SECTION II

INSTALLATION

2-1. SELECTION OF LOCATION.

2-2. The selection of a location for the tape transport should be based on the following factors:

a. The rack cabinet or rack selected must be capable of mounting and supporting the following components:

COMPONENT	WEIGHT	HEIGHT REQUIRED	DEPTH FROM RACK FACE
Tape transport	167 lb.	35"	14"
Transport electronics ass'y			
Vertical mounting	70 lb.	18"	7"
Horizontal mounting	70 lb.	7"	18"
Manual control panel	8 lb.	7"	3-1/2"
Voltage regulator	24 lb.	---	---
Transport access door	24 lb.	---	---

b. Read and write electronics must be placed so that lengthening of the head cables beyond the 80" length supplied is not required. The increased capacitance associated with long head cables will impair high-frequency response.

c. The unit should be located in an area characterized by ambient temperatures between 60° and 80° F, 40% - 60% RH.
16°...27°C relative humidity

d. The unit must not be located in proximity to any strong magnetic fields.

e. A reasonably dust and dirt free environment is required.

2-3. Components of the tape transport are designed for mounting in a standard 19-inch cabinet rack. If the unit is supplied with an Ampex cabinet rack, it is shipped nearly fully assembled and cabled, and the rack need only be fastened in position.

2-4. The manual control panel, if supplied, may be mounted on the same bracket as a horizontally-mounted transport electronics assembly; this configuration requires no additional rack space for the manual control panel. The manual control panel may also be mounted directly above a vertically-mounted transport electronics assembly. In this configuration, seven inches of rack space are required for the manual control panel.

2-5. The voltage regulator is mounted on the side panel of Ampex cabinet racks. In custom installations, it may be mounted similarly or in any other convenient location which affords ample support.

2-6. The dimensions and recommended clearances for the Ampex cabinet rack are shown in Figure 2-1. In general, similar clearances will be required for all mounting schemes.

2-7. UNCRATING.

2-8. Each TM-2 tape transport is packed in a custom-built case for maximum protection in shipment. This case is designed for shipment in a horizontal attitude, and should not be handled in an upright position. In uncrating the tape transport, dismantle the shipping case carefully to avoid damage. Check the contents of the container carefully against the packing slip, and investigate the equipment for damage.

2-9. The voltage regulator transformer (shipped unmounted) must be mounted in the cabinet. Voltage regulator transformers for 60 cycle tape transports are mounted on the right side of the cabinet as viewed from the rear; voltage regulator transformers for 50 cycle tape transports are similarly mounted on the left side of the cabinet. Tapped holes are provided in the cabinet for the voltage regulator transformer and for cable clamps holding the connecting cable to TB709 on the tape transport.

2-10. When the equipment is shipped in an Ampex cabinet rack, a shipping lock will be found in the form of a strap over the transport latch (inside the cabinet). The two screws holding this strap must be removed before the latch may be operated.

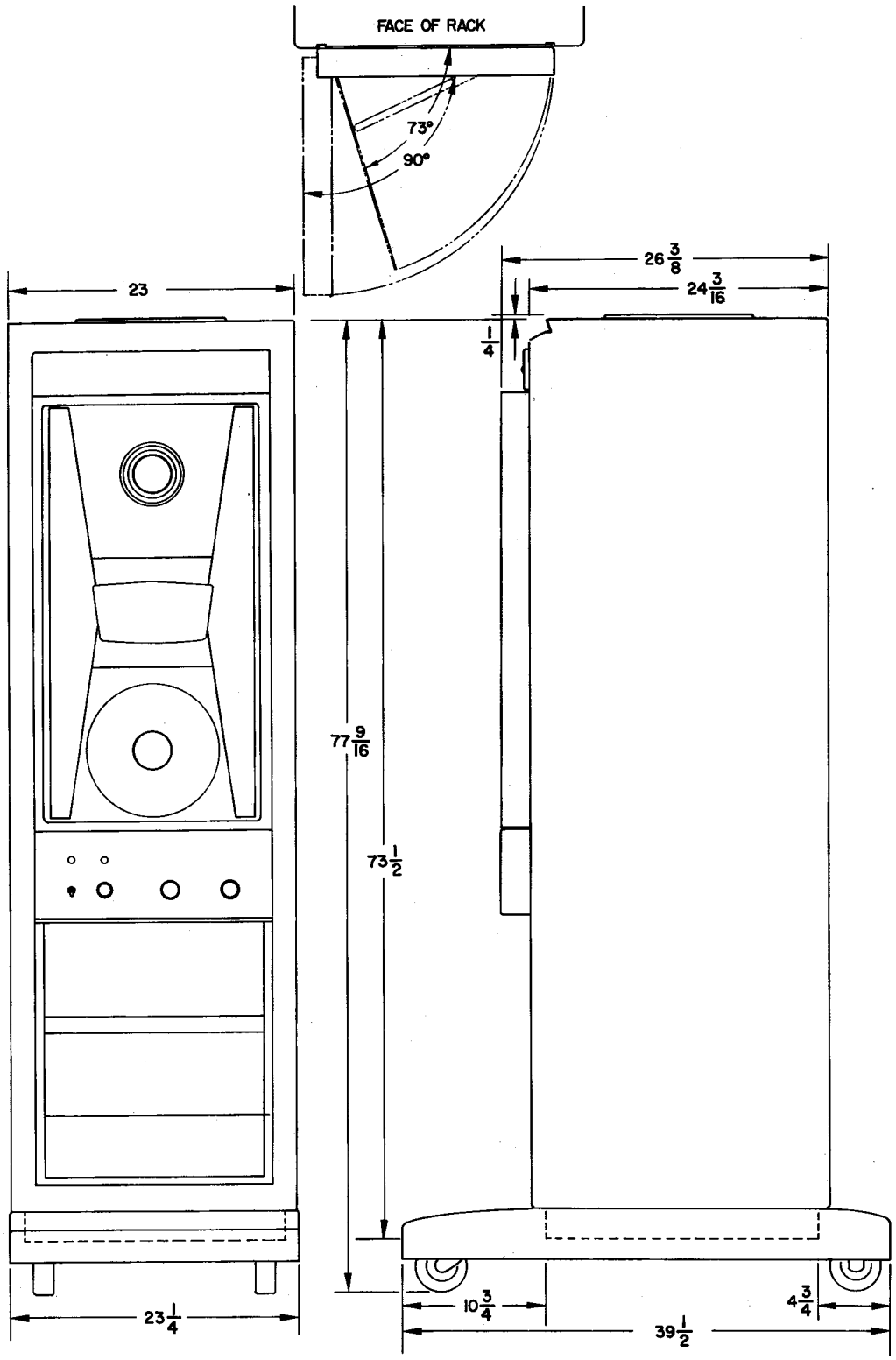


Figure 2-1
Dimensions and Clearances, Ampex Cabinet Rack

CAUTION

The transport should not be swung from the face of the rack until the rack cabinet is securely bolted to the floor.

2-11. Transports shipped in an Ampex cabinet rack and utilizing a horizontally mounted transport electronics assembly have additional shipping locks in the form of angle brackets at each side of the transport electronics assembly, attaching this assembly to the inner frame of the rack cabinet. When these locks are removed, the transport electronics assembly may be withdrawn from the front of the rack for servicing.

2-12. Transports shipped unmounted for custom installation should be carefully removed from the shipping case. The tape transport should be lifted only by the cast main frame.

2-13. MOUNTING (CUSTOM INSTALLATIONS).

2-14. The following procedure is recommended for custom installations of the tape transport:

Step 1: Place the rack on its back on the floor.

Step 2: Mount the hinge block (Ampex Part No. 31 01320 10) to the left side rail of the rack using the eight 12-24 by 1/2-inch flat head screws provided. A hole pattern for the hinge block is shown in Figure 2-2.

Step 3: Lift the transport by the cast main frame and place in position on the rack, with the hinge portion of the casting between the blocks of the hinge block strip.

Step 4: Insert the hinge pins (Ampex Part No. 31 01322 10) through the hinge block into the hinge portion of the cast main frame. Tighten the screws securely.

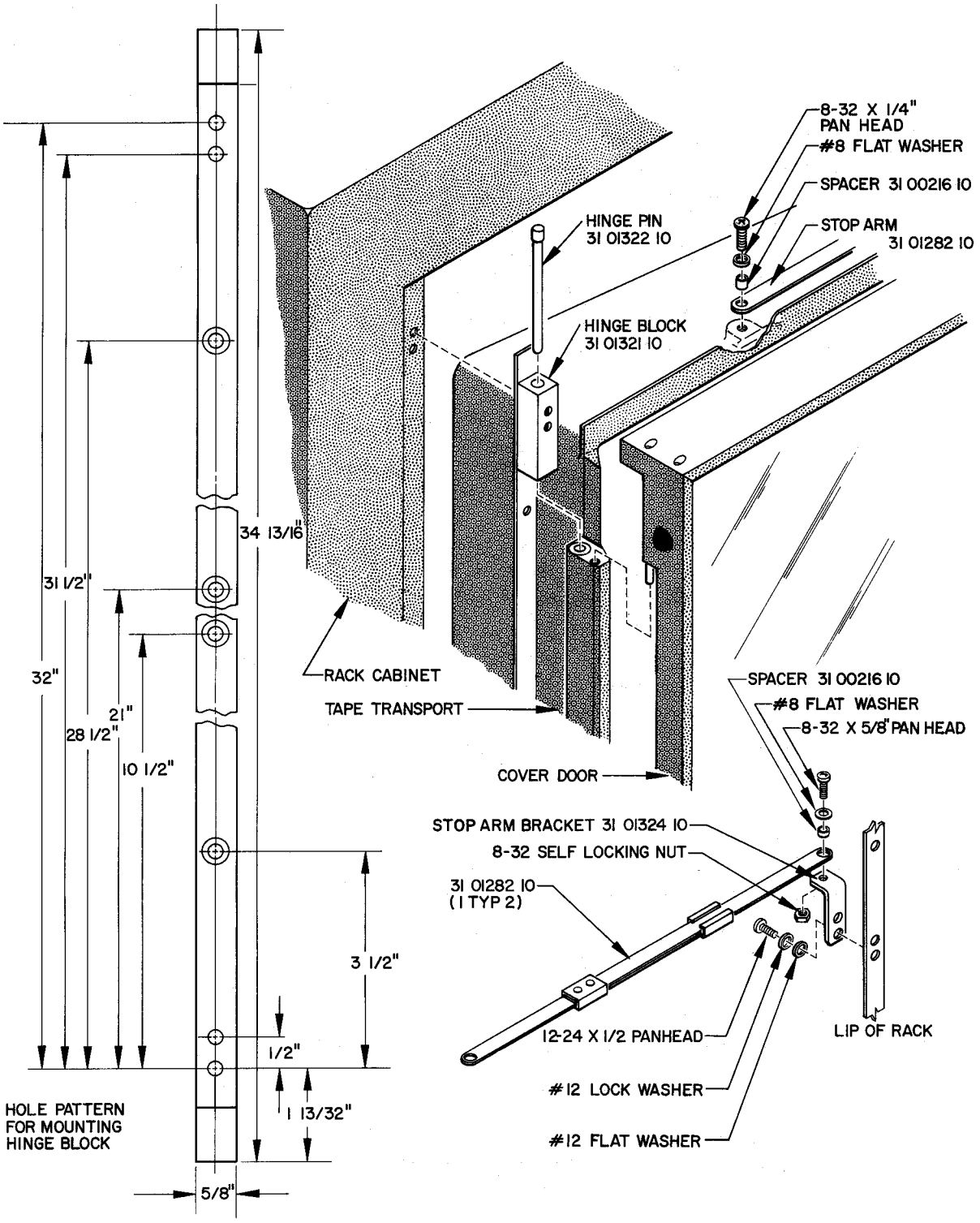


Figure 2-2
Tape Transport Mounting

Step 5: Place the transport electronics assembly in position and fasten to the side rails of the rack using the 12-24 by 3/8-inch pan head screws and #12 lock washers provided. Vertically-mounted transport electronics assemblies are fastened to the rack face with eight screws; horizontally-mounted transport electronics assemblies are fastened to the rack face with four screws. The balance of hardware supplied with the horizontally mounted transport electronics assembly may be discarded.

NOTE

If a horizontally-mounted transport electronics assembly is used and a manual control panel is included in the system, the two Ampex Part No. 31 01151 10 brackets (supplied with the manual control panel) should be installed with the transport electronics assembly as shown in Figure 2-3. If a manual control panel is to be used with vertically-mounted transport electronics assembly, the two Ampex Part No. 31 01151 10 brackets should be mounted separately from the transport electronics assembly.

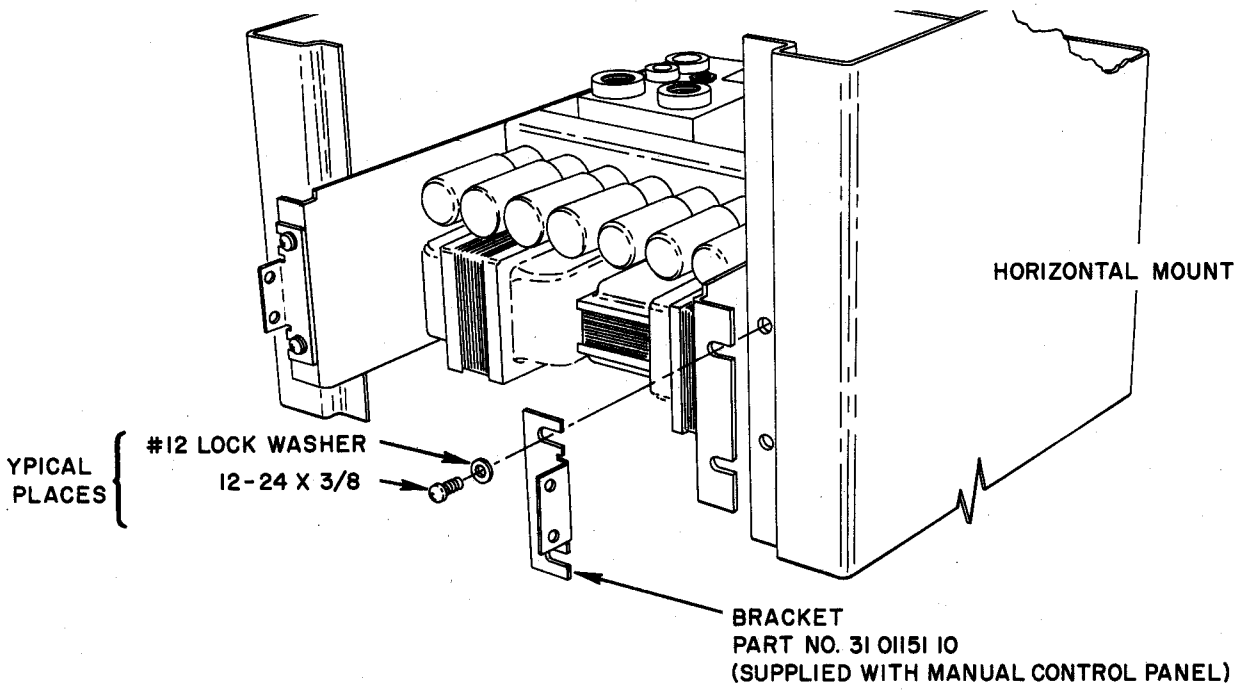
Step 6: Fasten the manual control panel to the Ampex Part No. 31 01151 10 bracket (Figure 2-4) using the four 6-32 by 3/8-inch flat head screws supplied with the manual control panel.

Step 7: Using the dimensions and mounting details shown in Figure 2-5, select a location for the voltage regulator. Mount this unit using the hardware provided.

Step 8: Erect the rack. Bolt the rack to the floor.

CAUTION

Do not attempt to swing the tape transport from the face of the rack until the rack is securely bolted to the floor.



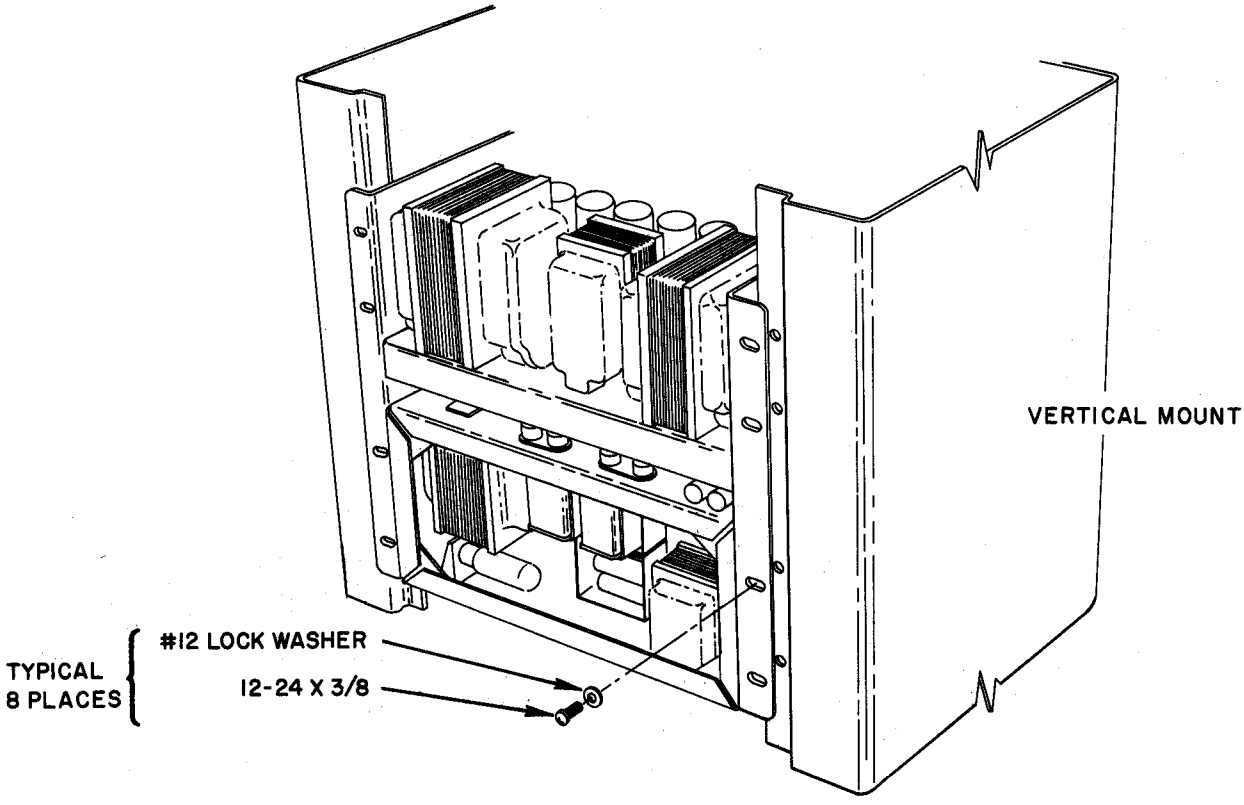


Figure 2-3
Transport Electronics Assembly Mounting

Step 9: Fasten the ground strap from the transport to the rack using the 12-24 by 5/16-inch screw and #12 lock washer provided with the tape transport.

Step 10: Mount the Ampex Part No. 31 01324 10 bracket on the back of the face of the rack cabinet using the 12-24 by 1/2-inch screws provided with the tape transport.

Step 11: Assemble the two Ampex Part No. 31 01282 10 stop arms provided with the tape transport as shown in Figure 2-2. Fasten the assembly to the bracket attached in step 10 using the 8-32 by 5/8 screw, #8 flat washer, Ampex Part No. 21 00216 10 spacer, and #8 self-locking nut as shown in Figure 2-2. Fasten the other end of the assembly to the top of the transport using the 8-32 by 1/4-

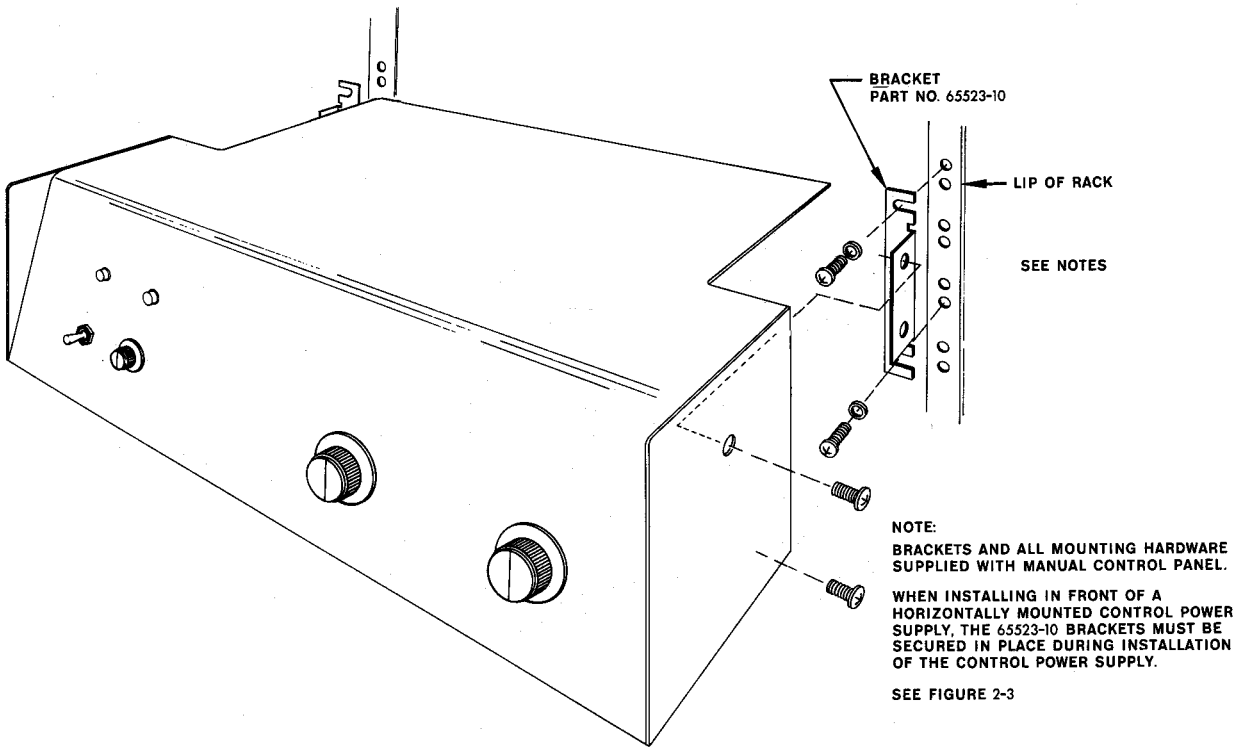


Figure 2-4
Manual Control Panel Mounting

inch screw, #8 flat washer, and Ampex Part No. 31 00216 10 spacer as shown in Figure 2-2.

Step 12: Fasten the air filter assembly to the rack at some convenient location. Connect the hose from the air filter to the positive pressure blower inlet, using the hose clamp provided.

NOTE

The air filter is designed to mount at the rear of the rack cabinet. If this scheme is used, the rear door of the cabinet must be louvered or otherwise opened to permit air flow.

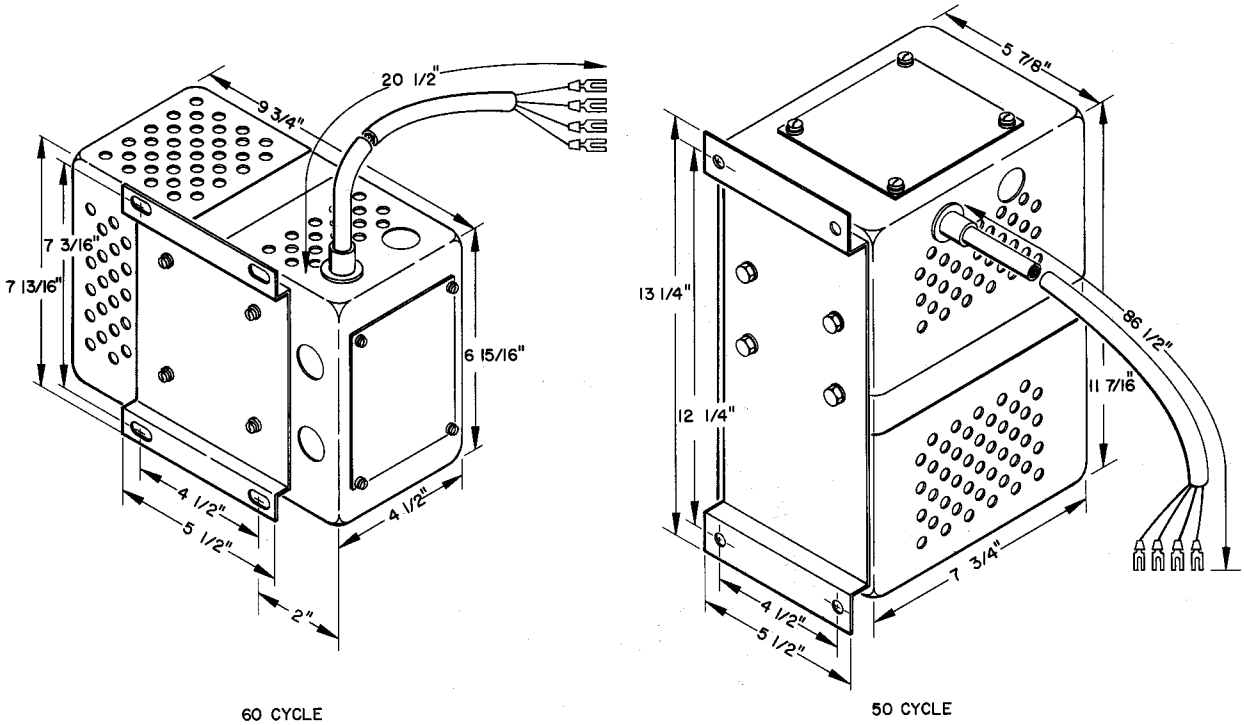


Figure 2-5
Voltage Regulator Mounting

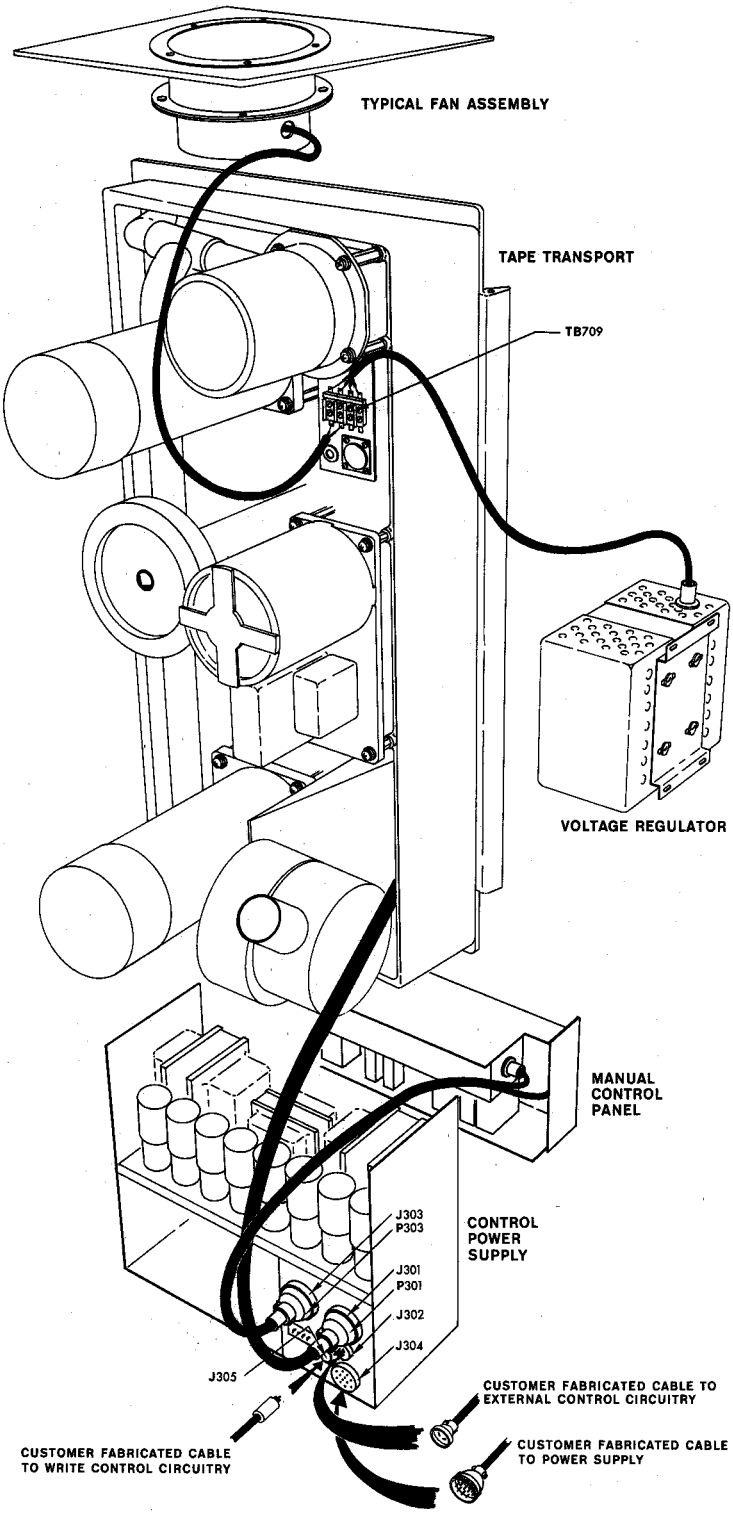


Figure 2-6
Cabling Diagram

Step 13: Provide a source of cooling air through the rack. A minimum flow of 400 cfm over the reel motors is required. Cool air should be drawn in through louvers at the bottom of the rack and expelled at the top.

WARNING

Inadequate cooling may permit excessive heating of the reel motors, thereby imposing program restrictions which prevent full realization of the designed potential.

Step 14: Install cover panels over unused portion of rack.

Step 15: Mount the head assembly on the tape transport by means of the socket head cap screws and flat washers provided. Connect the head connectors to the receptacles on the tape transport, taking care to connect the write head to the write receptacle, the read head to the read receptacle. Fasten the screws which secure each connector to its receptacle.

2-15. CABLING (Figure 2-6)

2-16. All cable connections to the tape transport are made through a connector chassis on the transport electronics assembly. This component also serves as a central point for most connections within the tape transport.

Step 1: Connect the cable captive to the tape transport to J301 on the transport electronics assembly.

Step 2: Connect the 117 vac power source to J302 on the transport electronics assembly. A mating connector for this purpose is furnished with the tape transport, and should be wired as follows:

Pin 1..... Ground
Pin 2..... 117 vac (hot)
Pin 3..... 117 vac (common)

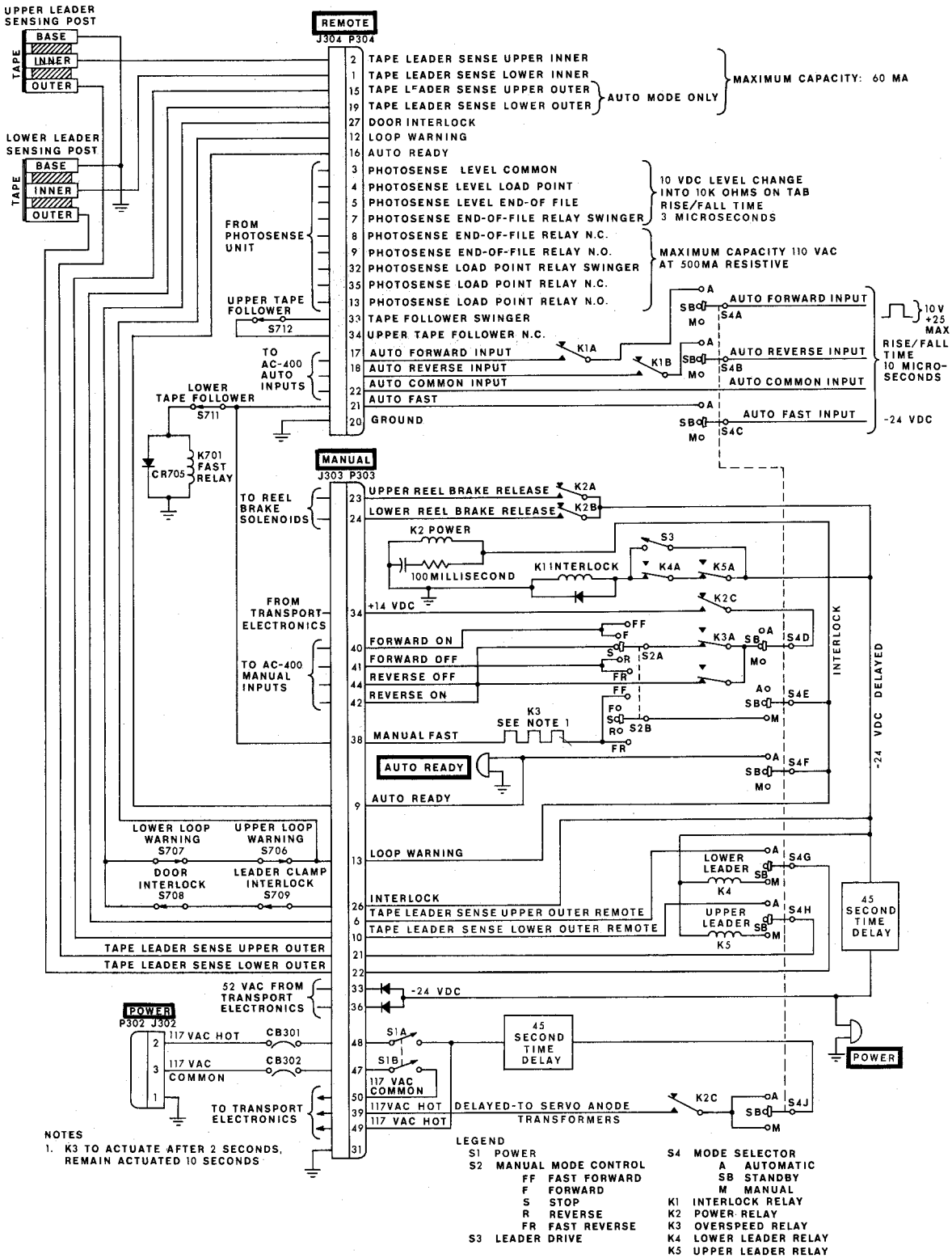


Figure 2-7
Typical Control Circuitry

Step 3: If a manual control panel is supplied, connect the cable captive to the manual control panel to J303 on the transport electronics assembly. If no manual control panel is supplied, suitable similar circuitry must be connected through J303; see Figure 2-7.

Step 4: If the tape transport is to be programmed from the tape control unit of a computer or other external source, connect this source through J304 and J305 on the transport electronics assembly. Mating connectors are supplied with the tape transport. Typical control circuitry is indicated in Figure 2-7.

Step 5: Connect the voltage regulator cable fanning strip to TB709 on the rear of the tape transport.

Step 6: Connect the cooling fan for the rack cabinet to terminals 1 and 2 on TB709, unless the power for this fan is to be supplied elsewhere.

2-17. HEAD CABLE CONNECTIONS.

2-18. The write head cables are terminated in 19-pin male Cannon connectors, one connector being used for each eight track cable. The read head cables are terminated in similar 19-pin female Cannon connectors. Mating receptacles are provided on Ampex signal electronics assemblies; when no such electronics are provided, mating connectors must be furnished by the user.

2-19. The pin assignments of write and read head connectors are identical, and are shown in Figure 2-8. The numbers shown in parentheses in Figure 2-8 refer to track assignment on the cable for tracks 9 through 16.

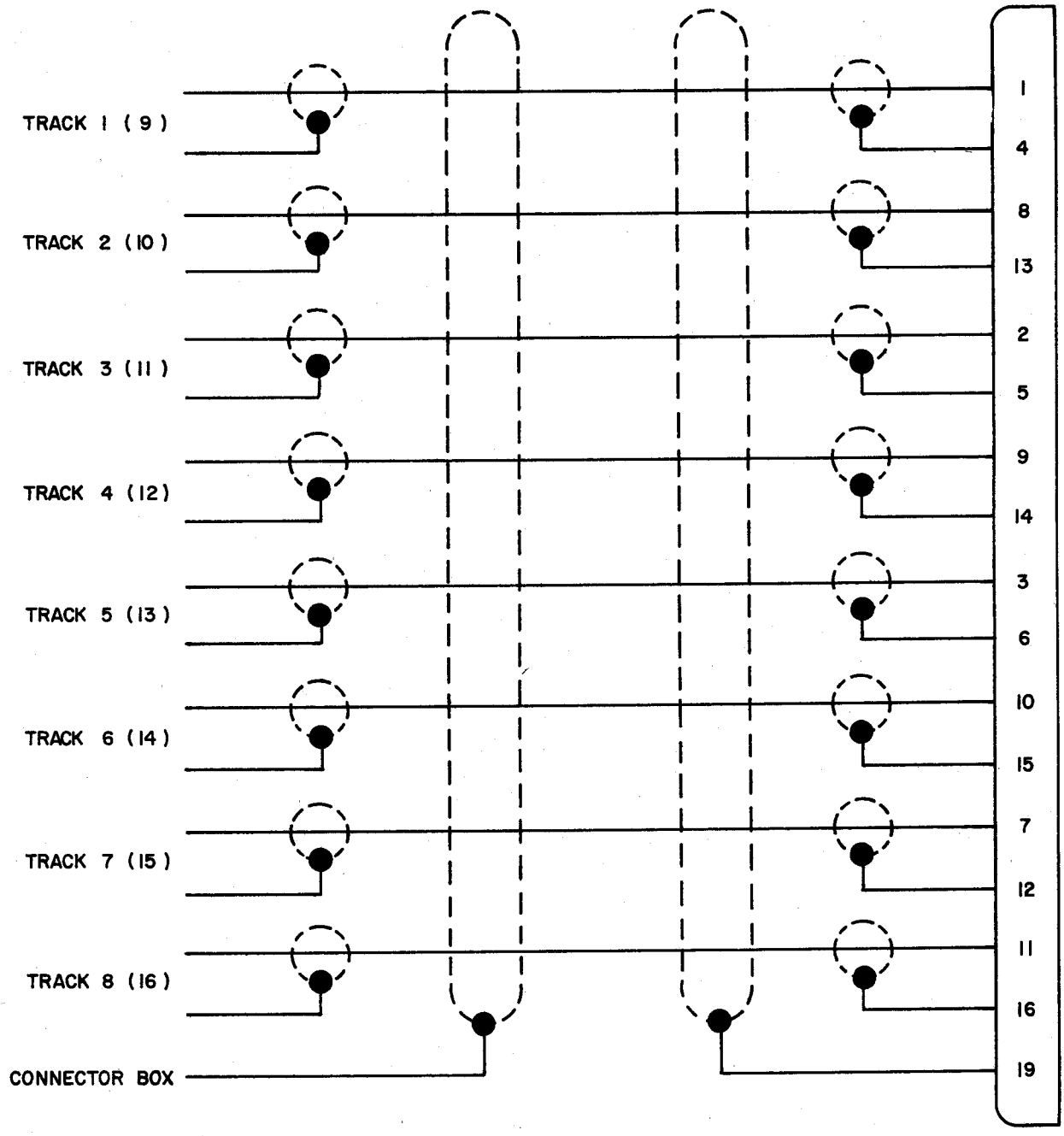


Figure 2-8
Head Cable Connections