Film-Tech

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SPECO

SYSTEMS & PRODUCTS ENGINEERING COMPANY

LP-270
LONG PLAYING
NO REWIND
FILM TRANSPORT
SYSTEM

OPERATION & INSTALLATION MANUAL

Revision Four

709 NORTH 6TH STREET • KANSAS CITY, KANSAS 66101 • (913) 321-3978 • TELEX 417125 • FAX: 321-7439

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INTRODUCTION

The Model LP-270, no rewind, 35mm film transport system is a precision built transport that has been designed to give years of trouble-free operation, when installed and operated within the scope of the manufacturer's recommendations. The unit has been fully aligned and tested prior to shipment, thus decreasing the installation time.

The purpose of this transport system is to provide up to four and one-half hours of un-interrupted film presentation (nine hours with a five-minute intermission), without the need for changeovers or for rewinding of the film. This is accomplished by splicing together the 2000-foot reels from the film distributor into one continuous length, supporting the film by its edge and winding the film onto a large, flat, horizontal disc or platter.

A major advantage of this system of film presentation is that after completion of the show, the film is already rewound into the correct position and can therefore be presented again to the audience after a quick threading procedure.

To provide redundancy and greater flexibility, three such platters are incorporated into this system. It is for this reason that two, four and one-half hour features may be presented sequentially with only one short stop for intermission. This feature also permits either the make-up of tomorrow's feature or the break-down of yesterday's feature simultaneously with the presentation of today's feature. The standard LP-270 film transport has the capability of make-up or break-down from any of the three platters. When used with the horizontal reel work table, rewinding of the 2000-foot reels may be accomplished independent of the platter operation, if the need arises.

Thus it can be observed that by the use of this system, the efficiency of the projection booth operation is enhanced, enabling the operator to perform other functions, such as the operation of threatres with multiple auditoriums. At the same time, less handling of the film at high speeds is realized, resulting in less wear to the film.

The platter assembly is finished in an attractive, two-color style using a durable epoxy paint. The work table has a wood-grain formica surface that is capable of withstanding daily usage.

INSTALLATION

Prior to unpacking the equipment, the location of the LP-270 film transport should be determined. Although the film transport may be located on either side of the projector, locating the platter assembly to the right side of the projector (film side) will provide the maximum in operator ease. Figure 1 indicates the recommended position of the projector, film transport, and work table. Of course, existent booth configurations may require modification of this floor plan. Also remember that the work table may be stored when not in use at another location than shown.

After the location of the equipment has been determined, the vertical post assembly should be unpacked. To remove this assembly from the carton, cut the four corners of the box to the floor and lay the carton sides on the floor. Thus, this assembly does not require lifting out of the carton. (This precaution must be observed because the assembly is heavy and bulky, and possible damage may occur to the components fastened to the vertical post.) Remove the four bolts attached to the 4-inch by 7-inch plate. After removing the cardboard sleeves from the V-base package, position the V-base onto the vertical post with the adjustable feet towards the bottom. Insert the four bolts previously removed into the two, 4-inch by 7-inch bolt plates, using lockwashers under the nuts, and securely tighten.

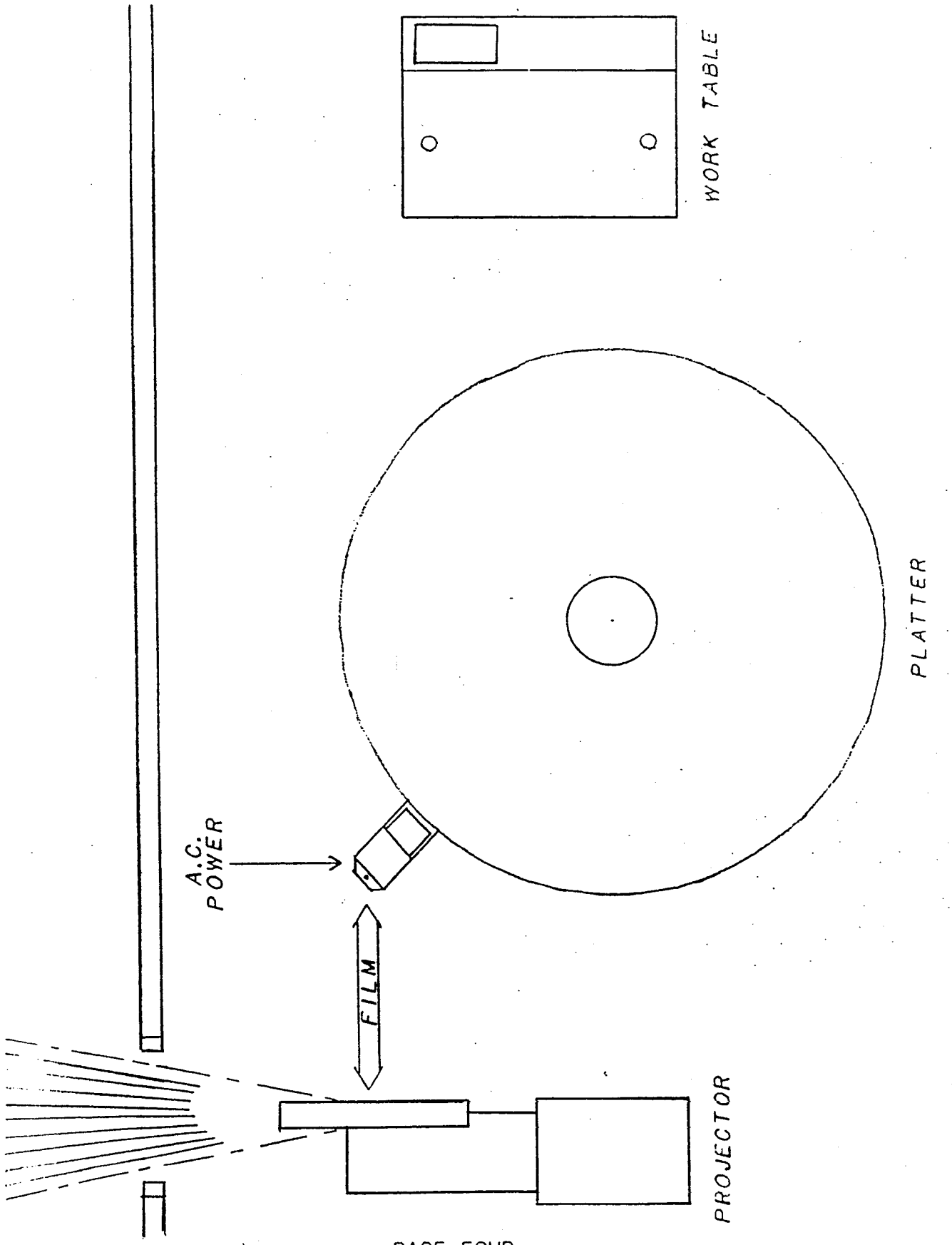
Without using either of the two rods on the rear of the vertical post for support, raise the vertical post/V-base assembly to an upright position. Position this assembly in the location determined earlier.

Remove the remainder of the packing materials and inspect for any possible damage. Remove the six coil springs located on the platter mount mounts. Remove the three, flat-head screws at the top of each horizontal arm. Discard the bearing retainer plates.

Unpack the platter disc assemblies by removing the top from the crate. Again, inspect for any possible damage to the units. Remove any dirt or tape from around the two platter bearings. (Do not use any grease-cutting cleaner.) Install the platter discs onto the horizontal arms, being careful not to damage the payout control shaft protruding from the horizontal arm. Note that the markings on the bottom of the platter discs (top, middle, or bottom) and position the platter discs accordingly. Be sure that the platter motor shaft clears the outer periphery of the platter disc.

Replace the coil springs behind the platter motor mounts.

FIGURE 1 - EQUIPMENT LOCATION



Next, open the work table carton and remove the work table and work table leg(s). The remainder of the components necessary to complete the installation will be found inside the work table. Remove and inspect all parts as they are unpacked for possible damage. Remove the protective cover from the speed control without distorting the speed control arm.

Locate the three payout control panels. Position each panel within the large opening in the center of each platter, positioning the two rubber bumpers to the front and to the right. Secure the panels with the flat head screws previously removed.

Locate the three payout control arms and press them onto the payout control shafts, aligning the flat on the shafts to the flat on the arms. Verify that the payout control arms do not contact the payout control panels at any position between the two rubber bumpers.

Locate the Z-bracket/film roller assembly and attach it to the top of the vertical post with the bolts provided. The film roller must protrude from the right side of the vertical post.

Position the two take-up rings onto the center of two platters. Place the two film end stops on a platter.

Locate the two work table legs and the two rubber casters. Attach the rubber casters to the legs. Attach the leg support cross members to the legs (rubber casters are on the inside). Position the work table on top of the leg assembly and securely fasten. Screw lamp into the work table lamp socket.

If the work table incorporates a pole kit, position the pole onto the leg and bolt the bracket to the work table.

If a vertical reel work table is used, attach the hub shaft extension (either 5/16 or 1/2 inch) to the work table motor. Place top of work table in position.

If a horizontal reel work table is used, attach the bracket(s) to the rear of the work table. Place top of work table in position. Attach the dog assembly to the shaft on the left side of the work table. Tighten the set screws onto the flats of the shaft.

Using the cable provided, electrically connect the work table to the vertical post. The work table connector is located on the bottom of the work table, while the platter connector is located at the bottom of the vertical post.

Using a method that meets local electrical codes, provide electrical power to the three wires located at the bottom of the vertical post. The black wire is 'live', the white wire is 'neutral', and the green wire is 'ground'.

Attach the projector roller assemblies (reel arms) to the projector using the manufacturer's recommendation.

Using the manufacturer's recommendation, connect the fail-safe switch to the automation such that the projector motor and projector lamp are turned off in the event of film breakage. If no automation is used, connect the fail-safe switch as shown in Appendix I.

At this time, the installation of the LP-270 film transport system is complete and the equipment is ready for film roller alignment and for check-out procedures.

If, during any of the previous steps, damage was observed due to shipment, immediately notify the shipping agent as well as SPECO. All claims must be made promptly.

ALIGNMENT AND CHECKOUT

Mainly, alignment consists of accurately leveling the unit. All other alignment has been performed in the factory at the time of assembly and testing.

To level the platter, place a three-foot or longer level on the vertical post, stretching from top to bottom. With the level on the side, alternately adjust the two leveling feet attached to the V-base assembly for a level indication. Reposition the level onto the rear of the vertical post. Adjust the same two leveling feet simultaneously for a level indication. Lock these adjustments when completed. Verify that the three payout control arms remain in the off position. (The off position is when the payout control arm fingers are on the right side of the platter.)

NOTE: Do not level the individual platter discs but rather level using the above procedure.

After the leveling procedure is completed, continue with the electrical testing of the system.

On the work table control panel, position the Mode Switch in the 'off' position, the Speed Control at the 'minimum' position, and the Power Switch in the 'off' position. Verify that a 3-amp, fast-blo fuse has been installed. Check that all push-buttons on the top of the vertical post are in their 'off' or 'out' positions.

NOTE: Unless instructed otherwise, never depress two push-buttons of the same color simultaneously. Under certain conditions, overloading may occur.

Apply line power to the system. Observe that the work lamps located above the two lower payout control panels are illuminated. Depress each of the push-buttons on the vertical post, one at a time, and observe that each respective lamp is illuminated. (The discs may rotate and should be ignored.) When completed, position all of the push-buttons in the 'off' position.

Position Power Switch on the work table to the 'on' position. The splicing window lamp should be illuminated.

Position Mode Switch in the 'Break-Down' position. Slowly increase the setting of the Speed Control. Verify that the work table motor rotates, and that the speed of the motor is determined by the setting of the Speed Control.

Depress the Break-Down push-button (BLUE) for one of the discs. Depress the Brake Switch on the work table and the disc should begin to rotate. Repeat this paragraph for each of the discs.

Position Mode Switch in the 'Make-Up' position. Depress the Make-Up push-button (YELLOW) for one of the discs. Slowly increase the setting of the Speed Control. Verify that the platter motor rotates, and that the speed of the motor is determined by the setting of the Speed Control. Repeat this paragraph for each of the discs.

If a vertical reel work table is used, position all push-buttons in their 'off' or 'out' position. Increase the setting of the Speed Control. Verify that the work table motor rotates slowly with high settings of the Speed Control. Position the Mode Switch and the Power Switch in the 'off' position.

Lift the Take-Up film roller to the top of its range. Depress the Take-Up push-button (RED) for one of the discs. Verify that the platter motor rotates and that the speed is determined by the position of the Take-Up film roller. In the full down position, the fail-safe switch should turn the platter disc off. Repeat this paragraph for each of the discs.

Depress the Pay-Out push-button (GREEN) for one of the discs. Observe that the disc begins to rotate when the payout control arm is 1/4-inch from the 'on' position and is off for all other positions. Also observe that when the payout control arm is in the 'center' position, the speed of the disc is determined by the Take-Up film roller. Repeat this paragraph for each of the discs.

The checkout of the platter system, both mechanically and electrically, is complete at this time. If difficulty did arise, recheck the instruction and, if difficulty persists, refer to the trouble-shooting section.

OPERATION

To assist the operator in becoming familiar with the LP-270 film transport, a brief description is provided herein. In general, the operator's controls are located either at the work table or at the disc assembly.

When power is applied to the platter system, the work lamps above the two lower discs are illuminated. The POWER SWITCH on the work table controls power to the work table functions only. When power is applied to the work table, the film splicing lamp is illuminated.

The MAIN FUSE for the platter system is located at the bottom of the vertical post. This fuse conrols all functions of the platter system. The TAKE-UP FUSE controls only the Take-Up and Pay-Out modes of all the discs. The WORK TABLE FUSE controls the work table functions only.

The MODE SWITCH selects the Make-Up or Break-Down functions of the work table. This switch normally remains off.

The SPEED CONTROL determines the speed of the Make-Up disc or the Break-Down reel, as selected by the mode switch.

The spring-loaded BRAKE SWITCH slows and reverses the Break-Down disc if in the Break-Down mode.

Three rows of PUSH-BUTTON SWITCHES are located at the top of the vertical post - one row for each disc. All three discs have been connected identically. Whatever description that is applied to one disc is true for the other discs as well. These functions are:

MAKE-UP - This function (yellow) is used for assembling a presentation on the disc by transferring the film from the distributor's reel to the disc. When this button is depressed and the mode switch on the work table is in the Make-Up position, the disc speed is controlled by the work table speed control.

PAY-OUT - This function (green) is used for paying out the film to the projector for presentation. When this button is depressed, the disc speed is controlled by the position of the Pay-Out control arm.

TAKE-UP - This function (red) is used for taking up the film from the projector after presentation. When this button is depressed, the disc speed is controlled by the position of the Take-Up mechanism on the rear of the vertical post.

BREAK-DOWN - This function (blue) is used for disassembling a presentation on the disc by transferring the film from the disc to the distributor's reel. When this button is depressed and the mode switch on the work table is in the Break-Down position, the disc speed is controlled by the work table speed control.

A) Make-Up Procedure

To Make-Up or prepare a program on the LP-270 film transport, place the first reel on the Make-Up spindle (right side on a horizontal reel work table, or rear side on a vertical reel work table). Place the POWER SWITCH in the on position, the MODE SWITCH in the Make-Up position, and the PUSH-BUTTON SWITCH in the Make-Up position.

NOTE: Rewind the film on the reel if the head is not on the outside of the reel.

Using a sufficient length of leader, route the head of the film onto the desired disc and wrap counter-clockwise around the Take-Up ring. Slowly increase the SPEED CONTROL until the film has been entirely tranferred to the disc. Remove the tail of the first reel and the header of the second reel and save for Break-Down. Splice the two reels together and repeat the transfer of film. Continue this process until the entire presentation is on the disc. Place all above switches in their off positions.

NOTE: Place a film stop at the end of the film. Never tape the end of the film.

B) Film Presentation

Remove the Take-Up ring from the center of the disc and position it on the desired Take-Up disc. Using Figure Two as a reference, route the film through the film rollers of the Pay-Out mechanism. Place the PUSH-BUTTON SWITCH in the Pay-Out position. Continue routing the film over the film rollers to the upper magazine film roller. Temporarily by-pass the projector mechanism and route the film past the lower magazine film roller. Continue routing the film though the Take-Up mechanism and onto the Take-Up disc.

Return to the projector mechanism and thread the film per the manufacturer's recommendation.

Rotate the Take-Up disc until the Take-Up film roller is located twelve inches from the top. Place the PUSH-BUTTON SWITCH in the Take-Up position. The platter system will now supply and take-up film at the speed dictated by the projector.

Check all film rollers for the correct placement of the film, both on the platter system and in the projector mechanism.

This procedure is to be followed each time the film is to be presented to the audience.

FIGURE 2 – PAYOUT CONTROL FILM PATH

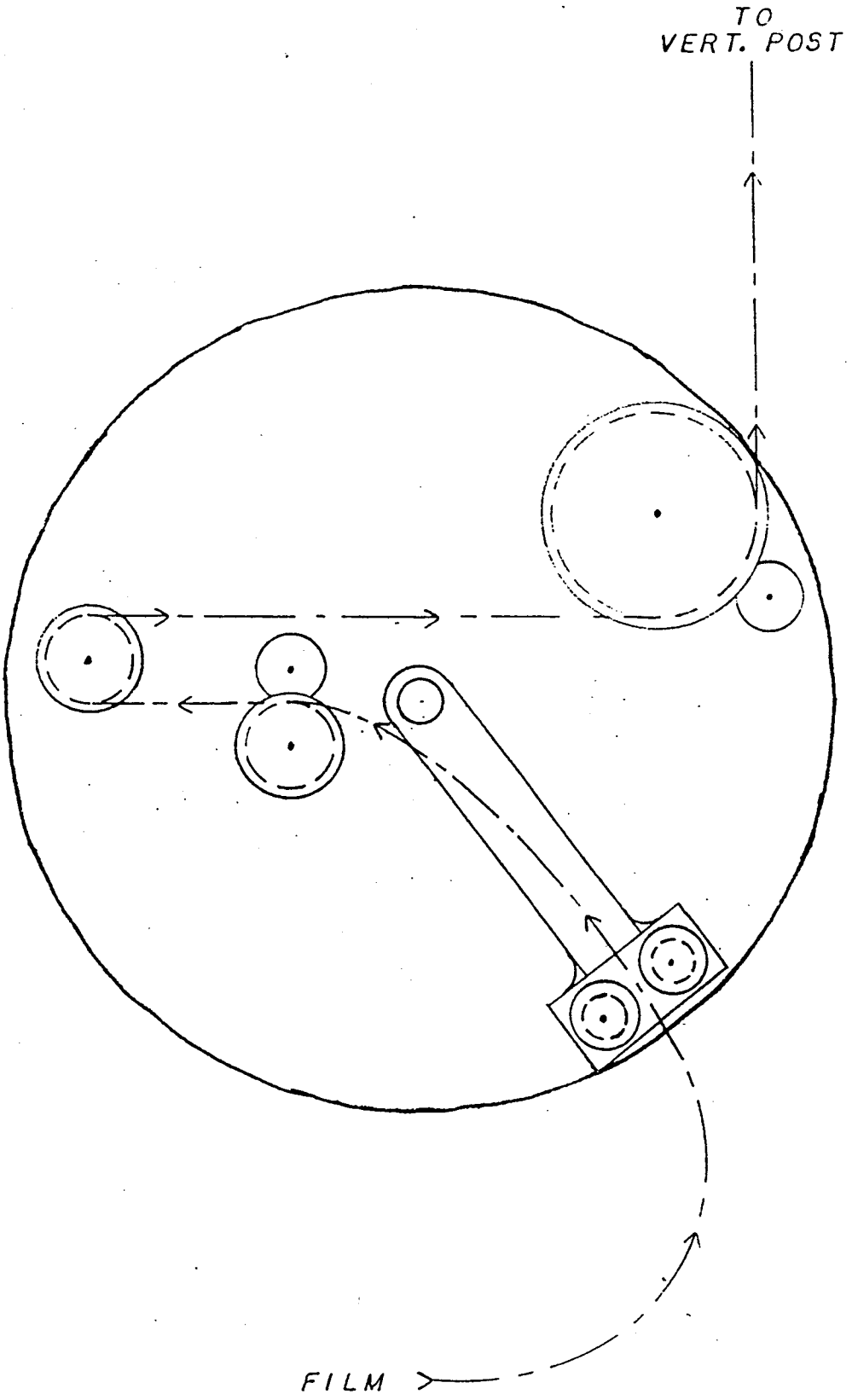
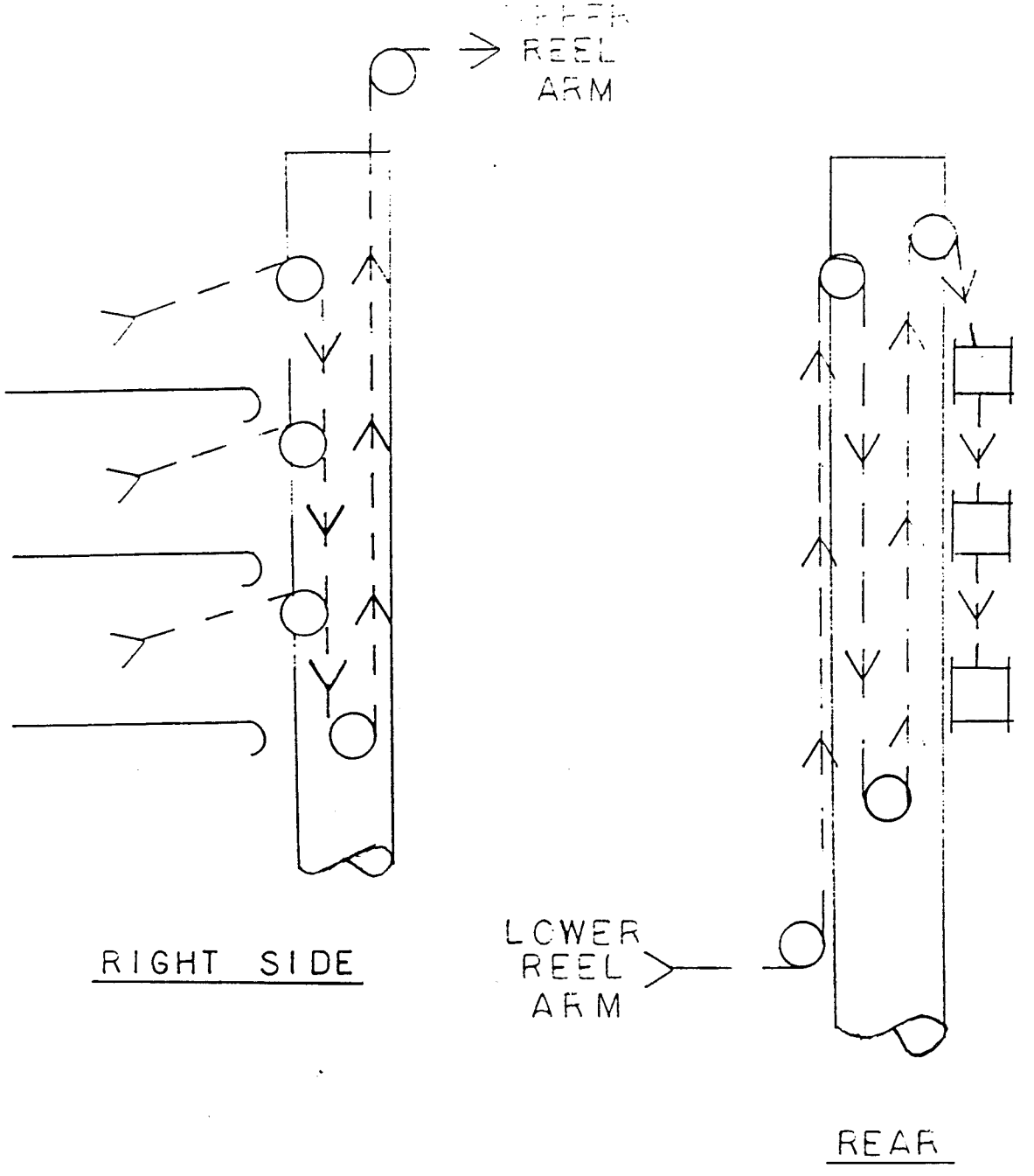


FIGURE 3 — VERTICAL POST FILM PATH



C) Break-Down Procedure

After the last presentation, the film must be returned to the distributor's reel. To do this, position the POWER SWITCH in the on position, the MODE SWITCH in the Break-Down position, and the PUSH-BUTTON SWITCH in the Break-Down position. Route the film from the outer periphery of the disc to the distributor's reel. Slowly increase the SPEED CONTROL until the film is transferred.

When the film on the reel approaches the previous splice, slowly reduce the SPEED CONTROL, using the BRAKE SWITCH, if necessary. Do not allow any slack to develop in the film.

When the disc and the reel has stopped, remove the splice and reattach the leader. Repeat this procedure for each reel until complete.

Some helpful hints in the operation of the LP-270 film transport:

1 - When making up the program, use a colored wax pencil on the edge of the film where the reels have been spliced together. This will assist in locating these splices for the breaking down of the program.

2 - Always keep the soundtrack in the same position for all procedures. This will result in a minimum number of twists in the film.

3 - If this procedure for threading the platter system is followed, no film will ever touch the floor.

4 - When in the film presentation mode of operation, one green lamp and one red lamp must be on. Otherwise, the unit has not been programmed correctly and unsatisfactory operation will result. Likewise, two lamps of the same color should not be illuminated at the same time.

5 - When slowing the disc and reel in the breakdown mode of operation, decrease the speed control to about the 60% position and then initiate the brake switch, followed by a further reduction of the speed control to about the 40% position. When completely stopped, reduce the speed control to the minimum position.

6 - Break-Down or Make-Up operation may be done simultaneously with another program being presented to the audience. There is no interaction of controls.

AUTOMATION

SPECO has also designed and manufactures a Model ATS-2 single-projector automation unit for use in conjunction with the LP-270 film transport system. With the operation of a single push-button switch, either in the projection booth or in a remote location, the following functions are automatically controlled at the start of the program, at the start of an intermission, at the end of an intermission, and at the end of the program:

House or Ceiling lighting

Stage or foot lighting

Screen curtain

Projector motor

Projector lamp & rectifier

Background music

Projector light shutter (zipper)

Film transport

MAINTENANCE

The task of preventative maintenance of the LP-270 film transport system has been kept to an absolute minimum. This is accomplished by the use of permenantly lubricated bearings throughout the platter assembly.

The most important maintenance chore is to keep the payout control mechanisms clean and free of dirt. Due to the amount of film that passes through this assembly, after each performance, this area should be cleaned by means of a vacuum cleaner, hand bellows, or dry cloth. Never use a chemical cleaner or lubricate this mechanism.

Similarily, remove the dirt and dust accumulation on the Take-Up film roller bearing. The half-inch, round rod may be lubricated with a drying lubricant, such as WD-40.

Every six months, perform the following housekeeping chores:

1 - Check the motor brushes for wear and replace, if necessary.

2 - Using a fine sandpaper, remove any glaze on the platter motor shaft rollers. Remove only the glaze.

3 - Clean all film rollers on the platter system, on the work table, and on the projector magazines. Remove all accumulated dirt.

4 - Check all film roller brackets for alignment and correct adjustment. Tighten (loosen) all hold down screws, as necessary.

5 - If necessary, add a few drops of oil to the Make-Up spindle shaft clutch.

No other preventative maintenance is required of the LP-270 platter.

TROUBLE-SHOOTING

The following listing is to assist service personnel in the location and correction of difficulties.

A - Work lights do not illuminate.
    1 - No power is supplied to the unit.
    2 - Vertical post fuse is blown.
    3 - Pilot lamp transformer fuse is blown.
    4 - Pilot lamp transformer is defective.
    5 - Lamps are defective.

B - All lights illuminate but payout, take-up, and make-up functions are inoperative.
    1 - Plug-in rectifier module is defective.

C - Push-Button switch does not lock in a depressed position.
    1 - Push-Button switch cover is out of alignment with the switches.

D - Payout control arm does not follow the position of the film smoothly.
    1 - Payout control arm bearings are not properly seated.
    2 - Dirt within the payout mechanism parts.
    3 - Payout control magnet out of alignment.
    4 - Interference with the payout control PC Board ass'y.
    5 - Metal particles on the payout control magnet.

E - Payout control arm provides only a single speed control.
    1 - The film break sensor is activated.
    2 - Defective payout control PC Board.
    3 - Payout conrol magnet improperly adjusted.
    4 - Payout control PC Board plug is not fully seated.

F - Erratic operation of the Take-Up mechanism.
    1 - Accumulated dirt on Take-Up control shafts.
    2 - Improper lubrication of Take-Up control shafts.
    3 - Linear bearing improperly adjusted.
    4 - Defective variable transformer.

G - Film break sensor does not function.
    1 - Film break switch is not aligned.
    2 - Film break switch is defective.

H - Film break switch activated at start of program.
    1 - Film on the Take-Up ring slips due to insufficient leader length.
    2 - Take-Up push-button not activated.
    3 - Low line voltage.

I - Payout disc does not stop at end of program.
    1 - Payout control PC Board is defective.
    2 - Platter system has not been properly leveled.

J - Work table speed control does not function in either Make-Up or Break-Down mode.
    1 - Defective variable transformer
    2 - Defective work table fuse.

K - Work table speed control functions in Break-Down mode but does not function in Make-Up mode.
    1 - Work table bridge rectifier is defective.

L - Work table fuse continually blowing.
    1 - Operator accelerates disc at too fast a rate.
    2 - Mode switch is operated with the speed control not at minimum position.

M - Excessive film tension during Break-Down.
    1 - Push-Button for Break-Down mode not activated.

N - Improper film tension during Make-Up.
    1 - If a horizontal reel work table is installed, the Make-Up shaft tension nuts are not positioned correctly.
    2 - If a vertical reel table is used, the film reel is turning in wrong direction.

O - Noisy film rollers.
    1 - Correct by adding a drop of oil on both sides of the roller.

P - Film does not stay within roller.
    1 - The film roller is not aligned for the path of the film.
    2 - The film roller bracket is rotated from correct position.

APPENDIX I - Fail-safe Connections

Located near the bottom of the vertical post assembly are two microswitches that are activated if a film break should occur. The innermost switch has been wired to provide shutdown to the LP-270 film transport. The outermost switch is available to the installer for the control of the projector motor and projector lamp.

The connections to this switch (rating = 3-amp max) are located on a terminal board within the variable transformer cover. SPDT contacts are provided so as to be able to connect to any type of external automation equipment. If automation is not provided, an external relay should be wired as shown in the schematic below.

APPENDIX II - Emergency Operation

This appendix describes the semi-automatic, back-up controls provided in the LP-270 film transport system in the event that certain malfunctions should occur during a film presentation. If one of these malfunctions should occur, the presentation can be kept on the movie screen and the repair can be accomplished during the intermission.

TAKE-UP MODE

If the malfunction is associated with the circuitry of the Take-Up variable transformer, depress the Make-Up push-button (YELLOW), activate the Make-Up mode on the work table, and control the speed of the disc by means of the Speed Control on the work table. An indication of the correct speed will be shown by a constant position of the Take-Up roller on the rear of the vertical post. Throughout the remainder of the presentation, this Speed Control will have to be varied to compensate for the varying speed requirements of the Take-Up disc.

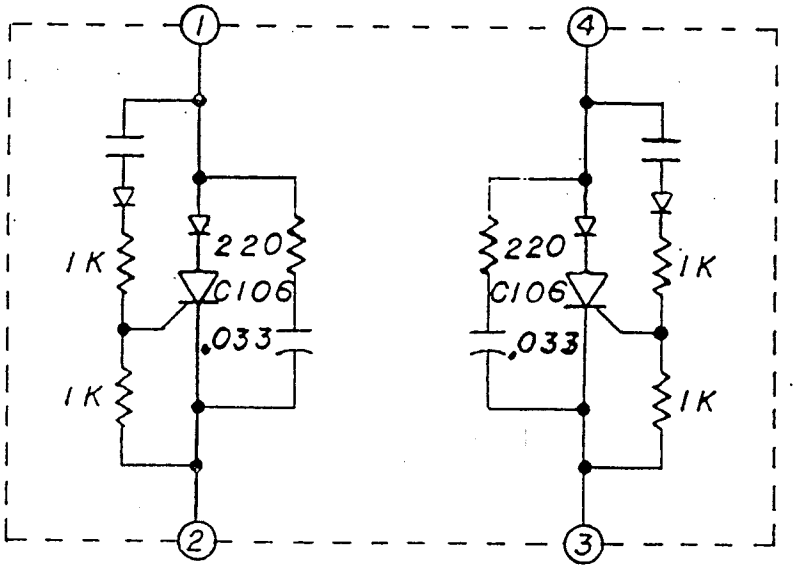
PAY-OUT MODE

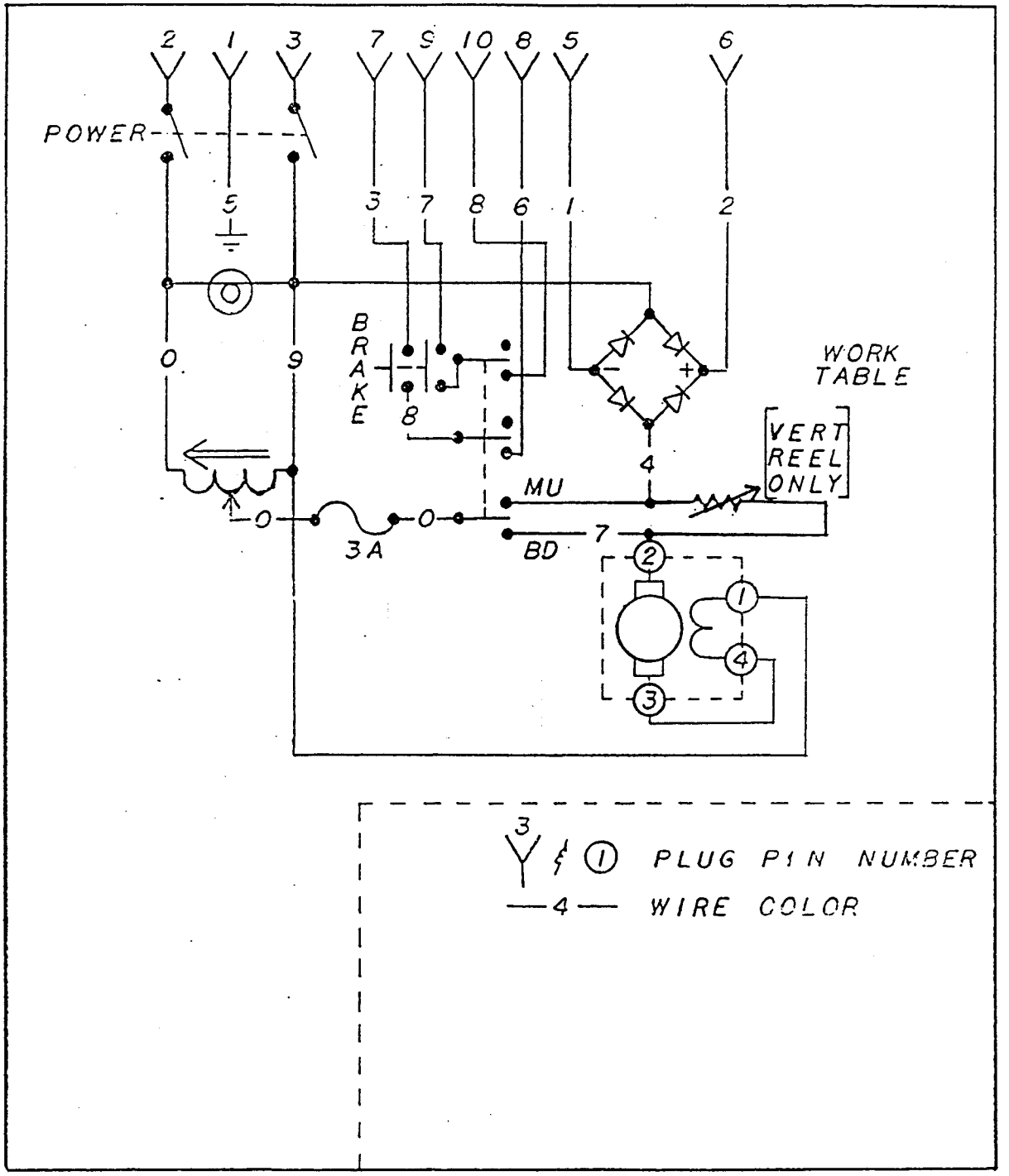
If the malfunction is associated with the circuitry of the Pay-Out control PC Board, depress the Take-Up push-button (RED). The Pay-Out disc will now turn at a rate slightly faster than required, so that a momentary slowing of the disc by hand will be required throughout the presentation.

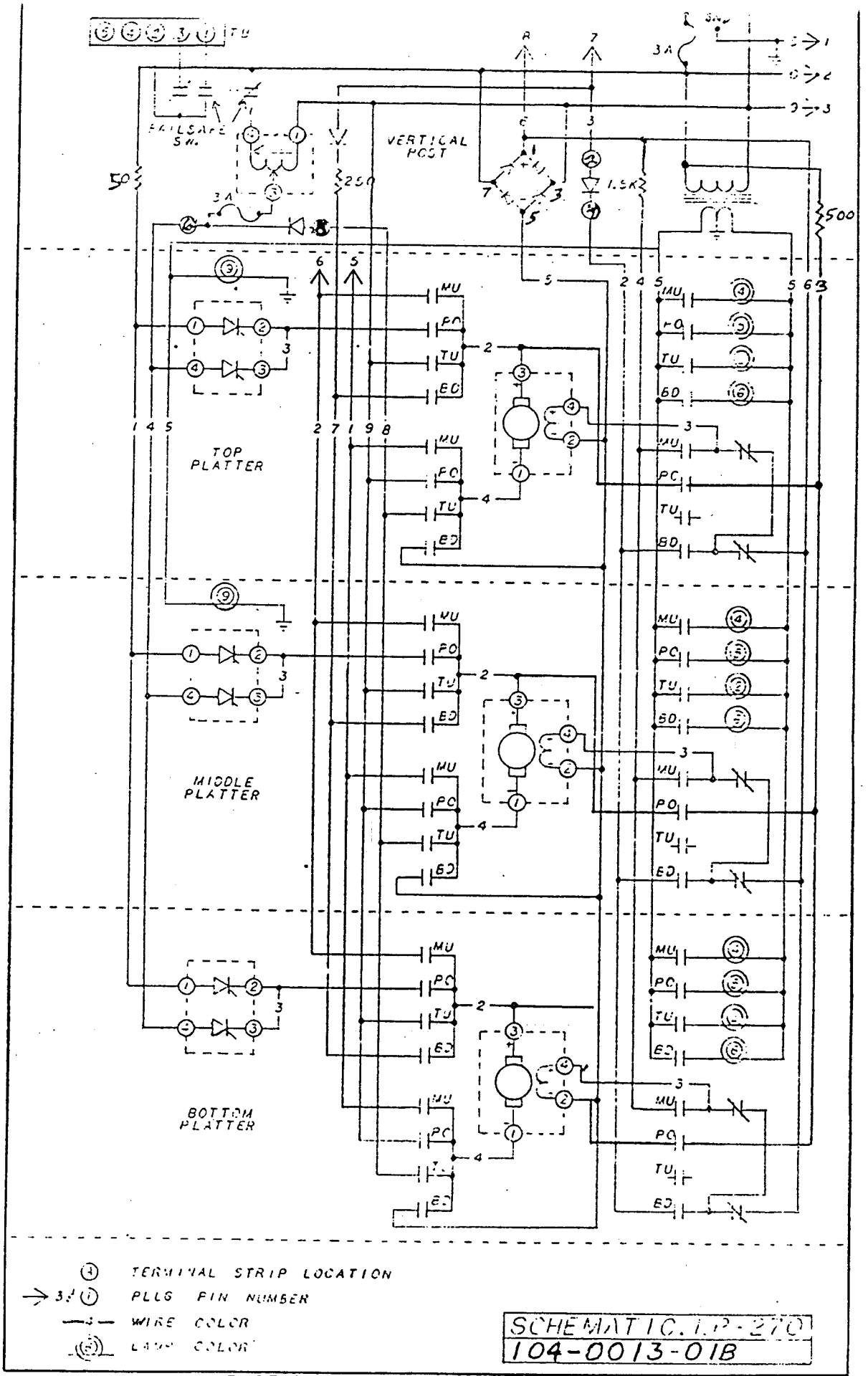
As an alternative for the same malfunction, depress the Make-Up push-button (YELLOW), activate the Make-Up mode on the work table, and control the speed of the disc by means of the Speed Control on the work table. Throughout the remainder of the presentation, this Speed Control will have to be varied to compensate for the varying speed requirements of the Pay-Out disc.

NOTE: In each of the above examples, the purpose of operating the unit in the stated manner is to keep the presentaion exhibited on the screen and delaying the repair until a more convenient time, such as intermission. These operating procedures are NOT normal and should be used in emergency only.

APPENDIX III - SCHEMATICS




2
1
3
7
9
10
8
5
6
POWER
5
3
7
8
6
1
2
BRAKE
0
9
8
WORK TABLE
VERT REEL ONLY
4
MU
0
0
3A
7
BD
2
1
4
3
3
① PLUG PIN NUMBER
—4— WIRE COLOR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FAILSAFE SW.
VERTICAL POST
50
250
3A
1.5K
500
TOP PLATTER
MIDDLE PLATTER
BOTTOM PLATTER
MU
PC
TU
BD
TERMINAL STRIP LOCATION
PLUG PIN NUMBER
WIRE COLOR
LAMP COLOR
SCHEMATIC, I.P. - 270
104-0013-01B

APPENDIX IV - SPARE PARTS LIST

PLATTER

Part #	Description
001-0026-01	Platter Ass'y with Bearings
001-0028-01	Magazine Conversion Kit, Upper & Lower
001-0034-01	Platter Motor Ass'y with Platter Motor & Plug Shaft Extension & Roller
001-0034-11	Platter Motor Ass'y with Platter Motor & Plug Shaft Extension & Roller Motor Mount & Hinge
001-0036-02	Platter to Work Table Extension (10-foot)
001-0040-01	Payout Control Panel Ass'y
001-0041-01	Plug-in Rectifier Module
001-0044-01	Platter Motor Mount & Hinge Ass'y
001-0045-01	Take-Up Weight Ass'y
020-0048-03A	Three-inch Threaded Roller Shaft
020-0048-06A	Six-inch Threaded Roller Shaft
020-0051-12	Z-Bracket
020-0051-18C	Push-Button Cover with Label
020-0051-22A	Platter Motor Shaft Extension with Roller
020-0051-24A	Twisted Rod
020-0051-25C	Take-Up Control Weight
020-0051-28B	Fail-Safe Switch Bracket
020-0051-38	Platter Motor Mount Tension Spring
020-0051-40E	Horizontal Arm
020-0051-41D	Horizontal Arm Cover with Hole
020-0051-41E	Horizontal Arm Cover without Hole

Part #	Description
020-0051-43A	Payout Control Shaft
020-0051-44B	Payout Control Arm Ass'y
020-0051-46	Payout Control Straight Roller Shaft
020-0051-47	Payout Control Angle Roller Shaft
020-0051-49B	Payout Control Magnet Ass'y
020-0051-53C	Platter Take-Up Ring Ass'y
020-0051-91	Take-Up Control Precision Shaft
020-0051-99	Keeper Roller Bracket
021-0014-01	Platter Film Stop Ass'y
021-0014-06	1-inch Film Roller
021-0015-01	2-inch Film Roller
021-0018-01	1.25-inch Film Roller
021-0020-01	Take-Up Control Weight Guide
021-0021-01	Twisted Rod Bushing
030-0008-01A	Platter Film Footage Label
109-6001-04	Payout Control PCB Diode (1-Amp)
109-6002-04	Power Rectifier (3-Amp)
109-9600-01	Power Line Surge Suppressor
111-0021-03	Payout Control PCB Ass'y
120-0004-01	Variable Transformer
120-0004-99	Variable Transformer Brush
120-0005-04	Pilot Lamp Transformer (24-volt)
129-0050-05	Fail-Safe Terminal Strip
129-0055-04	Platter Motor Receptacle
129-0055-10	Column Receptacle

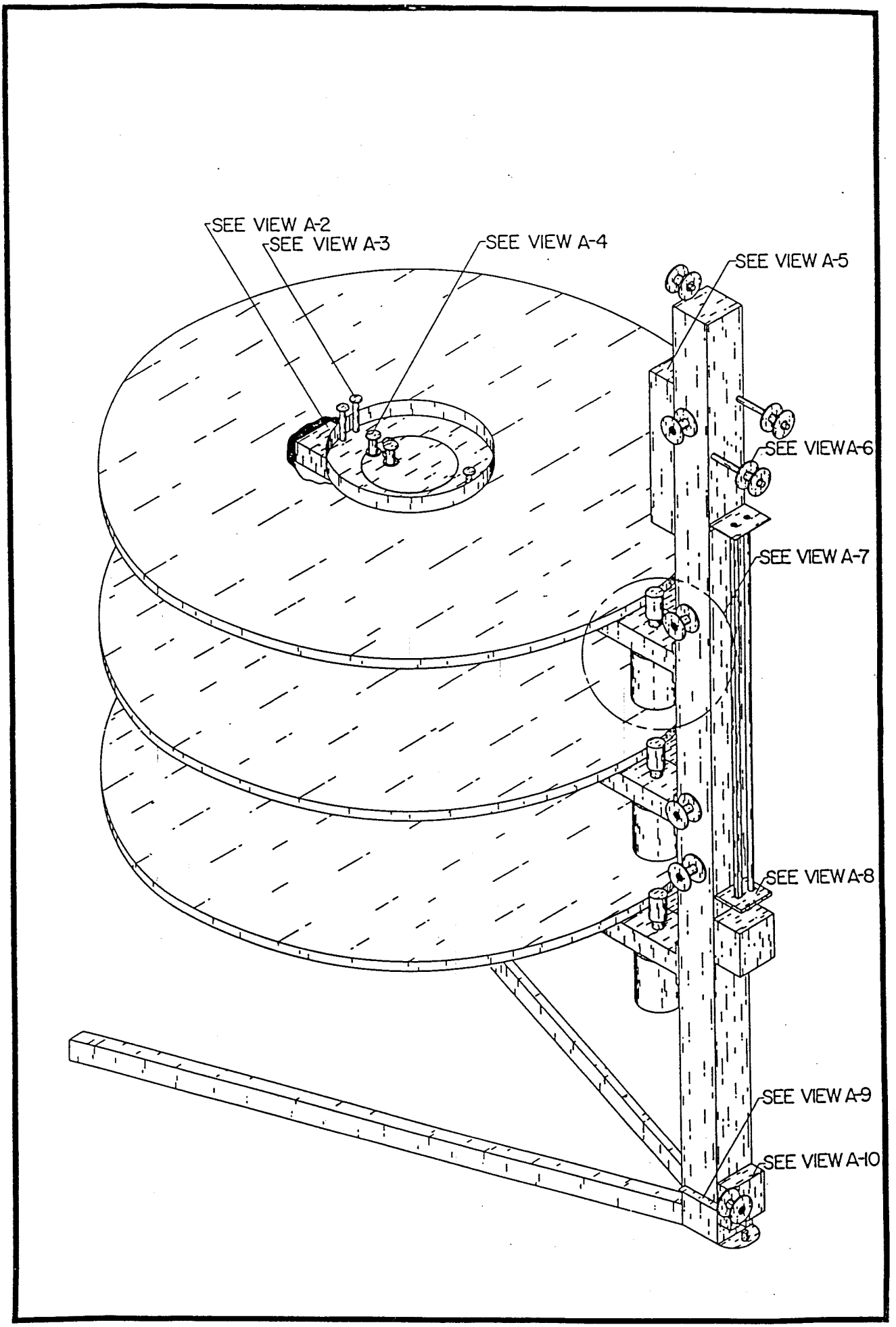
Part #	Description
130-0004-03	Fail-Safe Switch
130-0010-02	Push-Button Switch Ass'y with Covers
130-0010-99	Push-Button Switch Cover (Specify Color)
130-0018-01	Payout Control PCB Reed Switch
134-9001-00	Take-Up Control Fuse Holder
134-9005-01	Pilot Lamp Fuse Holder
134-1102-00	Fuse (1-Amp)
134-1302-00	Fuse (3-Amp)
135-0012-00	Platter Work Lamp
135-0385-00	Push-Button Switch Lamp
136-0003-02	Platter Work Lamp Socket
195-0500-59	50-ohm Power Resistor
195-0251-59	250-ohm Power Resistor
195-0501-59	500-ohm Power Resistor
195-0152-57	1500-ohm Power Resistor
240-0001-01	Platter Bearing
240-0005-03	Payout Control Shaft Bearing
240-0006-01	Take-Up Control Linear Bearing
250-0002-01	Platter Motor with Plug
250-0002-97	Platter Motor Brush Spring
250-0002-99	Platter Motor Brush
300-9905-80	Leveling Foot
303-6900-20	Rubber Bumper
303-9900-16	0.25-inch Shaft Collar
303-9901-16	Take-Up Control Shaft Coupling

APPENDIX IV - SPARE PARTS LIST

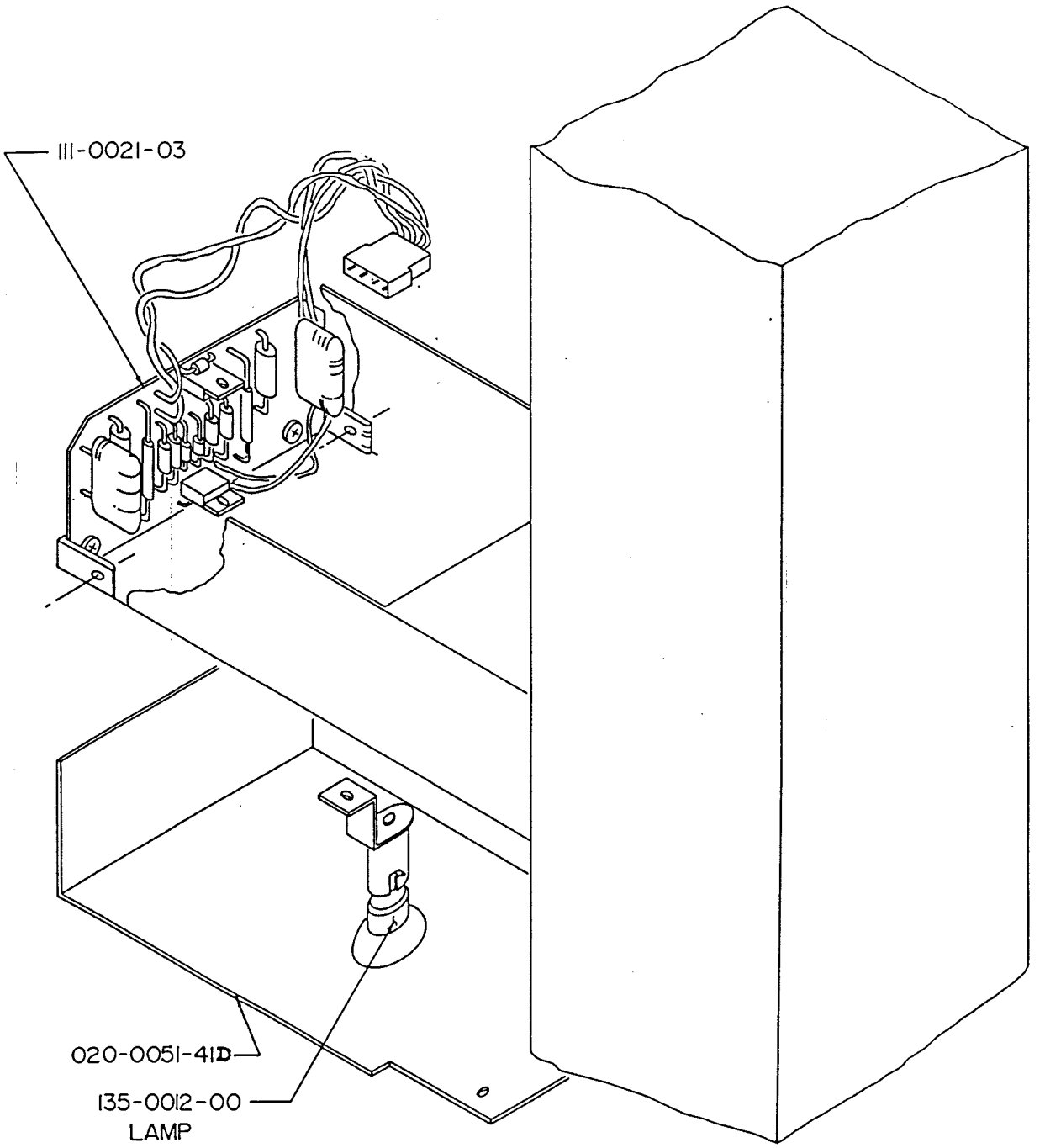
WORK TABLE

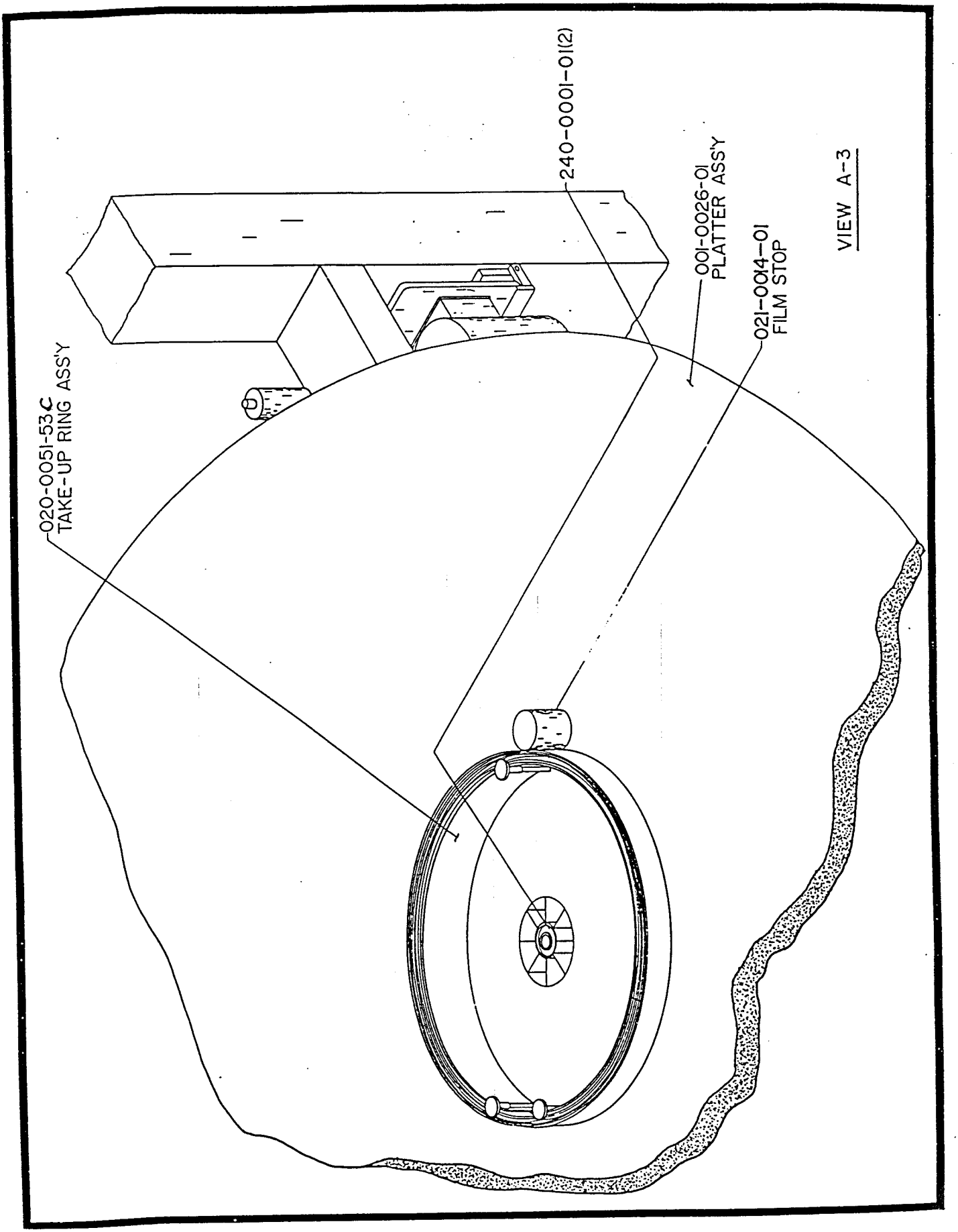
Part # :	Description
001-0023-00	Rewind Dog Ass'y
001-0029-01	2-inch Film Roller Ass'y (with Bracket)
001-0032-01	0.5-inch Make-Up Hub Adapter
001-0036-02	Platter to Work Table Extension (10-foot)
001-0037-01	Work Table Control Panel Ass'y
001-0038-02	Make-Up Shaft Ass'y
001-0046-01	Upper Bracket Extension Add-On Kit
001-0047-01	Work Table Pole Add-On Kit
020-0051-63B	Make-Up Shaft Only
020-0051-64A	Work Table Motor Shaft Extension
020-0051-68	Make-Up Shaft Key Retainer
020-0051-69	Make-Up Shaft Key
020-0051-70A	Upper Roller Bracket
020-0051-71	Lower Roller Bracket
020-0062-10	Work Table Motor Hub (vertical reel)
020-0062-11	0.5-inch, 35mm Motor Shaft (vertical reel)
020-0062-12A	0.31-inch, 35mm Motor Shaft (vertical reel)
021-0015-01	2-inch Film Roller
109-9003-01	Bridge Rectifier
120-0004-01	Variable Transformer

Part #	Description
124-0004-99	Variable Transformer Brush
129-0057-10	Work Table Receptacle
130-0014-01	Power Switch (DPST)
130-0014-02	Brake Switch (DPST-MOM)
130-0014-03	Mode Switch (3PDT-CO)
134-1302-00	Fuse (3-Amp)
134-9003-00	Work Table Fuse Holder
185-0251-59	250-ohm Variable Power Resistor (vertical reel)
240-0008-01	Make-Up Shaft Bearing
250-0006-02	Work Table Motor/Gearbox with Plug
250-0006-98	Work Table Motor Brush
303-9900-16	0.25-inch Shaft Collar

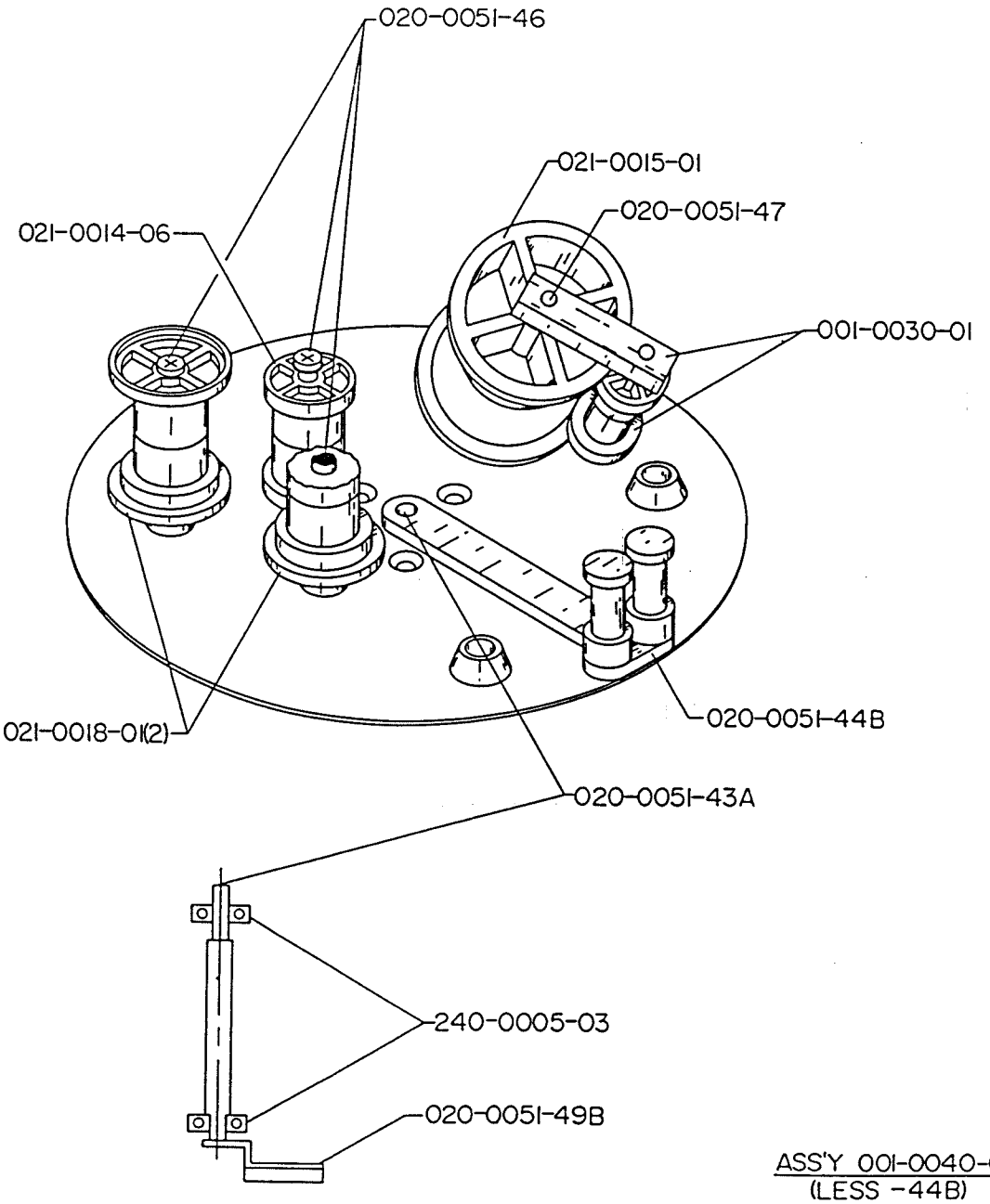

SEE VIEW A-2
SEE VIEW A-3
SEE VIEW A-4
SEE VIEW A-5
SEE VIEW A-6
SEE VIEW A-7
SEE VIEW A-8
SEE VIEW A-9
SEE VIEW A-10

VIEW A-2



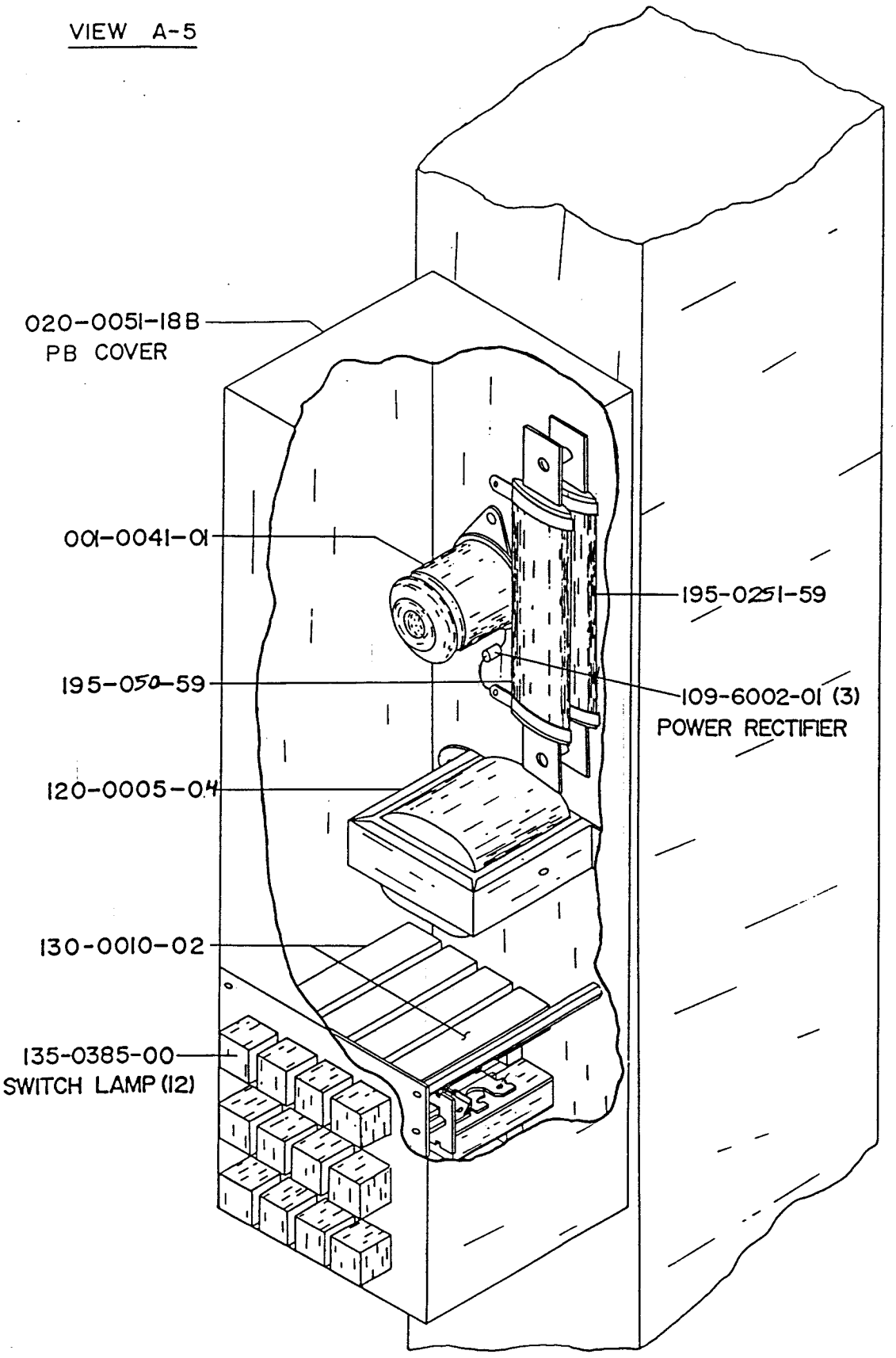

240-0001-01(2)
001-0026-01
PLATTER ASS'Y
021-0014-01
FILM STOP
020-0051-53C
TAKE-UP RING ASS'Y
VIEW A-3

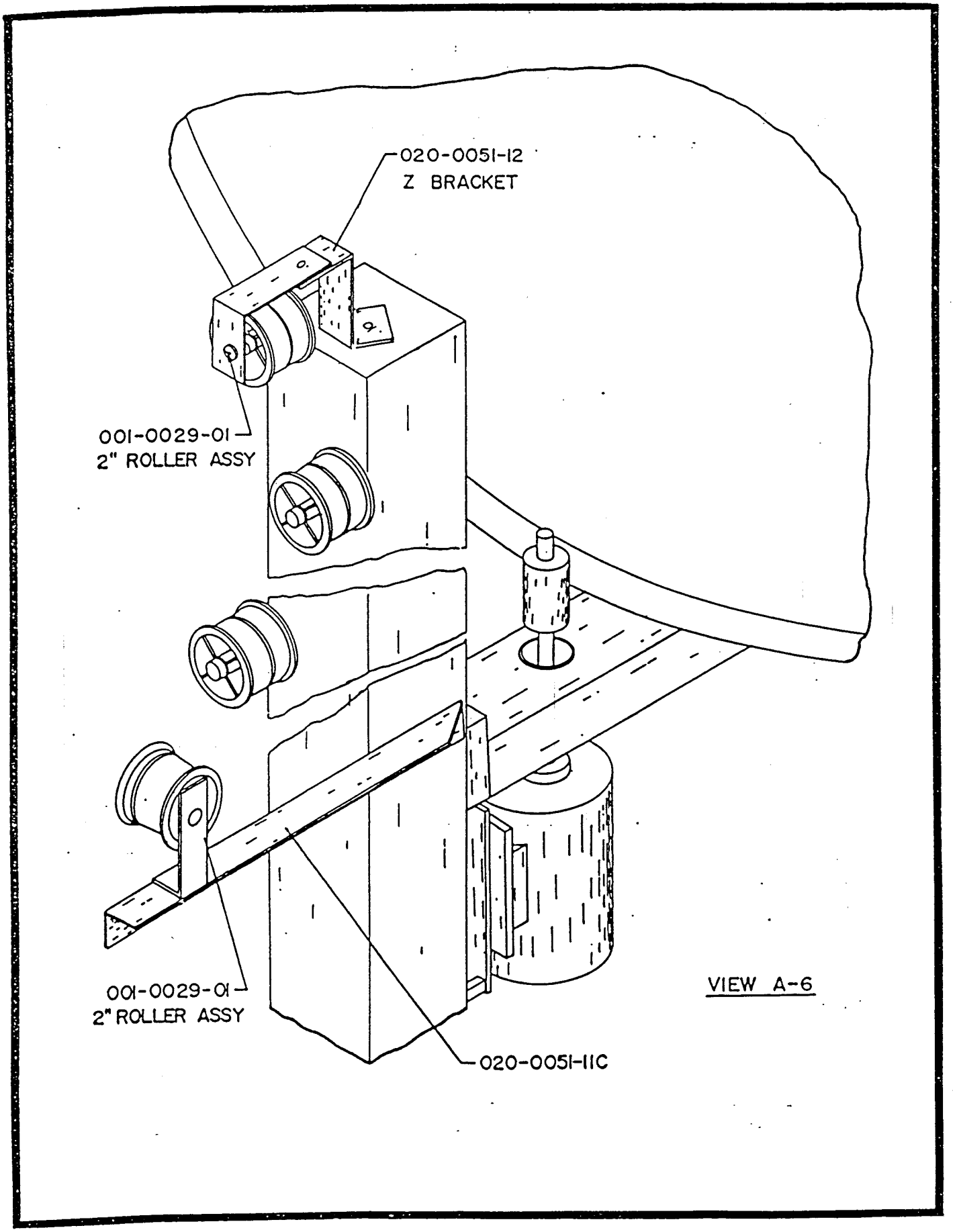
VIEW A-4



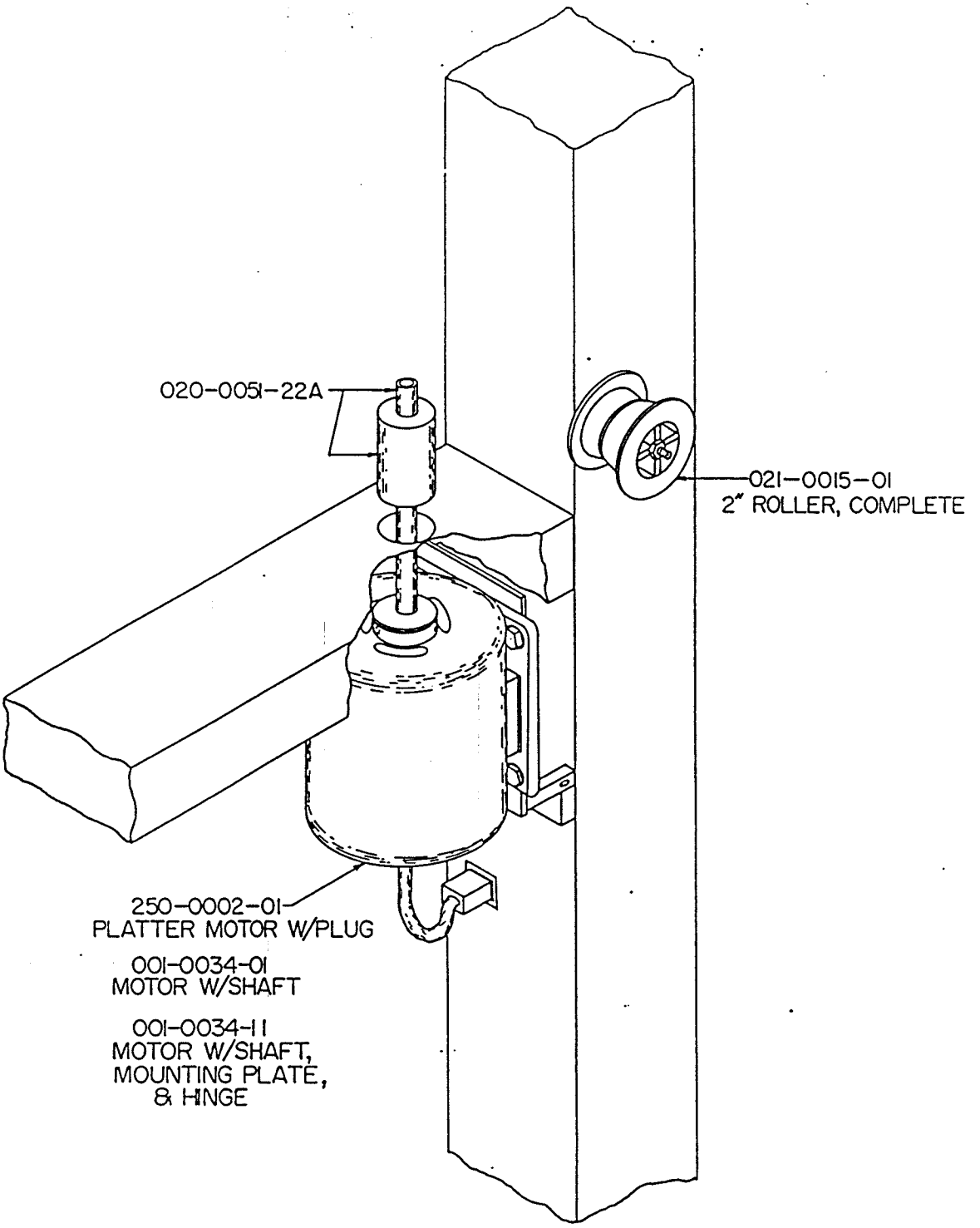
ASS'Y 001-0040-01
(LESS -44B)

VIEW A-5

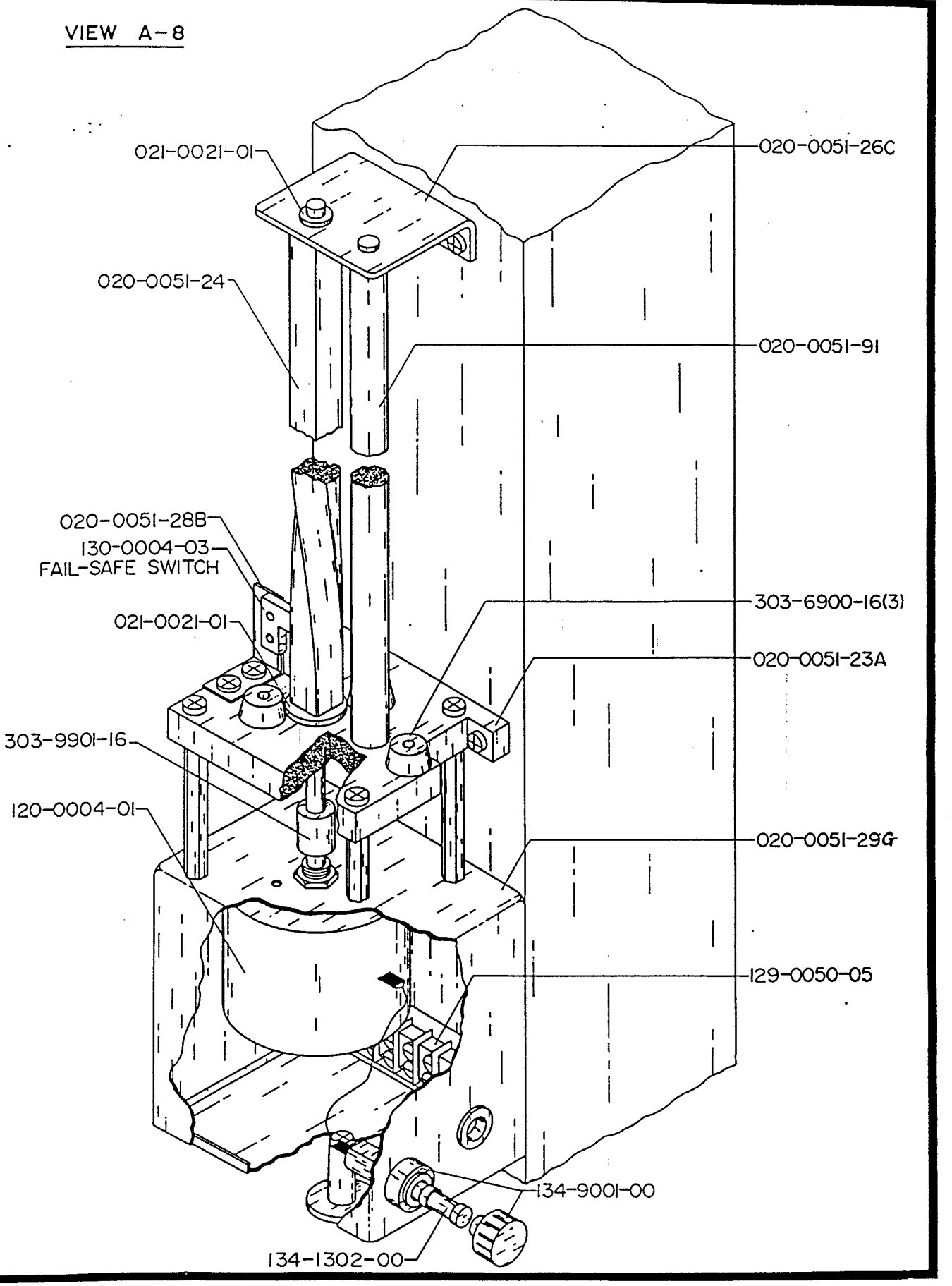

020-0051-18B
PB COVER
001-0041-01
195-0251-59
195-050-59
109-6002-01 (3)
POWER RECTIFIER
120-0005-04
130-0010-02
135-0385-00
SWITCH LAMP (12)

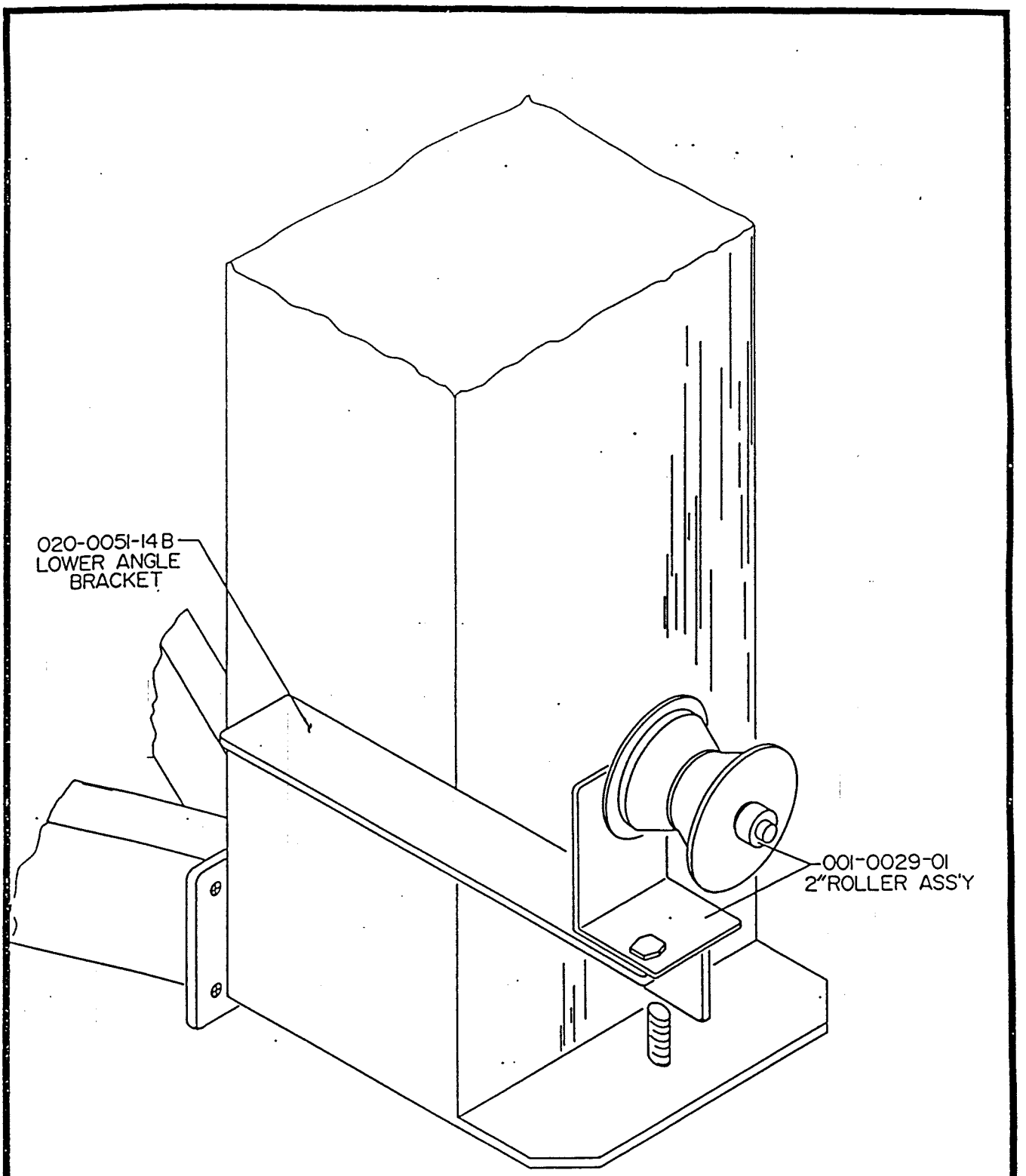

020-0051-12
Z BRACKET
001-0029-01
2" ROLLER ASSY
001-0029-01
2" ROLLER ASSY
020-0051-11C
VIEW A-6

VIEW A-7


020-0051-22A
021-0015-01
2" ROLLER, COMPLETE
250-0002-01
PLATTER MOTOR W/PLUG
001-0034-01
MOTOR W/SHAFT
001-0034-11
MOTOR W/SHAFT,
MOUNTING PLATE,
& HINGE

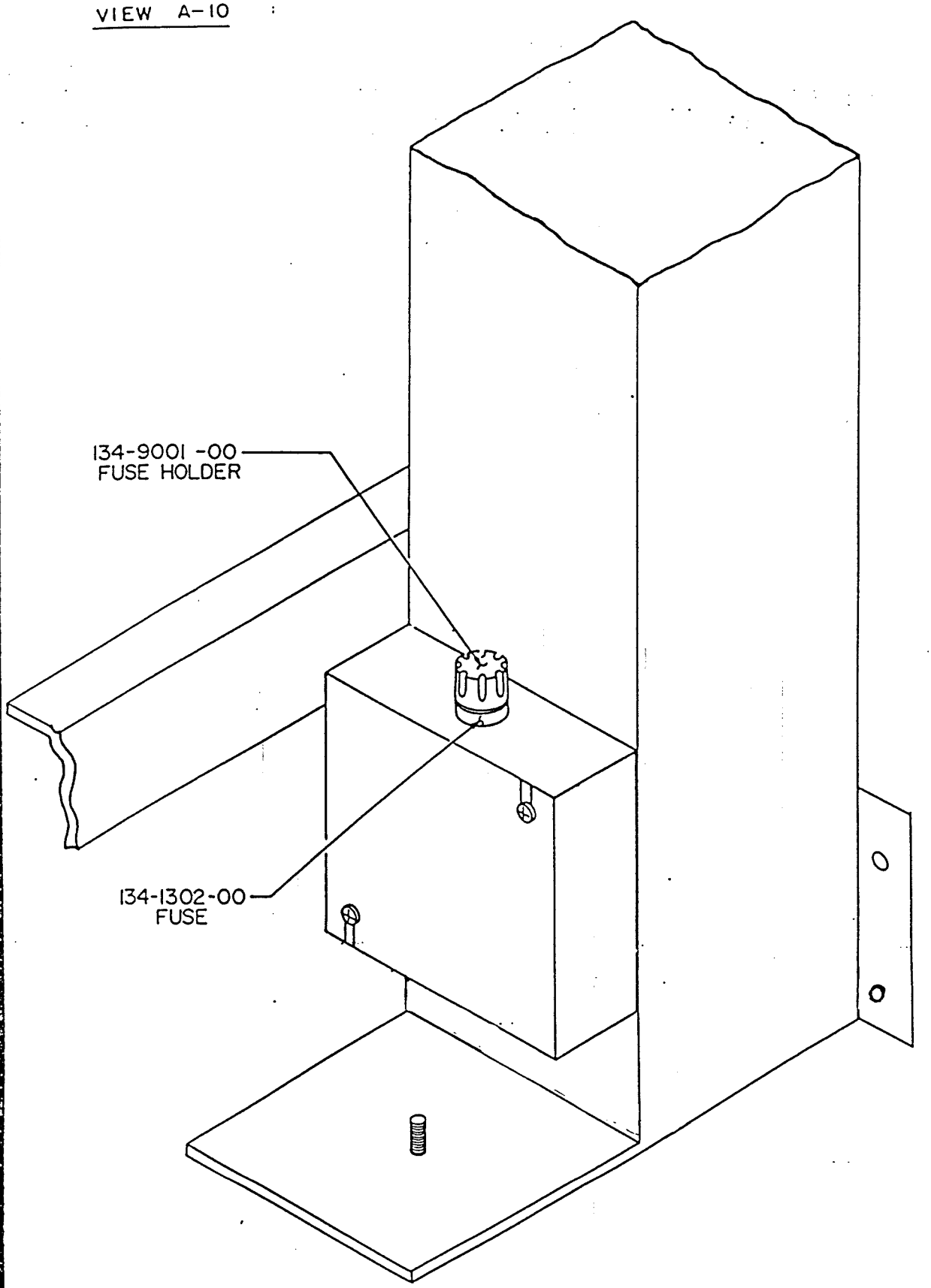
VIEW A-8

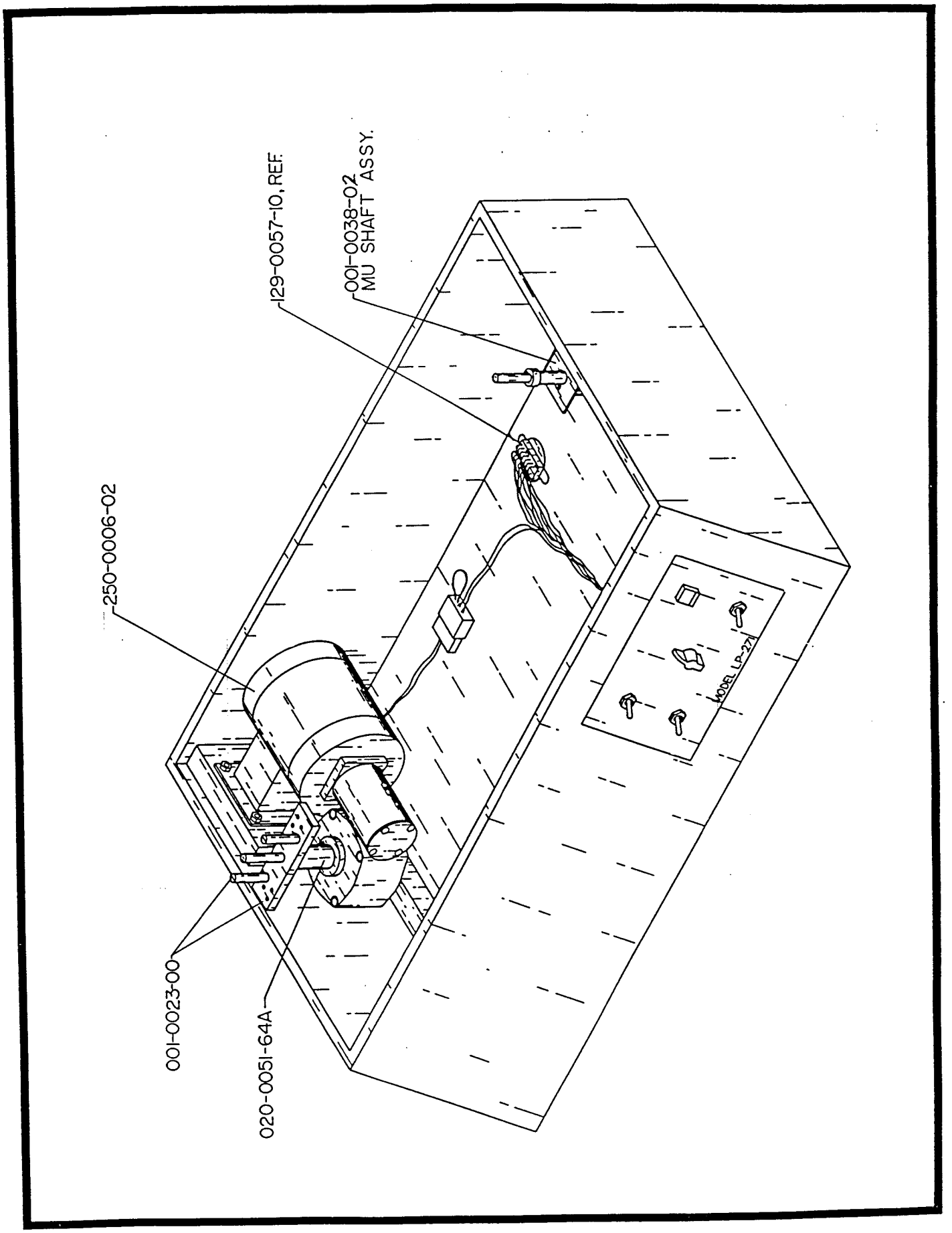

021-0021-01
020-0051-26C
020-0051-24
020-0051-91
020-0051-28B
130-0004-03
FAIL-SAFE SWITCH
021-0021-01
303-6900-16(3)
020-0051-23A
303-9901-16
120-0004-01
020-0051-29G
129-0050-05
134-9001-00
134-1302-00

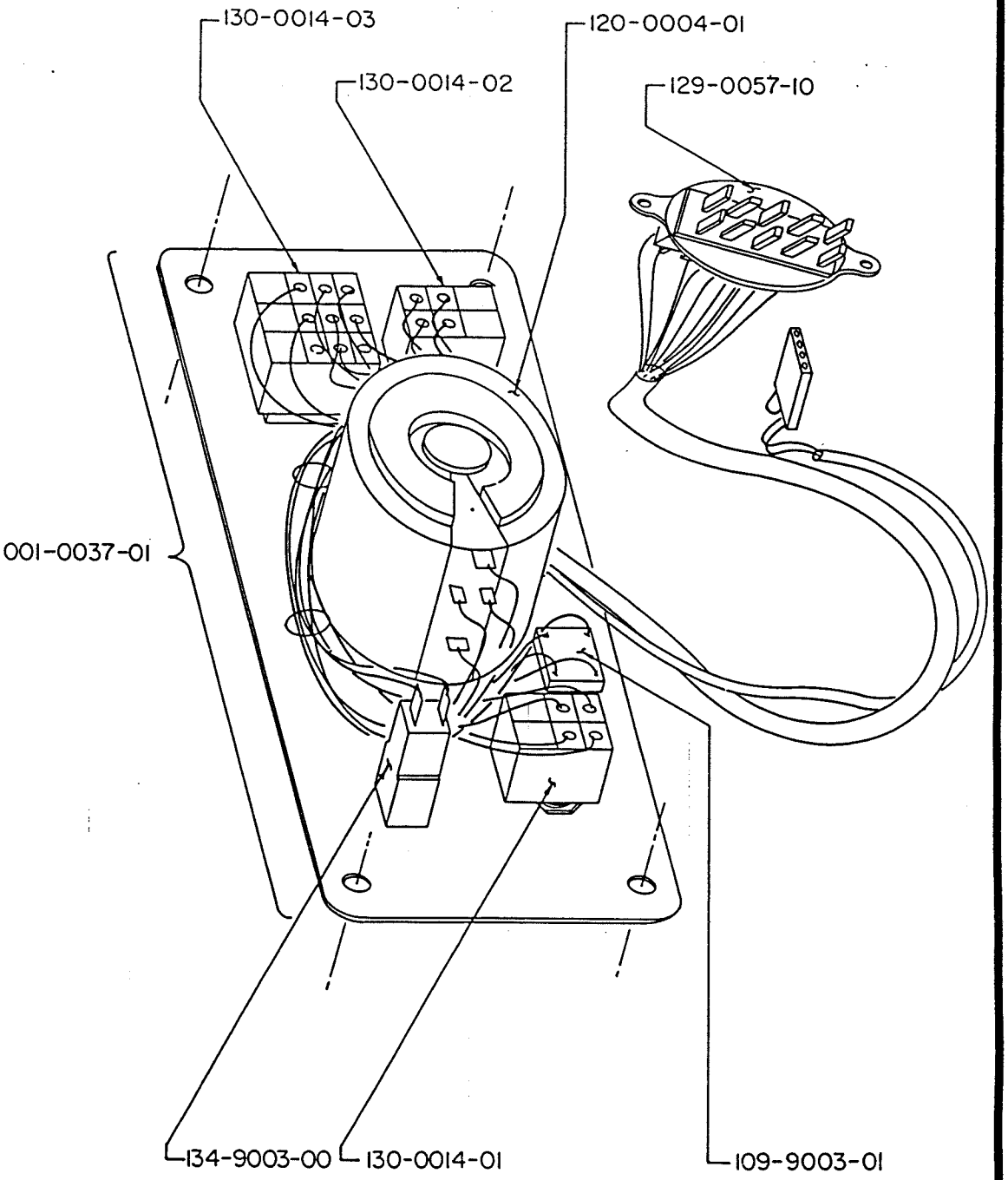


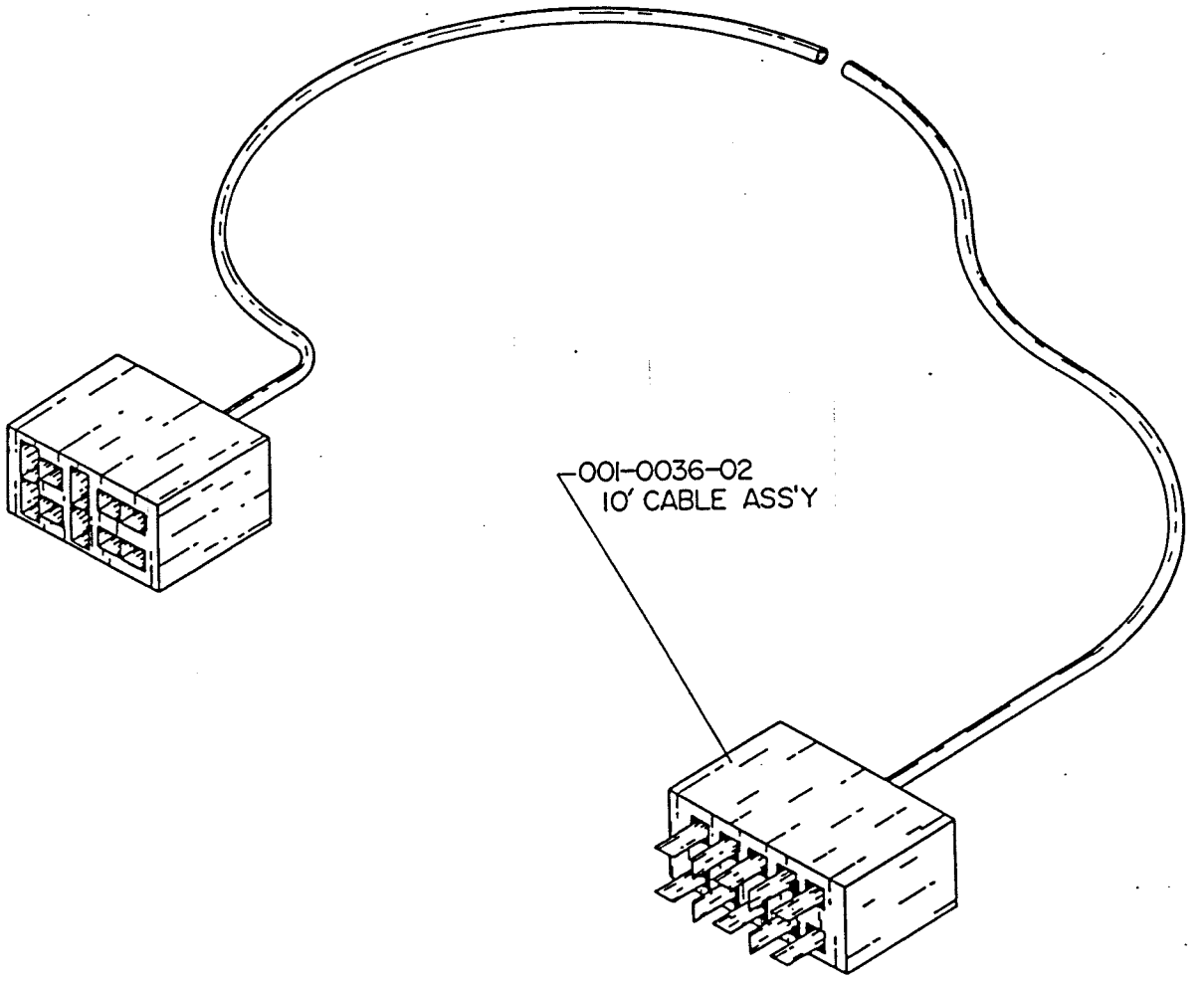
VIEW A-9

VIEW A-10




129-0057-10, REF
001-0038-02
MU SHAFT ASSY.
250-0006-02
001-0023-00
020-0051-64A
MODEL LP-27


130-0014-03
130-0014-02
120-0004-01
129-0057-10
001-0037-01
134-9003-00
130-0014-01
109-9003-01


-001-0036-02
10' CABLE ASS'Y