

### 37 REPERFORATOR-TRANSMITTER (RT) CABINET

#### DESCRIPTION AND OPERATION

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2.01 The basic cabinet (Figure 1) includes these facilities and features.

#### 1. GENERAL

1.01 This section describes the features and facilities of the reperforator-transmitter (RT) cabinet and gives the purpose and operation of its various mechanisms (Figure 1). The section is reissued to incorporate engineering changes and comments received on Issue 1. Since only a limited distribution was made on Issue 1, marginal arrows have been omitted.

1.02 The basic purpose or function of the reperforator-transmitter (RT) cabinet is to provide protection and operational facilities for the components which it houses. When the RT cabinet is outfitted with a reperforator (punch), transmitter (reader), reperforator drive motor, electrical service unit, etc, it becomes an RT Module used for tape preparation and transmitting in conjunction with the 37 Automatic Send-Receive (ASR) Set.

1.03 References in this section to left or right, top or bottom, front or rear, etc, refer to the cabinet in its normal operating position as viewed by the operator from the front of the cabinet (Figure 1).

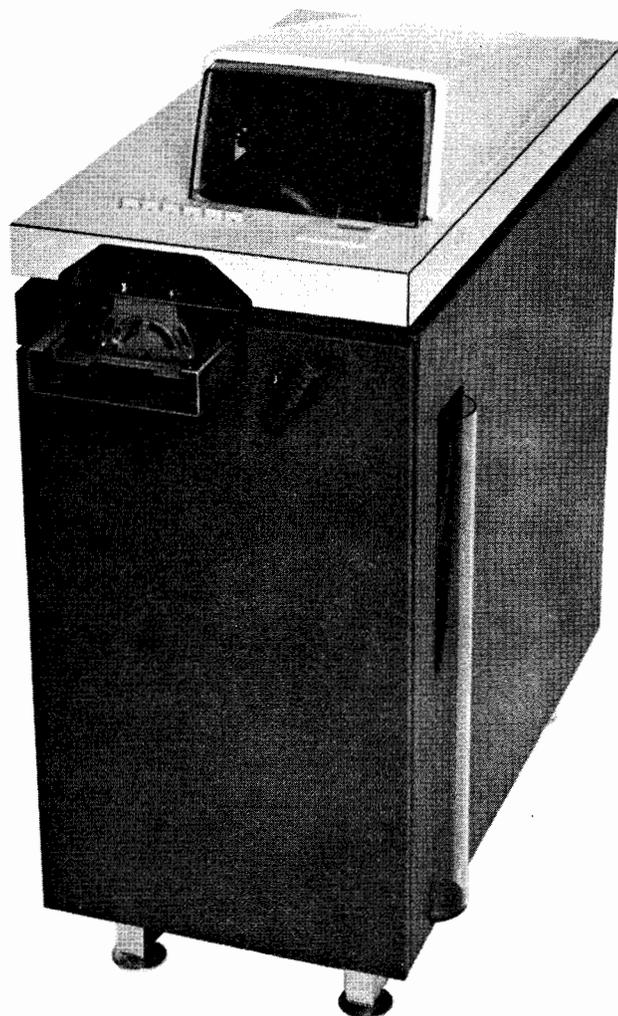


Figure 1 - Reperforator-Transmitter (RT) Cabinet

SECTION 574-327-100TC

- (a) A base for mounting and operating a CX-type reader unit including a motor unit and drive parts (belt and pulleys). The reader unit base is fastened to its mounting bracket on the cabinet top with vibration dampers.
- (b) A base for mounting and operating a re-perforator including a motor unit and drive parts, tape supply container and 8-inch diameter tape reel, and low-tape alarm. The re-perforator base is mounted on vibration isolators.
- (c) A re-perforator cover equipped with a clear plastic window and hinged at the left to permit access to the re-perforator and tape supply.
- (d) A bank of six pushbutton-type switches to control the operating components of the cabinet.
- (e) A tight-tape device including a tight-tape switch and guide roller for use with the reader unit.
- (f) Mounting facilities for an electrical service unit within the lower portion of the cabinet.
- (g) A chad container with the capacity equivalent to the chad produced by two 8-inch diameter rolls of randomly punched tape.
- (h) A cabinet door without tape handling facilities.

2.02 The basic cabinet is illustrated and described in Figures 2 and 3.

**TAPE HANDLING DOORS**

2.03 Two variations of the basic cabinet (Figures 1, 2 and 3) are available to provide tape handling facilities. These facilities are provided by two different tape handling doors which are described below and in Figures 4 and 5.

(a) Door with Single Winder — The single winder occupies the upper position on the cabinet door and is used to wind tape from the reader unit. The tape handling door also includes a winder switch and a tape sensor to control the operation of the winder and a tape tensioner (guide post and pressure pad). Latching the tape sensor permits a free tape path for easy threading. The winder incorporates an antibacklash brake to prevent

slack tape between tensioner and reel when the motor is turned off.

(b) Door with Double Winder — The power winders on this door are identical to the winder described above except for the tape sensor associated with the lower winder which is equipped to also operate as a power unwinder. A switch permits selection of winder-unwinder modes. The winders have separate tape sensors, guide posts, and pressure pads. The upper winder is used to wind tape from the reader unit. The lower winder is used to wind tape from the re-perforator, for fast reel-to-reel rewinding, and for power unwinding of tape from a message reel to the reader unit.

2.04 The tape reel used with either winder has a tape-insertion slot for easy tape threading and an opening that permits the wound message to be removed from the core for use on an inside unwinder. The front flange of the reel may be separated from the rear reel permitting removal of tape with the rear reel remaining on the winder.

2.05 Cabinets with tape handling doors may be equipped with a 75 foot capacity tape storage bin and a tape director which routes re-perforator message tape into the bin or out of the cabinet through either of two tape exits.

**TECHNICAL DATA**

**Weight**

Basic unit . . . . .	84 pounds
With tape handling doors, intermediate tape storage . . . . .	103 pounds
Height . . . . .	26-1/2 inches
Width . . . . .	12 inches
Depth (basic unit) . . . . .	23-3/32 inches
Tape winder capacity . . . . .	8-inch dia. roll
Tape winder operating speed . . . . .	up to 1200 wpm
Re-perforator tape supply . . . . .	8-inch dia. roll

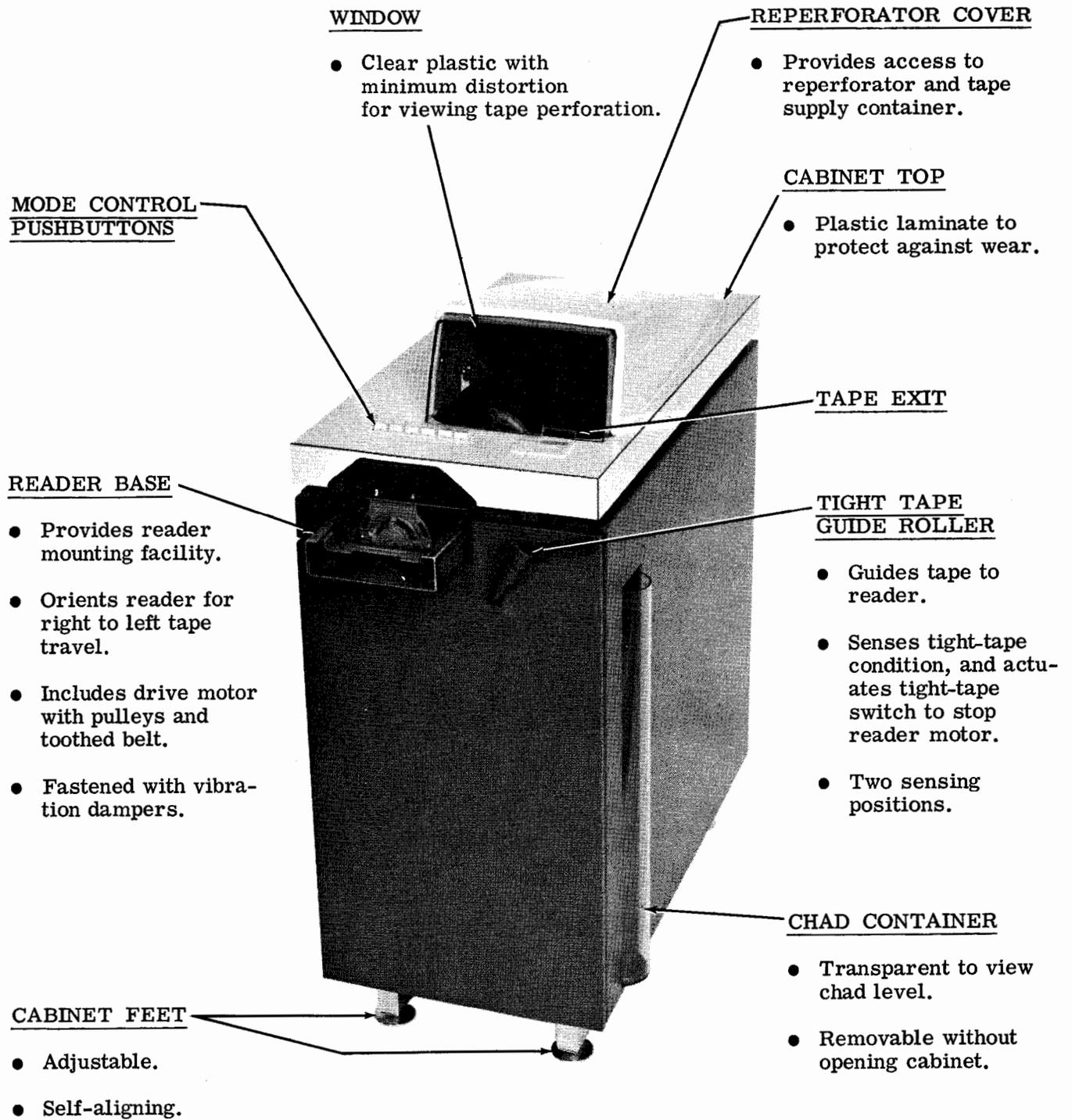
**Motor Unit**

**Reader Drive Motor**

Rating . . . . .	1/150 hp
Type . . . . .	capacitor start, synchronous
Operating voltage . . . . .	115 volts ±10%, single-phase, 60/50 Hz ac

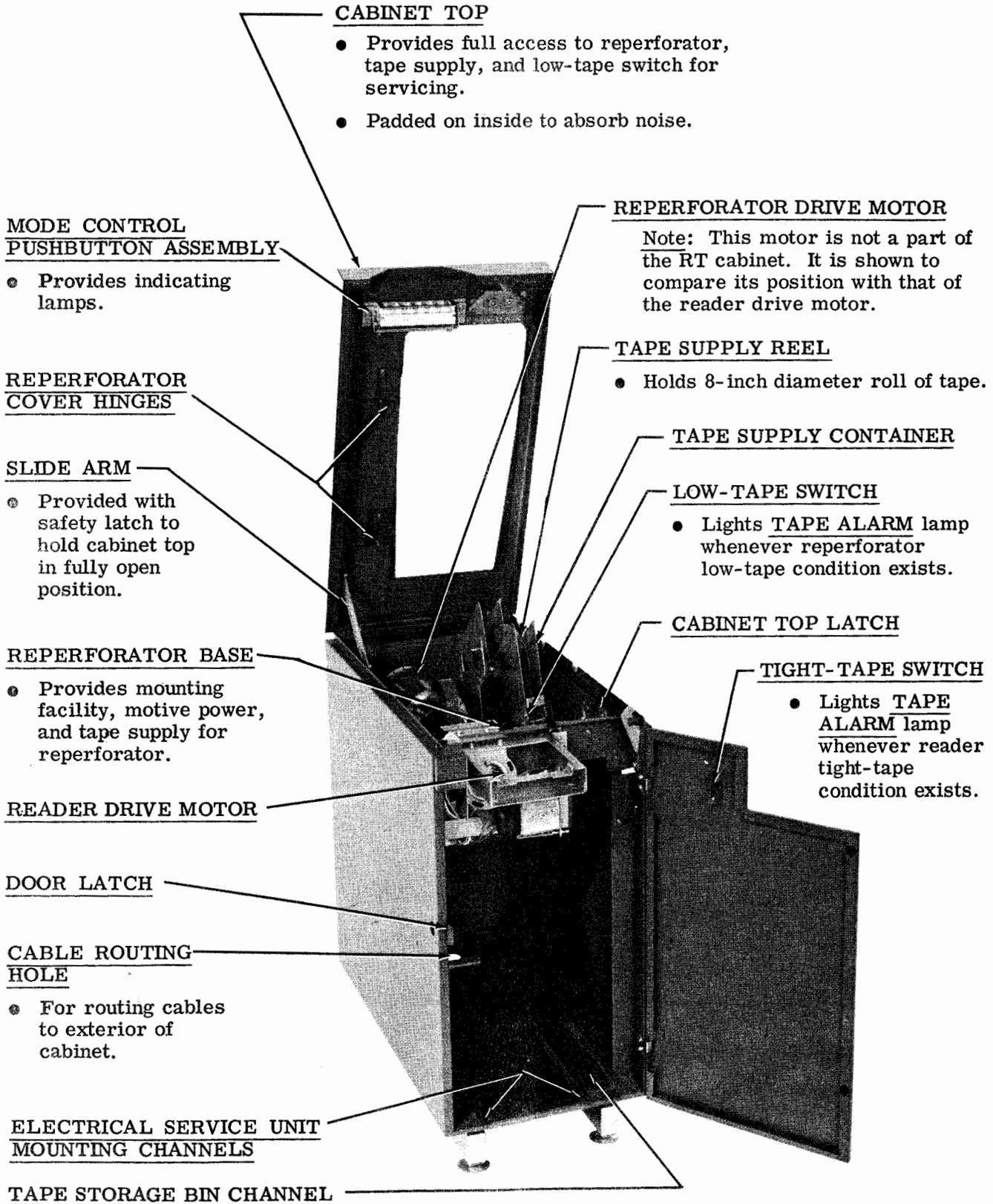
**Speed**

60 Hz . . . . .	1800 rpm
50 Hz . . . . .	1500 rpm
Capacitor . . . . .	4 mfd



(Right Front View)

Figure 2 - Cabinet with Plain Door



(Left Front View)

Figure 3 - Cabinet with Door and Top Opened

DRIVE DETENT

- Engages tape reel when moved into reel drive slot.
- Permits tape reel to free wheel in disengaged position (45° from spindle axis).

PRESSURE PAD

GUIDE POST

READER WINDER SWITCH

- Applies power to motor through reader winder sensing switch.

REPERFORATOR WINDER MODE SWITCH

- Directs power to reperforator motor through appropriate sensing switch.
- In U position, power is applied through unwind mode sensing switch.
- In OFF position, all power is removed from motor.
- In W position, power is applied through wind mode sensing switch.

READER TAPE SENSOR

- Controls power to reader winder motor by actuating reader winder sensing switch.
- Includes release button for unlatching tape sensor.

TAPE CHUTE CONTROL BUTTON

TAPE GUIDE

- Directs tape from reperforator over cabinet top, or through tape chute and tape exit, or through tape chute and into intermediate storage bin.
- Position determined by tape chute control button.

TAPE EXIT

TAPE CLIP

- Provides a place to hang leading end of tape awaiting further operation.
- Facilitates keeping tape clean.
- Frees operator from close attendance while tape being reperforated.

AUXILIARY TAPE GUIDE ROLLER

TAPE REEL

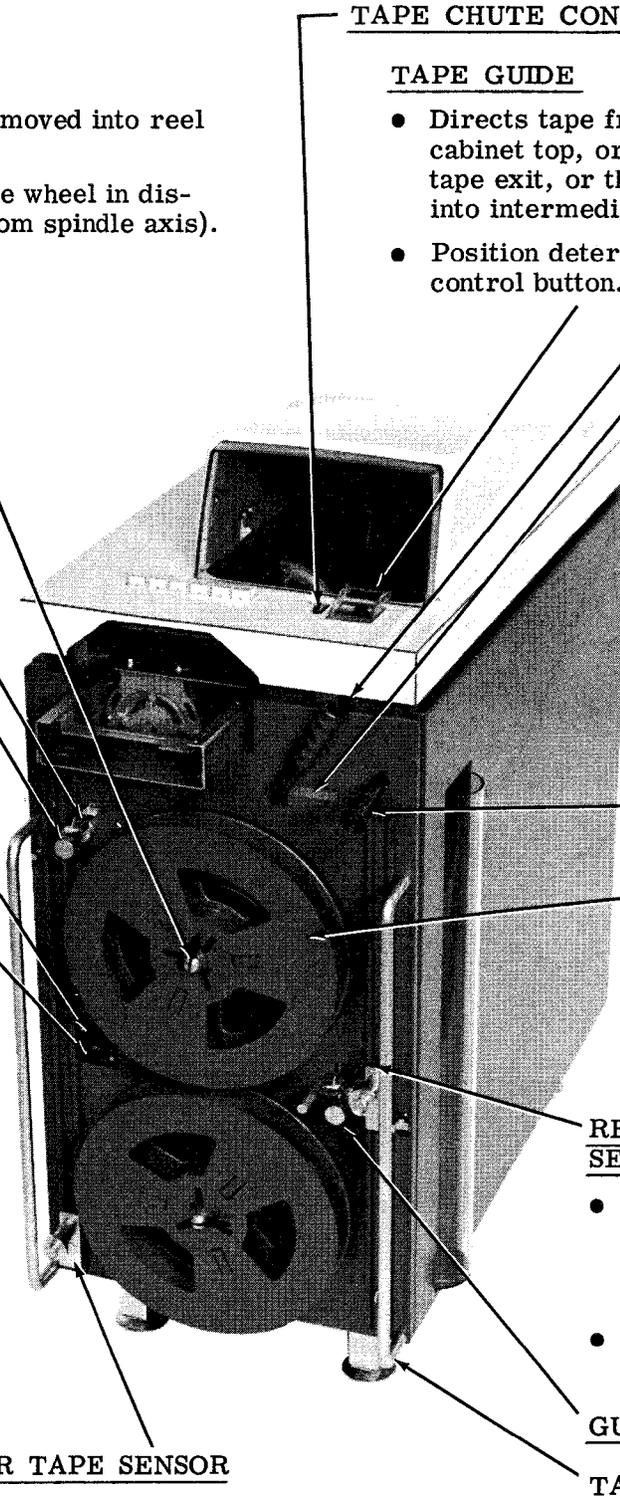
- Holds 8-inch diameter roll of tape.
- Front flange removable for access to tape.

REPERFORATOR TAPE SENSOR

- Controls power to reperforator winder motor through mode sensing switch energized.
- Includes release button for unlatching tape sensor.

GUIDE POSTS

TAPE REEL GUARD



(Right Front View)

Figure 4 - Cabinet with Power Winders

TIGHT TAPE SWITCH

- Actuated by tight tape guide roller to remove power from reader drive motor.

READER WINDER MOTOR

- Rotates reader winder reel.

TAPE SENSOR LATCHING MECHANISM

- Holds reperfocator tape sensor in uppermost position.
- Disengaged by release button on tape sensor.

TAPE SENSOR LATCHING MECHANISM

- Holds reader, tape sensor in uppermost position.
- Disengaged by release button on tape sensor.

UNWIND MODE SENSING SWITCH

- Controls power to reperfocator winder motor in accordance with reperfocator tape sensor for the unwind mode.

READER WINDER SWITCH

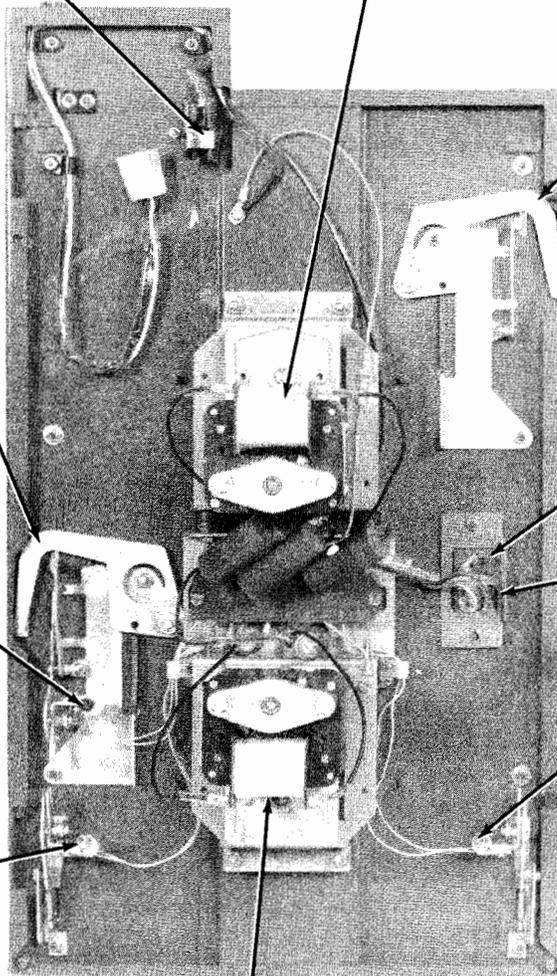
REPERFORATOR WINDER MODE SWITCH

WIND MODE SENSING SWITCH

- Controls power to reperfocator winder motor in accordance with reperfocator tape sensor position for the wind mode.

READER WINDER SENSING SWITCH

- Controls power to reader winder motor in accordance with reader tape sensor position.



(Rear View)

REPERFORATOR WINDER MOTOR

- Rotates reperfocator winder reel in either direction for power winding or unwinding.

Figure 5 - Cabinet Door with Power Winders

**3. OPERATION**

**3.01** The operation of the cabinet is contained in a series of illustrations which are supported by text to describe the purpose and operation of the various mechanisms.

**3.02** The contents of this part are listed alphabetically in the mechanism index.

**MECHANISM INDEX**

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**BASIC UNIT**

**3.03 Tight-Tape Guide Roller and Motor Unit.**

**TIGHT-TAPE GUIDE ROLLER AND SWITCH**

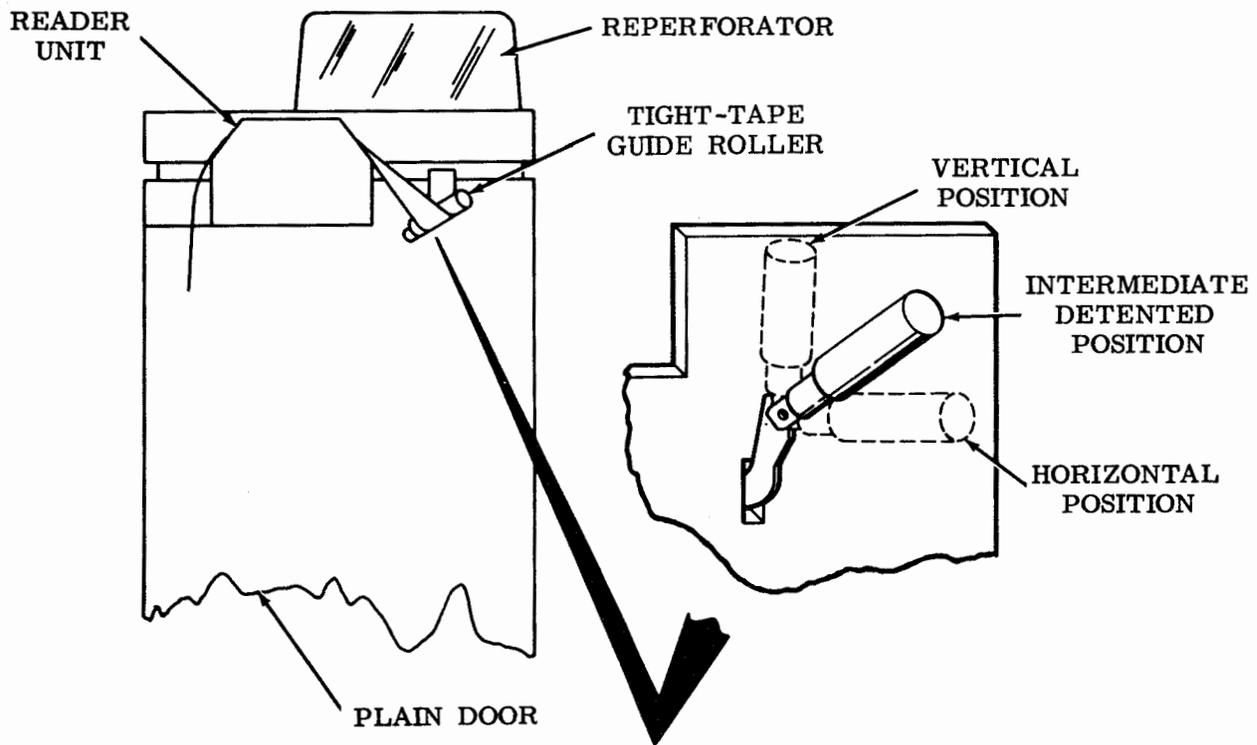
**Purpose**

Provides for reader tight-tape sensing when tape is supplied from the reperforator or, on units so equipped, the tape storage bin or lower tape reel.

**Operation**

When a tight-tape condition occurs, the tight-tape roller operates the tight-tape switch to turn off the reader unit. The tight-tape guide roller is placed in its vertical position when not in use, in the intermediate detented posi-

tion when tape is supplied from the reperforator or storage bin, and in the horizontal position for tape supplied from the lower tape reel.



**MOTOR UNIT**

**Purpose**

Provides mechanical rotating motion for the reader unit.

**Operation**

The reader drive motor unit is a synchronous type unit, rated at 1/150 hp, single-phase 115 volts  $\pm 10\%$ , 60/50 Hz, ac. It operates at 1800 rpm at 60 Hz and is equipped with a starting capacitor and two windings: start

and main. Initially, power is applied to the capacitor and start winding. As the rotor approaches its operating speed, the main winding is substituted for the start winding.

TAPE HANDLING DOORS

3.04 Power Winders

READER TAPE WINDER

**Purpose**

Provide controlled power winding of tape from the reader unit.

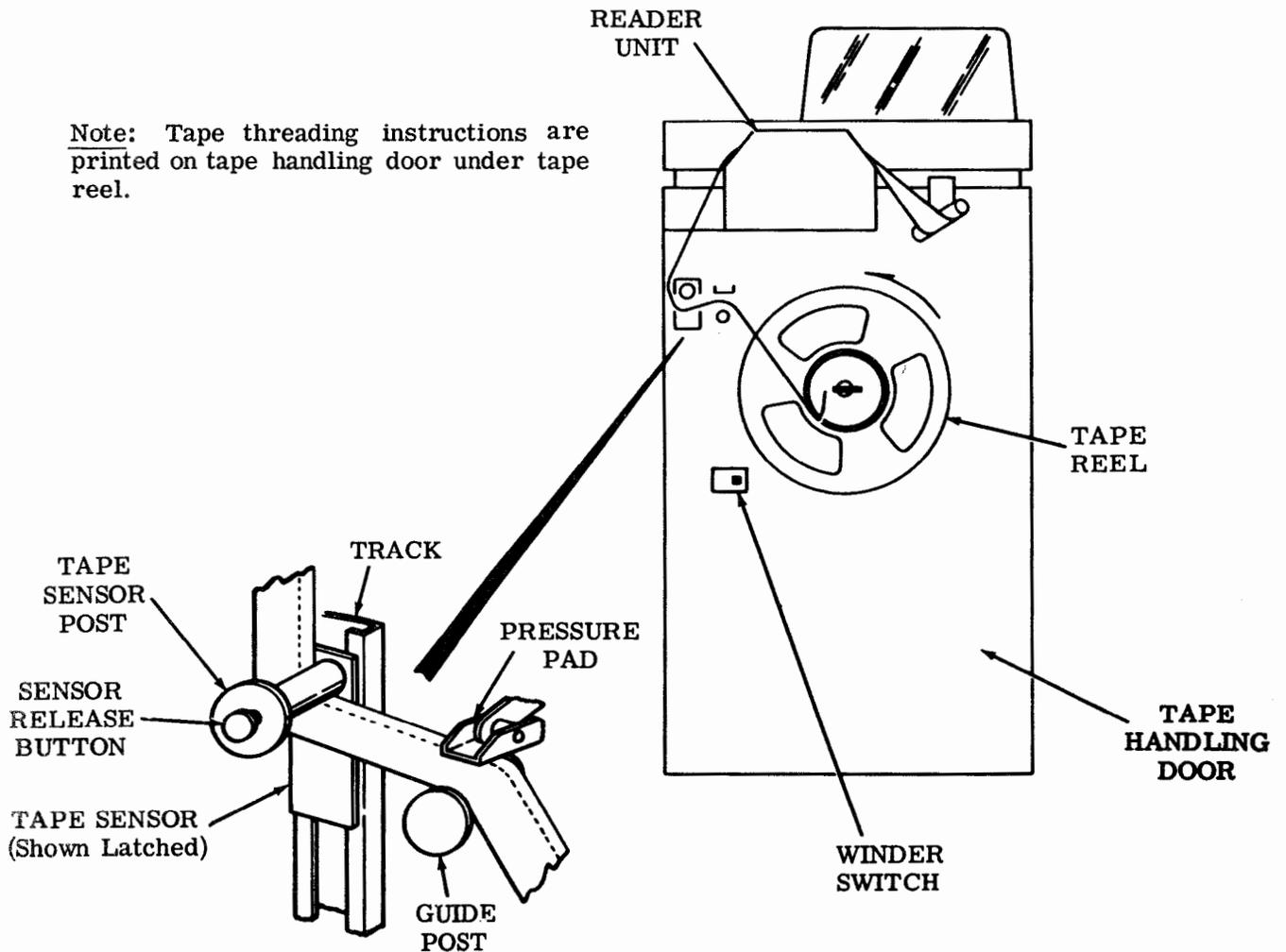
**Operation**

Tape from the reader unit is wound by a motor-driven reel when both the winder switch and the reader winder sensing switch (Figure 5) are closed. Power to the motor is removed when either of these switches is open.

With tape threaded from the reader unit to the winder reel, pushing the sensor release button unlatches the tape sensor and causes a loop of tape to form. As tape is fed from the reader unit the tape loop lengthens allow-

ing the tape sensor to slide downward in its track. As the tape sensor approaches the bottom of the track it operates the reader winder sensing switch (mercury-type) which closes the circuit from the winder switch to the reader winder (shaded-pole) motor, driving the reel. As the reel turns, the tape loop shortens, causing the tape sensor to move upward and open the reader winder sensing switch. This cycle is repeated when tape from the reader unit causes the tape sensor to move downward.

Note: Tape threading instructions are printed on tape handling door under tape reel.



3.05 Power Winders (Continued)

REPERFORATOR TAPE WINDER

**Purpose**

Provide controlled power winding of tape from the reperforator.

**Operation**

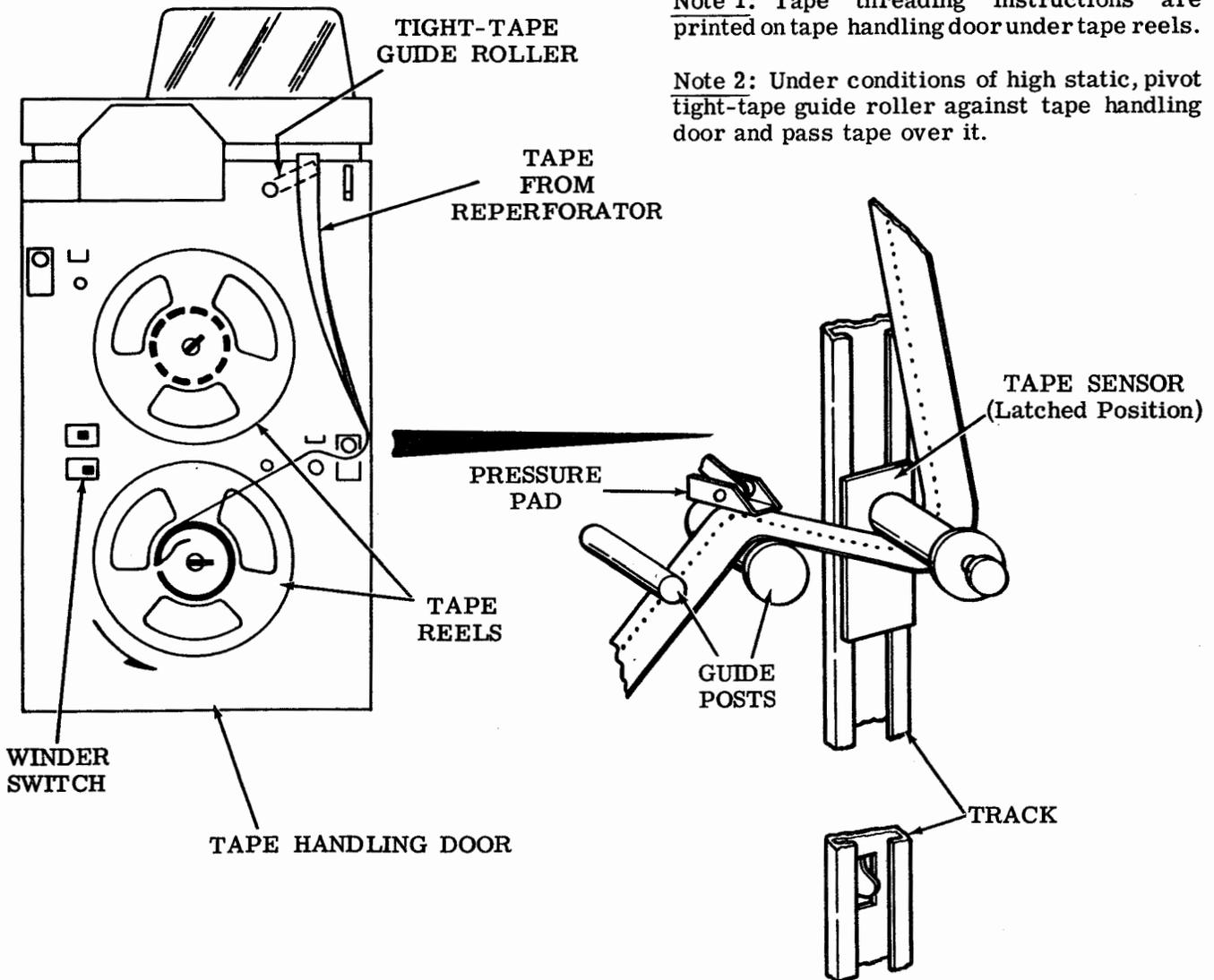
Tape from the reperforator is wound by a motor-driven reel when both the winder switch and the reperforator winder sensing switch (Figure 5) are closed. Power to the motor is removed when either of these switches is open.

With tape threaded from the reperforator to the winder reel, pushing the sensor release button unlatches the tape sensor and causes a loop of tape to form. As tape is fed from the reperforator the tape loop lengthens

allowing the tape sensor to slide downward in its track. As the tape sensor approaches the bottom of the track it operates the reperforator winder sensing switch (mercury-type) which closes the circuit from the winder switch to the reperforator winder (shaded-pole) motor, driving the reel. As the reel turns, the tape loop shortens, causing the tape sensor to move upward and open the reperforator winder sensing switch. This cycle is repeated when tape from the reperforator causes the tape sensor to move downward.

Note 1: Tape threading instructions are printed on tape handling door under tape reels.

Note 2: Under conditions of high static, pivot tight-tape guide roller against tape handling door and pass tape over it.



3.05 Power Winders (Continued)

FAST REWINDER

**Purpose**

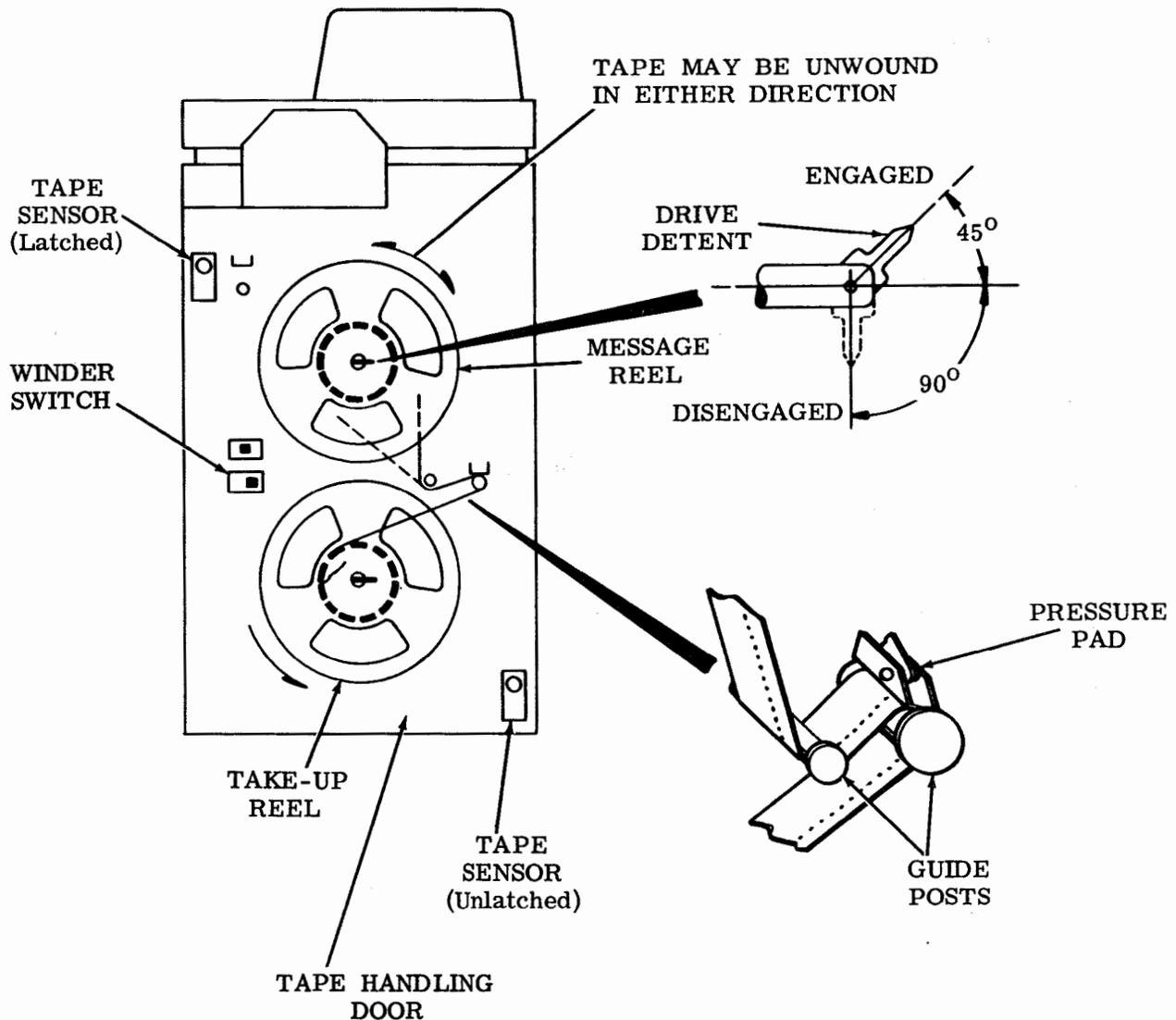
Provide fast transfer of tape from upper reel to lower reel.

**Operation**

With the message reel on the upper winder hub and the reel driving detent disengaged to permit the reel to free wheel on the spindle, the tape is routed to the take-up reel in a path that bypasses the tape sensor. Then, with the reel driving detent fully engaged,

the tape sensor is unlatched and moved to its lowest position. This operates the tape sensor switch in series with the lower winder motor. With the drive motor conditioned, the take-up reel is driven when the winder switch is placed in the W (wind) position.

Note: Tape threading instructions are printed on tape handling door under tape reels.



3.06 Power Winders (Continued)

POWER UNWINDER

**Purpose**

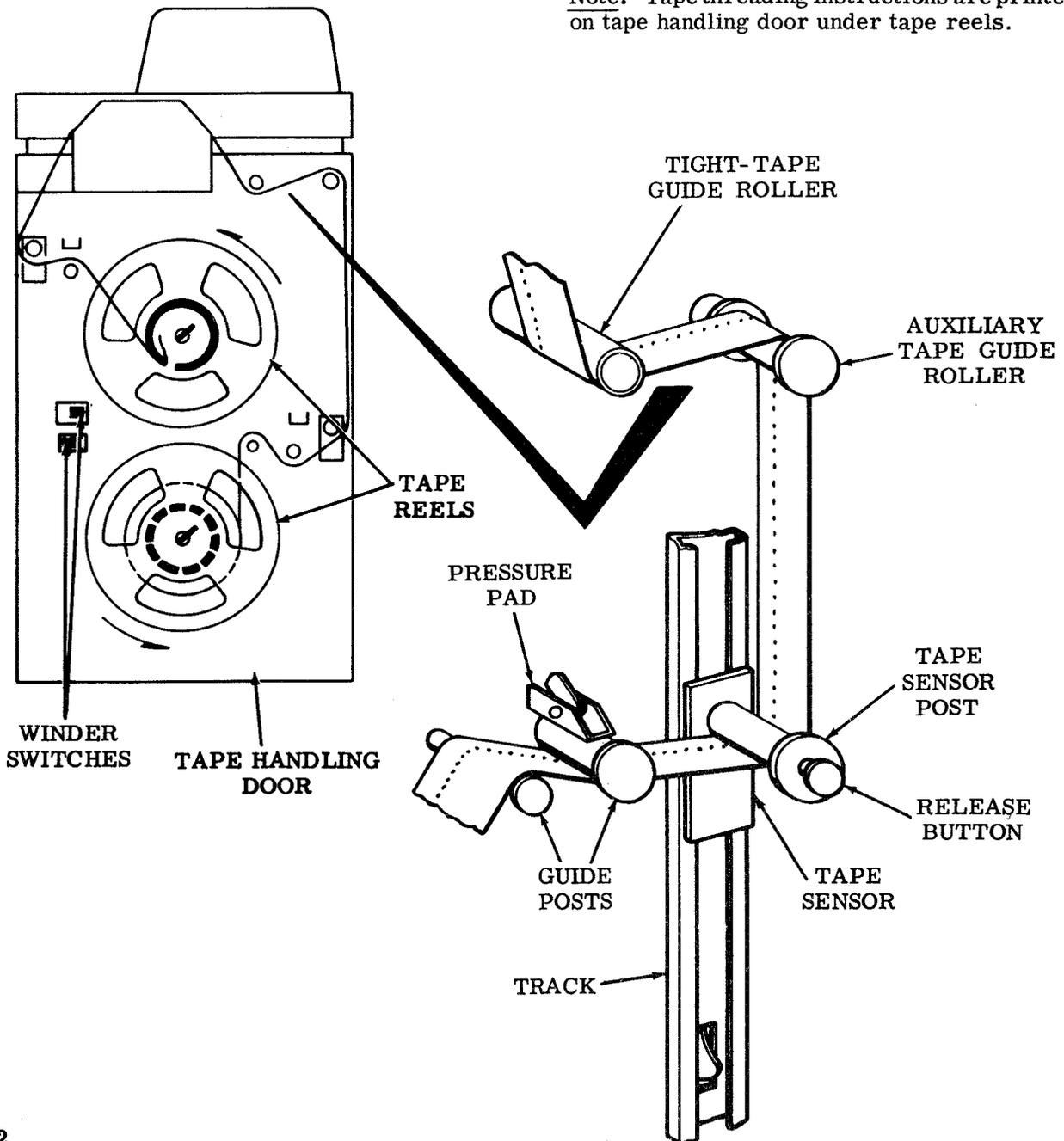
Provide power unwinding from a message reel to the reader unit.

**Operation**

Tape is routed to unwind in a counterclockwise direction from the lower message reel to the reader unit and then to the upper take-up reel. When the tape sensor associated with the lower reel is released and the winder switch is placed in the U (unwind) position, the reel is driven and the unwinding tape permits the tape sensor to slide down its track.

As the tape sensor moves downward it opens the upper unwinder sensing switch in series with the unwinder drive motor, turning the motor off. When the reader demands additional tape, the tape loop shortens raising the tape sensor and closing the tape sensor switch to repeat the power unwind cycle.

Note: Tape threading instructions are printed on tape handling door under tape reels.



## 3.07 Tape Director and Intermediate Tape Storage Bin

TAPE DIRECTOR AND STORAGE BIN**Purpose**

Provide three paths for routing reperforator message tape including to a 50-foot capacity intermediate tape storage bin.

**Operation**

The tape director consists of a three-position tape guide and a two-position tape chute operated by a control button. The tape guide, in its flat position, directs reperforator message tape across the cabinet top, bypassing both the tape chute and the storage bin.

In its tilted position (15°), the tape guide deflects the reperforator tape through the tape chute and the tape exit slot provided in the cabinet for further routing.

In its fully opened position, the tape guide permits pulling the tape back through the tape chute for inspection.

Pushing the tape chute control button to the rear position allows the tape chute to guide the lead end of the tape through the front of the cabinet top so that it may be retained. Pulling the chute control button forward with the tape end retained directs the tape downward through the chute and into the storage bin.

**Note:** If end of tape falls into storage bin, place tape guide into 15-degree tilted position and scoop tape out with pencil point or other suitable instrument.

