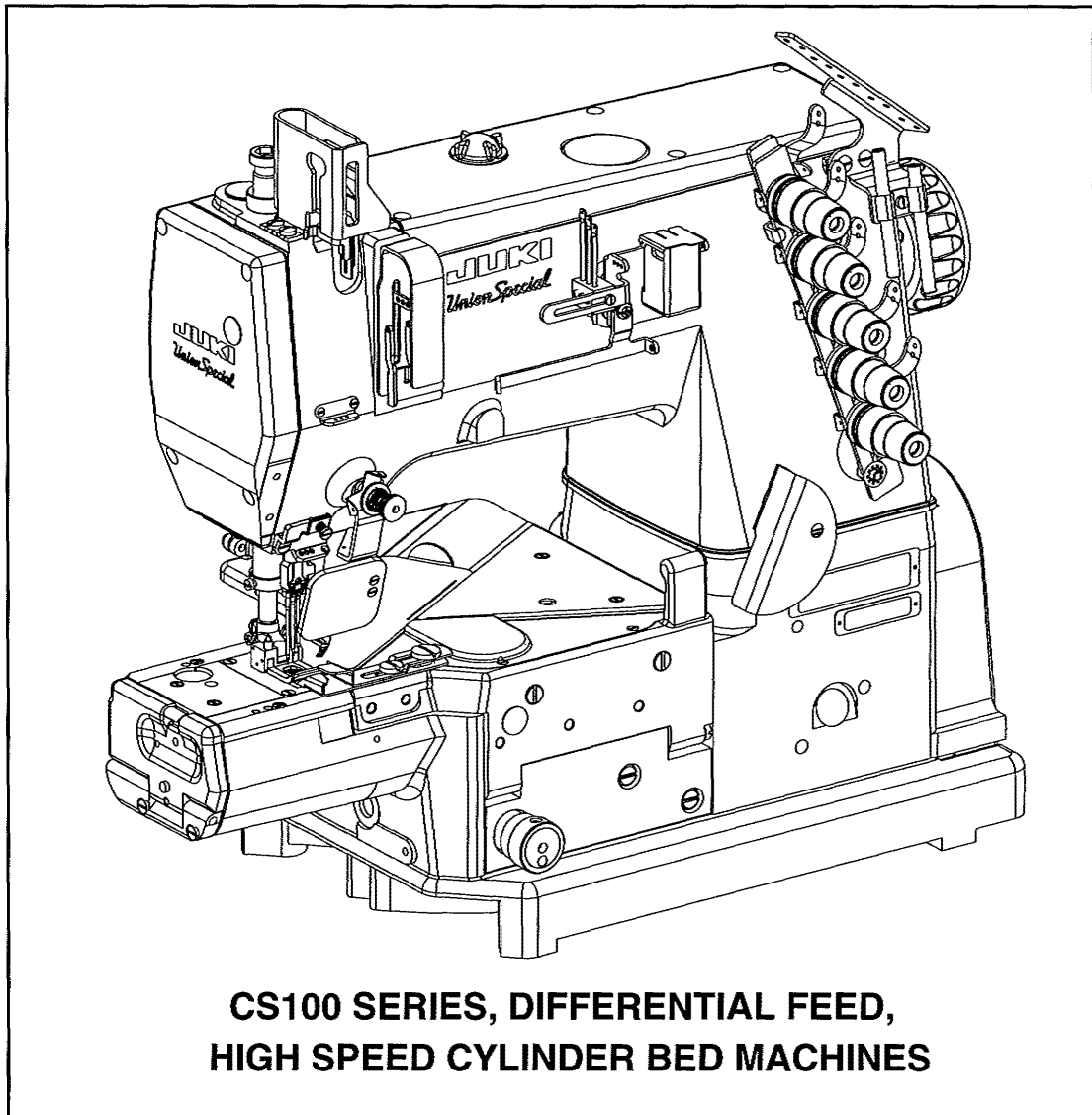




# *Union Special*

INDUSTRIAL SEWING EQUIPMENT

## ADJUSTING INSTRUCTION / PARTS MANUAL



**MANUAL NO. PT9641  
FOR DEVICES**

**UT1CS1  
UT2CS1  
UT3CS1  
UT4CS1  
UT5CS1**

# Adjusting Instructions/Parts Manual PT9641 for Devices UT1CS1, UT2CS1, UT3CS1, UT4CS1, UT5CS1

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## PREFACE

This parts manual has been prepared to assist you in locating NEW individual parts or assemblies on the CS100 Series machines. It can be used in conjunction with Union Special Parts Manuals PT9512 or PT9425 (depending on machine style) & Operator's Manual OP9637.

It is the desire of Union Special that each machine run at its optimum performance. Parts listed in this manual are designed specifically for your machine and are manufactured with utmost precision to assure long lasting service.

This manual has been comprised on the basis of available information. Changes in design and/or improvements may incorporate a slight modification of configuration in illustrations or part numbers.

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## SAFETY RULES

1. Before putting the machines described in this manual into service, carefully read the instructions. The starting of each machine is only permitted after taking notice of the instructions and by qualified operators.

**IMPORTANT!** Before putting the machine into service, also read the safety rules and instructions from the motor supplier.

2. Observe the national safety rules valid for your country.
3. The sewing machines described in this instruction manual are prohibited from being put into service until it has been ascertained that the sewing units which these sewing machines will be built into, have conformed with the EC Council Directives (89/392/EEC, Annex II B).

Each machine is only allowed to be used as foreseen. The foreseen use of the particular machine is described in paragraph "STYLES OF MACHINES" of this instruction manual. Another use, going beyond the description, is not as foreseen.

4. All safety devices must be in position when the machine is ready for work or in operation. Operation of the machine without the appertaining safety devices is prohibited.
5. Wear safety glasses.
6. In case of machine conversions and changes all valid safety rules must be considered. Conversions and changes are made at your own risk.
7. The warning hints in the instructions are marked with one of these two symbols:



8. When doing the following the machine has to be disconnected from the power supply by turning off the main switch or by pulling out the main plug:
  - 8.1 When threading needle(s), looper, spreader etc.
  - 8.2 When replacing any parts such as needle(s), presser foot, throat plate, looper, spreader, feed dog, needle guard, folder, fabric guide etc.
  - 8.3 When leaving the workplace and when the workplace is unattended.
  - 8.4 When doing maintenance work.
  - 8.5 When using clutch motors without actuation lock, wait until the motor is stopped totally.
9. Maintenance, repair and conversion work (see item 8) must be done only by trained technicians or special skilled personnel under consideration of the instructions.
10. Any work on the electrical equipment must be done by an electrician or under direction and supervision of special skilled personnel.
11. Work on parts and equipment under electrical power is not permitted. Permissible exceptions are described in the applicable sections of standard sheet DIN VDE 0105.
12. Before doing maintenance and repair work on the pneumatic equipment, the machine has to be disconnected from the compressed air supply. In case of existing residual air pressure after disconnecting from compressed air supply (i.e. pneumatic equipment with air tank), the pressure has to be removed by bleeding.

## TENSION RELEASE (UNDERBED THREAD TRIMMER)

Set separators (C) as close to tension discs (D) without touching them and not to bind when fully extended.

Tension discs (D) must open as soon as cutting process begins.

Tension disc separators (C) should move freely between tension discs (D) without binding.

Thread trimmer and tension release assemblies are linked together.

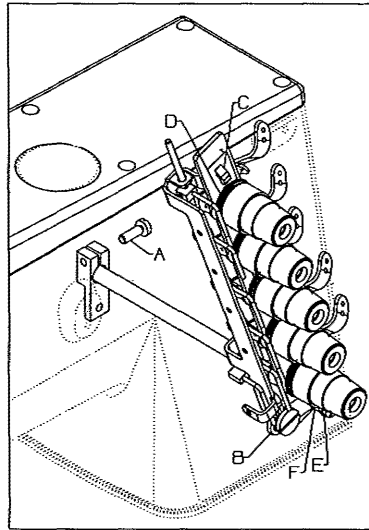


FIG 9

TO ADJUST:

Loosen screw (E).

Turn eccentric (F), located behind screw (E) to set tension release lever (B) as required.

Retighten screw (E).

After adjustment there should be no binding at any point.

Adjust the tension release lever (A, fig. 9) to fully open the tension release and return without binding. The tension release is timed with the activation of the fabric thread trimmer.

## THREAD PULL-OFF

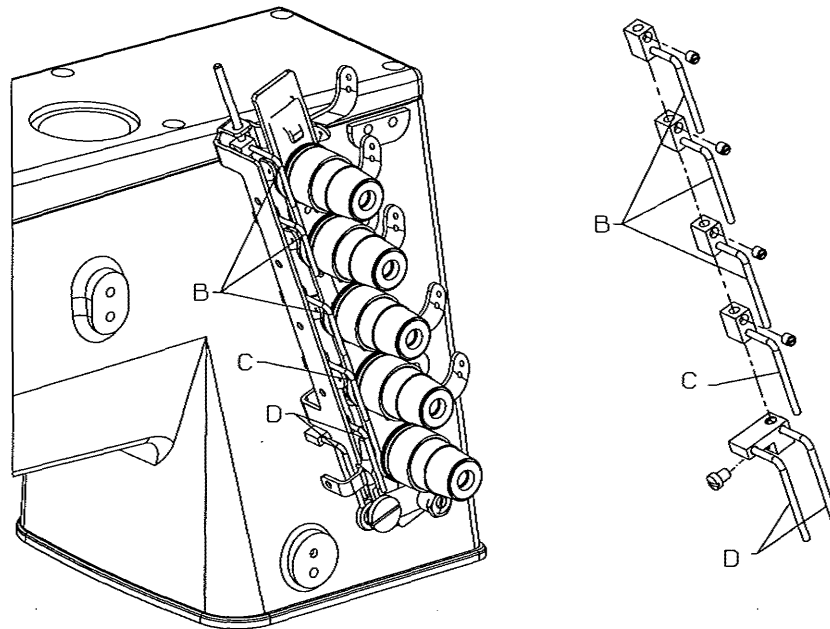
Pull-off hooks (B) for needle threads, control length of needle thread tails on a garment after trimming.

Set hooks (B) to strike-off shortest tail possible and still start sewing within the first or second stitch.

Set thread pull-off hook (C), for spreader thread so that thread is clamped securely when trimmed and starts properly when the stitch is first started. Lowering the needle thread pull off hooks will strike off more thread leaving longer tails.

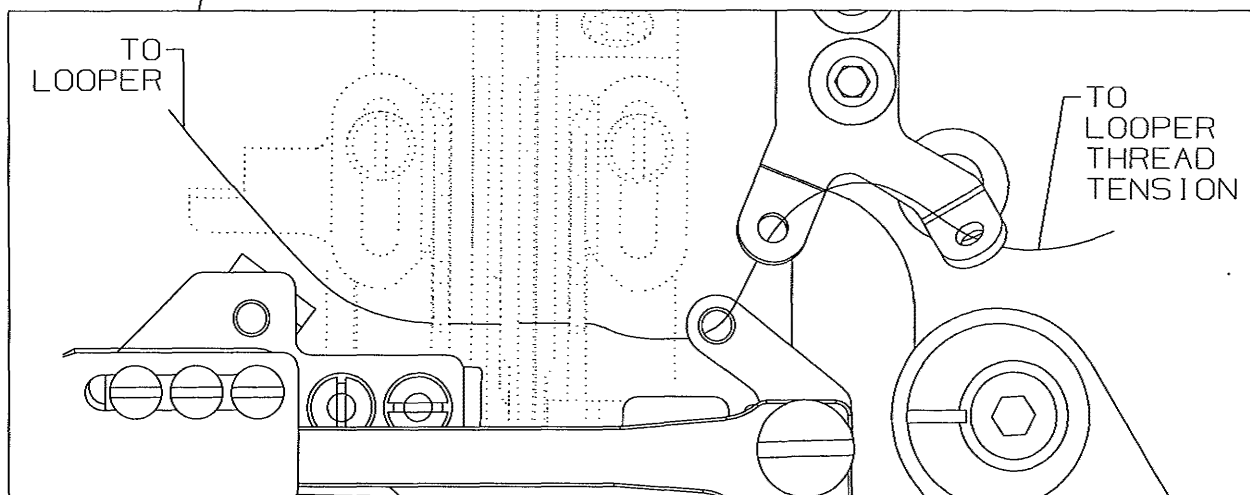
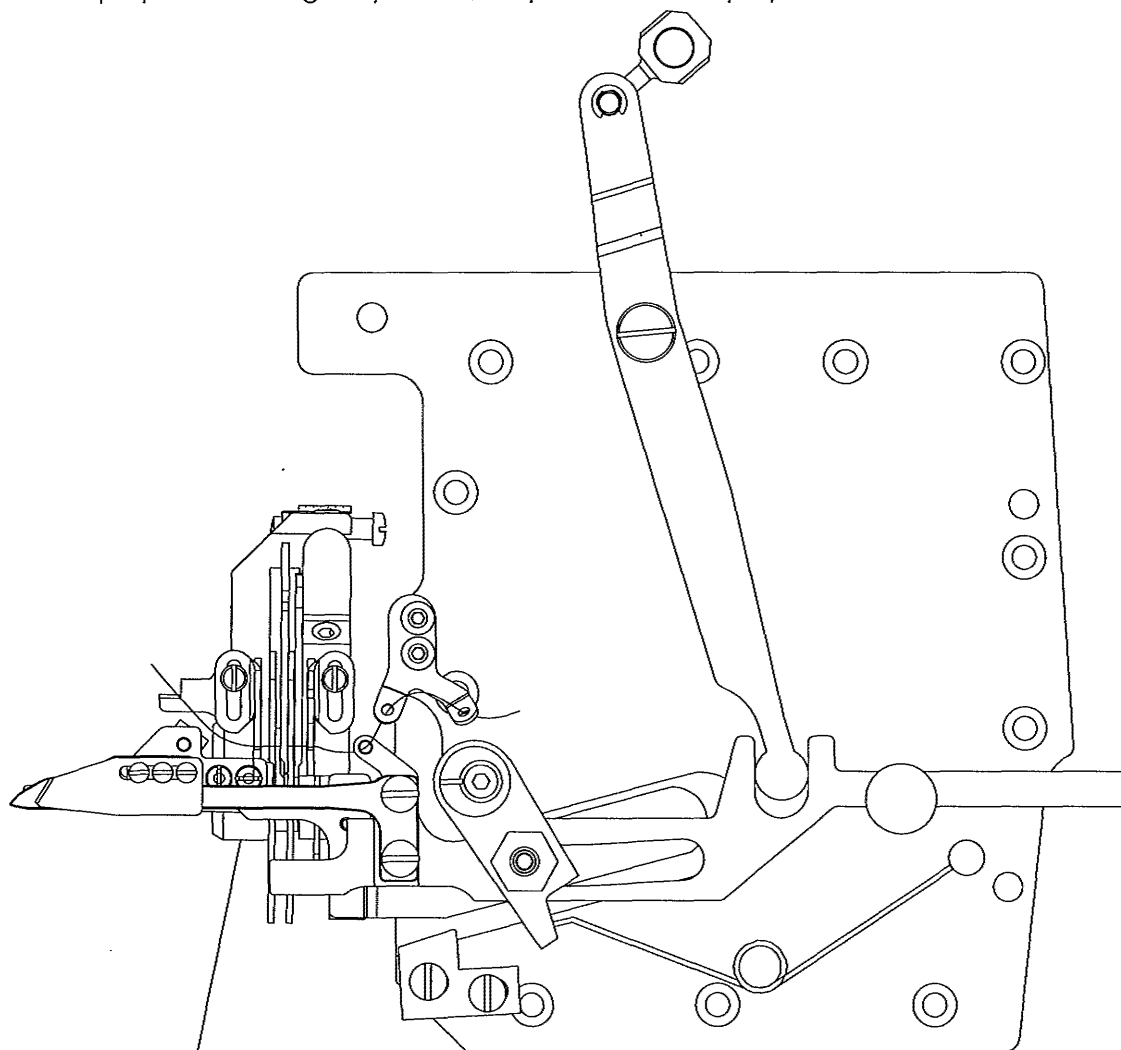
Set hook (D), for the looper thread so that the thread is clamped securely when trimmed.

NOTE: Moving strike-off hooks down strikes off more thread. Moving strike-off hooks up strikes off less thread.



THREADING DIAGRAM  
Looper Thread Strike-Off

CAUTION: Improper threading may cause; looper thread wrap-ups or inconsistent start of stitches.



## UNDERBED THREAD TRIMMER (ELECTRIC)

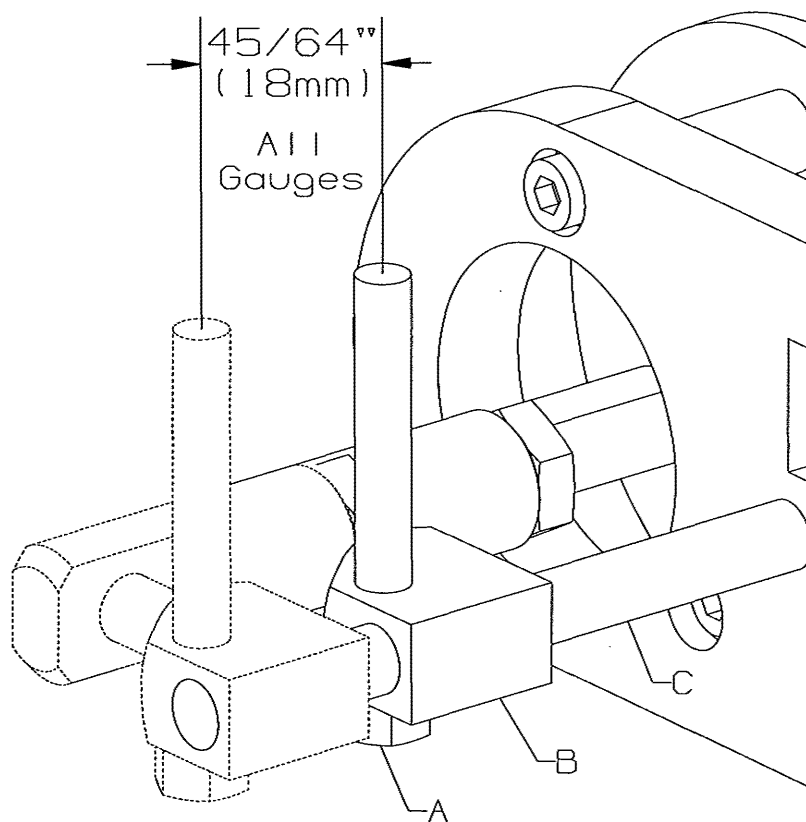
Set stroke of the driving solenoid to:  $45/64$ " (18mm). All gauges.

Remove the cloth plate.

Loosen nut (A).

Move crosshead (B) on shaft (C) as required.

Retighten nut (A).





## UNDERBED THREAD TRIMMER ASSEMBLY

When the thread trimmer is in its home position, the distance between edge (AA) and the protruding edge of lever (D) should be: 1/64" (0.4mm).

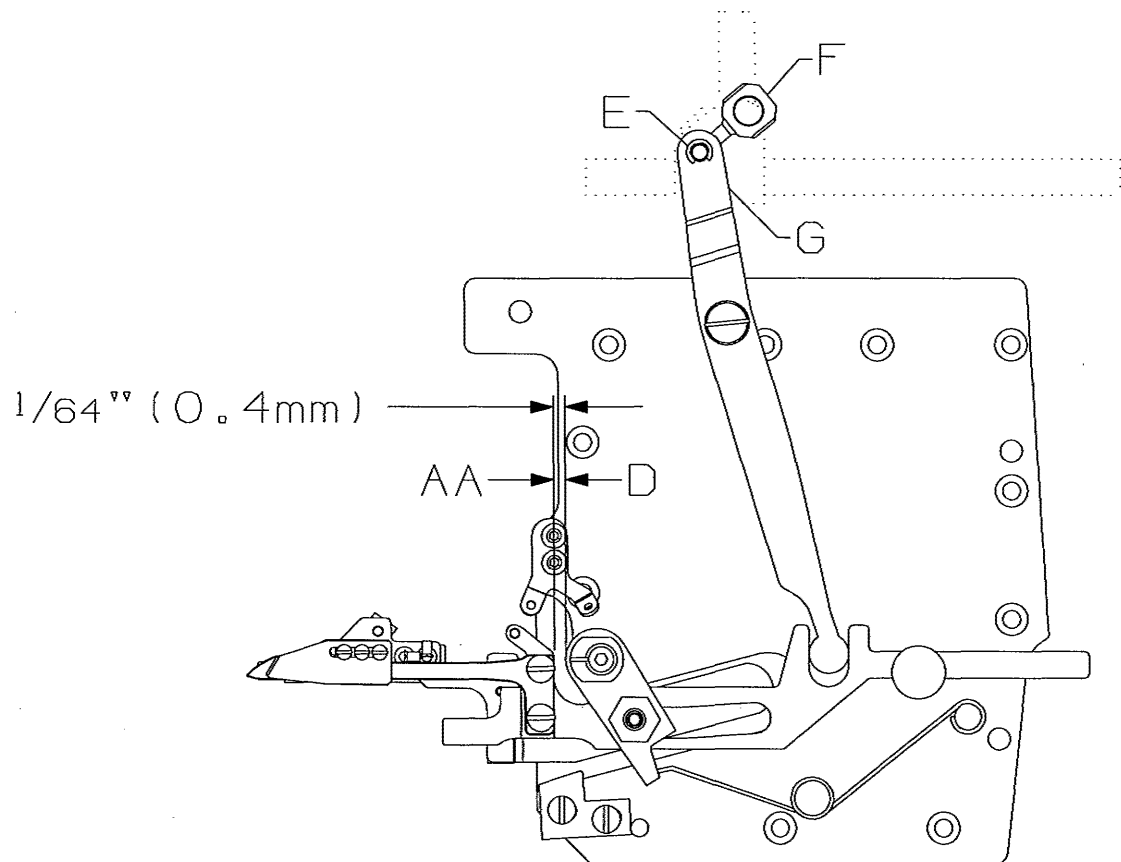
Remove retainer ring (E).

Push down on driving link to remove from hole in arm (G).

Turn driving link(F) in or out as required.

Release driving link (F) making sure pin is in hole in arm (G).

Replace retainer ring (E).



# UNDERBED THREAD TRIMMER ASSEMBLY

## Knife Adjustment

When positioning lower knife (G), eyelet (J) must be seated to the right.

Lower knife (G) must be seated to the right and all the way forward when tightened.

Loosen 2 screws (K).

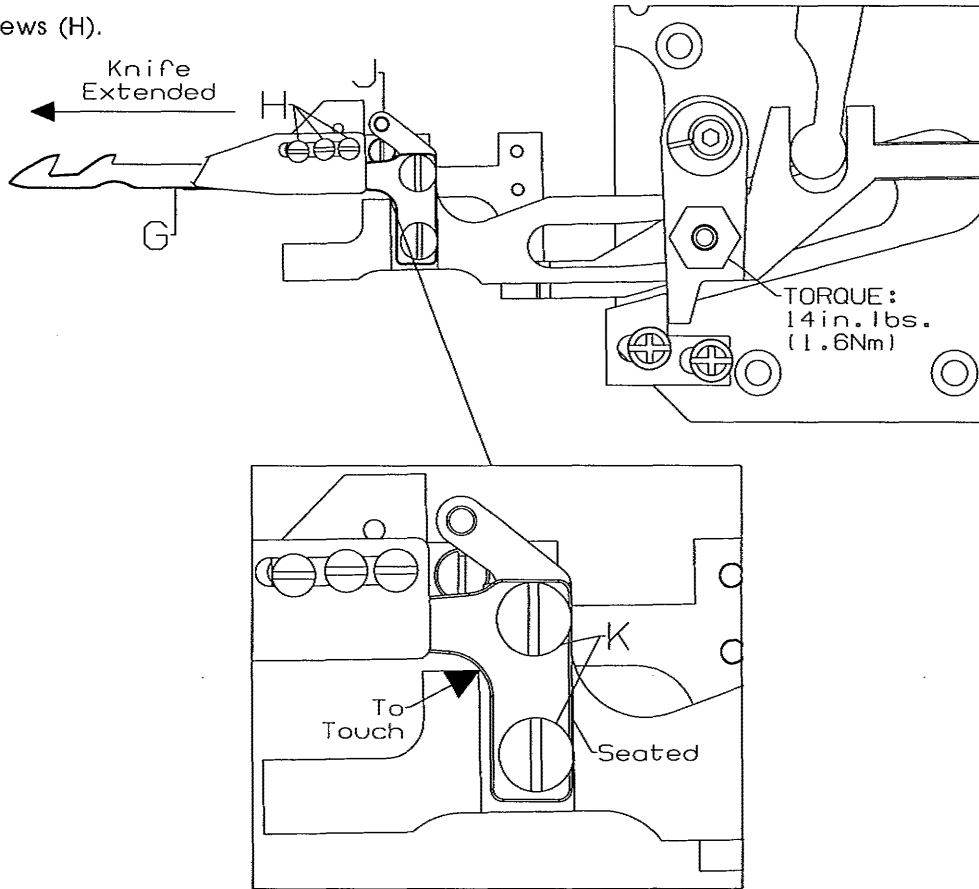
Move eyelet (J) to the right as required.

Set lower knife as required.

Retighten screws (K).

To ensure no binds, extend knife (G) to the left and loosen upper knife screws (H) at the same time.

Retighten screws (H).



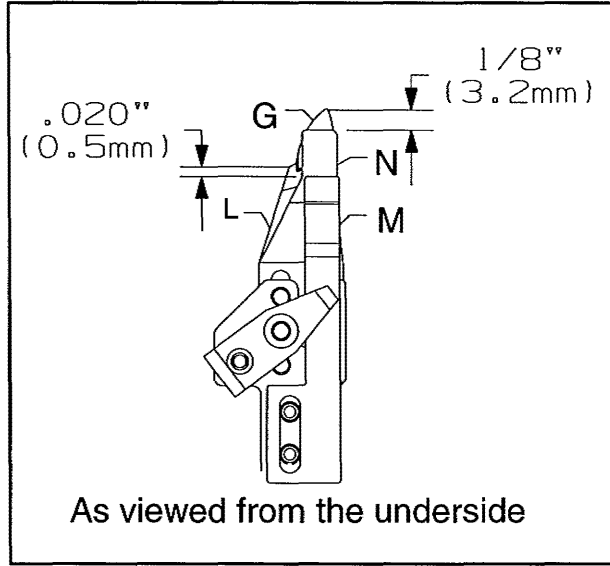
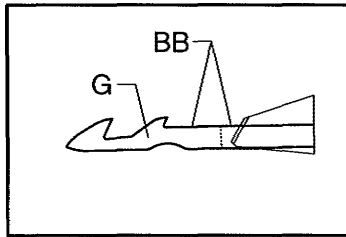
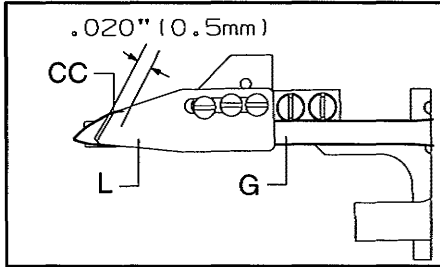
## UNDERBED THREAD TRIMMER ASSEMBLY

Upper knife (L) should overlap lower knife (G) by: .020" (0.5mm).

The distance from clamping leaf spring (N) to the tip of lower knife (G) should be: 1/8" (3mm). Clamping leaf spring (N) should be flush with knife at edge (BB).

NOTE: The clamping leaf spring must be set to only clamp the looper thread, NOT the needle threads.

The distance from tension leaf spring (M) to the back of upper knife (L, @ point CC) should be: .020" (0.5mm).



## UPPER KNIFE AND CLAMPING SPRING

Loosen two screws (H) and screw (H1).

Move upper knife (L) and clamping leaf spring (N) as required.

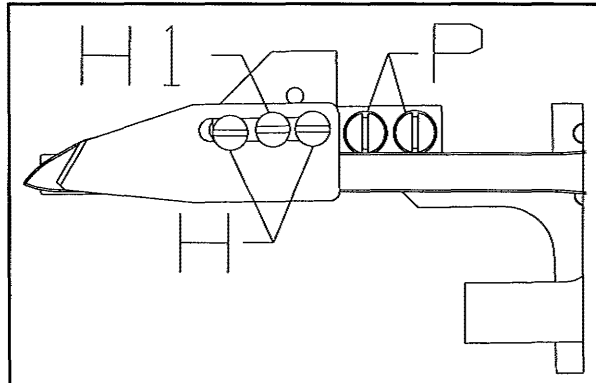
Retighten screws (H) and (H1).

## TENSION SPRING

Loosen two screws (P).

Adjust leaf spring (M) as required.

Retighten screws.



## UNDERBED THREAD TRIMMER ASSEMBLY

With the needles at top dead center: Lower knife (G) should be extended past the heel of looper (Q) by: 15/32" (12.0mm), for the following adjustments.

The tip of lower knife (G) should be centered front to back, to the rear edge of the flat on top of looper (Q).

Stop (R) sets the distance of the upper knife and springs to the looper, it should be centered in its slots.

Guide (S) should just contact edge (DD) of knife mechanism.

On cover stitch machines (G) should be set slightly rearward .005" (.10mm) of the standard adjustment.

The bottom of lower knife (L) should clear looper (Q) by .004" (0.1mm).

### LOWER KNIFE FRONT TO BACK

Loosen screw (T).

Move eccentric (U) as required.

Retighten screw (T).

### STOP DISTANCE

Loosen screws (V).

Move stop (R) as required.

Retighten screws (V).

### GUIDE DISTANCE

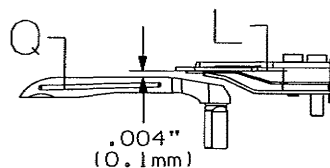
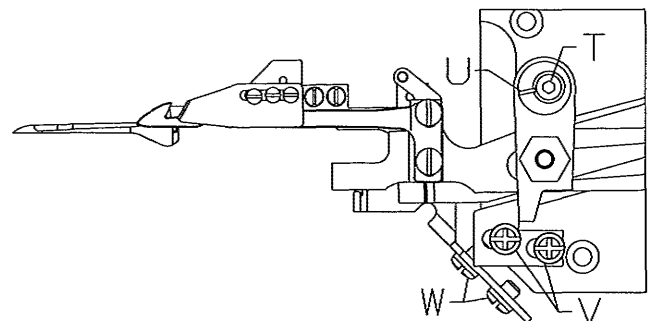
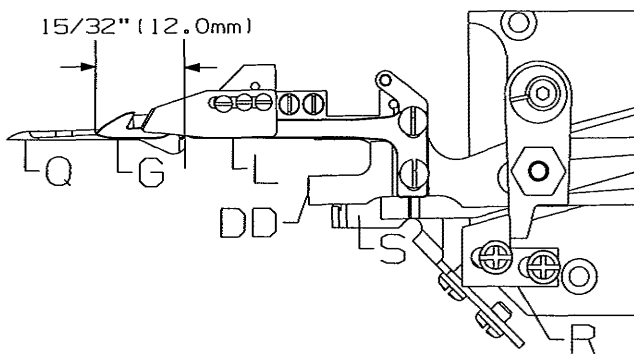
Loosen screws (W).

Move guide (S) as required to just contact edge (DD).

Retighten screws (W).

Loosen screws (W). Move guide (S) as required to obtain .004" (0.1mm) dimension.

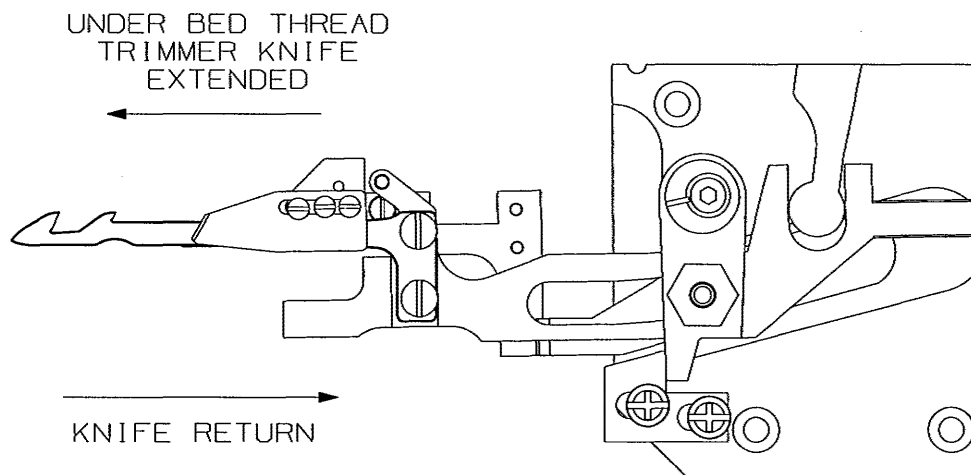
Retighten screws (W).



## UNDERBED THREAD TRIMMER

### ELECTROPNEUMATIC DRIVE

Adjust the metering screws so that thread trimmer mechanism and knife move smoothly left to right and the threads are cleanly cut and clamped.

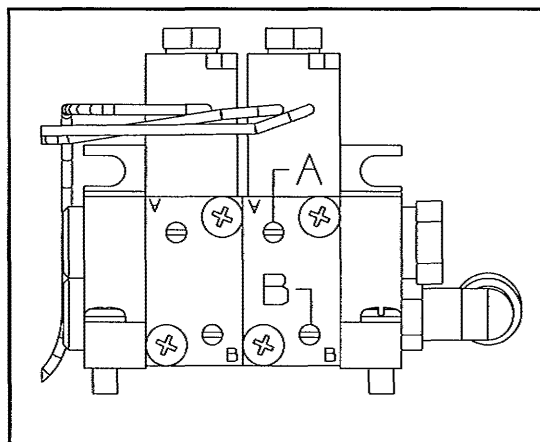


To increase the speed of the knife return, turn screw (A) counterclockwise.

To decrease the speed of the knife, turn screw (A) clockwise.

To increase the speed of extending the knife, turn screw (B) counterclockwise.

To decrease the speed of extending the knife, turn screw (B) clockwise.



## SETTING PROXIMITY SWITCH

Proximity switch prevents motor from running when thread trimmer mechanism is not in extreme right position.

When moving thread trimmer mechanism 0.020" (0.5mm) to left LED must go out, motor will not start.

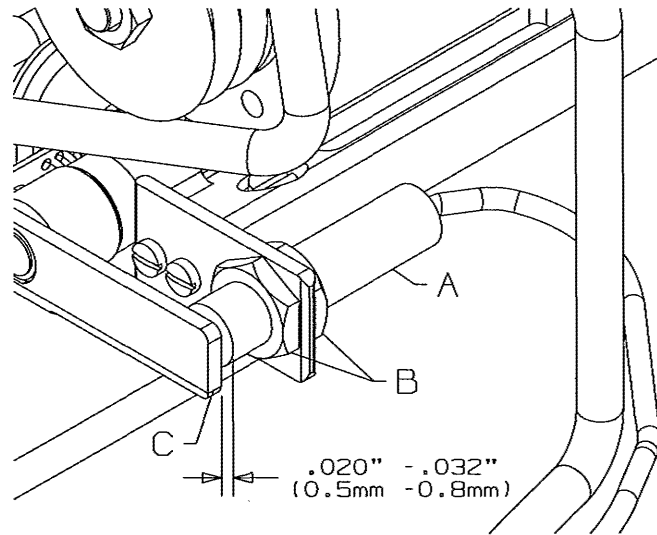
Move thread trimmer mechanism to its extreme right (end) position.

Switch on motor (do not run).

Loosen nuts (B).

Adjust switch (A) closer to lever (C) until LED illuminates.

Distance should be between 0.020 to 0.032" (0.5 to 0.8mm).



## SOLENOID/PNEUMATIC THREAD WIPER

Bracket installed at 90 angle to needles.

Wiper hook (A) must deflect needle threads to operator on downstroke, (Fig. 1). Also the catch of the hook must pass the left needle by  $1/8''$  (3.0mm).

On return, wiper hook must catch all needle threads (Fig. 2) and draw them into leaf spring (B) to be clamped.

Wiper hook (A) and leaf spring (B) should be flush at point (C) when at rest position.

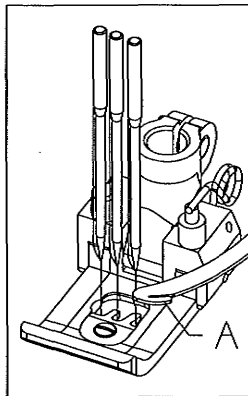
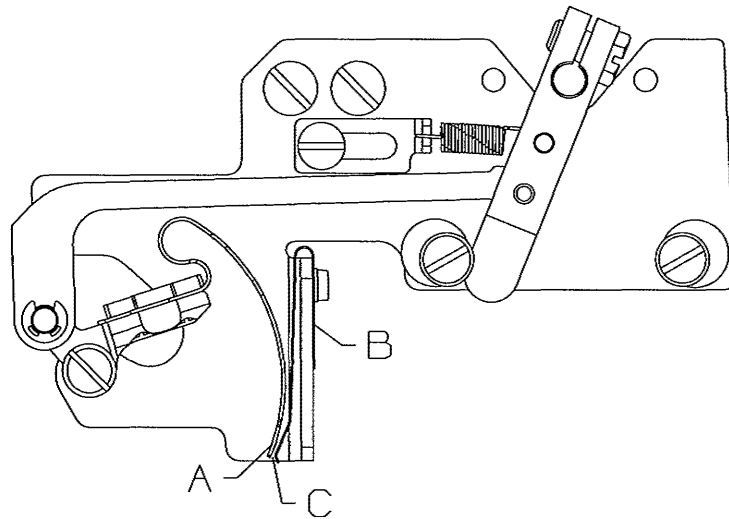


FIG. 1

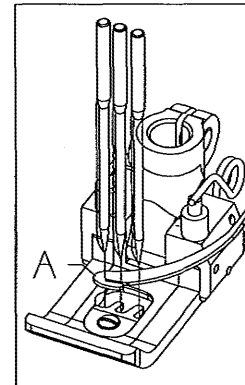
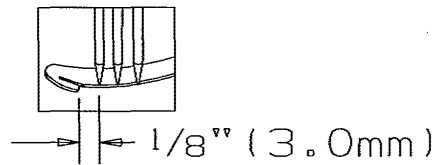


FIG. 2

## ADJUSTING THREAD WIPER

Disconnect power supply for thread wiper.

Loosen screws (D). Move wiper (A) left or right as necessary.

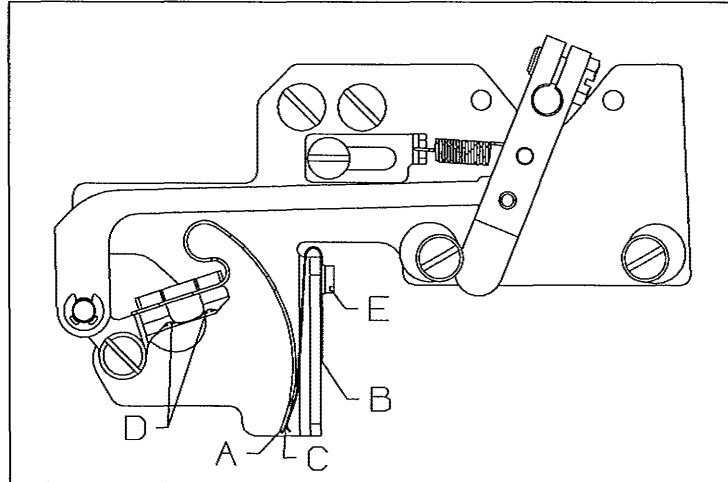
Retighten screws (D).

Operate wiper manually to check adjustment.

Loosen screw (E), move leaf spring (B) flush with wiper (A) at point (C).

Retighten screw (E).

Reconnect power supply.



To lengthen travel past left needle.

Disconnect power supply to thread wiper.

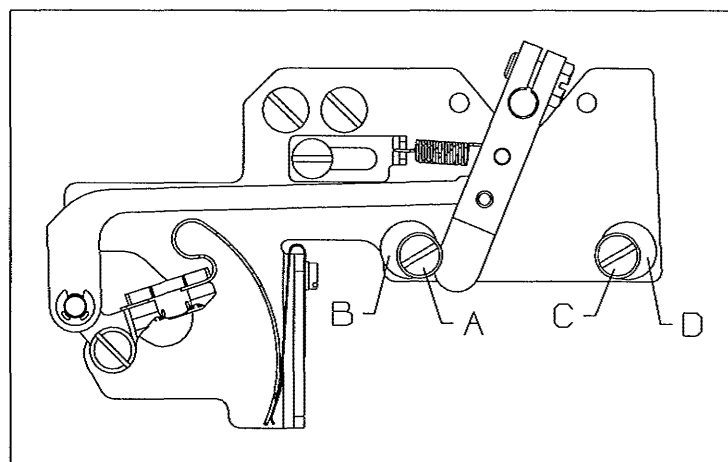
Loosen stop screw (A) and rotate eccentric (B) so high lobe is further to left. Retighten stop screw (A).

To move wiper higher in leaf spring.

Loosen screw (C) and rotate eccentric (D) so high lobe is further to the right. Tighten stop screw (C).

Reconnect power supply.

NOTE: Recheck leaf spring setting to wiper.





## PNEUMATIC/ELECTRIC COVER THREAD TRIMMER

Cover thread trimmer is positioned so that moveable thread catches knife (A):

Clear recess in spreader (B).

Does not interfere with needle head (C).

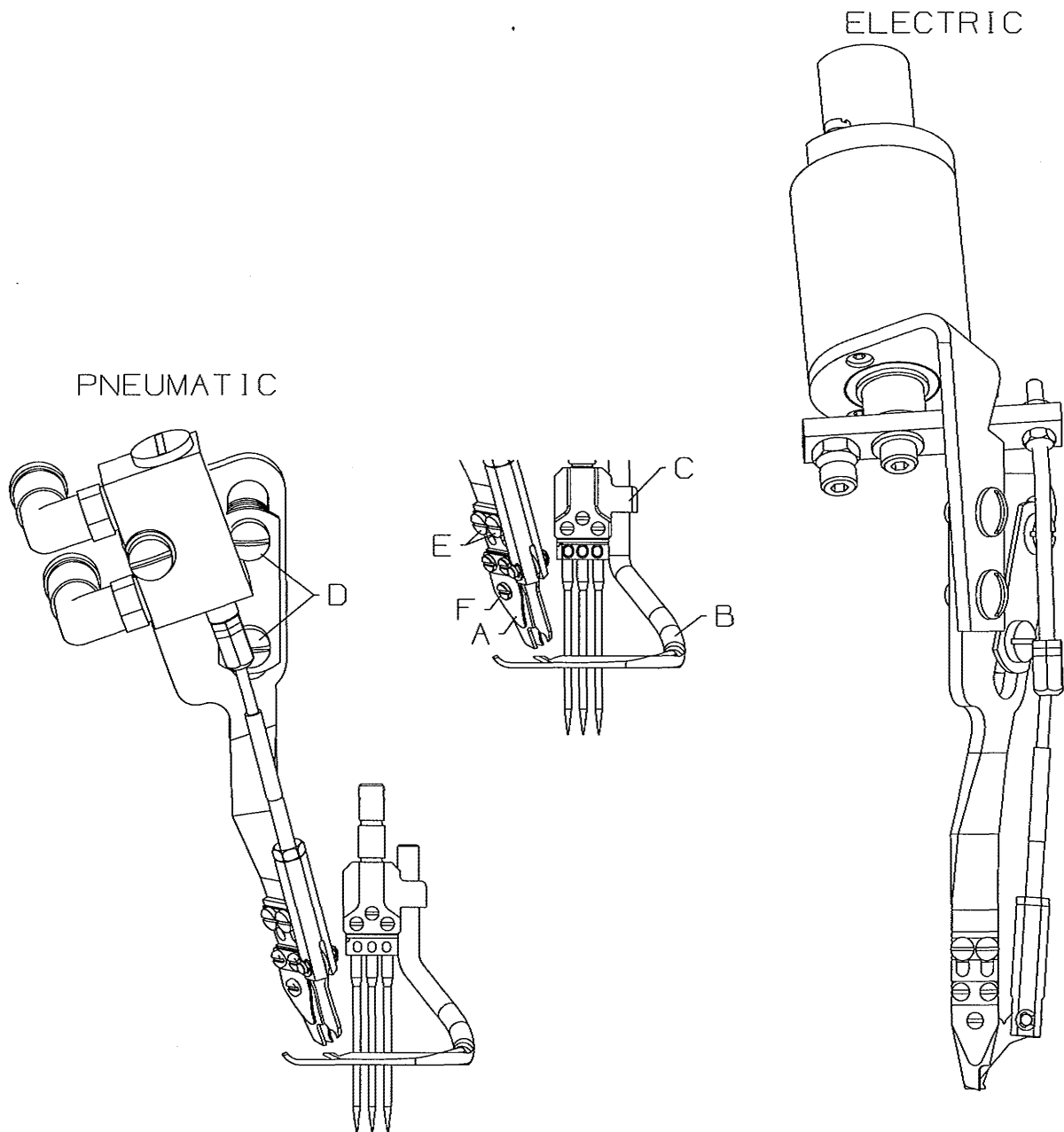
Cuts cleanly and clamps spreader thread.

To move trimmer away from or closer to spreader (B), loosen screws (D).

Recheck position to recess in spreader (B) and clearance to needle head (C).

To position trimmer to recess in spreader (B) loosen screws (E). Reposition moveable thread catch knife (A). Tighten screws (E).

Set the pressure of knife (F) to the minimum and still cut the spreader thread.



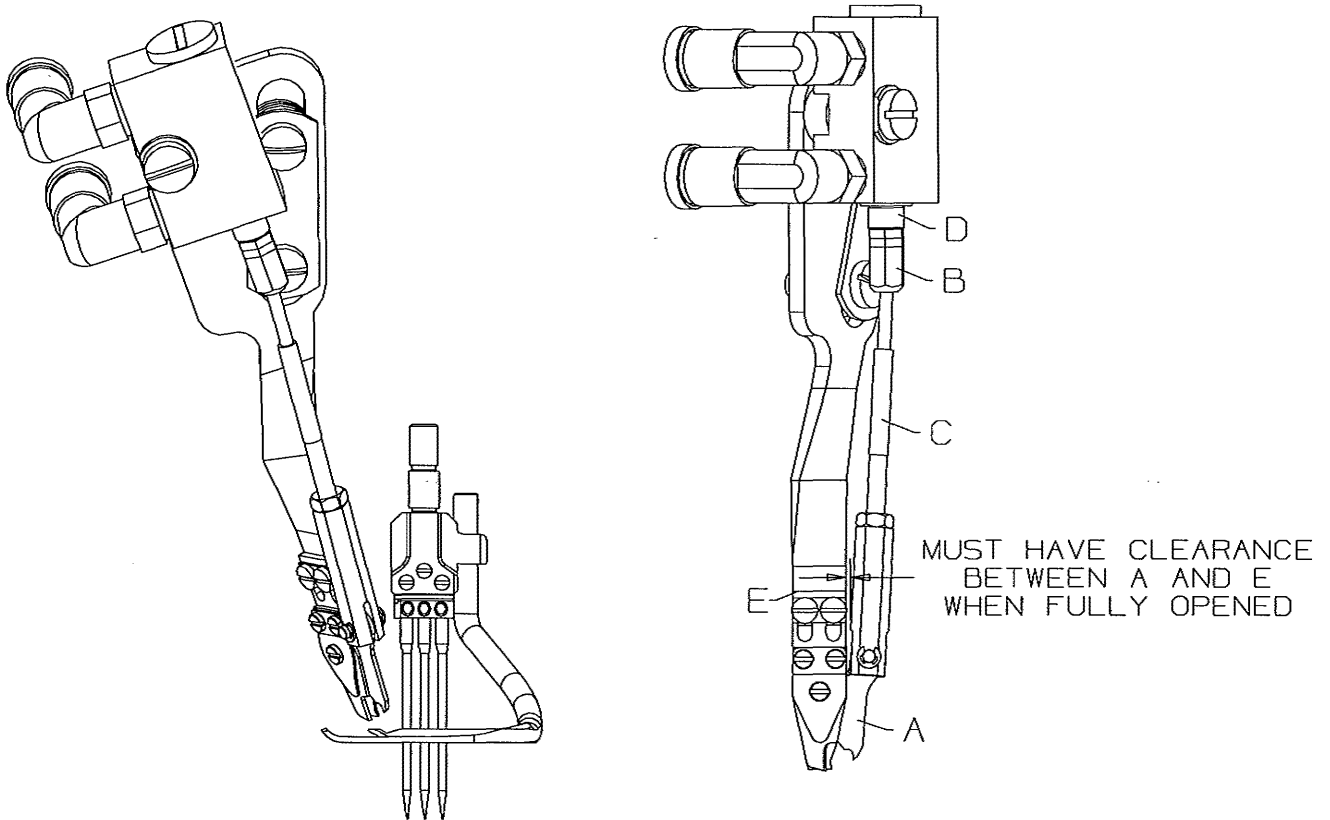
## SETTING THREAD CATCH KNIFE STROKE

Knife (A) must open wide enough to catch spreader thread.

Loosen nut (B), rotate connecting rod (C) clockwise to decrease stroke or counterclockwise to increase.

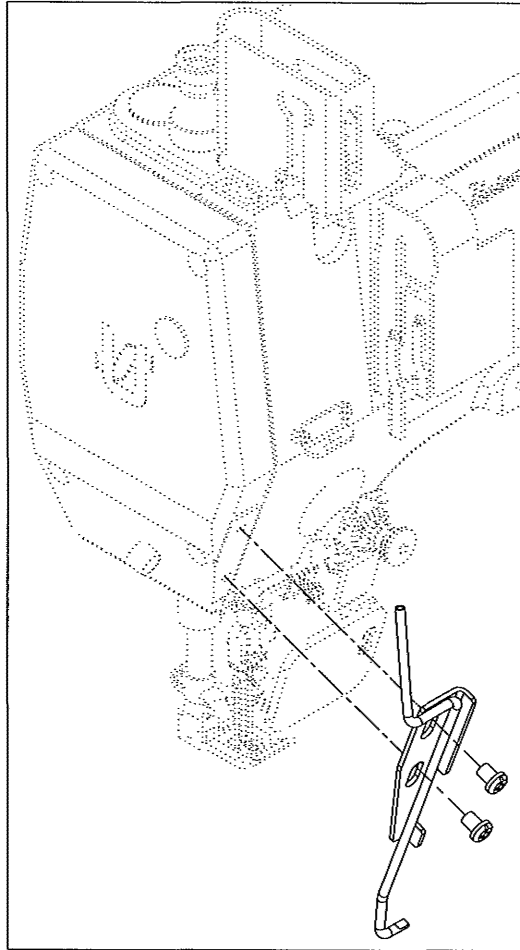
### CAUTION:

When increasing stroke check that spacer (D) stops the cylinder stroke before thread catch knife (A) hits distance plate (E).



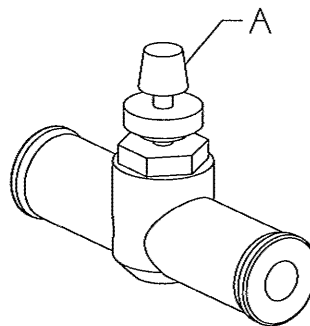
## NEEDLE THREAD BLOWER ASSEMBLY

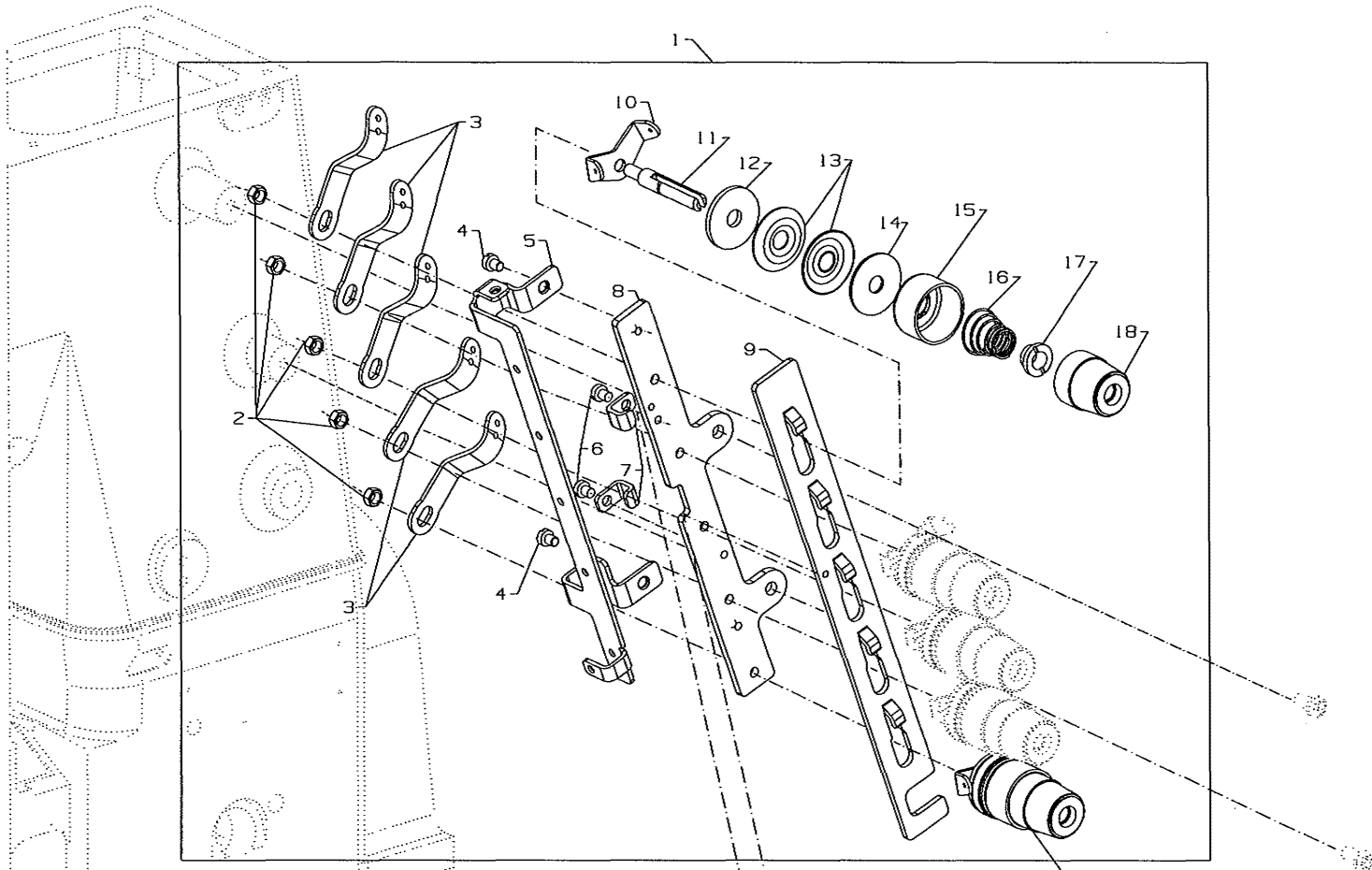
Needle threads must be blown out from under a raised presser foot after material has been removed.



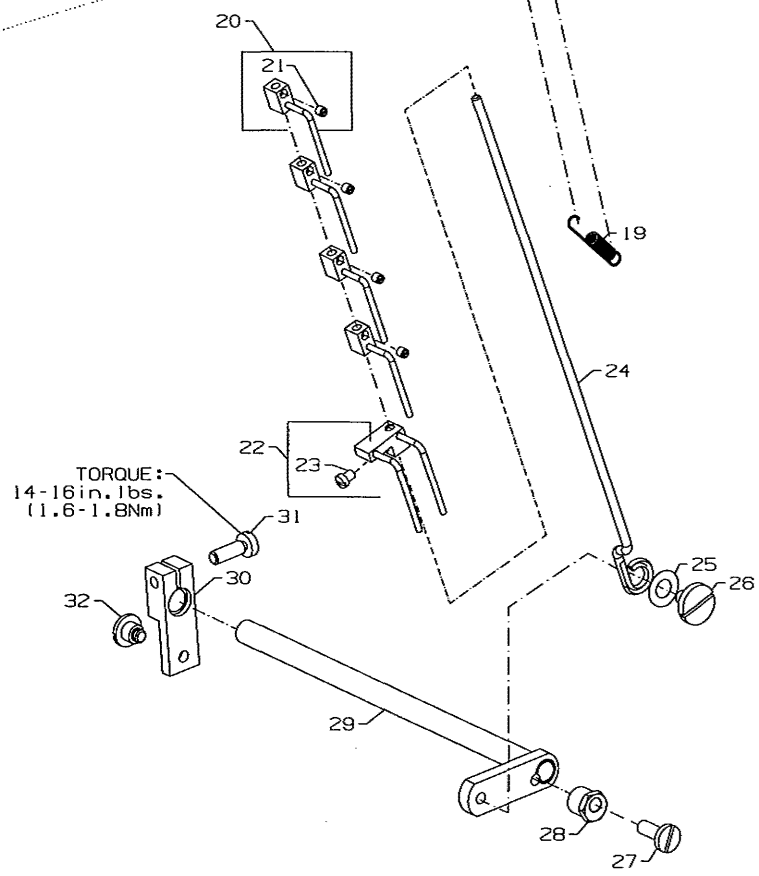
### AIR FLOW

1. Turn needle valve (A) clockwise to decrease air flow.
2. Turn needle valve (A) counterclockwise to increase air flow.





Note:  
For Looper Tension  
Details #12 And #14  
Are Reversed



TORQUE:  
14-16 in. lbs.  
(1.6-1.8 Nm)

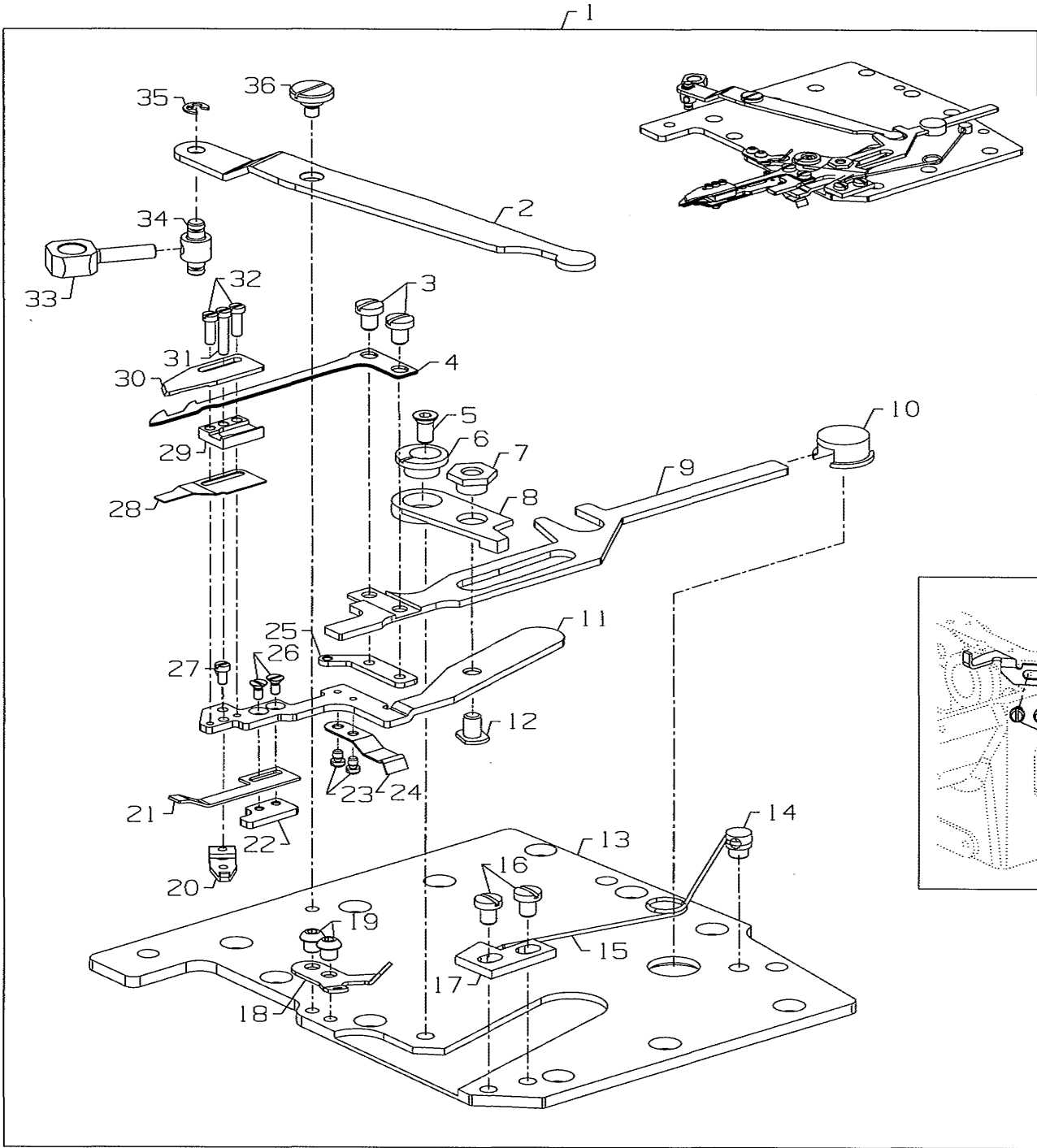


## THREAD TENSION

| Ref.<br>No. | Part No.    | Description                             | Amt.<br>Req. |
|-------------|-------------|---|--------------|
| 1.          | 29477NL     | 5 Thread Tension Assembly .....         | 1            |
| 2.          | NS6110420SP | Nut .....                               | 5            |
| 3.          | 57865       | Lead-in Thread Guide .....              | 5            |
| 4.          | SS7090520SP | Screw .....                             | 2            |
| 5.          | 50392AP     | Thread Guide .....                      | 1            |
| 6.          | SS7090520SP | Screw .....                             | 2            |
| 7.          | 50392AV     | Guide, for tension disc separator ..... | 2            |
| 8.          | 50392X      | Tension Bracket .....                   | 1            |
| 9.          | 50392AR     | Tension Disc Separator .....            | 1            |
| 10.         | 57892K      | Thread Tension Eyelet .....             | 5            |
| 11.         | 56392G      | Tension Post .....                      | 5            |
| 12.         | B3120704000 | Tension Disc Felt .....                 | 5            |
| 13.         | B3126012000 | Tension Disc .....                      | 10           |
| 14.         | B3120352000 | Tension Disc Felt .....                 | 5            |
| 15.         | 56392H      | Spring Shield .....                     | 5            |
| 16.         | B3103804000 | Spring, for spreader (blue) .....       | 1            |
| -           | B3101804000 | Spring, for needle (red) .....          | 3            |
| -           | B3121804000 | Spring, for looper (plain) .....        | 1            |
| 17.         | B3112704000 | Ferrule, for tension spring .....       | 5            |
| 18.         | 56392M      | Knob, for spreader (blue) .....         | 1            |
| -           | 56392L      | Knob, for needle (red) .....            | 3            |
| -           | 50392R      | Knob, for looper (plain) .....          | 1            |
| 19.         | 96711       | Extension Spring .....                  | 1            |
| 20.         | 50358Y      | Thread Pull-off Hook .....              | 4            |
| 21.         | 28C         | Screw .....                             | 4            |
| 22.         | A9858       | Thread Pull-off Hook .....              | 1            |
| 23.         | 77A         | Screw .....                             | 1            |
| 24.         | 50392AS     | Puller Rod, for thread puller .....     | 1            |
| 25.         | 50374A      | Washer .....                            | 1            |
| 26.         | 99296       | Shoulder Screw .....                    | 1            |
| 27.         | 22757       | Screw .....                             | 1            |
| 28.         | G51346KA    | Tension Release Eccentric .....         | 1            |
| 29.         | 50392AN     | Tension Release Assembly .....          | 1            |
| 30.         | 99620       | Tension Release Lever .....             | 1            |
| 31.         | 22596       | Screw .....                             | 1            |
| 32.         | 22735       | Screw .....                             | 1            |

| UT COMPONENT DEVICE KEY |                             |
|-------------------------|-----------------------------|
| UT DEVICE               | COMPONENT USED<br>ON DEVICE |
| UT1CS1                  | •                           |
| UT2CS1                  | •                           |
| UT3CS1                  | •                           |
| UT4CS1                  | •                           |
| UT5CS1                  | •                           |



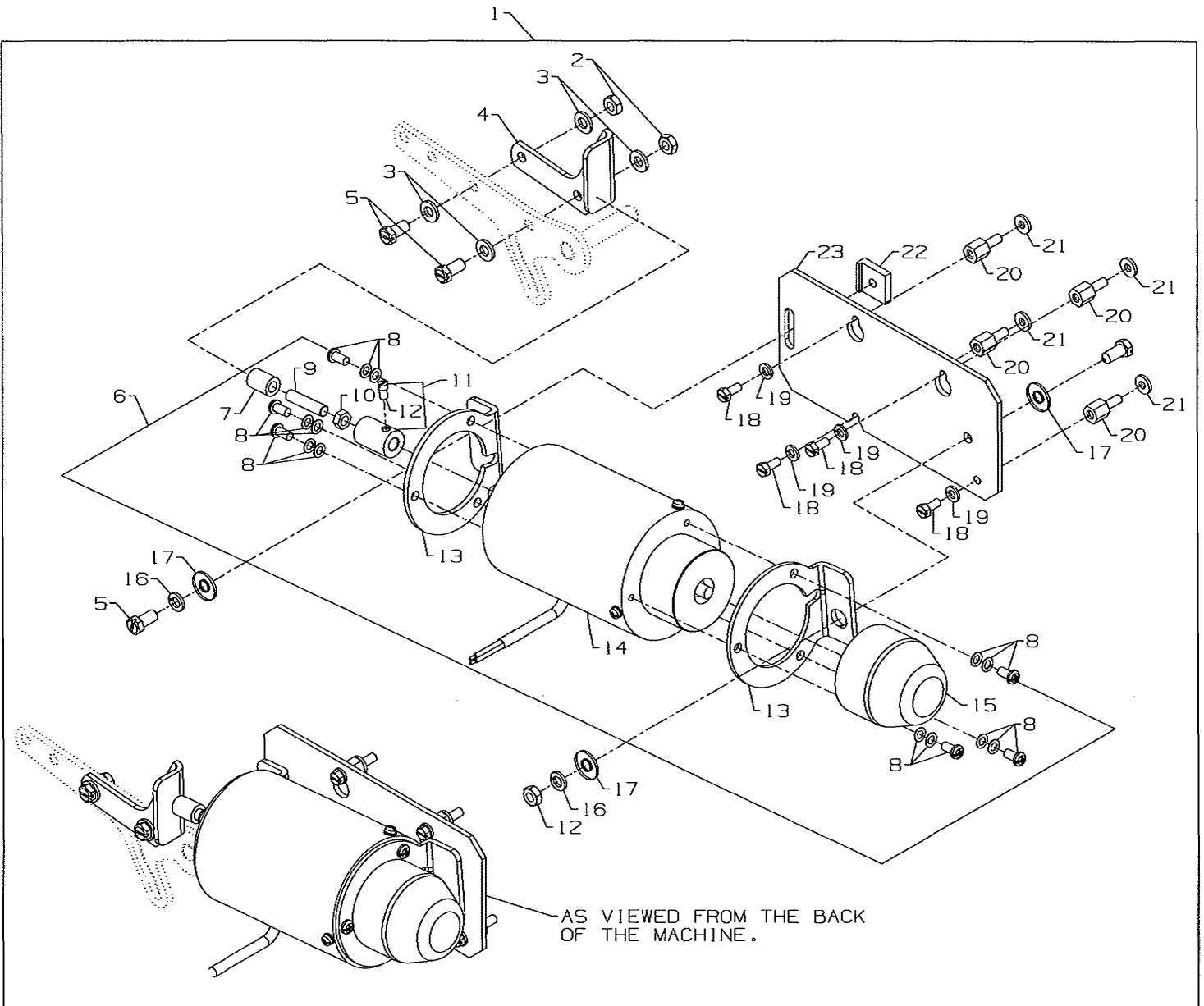


## UNDERBED THREAD TRIMMER ASSEMBLY

| Ref.<br>No. | Part No.    | Description                            | Amt.<br>Req. |
|-------------|-------------|--|--------------|
| 1.          | 29480AWB    | Underbed Thread Trimmer Assembly ..... | 1            |
| 2.          | 34763P      | Lever .....                            | 1            |
| 3.          | 18-1453     | Screw .....                            | 2            |
| 4.          | 34749P      | Lower Knife .....                      | 1            |
| 5.          | 18-1450     | Screw .....                            | 1            |
| 6.          | 34768A      | Eccentric Guide .....                  | 1            |
| 7.          | 34768C      | Guide Washer .....                     | 1            |
| 8.          | 34750R      | Lever .....                            | 1            |
| 9.          | 34750T      | Lower Knife Holder .....               | 1            |
| 10.         | 34750U      | Guide .....                            | 1            |
| 11.         | 34750SA     | Upper Knife Holder .....               | 1            |
| 12.         | 18-1472     | Screw .....                            | 1            |
| 13.         | 34382AC     | Oil Reserve Cover .....                | 1            |
| 14.         | 34751MS     | Pin .....                              | 1            |
| 15.         | 50332AD     | Spring .....                           | 1            |
| 16.         | 18-1449     | Screw .....                            | 2            |
| 17.         | 34775H      | Stop .....                             | 1            |
| 18.         | 50366D      | Looper Thread Guide .....              | 1            |
| 19.         | 18C1471     | Screw .....                            | 2            |
| 20.         | 34751MT     | Tension Lever .....                    | 1            |
| 21.         | 34773D      | Leaf Spring .....                      | 1            |
| 22.         | 34769B      | Threaded Plate .....                   | 1            |
| 23.         | SM6020250TP | Screw .....                            | 2            |
| 24.         | 34773E      | Leaf Spring .....                      | 1            |
| 25.         | 50368AE     | Looper Thread Pull-off Eyelet .....    | 1            |
| 26.         | SM1020450TP | Screw .....                            | 2            |
| 27.         | 18-1473     | Screw .....                            | 1            |
| 28.         | 34773F      | Leaf Spring .....                      | 1            |
| 29.         | 34750P      | Lower Knife Guide .....                | 1            |
| 30.         | 34770M      | Upper Knife .....                      | 1            |
| 31.         | SM6021000TP | Screw .....                            | 1            |
| 32.         | SM6020600TP | Screw .....                            | 2            |
| 33.         | 34752M      | Driving Link .....                     | 1            |
| 34.         | 34752N      | Carrier Bolt .....                     | 1            |
| 35.         | RE025000KO  | E-Ring .....                           | 1            |
| 36.         | SD0600176SP | Screw .....                            | 1            |
| 37.         | 34794A      | Guide .....                            | 1            |
| 38.         | 90          | Screw, for guide .....                 | 2            |

| UT COMPONENT DEVICE KEY |                             |
|-------------------------|-----------------------------|
| UT DEVICE               | COMPONENT USED<br>ON DEVICE |
| UT1CS1                  | •                           |
| UT2CS1                  | •                           |
| UT3CS1                  | •                           |
| UT4CS1                  | •                           |
| UT5CS1                  | •                           |





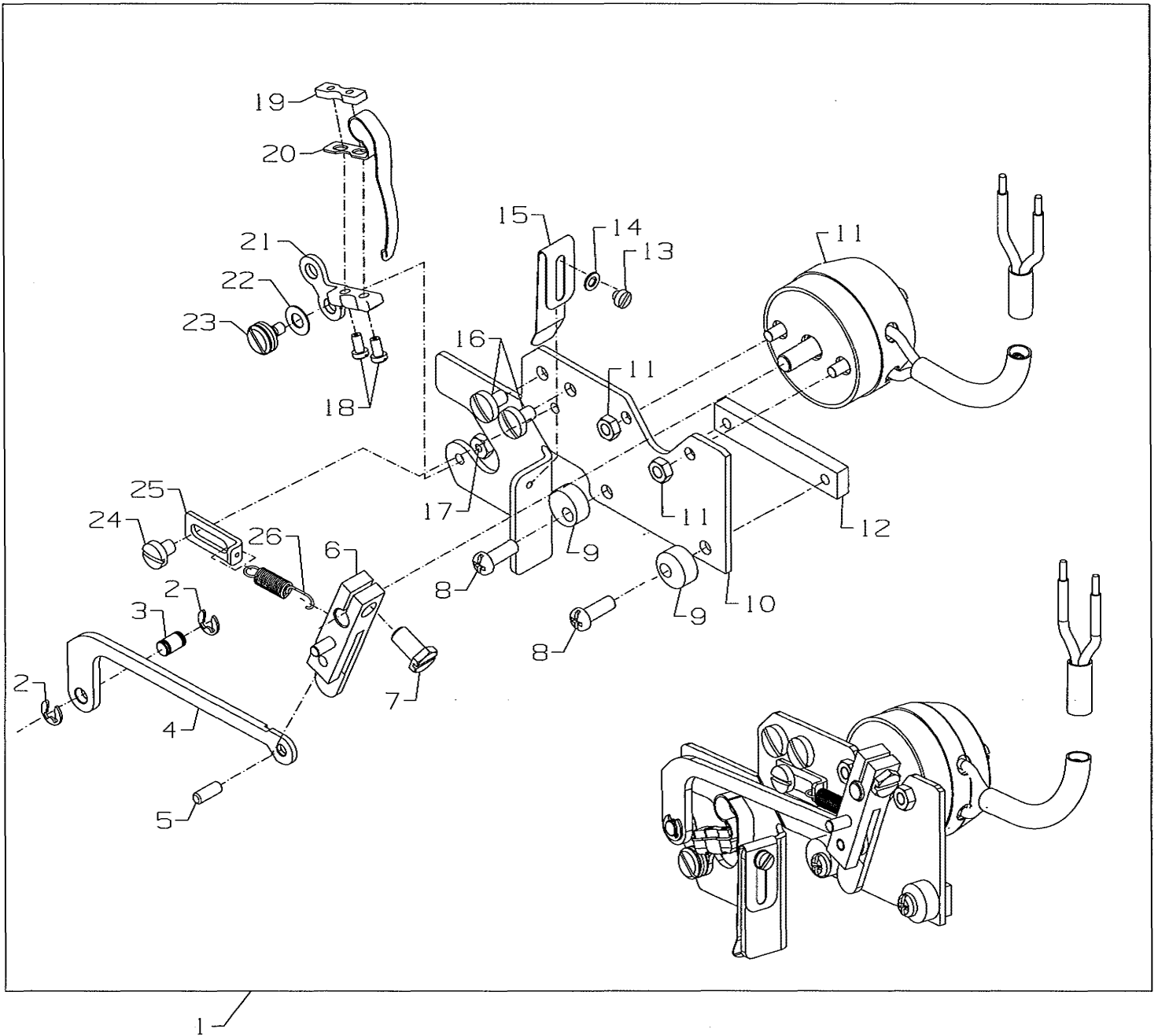


## ELECTRIC PRESSER FOOT LIFTER ASSEMBLY

| Ref.<br>No. | Part No.    | Description                   | Amt.<br>Req. |
|-------------|-------------|-------------------------------|--------------|
| 1.          | 29921D      | Electric Drive Assembly ..... | 1            |
| 2.          | NS6150430SP | Nut .....                     | 3            |
| 3.          | 95951       | Washer .....                  | 4            |
| 4.          | 50367H      | Lifter .....                  | 1            |
| 5.          | SS9151420TP | Hex Screw .....               | 4            |
| 6.          | 670K29      | Solenoid Assembly .....       | 1            |
| 7.          | 92855A      | Cap .....                     | 1            |
| 8.          | SS4051281SE | Screw .....                   | 6            |
| 9.          | 50395N      | Stud .....                    | 1            |
| 10.         | NS6660430SP | Nut .....                     | 1            |
| 11.         | 50333B      | Coupling .....                | 1            |
| 12.         | SS6110710TP | Screw .....                   | 1            |
| 13.         | GAK33034000 | Bracket .....                 | 2            |
| 14.         | GAK8403000A | Solenoid .....                | 1            |
| 15.         | GAK3303600A | Cap .....                     | 1            |
| 16.         | WS0631510KP | Lock Washer .....             | 2            |
| 17.         | 53636C      | Washer .....                  | 3            |
| 18.         | SS9111010SP | Hex Screw .....               | 4            |
| 19.         | WS0510002KP | Lock Washer .....             | 4            |
| 20.         | 50395P      | Stand-Off .....               | 4            |
| 21.         | 4611U       | Washer .....                  | 4            |
| 22.         | 50395R      | Clamp Plate .....             | 1            |
| 23.         | 50383S      | Base Plate .....              | 1            |

| UT COMPONENT DEVICE KEY |                             |
|-------------------------|-----------------------------|
| UT DEVICE               | COMPONENT USED<br>ON DEVICE |
| UT1CS1                  | •                           |
| UT2CS1                  | •                           |
| UT3CS1                  |                             |
| UT4CS1                  |                             |
| UT5CS1                  |                             |



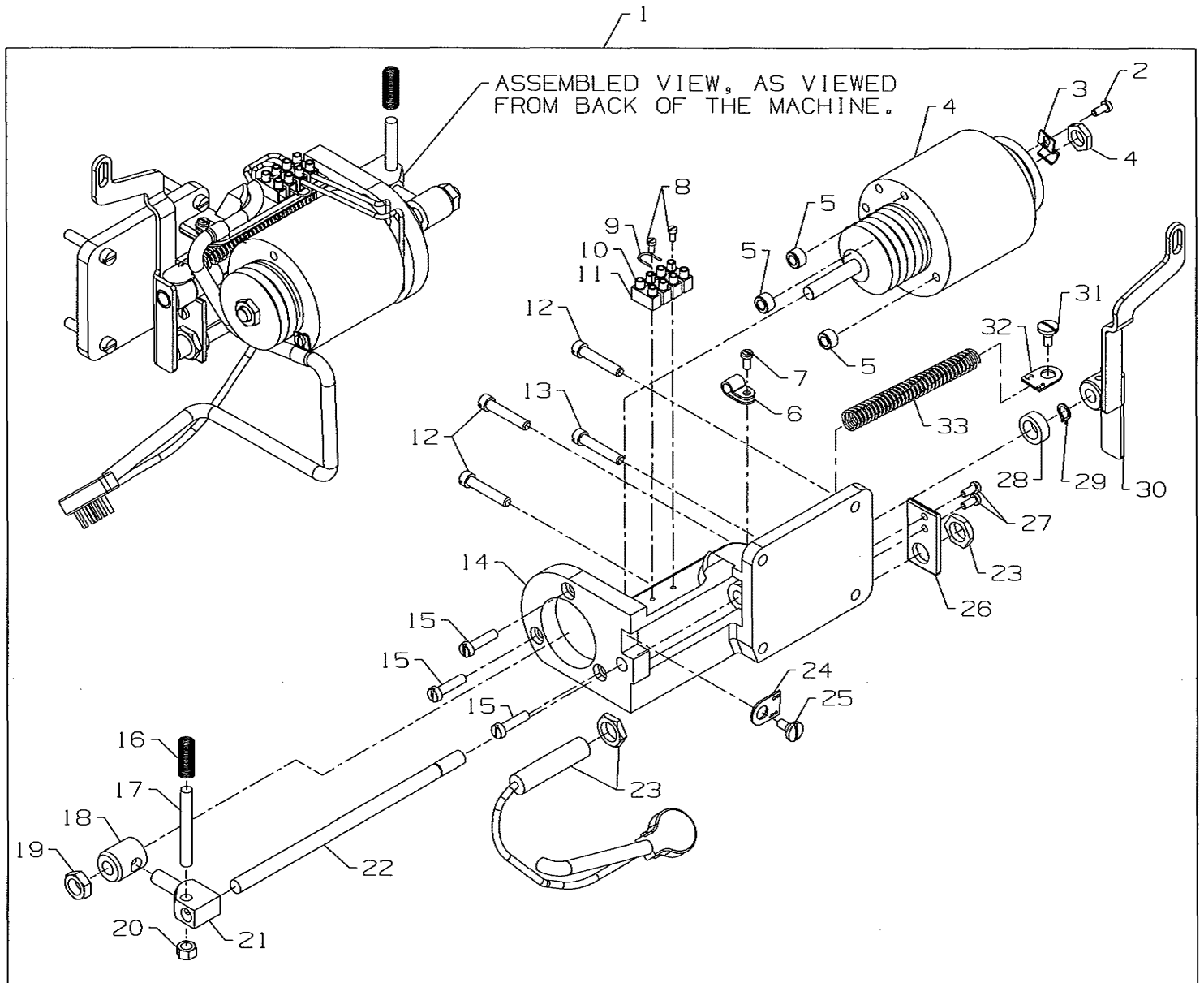


## ELECTRIC THREAD WIPER ASSEMBLY

| Ref.<br>No. | Part No.    | Description                          | Amt.<br>Req. |
|-------------|-------------|--------------------------------------|--------------|
| 1.          | 29906M      | Electric Thread Drive Assembly ..... | 1            |
| 2.          | 96280       | Retaining Ring .....                 | 2            |
| 3.          | 99591DN     | Pin .....                            | 1            |
| 4.          | 99545G      | Push Rod .....                       | 1            |
| 5.          | PH0300083U0 | Pin .....                            | 1            |
| 6.          | 99646J      | Lever .....                          | 1            |
| 7.          | SS9120910TP | Screw .....                          | 1            |
| 8.          | SS4091015SP | Screw .....                          | 2            |
| 9.          | 50363BF     | Stop Eccentric .....                 | 2            |
| 10.         | 99650E      | Wiper Bracket .....                  | 1            |
| 11.         | 670K15      | Electric Solenoid Rotary .....       | 1            |
| 12.         | 99545H      | Nut Plate .....                      | 1            |
| 13.         | SS6060210SP | Screw .....                          | 1            |
| 14.         | 96150       | Washer .....                         | 1            |
| 15.         | 99697AA     | Leaf Spring .....                    | 1            |
| 16.         | SS7090610SP | Screw .....                          | 2            |
| 17.         | 51250C      | Hex Nut .....                        | 1            |
| 18.         | SS6060510TP | Screw .....                          | 2            |
| 19.         | 50362B      | Plate .....                          | 1            |
| 20.         | 99653B      | Wiper Hook .....                     | 1            |
| 21.         | 99657E      | Lever .....                          | 1            |
| 22.         | 96161       | Washer .....                         | 1            |
| 23.         | 99358       | Shoulder Screw .....                 | 1            |
| 24.         | SS7090510SP | Screw .....                          | 1            |
| 25.         | 99591DP     | Bracket .....                        | 1            |
| 26.         | 50332AB     | Extension Spring .....               | 1            |

| <b>UT COMPONENT DEVICE KEY</b> |                             |
|--------------------------------|-----------------------------|
| UT DEVICE                      | COMPONENT USED<br>ON DEVICE |
| UT1CS1                         | •                           |
| UT2CS1                         |                             |
| UT3CS1                         |                             |
| UT4CS1                         |                             |
| UT5CS1                         |                             |





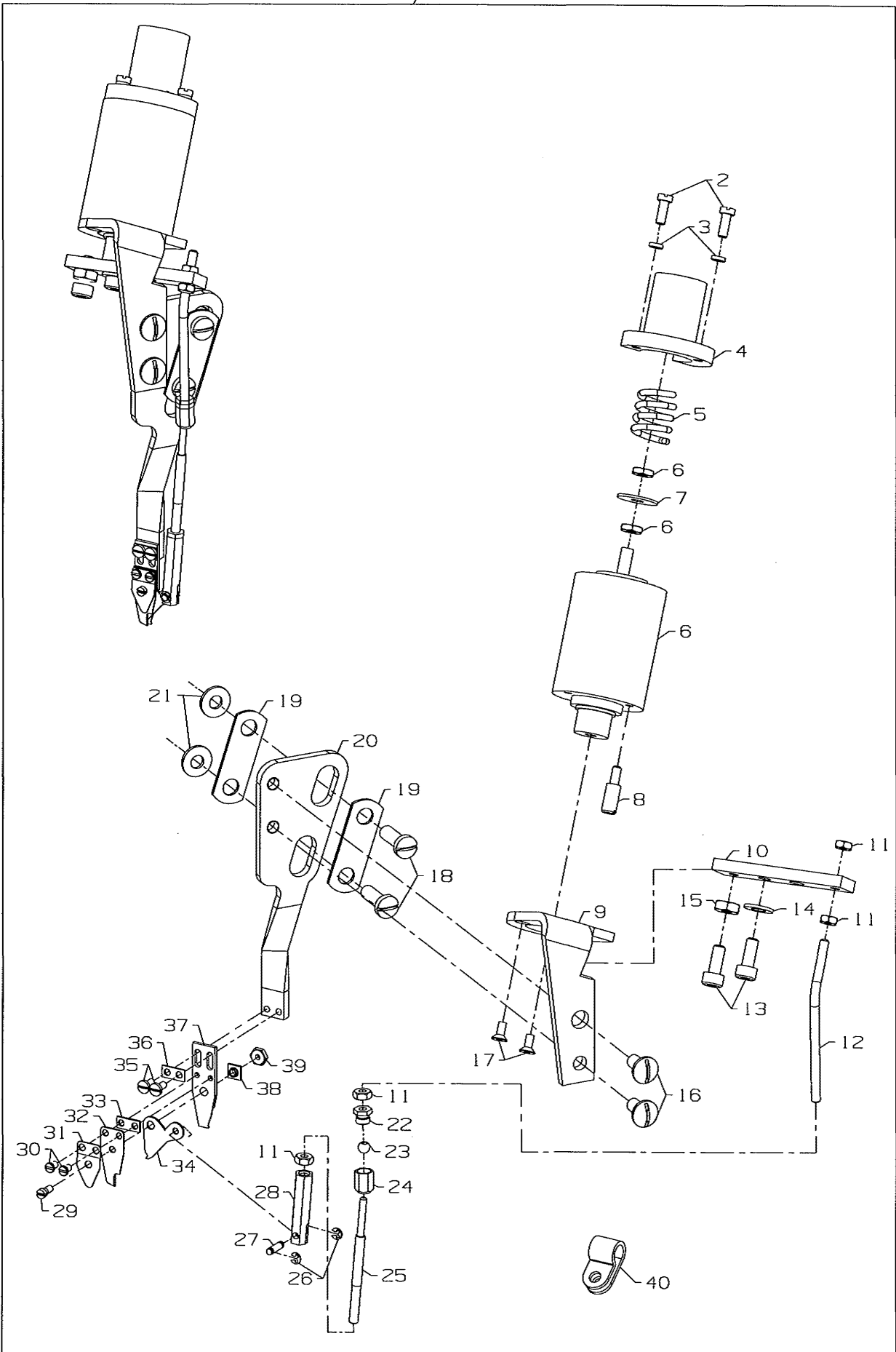
## ELECTRIC DRIVE DOUBLE ACTION ASSEMBLY

| Ref.<br>No. | Part No. | Description                   | Amt.<br>Req. |
|-------------|----------|-------------------------------|--------------|
| 1.          | 670K28   | Electric Drive Assembly ..... | 1            |
| 2.          | 95169    | Screw .....                   | 1            |
| 3.          | G21233BG | Cable Clamp .....             | 1            |
| 4.          | 998-306B | Solenoid .....                | 1            |
| 5.          | 99617A   | Bushing .....                 | 3            |
| 6.          | 998-358E | Hose Clamp .....              | 2            |
| 7.          | 22542    | Screw .....                   | 1            |
| 8.          | 95179K   | Screw .....                   | 2            |
| 9.          | 1318001  | Wire .....                    | 1            |
| 10.         | 670E1302 | Terminal Block .....          | 1            |
| 11.         | 998-297A | Cable End Plate .....         | 2            |
| 12.         | 22852A   | Screw .....                   | 3            |
| 13.         | 22517A   | Screw .....                   | 1            |
| 14.         | G52882KW | Mounting Bracket .....        | 1            |
| 15.         | 95177    | Screw .....                   | 3            |
| 16.         | 51292F2  | Spring .....                  | 1            |
| 17.         | 99619    | Clamping Screw .....          | 1            |
| 18.         | 99616    | Driving Connection .....      | 1            |
| 19.         | 95251    | Nut .....                     | 1            |
| 20.         | 55235E   | Nut .....                     | 1            |
| 21.         | 99614D   | Cross Head .....              | 1            |
| 22.         | 99613D   | Shaft .....                   | 1            |
| 23.         | 670E815  | Switch Assembly .....         | 1            |
| 24.         | 80696RA  | Spring Eyelet .....           | 1            |
| 25.         | 14076    | Screw .....                   | 1            |
| 26.         | 34762    | Bracket .....                 | 1            |
| 27.         | 22585    | Screw .....                   | 2            |
| 28.         | 99615    | Washer .....                  | 1            |
| 29.         | 96261    | Retaining Ring .....          | 1            |
| 30.         | 50373DG  | Lever .....                   | 1            |
| 31.         | 22569B   | Screw .....                   | 1            |
| 32.         | 80696RA  | Spring Eyelet .....           | 1            |
| 33.         | 96721    | Spring .....                  | 1            |

| UT COMPONENT DEVICE KEY |                             |
|-------------------------|-----------------------------|
| UT DEVICE               | COMPONENT USED<br>ON DEVICE |
| UT1CS1                  | •                           |
| UT2CS1                  | •                           |
| UT3CS1                  |                             |
| UT4CS1                  |                             |
| UT5CS1                  |                             |



1

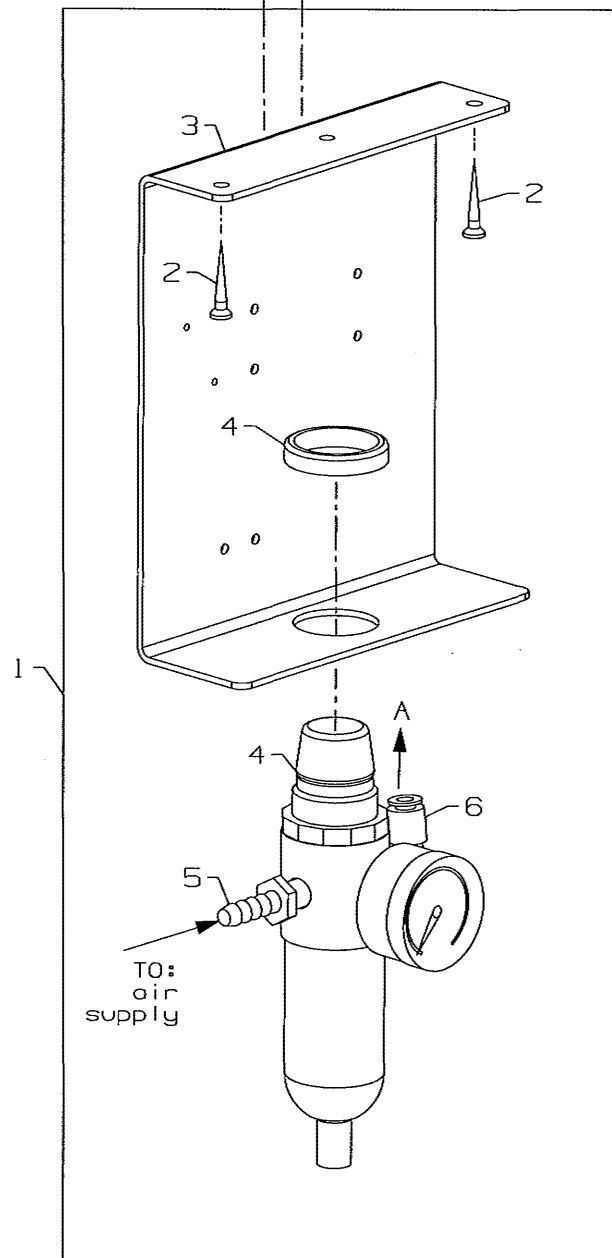
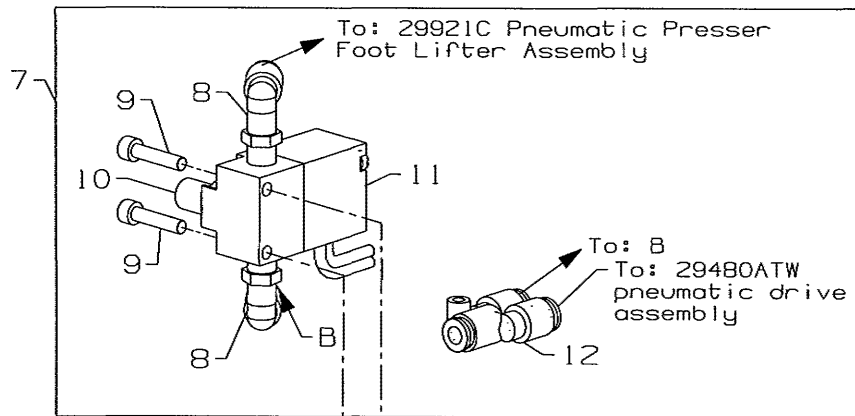


## ELECTRIC SPREADER THREAD TRIMMER ASSEMBLY

| Ref.<br>No. | Part No.    | Description                                      | Amt.<br>Req. |
|-------------|-------------|--|--------------|
| 1.          | 29980LC     | Spreader Thread Trimmer Assembly, Electric ..... | 1            |
| 2.          | 95166V      | Screw .....                                      | 2            |
| 3.          | 41358T      | Washer .....                                     | 2            |
| 4.          | 50382GY     | Cover Spring .....                               | 1            |
| 5.          | 995-705AS   | Spring .....                                     | 1            |
| 6.          | 670K27      | Solenoid .....                                   | 1            |
| 7.          | 50386A      | Washer .....                                     | 1            |
| 8.          | 50395M      | Stud .....                                       | 1            |
| 9.          | 50383R      | Solenoid Bracket .....                           | 1            |
| 10.         | 50383P      | Mounting Plate .....                             | 1            |
| 11.         | 95259       | Nut .....  | 4            |
| 12.         | 50345Y      | Connecting Rod .....                             | 1            |
| 13.         | 95409D      | Screw .....                                      | 2            |
| 14.         | 95954       | Washer .....                                     | 1            |
| 15.         | 95257       | Nut .....  | 1            |
| 16.         | 22848       | Screw .....                                      | 2            |
| 17.         | 95435A      | Screw .....                                      | 2            |
| 18.         | SS4121415SA | Screw .....                                      | 2            |
| 19.         | 34751MF     | Washer Plate .....                               | 2            |
| 20.         | 50372DG     | Holder .....                                     | 1            |
| 21.         | 69H         | Washer .....                                     | 2            |
| 22.         | 34751MJ     | Hex Head Screw .....                             | 1            |
| 23.         | 34751MK     | Ball .....                                       | 1            |
| 24.         | 34751ML     | Nut .....  | 1            |
| 25.         | 50322AY     | Rod .....  | 1            |
| 26.         | 660-1097    | Retainer .....                                   | 2            |
| 27.         | 50347S      | Pin .....  | 1            |
| 28.         | 50322AX     | Yoke .....                                       | 1            |
| 29.         | 22738U      | Screw .....                                      | 1            |
| 30.         | 22738       | Screw .....                                      | 2            |
| 31.         | 34751ME     | Leaf Spring .....                                | 1            |
| 32.         | 50349C      | Fixed Knife .....                                | 1            |
| 33.         | 34751MC     | Plate .....                                      | 1            |
| 34.         | 34770LB     | Knife .....                                      | 1            |
| 35.         | 22798A      | Screw .....                                      | 2            |
| 36.         | 34751MR     | Plate .....                                      | 1            |
| 37.         | 34751MB     | Plate .....                                      | 1            |
| 38.         | 34751MD     | Square Collar .....                              | 1            |
| 39.         | 60078Z      | Nut .....  | 1            |
| 40.         | 998-358E    | Hose Clamp .....                                 | 1            |

| UT COMPONENT DEVICE KEY |                             |
|-------------------------|-----------------------------|
| UT DEVICE               | COMPONENT USED<br>ON DEVICE |
| UT1CS1                  |                             |
| UT2CS1                  | •                           |
| UT3CS1                  |                             |
| UT4CS1                  |                             |
| UT5CS1                  |                             |







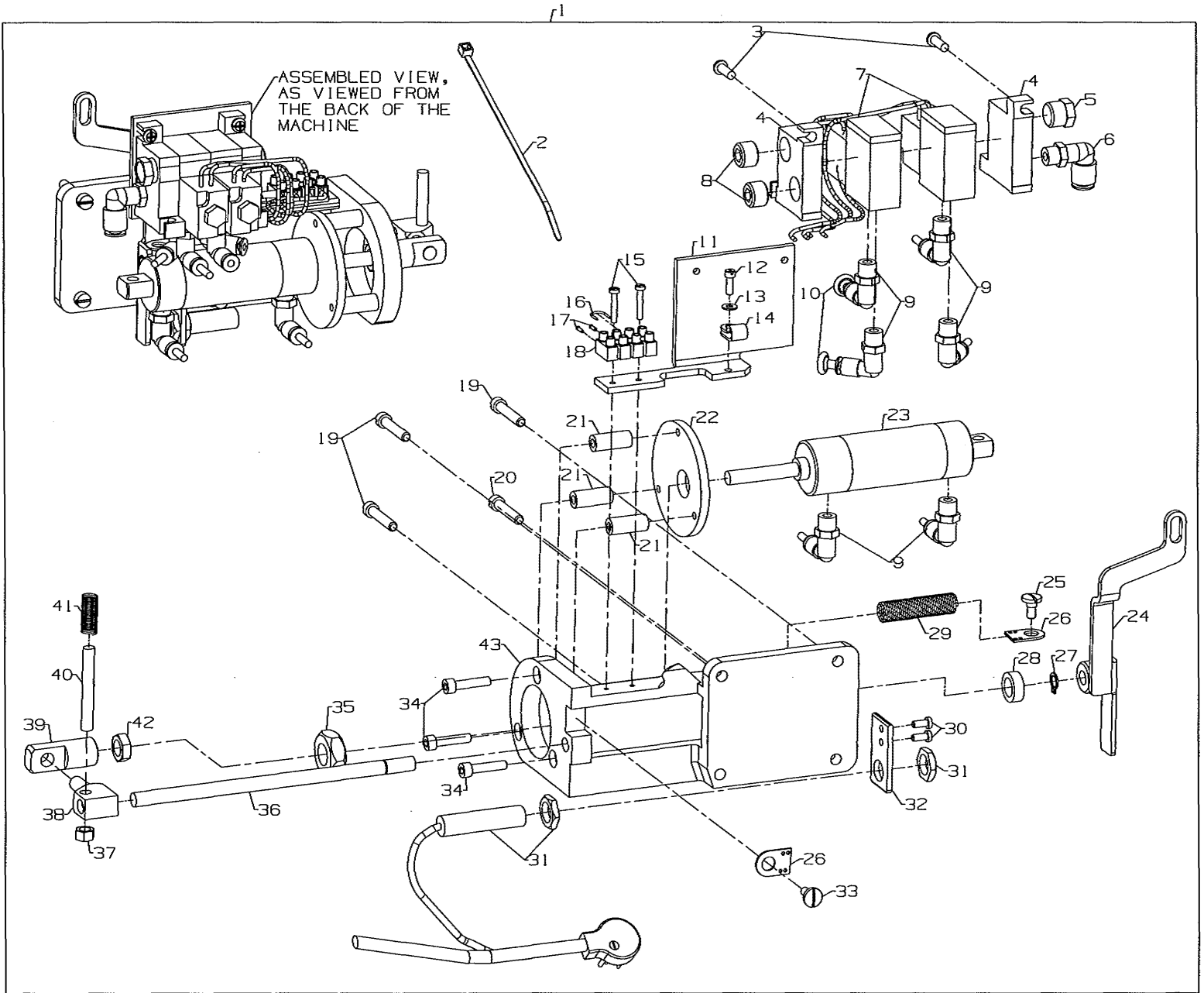
## PNEUMATIC CONTROL

| Ref.<br>No. | Part No. | Description                                   | Amt.<br>Req. |
|-------------|----------|---|--------------|
| 1.          | 29480ASU | Pneumatic Control Kit .....                   | 1            |
| 2.          | 90561K   | Wood Screw .....                              | 2            |
| 3.          | 99683CP  | Mounting Bracket .....                        | 1            |
| 4.          | 671D42   | Filter/ Regulator Assembly .....              | 1            |
| 5.          | 671F88   | Barb Fitting .....                            | 1            |
| 6.          | 671F81A  | Elbow Fitting - 6mm x 1/2" NPT .....          | 1            |
| -           | 671B182  | Air Tubing - 6mm O.D. x 1m (not shown) .....  | 1            |
| 7.          | 29480AST | Presser Foot Lifter Kit .....                 | 1            |
| 8.          | 671F81C  | Elbow Fitting - 6mm x 1/8" NPT .....          | 2            |
| 9.          | 95415    | Screw - 4mm .....                             | 2            |
| 10.         | 660-403  | Muffler .....                                 | 1            |
| 11.         | 671-50   | Valve .....                                   | 1            |
| 12.         | 671F86B  | Splitter .....                                | 1            |
| -           | 670E673  | Cable Harness (not shown) .....               | 1            |
| -           | RM2724A  | Connector (male, not shown) .....             | 2            |
| -           | 671B23   | Air Tubing - 6mm O.D. x 1mm (not shown) ..... | 1            |

| <b>UT COMPONENT DEVICE KEY</b> |                             |
|--------------------------------|-----------------------------|
| UT DEVICE                      | COMPONENT USED<br>ON DEVICE |
| UT1CS1                         |                             |
| UT2CS1                         |                             |
| UT3CS1                         | •                           |
| UT4CS1                         |                             |
| UT5CS1                         | •                           |



ASSEMBLED VIEW,  
AS VIEWED FROM  
THE BACK OF THE  
MACHINE

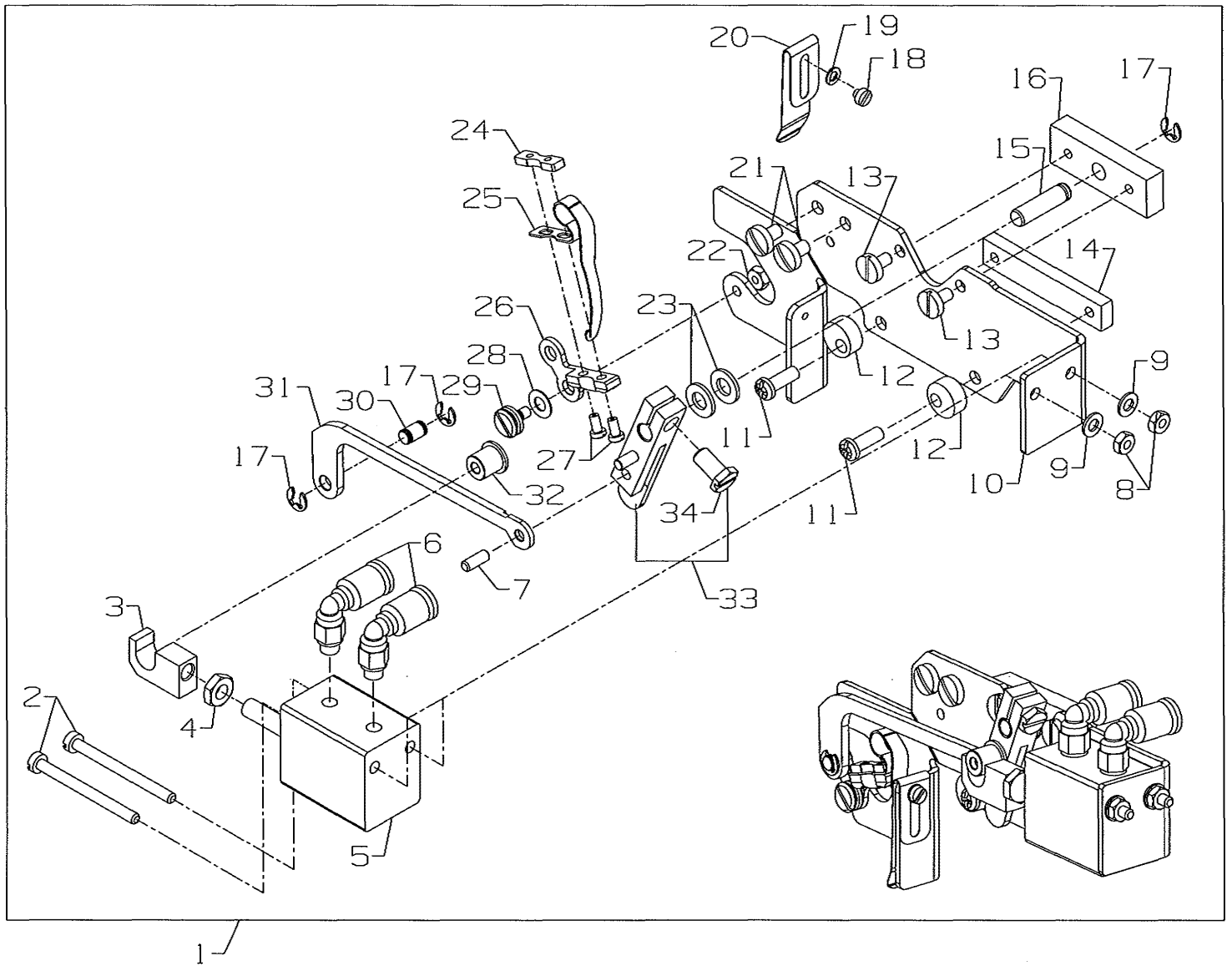


## PNEUMATIC DRIVE DOUBLE ACTION ASSEMBLY

| Ref.<br>No. | Part No.    | Description                          | Amt.<br>Req. |
|-------------|-------------|--------------------------------------|--------------|
| 1.          | 29480ATW    | Pneumatic Drive Assembly .....       | 1            |
| 2.          | RM2871B     | Cable Tie .....                      | 2            |
| 3.          | SS4121415SP | Screw .....                          | 2            |
| 4.          | 671-104A    | Manifold .....                       | 1            |
| 5.          | 660-763     | Silencer .....                       | 1            |
| 6.          | 671F81A     | Elbow .....                          | 1            |
| 7.          | 671-103B    | Mac Valve .....                      | 2            |
| 8.          | 671F87      | Plug .....                           | 2            |
| 9.          | 671F82C     | Elbow .....                          | 6            |
| 10.         | 670G276     | Plug .....                           | 2            |
| 11.         | 50383N      | Bracket .....                        | 1            |
| 12.         | 22729       | Screw .....                          | 1            |
| 13.         | 95954       | Washer .....                         | 1            |
| 14.         | 998-358E    | Cable Clamp .....                    | 1            |
| 15.         | 22894AX     | Screw .....                          | 2            |
| 16.         | 1318001     | Wire .....                           | 1            |
| 17.         | 998-297A    | Cable End Sleeve .....               | 2            |
| 18.         | 670E1302    | Terminal .....                       | 1            |
| 19.         | 22852A      | Screw .....                          | 3            |
| 20.         | 22517A      | Screw .....                          | 1            |
| 21.         | 99617T      | Spacer .....                         | 3            |
| 22.         | 99591DH     | Disc .....                           | 1            |
| 23.         | 99694A      | Air Cylinder .....                   | 1            |
| 24.         | 50373DG     | Lever .....                          | 1            |
| 25.         | 22569B      | Screw .....                          | 1            |
| 26.         | 80696RA     | Spring Eyelet .....                  | 1            |
| 27.         | 96261       | Retaining Ring .....                 | 1            |
| 28.         | 99615       | Washer .....                         | 1            |
| 29.         | 96721       | Spring .....                         | 1            |
| 30.         | 22585       | Screw .....                          | 2            |
| 31.         | 670E815     | Switch Assembly .....                | 1            |
| 32.         | 34762       | Bracket .....                        | 1            |
| 33.         | 14076       | Stud .....                           | 1            |
| 34.         | 95411       | Screw .....                          | 3            |
| 35.         | 99327       | Nut .....                            | 1            |
| 36.         | 99613D      | Shaft .....                          | 1            |
| 37.         | 55235E      | Nut .....                            | 1            |
| 38.         | 99614D      | Cross Head .....                     | 1            |
| 39.         | 99616A      | Connector .....                      | 1            |
| 40.         | 99619       | Clamping .....                       | 1            |
| 41.         | 51292F2     | Spring .....                         | 1            |
| 42.         | 21233FB     | Nut .....                            | 1            |
| 43.         | G52882KW    | Support Bracket .....                | 1            |
| -           | 671B182     | Tubing (not shown) .....             | 2ft.         |
| -           | 6-878       | Nylon Black Tubing (not shown) ..... | 1            |
| -           | 998-358E    | Hose Clamp (not shown) .....         | 1            |

| UT COMPONENT DEVICE KEY |                             |
|-------------------------|-----------------------------|
| UT DEVICE               | COMPONENT USED<br>ON DEVICE |
| UT1CS1                  |                             |
| UT2CS1                  |                             |
| UT3CS1                  | •                           |
| UT4CS1                  | •                           |
| UT5CS1                  | •                           |



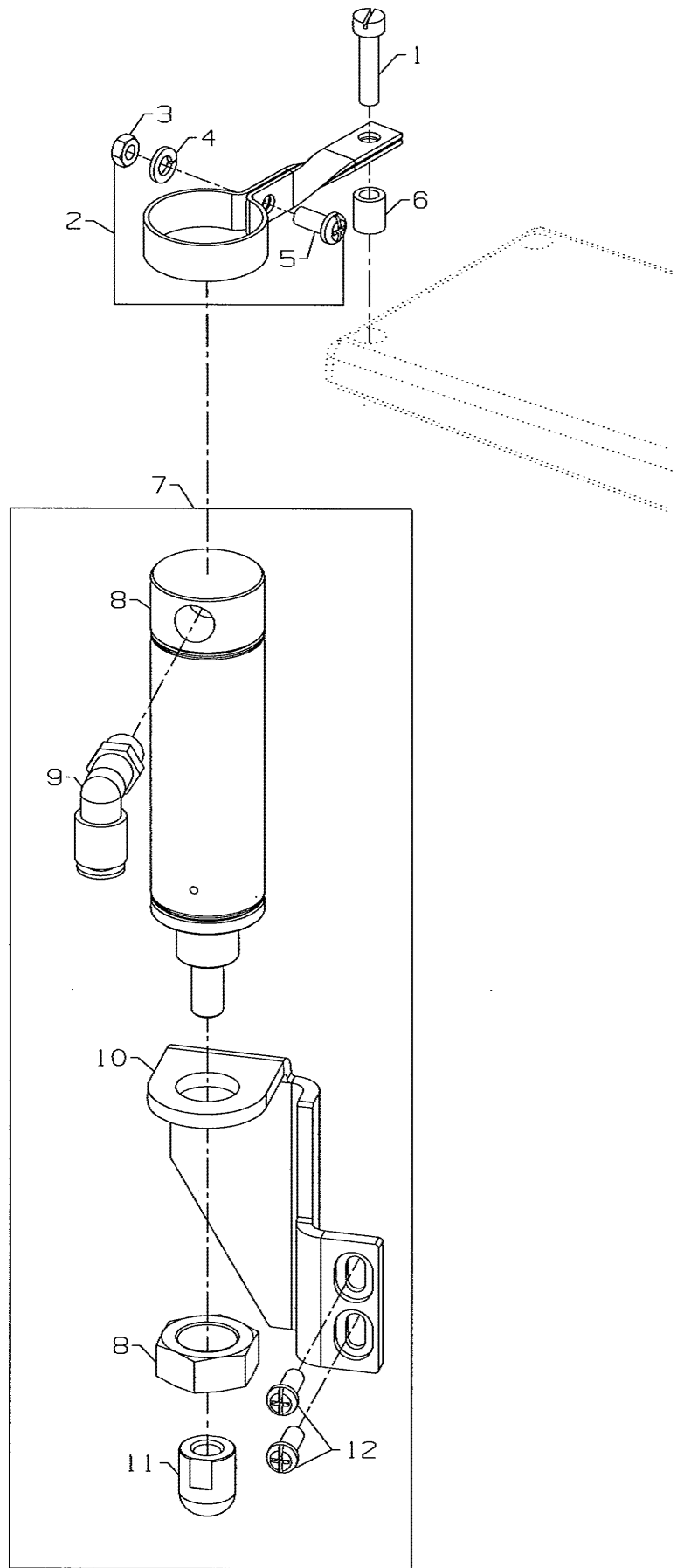


## PNEUMATIC THREAD WIPER ASSEMBLY

| Ref.<br>No. | Part No.    | Description                           | Amt.<br>Req. |
|-------------|-------------|---------------------------------------|--------------|
| 1.          | 29906L      | Pneumatic Thread Wiper Assembly ..... | 1            |
| 2.          | 95167CV     | Screw .....                           | 2            |
| 3.          | 35086BK     | Clevis .....                          | 1            |
| 4.          | 95294       | Hex Nut .....                         | 1            |
| 5.          | 999-191H    | Pneumatic Cylinder .....              | 1            |
| 6.          | 999-411M5-4 | Pneumatic Fitting .....               | 2            |
| 7.          | PH0300083U0 | Pin .....                             | 1            |
| 8.          | 95259       | Hex Nut .....                         | 2            |
| 9.          | 95956       | Washer .....                          | 2            |
| 10.         | 99650D      | Wiper Bracket .....                   | 1            |
| 11.         | SS4091015SP | Screw .....                           | 2            |
| 12.         | 50363BF     | Stop Eccentric .....                  | 2            |
| 13.         | SS6080610TP | Screw .....                           | 2            |
| 14.         | 99545H      | Nut Plate .....                       | 1            |
| 15.         | 52336B      | Pin .....                             | 1            |
| 16.         | 99545F      | Plate .....                           | 1            |
| 17.         | 96280       | Retaining Ring .....                  | 3            |
| 18.         | SS6060210SP | Screw .....                           | 1            |
| 19.         | 96150       | Washer .....                          | 1            |
| 20.         | 99697AA     | Leaf Spring .....                     | 1            |
| 21.         | SS7090610SP | Screw .....                           | 2            |
| 22.         | 51250C      | Hex Nut .....                         | 1            |
| 23.         | 99652A      | Washer .....                          | 2            |
| 24.         | 50362B      | Plate .....                           | 1            |
| 25.         | 99653B      | Wiper Hook .....                      | 1            |
| 26.         | 99657E      | Lever .....                           | 1            |
| 27.         | SS6060510TP | Screw .....                           | 2            |
| 28.         | 96161       | Washer .....                          | 1            |
| 29.         | 99358       | Shoulder Screw .....                  | 1            |
| 30.         | 99591DN     | Pin .....                             | 1            |
| 31.         | 99545G      | Push Rod .....                        | 1            |
| 32.         | 35086BJ     | Roller .....                          | 1            |
| 33.         | 99646J      | Lever .....                           | 1            |
| 34.         | SS9120910TP | Screw .....                           | 1            |

| UT COMPONENT DEVICE KEY |                             |
|-------------------------|-----------------------------|
| UT DEVICE               | COMPONENT USED<br>ON DEVICE |
| UT1CS1                  |                             |
| UT2CS1                  |                             |
| UT3CS1                  | •                           |
| UT4CS1                  |                             |
| UT5CS1                  |                             |



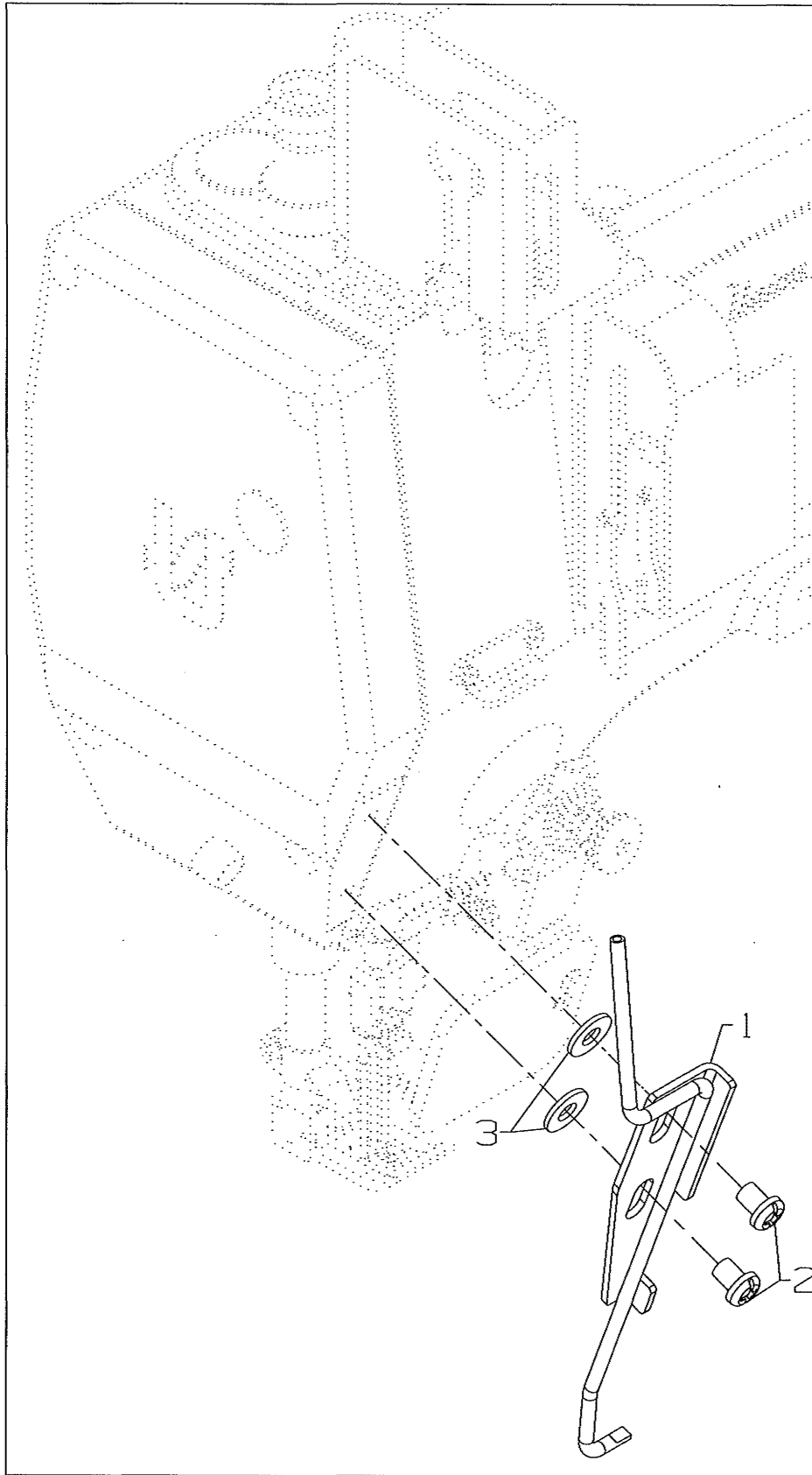


## PRESSER FOOT LIFTER

| Ref.<br>No. | Part No.    | Description                        | Amt.<br>Req. |
|-------------|-------------|------------------------------------|--------------|
| 1.          | SS6122030SP | Screw .....                        | 1            |
| 2.          | 50383AR     | Cylinder Support Bracket .....     | 1            |
| 3.          | NS6120310SP | Nut .....                          | 1            |
| 4.          | WS0510002KP | Washer .....                       | 1            |
| 5.          | SS4121015SP | Screw .....                        | 1            |
| 6.          | 50374K      | Spacer .....                       | 1            |
| 7.          | 29480AXJ    | Presser Foot Lifter Assembly ..... | 1            |
| 8.          | 671A360     | Air Cylinder .....                 | 1            |
| 9.          | 671F81C     | Fitting .....                      | 1            |
| 10.         | 50383AF     | Bracket .....                      | 1            |
| 11.         | 660-1099    | Air Cylinder Cap .....             | 1            |
| 12.         | SS4121215SP | Screw .....                        | 2            |

| UT COMPONENT DEVICE KEY |                             |
|-------------------------|-----------------------------|
| UT DEVICE               | COMPONENT USED<br>ON DEVICE |
| UT1CS1                  |                             |
| UT2CS1                  |                             |
| UT3CS1                  | •                           |
| UT4CS1                  | •                           |
| UT5CS1                  | •                           |





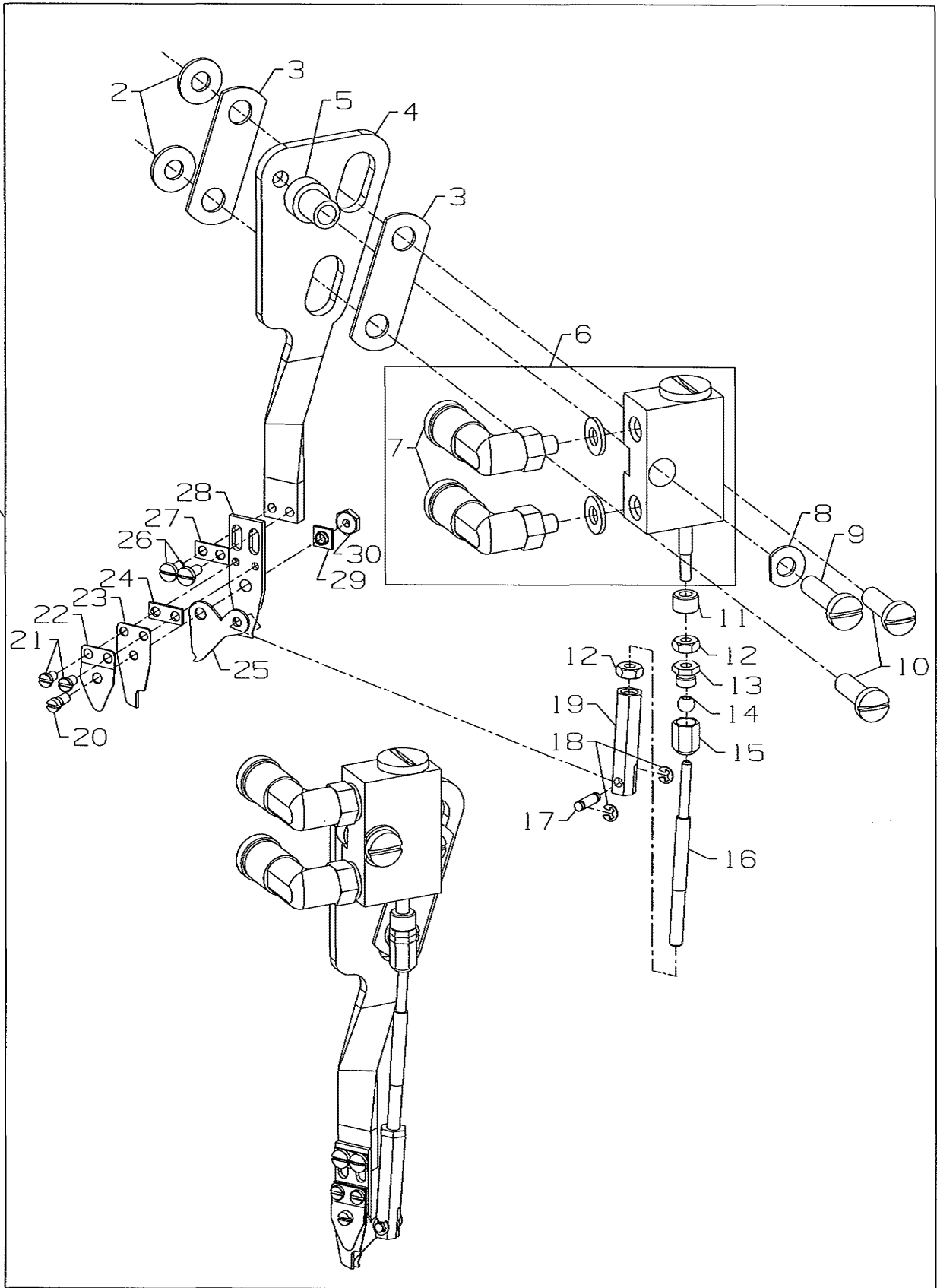


## NEEDLE THREAD BLOWER ASSEMBLY

| Ref.<br>No. | Part No.    | Description                                    | Amt.<br>Req. |
|-------------|-------------|--|--------------|
| 1.          | 50394AJ     | Needle Thread Blower Assembly .....            | 1            |
| 2.          | SS4120615SP | Screw, for needle thread blower assembly ..... | 2            |
| 3.          | 69H         | Washer .....                                   | 2            |

| <i>UT COMPONENT DEVICE KEY</i> |                             |
|--------------------------------|-----------------------------|
| UT DEVICE                      | COMPONENT USED<br>ON DEVICE |
| UT1CS1                         |                             |
| UT2CS1                         |                             |
| UT3CS1                         |                             |
| UT4CS1                         | •                           |
| UT5CS1                         |                             |



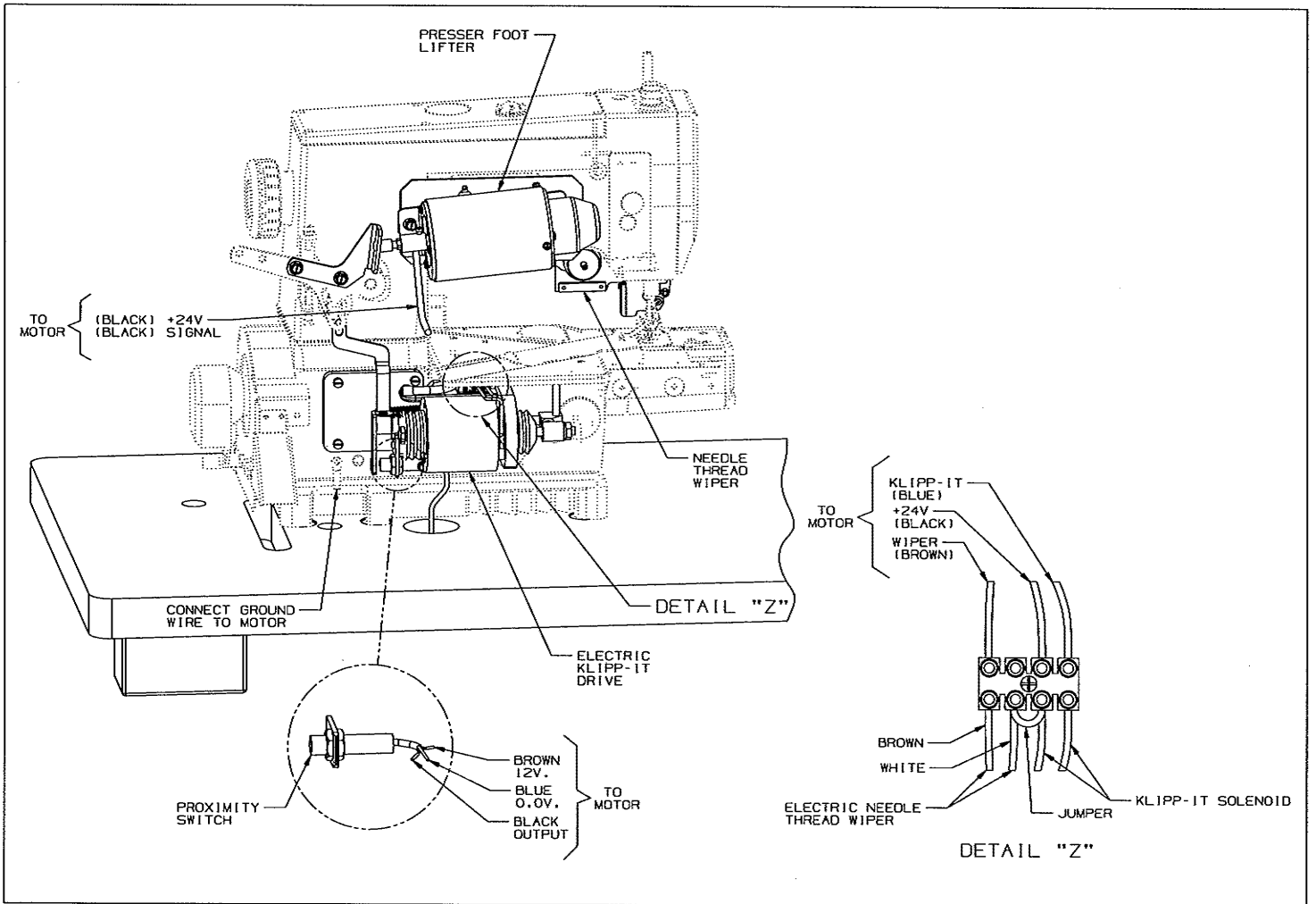


## PNEUMATIC COVER THREAD TRIMMER ASSEMBLY

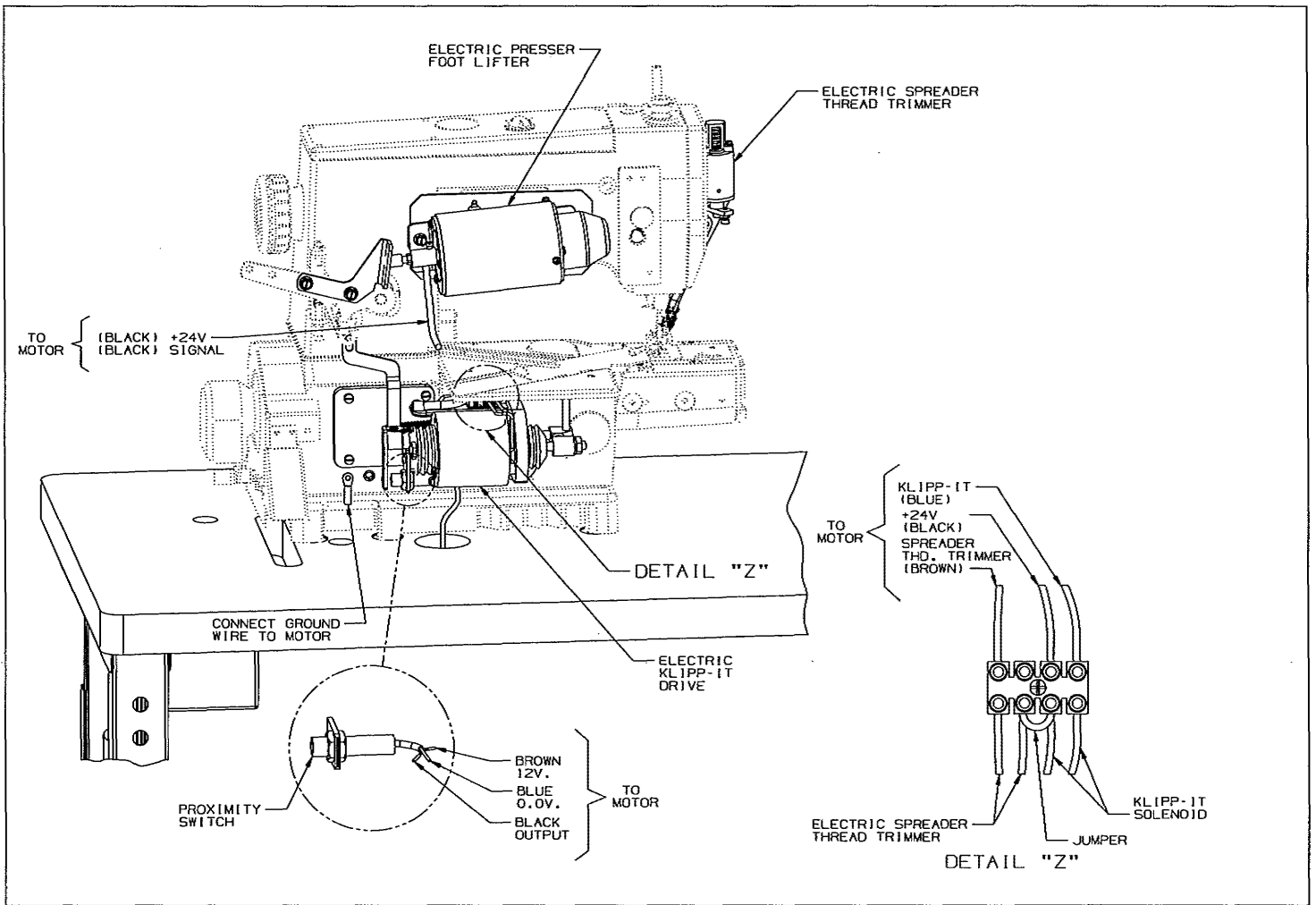
| Ref.<br>No. | Part No.    | Description                                   | Amt.<br>Req. |
|-------------|-------------|---|--------------|
| 1.          | 29980LB     | Pneumatic Cover Thread Trimmer Assembly ..... | 1            |
| 2.          | 69H         | Washer .....                                  | 2            |
| 3.          | 34751MF     | Washer Plate .....                            | 2            |
| 4.          | 50372DG     | Holder .....                                  | 1            |
| 5.          | 99683VF4    | Bushing .....                                 | 1            |
| 6.          | 99683VG     | Air Cylinder .....                            | 1            |
| 7.          | 999-411M5-4 | Coupling .....                                | 2            |
| 8.          | 39278C      | Washer .....                                  | 1            |
| 9.          | 93B         | Screw .....                                   | 1            |
| 10.         | SS4121415SP | Screw .....                                   | 2            |
| 11.         | 34751MH     | Spacer .....                                  | 1            |
| 12.         | 95259       | Nut .....                                     | 2            |
| 13.         | 34751MJ     | Hex Head Screw .....                          | 1            |
| 14.         | 34751MK     | Ball .....                                    | 1            |
| 15.         | 34751ML     | Nut .....                                     | 1            |
| 16.         | 50322AY     | Connecting Rod .....                          | 1            |
| 17.         | 50347S      | Pin .....                                     | 1            |
| 18.         | 660-1097    | Retaining Ring .....                          | 2            |
| 19.         | 50322AX     | Yoke .....                                    | 1            |
| 20.         | 22738U      | Screw .....                                   | 1            |
| 21.         | 22738       | Screw .....                                   | 2            |
| 22.         | 34751ME     | Leaf Spring .....                             | 1            |
| 23.         | 50349C      | Fixed Knife .....                             | 1            |
| 24.         | 34751MC     | Washer Plate .....                            | 1            |
| 25.         | 34770LB     | Knife .....                                   | 1            |
| 26.         | 22798A      | Screw .....                                   | 2            |
| 27.         | 34751MR     | Washer Plate .....                            | 1            |
| 28.         | 34751MB     | Support .....                                 | 1            |
| 29.         | 34751MD     | Nut .....                                     | 1            |
| 30.         | 60078Z      | Nut .....                                     | 1            |

| UT COMPONENT DEVICE KEY |                             |
|-------------------------|-----------------------------|
| UT DEVICE               | COMPONENT USED<br>ON DEVICE |
| UT1CS1                  |                             |
| UT2CS1                  |                             |
| UT3CS1                  |                             |
| UT4CS1                  |                             |
| UT5CS1                  | •                           |

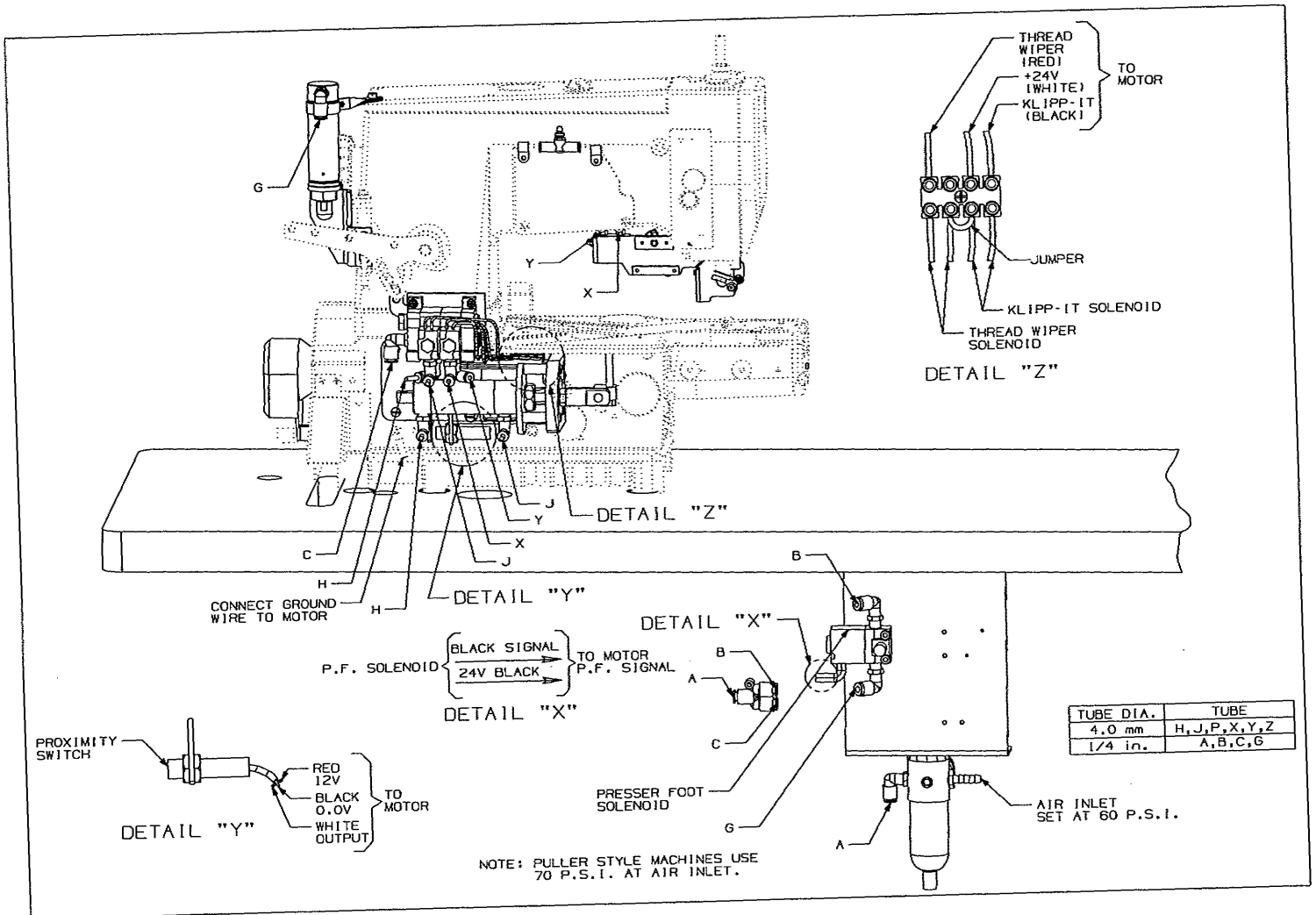


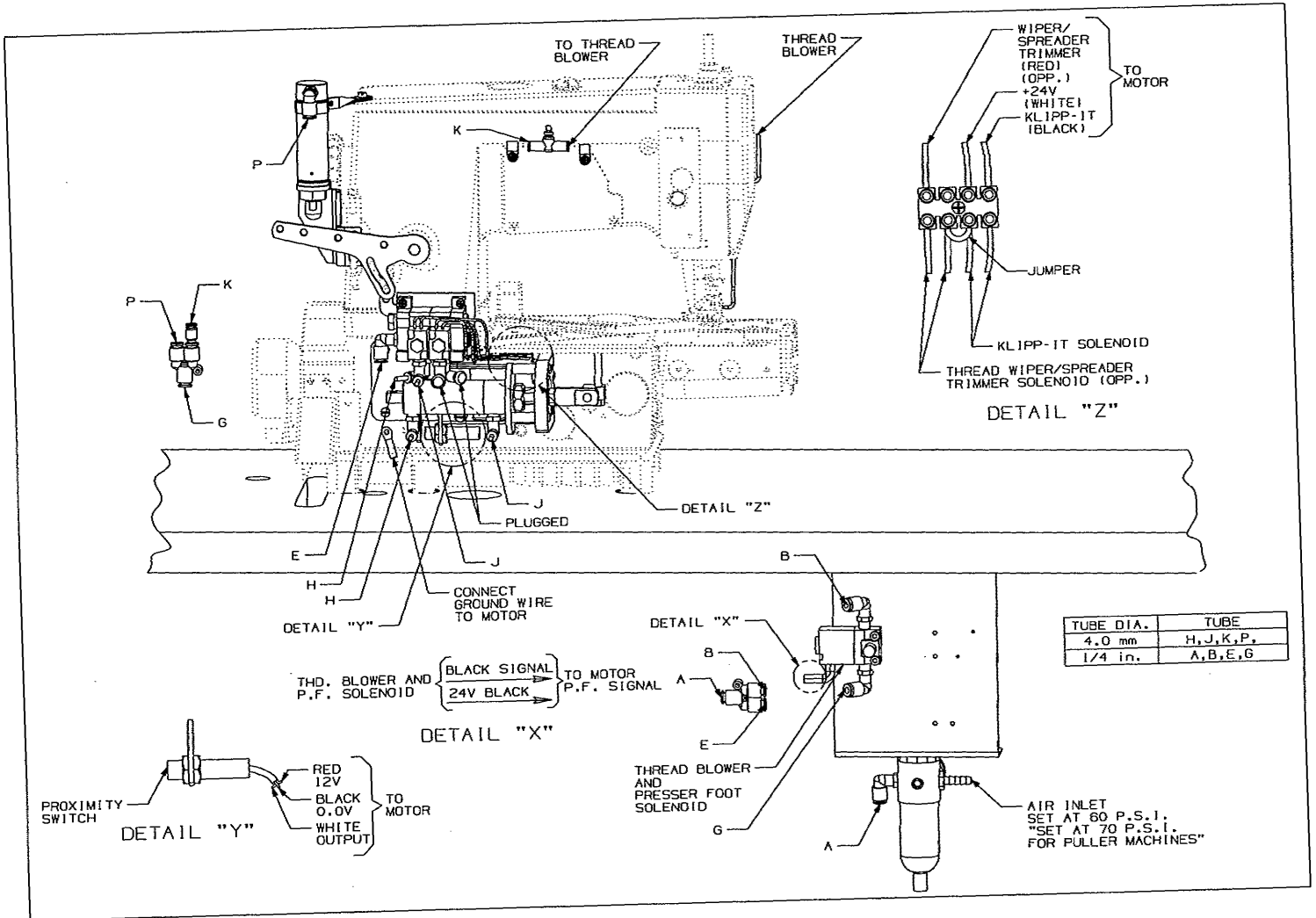


UT2CS1

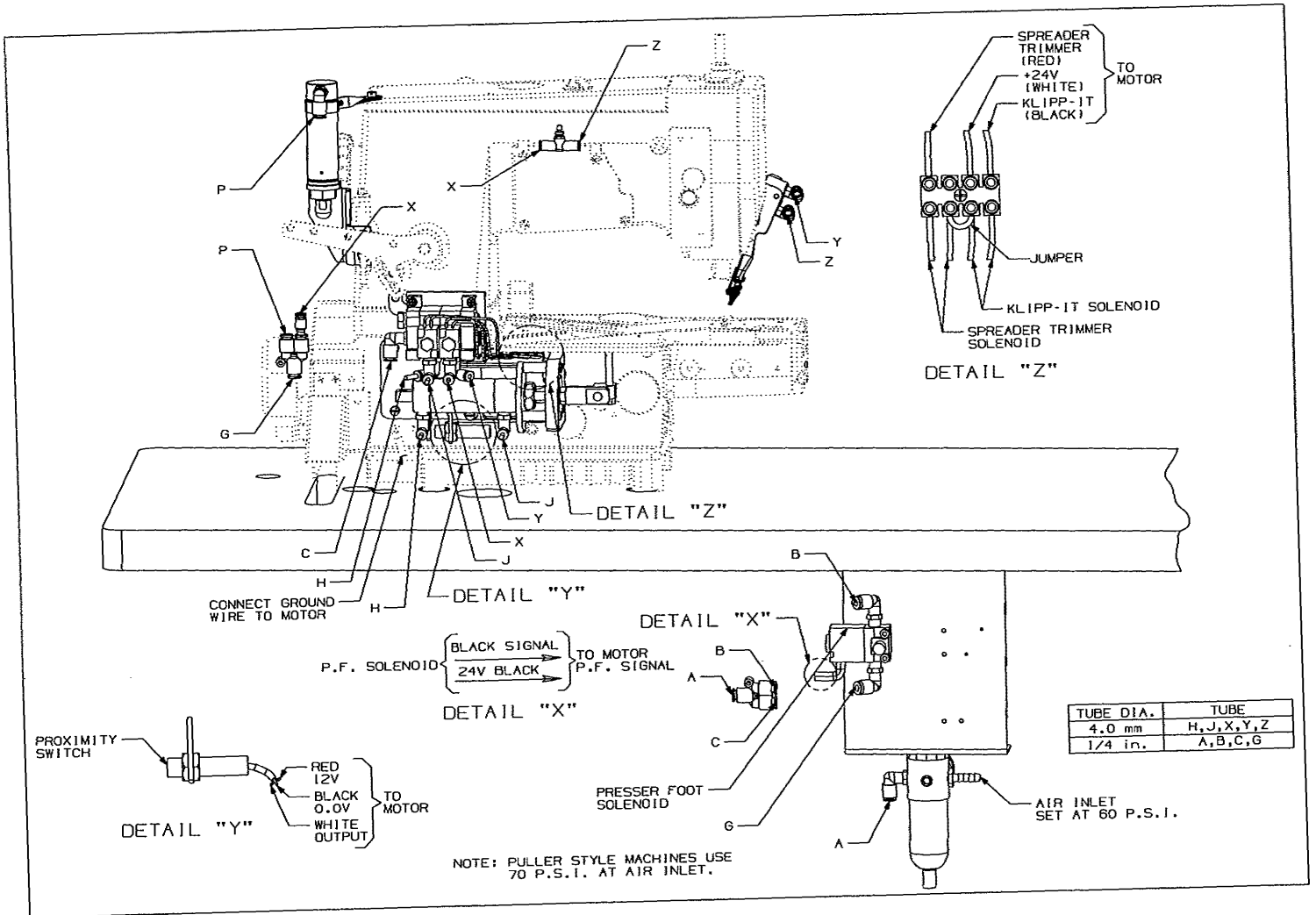


# UT3CS1





UT5CS1







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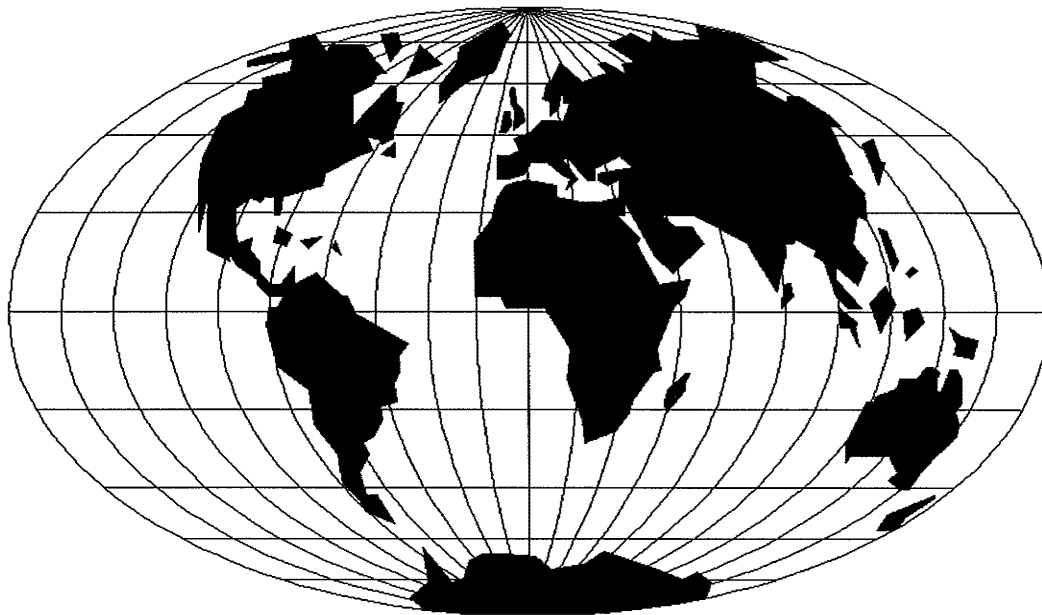
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