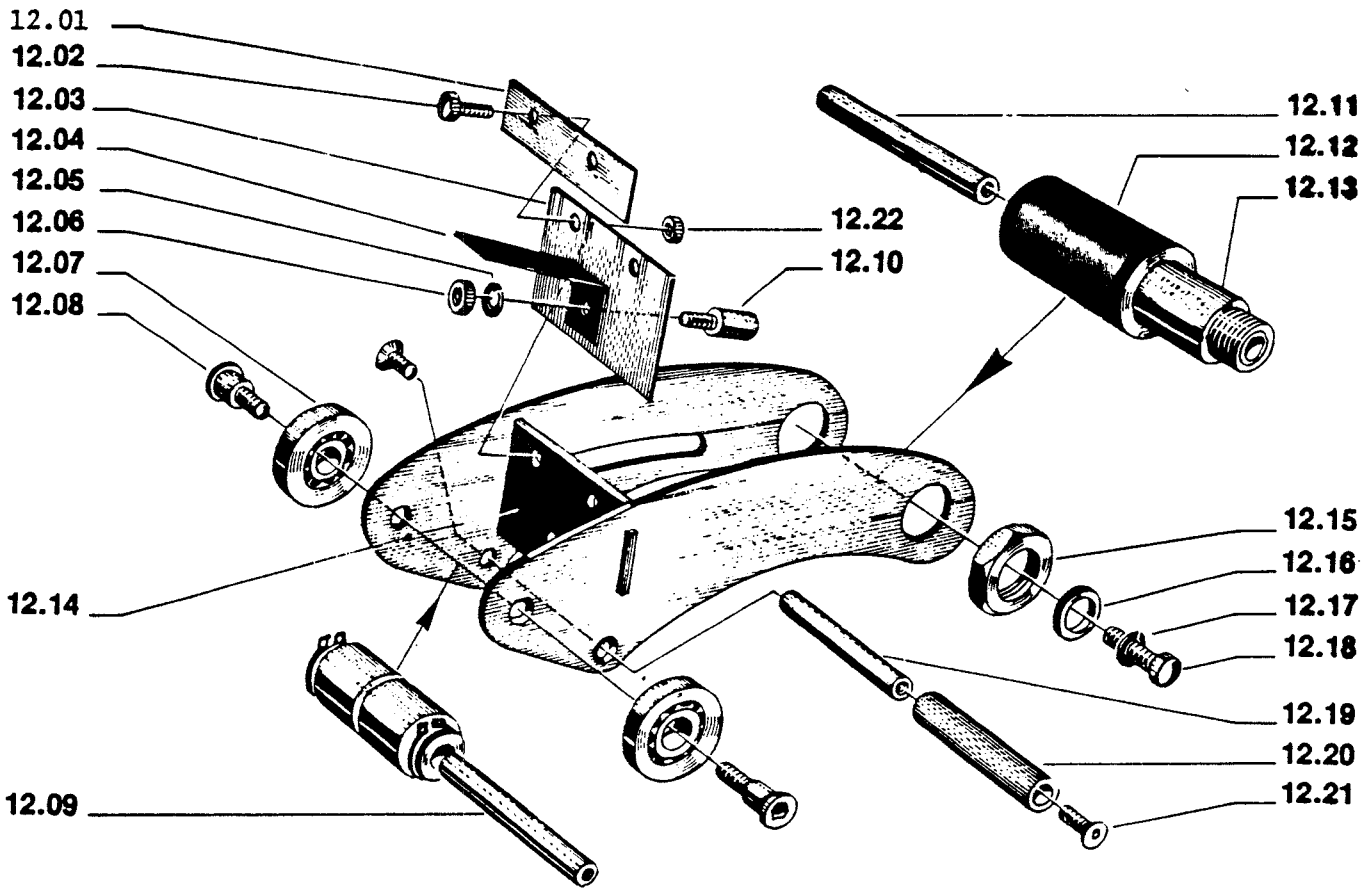
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FIGURE 12

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

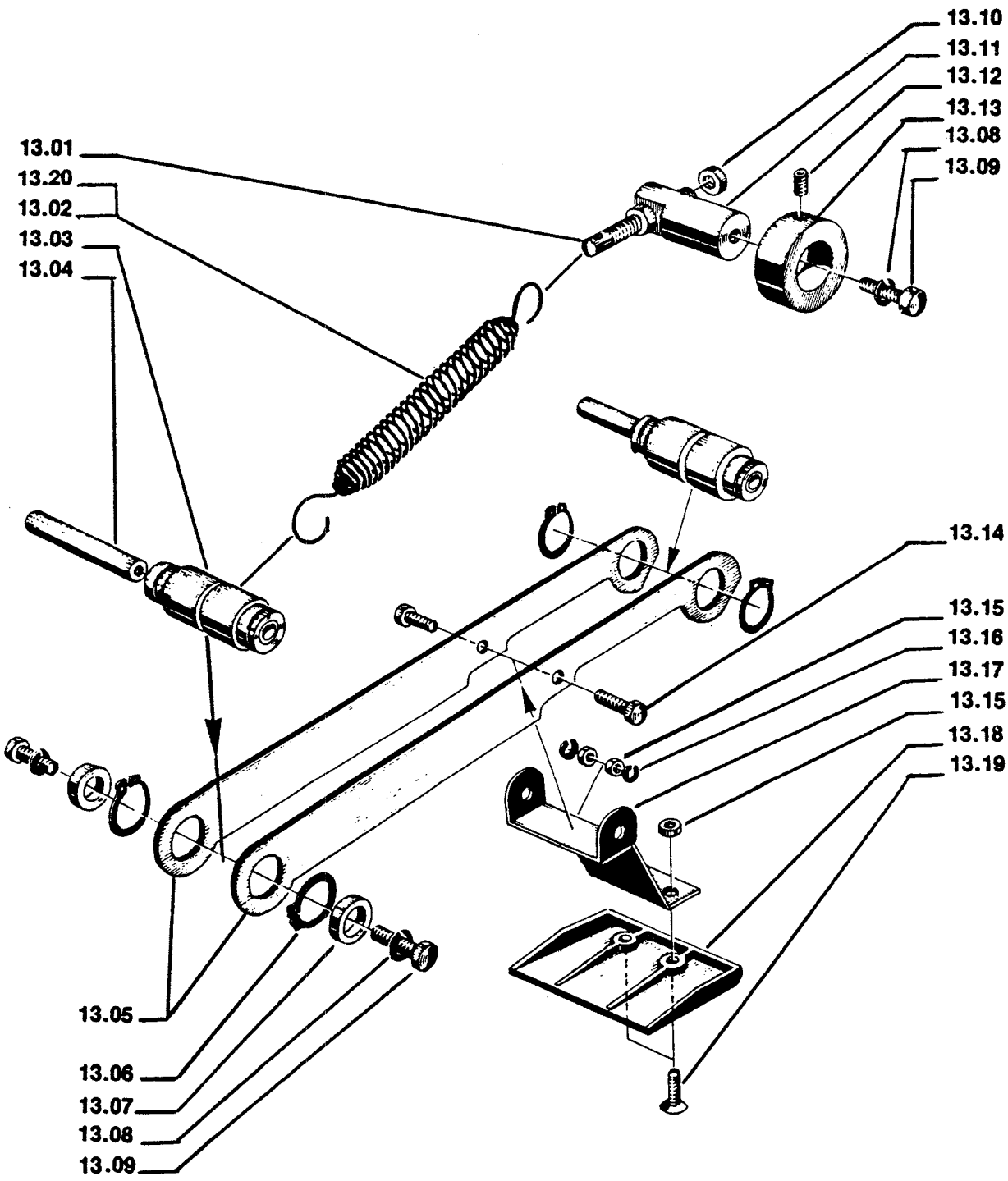
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FIGURE 13

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
13-19	78-8017-9333-8	Screw - Allen FH, M5 X 15
13-20	78-8017-9424-5	Spring, Main, Bottom Head

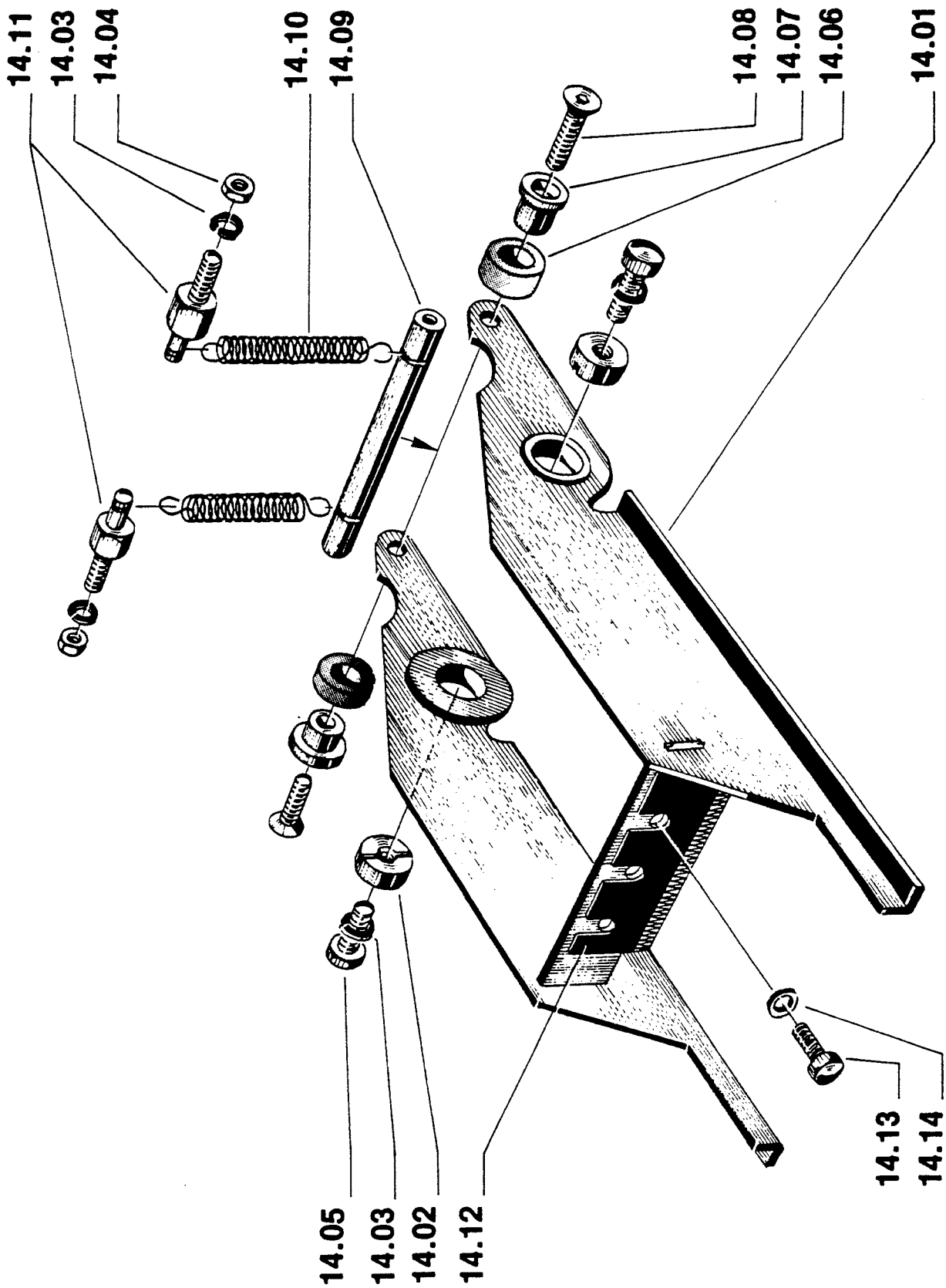
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FIGURE 14

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
14-12A	78-8017-9173-8	Blade - 2.2 inch/56mm (Preferred)
14-12B	70-8601-0077-8	Blade - .75 inch/19mm, 3 required (Alternative)
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

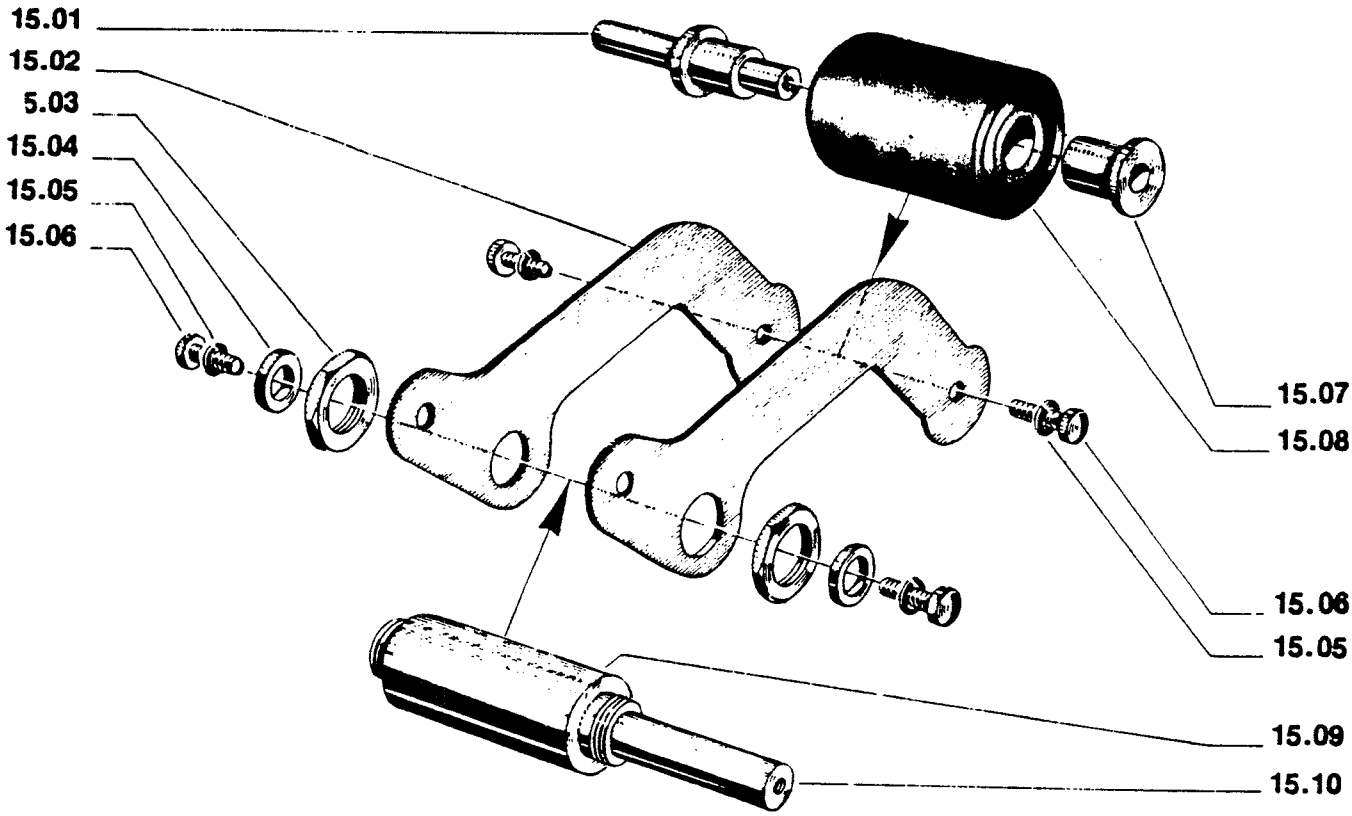
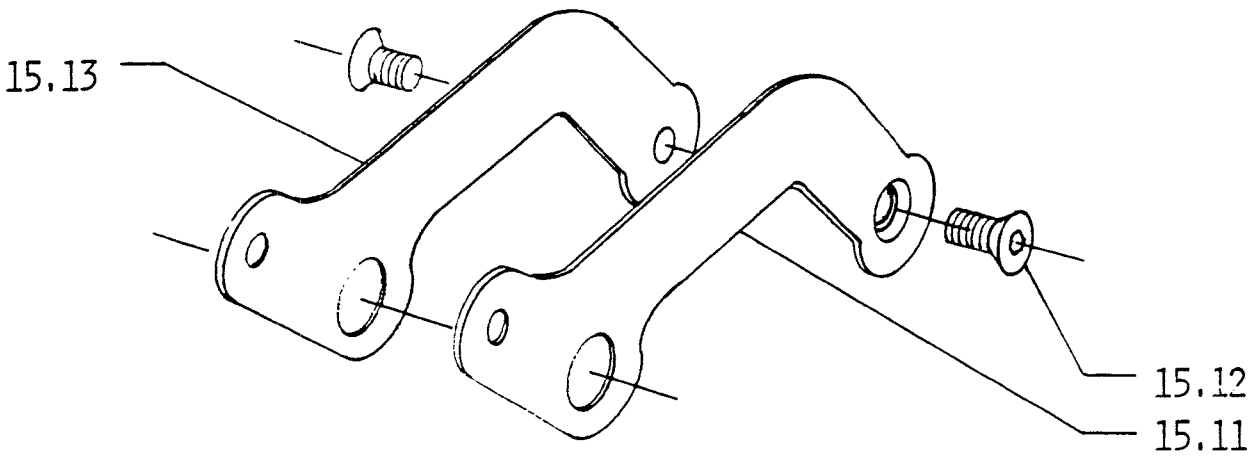


FIGURE 15

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

SUPPLEMENT TO FIGURE 15

SERIAL NUMBERS 7R-1575 AND ABOVE



REF NO.	3M PART NO.	DESCRIPTION
15-11	78-8018-7608-3	Arm - Buffing Roller, Left
15-12	78-8017-9162-1	Screw - Allen, FH, M6 x 12
15-13	78-8018-7609-1	Arm - Buffing Roller, Right

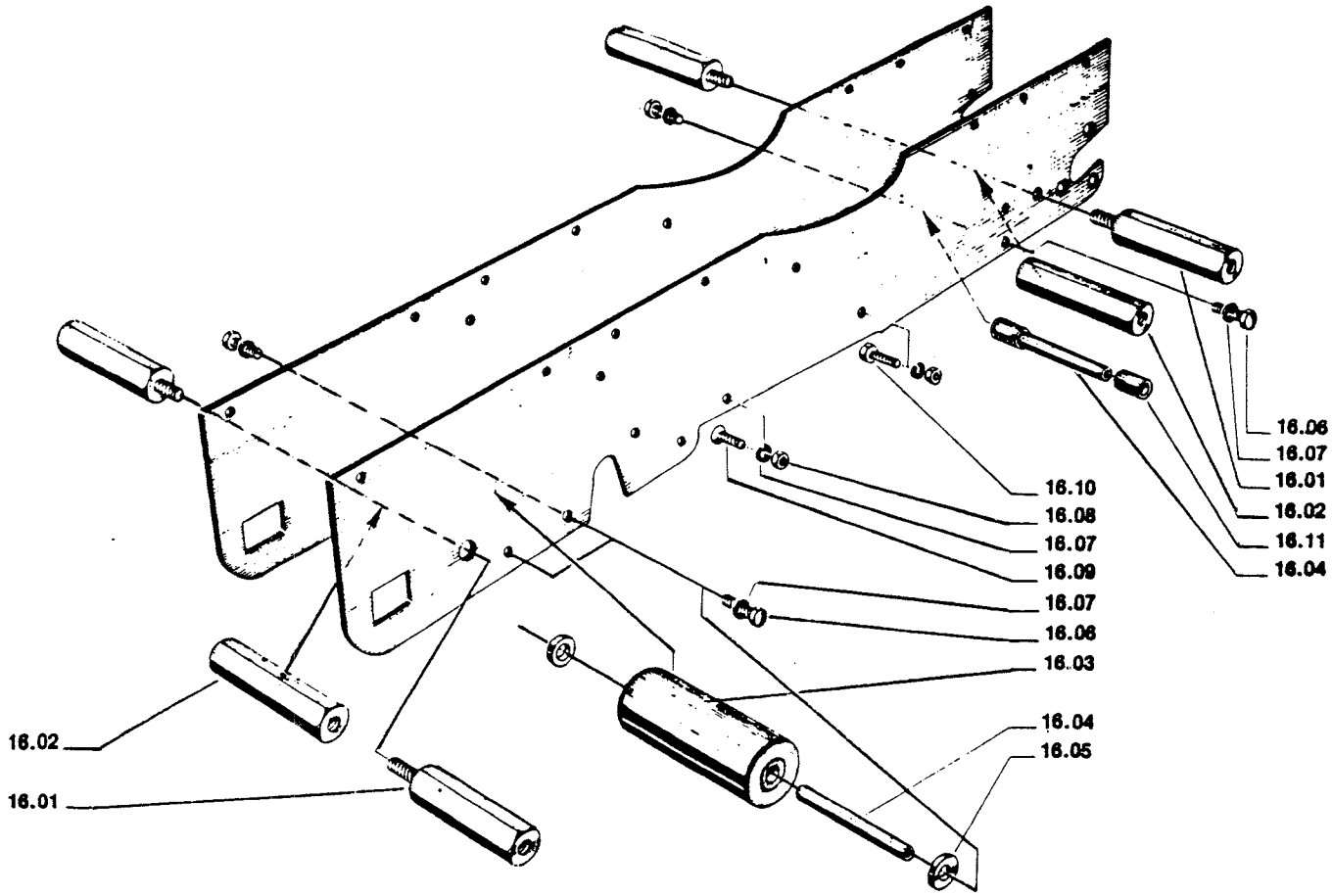


FIGURE 16

REF. NO.	3M PART NO.	DESCRIPTION
16-01	78-8017-9143-1	Pin - Attachment
16-02	78-8017-9144-9	Spacer - Hexagonal
16-03	78-8017-9145-6	Roller Assembly - 38mm Diameter
16-04	78-8017-9109-2	Pin - 10 X 90mm
16-05	78-8017-9095-3	Spacer
16-06	78-8032-0375-7	Screw - Metric, M6 X 16, Hex Hd. Cap, Steel, Nick. Pl., DIN 933-8.8
16-07	78-8010-7435-8	Washer - Metric, Loc, Spr., Steel - M6
16-08	78-8010-7418-4	Nut - Metric, Hex Steel, M6
16-09	78-8017-9334-6	Screw - Allen FH, M6 X 20
16-10	78-8010-7193-3	Screw - Metric, M6 X 20, Hex Hd. Cap, Steel, Black Zinc, DIN 933-8.8
16-11	78-8017-9148-0	Bumper - Buffing Arm

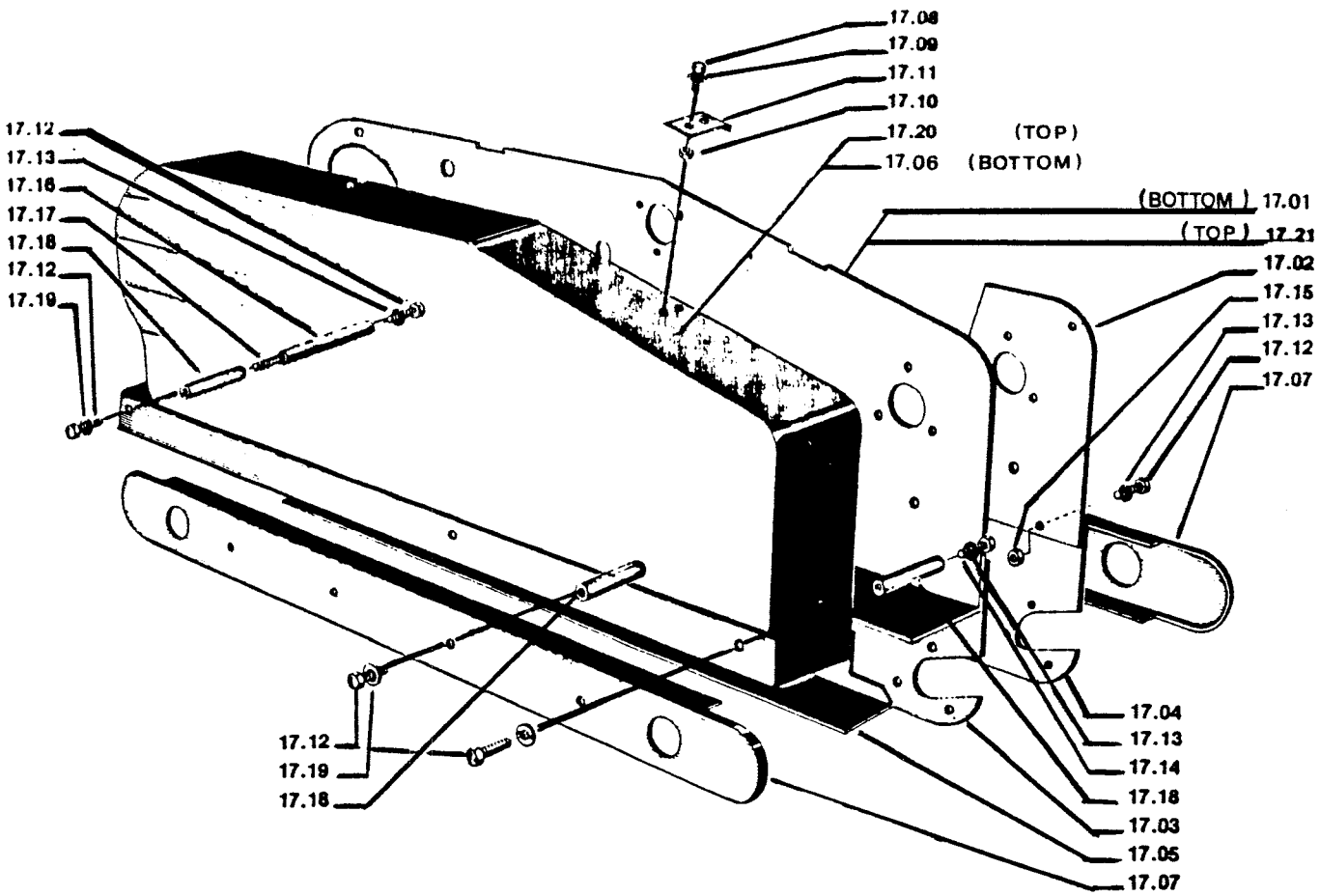

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FIGURE 17

REF. NO.	3M PART NO.	DESCRIPTION
35-01	78-8017-9179-5	Collar Weldment Assembly - Adjustable Stop, Left Side
35-02	78-8017-9180-3	Screw - Stop
35-03	78-8017-9264-5	Knob
35-04	78-8017-9258-7	Set Screw - Hex Soc. Dr., M6 X 6, Black Zinc
35-05	78-8017-9181-1	Plate - Threaded
35-06	78-8010-7210-5	Screw - Soc. Hd., Hex Soc. Dr., M6 X 20 Nick. Pl.
35-07	78-8017-9182-9	Bracket - Column Clamping Attachment
35-08	78-8017-9183-7	Base Weldment Assembly - Box Sealer
35-09	78-8017-9261-1	Nut - Special
35-10	78-8017-9214-0	Bushing - Rubber
35-11	78-8017-9262-9	Caster - W/Wheel Lock
35-12	78-8017-9184-5	Cover - Column Top
35-13	78-8017-9265-2	Screw - Self-Tapping, 3.5 X 10, Nick Pl.
35-14	78-8017-9185-2	Column - Left Side
35-15	78-8017-9210-8	Bumper - Top Head
35-16	78-8017-9186-0	Collar Weldment Assembly - Adjustable Stop, Right Side
35-17	78-8017-9187-8	Column - Right Side
35-18	78-8017-9260-3	Nut - Special, M22 X 1
35-19	78-8017-9263-7	Screw - Special
35-20	78-8017-9211-6	Ball
35-21	78-8017-9188-6	Bushing - Foot
35-22	78-8010-7208-9	Screw - Soc. Hd., Hex Soc. Dr., M6 X 10, Nick. Pl.
35-23	78-8017-9189-4	Shaft - Foot
35-24	78-8017-9212-4	Pad - Foot

Serial Number 7R-1612 and Above

35-27	78-8018-7612-5	Collar Weldment Assembly - Adjustable Stop - Right Side
35-28	78-8018-7610-9	Bumper - Top Head
35-29	78-8018-7613-3	Collar Weldment Assembly - Adjustable Stop - Left Side

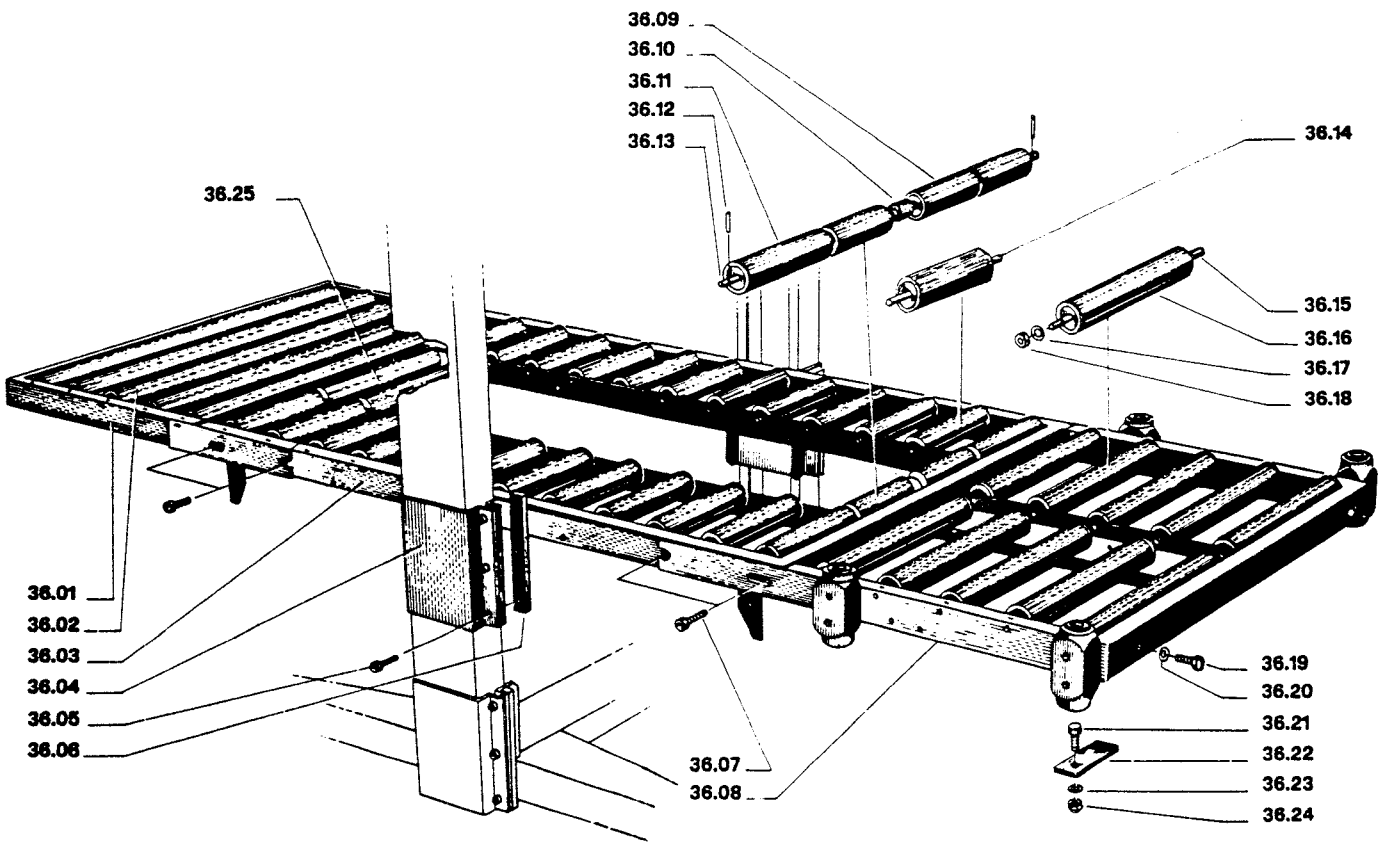
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FIGURE 36

REF. NO.	3M PART NO.	DESCRIPTION
36-01	78-8017-9190-2	Frame Weldment Assembly - Discharge Conveyor
36-02	78-8017-9215-7	Roller - Conveyor, 32 X 563 mm
36-03	78-8017-9191-0	Frame Weldment Assembly - Central Conveyor
36-04	78-8017-9182-9	Bracket - Column Clamping
36-05	78-8010-7210-5	Screw - Soc. Hd., Hex Soc. Dr., M6 X 20 Nick. Pl.
36-06	78-8017-9181-1	Plate - Threaded
36-07	78-8017-9302-3	Screw - Soc. Hd., Hex Soc. Dr., M8 X 20 Nick. Pl.
36-08	78-8017-9193-6	Frame Weldment Assembly - Infeed Conveyor
36-09	78-8017-9216-5	Roller - Conveyor, 32 X 112mm
36-10	78-8017-9217-3	Spacer
36-11	78-8017-9218-1	Roller - Conveyor, 32 X 152mm
36-12	78-8010-7458-0	Pin - Metric, Tension, Stl. Black, 3 X 10mm
36-13	78-8017-9219-9	Shaft - For 32 X 563 mm Roller
36-14	78-8017-9220-7	Shaft - For 32 X 152 mm Roller
36-15	78-8017-9221-5	Shaft - For 32 X 259mm Roller
36-16	78-8017-9222-3	Roller - 32 X 259mm
36-17	78-8005-5741-1	Washer - Metric Plain Stl., Nick. Pl., 5mm
36-18	78-8010-7417-6	Nut - Metric, Hex, Stl., M5, Nick. Pl.
36-19	78-8017-9324-7	Screw - Hex Hd., M8 X 15, Nick. Pl.
36-20	78-8017-9318-9	Washer - Metric Plain Stl., Nick. Pl., 8mm
36-21	78-8017-9325-4	Screw - Hex Hd., M6 X 15, Nick. Pl.
36-22	78-8017-9194-4	Plate - Nylon
36-23	26-1000-0010-3	Washer - Metric Plain Stl., Nick. Pl., 6mm
36-24	78-8017-9307-2	Nut - Selflocking, M6, Nick. Pl.
36-25	78-8017-9223-1	Roller - Conveyor, 32 X 248mm

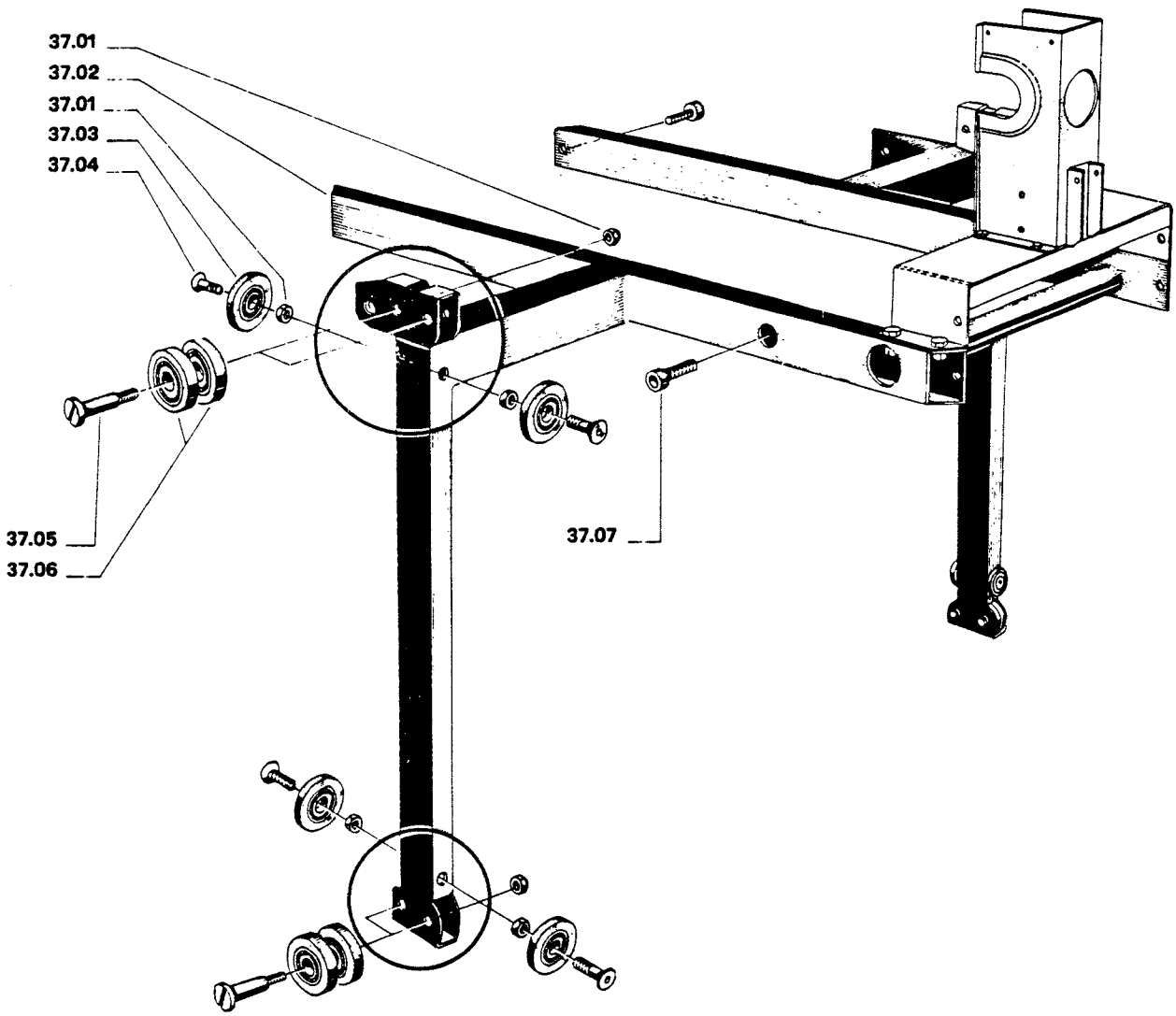

FIGURE 37

REF. NO.	3M PART NO.	DESCRIPTION
37-01	78-8017-9307-2	Nut - Selflocking, M6, Nick. Pl.
37-02	78-8017-9195-1	Support Weldment Assembly - Top Taping Head
37-03	78-8017-9298-3	Bearing - 25 X 6mm
37-04	78-8017-9306-4	Screw - Allen FH M6 X 20
37-05	78-8017-9297-5	Screw - Shoulder, For Bearing
37-06	78-8017-9299-1	Bearing - 33 X 6mm
37-07	78-8017-9303-1	Screw - Soc. Hd., Hex Soc. Dr., M10 X 20 Nick. Pl.

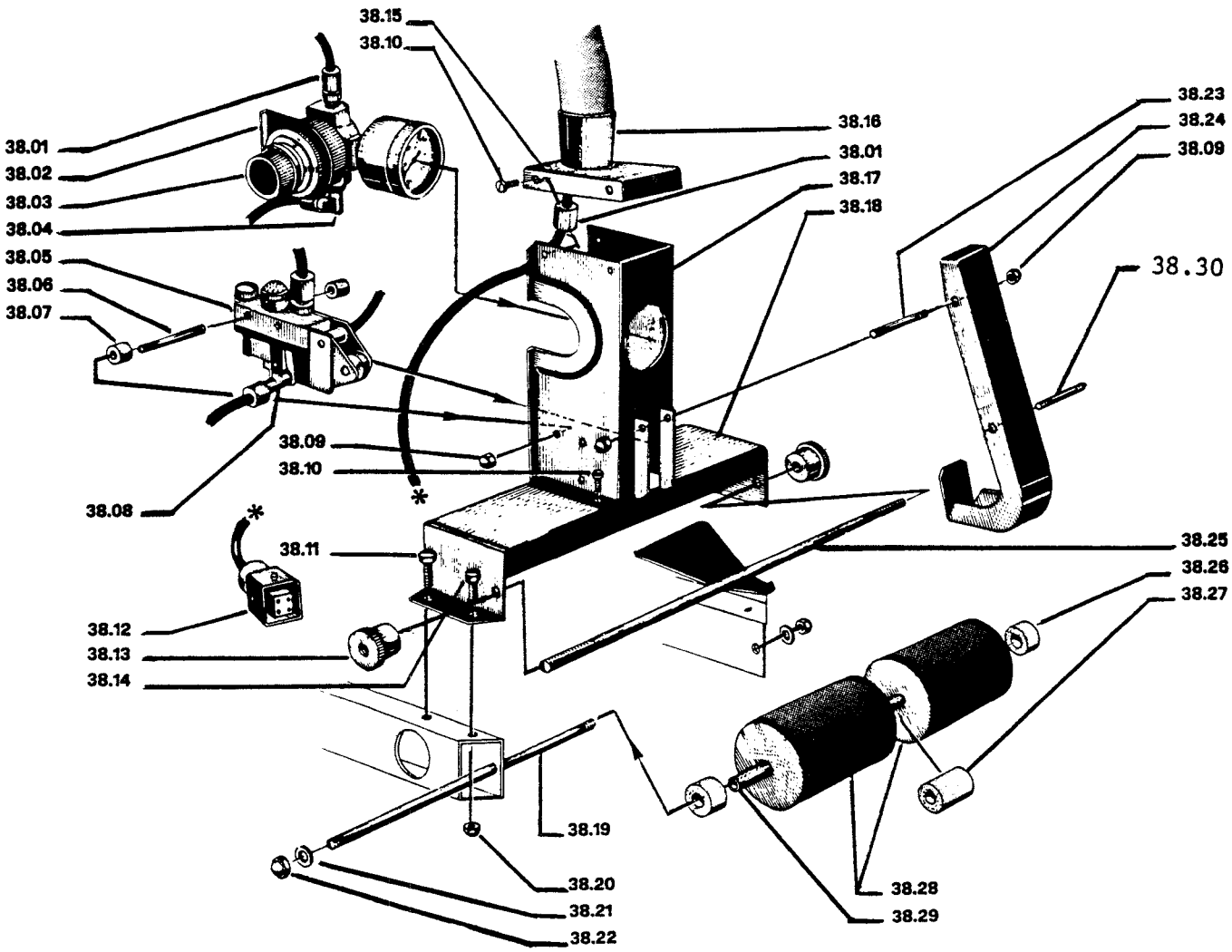
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FIGURE 38

REF. NO.	3M PART NO.	DESCRIPTION
38-01	78-8017-9267-8	Connector - 1/8", Straight, For 6mm Tubing
38-02	78-8017-9196-9	Plate - Air Regulator Holder
38-03	78-8017-9268-6	Regulator - Air Pressure, 0 To 4 ATM
38-04	78-8017-9269-4	Elbow - 90°, 1/8", For 6mm Tubing
38-05	78-8017-9270-2	Valve - 4-way, C48R
38-06	78-8017-9197-7	Pin - Threaded, 4 X 60mm
38-07	78-8017-9209-0	Spacer
38-08	78-8017-9271-0	Connector - 1/8", Tee, For 6mm Tubing
38-09	78-8017-9308-0	Nut - Cap, M4
38-10	78-8017-9265-2	Screw - Self-tapping, 3.5 X 10, Nick. Pl.
38-11	78-8017-9325-4	Screw - Hex Hd., M6 X 15, Nick. Pl.
38-12	78-8017-9013-6	Plug
38-13	78-8017-9266-0	Knob
38-14	78-8010-7169-3	Screw - Metric, Hex Hd., M6 X 12, Stl. Nick. Pl., DIN 933-8.8
38-15	78-8017-9198-5	Cover - Regulator/Valve Support
38-16	78-8017-9428-6	Sleeving - 29 mm Diameter
38-17	78-8017-9200-9	Support - Regulator/Valve
38-18	78-8017-9213-2	Bracket - Regulator/Valve
38-19	78-8017-9201-7	Shaft - Roller Sleeve
38-20	78-8017-9307-2	Nut - Self-locking, M6, Nick. Pl.
38-21	26-1000-0010-3	Washer - Metric, Plain 6mm, Stl., Nick. Pl.
38-22	78-8017-9310-6	Nut - Cap, M6, Nick. Pl.
38-23	78-8017-9202-5	Pin - Threaded 4 X 40mm
38-24	78-8017-9203-3	Actuator - Top Taping Head
38-25	78-8017-9204-1	Latch Weldment Assembly - Actuator, Top Taping Head
38-26	78-8017-9205-8	Spacer - 10/20 X 15mm
38-27	78-8017-9206-6	Spacer - 20/32 X 10mm
38-28	78-8017-9207-4	Roller - 60 X 82mm
38-29	78-8017-9208-2	Bushing - Roller Sleeve
38-30	78-8017-9368-4	Pin - Metric, Tension, Stl., Black, 4 x 35mm

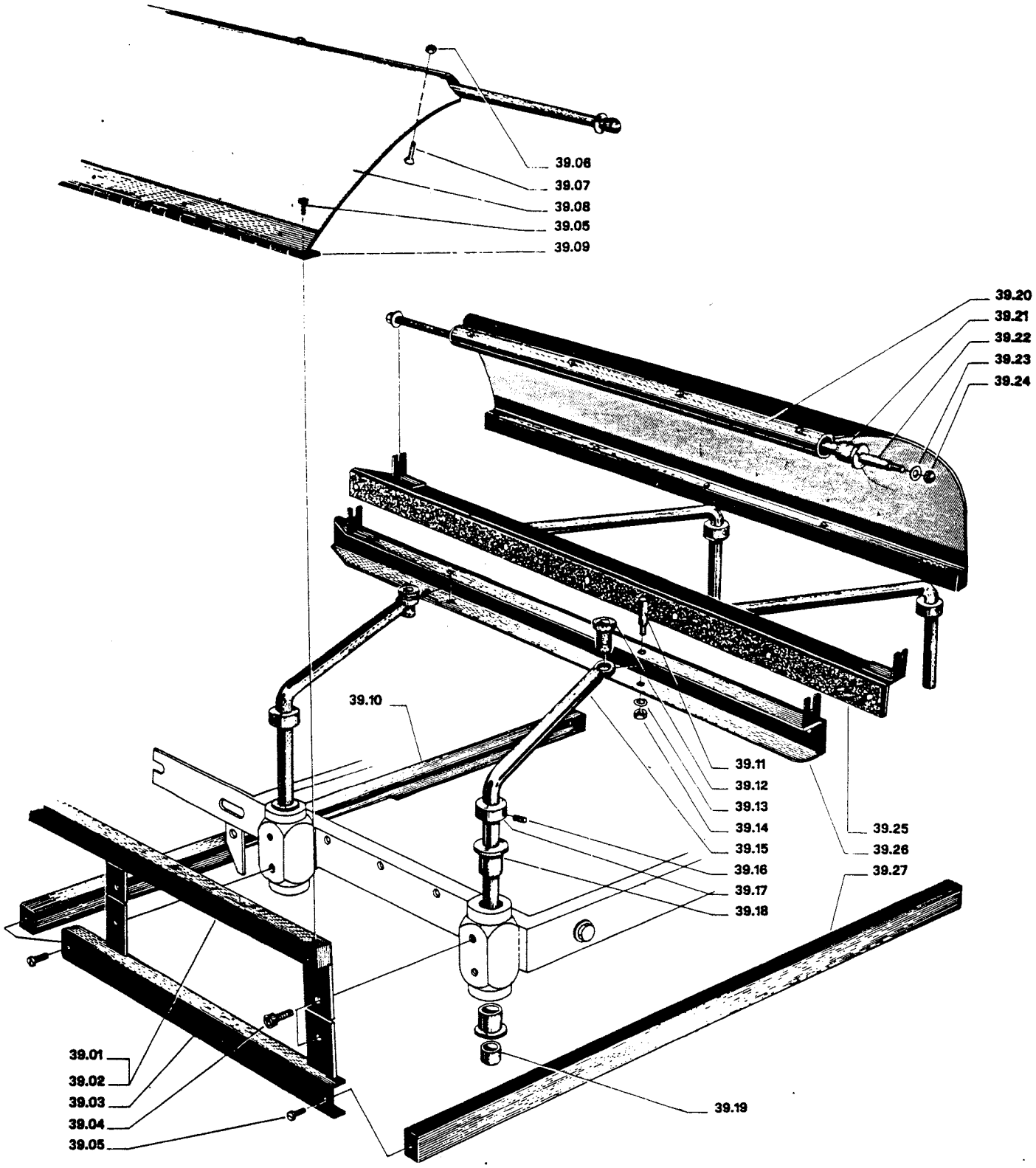
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FIGURE 39

REF. NO.	3M PART NO.	DESCRIPTION
39-01	78-8017-9224-9	Support Weldment Assembly - Left Guard
39-02	78-8017-9225-6	Support Weldment Assembly - Right Guard
39-03	78-8017-9226-4	Guard Weldment Assembly - Chain
39-04	78-8010-7208-9	Screw - Soc. Hd., Hex Soc. Dr., M6 X 10 Nick. Pl.
39-05	78-8017-9265-2	Screw - Self-Tapping, 3.5 X 10, Nick. Pl.
39-06	78-8017-9309-8	Nut - Self-Locking, M4, Nick. Pl.
39-07	78-8017-9317-1	Screw - Allen, FH, M4 X 12, Black Zinc
39-08	78-8017-9227-2	Guard Assembly - Left Side Guide
39-09	78-8017-9228-0	Guard Assembly - Right Side Guide
39-10	78-8017-9229-8	Cover - Rear Chain
39-11	78-8017-9230-6	Pivot - Box Guide
39-12	78-8017-9231-4	Bushing - Flanged
39-13	78-8005-5741-1	Washer - Metric Plain 5mm, Stl, Nick. Pl.
39-14	78-8017-9311-4	Nut - Self-Locking, M5, Nick. Pl.
39-15	78-8017-9232-2	Arm - Side Guide
39-16	78-8017-9258-7	Set Screw - Hex Soc. Dr., M6 X 6, Black Zinc
39-17	78-8017-9273-6	Collar - Stop
39-18	78-8017-9192-8	Bushing - Flanged
39-19	78-8017-9274-4	Spacer - Nylon
39-20	78-8017-9233-0	Sleeve - Side Guide Cover
39-21	78-8017-9275-1	Bushing - Flanged, Nylon
39-22	78-8017-9234-8	Shaft - Side Guide Sleeve
39-23	78-8017-9321-3	Washer - Special
39-24	78-8017-9310-6	Nut - Cap, M6, Nick. Pl.
39-25	78-8017-9235-5	Guide Assembly Weldment - Right Side
39-26	78-8017-9236-3	Guide Assembly Weldment - Left Side
39-27	78-8017-9237-1	Cover - Front Chain

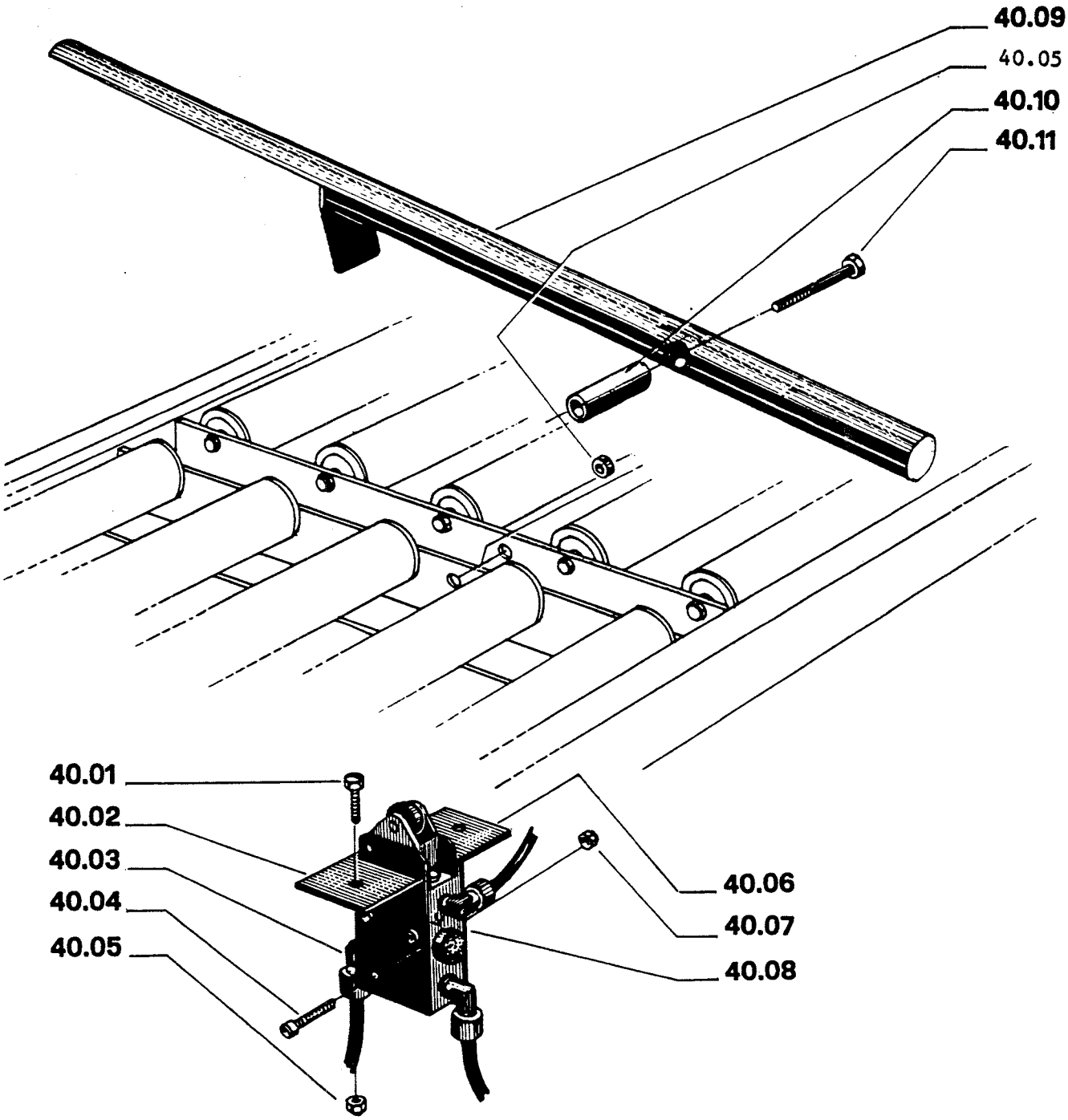

FIGURE 40

REF. NO.	3M PART NO.	DESCRIPTION
40-01	78-8017-9325-4	Screw - Hex Hd., M6 X 15, Nick. Pl.
40-02	78-8017-9238-9	Bracket - Valve, Left Side
40-03	78-8017-9269-4	Elbow - 90°, 1/8", For 6mm Tubing
40-04	78-8017-9304-9	Screw - Soc. Hd., Hex Soc. Dr., M4 X 35, Nick. Pl.
40-05	78-8017-9307-2	Nut - Self-Locking, M6, Nick. Pl.
40-06	78-8017-9239-7	Bracket - Valve, Right Side
40-07	78-8017-9309-8	Nut - Self-Locking, M4, Nick. Pl.
40-08	78-8017-9270-2	Valve - 4-way, C48R
40-09	78-8017-9240-5	Lever Weldment Assembly - Guide Closing
40-10	78-8017-9335-3	Bushing
40-11	78-8017-9326-2	Screw - Hex Hd., M6 X 50, Nick. Pl.

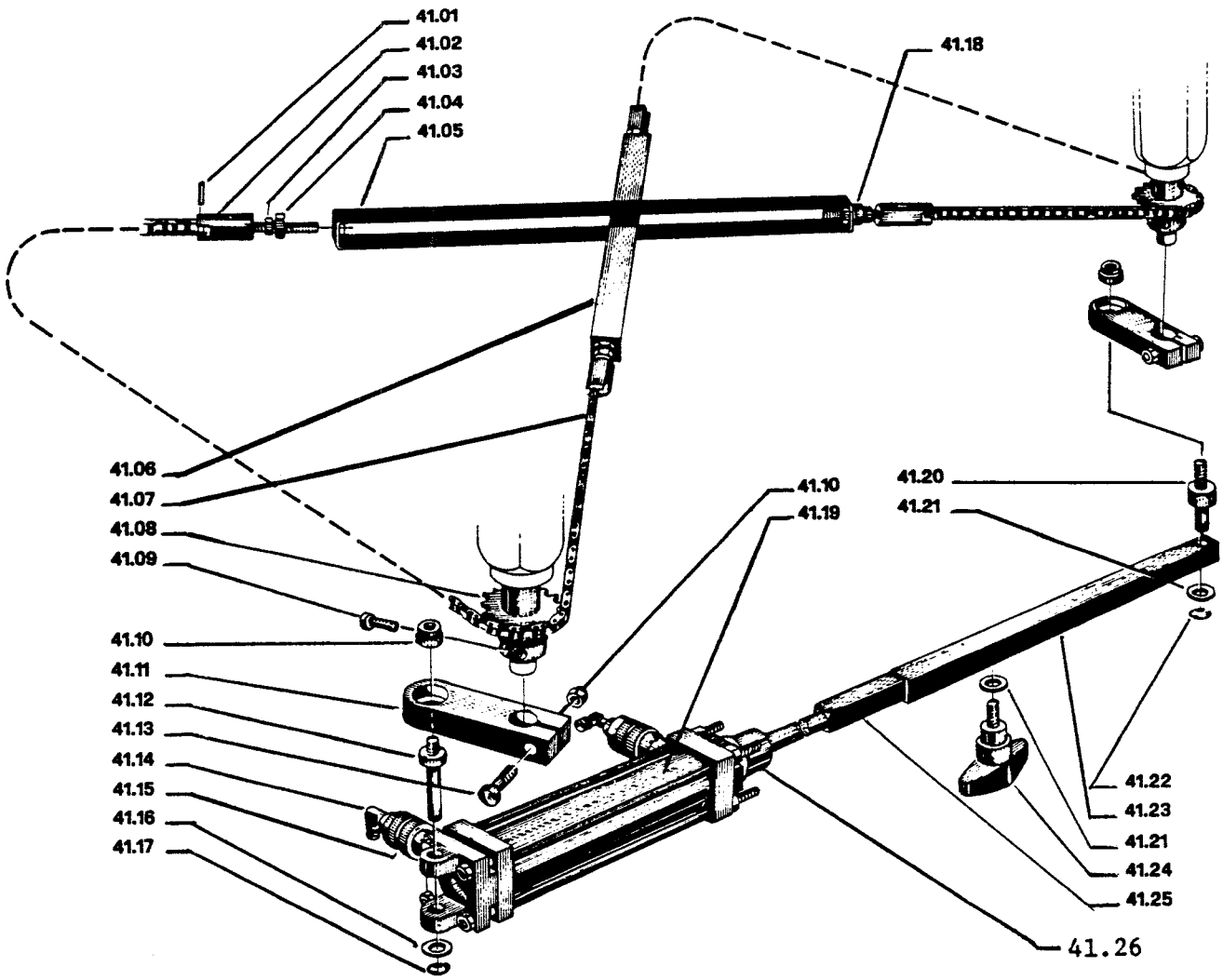
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FIGURE 41

REF. NO.	3M PART NO.	DESCRIPTION
41-01	78-8017-9259-5	Pin - Roll, 3 X 13mm
41-02	78-8017-9241-3	Holder - Chain
41-03	78-8017-9242-1	Rod - Threaded
41-04	78-8017-9312-2	Nut - M8, Nick. Pl.
41-05	78-8017-9243-9	Connector Weldment Assembly - Chain, Open
41-06	78-8017-9244-7	Connector Weldment Assembly - Chain, Closed
41-07	78-8017-9276-9	Chain
41-08	78-8017-9277-7	Sprocket - Split Hub
41-09	78-8010-7210-5	Screw - Soc. Hd., Hex Soc. Dr., M6 X 20, Nick. Pl.
41-10	78-8017-9313-0	Nut - Self-Locking, M8, Nick. Pl.
41-11	78-8017-9245-4	Lever
41-12	78-8017-9278-5	Pin - Air Cylinder Clevis
41-13	78-8017-9322-1	Screw - Hex Hd., M8 X 40, Nick. Pl.
41-14	78-8017-9269-4	Elbow - 90°, 1/8", For 6mm Tubing
41-15	78-8017-9279-3	Regulator - Flow
41-16	78-8017-9318-9	Washer - Plain, Metric 8mm, Nick. Pl.
41-17	78-8017-9280-1	Ring - Snap, For 8mm Shaft
41-18	78-8017-9300-7	Nut - LH Thread, M8, Nick. Pl.
41-19	78-8017-9281-9	Cylinder - Air, 32 X 125mm
41-20	78-8017-9282-7	Pin - Mounting
41-21	78-8017-9319-7	Washer - Flat, 10mm, Nick. Pl.
41-22	78-8017-9283-5	Ring - Snap, For 10mm Shaft
41-23	78-8017-9246-2	Tube - Square
41-24	78-8017-9284-3	Knob
41-25	78-8017-9247-0	Rod - Square
41-26	78-8017-9367-6	Spacer
-	78-8017-9406-2	Seal Kit-For Air Cylinder 41-19

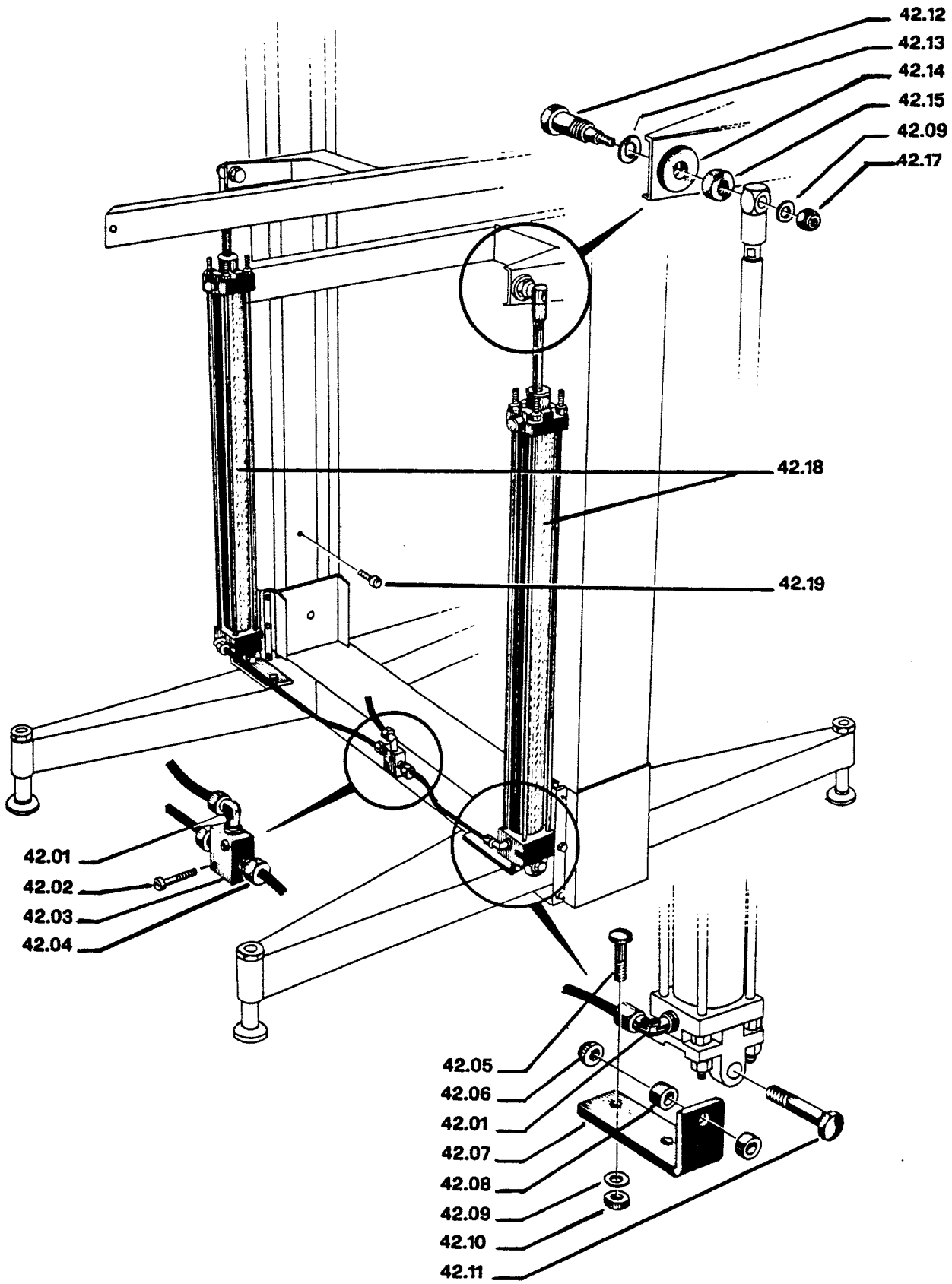
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FIGURE 42

REF. NO.	3M PART NO.	DESCRIPTION
42-01	78-8017-9269-4	Elbow - 90°, 1/8", For 6mm Tubing
42-02	78-8017-9304-9	Screw - Soc. Hd., Hex Soc. Dr., M4 X35, Nick. Pl.
42-03	78-8017-9285-0	Distributor - Air
42-04	78-8017-9267-8	Connector - 1/8", Straight, For 6mm Tubing
42-05	78-8010-7210-5	Screw - Hex Hd., M6 X 20, Nick. Pl.
42-06	78-8017-9313-0	Nut - Self-Locking, M8, Nick. Pl.
42-07	78-8017-9248-8	Bracket - Air Cylinder
42-08	78-8017-9345-2	Spacer
42-09	26-1000-0010-3	Washer - Flat, 6mm, Nick. Pl.
42-10	78-8017-9307-2	Nut - Self-Locking, M6, Nick. Pl.
42-11	78-8017-9323-9	Screw - Hex Hd., M8 X 55, Nick. Pl.
42-12	78-8017-9286-8	Pin - Air Cylinder Rod
42-13	78-8017-9315-5	Washer - Special
42-14	78-8017-9316-3	Washer - Special
42-15	78-8017-9314-8	Nut - M10, Nick. Pl.
42-16		
42-17	78-8017-9310-6	Nut - Cap, M6, Nick. Pl.
42-18	78-8017-9287-6	Cylinder - Air, 32 X 440mm
42-19	78-8010-7203-0	Screw - Soc. Hd., Hex Soc. Dr., M5 X 10, Nick. Pl.
-	78-8017-9406-2	Seal Kit - For Air Cylinder 42-18

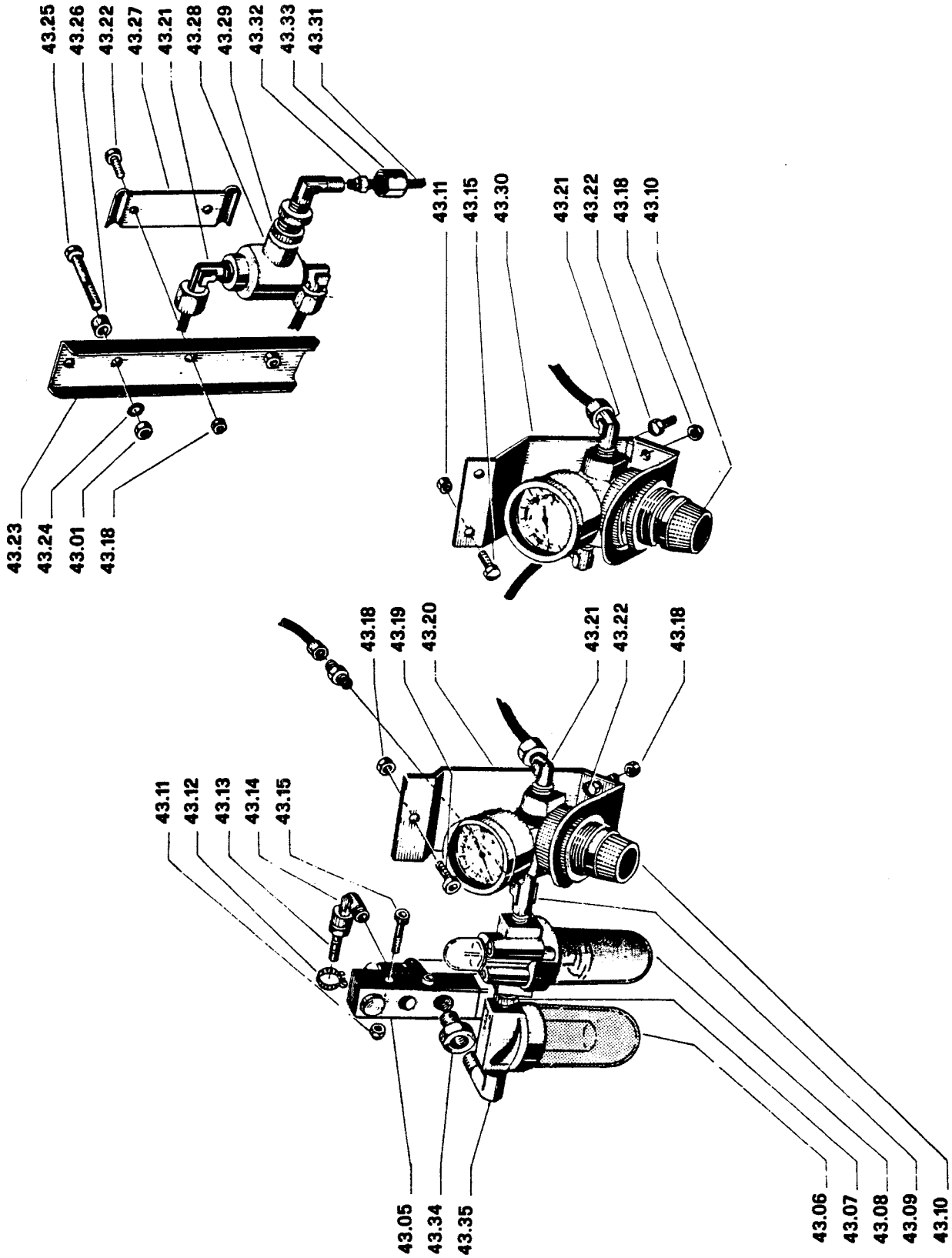
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FIGURE 43

REF. NO.	3M PART NO.	DESCRIPTION
43-01	78-8017-9307-2	Nut - Self-Locking, M6, Nick. Pl.
43-02		
43-03		
43-04		
43-05	78-8017-9289-2	Valve - Pneumatic On/Off
43-06	78-8017-9290-0	Filter - Air
43-07	78-8017-9291-8	Nipple - Straight, 1/8" X 1/8"
43-08	78-8017-9292-6	Lubricator - Air
43-09	78-8017-9343-7	Tee - Running, 1/8" X 1/8", For 6mm Tubing
43-10	78-8017-9294-2	Regulator - Air Pressure, 0 to 10 Atm.
43-11	78-8017-9309-8	Nut - Self-Locking, M4, Nick. Pl.
43-12	78-8017-9295-9	Clamp - Tubing
43-13	78-8017-9296-7	Union - Air Supply Hose
43-14	78-8017-9427-8	Elbow - 90°, 1/8" male x 1/8" female
43-15	78-8017-9304-9	Screw - Soc. Hd., Hex Soc. Dr., M4 X 35, Nick. Pl.
43-18	78-8017-9311-4	Nut - Self-Locking, M5, Nick. Pl.
43-19	78-8010-7204-8	Screw - Soc. Hd., Hex Soc. Dr., M5 X 12, Nick. Pl.
43-20	78-8017-9251-2	Bracket - Pressure Regulator
43-21	78-8017-9269-4	Elbow, 90°, 1/8", for 6mm Tubing
43-22	78-8010-7163-6	Screw - Metric Hex Hd., M5 X 10, Nick. Pl., DIN 933-8.8
43-23	78-8017-9336-1	Bracket - Quick Exhaust Valve
43-24	26-1000-0010-3	Washer - Flat, 6mm, Nick. Pl.
43-25	78-8017-9337-9	Screw - Hex Hd., M6 X 45, Nick. Pl.
43-26	78-8017-9338-7	Spacer
43-27	78-8017-9339-5	Clamp - Tubing
43-28	78-8017-9340-3	Valve - Quick Exhaust
43-29	78-8017-9341-1	Adapter - 1/8"
43-30	78-8017-9342-9	Bracket - Pressure Regulator
43-31	78-8017-9346-0	Tubing - 6mm, 3 Metres
43-32	78-8017-9347-8	Collar - Tubing, for Air Fittings
43-33	78-8017-9348-6	Nut - Tubing, for Air Fittings
43-34	78-8017-9423-7	Union - 1/8",(Serial number 7R-1205 and above)
43-35	78-8017-9426-0	Elbow - 90°, 1/8" male x 1/8" male

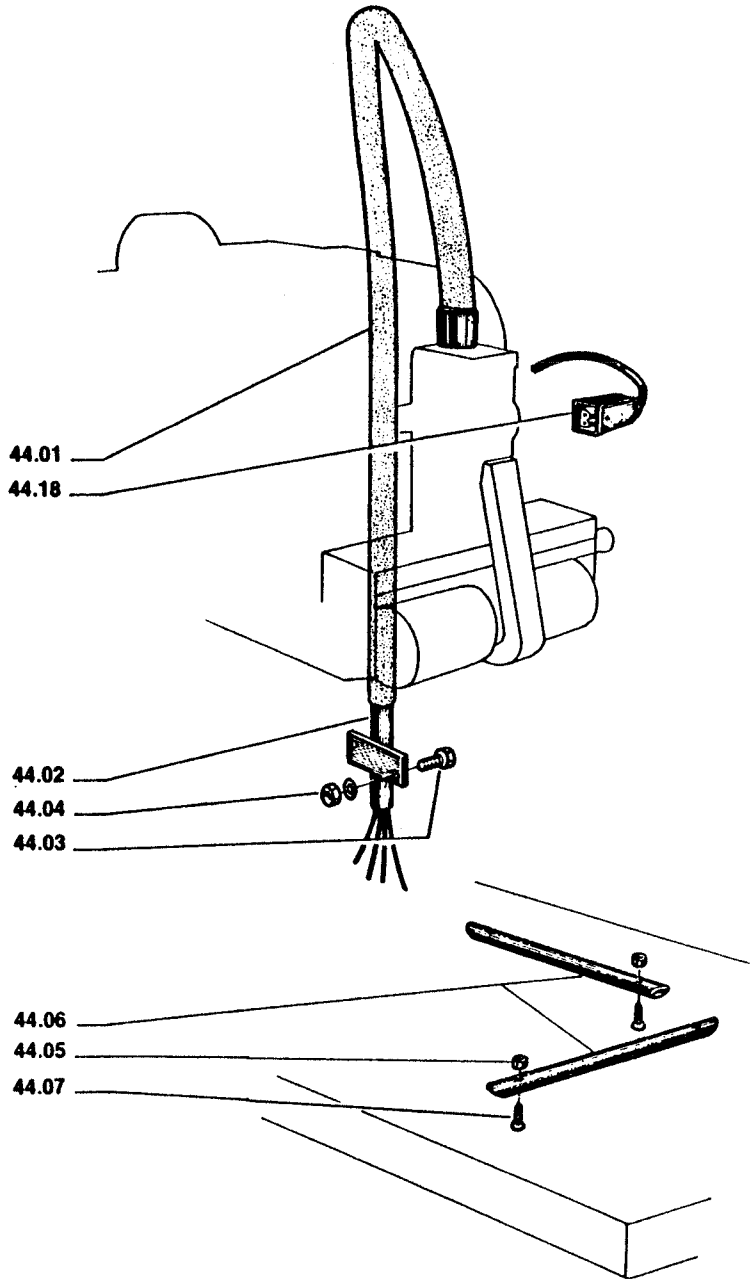
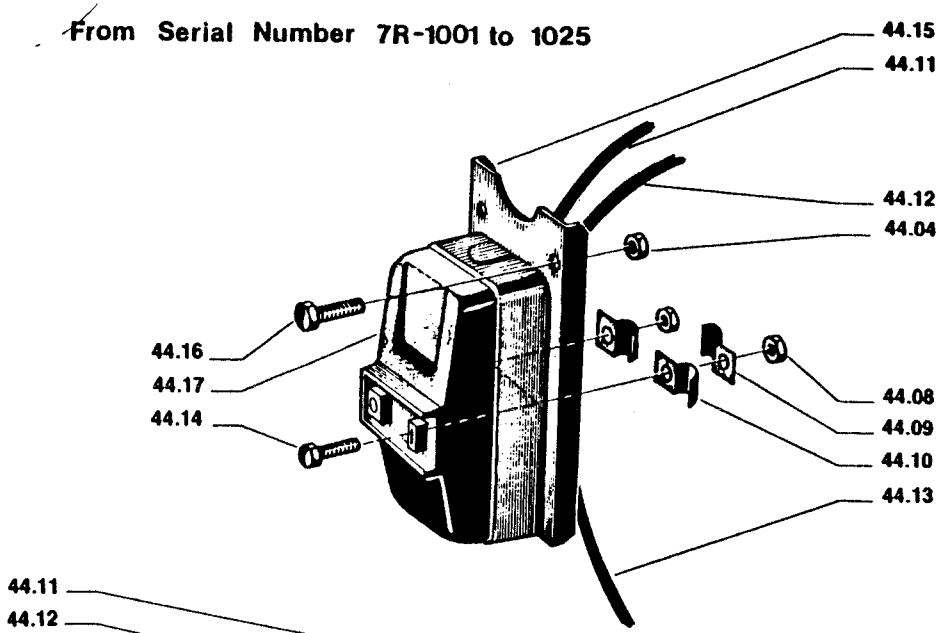
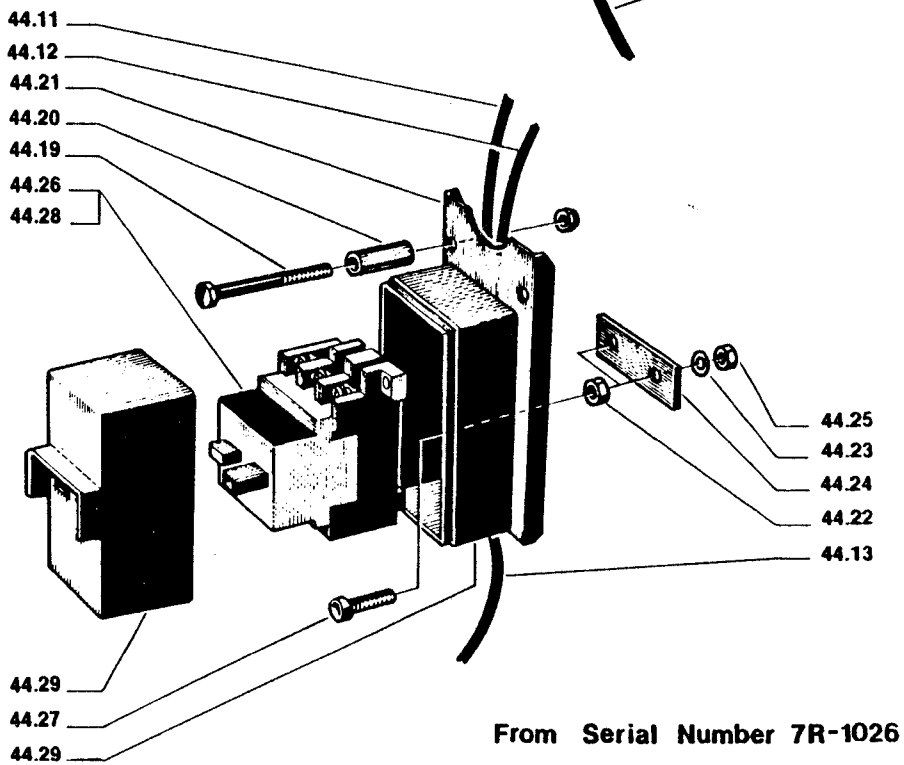


FIGURE 44

From Serial Number 7R-1001 to 1025





From Serial Number 7R-1026

REF. NO.	3M PART NO.	DESCRIPTION
44-01	78-8017-9428-6	Sleeving - 29mm Diameter
44-02	78-8017-9429-4	Holding Weldment Assembly - Sleeving, 29mm Diameter
44-03	78-8017-9305-6	Screw - Soc. Hd., Hex Soc. Dr., M6 x 35, Nick. Pl.
44-04	78-8017-9307-2	Nut - Self-locking, M6, Nick. Pl.
44-05	78-8017-9309-8	Nut - Self-locking, M4, Nick. Pl.
44-06	78-8017-9383-3	Tube - Cable
44-07	78-8017-9384-1	Screw - Allen FH, M4 x 12
44-08	78-8010-7416-8	Nut - Metric, Hex, Stl., M4, Nick. Pl.
44-09	78-8017-9372-6	Clamp - Cable
44-10	78-8017-9373-4	Clamp - Cable
44-11	78-8017-9374-2	Cable - 1.3 metres
44-12	78-8017-9375-9	Cable - 3.5 metres
44-13A	78-8005-7933-2	Power Cord - U.S.
44-13B	78-8017-9404-7	Power Cord - European
44-14	78-8005-5695-9	Screw - Fillister Head, M4 x 25, Nick. Pl.
44-15	78-8017-9249-6	Plate - Switch Mounting
44-16	78-8017-9327-0	Screw - Hex Hd., M6 x 30, Nick. Pl.
44-17	78-8017-9288-4	Switch - Electric On/Off
44-18	78-8017-9013-6	Plug
44-19	78-8017-9400-5	Screw - Hex Hd., Stl., M6 x 55, Nick. Pl.
44-20	78-8017-9401-3	Spacer
44-21	78-8017-9405-4	Plate - Siemens Switch Mounting
44-22	78-8017-9311-4	Nut - Self-locking, M5, Nick. Pl.
44-23	78-8005-5741-1	Washer - Plain, Metric, M5, Nick. Pl.
44-24	78-8017-9402-1	Plate - Clamp
44-25	78-8010-7417-6	Nut - Metric, Nex Stl., M5, Nick. Pl.
44-26	78-8017-9403-9	Switch - Electric On/Off, Siemens, 110V, 60 Hz.
44-27	78-8010-7206-3	Screw - Soc. Hd., Hex Soc. Dr., M5 x 25, Nick. Pl.
44-28	78-8017-9421-1	Switch - Electric On/Off, Siemens, 220-240V, 50 Hz.
44-29	78-8017-9422-9	Switch box, Plastic Siemens

3M-MATIC SPECIFICATIONS

7R RANDOM BOX SEALER MODEL 176

TAPE SPECIFICATIONS	
TAPE	"SCOTCH" Brand pressure-sensitive film box sealing tapes.
TAPE WIDTH	1-1/2 inch or 36mm minimum to 2 inch or 48mm maximum.
TAPE ROLL DIAMETER	Up to 14 inches [355.6mm] maximum on a 3 inch [76.2mm] diameter core. (Accommodates "SCOTCH" Brand 1,000 yard rolls.)
BOX SPECIFICATIONS	
BOX BOARD	125-275 P.S.I. bursting test, single wall, A, B, C Flute.
BOX WEIGHT CAPACITY (Filled)	Up to 50 pounds [22.7kg]
BOX SIZE CAPACITY (Outside Box Dimensions)	Minimum / Maximum Length: 6 Inches [152mm] / Unlimited Width: 5.8 Inches [147mm] / 21 Inches [533mm] Height: 5.2 Inches [132mm] / 19.8 Inches [503mm] NOTES: Box heights up to 21.5 inches [546mm] can be accommodated by adjusting conveyor bed to lower position without any affect to 14 inch [355.6mm] tape roll diameter capacity on bottom taping head. With tape roll diameters less than 14 inches [355.6mm], the conveyor bed can be lowered further for additional box height capacity. Box heights up to 26 inches [660mm] can be accommodated through repositioning bottom taping head tape roll with special mounting bracket available from Tape Customer Engineering. The 7R Random Box Sealer can accommodate most boxes within size range listed above. However, boxes with tall proportions, for example a box length (in direction of seal) to box height ratio of .5, should be test run to assure proper machine performance.
OPERATING RATE	Up to 12 boxes per minute depending on box size, weight, and operator capability. Higher rates are possible through box size range or fixed size adjustments provided.
POWER REQUIREMENTS	
ELECTRICAL	115V, 60 Hz, 7A or 220V, 50 Hz, 4A
PNEUMATIC	70 PSIG [584 kPa], 2.5 SCFM [4.25m3/h] maximum at maximum random cycle rate. A pressure regulator-filter-lubricator is included.
OPERATING CONDITIONS	Use in dry, relatively clean environments at 40° F to 120° F [4.4° C to 48.9° C] with clean, dry boxes. Machine should not be washed down or subject to conditions causing moisture condensation on components.
MACHINE DIMENSIONS	
LENGTH	65.5 Inches [1664mm], 40.2 Inches [1021mm] for shipping purposes.
WIDTH	28.5 Inches [724mm]
HEIGHT	48.8 Inches [1240mm]
CONVEYOR BED HEIGHT	Adjustable up and down from factory set height of 24.6 inches [625mm].
WEIGHT	330 pounds [150kg] uncrated, 462 pounds [210kg] crated.

Contact your 3M Company representative for application requirements outside the above specifications.

Packaging Systems Division 3M COMPANY

3M CENTER • ST. PAUL, MINNESOTA 55101

34-7004-7154-2

Litho in U.S.A.