

## Section 3

### OPERATION

3

#### GENERAL

The Model 300 recorder/reproducer is intended for single channel operation. Tape motion is controlled by two pushbuttons START and STOP, and a mode selector switch for selecting PLAY, REWIND and FAST FWD functions. A RECORD push-button on the tape transport provides a means to select the record functions on one track in the system. The equipment will accommodate the NAB 10-1/2-inch diameter tape reels. The 14-inch diameter reel equipment is obtainable by arrangement with Ampex Professional Products Contract Engineering.

Either of two capstan drive motor speeds can be selected at the LOW-HIGH TAPE SPEED switch which is also located on the tape transport front panel.

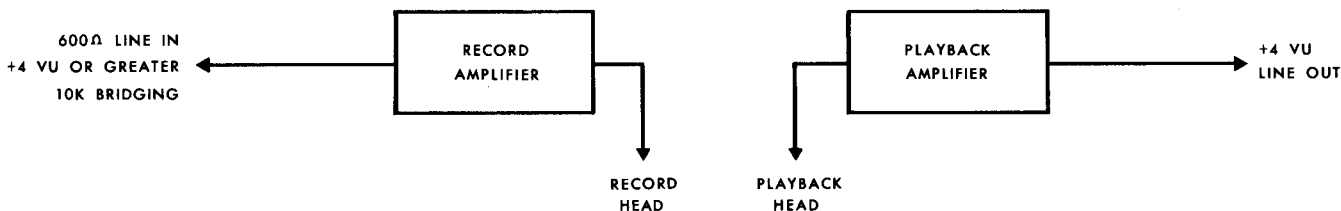
In operating the tape transport, the same size reel hubs should be used on both

the supply and takeup sides, or the braking action may spill tape as one side brakes faster than the other (if different size reel hubs are employed).

With reference to figure 3-1 connect the input and output circuits to the recorder. After POWER switch S801 is in the ON position, follow this procedure:

#### EQUIPMENT WITHOUT METER CONTROL PANEL

Connect a +4 vu line (balanced or unbalanced) to the input receptacle J101S on the electronic chassis. The record level control R101 has been adjusted at the factory to give the recommended tape level with this input. It is possible to record at proper tape level with inputs of -30 vu to +10 vu by readjusting the record level control. The playback level control R213 has



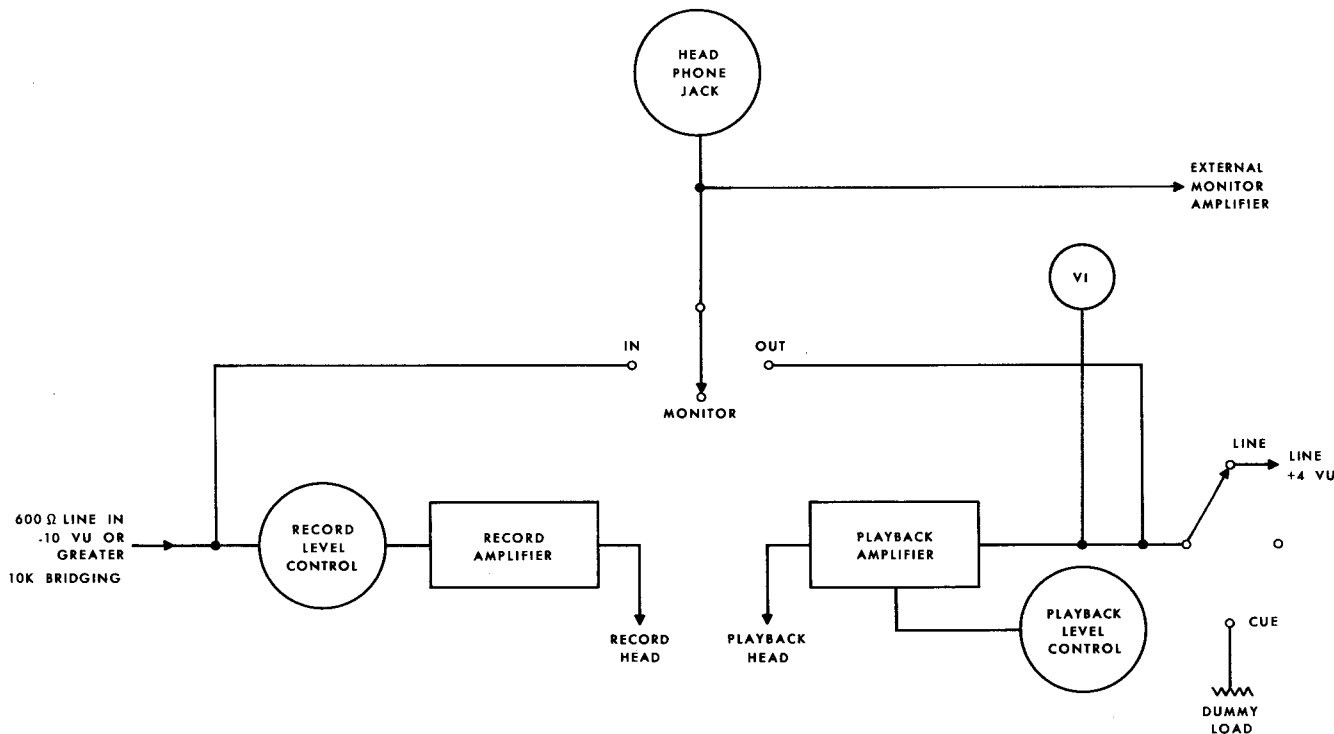
**Fig. 3-1 EQUIPMENT WITHOUT METER CONTROL PANEL**

been adjusted at the factory to give an output of +4 vu into a 600 ohm load from tapes recorded at the recommended operating level.

**EQUIPMENT WITH INPUT METER CONTROL PANEL**

With reference to figure 3-2 connect an input signal (balanced or unbalanced) to terminals 1, 2 and 3 of the Meter Panel. For unbalanced operation terminal 2 should be the ground side of the line. The input signal must be greater than -10 vu. Set the meter panel playback step control R1102 to

14. Record a signal and adjust the meter panel record step control R1101 so the vu meter reads "0". This indicates a +4 vu output signal into 600 ohms, since the meter is always connected across the PLAYBACK OUTPUT. The playback vernier control R213 has been set at the factory so that "0" meter reading indicates the recommended tape level with the meter panel playback step control set at 14. On playback, any tape recorded off level by a voltage ratio of 5 to 1 (14 db) may be reproduced at +4 by adjusting the meter panel playback level control.



**Fig. 3-2 EQUIPMENT WITH INPUT METER CONTROL PANEL**

SUMMARY OF CONTROLS, SWITCHES AND  
INDICATORS

<u>ITEM</u>	<u>SCHEMATIC REFERENCE NUMBER</u>	<u>LOCATION</u>	<u>FUNCTION</u>
POWER switch	S801	Tape Transport	Controls all power to the entire system. When this switch is on, the capstan rotates (if tape is properly threaded) and the vu meter lights.
POWER Indicator	A801	Tape Transport Control Circuit	Lights when power switch is on.
TAPE SPEED	S502 and S503	Tape Transport Control Circuit	Determines speed of the capstan drive motor by high or low speed winding. Equalization switching is done through relay K102.
H F EQUALIZER	R207	Electronic Assembly Playback Amplifier	Adjusts reproduce equalization curve.
PLAYBACK LEVEL	R213	On Meter Panel, or if there is no meter panel it will appear on Playback Amplifier chassis.	Sets Reproduce level gain.
RECORD LEVEL	R101	Electronic Assembly	Adjusts record level.
H F EQUALIZER	C126	Electronic Assembly	Adjust equalization curve for low speed.
H F EQUALIZER HIGH SPEED	C125	Electronic Assembly	Adjusts equalization curve for high speed.
RECORD NOISE BALANCE	R117	Electronic Assembly	Sets record head d-c balance for minimum noise.

<u>ITEM</u>	<u>SCHEMATIC REFERENCE NUMBER</u>	<u>LOCATION</u>	<u>FUNCTION</u>
RECORD BIAS	R126	Electronic Assembly	Adjusts high frequency bias current in record head.
ERASE TRIMMER	C120	Electronic Assembly	Sets high frequency current in erase head.
START button	S805	Tape Transport Control Circuit	Starts tape in mode selected by the mode selector switch S802
RECORD button	S804	Tape Transport Control Circuit	Controls record function of electronic assembly by energizing relay K101 in electronic assembly.
RECORD indicator	I802	Tape Transport Control Circuit	Lights only when record button has been pressed, energizing relay K101 in the electronic assembly.
FAST FWD REWIND PLAY Mode Selector Switch	S802	Tape Transport Control Circuit	Selects tape transport operation for recording, reproducing, rewinding and/or fast forward modes of operation.
STOP button	S803	Tape Transport Control Circuit	When this button is pressed, the brake solenoids and all relays are de-energized. Tape transport motion is stopped.

## OPERATING TECHNIQUES

### Threading the Tape

Thread the tape as shown in the illustration -- TAPE THREADING PATH. Unwind and inspect all new factory wound reels

of tape by running them through in the FAST FORWARD mode.

New tapes might be looped to the hub in such a manner that the tape will not come free of the reel at the end. This will prevent the safety switch (S501) from disen-

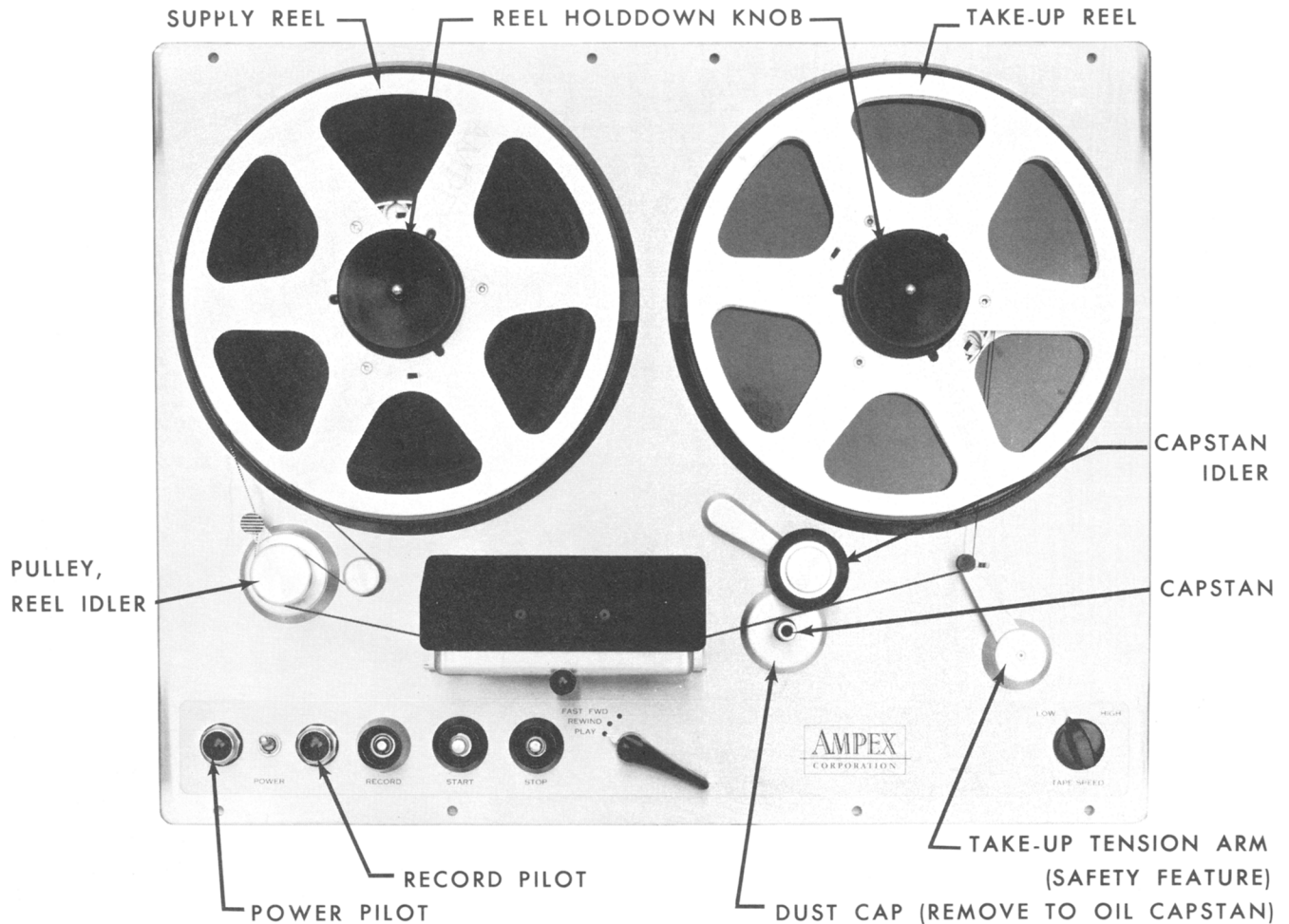


Fig. 3-3 TAPE THREADING PATH

gaging the capstan idler and the capstan, which results in a flat being worn on the capstan idler wheel. (Any adhesive material accumulation on the reel hub may also keep the tap from coming free at the end of the reel, and should therefore be removed with solvent.)

Reel hold-down knobs, catalog number 9093 are furnished for 1/4-inch tape equipment.

#### Power

Power to the tape transport and electronic assembly is supplied through power switch S801.

#### Speed Switches

There is only one switch associated with operating speed. The tape speed switch S503 determines the speed of the capstan drive motor.

#### Tape Motion

The tape motion is controlled at the tape transport control cluster by two push-buttons -- PLAY and START, a mode selector switch -- FAST FWD, REWIND and PLAY, a LOW-HIGH tape speed switch, and one other switch on the tape transport connector panel -- FAST START/SLOW START.

FAST START/SLOW START switch S806 on the tape transport connector panel should normally be placed in the FAST START position when operating at all speeds

of the Model 300. The capstan drive motor will then operate at all times when the tape is threaded.

With this switch in the SLOW START position, the capstan drive motor will operate only after the START button is pressed. This feature is provided so that the capstan motor will not operate if the equipment is to be left in a STANDBY condition for long periods.

#### LOW-HIGH TAPE SPEED

The tape speed switch S503 determines the speed of the capstan drive motor.

#### START

To start the equipment in any mode of operation, press the START button S805.

#### PLAY OR RECORD

Tape motion during recording or reproduction is the same. Place the mode selector switch in the PLAY position and press the START button. The tape will start in motion at the speed selected by the LOW-HIGH TAPE SPEED switch and reproduction will take place. Press the RECORD button to place the equipment in the record mode.

#### STOP

Pressing the STOP button causes all tape motion to cease, and shuts off record-

ing by removing the power from the last stage in the record amplifier and from the bias/erase oscillator.

#### FAST FWD

To operate in the fast forward mode place the selector in the FAST FWD position and press the START button.

#### REWIND

Place the mode selector switch in the REWIND position and press the START button.

When editing or cueing the tape, the selector switch makes possible changing from fast forward to rewind (and vice-versa) without using the STOP and START buttons.

#### NOTE

In either fast forward or rewind modes of operation, it is desirable to remove the tape from direct contact with the heads by opening the head assembly gate.

#### Editing or Cueing

Indexing the tape as in editing or cueing, or when approaching the end of the reel, can be accomplished by switching the mode selector positions from FAST FWD to REWIND, reducing the tape motion to a slow travel and then pressing the STOP button when the desired point is reached.