



TR-1000 Recorder

Operating Instructions

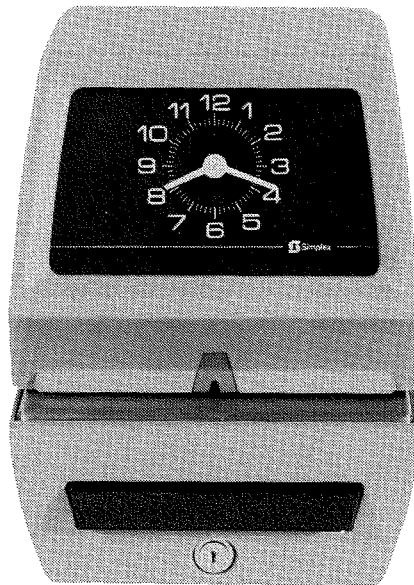
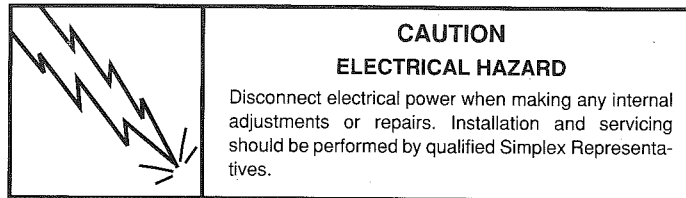


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MAIN SPECIFICATIONS:

- Power Requirements: 120/240V, 50/60 Hz; 0.2 Amp continuous, 10 Amp intermittent. TAM available in 120V models only. 24 VDC (from master control) for self regulating models.
- Environmental: 35°F to 120°F (2°C to 49°C); up to 90% relative humidity (non-condensing); not to be used in an explosive atmosphere.
- Printing: Spool ribbon
- Typewheels:
 - (A) Day of week, 1-12 Hours, Minutes
 - (B) Day or week, 0-23 Hours, Hundredths
 - (C) Month, Date, 1-12 Hours, Minutes
 - (D) Month, Date, 0-23 Hours, Hundredths

Other typewheels available on request
- Dimensions: Width, 9-1/2 in (24.1 cm); depth 7 in (17.1 cm); height, 12 in (30.5 cm)
- Weight: 17 lbs (7.7 kg)
- Mounting: Shelf or wall

BEFORE INSTALLATION

When you receive the recorder, inspect it for signs of damage that may have occurred during shipping. If you detect damage, you must immediately place a claim with the carrier. If you know the extent of the damage, inform the carrier.

If the recorder is undamaged, check to see that a small envelope containing two keys is enclosed.

HOW TO REMOVE THE RECORDER'S COVER (Figure 1)

1. Insert one of the keys supplied with the recorder into the recorder's keyhole. Then unlock the case by turning the key 90° clockwise.
2. Pull the bottom of the cover out as shown. Then lift the cover straight up and off the recorder.
 - Reverse this procedure to install the cover.

HOW TO MOUNT THE RECORDER ON A WALL (Figures 2 and 3)

Note 1: Unless the recorder is to be hardwired to its power source, mount the recorder within 6 ft (1.8 m) of a *grounded* wall outlet.

- For recorder power requirements, check the data plate on the recorder's bottom.

Note 2: System-timed and signal-controlling recorders must be hardwired.

- See page 12 for instructions on hardwiring the recorder in accordance with the National Electrical Code.
- Local building, electrical, and health codes apply.

A. To mount the recorder on a wooden wall:

Hang the recorder on the wall by screwing a screw from the shipping packet through hole A and into the wall. Then, after leveling the recorder, use the remaining screws through holes B and C to attach the recorder firmly to the wall.

B. To mount the recorder on a plasterboard wall:

Hang the recorder on the wall by screwing a screw from the shipping packet through hole A and into a wall stud. Then level the recorder, install plastic anchors behind holes B and C, and use the remaining screws to attach the recorder firmly to the wall.

C. To mount the recorder on a concrete wall:

Secure an appropriately-sized piece of 3/4 in. (18.95 mm) plywood to the wall. Then attach the recorder to the plywood in accordance with the instructions for mounting on a wooden wall.

HOW TO CONFIGURE THE RECORDER'S PRINT MECHANISM (Figure 4)

Note: As delivered, the recorder prints both automatically (prints when you insert a card fully into the recorder) and manually (prints when you push the print bar).

- To configure for automatic print only, remove the red wires from the "manual print switch" by disconnecting connector A.
- To configure for manual print only, open the yellow wire by separating connectors B.

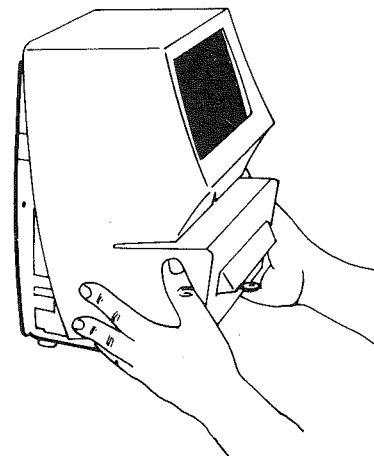


FIGURE 1

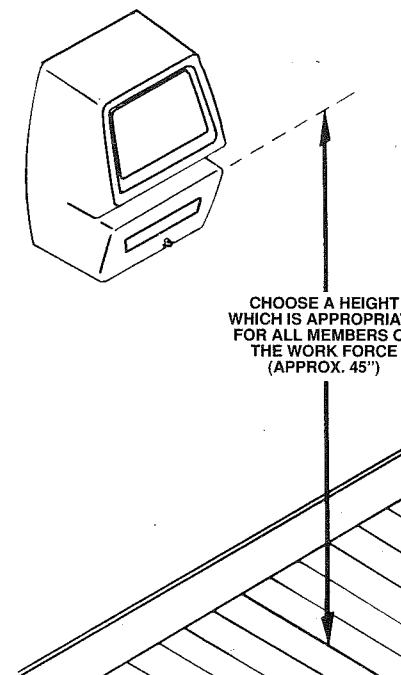


FIGURE 2

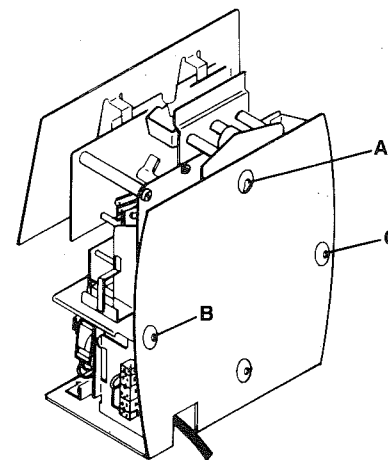


FIGURE 3

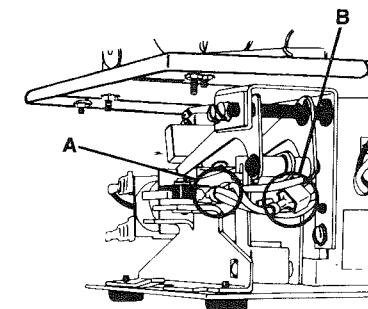


FIGURE 4

HOW TO CONNECT POWER TO THE RECORDER

THE RECORDER MUST BE GROUNDED, AND IT MUST BE POSSIBLE TO EASILY DISCONNECT THE POWER SOURCE WHEN SERVICING THE RECORDER.

Either plug the recorder into a *grounded* wall outlet or hardwire the recorder in accordance with the wiring diagram inside of the recorder's cover.

- See page 12 for information on hardwiring the recorder.

HOW TO OBTAIN A TIME REGISTRATION

Note: Ensure that power to the recorder is ON.

Under the red-framed notch on the recorder's front, position the area of the card where you want the time printed. Then:

- If the recorder has been configured for automatic print, slide the card into the recorder until the recorder prints.
- If the recorder has been configured for manual print, slide the card into the recorder as far as possible. Then touch the print bar (the black bar found under the card shelf).

HOW TO SET THE RECORDER TO TIME

QUICK ADVANCE (Figure 5 or Figure 6)

1. Take a sample registration and compare the time printed with the time shown on the dial.
2. If necessary, synchronize the hands with the typewheels as follows:
 - A. Loosen the minute hand anchor screw, position the hand to agree with the minute printed, and tighten the anchor screw.

Note: If the minutes typewheel indicates hundredths of minutes, 9:15 prints as 09 25, 9:30 prints as 09 50, 9:45 prints as 09 75, etc. (Refer to *Decimal Equivalents of Minutes* chart shipped with the recorder.)

- B. Manually move the hour hand to agree with the hour printed.

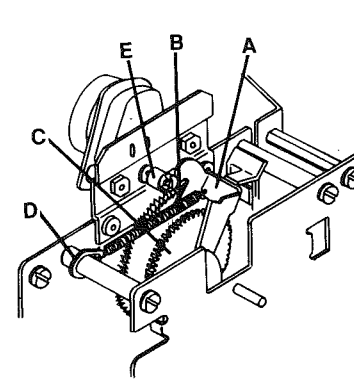
Note: The hour hand is friction-fitted and can be safely moved in either direction.

3. Rotate the top of gear C toward spring anchor D until the dial is five minutes slow (reads 10:20 at 10:25).
4. Punch the recorder and verify that the minute and hour typewheels are also five minutes slow. Then set the recorder to the current minute and second.

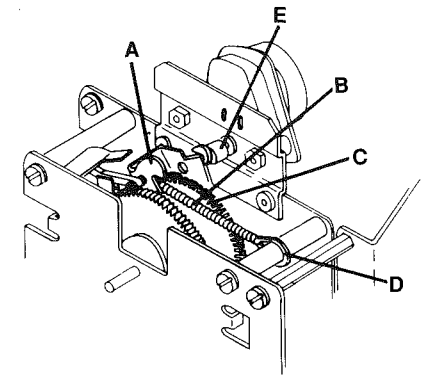
TO THE CURRENT MINUTE AND SECOND

Synchronous-Timed Recorder (Figure 5 or Figure 6)

1. With power applied to the recorder, wait until lever A falls from cam E. Then immediately remove power.
2. Using an accurate time source as a reference, apply power to the recorder at 00 seconds.
3. Operator lever A until the recorder dial reads the current time.



Right-hand Print
FIGURE 5



Left-hand Print
FIGURE 6

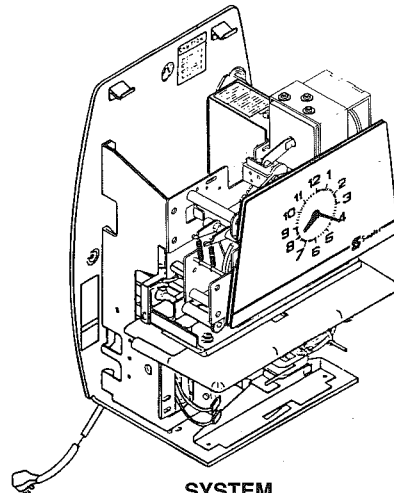
System-Timed Recorder (Figure 7)

The Master Time Center will correct the recorder during the next hour.

TAM-Timed Recorder (Figure 8)

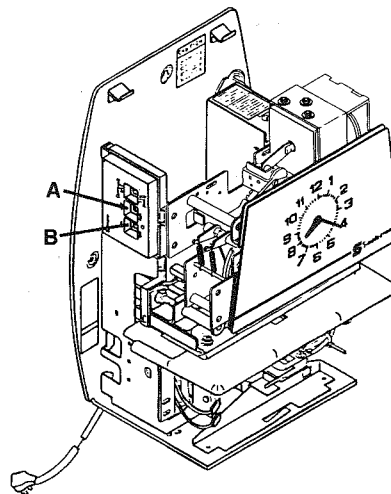
1. Ensure that switch A is in the RUN position and that switch B is turned OFF.
2. With power applied to the recorder and using an accurate time source as a reference, at 00 seconds transfer switch B to ON.

- Transfer switch A to its ADV position until the dial reads the current time. Then return the switch to its RUN position.



SYSTEM
TYPESECTION

FIGURE 7



TAM
TYPESECTION

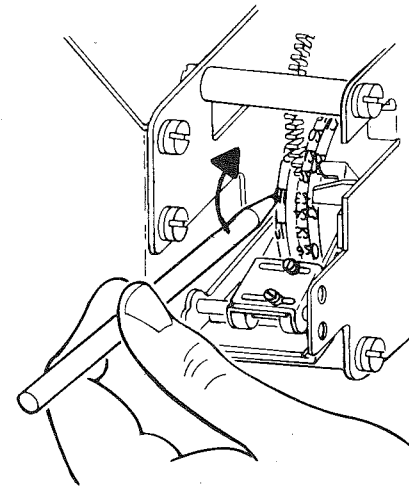
FIGURE 8

HOW TO SET THE RECORDER'S TYPEWHEELS

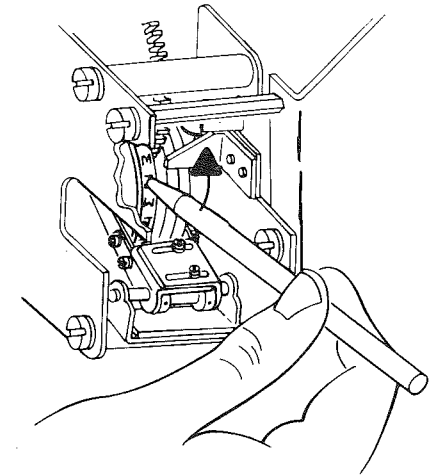
DAY AND DATE TYPEWHEELS (Figure 9 or Figure 10)

Note: A *date* typewheel contains 31 days. Therefore, this typewheel must be manually advanced after any month which contains less than 31 days.

- Take a sample registration and check the day or date printed.
- Using a pencil or similar tool, advance the typewheel to the current day or date as shown in Figure 9 or Figure 10. A click will be heard for each day or date the typewheel advances. Thus, to advance the wheel three days, move it three clicks.



Right-hand Print
FIGURE 9



Left-hand Print
FIGURE 10

MONTH TYPEWHEEL (Figure 11 or Figure 12)

Note: Unlike the other typewheels — which advance automatically — the month typewheel must be set at the start of each month.

- Pivot the lock lever away from the typewheel.
- Rotate the typewheel to the desired position.
- Lock the typewheel in place by lowering the tip on the lever over a tapered projection on the wheel.

YEAR SEGMENT FOR LEFT-HAND PRINT RECORDER (Figure 13)

- Remove power from the recorder.
- Remove screws A and B.
- Move segment C to the desired year.
- Start — but do not tighten — screws A and B.
- Hold upward pressure against segment C and, at the same time, securely tighten screw B. Then tighten screw A.

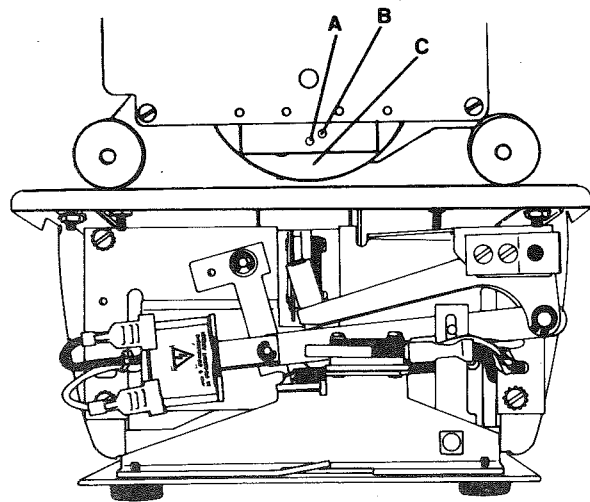
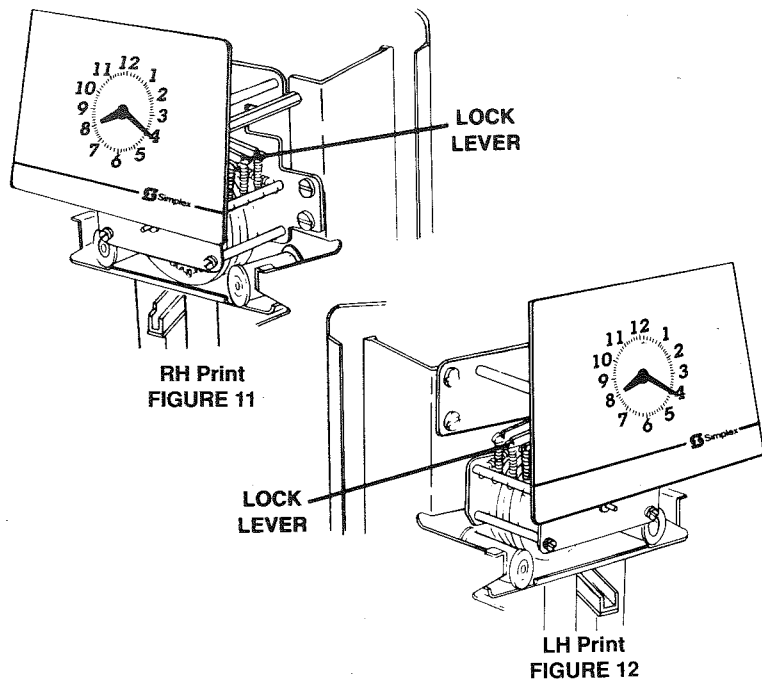


FIGURE 13

YEAR SEGMENT FOR RIGHT-HAND PRINT RECORDER (Figure 14)

1. Remove power from the recorder.
2. Remove the dial assembly. (Three screws secure the dial assembly to the typesection.)
3. Remove the typesection. (Four screws secure the typesection to the chassis.)
4. Remove screws A and B.
5. On segment C, align desired year characters with the print field type characters.
6. Press the year segment against the typeshaft collar (not visible in Figure 14), and insert and tighten screws A and B.
7. Install the typesection.
8. Install the dial assembly and (if necessary) set the hands to agree with the typewheels.

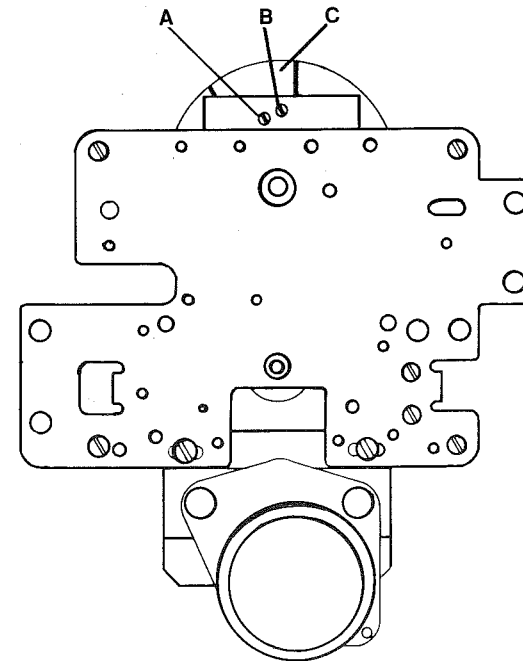


FIGURE 14

HOW TO CHANGE THE RIBBON (Figure 15)

1. Remove the old ribbon by pulling it straight off its spindles.
2. Align the slots on the back of the replacement ribbon's spools with the pins on the ribbon spindles. Then push the spools fully onto their spindles.
 - The ribbon is not properly installed unless its spools snap into place.
3. Insert the ribbon into forks A and slide the ribbon toward the rear so that it lies flat on shelf B.
 - Grommet C must be outside of forks A.
4. Wind the excess ribbon onto the spools *without folding it*.
 - Ensure that the ribbon lies flat and that it extends beyond the back typewheel.

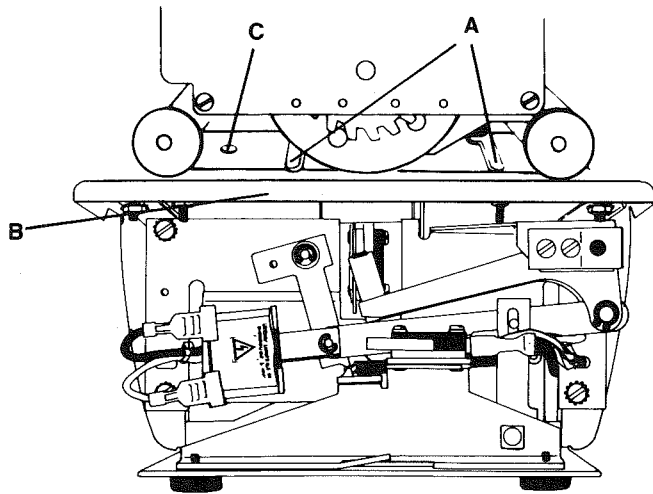


FIGURE 15

HOW TO REPLACE THE TIME ACCUMULATOR MODULE (TAM) BATTERY

Note: The Time Accumulator Module (TAM) uses a 9-volt battery for standby power. Replace the battery after one year of normal operation or 250 hours of standby operation. In event of repeated power outages, replace the battery more frequently.

To Replace (see Figure 16)

1. Remove AC power from the recorder.
2. Turn the TAM's ON/OFF switch to the OFF position.
3. Remove the old battery from its holder inside the recorder by unsnapping the battery from its harness. Then snap the harness onto the replacement battery.
4. Place the battery inside the battery holder.

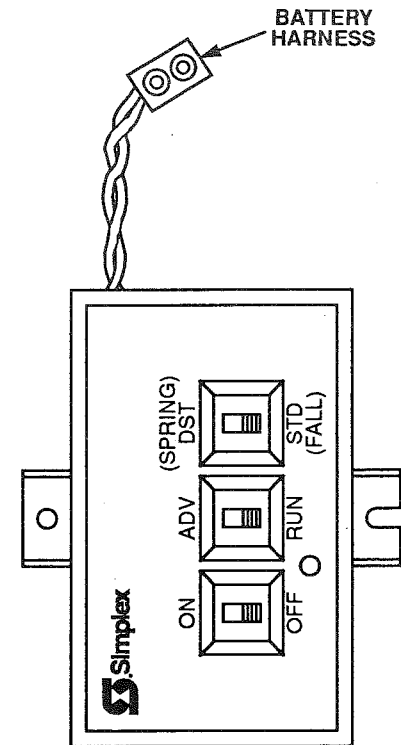


FIGURE 16

HOW TO SET TO AND FROM DAYLIGHT SAVING TIME

TO DST

- For system recorder (see Figure 7 on page 6), set system to DST from the Master Time Controller.
- For synchronous-timed recorder (see Figure 5 or 6 on page 5), advance recorder to DST by manually operating minute feed lever A.
- For TAM-equipped recorder (see Figure 8 on page 6), transfer the TAM's upper switch to its SPRING position.

FROM DST

- For system recorder (see Figure 7 on page 6), set system to Standard Time from the Master Time Controller.
- For synchronous-timed recorder (see Figure 5 or 6 on page 5), remove power for 65 minutes. Then set the recorder to the current minute and second (see page 5).
- For TAM-equipped recorder (see Figure 8 on page 6), transfer the TAM's upper switch to its FALL position.

HOW TO HARDWIRE THE RECORDER

Note: These instructions are intended for the use of a licensed electrician under the provisions of the National Electrical Code.

1. Remove and discard the power cord that comes with the recorder.
2. Remove the knockout(s) from the bottom of the recorder.
 - The knockouts can accommodate 3/4 in. (1.9 cm) conduit.
3. In accordance with the wiring diagram (found inside the recorder's cover), connect the recorder to an uninterrupted power source, signals, and time system circuitry as required.