

MODEL

33D & R220



A masterpiece of engineering and construction in the two basic components :

33D Tape Transport Mechanism

R 220 Recording Amplifier with
Playback Preamplifier.

Parts Locations

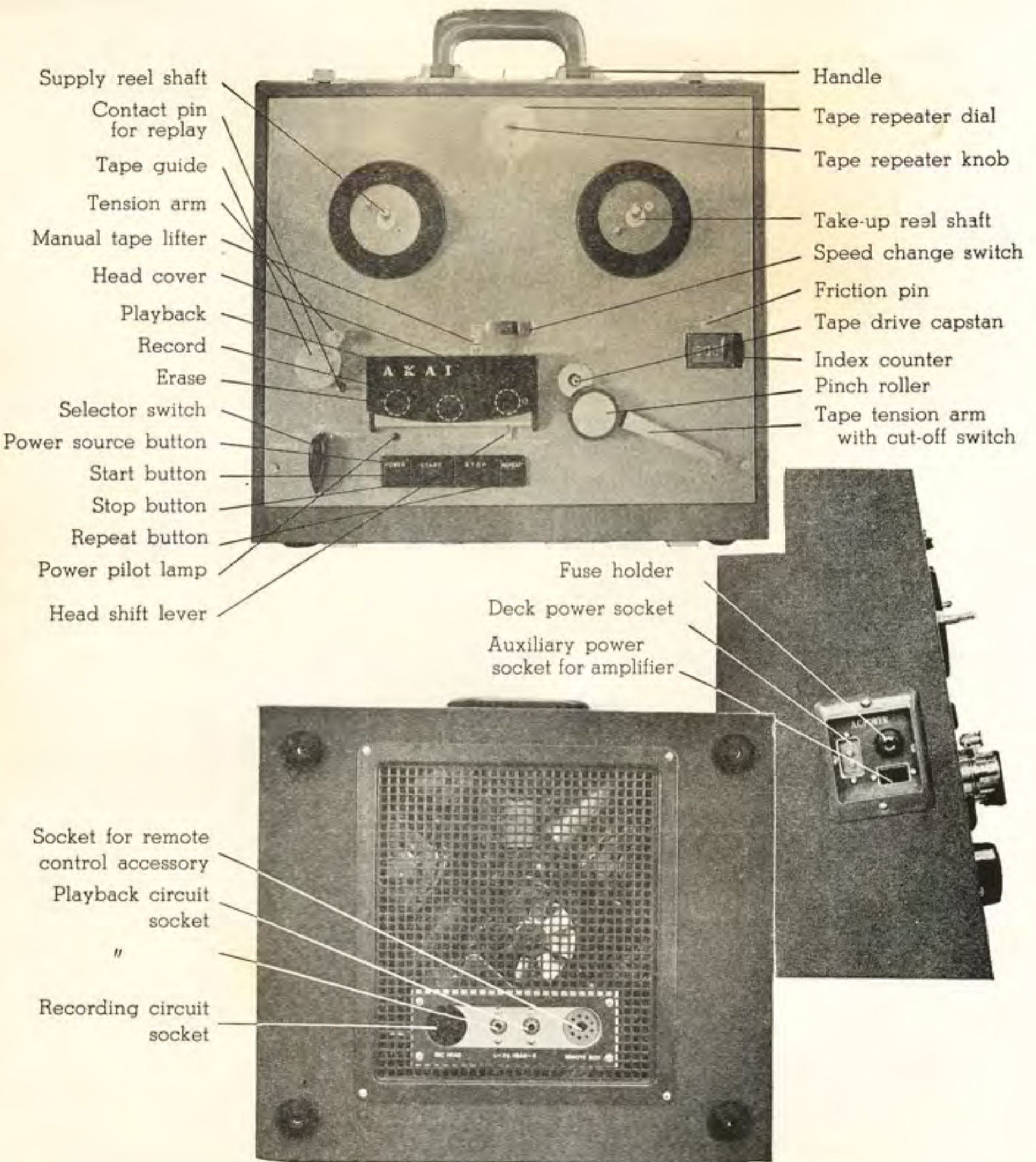
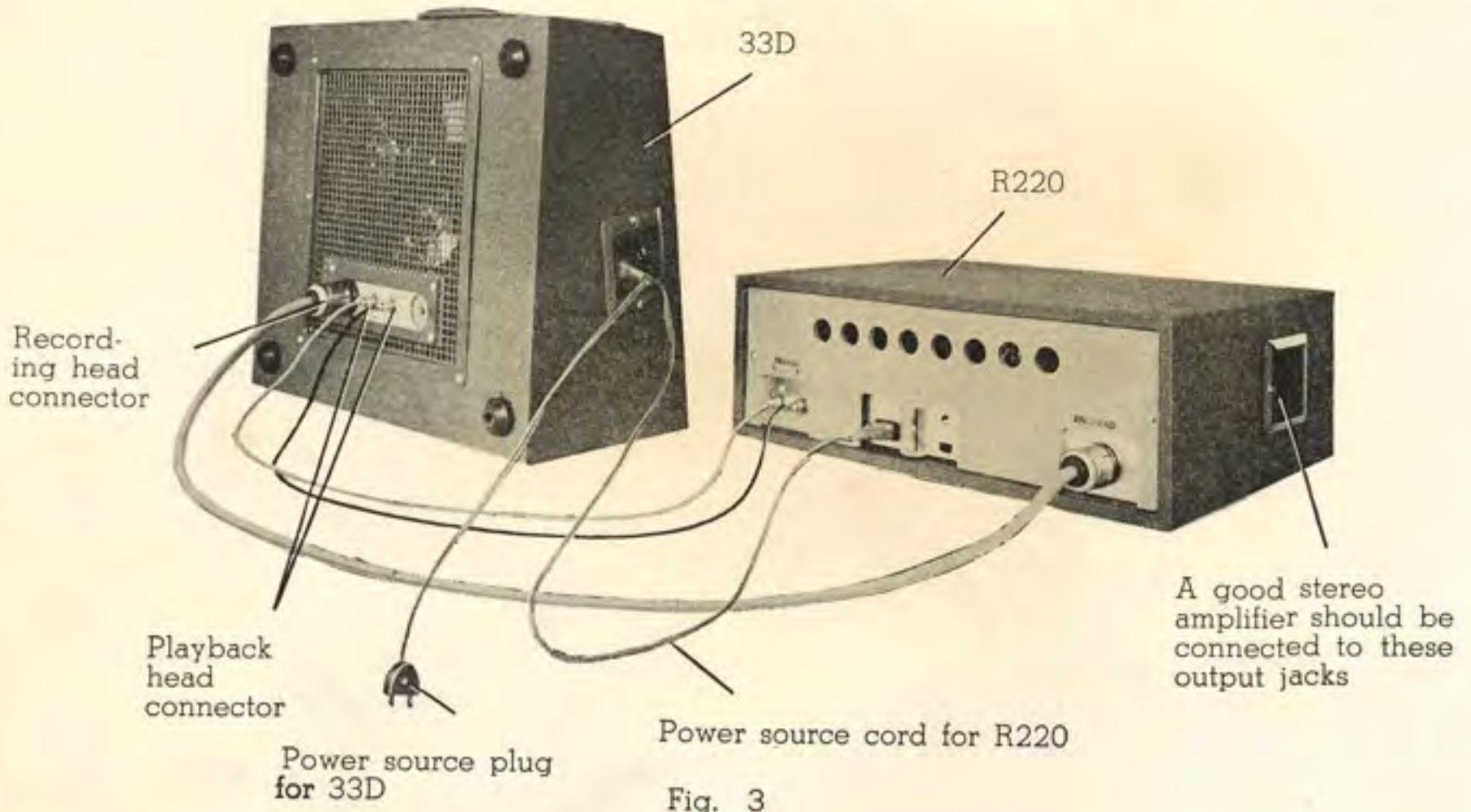


Fig. 1

General Instructions

Refer to the picture below as a guide to attaching the power cords and inter-connecting cable. The two components may be placed in any suitable position within the limits of the cables supplied.



If an amplifier of any type other than the R 220 is used, the recording head connector plug must be wired as shown in Fig. 5. In this case, it is important to prevent hum or noise that mechanism ground (12) and the ground terminal of such an amplifier must be connected using 1-pin cord which is supplied as an accessory.

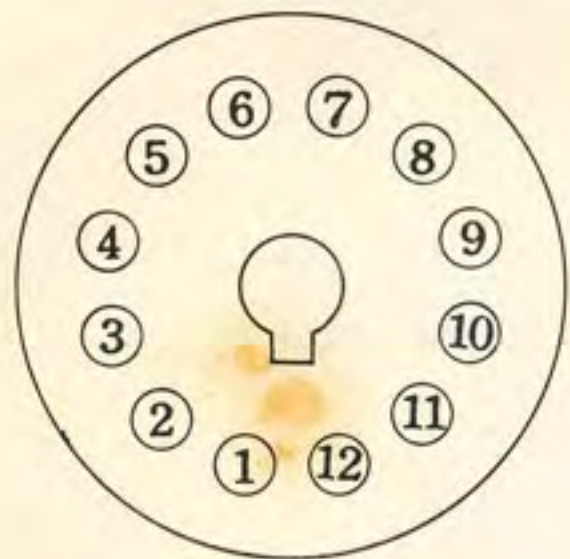


Fig. 5

Recording head	{	Left ③	ground ①
		Right ⑨	ground ⑪
Erasing head	{	Left ②	ground ①
		Right ⑩	ground ⑪
Speed equalizer circuit	{	Left ④	
		Right ⑧	
Recording button	{	+ ⑥	
relay circuit		- ⑫	
Amplifier short switch	{	Left ⑤	
circuit		Right ⑦	
Mechanism ground			⑫

CAUTION : Do not attempt to touch the tape head with any testing instrument as magnetization of the head may result. However, if direct current is supplied to the head by accident, a head demagnetizer should be used.

It should be understood that another stereo amplifier is needed to operate speakers for playback sound. The R 220 amplifier component is primarily a recording amplifier specially designed to give full frequency response in recording.

Included within the R 220 is a separate stereo preamplifier circuit. This has been designed to properly pre-amplify the very low output of the playback head and match this output to the input of any good stereo amplifier for playback.

Connect the playback amplifier to the output jacks located on the left side of the R 220 as indicated in the picture above.

Technical Information

Tape Deck

Power source A.C.	100V~117V 50%~60% (220 or 230V upon request)
Power consumption	100 V. A.
Head, playback	2-track~4-track
" recording	High impedance (3k Ω 1000%) 4-track
" erase	Low impedance (3k Ω 60k%) 4-track
Frequency response 19 CM/S (7½ in./sec.)	30~20,000%
9.5CM/S (3¾ in./sec.)	50~12,000%
Motor, for capstan driving	2 Speed hysteresis synchronous motor
" for supply and take-up shaft	2 Induction motors, capacitor start, dynamically balanced
Tape speed : 2-speed	19 CM/S (7½ ins./sec.)~9.5 CM/S (3¾ ins./sec.)
Tape speed deviation	within \pm 0.5%
Starting time for constant speed	within 0.5 sec.
Wow and flutter	Less than 0.1% R. M. S.
Fast Forward and Rewind time	45 sec. with 7" (1,200 ft.) reel of tape
Signal to Noise Ratio	More than 45 db
Dimensions	16" \times 14" \times 9"
Weight	33 lbs. (Net in carton)

Amplifier

Power source A.C.	100V~117V 50%~60% (220 or 230V upon request)
Power consumption	65V.A.
Recording input (Mic. input)	High impedance dynamic (Sensitivity -75 db)
(Line input)	Min. 100mV (Z=250K Ω)
Reproducing output	Max. 1.4V cathode follower
Head input terminals	4-track & 2-track Stereo & Monaural applicable
Reproducing input impedance (high)	3K Ω 1kc/s Reproducing characteristic follows standard NARTB & CCIR
Recording output impedance (low)	3K Ω 60kc/s Recording characteristic follows standard NARTB
Erasing output impedance (low)	300 Ω 60kc/s
Frequency characteristics	19cm/s (7½in./sec.) 30~19,000%
	9.5cm/s (3¾in./sec.) 30~12,000c/s
Signal to Noise Ratio	More than 45 db
Distortion harmonic	Within 1.5%
Vacuum tubes used	12AD7 \times 4 12AT7 \times 3 12AU7 \times 2 12BH7 \times 1 6X4 \times 1
Case Dimension	16" \times 12½" \times 5½"
Amplifier Dimension	15¼" \times 7⅝" \times 4"
Weight	20 lbs. (Net in Carton)