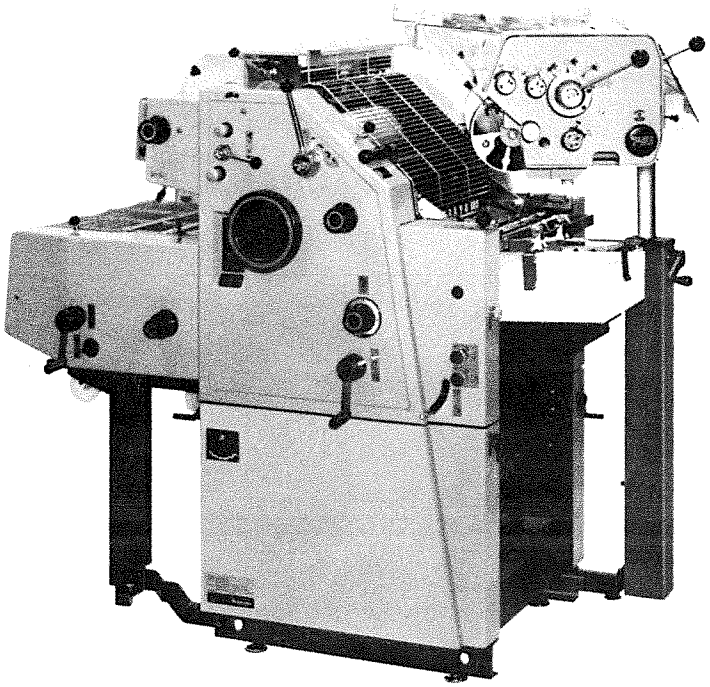
T-51 COLOR PRESS

FOR

SERIAL NO. 881716-982064



INSTALLATION 1

OPERATION 2

PARTS 3

PART NUMBER 34991 3/88

MFG. BY
TOWNSEND INDUSTRIES, INC.

T-51 TOWNSEND INDUSTRIES®
P.O. Box 97 Altoona, IA 50009 FAX 515-967-7519
Telephone 1-800-247-2262 or 1-515-967-4261

Congratulations!

Your purchase of a Townsend T-51 Color Press is another step forward in your expansion toward greater production and quality control.

We, the people in the plant who have designed, engineered and fabricated the press for you, take great pride in presenting it to you. Embodied in this piece of equipment are years of engineering research and development which, at the risk of being boastful, we feel will usher in a completely new area in the field of offset.

I urge you to study the following pages on installation and operation, it will be time well spent to assure you of maximum production immediately, and years of trouble free operation.

We are confident you will be highly pleased with the T-51 and are pleased to be of service to you.

Our sincere thanks,

TOWNSEND INDUSTRIES, INC.

Robert T. Townsend
President

RTT:l

SECTION 1

INSTALLATION

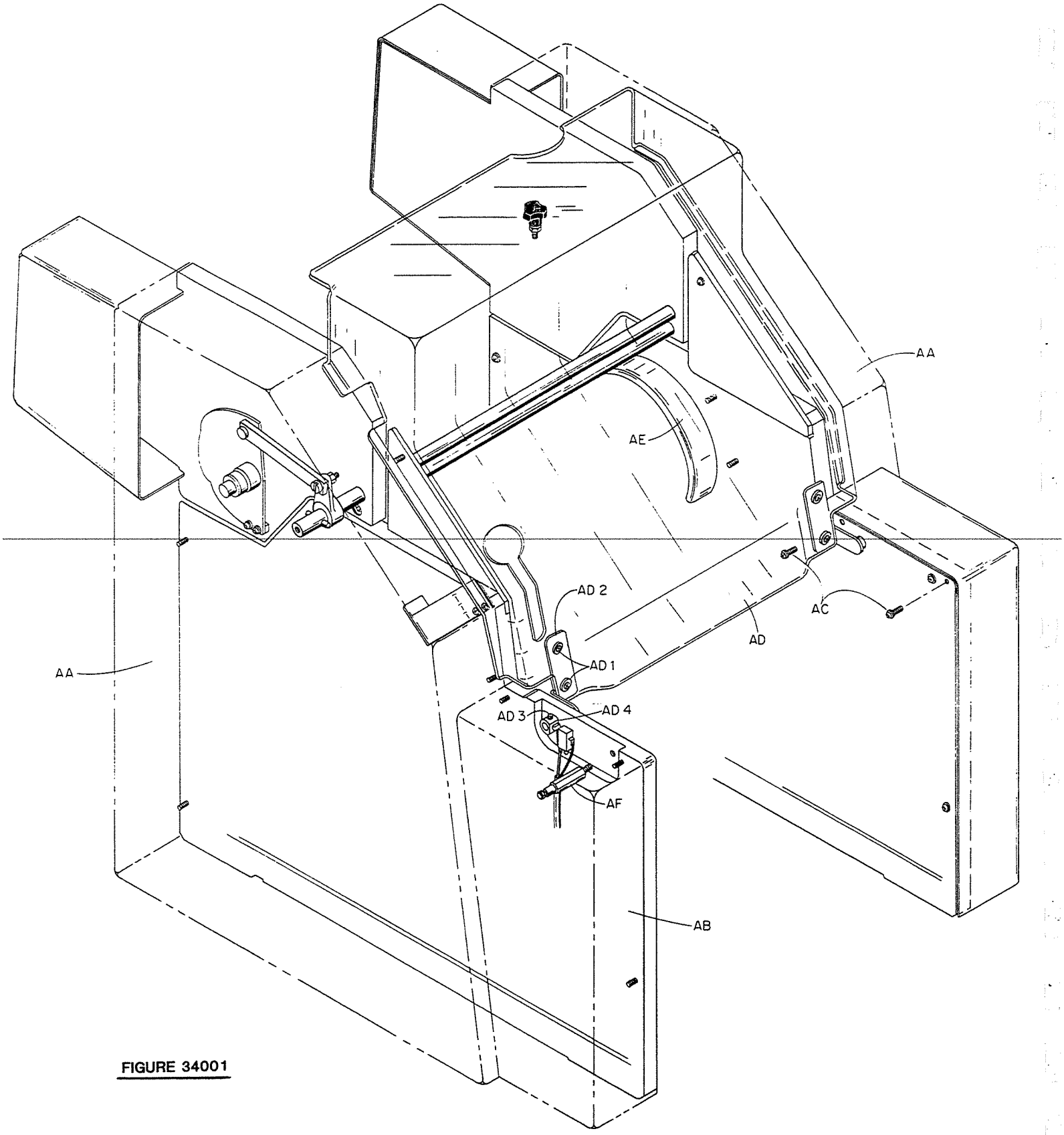


FIGURE 34001

INSTALLATION

Read through the installation instructions once briefly to familiarize yourself with the various parts that are required to install your T-51. Lay them out on a table, within easy reach, in the order you will be using them. Also read through the operation instructions as you will need to know the correct "ON" and "OFF" positions of the control handles. Follow the instructions carefully, one step at a time, in the order listed, and the installation will be a relatively simple operation.

1. Before installing the T-51, be certain that the parent press is adjusted and set up according to the manufacturer's manual and specifications. It is vitally important that all the cylinders be parallel and that the pressures are set correctly. Always use a new blanket. After these precautions have been taken, make sure that the press feeds consistently and prints properly.

WARNING: Unplug the parent press.

2. Remove the operator and non-operator side covers (AA) by taking off the operating controls and covers' screws. Remove the operator side feeder cover (AB) by taking out the screws. Some parent press models will have a one piece cover on each side. Remove the screws (AC).

3. The plastic safety cover (AD) is taken off by removing the two screws (AD1) on the operator side and sliding the cover out of the hole in the non-operator side main frame. Rotate the cover bracket (AD2) until you can loosen the set screw (AD3) that holds the collar (AD4) in place. Remove the collar and bracket from the parent press.

4. Remove both blanket cylinder ring gear guards (AE). Only the non-operator side guard is illustrated. Release the spring and remove the spring pin (AF).

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

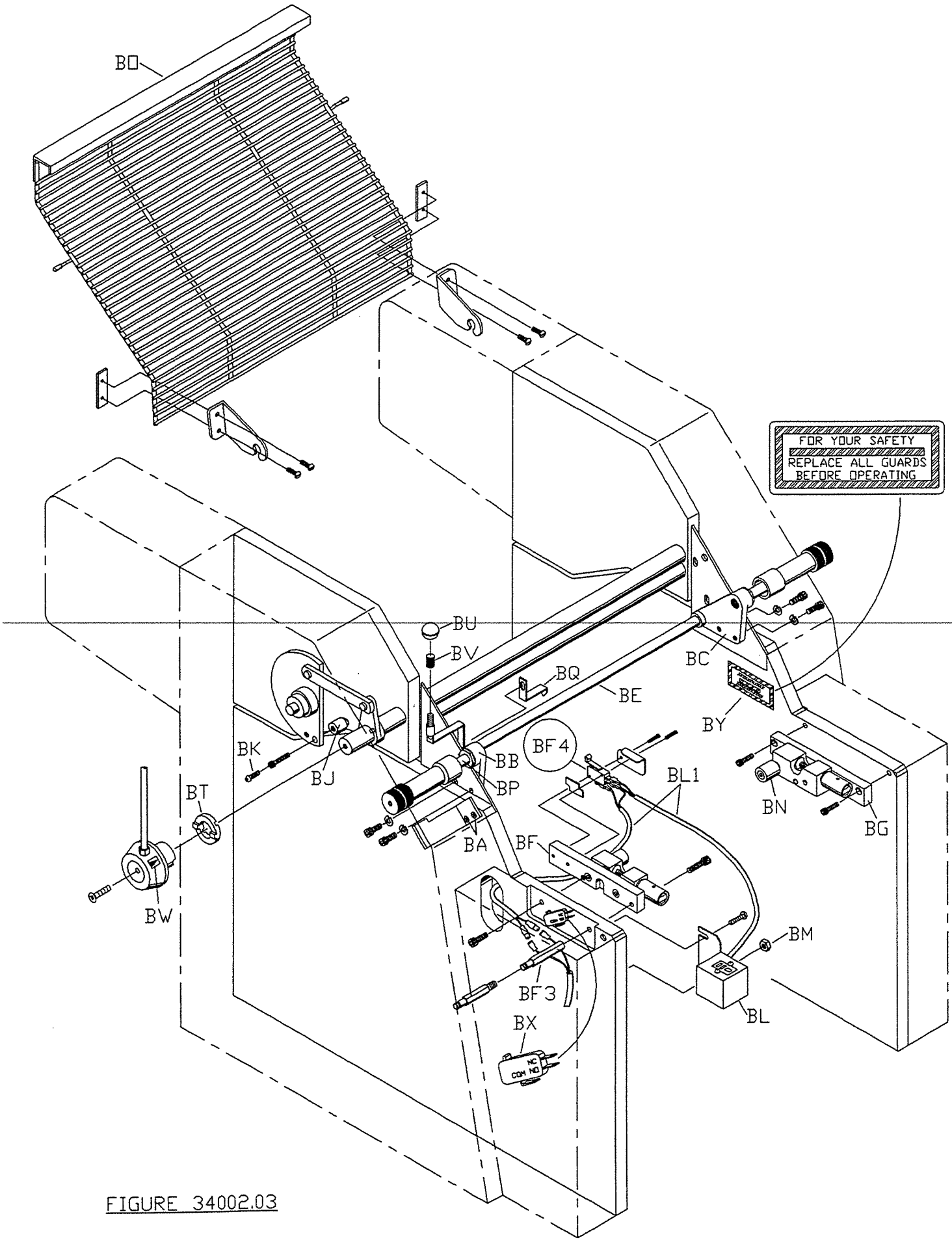


FIGURE 34002.03

5. Loosen the counter bracket screws (BA) so that the counter can be removed. Start each bracket (BB) and (BC) with the screws and washers that are closest to the feeder. Lift the brackets high enough to slide the safety tie rod (BE) into position. Start the remaining two screws and washers and then tighten all four screws. Adjust the counter so that it functions properly, and tighten the counter bracket screws (BA). Tighten the ring gear guard.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

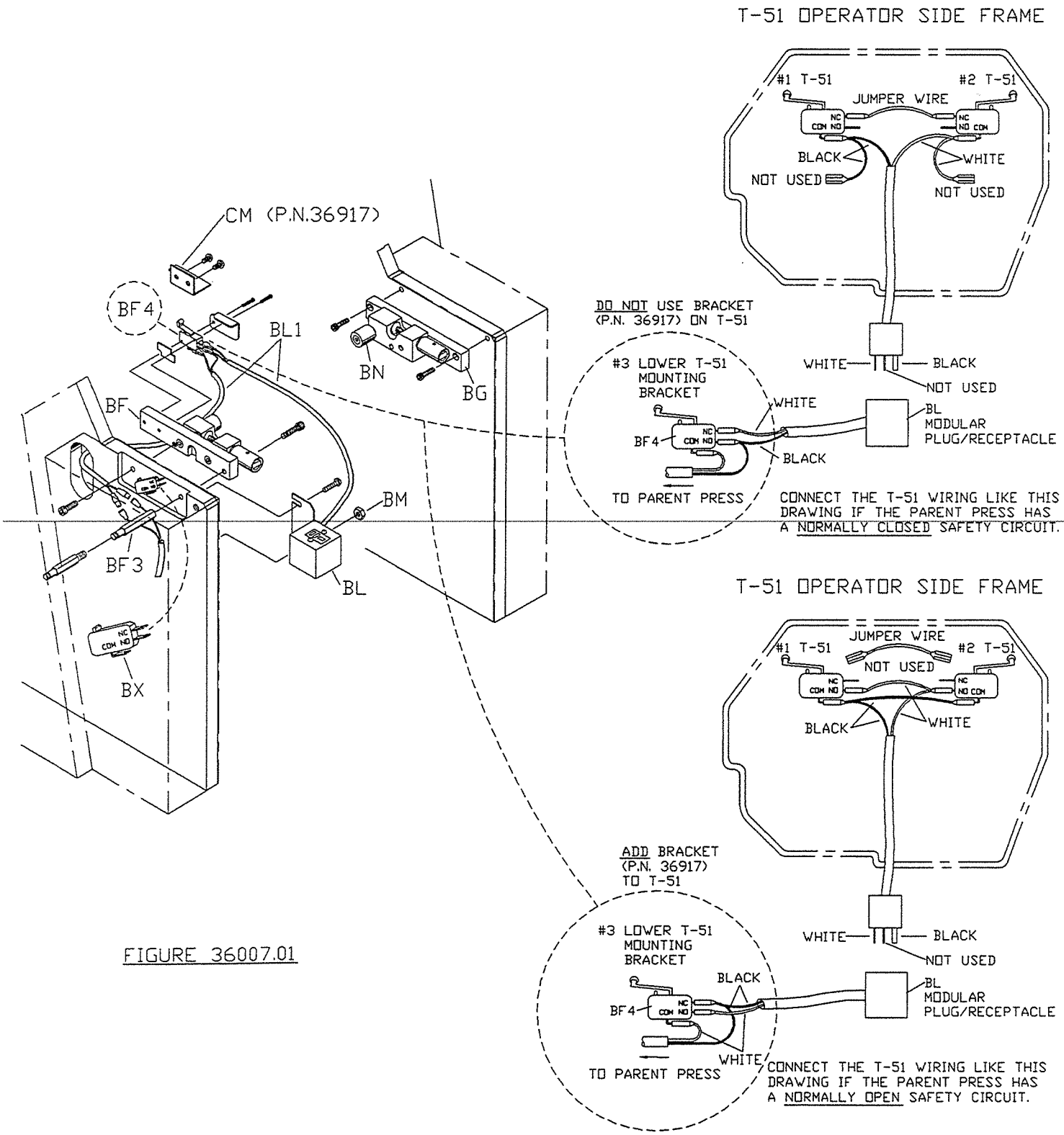


FIGURE 36007.01

6. Determine whether the parent press uses a normally closed or normally open electrical interlock switch system by noting if the wire harness is connected to the normally closed (NC) or normally open (NO) terminal of the interlock switch (BX). Then connect the wire harness (BL1) to the lower interlock switch (BF4), as illustrated, in the electrical schematic drawing.

Install the brackets (BF) and (BG). Install the spring pin (BF3) and hold the screw with a hex key while tightening the spring pin. Replace the spring. Install the modular receptacle (BL) securing it with the parent press nut (BM) and feeder cover screw. Connect the wire harness (BL1) to the parent press wire harness as illustrated. Route the wire harness so that it does not contact any moving parts and secure it with the cable tie.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

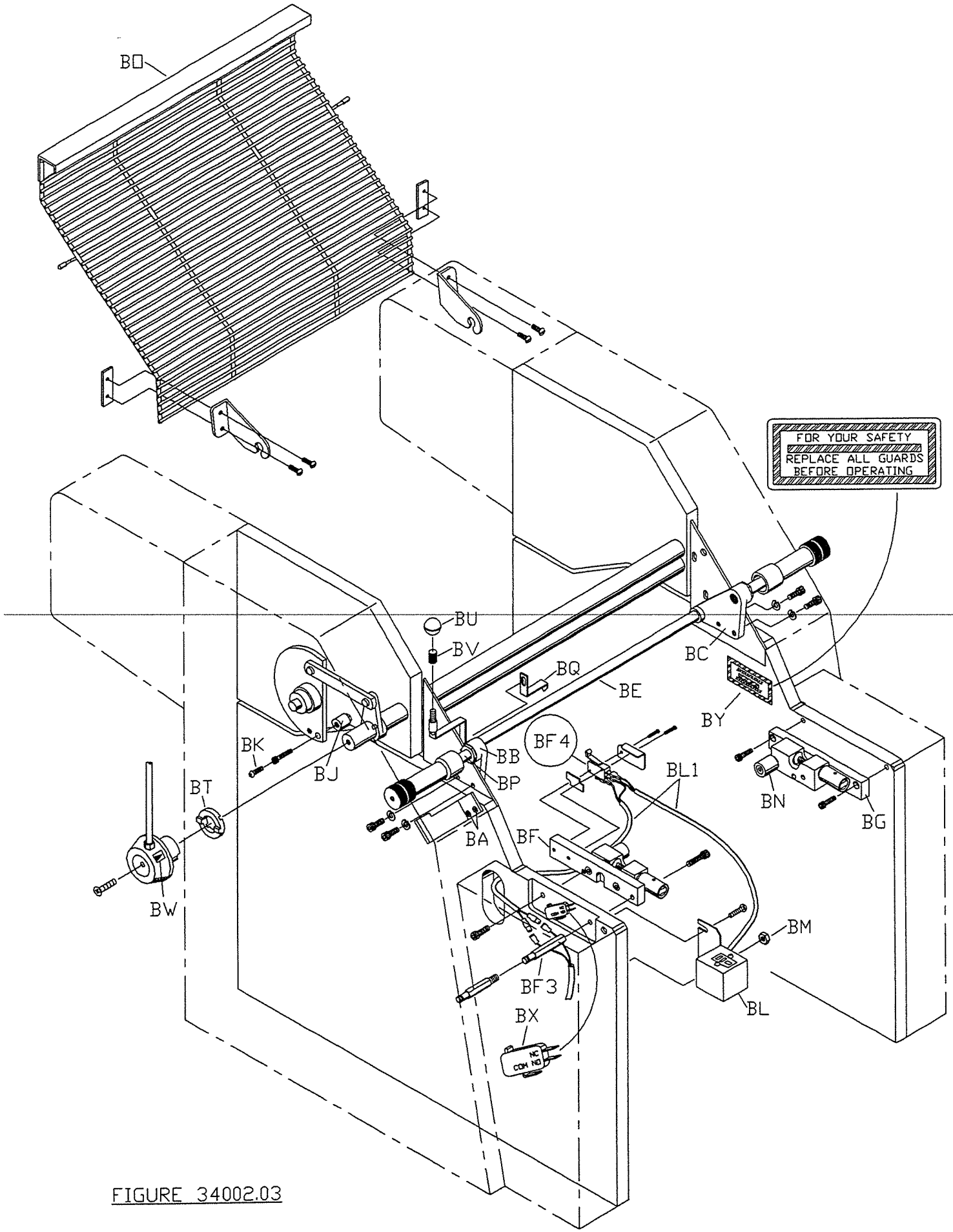


FIGURE 34002.03

7. To install the lockout attachment (BJ) move the operating lever to the No. 4 or far right position. Remove the screw (BK) and install the lockout attachment using the provided screw. Now, with the operating lever in the No. 1 or far left position, the plate and blanket cylinders of the parent press will not make contact when printing single-color work on the T-51.

8. Remove the parent press clamp lever knob (BU) and install the replacement knob (BV). Install the blanket cylinder pointer (BQ) using the clamp lever lower bracket screw. Mount the safety warning label (BY) after cleaning and degreasing the mounting surface. Alcohol works well for this purpose.

9. Replace the parent press operator and non-operator side covers and feeder cover. The stud (BP) on bracket (BB) must be removed to install the operator side cover. When replacing the operating controls, be sure to install the operating lever adapter (BT) under the parent press operating lever using the provided screw. Press the location decal (BW) onto the operating lever to indicate the operating lever position.

10. Plug in the parent press. Assemble the replacement safety guard (BO) using the brackets, screws, and nut plates. Pull out on the spring loaded guard knobs (BN) and install the replacement safety guard. Form the finger on the interlock switch (BF4) so that the parent press turns off when the guard is opened slightly less than 1/2 inch (12mm). Use this guard only when the parent press is operated with the T-51 swung off to the side.

WARNING: Unplug the parent press.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

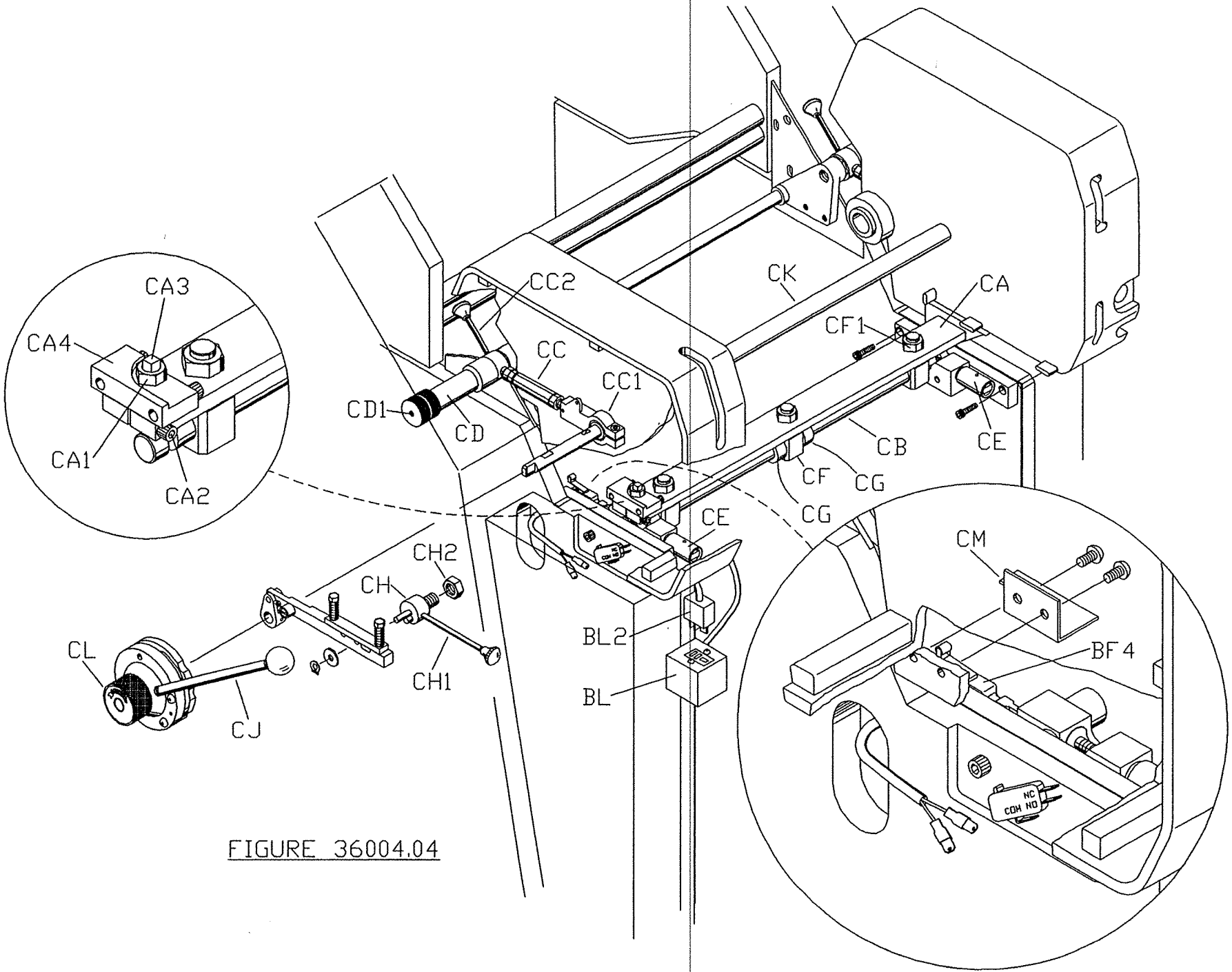


FIGURE 36004.04

11. Remove the T-51 operator and non-operator side guards and install the operating controls. Depending on the type of parent press electrical interlock system that was determined in step 6, check to be sure that the wire harness is connected to the interlock switches on the T-51 side frame correctly as illustrated in the electrical schematic drawing in Figure 36007. If the parent press uses a normally open electrical system, install the bracket (CM). Do not use this bracket with normally closed electrical systems.

12. Remove the drip tray. Be sure that the lock knobs (CD) are completely pulled out, the clamp sleeve assemblies (CE) are opened, and the slots of the hold-down shaft (CB) are positioned down. Also verify that each turnbuckle (CC) pivots with a slight drag on the yoke shaft eccentric without turning the yoke shaft (CK). This can be adjusted using the screw in the brass turnbuckle end.

13. Set the T-51 on the parent press, resting the hold-down shaft in the bracket slots. Line up the T-51 plate cylinder gap with the blanket cylinder gap. Attach the turnbuckles to the brackets and tighten the lock knobs. Tighten the clamp sleeve assemblies, non-operator side first, with the T-wrench. Connect the wire harness (BL2) to the modular receptacle as illustrated. Mount the plastic blanket cylinder safety guard onto the guard brackets that pivot on the top of the T-51 side frames.

14. Loosen the nut (CA1) and screw (CA2). Adjust the leveling screw (CA3) so that there is an 1/8 inch (3mm) gap between the hold-down bar (CA) and leveling block (CA4). Tighten the screw and nut.

15. Loosen the three nuts (CF1) until they turn freely by hand. Leave them loose until the completion of step 22. The center bolt acts as a pivot point in relation to the turnbuckles. The two other bolts pass through slots in the hold-down bar to permit movement around the center while adjusting the turnbuckles.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

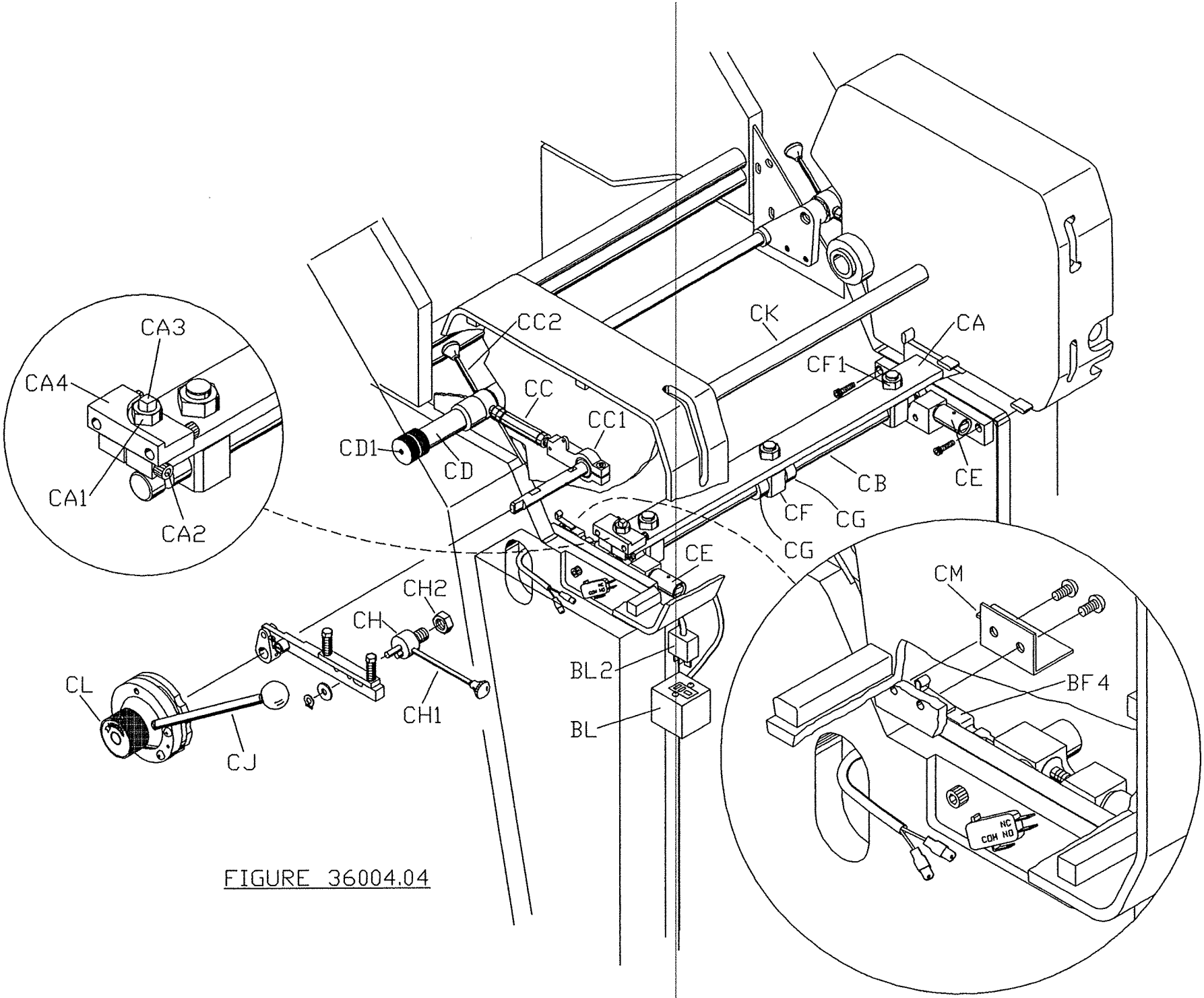


FIGURE 36004.04

16. Position the cylinder pressure stem (CH1) at "O" on the decal by loosening the lock nut (CH2). Being careful to watch the ring gears so that they mesh properly, rotate the disengage knob (CL), by hand or with the T-wrench, counterclockwise until the T-51 snaps into the "OPERATING" position. Damage will result as the turnbuckles (CC) are adjusted if the ring gears do not mesh correctly. Loosen the turnbuckles' lock nuts. With the single lever control (CJ) in the "ON IMPRESSION" position, adjust the turnbuckles until the T-51 plate cylinder is approximately parallel with the blanket cylinder. This is done by sliding a strip of paper between the plate and blanker cylinders at both ends until you have a slight drag on the paper. When you are satisfied they are relatively parallel, move the single lever control to the "OFF" position. Slightly tighten the turnbuckles' lock nuts at this time.

17. Center the T-51 between the parent press main frames by loosening the collars (CG) and sliding it on the hold-down shaft (CB). If necessary, slightly loosen the lock knobs (CD) to prevent the turnbuckles from binding as the unit moves. Tighten the set collars against the center base rocker (CF). Improper centering limits the amount of plate cylinder horizontal adjustment.

18. To adjust the lock knobs so they don't bind the turnbuckles, loosen the screws (CD1) in each lock knob. With each brass turnbuckle end assembly (CC1) on the yoke shaft (CK) pressed firmly against the T-51 side frames, turn each lock knob clockwise until they slightly contact the flange on each turnbuckle without pushing the turnbuckle sideways. Turn each screw (CD1) clockwise until they barely bottom out. Over-tightening the screws will prevent hand loosening of the lock knobs.

NOTE: If the lock knobs push the turnbuckles sideways, changing plate to blanket pressure will result during press operation or after the T-51 has been swung away and then reinstalled.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

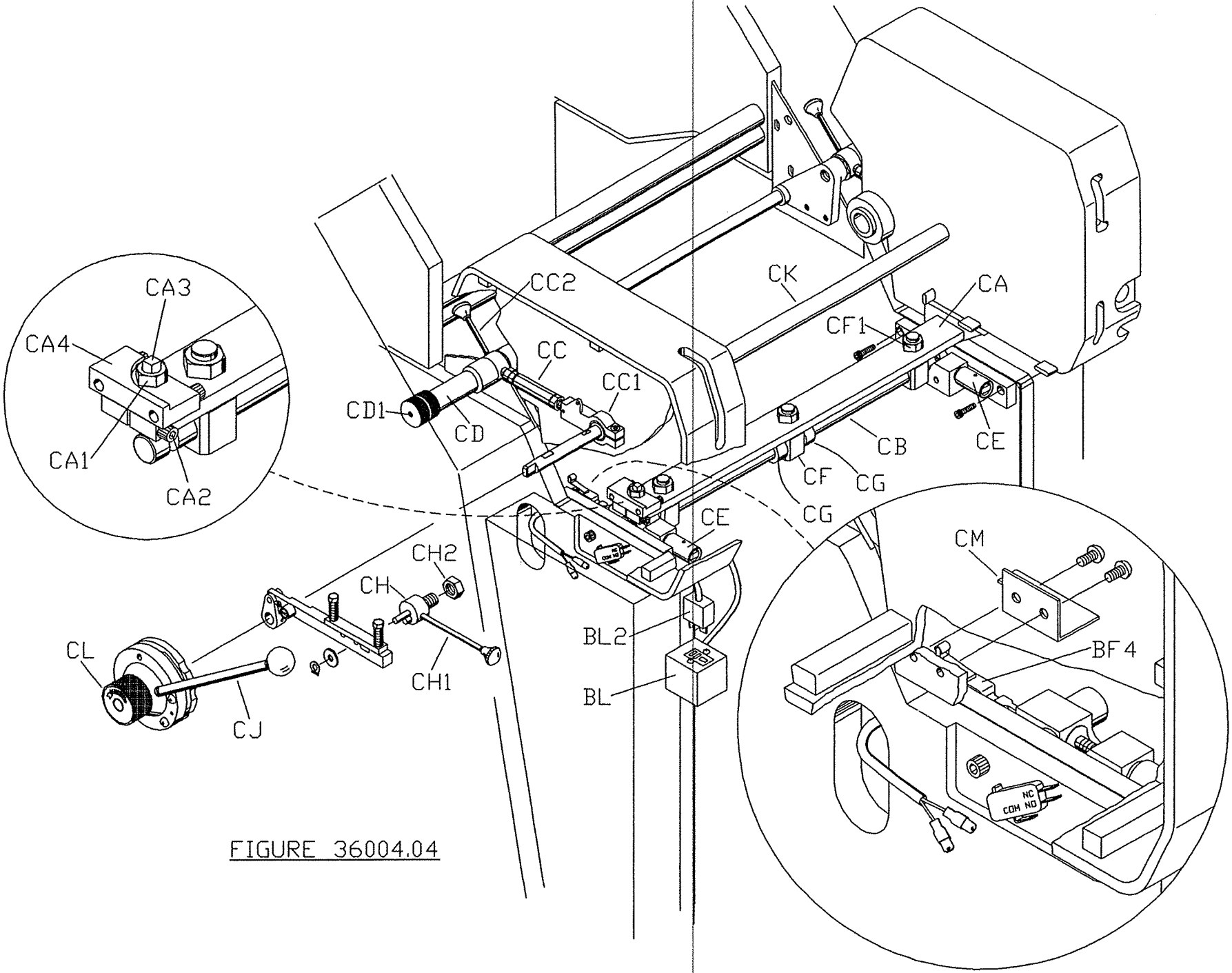


FIGURE 36004.04

19. Install the ink and water system oscillators with the dog and worm mechanism towards the non-operator side of the press. The dwell on each ductor roller has been factory set. The ink ductor roller must remain in contact with the transfer roller long enough to make 2 1/4 revolutions. Likewise, the water ductor roller must make 2 3/4 revolutions. Refer to the Operation Section if adjustments are required.

20. Refer to Figure 36003 in the Operation Section. Install the bottle holder and bracket assembly (FB). Press the hose onto the water fountain and bottle holder.

21. Plug in the parent press. If the bracket (CM) is used, move the single lever control (CJ) to the "ON IMPRESSION" position and form the bracket tab so that the finger on the interlock switch (BF4) is completely depressed. Then move the single level control to the "OFF" position. Install the drip tray so that the parent press will operate. Put a plate on the T-51. Put ink in the fountain and ink the rollers. Check the ink and water form roller stripes. The ink form rollers should be set at 5/32 inch (4mm) and the water form roller set at 3/32 inch (2.4mm) for metal plates. If camera direct plates are used, set the ink and water form rollers at 1/8 inch (3.2mm). Refer to the Operation section for adjustments.

22. Turn the water form roller to "OFF" detent position by aligning the form handle decal with the side guard decal. Drop the ink form rollers on the plate, with the single lever control (CJ), and ink the plate solid. Stop the press and move the single lever control "ON", then "OFF", impression to lay a stripe on the blanket. Be sure the three nuts (CF1) have been loosened. Adjust the turnbuckles to get an even 1/8 - 3/16 inch (4mm) wide stripe. Carefully tighten the turnbuckle lock nuts on both sides being careful not to move the turnbuckles (CC). Recheck the stripe. If the stripe has changed, repeat the above step. Move the single lever control to the "ON IMPRESSION" position and tighten the three nuts (CF1), center nut first.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

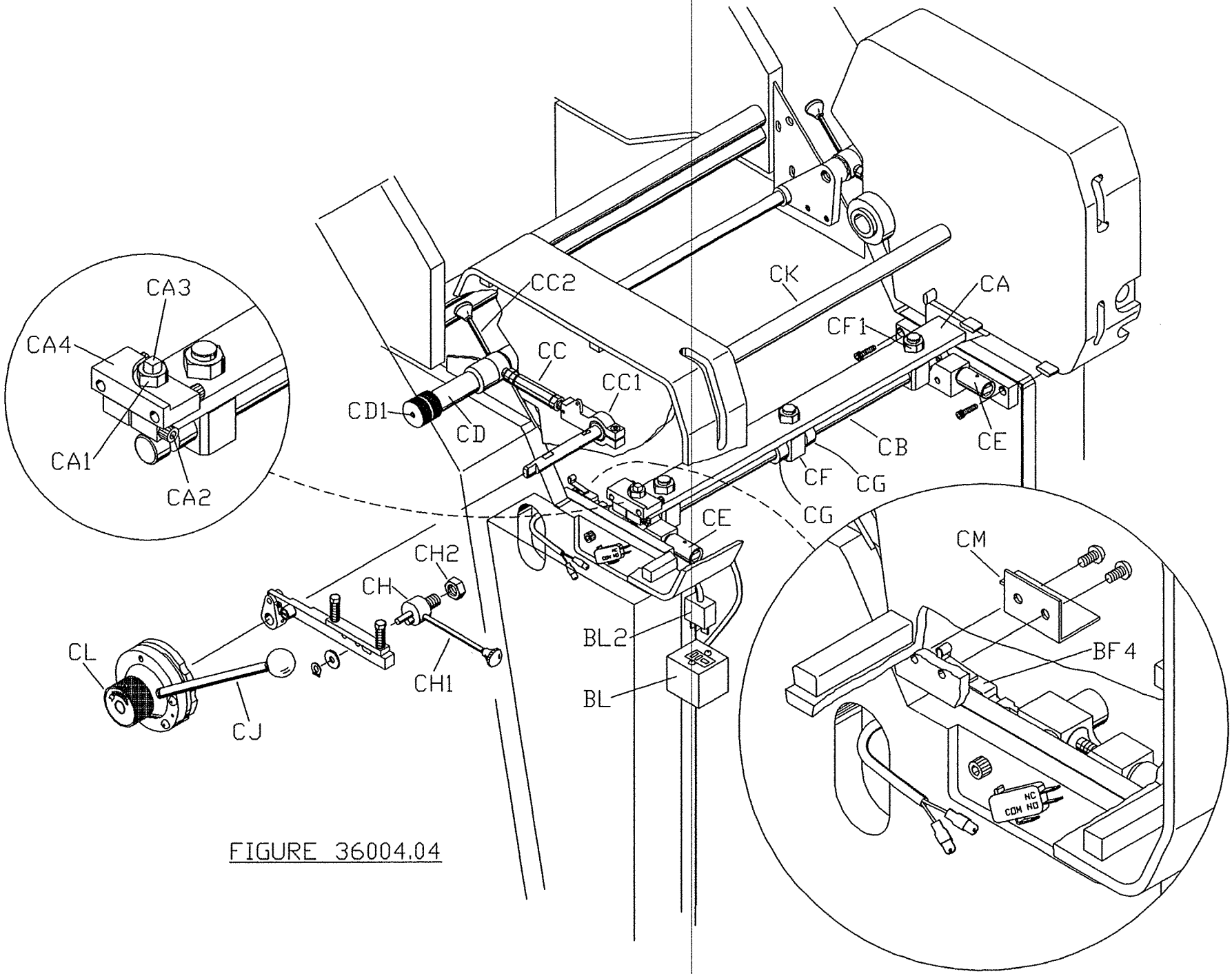


FIGURE 36004.04

23. Leveling of the T-51 plate cylinder to the blanket cylinder is extremely important. Make a negative with cross hairs in all four corners. Make two plates from this negative and put one on each press. Adjust the plates using vertical, horizontal, or twisting adjustments, as you print, until the targets on the non-operator side of the plates are lined up. If the targets on the operator side are not lined up, the leveling screw (CA3) must be changed. To do this, loosen the nut (CA1) and then the screw (CA2).

Keep in mind that you will be changing the targets on the T-51 to match those on the parent press

1. If the targets on the operator side are high, raise the leveling screw (CA3) to lower the targets on the operator side.

2. If the targets on the operator side are low, lower the leveling screw (CA3) to raise the targets on the operator side.

When the leveling adjustment is complete, tighten the screw (CA2) before the nut (CA1). Moving the leveling screw will change your plate to blanket stripe. As a result, loosen the three nuts (CF1) until they turn freely by hand and restripe the plate to blanket pressure. Refer back to step 22. When the stripe is correct with the three nuts (CF1) tightened, adjust the targets by printing as you did before to put them in register. The above steps may have to be repeated depending on how far the targets were out of register.

NOTE: Always loosen the three nuts (CF1) prior to adjusting the turnbuckles to prevent putting the T-51 in a bind.

If after leveling, the targets are lined up at the top of the sheet and yet do not fit vertically at the bottom (one plate looks as though the image is longer), it will be necessary to use packing under the plate with the long image. Usually a sheet of .001 inch (.025mm) or .002 inch (.05mm) mylar is all that is required.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

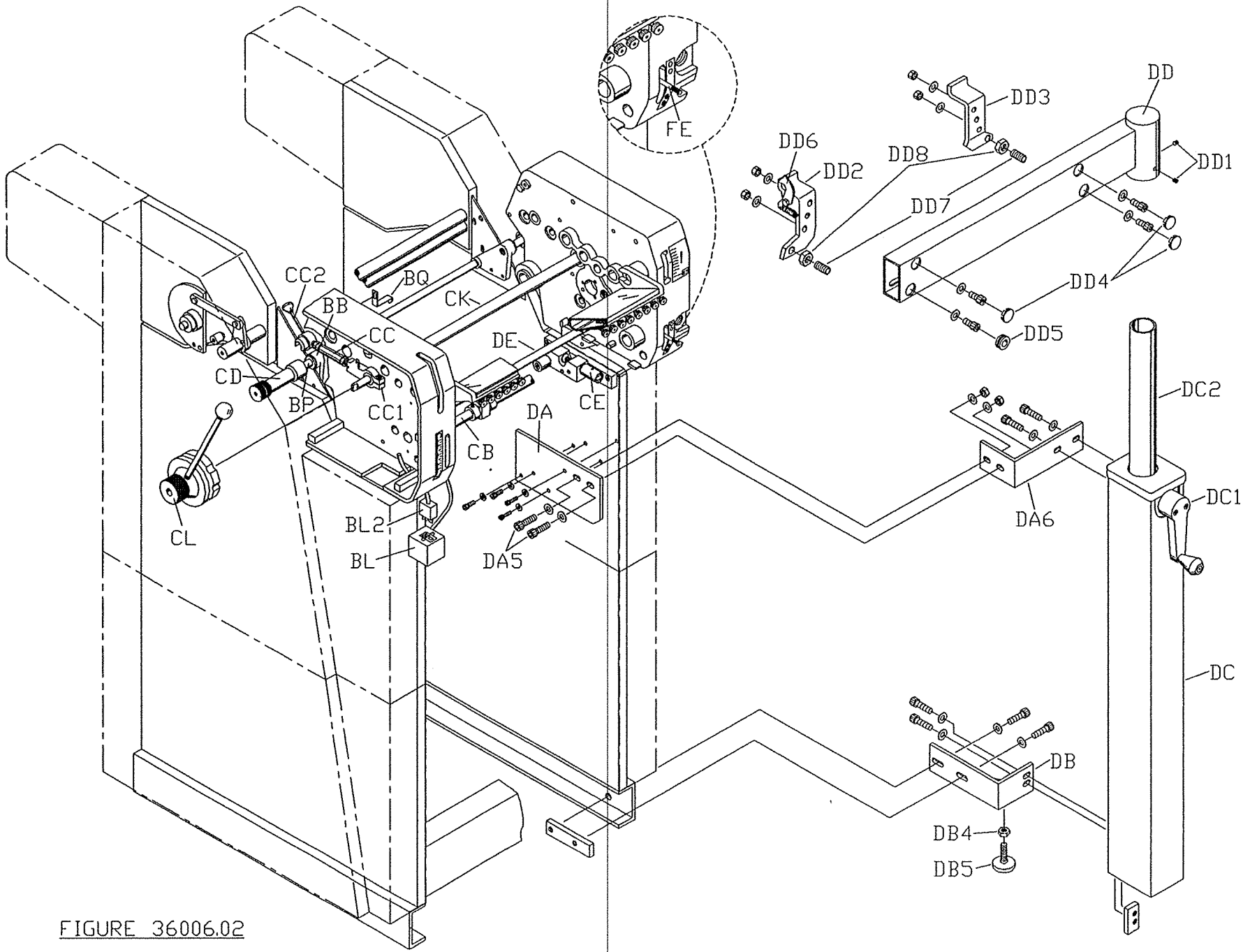


FIGURE 36006.02

WARNING: Unplug the parent press.

24. Replace the T-51 side guards.

25. Install the T-51 Swing-Away. Attach the mounting plate (DA) to the non-operator side main frame. Loosen the screws (DA5).

Attach the lower mounting bracket (DB) to the lift tube housing (DC) using the provided screws, washers, and nut plate. Leave the screws loose. Loosen both nut (DB4) and thread the leveling foot (DB5) completely into the bracket.

Attach the lift tube housing (DC) to the upper mounting bracket (DA6). Leave the screws loose.

Attach the lower mounting bracket (DB) to the bed frame base using the provided screws, washers, and nut plate. Leave the screws loose.

Turn the crank handle (DC1) and raise the inner lift tube (DC2) 6 1/2 inches (165mm). Seat the swing arm (DD) onto the inner lift tube. Tighten the screws (DD1).

Rotate the disengage knob (CL), by hand or with the T-wrench, clockwise until the T-51 snaps into the "DISENGAGE" position. Push the ductor shut off stem (FE) down and open the water fountain guard. Loosen each lock nut (DD8) and back the support screws (DD7) out of the cradle brackets until they are even with the bracket surface.

Remove the snap out plugs (DD4). Raise the swing arm and adjust the non-operator side cradle bracket (DD3) so that it slightly contacts the T-51 tie rod (DE) with the bottom of the bracket overlapping the T-51 side frame.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

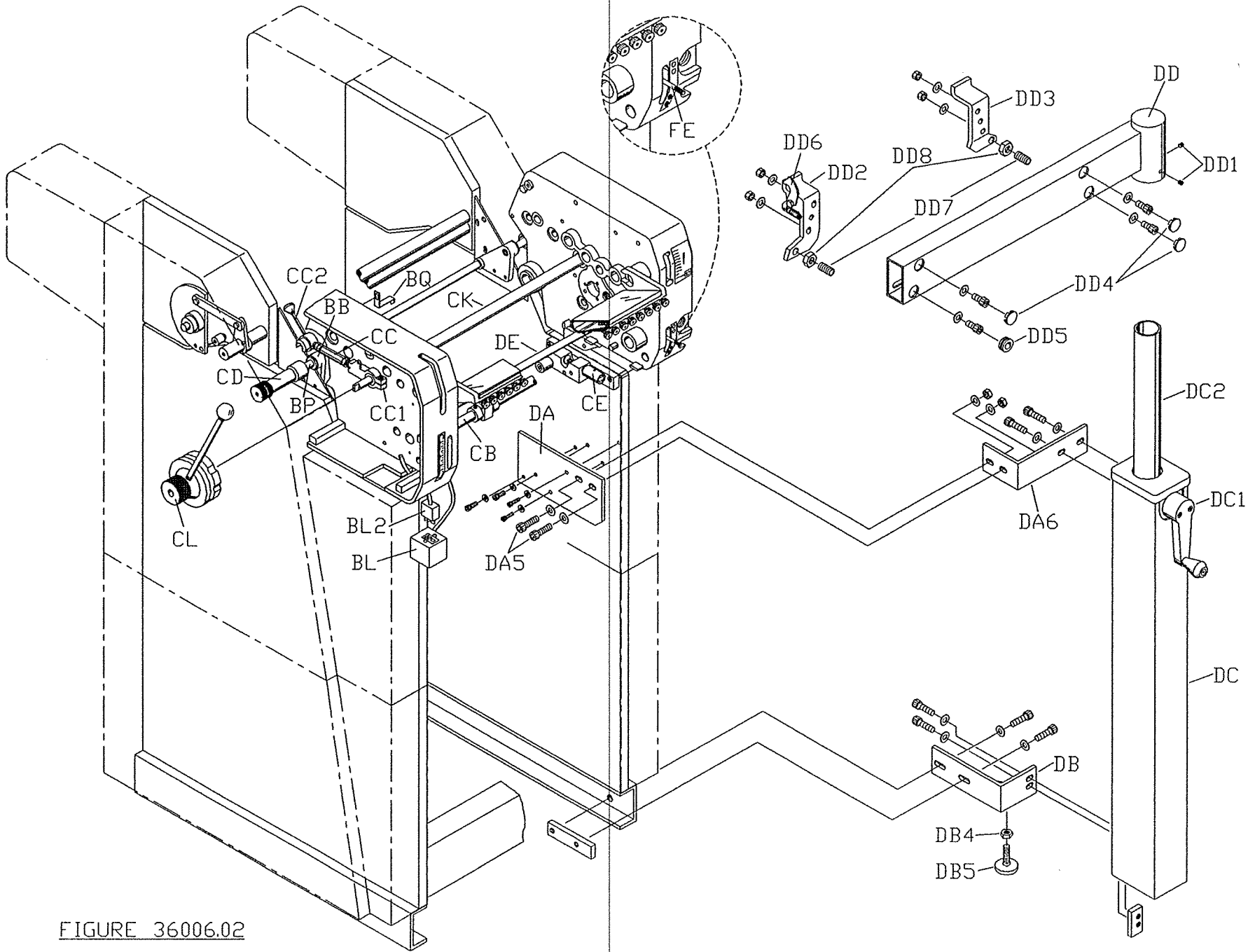


FIGURE 36006.02

Adjust the operator side cradle bracket (DD2) so that it is 1/8 inch (3mm) higher than the non-operator side bracket to compensate for the torque on the swing arm. The bottom of the bracket must overlap the T-51 side frame.

Position the lift tube housing (DC) so that it is vertical and tighten the screws on the upper mounting bracket (DA6), lower mounting bracket (DB), and lift tube housing. Adjust the leveling foot (DB5) so that it contacts the floor and tighten nut (DB4). Recheck each cradle bracket to be sure that they are still adjusted properly. Adjust each support screw (DD7) so that they contact the side frames and tighten each lock nut (DD8). Install the snap out plugs (DD4) and bumper (DD5).

Read the section entitled "Removing The T-51 Color Press With The Swing-Away" in the Operation Section and then swing the T-51 off to the side.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

SECTION 2

OPERATION

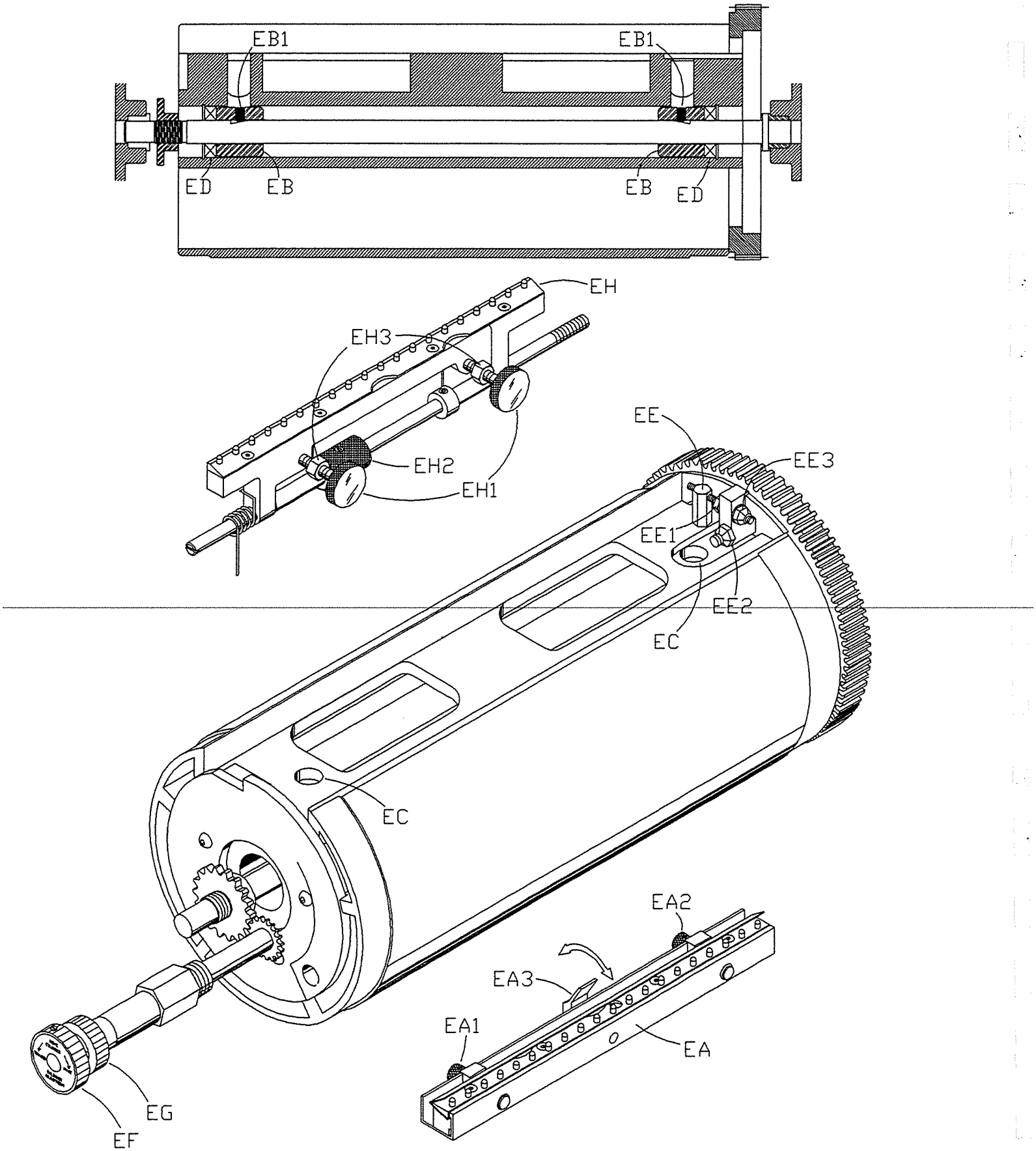


FIGURE 36005.02

OPERATION

If you have installed your T-51 in accordance with the installation instructions, you are now ready to begin printing two-color work. This section is written to supply you with the necessary information to make adjustments properly and operate your T-51 efficiently.

AFFIXING PLATE

1. Grasp the trail edge of the plate with the right hand holding it vertically over the edge of the plate cylinder opening.

2. Attach the plate to the lead edge plate clamp which pivots at the center.

3. Rotate the handwheel with the left hand to turn the plate cylinder down. The plate will feed on as you hold the trail edge. Keep the plate tight and straight.

4. Attach the plate to the trail edge plate clamp. Tighten the plate on the plate cylinder.

When attaching the plate to the parent press, do not hold the trail edge as usual. Place the right hand lightly on the surface of the plate, as it rolls around the plate cylinder, keeping it snug against the plate cylinder surface.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

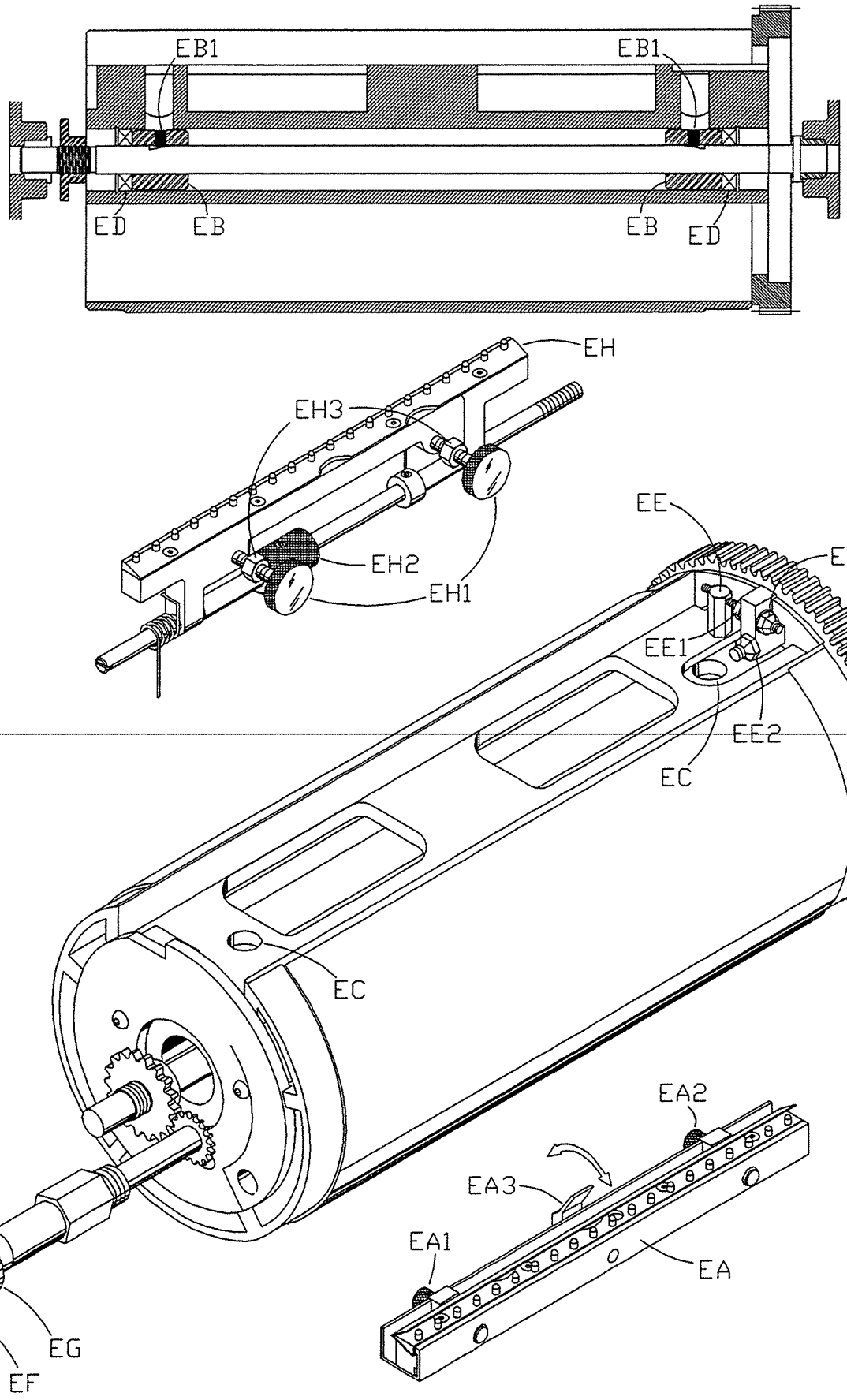


FIGURE 36005.02

OPERATION

T-51 COMBINATION CLAMP

The T-51 combination clamp (EA) is built with a clamping device for holding straight edge (unpunched) plates but also has pins to be used with punched plates.

To set the clamp for straight edge plates, the screws (EA1) and (EA2) must be adjusted until there is no pivoting action and the clamp is parallel with the lead edge of the plate cylinder. To open the clamp, push down on the lever (EA3). The clamp will remain locked open until a plate is positioned and the lever is lifted. Always be sure the lead edge of the plate is in the clamp straight and that the plate is centered on the plate cylinder surface before closing the clamp.

When running straight edge plates that are not fastened at the trail edge, a plate twist can be accomplished by removing the plate from the plate cylinder surface. To swing the trail edge of a plate towards the operator, loosen the non-operator side pivot screw (EA2) a predetermined amount. Tighten the operator side pivot screw (EA1) the same amount. The clamp can be adjusted either direction to straighten a crooked image.

NOTE: Before operating the T-51, tighten the lock nut on each trail edge plate clamp thumb screw.

PLATE CYLINDER CENTERING AND END PLAY REMOVAL

The T-51 plate cylinder is centered properly on the main shaft when the form rollers extend an equal amount over each end of the plate as the plate cylinder is moved the maximum amount of travel to each side of the press. This adjustment is done as follows.

1. Rotate the cylinder until the set screws (EB1) are visible through the holes (EC).

2. Loosen both set screws one turn and move the cylinder in the necessary direction.

3. Position the sleeves (EB) against the cylinder bearings (ED) and tighten the set screws. The cylinder will have end play if the sleeves are not against the cylinder bearings.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

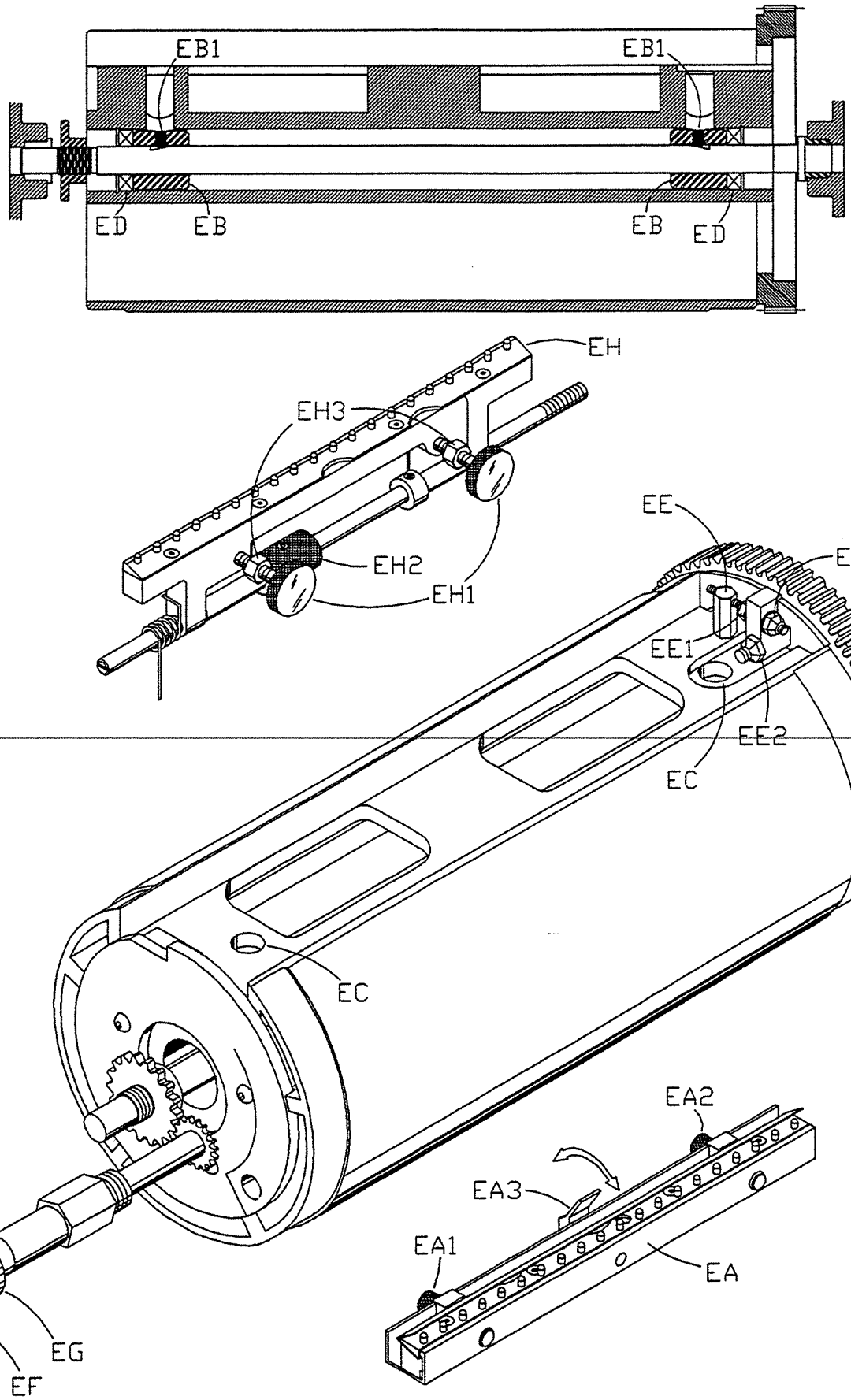


FIGURE 36005.02

REGISTRATION

VERTICAL MOVE GREATER THEN 1/8 INCH (3mm)

To make any vertical move up to a full 360 degrees, rotate the handwheel until the opening of the T-51 plate cylinder is accessible. Insert the T-wrench through the lock pin holder and turn the wrench until the slots engage the lockup mechanism. Loosen the mechanism slightly by turning the T-wrench counterclockwise. Leave the T-wrench engaged. With both hands, rotate the handwheel clockwise to move the image up or towards the gripper or counterclockwise to move the image down or away from the gripper.

NOTE: The nut (EE2) must be loose before an adjustment with the T-wrench can be made. Do not loosen nut more than 1/2 turn.

VERTICAL MOVE LESS THAN 1/8 INCH (3mm)

A finer move of a few thousandths to an eighth inch can be made with the microvertical mechanism (EE). Use the following sequence to make a move.

1. Center the adjustment screw in the post by turning the nut (EE1) to promote ease of operation and parts longevity.
2. Tighten the nut (EE2).
3. Loosen the cylinder lock with the T-wrench.
4. Use a 3/8 inch open end wrench to turn the nut (EE1).
   - **(a)** To raise the T-51 image, move the wrench handle into the plate cylinder gap.
   - **(b)** To lower the T-51 image, move the wrench handle out of the plate cylinder gap.
5. Tighten the cylinder lock with the T-wrench.
6. Print a sheet to see if you have made the desired move.

If it becomes difficult to make a microvertical move because of any looseness in the mechanism, hold the nut (EE1) and tighten the nut (EE3) slightly. Keep the mechanism lightly lubricated.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

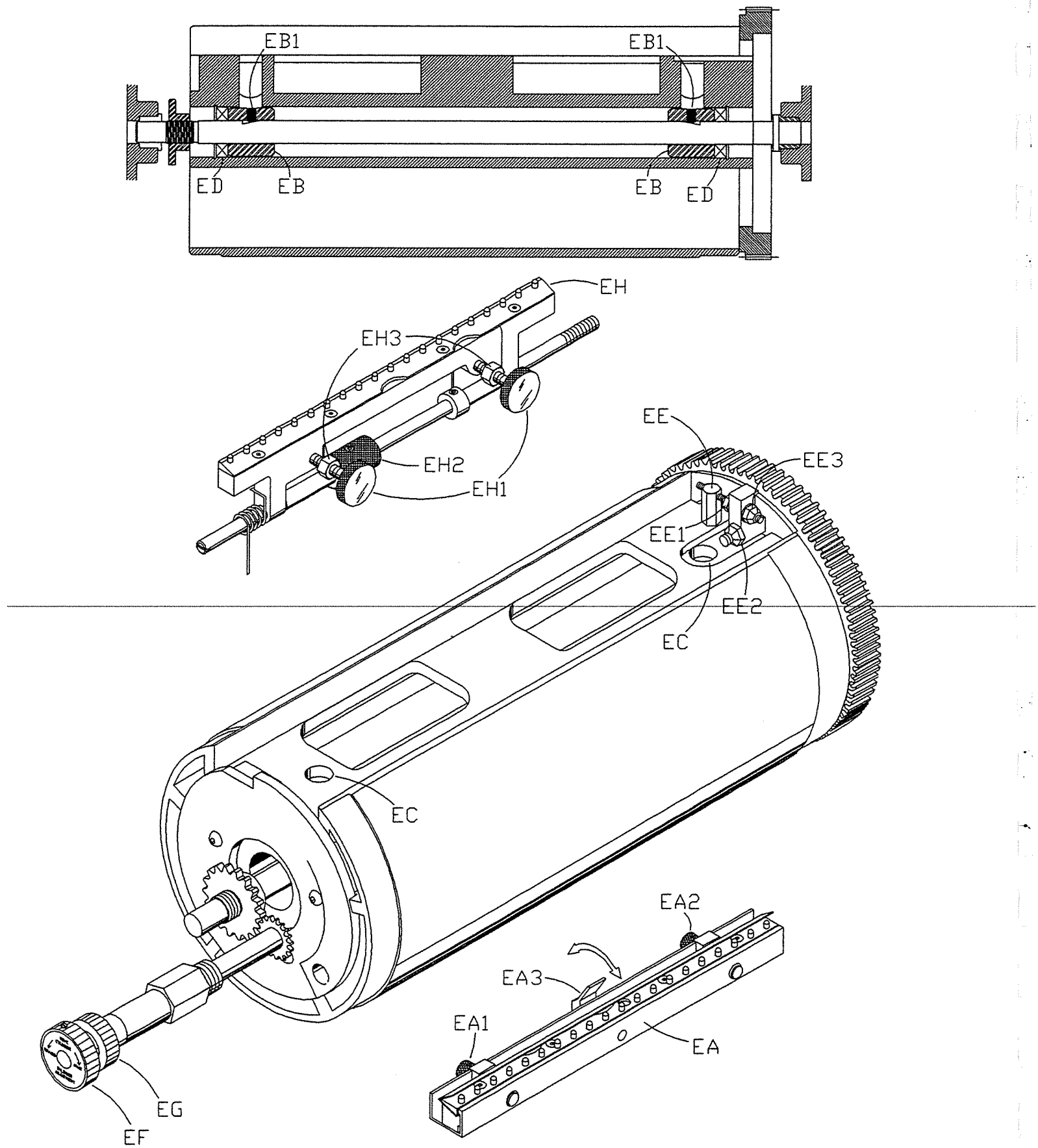


FIGURE 36005.02

REGISTRATION

HORIZONTAL

Hold the micro knob (EF) and loosen the lock knob (EG) by turning it counterclockwise one half turn. Turn both the lock knob and micro knob at the same time to change the horizontal position of the cylinder. Turning them clockwise moves the cylinder away from the operator. Turning them counterclockwise moves the cylinder towards the operator. Hold the micro knob and tighten the lock knob when the adjustment is complete. This adjustment can be made with the press running.

NOTE: To prevent binding the cylinder main shaft inside the horizontal mechanism gear, do not attempt to force the cylinder further than its maximum travel toward the operator.

TWISTING

By moving the trail edge plate clamp (EH), a plate that is fastened at both ends can be straightened without removing it from the cylinder. By loosening the thumb screws (EH1), you can shift the plate from side to side by turning the thumb nut (EH2) inside the cylinder. Turning the nut clockwise will move the trail edge away from the operator side. Turning the nut counterclockwise will move the trail edge towards the operator side. The lead edge plate clamp automatically pivots when the trail edge is moved provided that the screws (EA1) and (EA2) are backed out the maximum amount. Always tighten the lock nuts (EH3) when the plate is secured.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

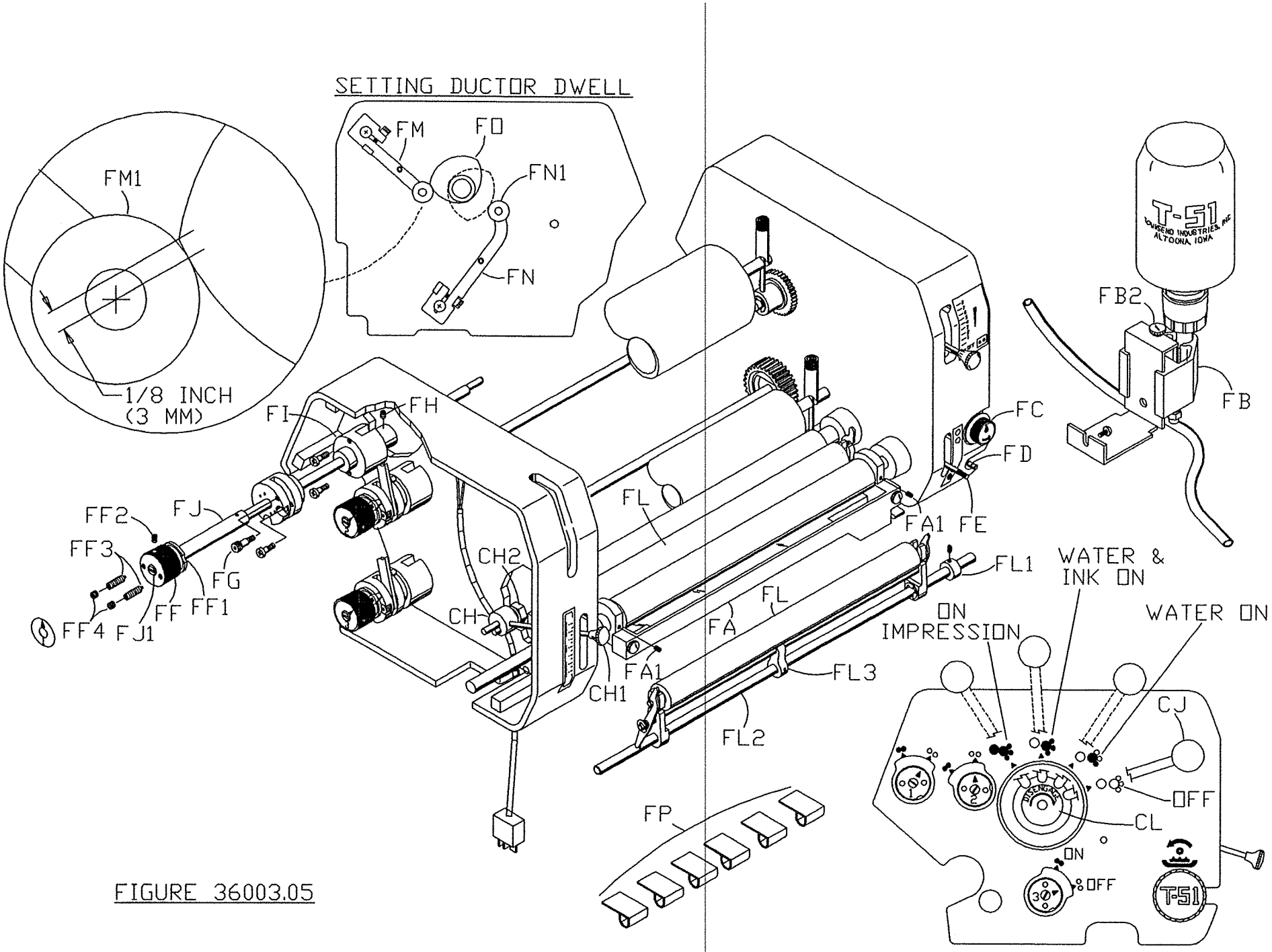


FIGURE 36003.05

WATER LEVEL IN FOUNTAIN

The T-51 mounts slightly different from press to press. Therefore, the level of the fountain (FA) is variable. The fountain must be setting on the press with the front and rear lips on the same plane. This is adjusted by loosening the screws (FA1) and pivoting the fountain. Tighten the screws when the adjustment is complete. Make the following adjustments on the bottle holder and bracket assembly (FB) with the press turned off.

1. Use the adjusting screw (FB2) to align the top of the bottle holder with the line on the bottle holder bracket.

NOTE: If adjusted too far below the line, the holder will be released from the bracket.

2. Place a full bottle of solution in the bottle holder.

3. Raise the bottle holder with the adjusting screw (FB2) very slowly until the solution just touches the bottom of the water fountain roller. The solution depth in the fountain will increase slightly when the press is in operation.

INFINITE WATER CONTROL AND DUCTOR SHUT OFF

The T-51 has an infinite water control system. Turning the water knob (FC) clockwise increases the amount of fountain solution that is delivered to the plate. A counterclockwise turn decreases the fountain solution delivery rate. The water indicator (FD) shows how much fountain solution is being supplied. As a starting point, set the water indicator at 2 - 3 notches. Always run the minimal amount of fountain solution consistent with quality printing.

Use the water stops (FP) to provide zone control of the fountain solution delivery rate. When affixed to the fountain lip, they apply gentle wiping action on the fountain roller.

To stop the water ductor roller from ducting to the fountain roller, pull up on the ductor shut off stem (FE). Pushing the stem down allows the ductor roller to duct normally.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

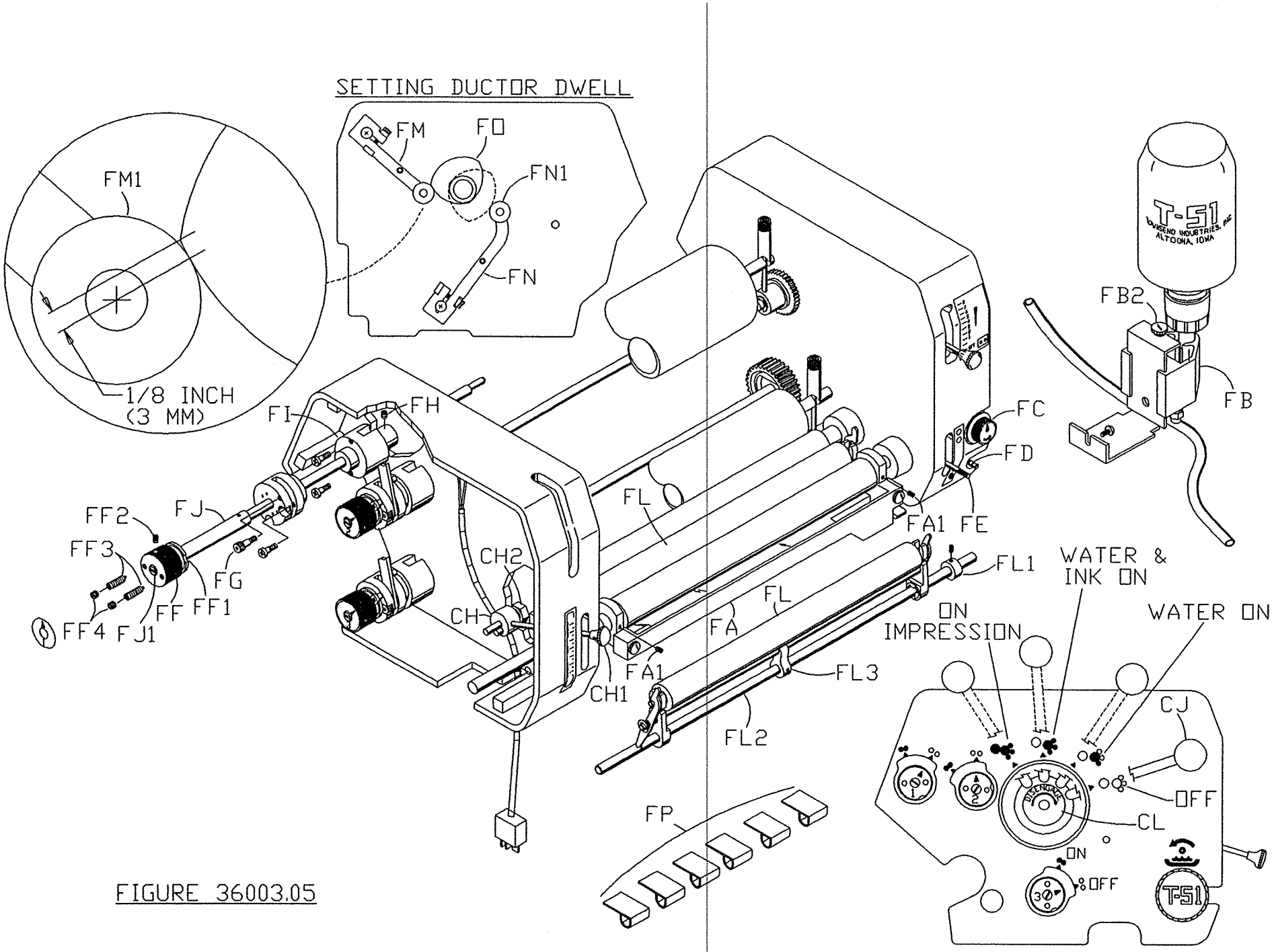


FIGURE 36003.05

OPERATION

AQUA-FLOW SYSTEM

In the Aqua-Flow system, all the rollers, except the water fountain roller, need to be inked with a fairly heavy lay of ink. With the ink rollers inked and the water ductor roller turned off, start the press and drop all three form rollers down on the plate. The plate will ink up and ink will be carried back through the water system rollers. As soon as the water rollers are inked, turn the water ductor roller on and set the water indicator (FD) on three notches, or your normal setting, by turning the water knob (FC). Water will be carried through the system. Watch the plate. As soon as it is running clean, cut the water back as much as possible consistent with quality printing.

The water fountain roller should be desensitized twice daily for the first week to keep it running clean. Chrome cylinder cleaner, plate cleaner, and plate gum works well for this. Thereafter, clean and gum the roller daily. It works best to make this part of your nightly routine so the roller is gummed overnight. You will need to drain the fountain before gumming the roller.

COVER DAMPENERS

If your T-51 is equipped with a molleton system, you will have to remove the water form roller to cover it. Remove the water oscillator roller. Rotate the form shaft (FJ) with your left hand until the notch (FF1) in the form handle (FF) is lined up with the form indexer screw (FG). Pull the form shaft out and remove the form roller from the press. To remove the water transfer roller, take off the operator side guard. Loosen the set screw that is located in the projecting boss that secures the transfer roller bushing. Push the bushing out and remove the transfer roller.

After placing covers on the rollers, wet them thoroughly with fountain solution. Squeegee them back to a "damp only" condition with an ink knife or by rolling them tightly in shop towels. Ideally, newly covered rollers should be wet with fountain solution and left overnight before using. Covers should fit tightly. Seamless covers are recommended. When replacing the form roller, be careful that the roller drive ears are aligned properly with the form gear driver. Before operating the T-51, be sure each form roller is in the "OFF" detent or "ON" detent position by aligning the form handle decal with the side guard decal.

The water fountain roller and metal oscillator roller need to be desensitized twice daily for the first week. Chrome cylinder cleaner, plate cleaner, and plate gum works well for this. After the first week, clean and gum these rollers once daily. It works best to make this part of your nightly routine so the rollers are left gummed overnight.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

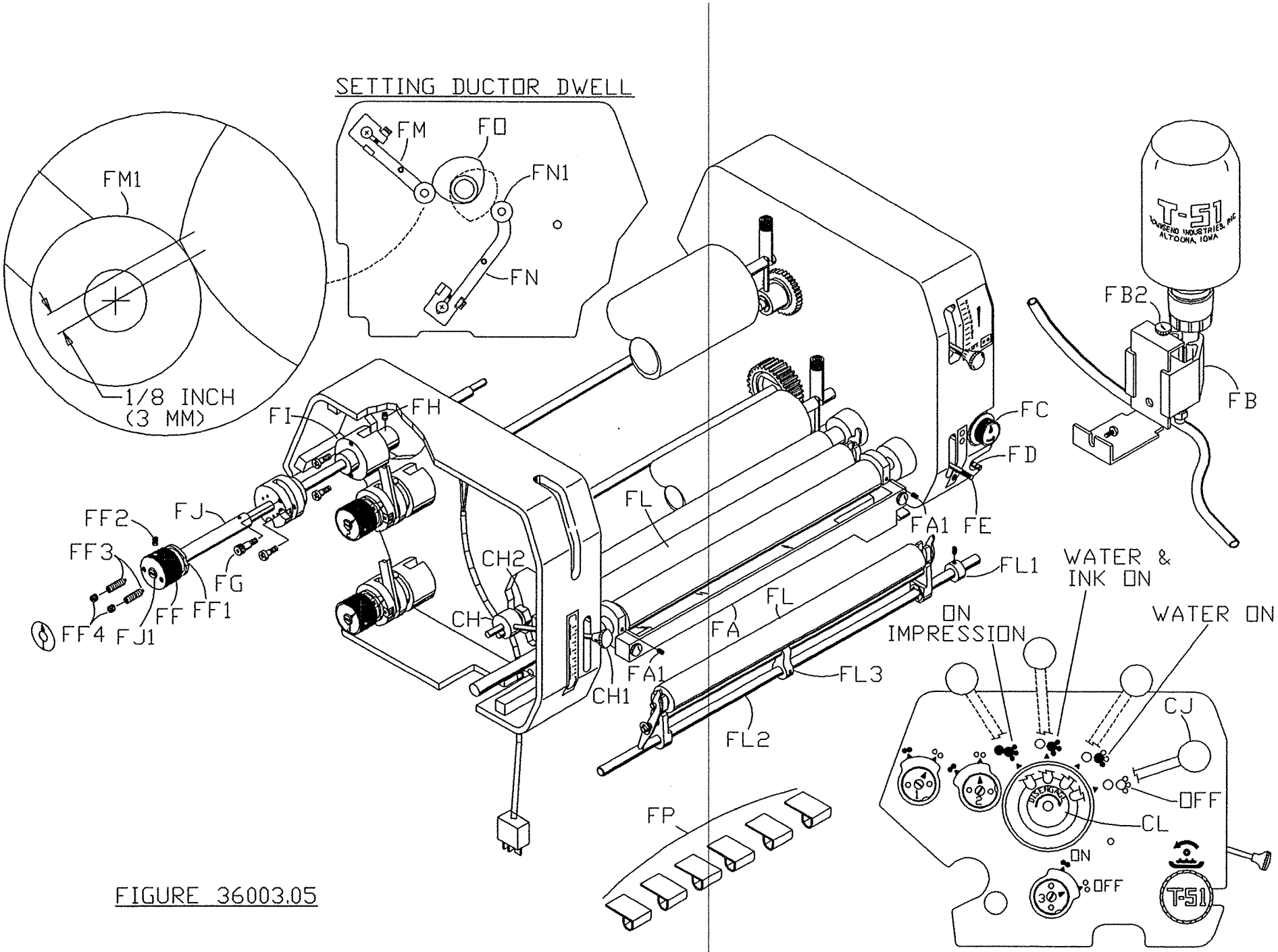


FIGURE 36003.05

FORM ROLLER PRESSURE

All three form rollers are removable. Simply rotate the form shaft (FJ) until the notch (FF1) in the form handle (FF) is lined up with the form indexer screw (FG). Pull the form shaft out and remove the form roller from the press. Be careful to return the form shafts and form rollers to their original positions. Properly align the drive ears of each roller with the form gear driver. Before operating the T-51, be sure each form roller is in the "OFF" detent or "ON" detent position by aligning the form handle decal with the side guard decal. When the form roller is in the "OFF" detent position, the roller will not contact the plate when the single lever control (CJ) is used.

NOTE: Do not run the T-51 with the no. 2 ink form roller and water form roller shafts removed from the press. This will result in damage to the plate cylinder by the form drive gears.

When adjusting the ink and water form roller pressures, turn each form handle to the "OFF" detent position. Move the single lever control to the third or "WATER and INK ON" position. To check the stripes on the plate, turn each form handle "ON" then "OFF". After the pressures have been set, move the single lever control to the "OFF" position and each form handle to the "ON" detent position.

PARALLELING

Remove the operator side guard. Loosen the set screw (FH) in the projecting boss on the inside of the side ;frame. Rotate the form bushing (FI) clockwise to decrease the pressure or counterclockwise to increase the pressure on the operator side of the press. Adjust the form bushing until you have an even stripe the full width of the plate.

OVERALL PRESSURE

Loosen the set screw (FF2) in the form handle (FF). Turn the form shaft (FJ), with a screwdriver in the slot (FJ1), to change the overall pressure. Turn the shaft clockwise to decrease the pressure or counterclockwise to increase the pressure. When the pressure is correct, the ink form rollers should lay a 5/32 inch (4mm) stripe for metal plates and 1/8 inch (3.2mm) stripe for camera direct plates across the plate. If the press is equipped with the Aqua-Flow System, the water form roller should lay a 3/32 inch (2.4mm) stripe for metal plates and 1/8 inch (3.2mm) stripe for camera direct plates across the plate. When tightening the set screw (FF2), always keep a slight inward pressure on the screwdriver and pull out on the form handle to prevent excessive end play. Excessive end play in the form roller will damage the roller drive ears and form gear driver. Ideally, there should be .002 inch (.05mm) end play.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

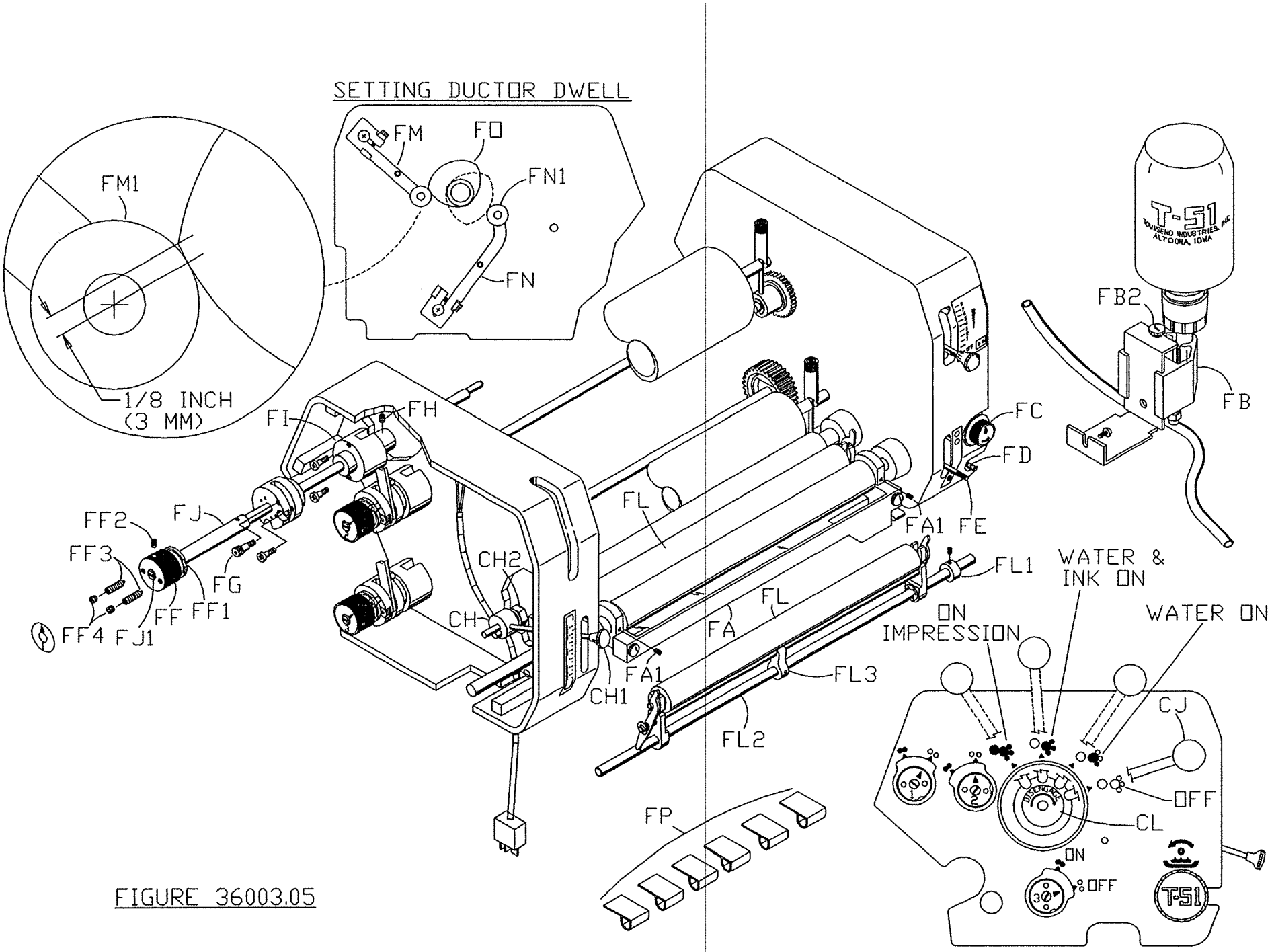


FIGURE 36003.05

FORM HANDLE PLUNGER PRESSURE

Remove the locking set screws (FF4). Turn the form handle plungers (FF3) clockwise until they stop turning and then back them out one half turn. Lock the set screws against the plungers. If the plungers turn while tightening the set screws, the form handle (FF) will seize against the form indexer screw (FG) as it is turned.

SINGLE LEVER CONTROL

To use the single lever control (CJ), use the following sequence of operation.

1. Move the lever from the "OFF" position to the "WATER ON" position.

2. After 2 - 3 revolutions, move the lever to the "WATER AND INK ON" position.

3. When the plate runs clean, move the lever to the "ON IMPRESSION" position to image the blanket.

4. When stopping the parent press, move the lever to the "OFF" position.

Each form roller has an "OFF" detent and "ON" detent position. By aligning the form handle decal with the "OFF" detent position decal on the side guard, the form roller will not contact the plate when the single lever control is used . This allows the operator to apply just ink or fountain solution to the plate.

CYLINDER PRESSURE ADJUSTMENT

Plate to blanket pressure can be changed by loosening the lock nut (CH2) and turning the cylinder pressure stem (CH1). Moving the stem up decreases the plate to blanket pressure. Moving the stem down increases the pressure. When the pressure is correct, the stripe should be 1/8 - 3/16 inch (4mm) wide or as light as possible consistent with good printing. After completing this adjustment, tighten the lock nut (CH2).

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

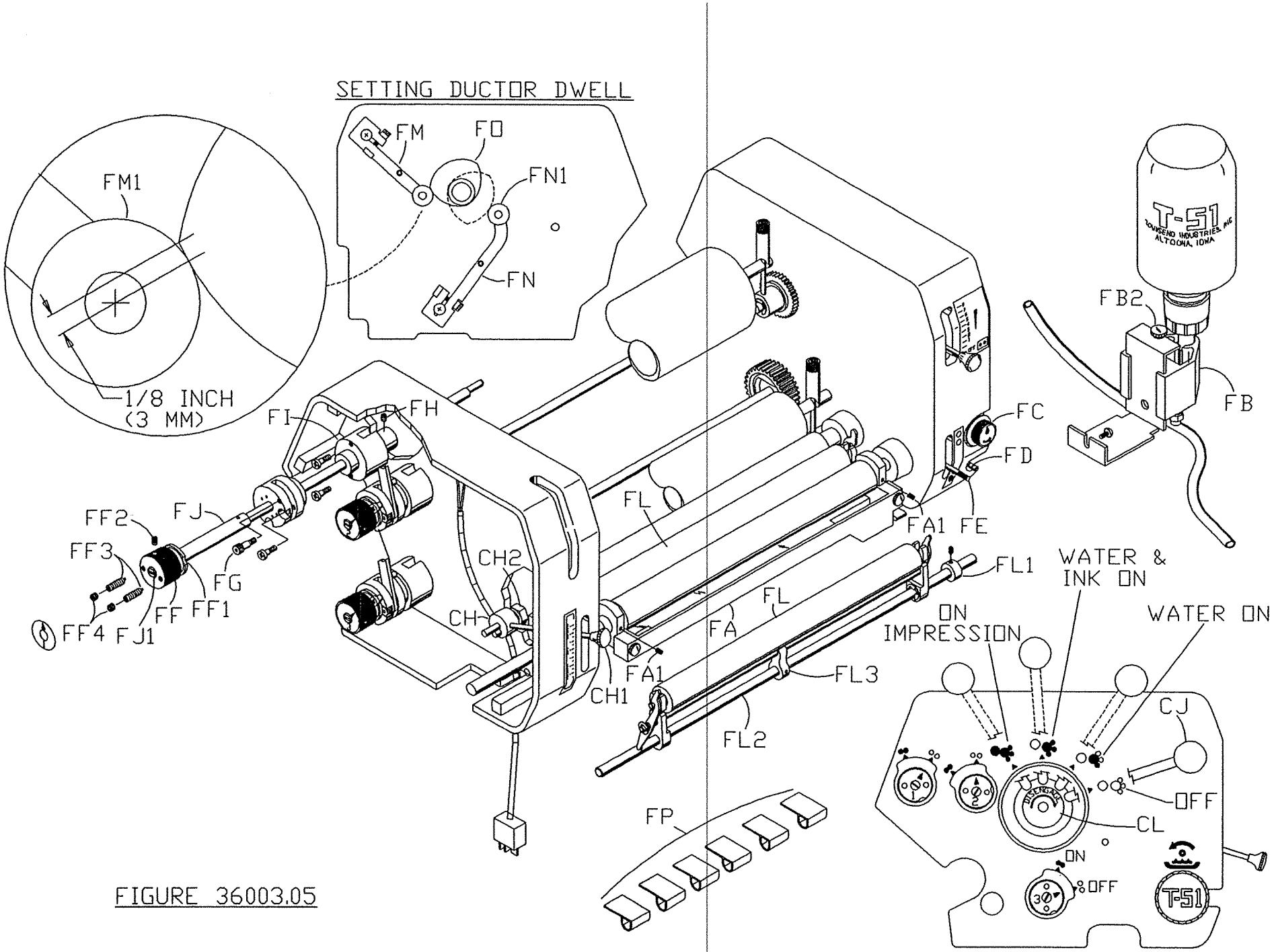


FIGURE 36003.05

DUCTOR ROLLER ADJUSTMENTS

CENTERING AND END PLAY REMOVAL

Each ductor roller (FL) can be centered with the fountain and transfer rollers by loosening the screw in each collar (FL1) and cam follower arm (FM) and (FN). The entire ductor mechanism can now be shifted from side to side to center the ductor roller. Hold the collar and follower arm against the T-51 side frame, when tightening the screws, to eliminate any end play in the mechanism. Check the ductor roller setting to be sure the pressure or dwell has not changed.

INK DUCTOR DWELL

Rotate the handwheel until the ink cam follower arm bearing (FM1) is 1/8 inch (3mm) before the high point of the cam (FO). Loosen the screw that locks the follower arm (FM) to the ductor shaft (FL2). Move the ductor roller (FL) to contact the transfer roller. Use the ductor driver (FL3) and keep slight pressure towards the transfer roller and side frame. Push the follower arm against the side frame and tighten the screw. The ductor roller must remain in contact with the transfer roller long enough to make 2 1/4 revolutions. Repeat the adjustment, if necessary, until the dwell is correct.

WATER DUCTOR DWELL

Rotate the handwheel until the water cam follower arm bearing (FN1) is on the high side of the cam (FO). Loosen the screw that locks the follower arm (FN) to the ductor shaft (FL2). Move the ductor roller (FL) to contact the transfer roller. Use the ductor driver (FL3) and keep slight pressure towards the transfer roller and side frame. Push the follower arm against the side frame and tighten the screw. The ductor roller must remain in contact with the transfer roller long enough to make 2 3/4 revolutions. Repeat the adjustment, if necessary, until the dwell is correct.

DISENGAGING THE T-51

Your T-51 should be disengaged whenever it is desired to use the parent press for single-color operation. No timing is involved since the T-51 plate cylinder is free to rotate 360 degrees. Rotate the disengage knob (CL), by hand or with the T-wrench, clockwise until the T-51 snaps into the "DISENGAGE" position. The T-51 ring gear is now disengaged from the blanket cylinder ring gear. To engage the T-51, carefully watch the ring gears so that they mesh correctly and rotate the disengage knob counterclockwise until the T-51 snaps into the "OPERATING" position. You may have to move the handwheel slightly so the ring gears will mesh properly.

NOTE: Always disengage the T-51 for running single-color work on the parent press.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

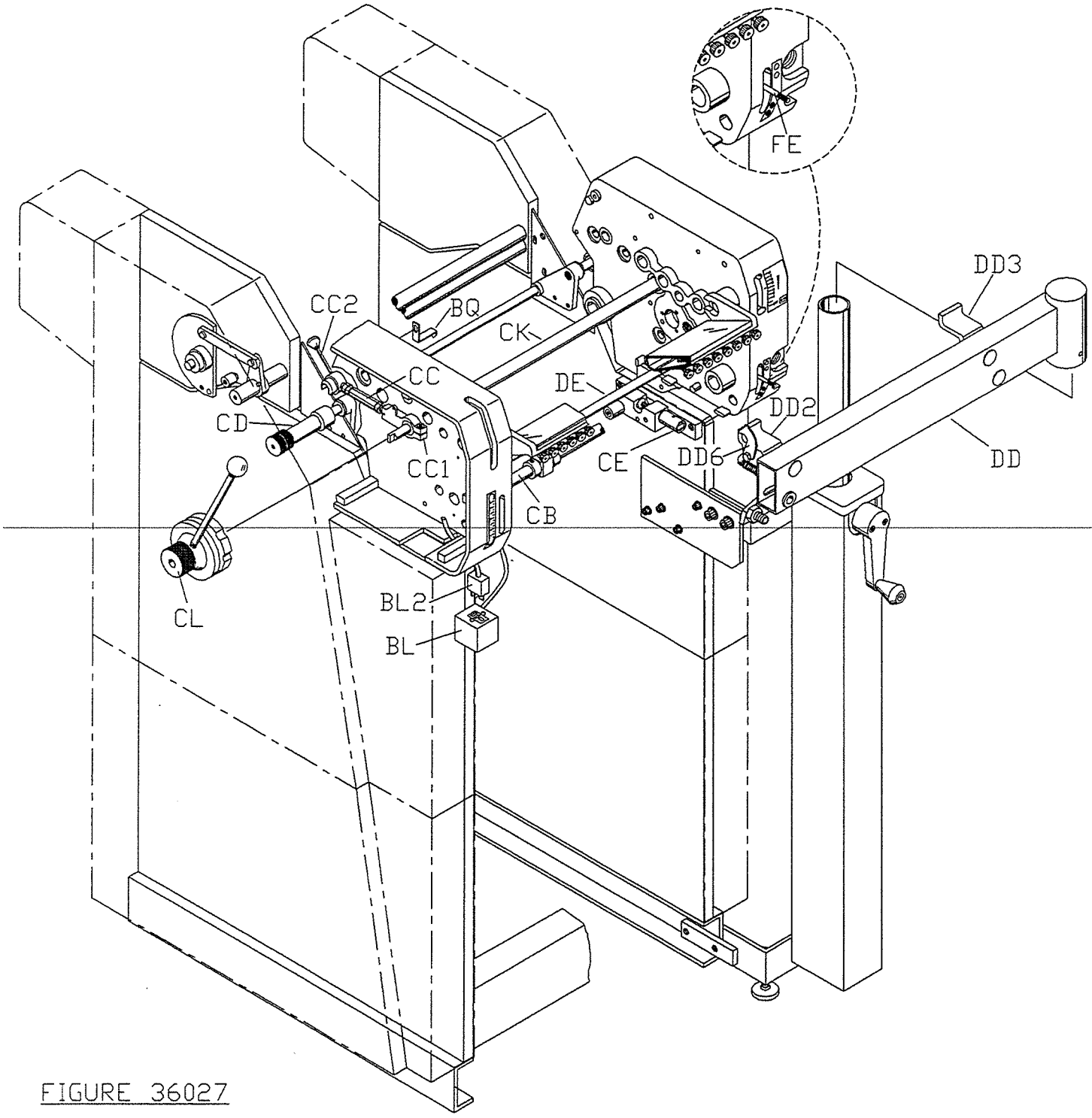


FIGURE 36027

REMOVING THE T-51 COLOR PRESS WITH THE SWING-AWAY

REMOVAL

1. Remove the water bottle. Push the ductor shut off stem (FE) down and open the water fountain guard.

2. Rotate the disengage knob (CL), by hand or with the T-wrench, clockwise until the T-51 snaps into the "DISENGAGE" position.

3. Position the swing arm (DD) under the T-51 tie rod (DE). Raise the swing arm until the cradle brackets (DD2) and (DD3) engage the tie rod and safety lock (DD6) snaps into position over the tie rod.

NOTE: Raising the swing arm too high will bind the T-51.

4. Unplug the wire harness (BL2) from the modular receptacle (BL). Loosen the clamp sleeve assemblies (CE) exactly five full turns with the T-wrench.

5. Loosen the lock knobs (CD) and slide them off of the turnbuckles (CC). Pull up on the turnbuckle stems (CC2) and disengage the turnbuckles from the upper brackets.

6. Raise the swing arm (DD) to the maximum height and swing the T-51 off to the side.

7. Refer to Figure 36002 in the Installation Section. Pull out on the spring loaded guard knobs (BN) and install the replacement safety guard (BO).

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

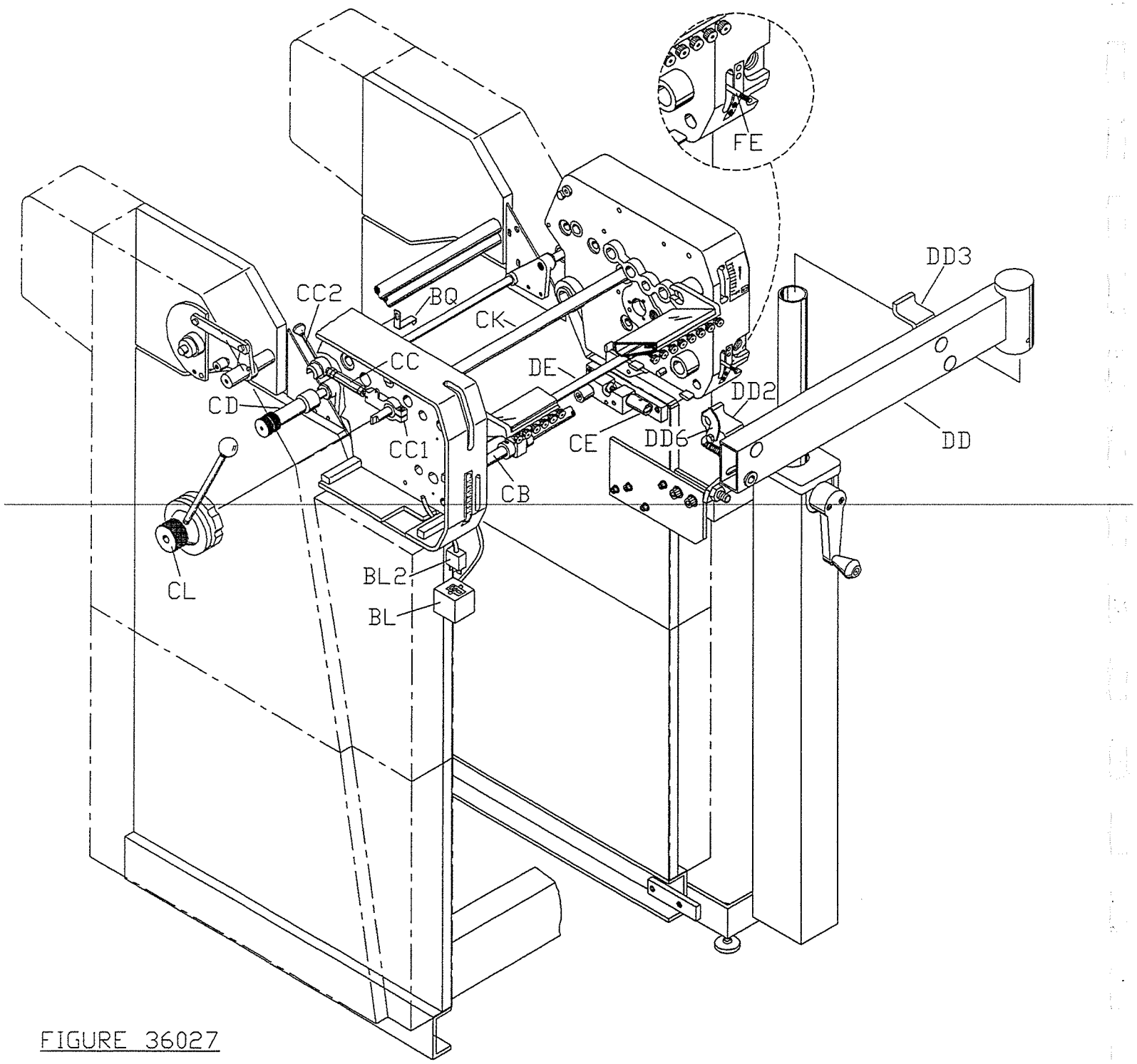


FIGURE 36027

REMOVING THE T-51 COLOR PRESS WITH THE SWING-AWAY

REINSTALLATION

1. Refer to Figure 36002 in the Installation Section. Pull out on the spring loaded guard knobs (BN) and remove the replacement safety guard (BO).

2. Swing the T-51 into position over the brackets. Lower the swing arm (DD) until the hold-down shaft (CB) is seated in the slot of each lower bracket.

NOTE: Lowering the swing arm too low will bind the safety lock (DD6).

3. With each brass turnbuckle end assembly (CC1) on the yoke shaft (CK) pressed firmly against the T-51 side frames, push down on the turnbuckle stems (CC2) and attach the turnbuckles (CC) to the upper brackets. Tighten the lock knobs (CD)

4. Pull the safety lock (DD6) back, lower the swing arm, and swing it out of the way.

5. Tighten the clamp sleeve assemblies (CE), non-operator side first, with the T-wrench. Plug the wire harness (BL2) into the modular receptacle (BL).

6. Rotate the disengage knob (CL), by hand or with the T-wrench, counterclockwise until the T-51 snaps into the "OPERATING" position. You may have to move the handwheel slightly so the ring gears will mesh properly.

NOTE: To maintain register when the T-51 is reinstalled, follow this procedure.

1. Before swinging the T-51 off to the side, insert the T-wrench into the T-51 plate cylinder and engage the torsion rod. Record the blanket cylinder number as indicated by the blanket cylinder pointer (BQ) or mark the blanket cylinder.

2. After the T-51 has been reinstalled, align the blanket cylinder number or mark with the blanket cylinder pointer and engage the ring gears with the disengage knob (CL).

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

CLEANING YOUR T-51

Cleanup of the T-51 is accomplished by using cleaner sheets. Mount a cleaner sheet on the plate cylinder just as you would a plate. With the ink and water controls off, start the press and apply a small amount of blanket wash to the ink rollers. Turn the ink form rollers on. After a few revolutions, turn them off. Stop the press and remove the cleaner sheet. Repeat, as above, until the rollers are clean. All the rubber rollers should be thoroughly cleaned by hand at regular intervals to prevent the buildup of glaze.On the Aqua-Flow equipped T-51, you must also apply blanket wash to the water rollers during cleanup.

On the molleton equipped T-51, remove the water oscillator roller and form roller before cleanup. Be sure to replace the water form roller shaft, however, to prevent damage to the plate cylinder by the form drive gear.

NOTE: The use of certain blanket washes, glaze-removers, and abrasive cleaners can cause permanent damage to the transparent rollers and covers. They should always be tested on a small portion of the rollers and covers before being used. Do not remove the ductor rollers during cleanup. Always put the form rollers and shafts back in the T-51 the same way they were taken out.

LUBRICATION

Turn to the last page of this manual for an explanation of lubrication and frequency symbols. Turn to the parts pages to locate the various areas that require lubrication.

NOTE: Replace any grease or oil that is wiped off during cleanup. Areas usually affected would include the ductor and form roller ends, ductor arms, form gears, and form roller shafts.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

OPERATOR TIPS

For smooth, trouble free, two-color printing, learn to use the following sequence of operation when starting the press.

1. Turn the handwheel one half turn in the normal direction of rotation.
2. Turn on the main switch.
3. After two or three revolutions, turn on the T-51 water form roller.
4. Turn on the parent press form rollers.
5. Turn on the T-51 ink form rollers.
6. Look at both plates to be sure they are running clean.
7. Turn on the paper feed. **NOTE:** Do not let the press idle with the paper feed off for more that a few revolutions while the ink and water are turned on. This will cause the ink to emulsify.
8. After at least two or three sheets have fed through the press, move the T-51 single lever control to the "ON IMPRESSION" position.

When stopping the press, reverse steps 2 through 8. Be sure at least two sheets feed through the press after you turn off the T-51 single lever control.

As you are well aware, there are a myriad of colors and copy variations that can be achieved using only two colors. You may have a job containing areas of overprinting (direct color on color). When you do, there are certain rules that must be followed.

1. Run the dark color of ink in the T-51 and the light color of ink in the parent press.
2. Use a fully transparent color. Do not try to use a semi-transparent or opaque ink. They will not trap properly.
3. The dark color of ink should have less tack than the light color of ink. If necessary, reduce the dark color with a paste compound type of tack reducer.

If you anticipate a problem because of the amount of overlay involved, drop out the background of the underlying color by reversing it and fitting the other one in. This eliminates the overlay. Because of the single blanket principle, a perfect fit presents no problem.

When no overprinting is involved, the overprinting rules 1, 2, and 3 do not need to be followed.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

OPERATOR TIPS

Always be sure both plates are free of superfluous marks such as punch holes or a corner that may not have been covered when the plate was burned. These marks, if left on the plate, will build a heavy ink deposit on the blanket while you are running and may cause color contamination.

When printing a two-color job using camera direct or metal plates, use the maximum recommended plate size listed in the parent press specifications. Color contamination may occur if the plate cylinders carry ink beyond the edges of the plates. To correct this situation, the plate cylinders must be desensitized. Treat the plate cylinders the same as the water fountain roller. If the image area of the form will allow it, you can also use a blanket that is slightly narrower than the plate.

Control the ink flow by using more notches of the ratchet control and a finer setting of the fountain keys. This will insure a constant flow of ink toward the plate and promote more even ink distribution. Always run a minimum amount of ink consistent with quality printing.

Your T-51 should always be run with a minimum of water to assure best results. You must also remember, however, that moisture on the plate during the printing operation is the condition that allows the single blanket principle its high degree of success. Consequently, if either plate becomes dry, it will pick up any color of ink it comes in contact with. You must not let either plate work itself into a dry condition. The T-51 will pick up and use excess moisture from the blanket while you are running. This allows you to run the T-51 with a lower setting on the water control for two-color printing than would be required if you were running single-color on the T-51. Since the water is cut back for two-color printing, you may experience difficulty starting up after being idle for a period unless you add some moisture. For this reason, we recommend that you wipe the plates down with fountain solution before starting. This will provide "start up" moisture until you are running and the plate is in contact with the blanket again.

Set the parent press water control by decreasing slowly until toning is experienced and then increase just enough to eliminate the tone. This should be set each time you switch sizes or grades of stock. The different grades of paper do have different degrees of absorbency.

One step fountain solutions that are mixed in a 30 to 1 ratio for rubber base inks work very well in the T-51 regardless of what is being used in the parent press. This mixture should produce a pH of approximately 6. Certain oil base inks may require a stronger fountain solution mixed in a 15 to 1 ratio which will produce a pH reading in the 5.5 range.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

OPERATOR TIPS

Generally speaking, alcohol is not required in the T-51. However, to maintain good copy quality if it is used, never add more than 10 percent by volume to the fountain solution.

When running silver emulsion plate material on the T-51 equipped with the Aqua-Flow System, mix the fountain solution in a 30 to 1 ratio even though the instructions on the bottle of concentrate may indicate otherwise. The lower mixing ratio will improve the T-51 performance and help prevent emulsification.

Do not run the T-51 with the no. 2 ink form roller shaft or the water form roller shaft removed from the press. This will result in damage to the plate cylinder by the form drive gears.

When the ink and water oscillators are removed, be sure the hanger pin assemblies are tilted back so they cannot engage the form gears. Use a good blanket that is free of glaze. Also use a hard rather than a soft blanket for quality of reproduction.

Too much overall plate to blanket pressure on the T-51 will cause a tone or streak about halfway down the sheet. This can be remedied by decreasing the pressure until you have an 1/8 - 3/16 inch (4mm) wide stripe.

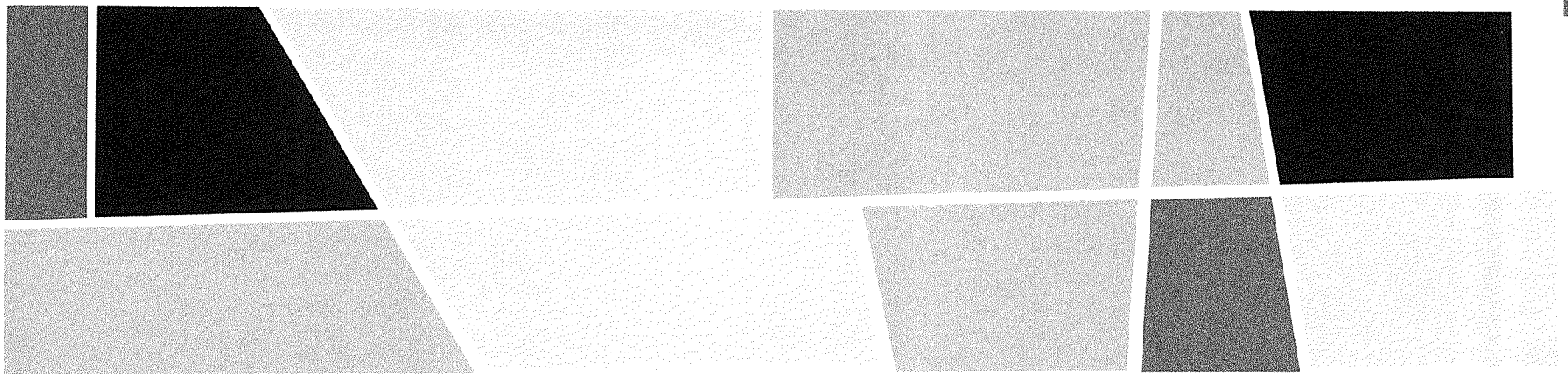
The parent press impression cylinder pressure must be kept at a minimum consistent with good copy. This is most important for maximum T-51 performance.

When attaching the plate to the parent press, do not hold the trail edge as usual. Place the right hand lightly on the surface of the plate, as it rolls around the plate cylinder, keeping it snug against the plate cylinder surface.

Use the 16 inch (41mm) feed roller adjustment tool to adjust the parent press feed roller pressure without swinging the T-51 off to the side.

WARNING: BE SURE ALL GUARDS, COVERS, AND SAFETY DEVICES ARE INSTALLED AND PROPERLY ADJUSTED BEFORE OPERATING THIS UNIT. IF THE T-51 IS REMOVED FROM THE PARENT PRESS, THE ORIGINAL GUARDING *MUST* BE REPLACED BEFORE OPERATING THE PRESS. WHEN THE T-51 IS SWUNG OFF TO THE SIDE, THE REPLACEMENT SAFETY GUARD *MUST* BE USED BEFORE OPERATING THE PRESS.

PARTS



SECTION 3

T-51 TOWNSEND INDUSTRIES

ORDERING INSTRUCTIONS

ALWAYS ORDER PARTS FROM YOUR DEALER AND GIVE THE FOLLOWING:

Company name
Name of Person Parts should be sent to or attention of:
Street
City, State, Zip Code

T-51 SERIAL NUMBER

The Serial number is located on a name plate under side cover.

HOW TO SHIP

United Parcel Service, Parcel Post, Best Way, etc.

HOW TO ORDER

Give quantity first – then part number.
Example: Quantity (2) Part Number (1132)
2 – 1132

RETURNED MERCHANDISE:

NO MERCHANDISE WILL BE ACCEPTED FOR CREDIT WITHOUT PRIOR AUTHORIZATION FROM TOWNSEND INDUSTRIES. ALL returned merchandise must have a Townsend packing list or invoice and is subject to our inspection. On any credit for returned merchandise that was not shipped through error, a 20% service handling charge will be deducted from the credit.

DEALER INFORMATION

WHEN ORDERING PARTS BY PHONE, ASK FOR PARTS DEPARTMENT.
MARK MAIL ORDERS, ATTENTION PARTS DEPARTMENT.
PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

PARTS

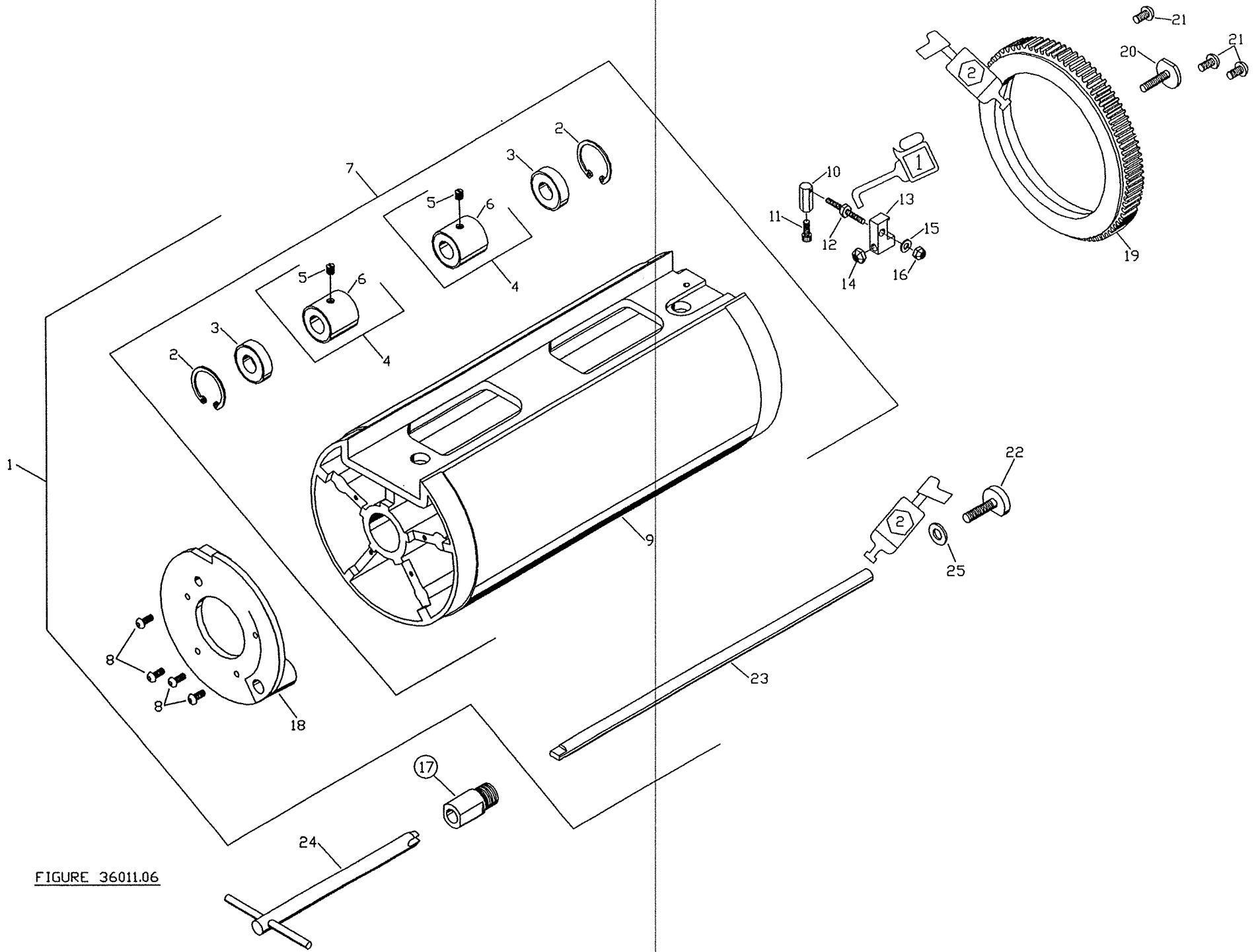


FIGURE 36011.06

INDEX NO.	PART NUMBER	DESCRIPTION 8-93
		S CYLINDER 19-3/8 PLATES
1	34194	CYL/RING GEAR/BEAR ASY
2	930001	RETAINING RING
3	900001	BEARING
4	18106	SLEEVE ASY
5	910021	SCREW
6	18105	SLEEVE
7	34198	CYLINDER & BEARING ASY
8	910308	SCREW
9	34190	*CYLINDER
10	19152	ADJUSTMENT POST
11	910047	SCREW
12	7153	MICRO SCREW
13	7151	MICRO CLAMP
14	940008	NUT
15	950033	WASHER
16	940028	NUT
17	1127	LOCK PIN HOLDER
18	36123	CYLINDER END
19	38114	RING GEAR
20	4152	CLAMP SCREW
21	910004	SCREW
22	1116	LOCK SCREW
23	18119	TORSION ROD
24	1132	HARDEN T-WRENCH
25	1108	WASHER
		P CYLINDER 18-1/2 PLATES
1	34184	CYL/RING GEAR/BEAR ASY
7	34188	CYLINDER & BEARING ASY
9	34180	*CYLINDER
10	7152	ADJUSTMENT POST
18	34123	CYLINDER END (L)
		C CYLINDER 18-1/2 PLATES
1	34154	CYL/RING GEAR/BEAR ASY
7	34158	CYLINDER & BEARING ASY
9	34150	*CYLINDER
10	7152	ADJUSTMENT POST
18	34123	CYLINDER END (L)
		O CYLINDER 15" PLATES
1	37124	CYL/RING GEAR/BEAR ASY.
7	37128	CYLINDER & BEARING ASY
9	37101	*CYLINDER
10	7152	ADJUSTMENT POST
27	37104	CYLINDER ASY.
		B CYLINDER 15" PLATES
1	37184	CYL/RING GEAR/BEAR ASY.
7	37188	CYLINDER & BEARING ASY
9	37180	CYLINDER
10	7152	ADJUSTMENT POST
27	37181	CYLINDER ASY

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

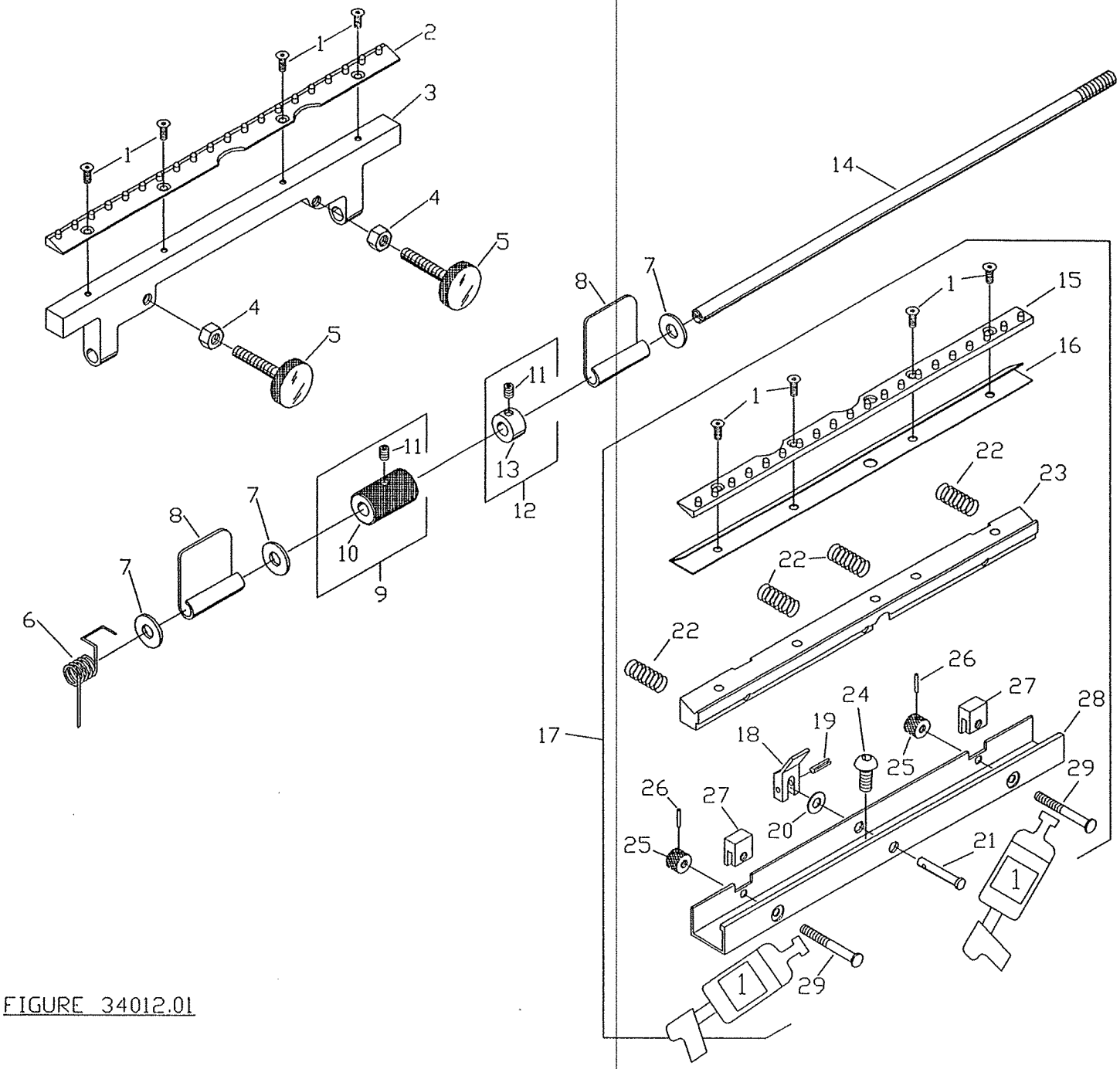


FIGURE 34012.01

INDEX NO.	PART NUMBER	DESCRIPTION 10-92
		P/C/S CYLINDER CLAMP FOR 18-1/2 INCH (470mm) & 19-3/8" (492mm) PLATES
1	910018	SCREW
2	1136	PIN BAR PLATE CLAMP
3	38141	ROCKER BAR
4	940003	NUT
5	1113	THUMB SCREW
6	965101	RETAINING ROD SPRING
7	950007	WASHER
8	4112	MAR STOP
9	8145	THUMB NUT ASY
10	8144	*THUMB NUT
11	910019	SCREW
12	1911	SET COLLAR ASY
13	1910	SET COLLAR
14	22146	RETAINING ROD
15	8136	PIN BAR PLATE CLAMP
16	8134	PLATE RETAINER
17	8170	CLAMP ASY
18	8168	CLAMP LEVER
19	920042	PIN
20	950032	WASHER
21	8166	RETRACTION PIN
22	9944	SPRING
23	8172	PLATE HOLDER
24	910069	SCREW
25	8169	ADJUSTMENT SCREW KNOB
26	920041	PIN
27	10135	THREAD BLOCK
28	8173	CLAMP PIVOT
29	8167	ADJUSTMENT SCREW
		O/B CYLINDER CLAMP FOR 15 INCH (381mm) PLATES
3	2141	ROCKER BAR
5	11113	THUMB SCREW
14	1146	RETAINING ROD
		* SOLD AS ASSEMBLY ONLY

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

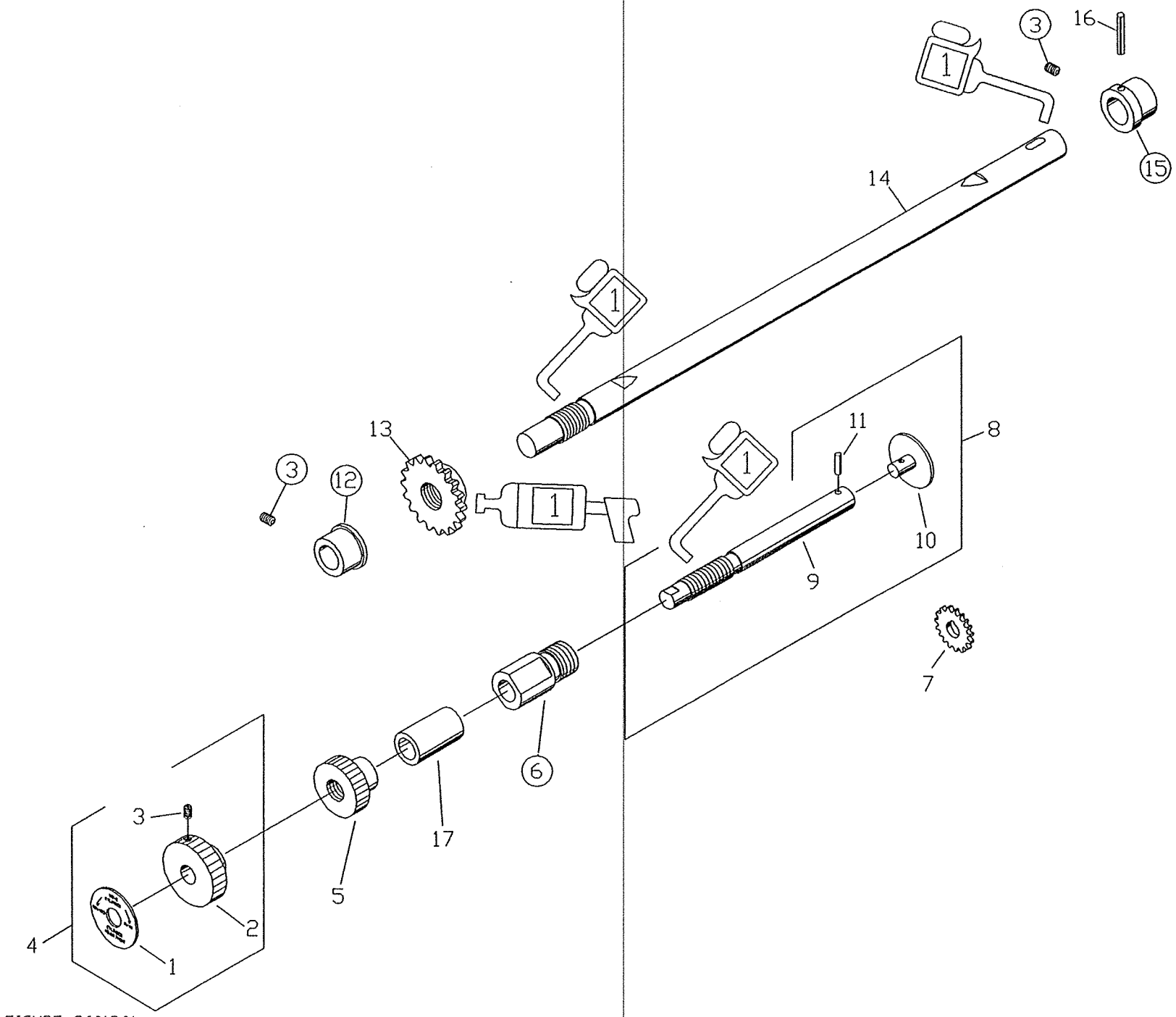


FIGURE 36013.01

INDEX NO.	PART NUMBER	DESCRIPTION 9-88
1	11914	CYLINDER ADJUST DECAL
2	6206	*MICRO KNOB
3	910019	SCREW
4	6219	MICRO KNOB ASY
5	6207	LOCK KNOB
6	1127	LOCK PIN HOLDER
7	6241	MICRO DRIVE GEAR
8	36205	WEDGE SHAFT ASY
9	36203	*WEDGE SHAFT
10	38216	*PRESSURE DISK
11	922001	PIN
12	8211	MAIN SHAFT BUSHING (L)
13	38240	MICRO GEAR
14	37201	MAIN SHAFT
15	8212	MAIN SHAFT BUSHING (R)
16	920011	PIN
17	36204	SPACER

* SOLD AS ASSEMBLY ONLY

ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

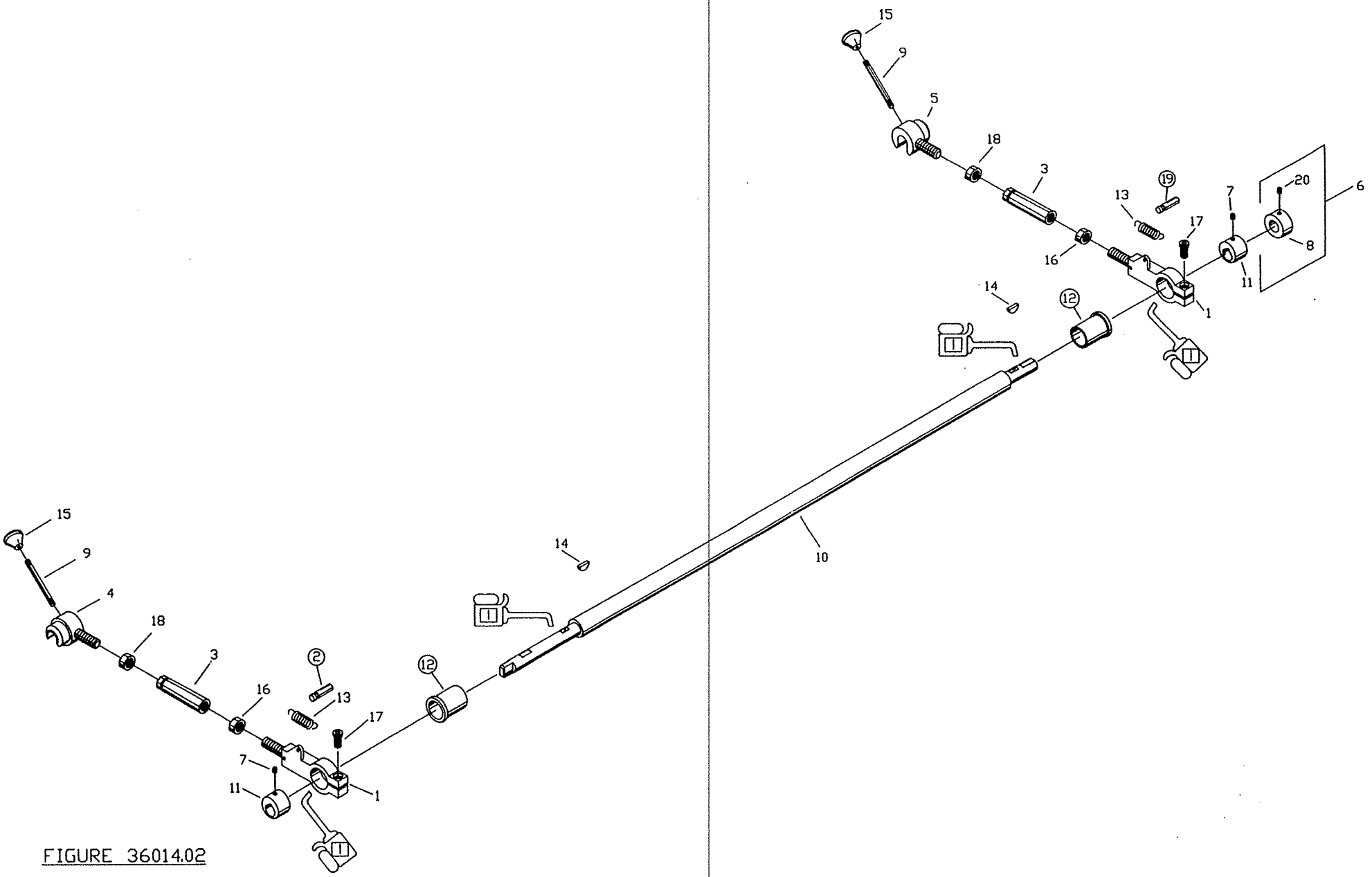


FIGURE 36014.02

INDEX NO.	PART NUMBER	DESCRIPTION 9-88
1	36320	TURNBUCKLE END (R)
2	920012	PIN
3	19319	CONNECTOR
4	36325	TURNBUCKLE HOOK (L)
5	36326	TURNBUCKLE HOOK (R)
6	1905	SET COLLAR ASY
7	910507	SCREW
8	1904	SET COLLAR
9	1575	STEM
10	34355	YOKE SHAFT
11	20356	YOKE ECCENTRIC
12	8316	BUSHING
13	6938	SPRING
14	961023	WOODRUFF KEY
15	12914	KNOB
16	940001	NUT
17	910070	SCREW
18	940002	NUT
19	920002	PIN
20	910021	SCREW

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

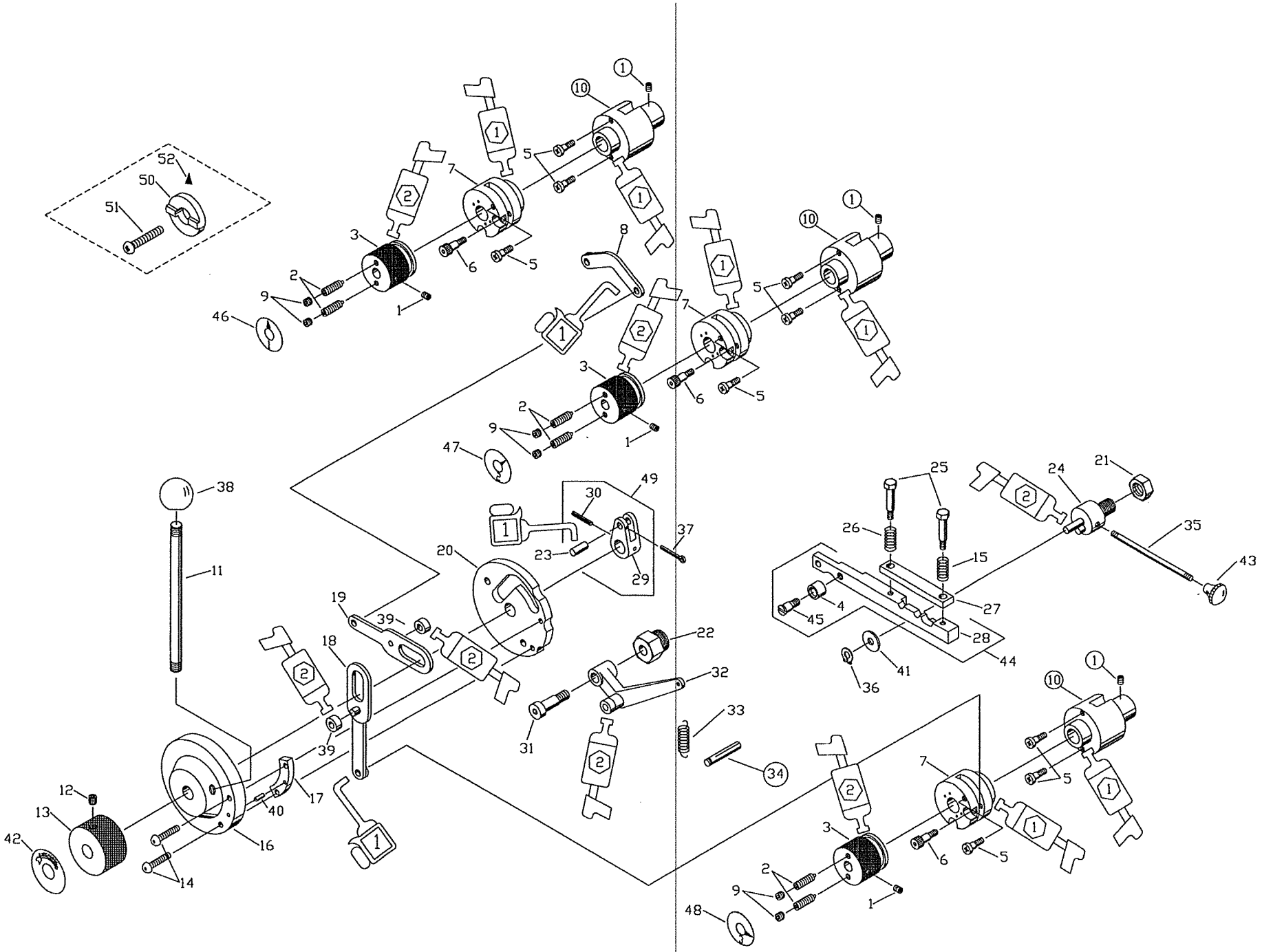


FIGURE 36033.03

INDEX NO.	PART NUMBER	DESCRIPTION 10-88
1	910019	SCREW
2	910571	PLUNGER
3	20475	FORM HANDLE
4	20312	SOLID BEARING
5	1864	SCREW
6	910602	SHOULDER SCREW
7	20474	FORM INDEXER
8	36463	CONNECTING LINK
9	910505	SCREW
10	36473	FORM BUSHING
11	20453	SHAFT
12	910021	SCREW
13	20357	KNOB
14	910312	SCREW
15	6944	SPRING
16	36452	WATER ACTUATOR CAM
17	20451	SPACER BAR
18	36455	WATER FORM LINK
19	26459	INK FORM LINK
20	36462	INK ACTUATOR CAM
21	940004	NUT
22	36465	DETENT SPACER
23	7302	PIN
24	36309	LATCH ADJUSTMENT
25	7343	LATCH SCREW
26	9944	SPRING
27	20304	LATCH
28	36303	LATCH STOP
29	7301	LATCH ARM
30	920019	PIN
31	910077	SCREW
32	20466	DETENT ARM
33	6938	SPRING
34	920027	PIN
35	4575	STEM
36	930013	RETAINING RING
37	920006	PIN
38	960025	KNOB
39	900016	BEARING
40	924005	PIN

(CONTINUED ON PAGE 13)

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

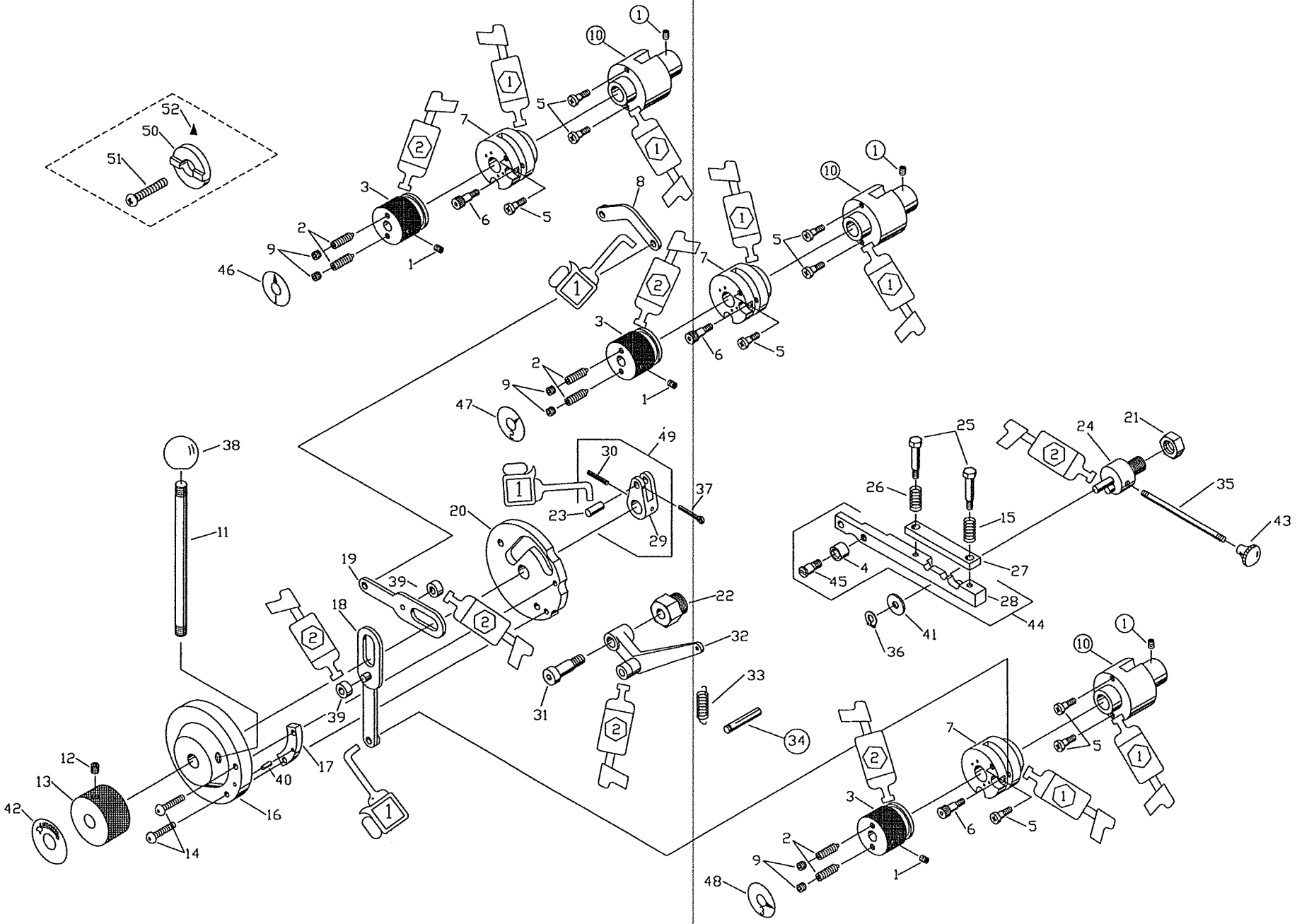


FIGURE 36033.03

INDEX NO.	PART NUMBER	DESCRIPTION 5-95
41	950008	WASHER
42	960020	DISENGAGE DECAL
43	12914	KNOB
44	36302	LATCH STOP ASY
45	36311	LATCH SCREW
46	960021	FORM KNOB DECAL #1
47	960022	FORM KNOB DECAL #2
48	960023	FORM KNOB DECAL #3
49	7306	LATCH ASY
		ADAPTOR FOR PARENT SINGLE LEVER
52	960038	LOCATION DECAL
50	36901	LEVER ADAPTOR
51	910262	SCREW

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

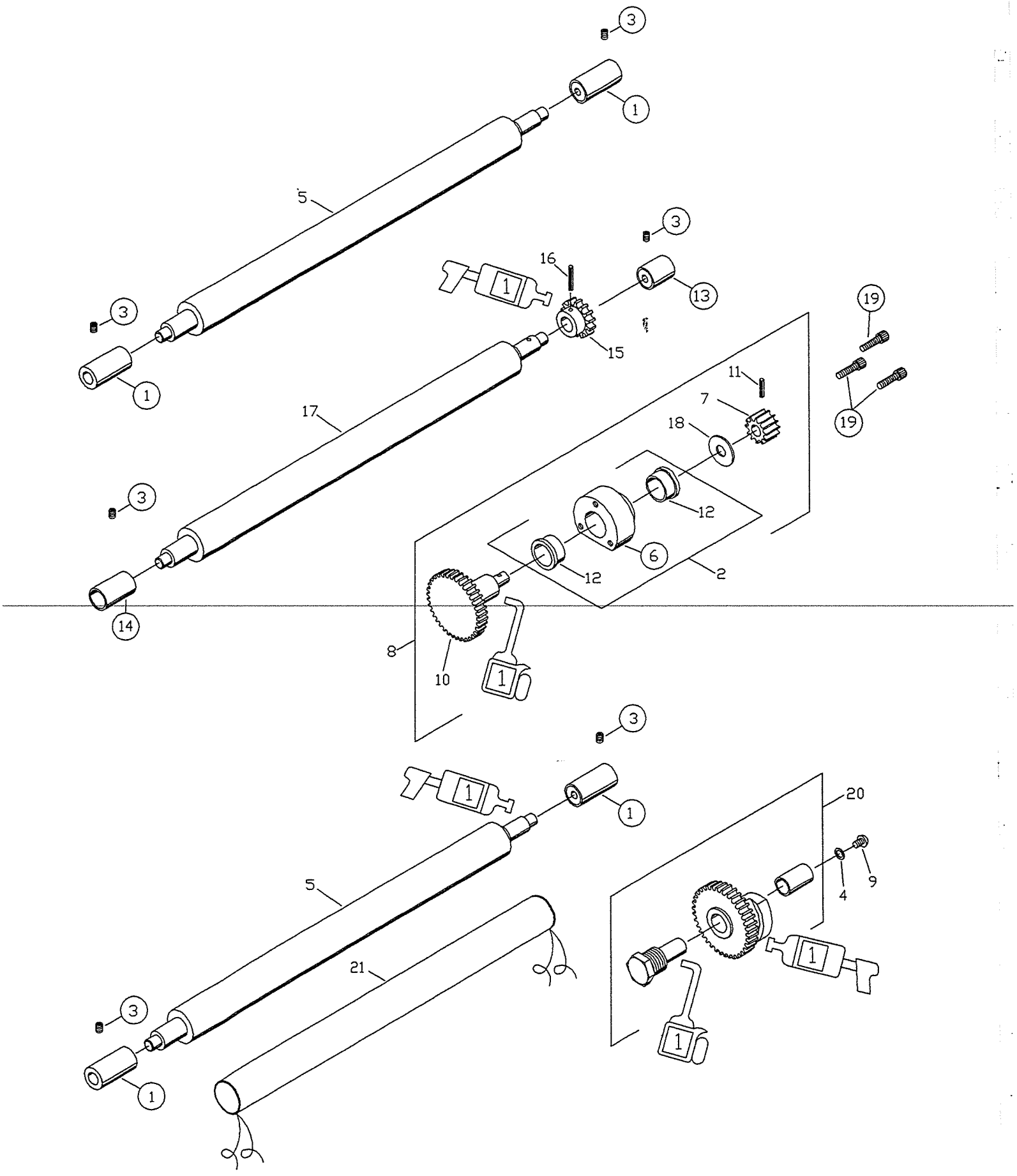


FIGURE 36015.05

INDEX NO.	PART NUMBER	DESCRIPTION 10-92
		AQUA-FLOW SYSTEM
1	7827	TRANSFER BUSHING ASY
2	25429	*CAM IDLER BUSH/BEAR ASY
3	910019	SCREW
4	950002	WASHER
5	2815	TRANSFER ROLLER
6	25431	CAM IDLER BUSHING
7	25435	PINION DRIVE GEAR
8	35430	CAM IDLER ASY
9	910166	SCREW
10	35432	CAM DRIVE IDLER GEAR
11	920028	PIN
12	901037	BEARING
13	36826	TRANSFER BUSHING ASY
14	19827	*TRANSFER BUSHING ASY
15	36433	TRANSFER GEAR
16	920019	PIN
17	34815	TRANSFER ROLLER
18	950026	WASHER
19	910028	SCREW
20	36412	GEAR CAM & BUSHING ASY
		MOLLETON SYSTEM
21	961040	TRANSFER ROLLER COVER
		* SOLD AS ASSEMBLY ONLY

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

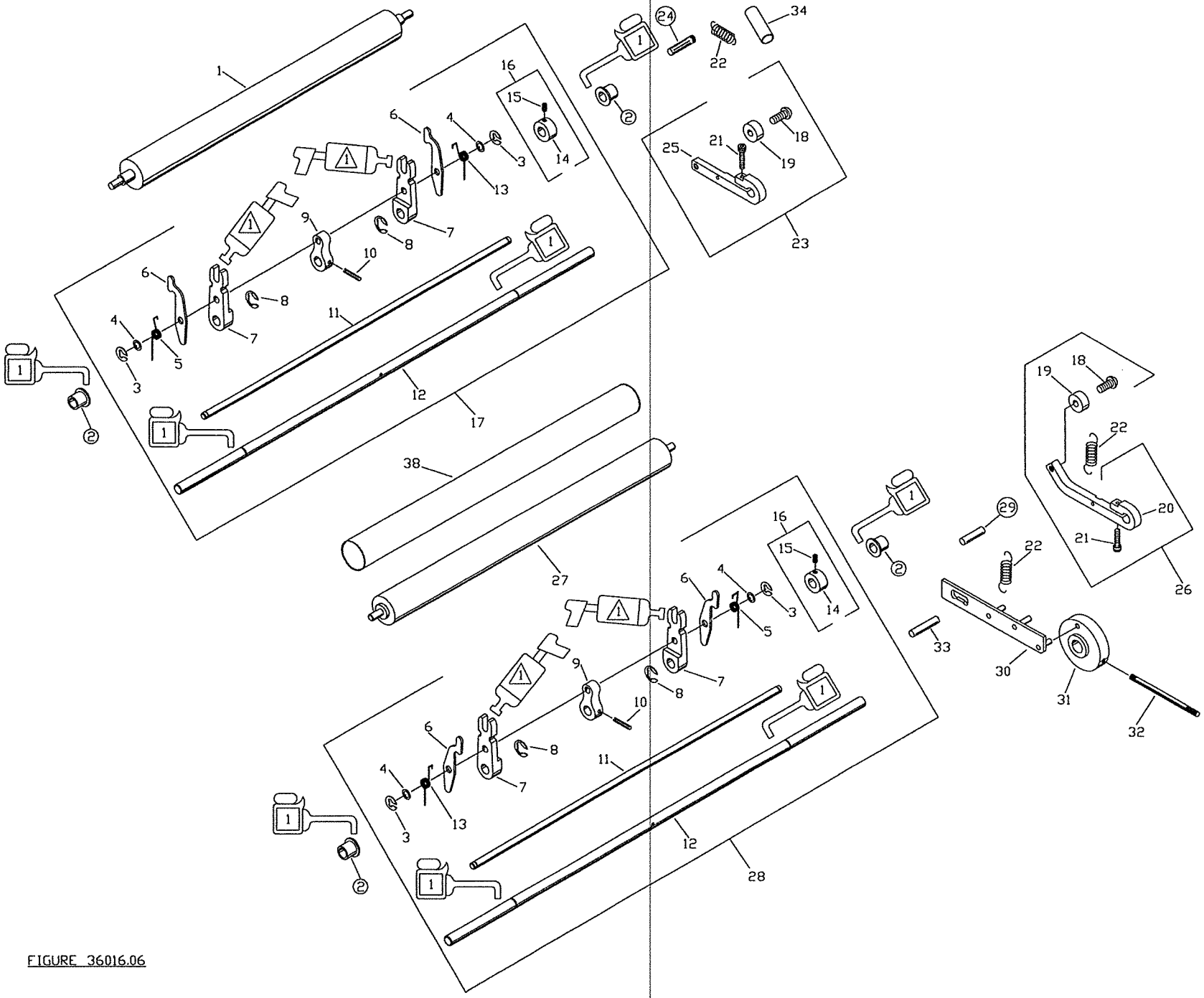


FIGURE 36016.06

INDEX NO.	PART NUMBER	DESCRIPTION 5-95
		AQUA-FLOW SYSTEM
1	2818	INK DUCTOR ROLLER
2	901003	BEARING
3	930003	RETAINING RING
4	950009	WASHER
5	1506	DUCTOR SPRING RED
6	1504	DUCTOR LATCH
7	1503	DUCTOR ARM
8	930006	RETAINING RING
9	1507	DUCTOR DRIVER
10	920009	PIN
11	2508	EQUALIZER BAR
12	38501	DUCTOR OPERATING SHAFT
13	1505	DUCTOR SPRING BLUE
14	1907	*SET COLLAR
15	910019	SCREW
16	1908	SET COLLAR ASY
17	38514	INK DUCTOR ASY
18	910010	SCREW
19	900003	BEARING
20	36521	WATER CAM FOLLOWER ARM
21	910007	SCREW
22	6938	SPRING
23	25524	CAM FOLLOWER ARM ASY
24	920001	PIN
25	25520	CAM FOLLOWER ARM
26	36525	WATER CAM FOLLOWER ASY
27	8817	ROLLER
28	38513	WATER DUCTOR ASY
29	920012	PIN
30	36579	DUCTOR LOCKOUT ARM
31	20576	DUCTOR SHUT OFF
32	1576	STEM
33	920034	PIN
34	34731	SPRING LIMITING TUBE
		MOLLETON SYSTEM
27	2817	WATER DUCTOR ROLLER
36	961029	COVER SET
		* SOLD AS ASSEMBLY ONLY

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

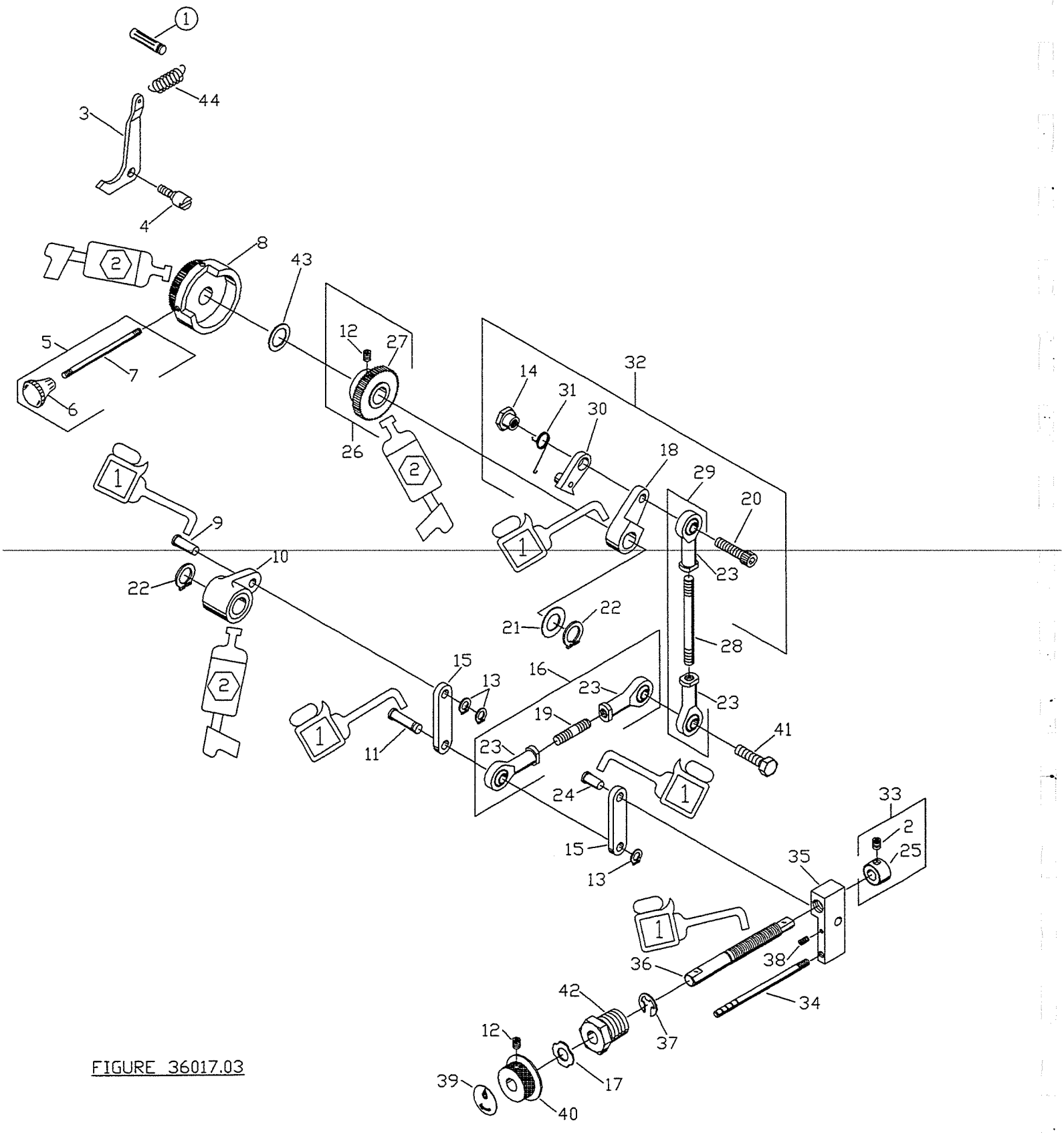


FIGURE 36017.03

INDEX NO.	PART NUMBER	DESCRIPTION 6-92
1	920001	PIN
2	910507	SCREW
3	1565	LATCH CONTROL
4	8554	SCREW
5	2587	STEM ASY
6	12914	KNOB
7	1575	STEM
8	1585	FEED SELECTOR
9	20657	PIN
10	20652	DRIVER
11	20655	PIN
12	910019	SCREW
13	930013	RETAINING RING
14	6559	PAWL SPRING ADJUST NUT
15	20654	LINK
16	5541	CONNECTING ROD ASY
17	950036	WASHER
18	1551	RATCHET DRIVE ARM
19	5537	CONNECTING ROD STEM
20	910041	SCREW
21	950006	WASHER
22	930026	RETAINING RING
23	905001	ROD END
24	20656	PIN
25	36910	SET COLLAR
26	1564	INK RATCHET ASY
27	1558	INK RATCHET
28	4537	CONNECTING ROD STEM
29	4541	CONNECTING ROD ASY
30	1570	PAWL
31	1572	SPRING
32	4546	INK RATCHET DRIVER ASY
33	36912	SET COLLAR ASY
34	36661	WATER INDICATOR
35	35670	ADJUSTER BLOCK
36	36672	ADJUSTER STUD
37	930006	RETAINING RING
38	910502	SCREW
39	960008	INFINITE WATER DECAL
40	20675	KNOB
41	910706	SCREW
42	36673	ADJUSTER STUD BUSHING
43	950003	WASHER
44	6938	SPRING

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

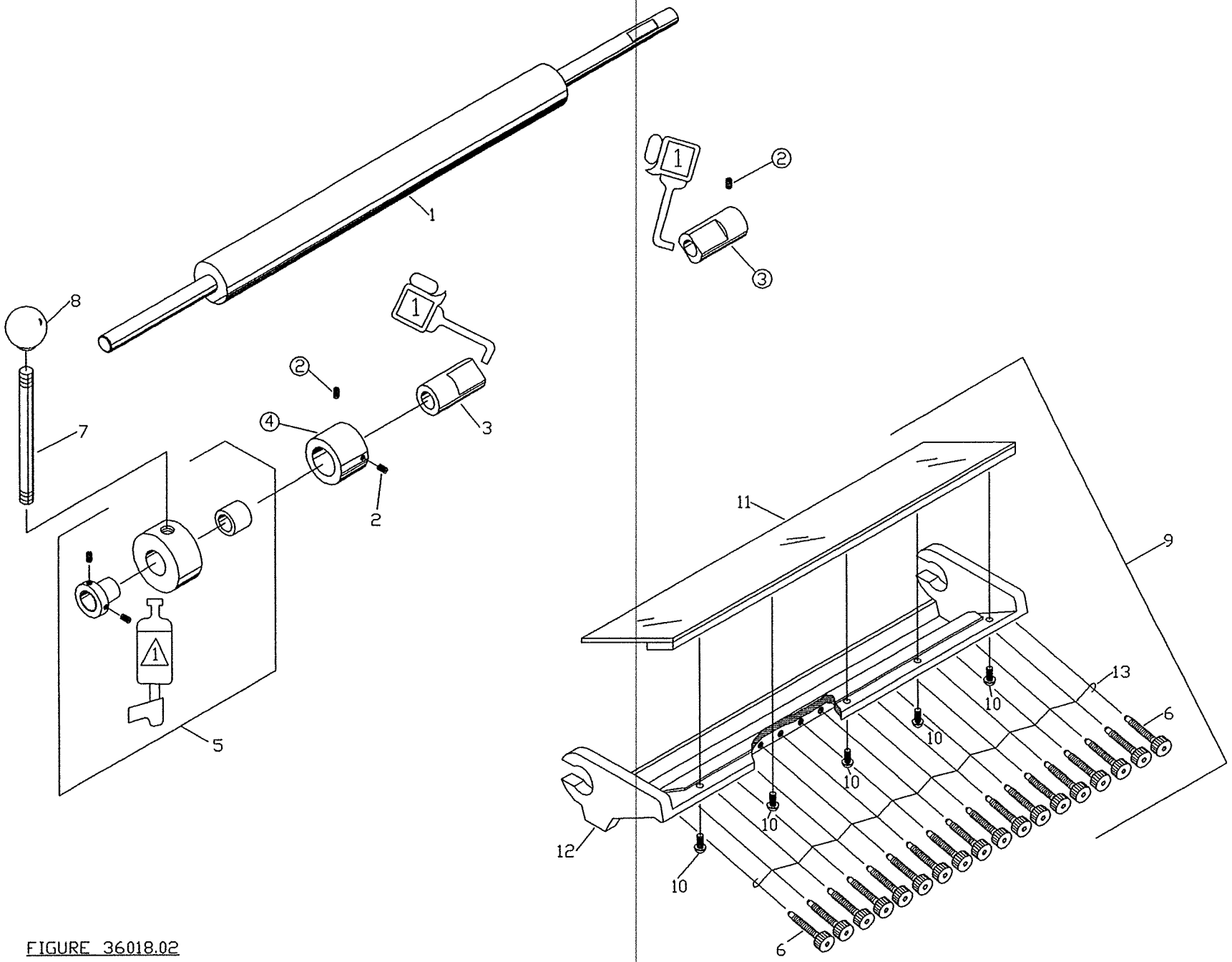


FIGURE 36018.02

INDEX NO.	PART NUMBER	DESCRIPTION 5-95
1	34602	INK FOUNTAIN ROLLER
2	910019	SCREW
3	37619	BUSHING
4	38617	BUSHING SLEEVE
5	20639	CRANK DRIVER
6	1630	FOUNTAIN SCREW
7	20647	INK CRANK SHAFT
8	960025	KNOB
9	42636	INK FOUNTAIN ASY
10	910300	SCREW
11	42638	INK BLADE ASY
12	34626	INK FOUNTAIN
13	2631	TENSION SPRING

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

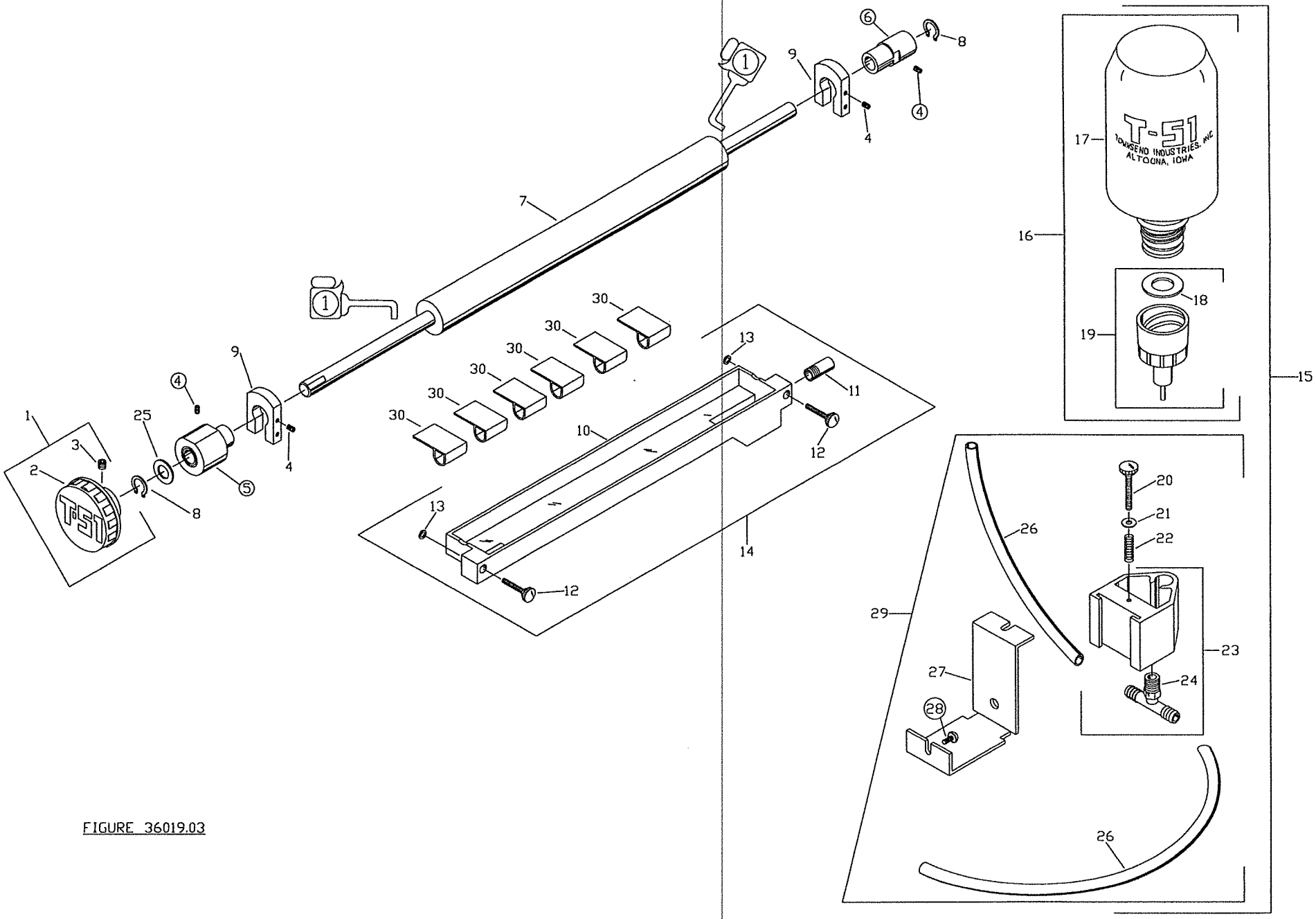


FIGURE 36019.03

INDEX NO.	PART NUMBER	DESCRIPTION 6-92
1	18611	T-51 KNOB ASY
2	18612	T-51 KNOB
3	910021	SCREW
4	910019	SCREW
5	36619	BUSHING
6	36620	BUSHING
7	34601	WATER FOUNTAIN ROLLER
8	930026	RETAINING RING
9	20603	FOUNTAIN HANGER
10	34645	WATER FOUNTAIN
11	13655	FITTING WATER FOUNTAIN
12	20699	THUMB SCREW
13	960345	O-RING
14	34651	WATER FOUNTAIN ASY
15	20644	BOTTLE HOLDER & BRKT ASY
16	3642	BOTTLE & CAP ASY
17	961007	WATER BOTTLE
18	3645	BOTTLE CAP WASHER
19	8641	BOTTLE CAP ASY
20	22113	SCREW
21	950025	WASHER
22	1945	SPRING
23	20649	BOTTLE HOLDER & TEE
24	961058	TEE FITTING
25	950006	WASHER
26	19649	HOSE
27	8647	BOTTLE HOLDER BRACKET
28	910027	SCREW
29	20646	BOTTLE HOLDER & BRKT ASY
30	20612	WATER STOP

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

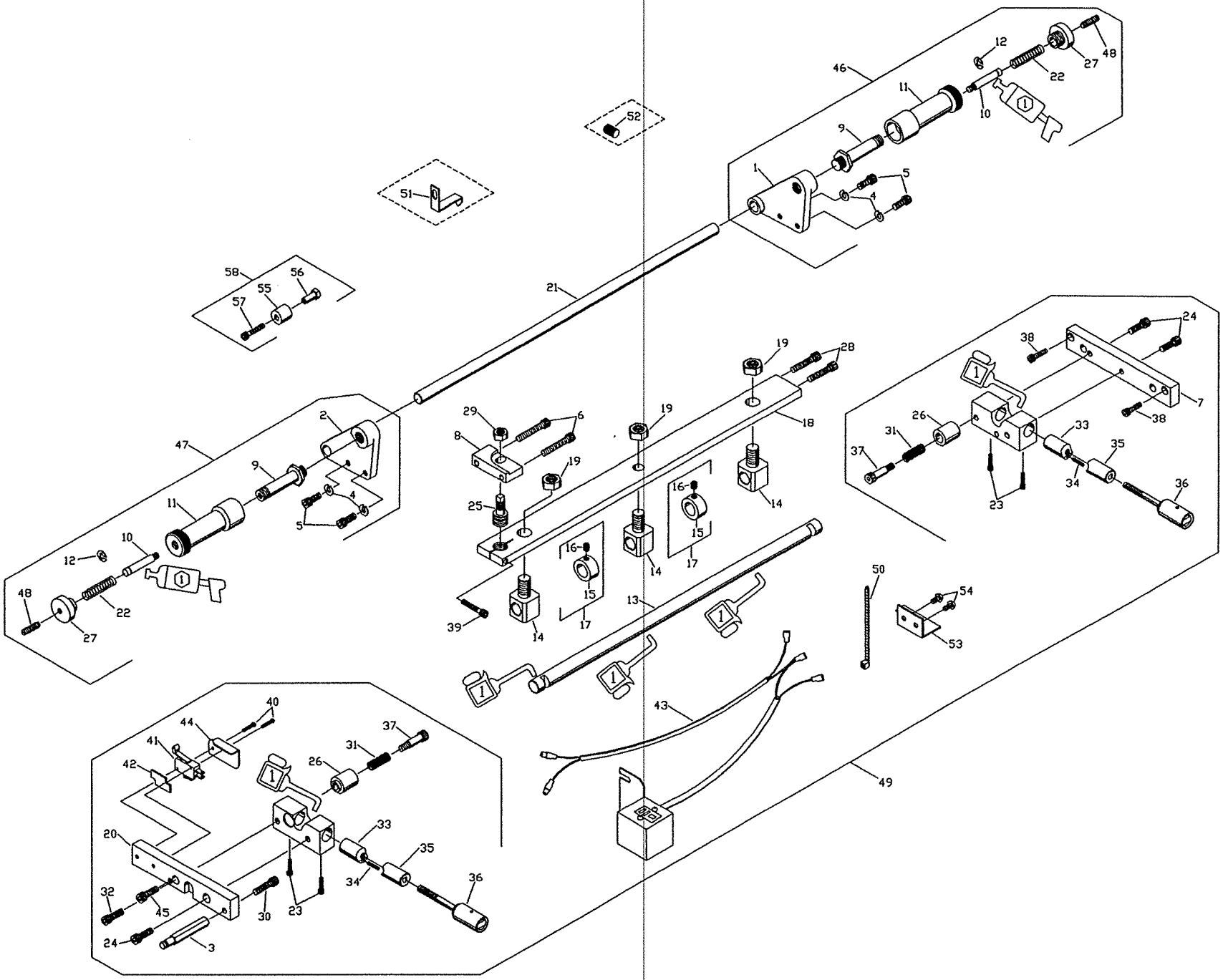


FIGURE 36020.09

INDEX NO.	PART NUMBER	DESCRIPTION 7-92
1	36712	TOP BRACKET (R)
2	36711	TOP BRACKET (L)
3	38776	REPLACEMENT SPRING PIN
4	950017	WASHER
5	910252	SCREW
6	910210	SCREW
7	36718	MOUNT ADAPTOR (R)
8	36710	LEVELING BLOCK
9	20361	STUD
10	20337	STUD
11	20360	LOCK KNOB
12	930003	RETAINING RING
13	34370	MOUNT BAR
14	1706	BASE ROCKER
15	1707	SET COLLAR
16	910021	SCREW
17	1725	SET COLLAR ASY
18	34708	HOLD DOWN BAR
19	940004	NUT
20	36717	MOUNT ADAPTER (L)
21	38721	FRONT TIE ROD
22	965007	SPRING
23	910012	SCREW
24	910042	SCREW
25	25719	LEVELING SCREW
26	36781	REPLACEMENT GUARD KNOB
27	20336	BUSHING
28	910001	SCREW
29	940005	NUT
30	910255	SCREW
31	965005	SPRING
32	910040	SCREW
33	20705	CLAMP THREADED
34	965003	SPRING
35	20706	CLAMP
36	20715	CLAMP SLEEVE ASY
37	910063	SCREW
38	910250	SCREW
39	910055	SCREW
40	910811	SCREW
		CONTINUED ON NEXT PAGE

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

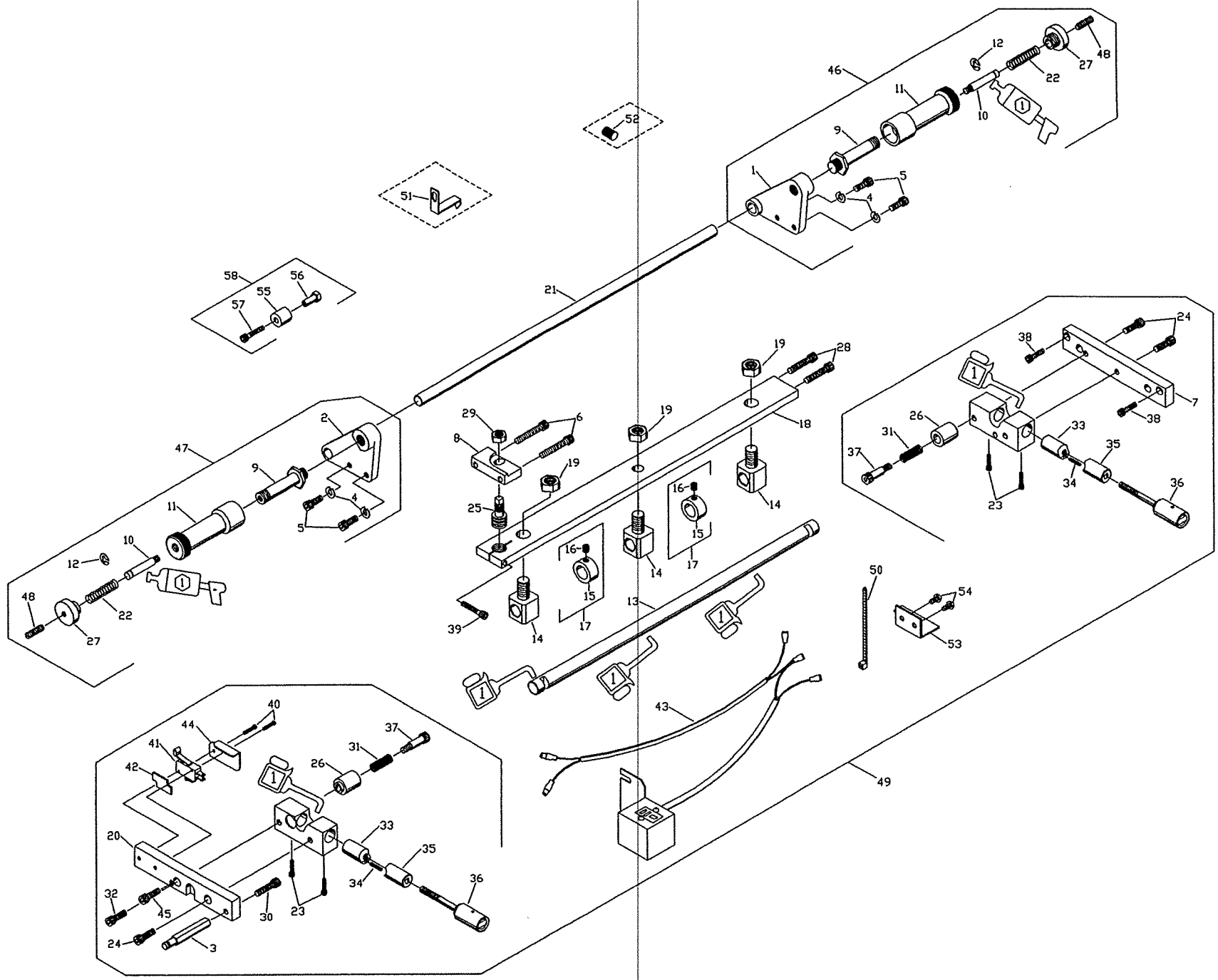


FIGURE 36020.09

INDEX NO.	PART NUMBER	DESCRIPTION 7-92
41	960011	INTERLOCK SWITCH
42	960012	ANTI-VIBRATION PAD
43	36766	WIRE HARNESS - PARENT
44	36769	SWITCH COVER
45	910253	SCREW
46	36734	UPPER MOUNT ASY (R)
47	36735	UPPER MOUNT ASY (L)
48	910168	SCREW
49	36871	LOWER MOUNT ASY SET
50	964025	CABLE TIE
		POINTER FOR PARENT PRESS
51	36925	POINTER
		REPLACEMENT KNOB FOR PARENT PRESS
52	36911	REPLACEMENT KNOB
		BRACKET FOR N O WIRED GUARD SYSTEM
53	36917	SWITCH BRACKET
54	910027	SCREW
		LOCKOUT FOR PARENT PRESS
55	6935	RUBBER BUMPER
56	38785	RUBBER BUMPER NUT
57	910251	SCREW
58	38786	RUBBER BUMPER ASY

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

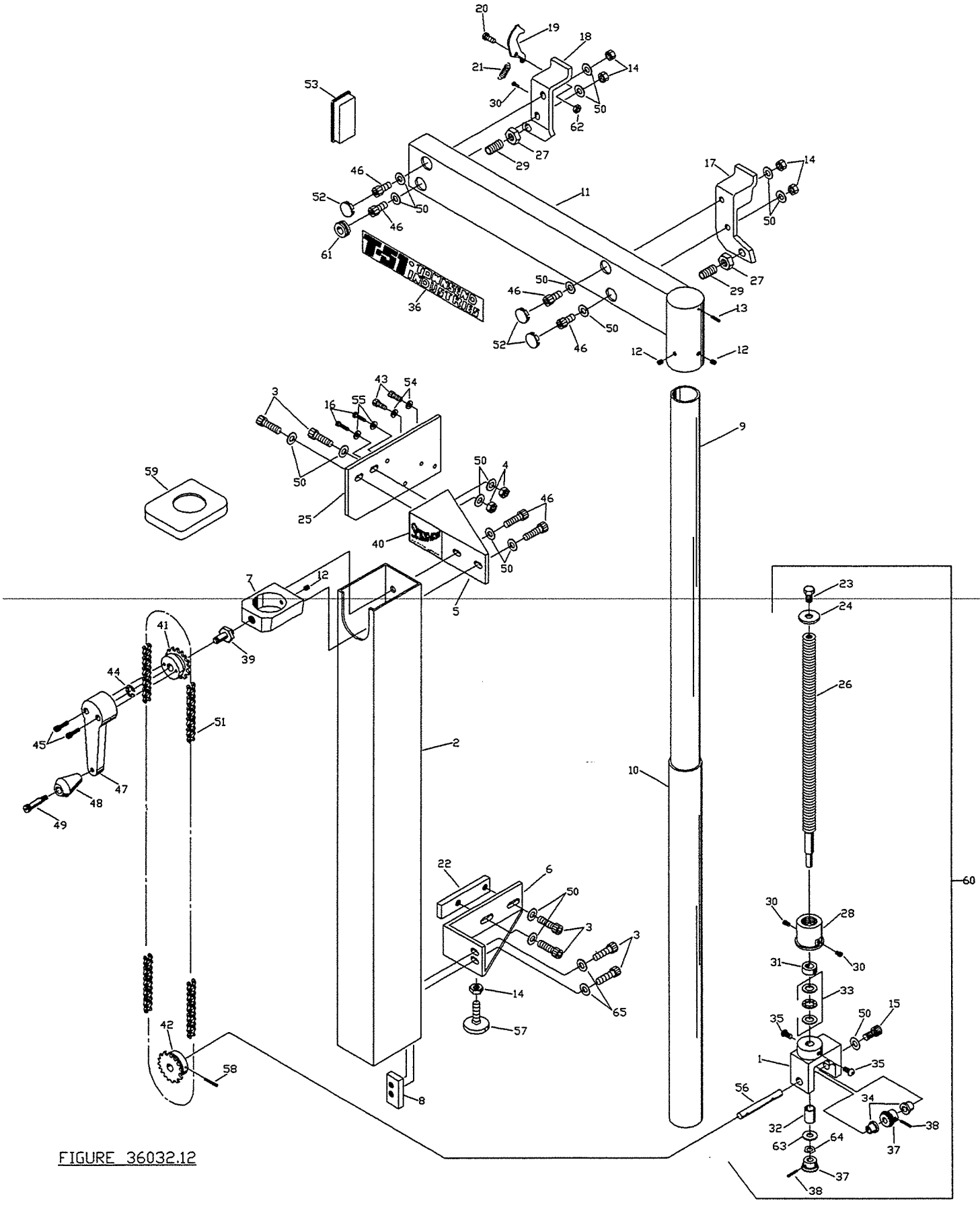


FIGURE 36032.12

INDEX NO.	PART NUMBER	DESCRIPTION 9-90
1	36288	GEAR BOX
2	36277	HOUSING TUBE
3	910206	SCREW
4	940030	NUT
5	36289	MOUNTING BRACKET - UPPER
6	36295	MOUNTING BRACKET - LOWER
7	36296	MOUNTING BRACKET
8	36274	NUTPLATE
9	36266	INNER LIFT TUBE
10	36265	OUTER LIFT TUBE
11	34292	SWING ARM ASY
12	910021	SCREW
13	920020	PIN
14	940012	NUT
15	910060	SCREW
16	910250	SCREW
17	36282	BRACKET CRADLE (R)
18	36283	BRACKET CRADLE (L)
19	35281	SAFETY LOCK
20	910702	SCREW
21	6938	SPRING
22	36275	NUTPLATE
23	910703	SCREW
24	950037	WASHER
25	36298	MOUNTING PLATE
26	36279	LIFT SCREW
27	940023	NUT
28	35271	TUBE NUT FLANGE
29	910517	SCREW
30	910209	SCREW
31	35276	THRUST COLLAR
32	901016	BUSHING
33	900030	THRUST BEARING
34	901003	BEARING
35	910311	SCREW
36	6956	T-51 LABEL
37	36251	MITER GEAR
38	920009	PIN
39	36272	CRANK STUD
40	960019	SWING-AWAY DECAL
		CONTINUED ON NEXT PAGE

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

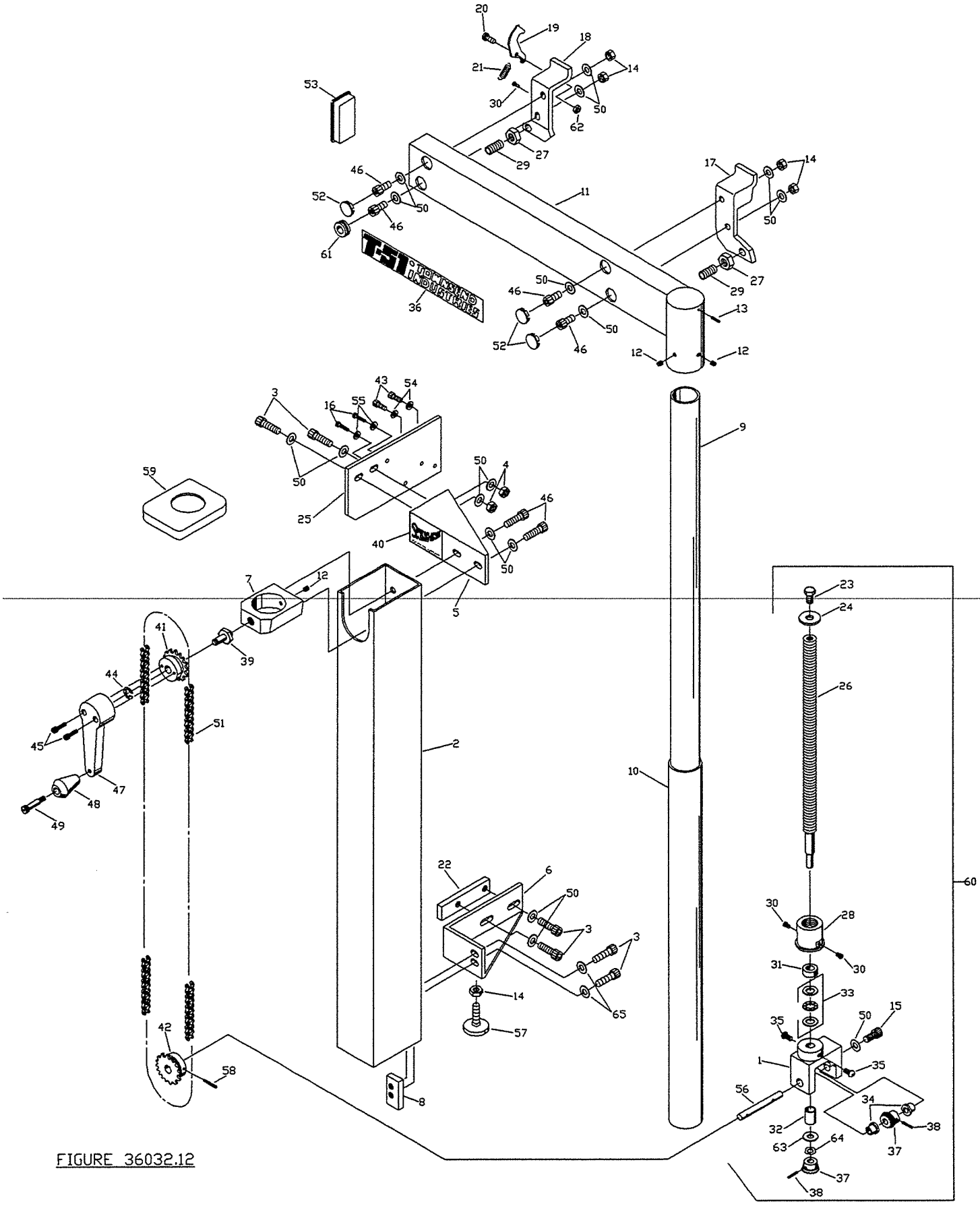


FIGURE 36032.12

INDEX NO.	PART NUMBER	DESCRIPTION 6-92
41	36253	UPPER SPROCKET
42	36252	LOWER SPROCKET
43	910252	SCREW
44	930006	RETAINING RING
45	910080	SCREW
46	910211	SCREW
47	23273	CRANK HANDLE
48	12916	KNOB
49	910044	SCREW
50	950005	WASHER
51	36250	LIFT CHAIN
52	964101	SNAP OUT PLUG
53	10249	END PLUG
54	950017	WASHER
55	950027	WASHER
56	36270	SHAFT
57	910182	LEVELING FOOT
58	924004	PIN
59	36299	COVER
60	36261	GEAR BOX/SCREW ASY
61	950040	RUBBER BUMPER
62	940003	NUT
63	950011	WASHER
64	950036	WASHER
65	950014	WASHER

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

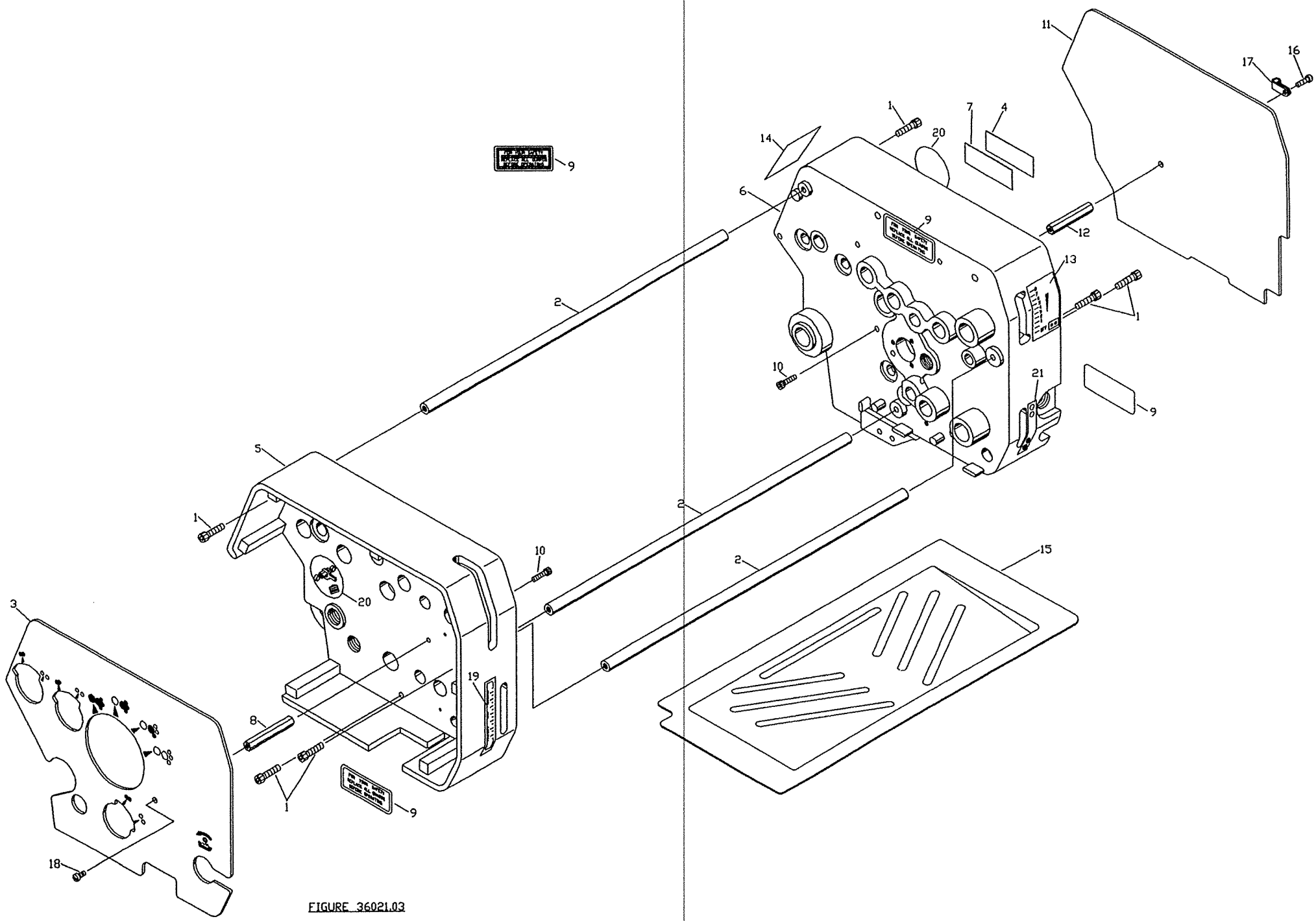


FIGURE 36021.03

INDEX NO.	PART NUMBER	DESCRIPTION 10-92
1	910041	SCREW
2	18704	TIE ROD
3	36723	SIDE GUARD (L) -TAN
4	1915	NAME PLATE
5	36701	SIDE FRAME (L) TAN
6	36702	SIDE FRAME (R) TAN
7	1916	ADHESIVE STRIP
8	36742	GUARD POST
9	6962	SAFETY LABEL
10	910028	SCREW
11	36724	SIDE GUARD (R) -TAN
12	20741	GUARD POST
13	19917	INK FEED SCALE LABEL
14	960006	MICRO ADJUSTMENT DECAL
15	34768	DRIP TRAY
16	910802	SCREW
17	964020	1/2 INCH PLASTIC CLAMP
18	910801	SCREW
19	960045	OVERALL PRESSURE DECAL
20	960007	TURNBUCKLE DECAL
21	960047	LOCKOUT DECAL
5	36703	SIDE FRAME (L) ORANGE
6	36704	SIDE FRAME (R) ORANGE
3	36725	SIDE GUARD (L) ORANGE
11	36726	SIDE GUARD (R) ORANGE

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

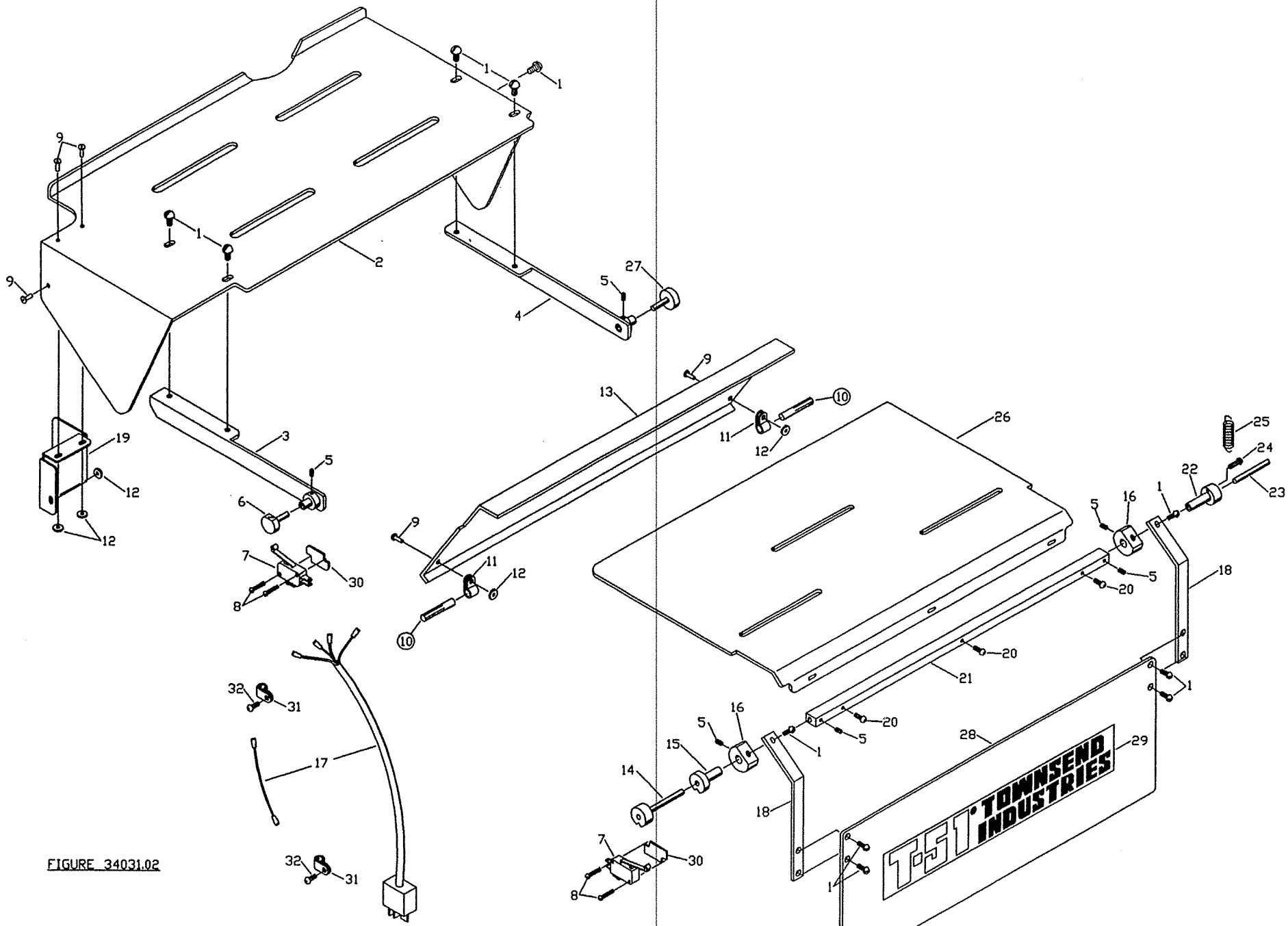


FIGURE 34031.02

INDEX NO.	PART NUMBER	DESCRIPTION 5-89
1	910096	SCREW
2	34771	TOP FRONT GUARD
3	37776	REPL GUARD BRACKET (L)
4	37777	REPL GUARD BRACKET (R)
5	910502	SCREW
6	37751	CAM PIN
7	960011	INTERLOCK SWITCH
8	910811	SCREW
9	921003	RIVET
10	920003	PIN
11	964022	PLASTIC CLAMP
12	950029	WASHER
13	37773	FRONT GUARD
14	19750	CAM PIN
15	19752	CAM SLEEVE
16	37759	PIVOT
17	36760	WIRE HARNESS T-51
18	36758	WATER GUARD BRACKET
19	36772	FILLER BRACKET
20	910309	SCREW
21	19755	GUARD PIVOT BAR
22	37753	SPRING PIVOT
23	37754	PIN
24	910803	SCREW
25	6938	SPRING
26	37772	TOP GUARD
27	37764	PIVOT ARM
28	34774	WATER FOUNTAIN GUARD
29	6956	T-51 LABEL
30	960012	ANTI-VIBRATION PAD
31	964022	PLASTIC CLAMP
32	910018	SCREW

ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

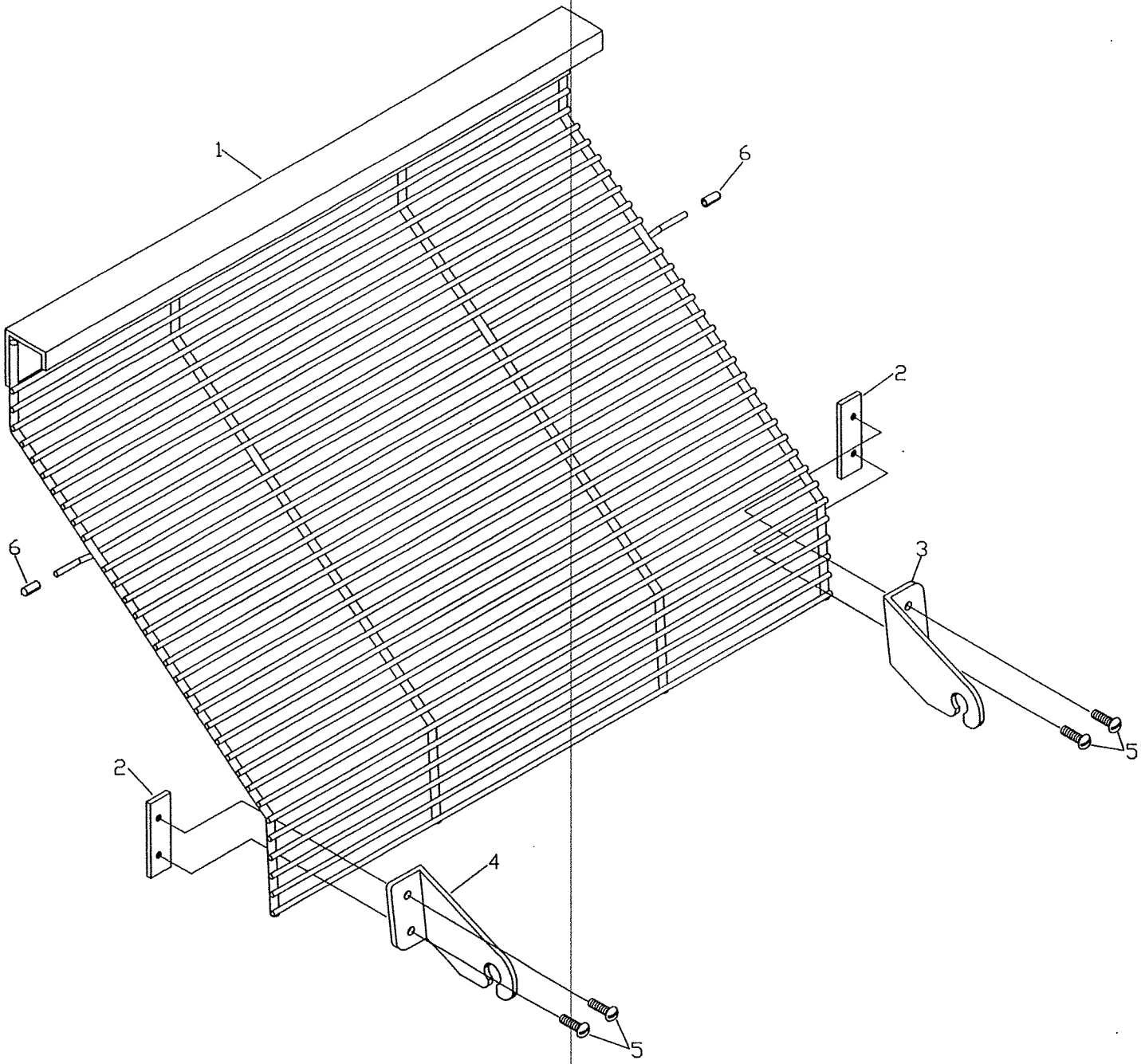


FIGURE 36029.01

INDEX NO.	PART NUMBER	DESCRIPTION 6-92
1	34778	REPLACEMENT GUARD
2	36782	GUARD NUT PLATE
3	36780	GUARD BRACKET (R)
4	36779	GUARD BRACKET (L)
5	910802	SCREW
6	960036	RUBBER BUMPER

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

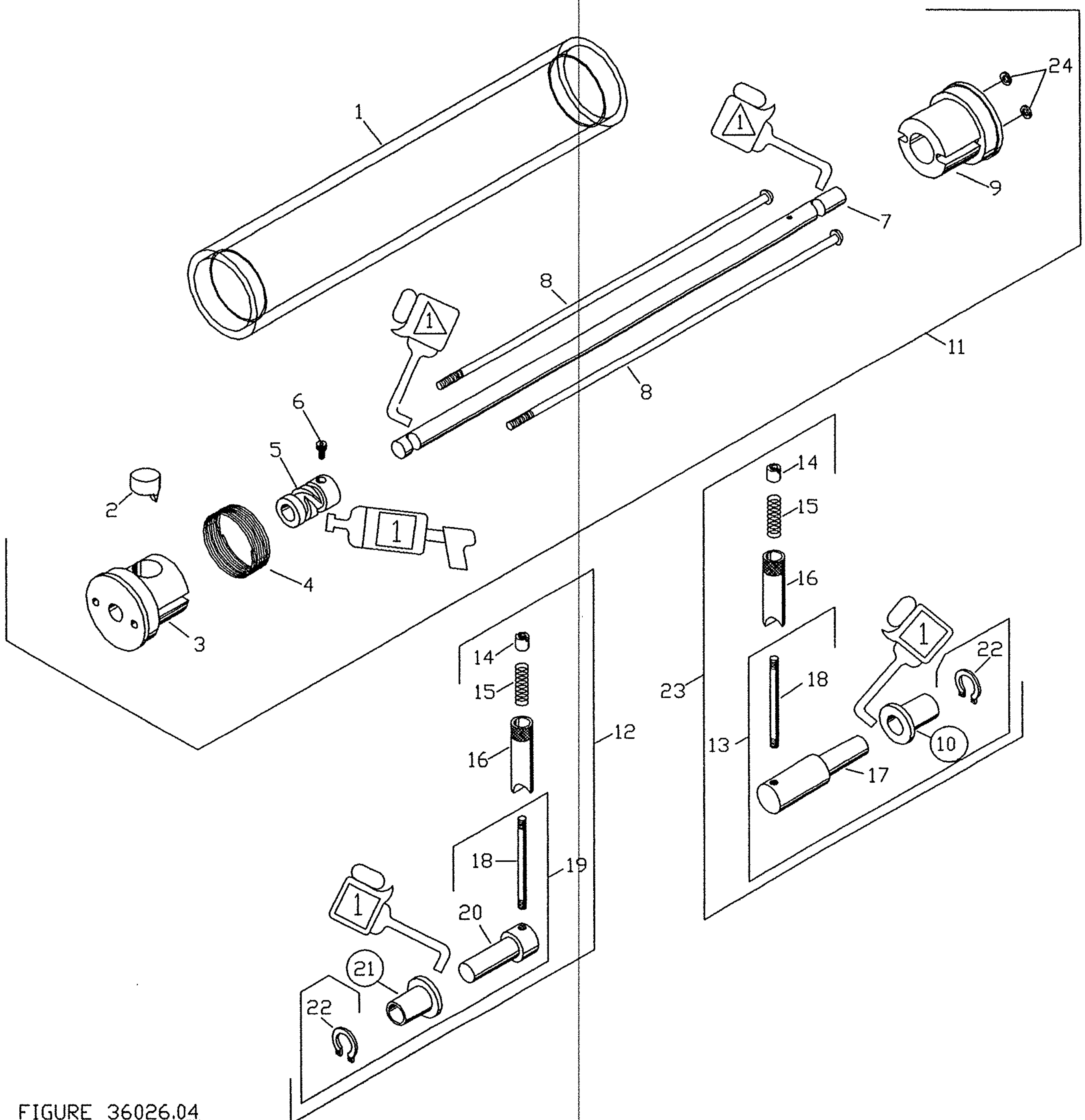


FIGURE 36026.04

INDEX NO.	PART NUMBER	DESCRIPTION 9-88
1	34811	SMALL OSCILLATOR TUBE
2	4804	DOG
3	4806	END BELL
4	4845	DOG RETAINER
5	1802	WORM
6	910016	SCREW
7	34801	OSCILLATOR SHAFT
8	38885	TIE ROD
9	1807	END BELL
10	901002	BUSHING
11	34824	SMALL OSCILLATOR ASY
12	22855	HANGER/HOLD DOWN ASY L
13	36854	HANGER ASY R
14	940024	NUT
15	9944	SPRING
16	19847	HOLD-DOWN TUBE
17	36849	HANGER
18	1575	STEM
19	4853	HANGER ASY
20	4849	HANGER
21	901042	BUSHING
22	930026	RETAINING RING
23	36851	HANGER/HOLD DOWN ASY R
24	950027	WASHER

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

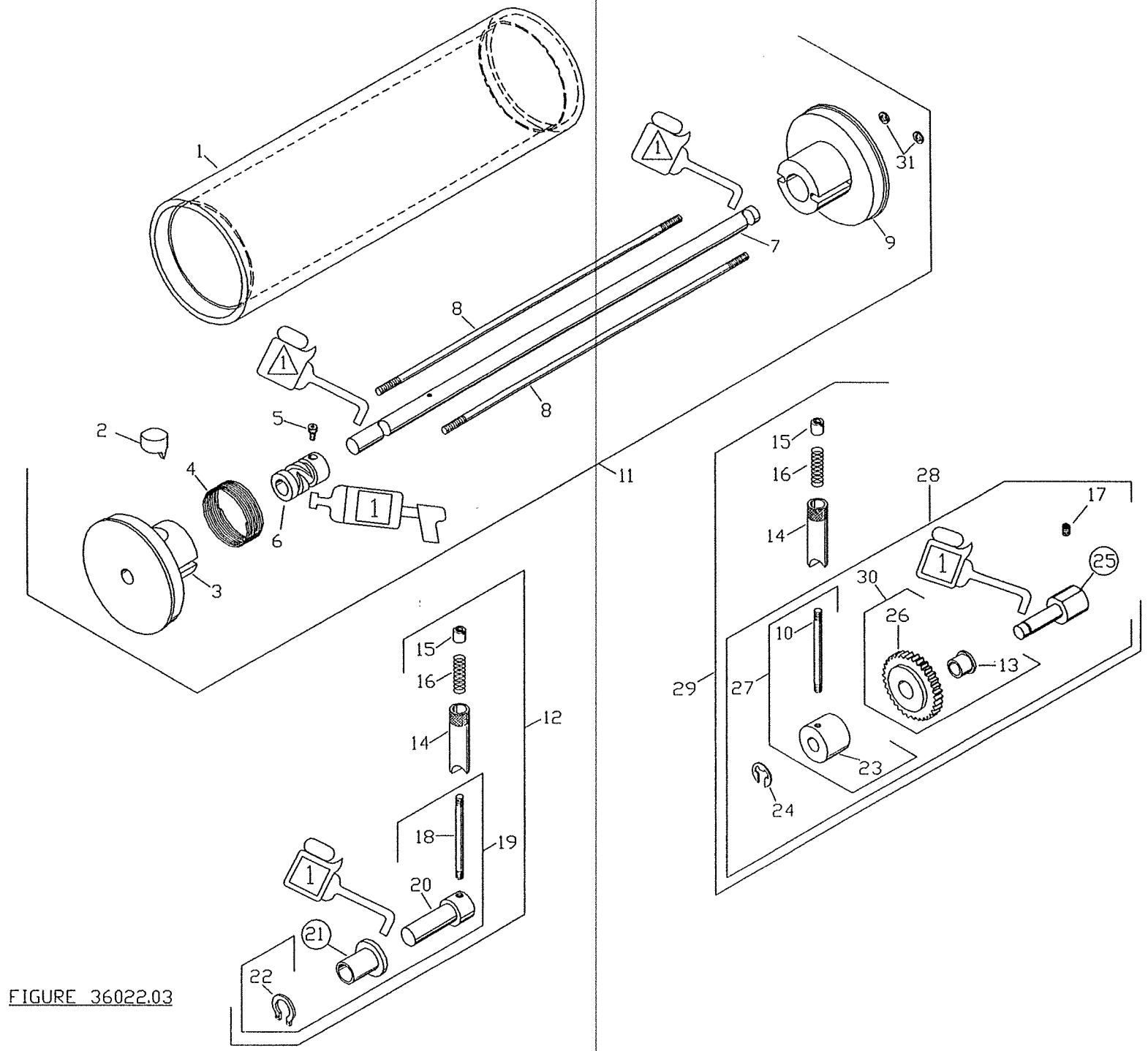


FIGURE 36022.03

INDEX NO.	PART NUMBER	DESCRIPTION 5-89
1	34810	LARGE OSCILLATOR TUBE
2	4804	DOG
3	4808	LARGE END BELL/DOG HOLE
4	4845	DOG RETAINER
5	910016	SCREW
6	1802	WORM
7	34801	OSCILLATOR SHAFT
8	38885	TIE ROD
9	1809	LARGE END BELL
10	36575	STEM
11	34823	LARGE INK OSCILLATOR ASY
12	36857	HANGER/HOLD DOWN ASY
13	900011	BUSHING
14	9847	HOLD DOWN TUBE
15	940024	NUT
16	9944	SPRING
17	910019	SCREW
18	1575	STEM
19	4853	HANGER ASY
20	4849	HANGER
21	901002	BUSHING
22	930026	RETAINING RING
23	36430	HANGER BUSHING
24	930006	RETAINING RING
25	36431	HANGER STUD
26	36432	IDLER GEAR
27	36856	HANGER ASY (R)
28	36858	HANGER/GEAR ASY
29	36852	HANGER/HOLDDOWN/GEAR ASY
30	36436	GEAR ASY
31	950027	WASHER

ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

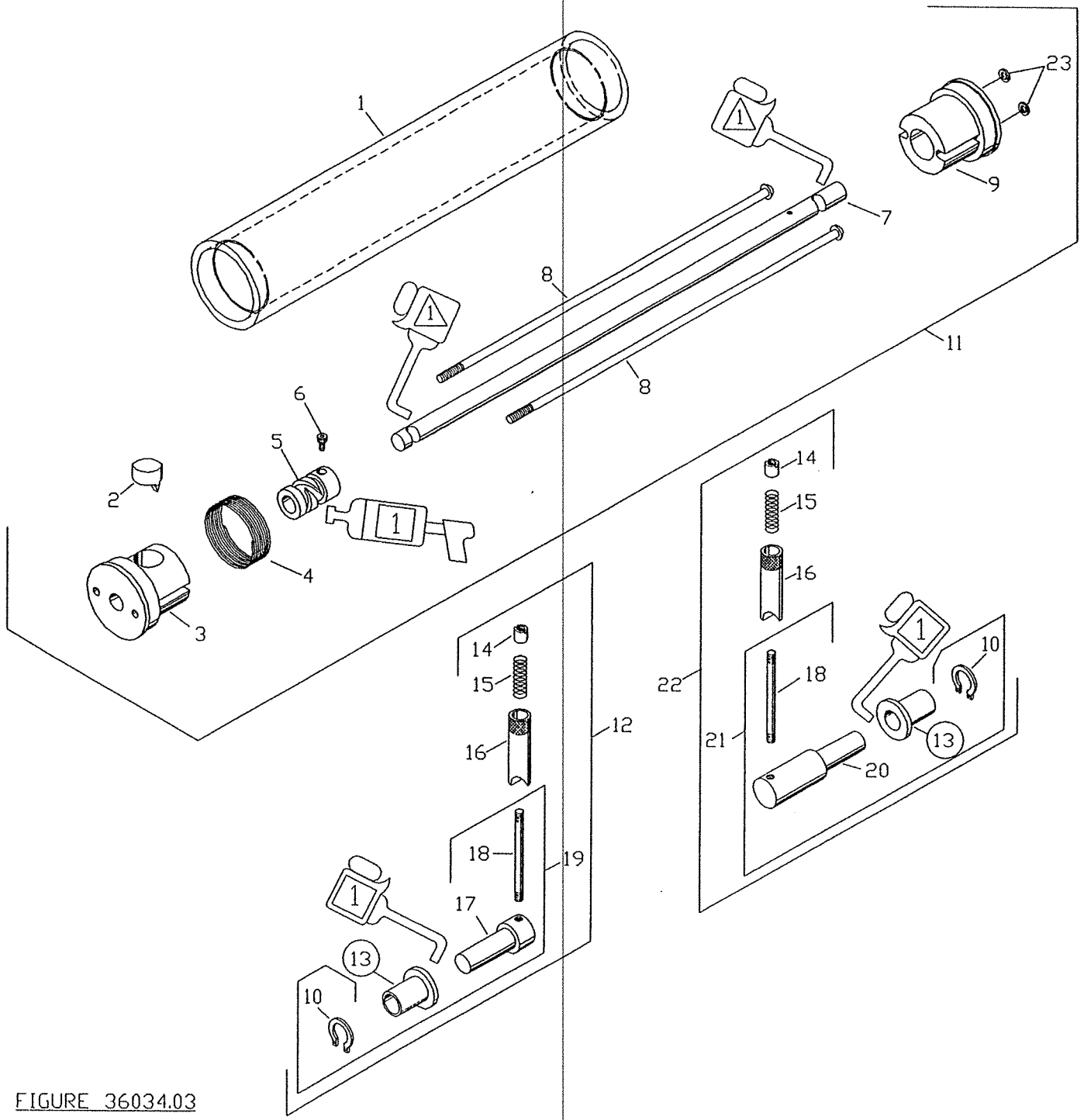


FIGURE 36034.03

INDEX NO.	PART NUMBER	DESCRIPTION 9-88
1	34811	SMALL OSCILLATOR TUBE
2	4804	DOG
3	4806	END BELL/DOG HOLE
4	4845	DOG RETAINER
5	1802	WORM
6	910016	SCREW
7	34801	OSCILLATOR SHAFT
8	38885	TIE ROD
9	1807	SMALL END BELL
10	930026	RETAINING RING
11	34824	SMALL OSCILLATOR ASY
12	36857	HANGER/HOLD DOWN ASY
13	901002	BUSHING
14	940024	NUT
15	9944	SPRING
16	9847	HOLD DOWN TUBE
17	4849	HANGER
18	1575	STEM
19	4853	HANGER ASY
20	4850	HANGER
21	4854	HANGER ASY
22	36859	HANGER/HOLD DOWN ASY
23	950027	WASHER

ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

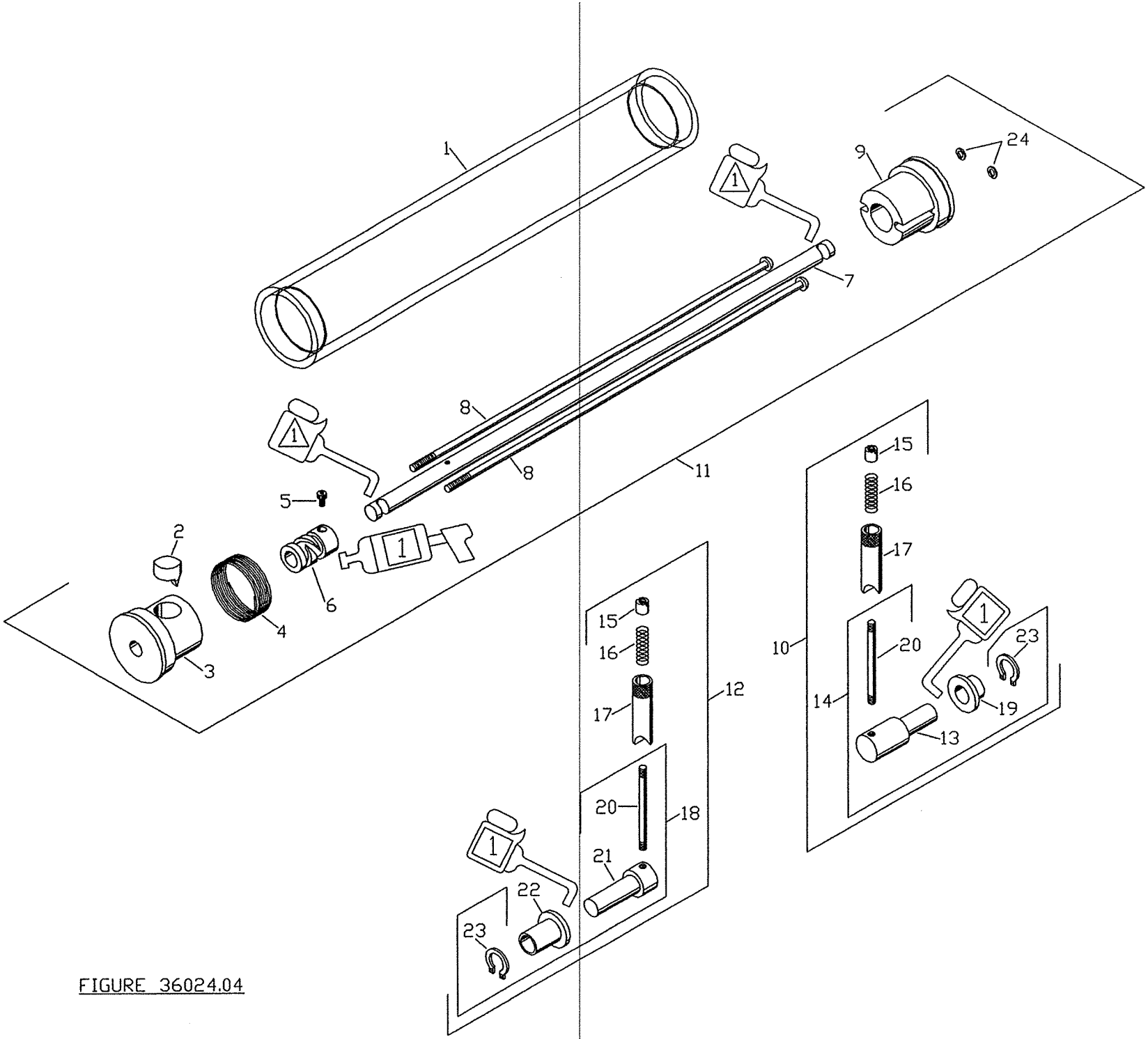


FIGURE 36024.04

INDEX NO.	PART NUMBER	DESCRIPTION 10-92
		AQUA-FLOW SYSTEM
1	34811	SMALL OSCILLATOR TUBE
2	4804	DOG
3	4806	END BELL
4	4845	DOG RETAINER
5	910016	SCREW
6	1802	WORM
7	34801	OSCILLATOR SHAFT
8	38885	TIE ROD
9	1807	END BELL
10	36855	HANGER/HOLD DOWN ASY (R)
11	34824	SMALL OSCILLATOR ASY
12	36860	HANGER/HOLD DOWN ASY (L)
13	36850	WATER HANGER
14	36853	HANGER ASY
15	940024	NUT
16	20945	SPRING
17	9847	HOLD-DOWN TUBE
18	4853	HANGER ASY
19	901042	BUSHING
20	1575	STEM
21	4849	HANGER
22	901002	BUSHING
23	930026	RETAINING RING
24	950027	WASHER
		MOLLETON SYSTEM
1	37829	SMOOTH WATER OSC TUBE
11	37839	WATER OSCILLATOR ASY

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.

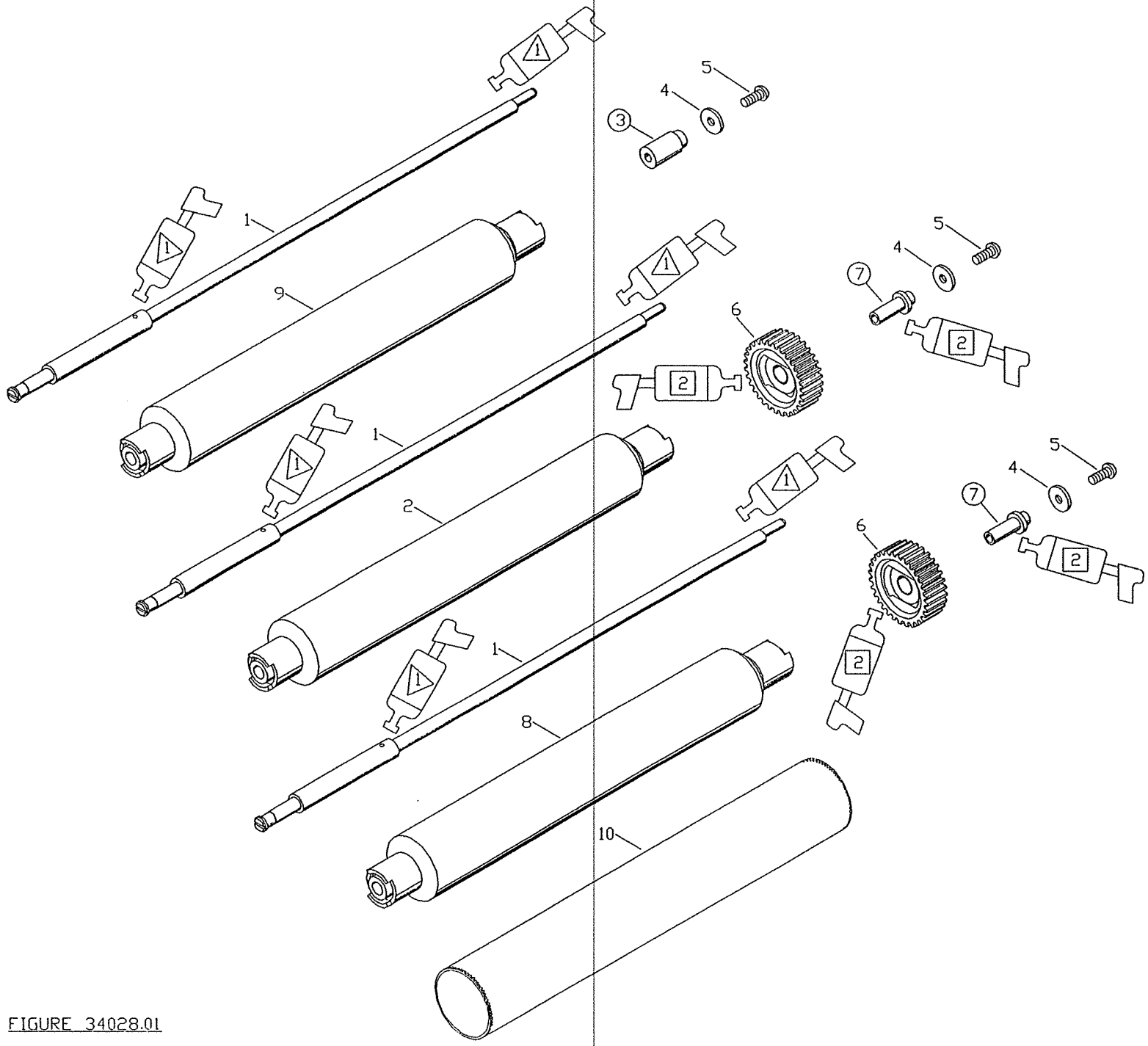


FIGURE 34028.01

INDEX NO.	PART NUMBER	DESCRIPTION 10-92
		AQUA-FLOW SYSTEM
1	34865	FORM SHAFT
2	38813	FORM ROLLER
3	8411	GEAR BEARING SPACER
4	950046	WASHER
5	910010	SCREW
6	38407	PINION DRIVE GEAR ASY
7	8410	DRIVE GEAR BEARING PIN
8	38813	FORM ROLLER
9	38814	FORM ROLLER
		MOLLETON SYSTEM
8	38814	FORM ROLLER
10	961029	COVER SET

CIRCLED NUMBERS IN FIGURE INDICATE PARTS FITTED INTO FRAME.
ALWAYS GIVE SERIAL NUMBER OF T-51 WHEN ORDERING PARTS.