

TRADE NAME	Delmonico Model 4TR-20S
SUPPLIER	Delmonico International Corp., 120-20 Roosevelt Ave., New York 68, New York
TYPE SET	Two Speed AC Operated, Four Track Stereo Tape Deck
POWER SUPPLY	110 - 117 Volts AC, 60 Cycles

FUNCTION OF CONTROLS

Record Lock

Depress to lock amplifier in the Record position.

Quick Stop

Pull the lever toward the front of the deck to stop tape motion momentarily.

Speed Selector

Depress for 7 1/2 ips and up for 3 3/4 ips.

Function Selector

Selects the mode of operation, Rewind, Play Record, or Fast Forward.

Fast Forward Lock

Depress and turn the Function Selector to Play Record to advance tape rapidly.

Power Switch

Turns the power on and off to the tape deck.

Volume

Inner knob regulates the volume on the left channel and the outer knob regulates the volume on the right channel.

Selector

Selects the recording or playback tracks, Stereo-Mono 1-4, or Mono 2-3.

Microphone

Insert microphone or microphones into these jacks when making a recording.

Record Level Meters

Two meters are provided to indicate the correct recording level. One for left channel and one for right channel.

CLEANING

Pressure roller (2), capstan, play-record head (5), erase head (20), and tape guides (19), accumulate tape oxide coating, which wears off the tape as it passes these parts. Use a soft cloth dipped in alcohol to remove this accumulation.

LUBRICATION

All sliding levers should be cleaned occasionally and lubricated with a nonhardening grease. This motor bearings should be lubricated with one or two drops of good motor oil.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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OPERATING INSTRUCTIONS

To Record

1. Place a reel of tape on the supply (left) spindle and thread the tape from left to right.
2. Select the desired speed.
3. Connect the sound source to the tape deck amplifier.
4. Select the proper tracks to record on; Stereo Mon. 1-4, or Mon. 2-3.
5. Depress the Record Lock and turn the Function Selector to Play-Record simultaneously.
6. Turn volume control(s) until the record level meter(s) fluctuate in the correct area of the meter(s).
7. To stop recording, return Function Selector to the Stop position.

Rewind

Turn Function Selector to Rewind to rewind the tape onto the supply reel.

Fast Forward

Depress the Fast Forward Lock and simultaneously turn the Function Selector to Play-Record position to advance the tape to a desired spot rapidly.

Playing a Recorded Tape

1. Place the reel of tape on the supply spindle (left) and thread the tape from left to right.
2. Select the correct speed.
3. Turn Selector to the position which corresponds to the tape.
4. Turn Function Selector to Play-Record position.
5. Adjust the volume control(s) to desired listening level.

Erasing Recorded Material

Any recording is automatically erased before a new recording is put on the tape when it is in Record position. To erase a recording without putting new material on the tape, proceed as follows:

1. Thread the tape.
2. Turn Selector to tracks to be erased.
3. Turn the volume control to its minimum counter-clockwise position.
4. Depress the Record Lock and simultaneously turn Function Selector to Play-Record position.
5. Use same procedure to erase the remaining tracks if so desired.

Quarter-Track Recording

One-fourth of the tape width is recorded at a time, thereby resulting in four-track recording. This four-track recording is accomplished in the following manner:

1. Thread the tape.
2. Turn Selector to Mono. 1-4.
3. Proceed as described under "To Record".
4. After the first track is recorded, and all the tape wound onto the takeup reel, return the Function Selector to Stop.
5. Remove the reels, turn them over, place the full reel on the supply (left) spindle, rethread the tape and continue the recording.
6. After this track, which is track 4, is recorded, return the Function Selector to Stop.
7. Turn the Selector to Mono. 2-3.
8. Remove the reels, turn them over, place the full reel on the supply (left) spindle, rethread the tape, and continue the recording.
9. After this track, which is track 2, is recorded, turn the Friction Selector to Stop.
10. Remove the reels, turn them over, place the full reel on the supply (left) spindle, rethread the tape, and continue recording.
11. The tape may be played back in the same manner.

ADJUSTMENTS

Play-Record Head

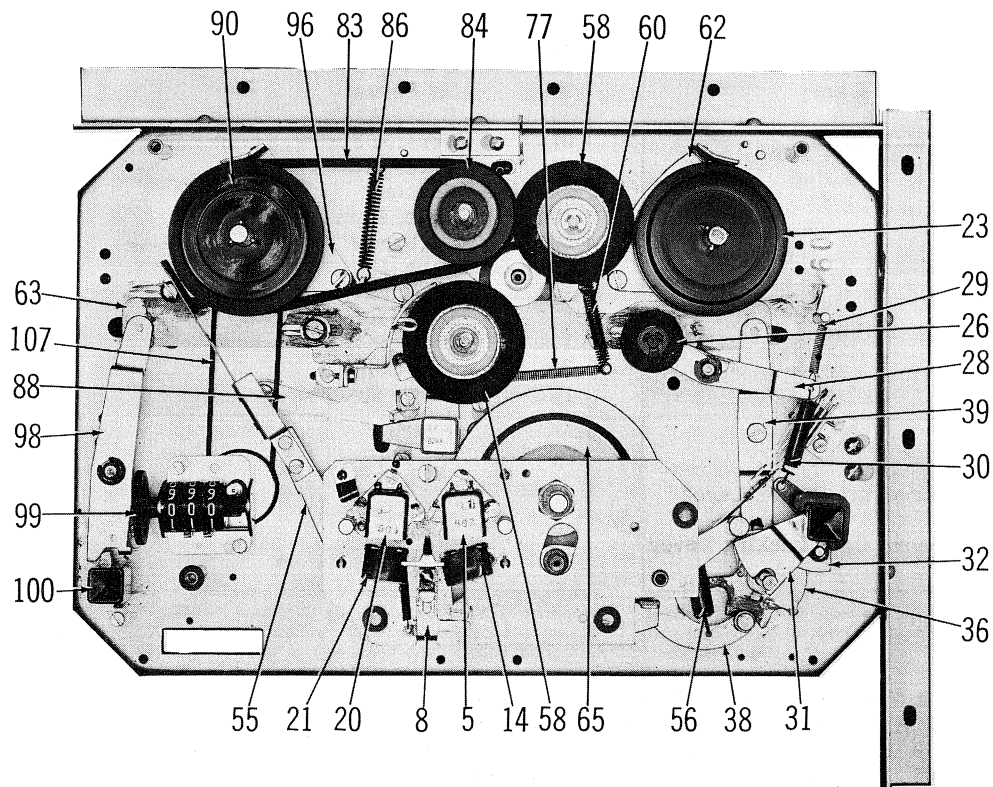
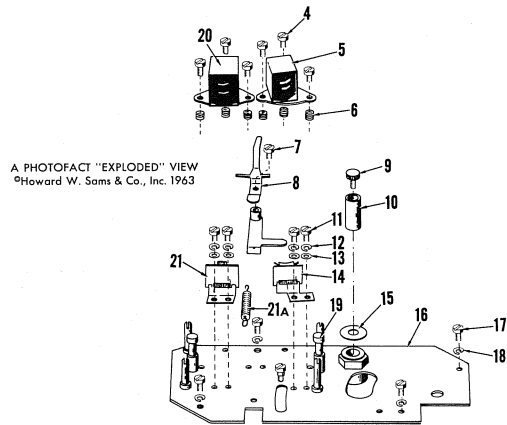
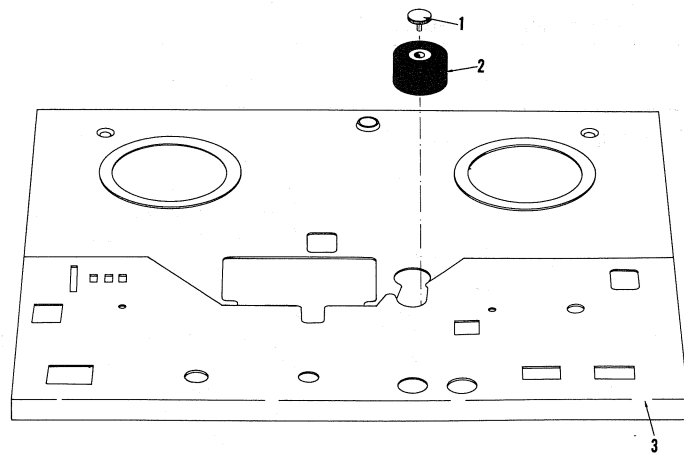
The recording head (5) must be aligned with the tape. If it is not, low output, loss of high frequencies, or track overlap may result. To align the head, adjust as follows:

1. Thread an alignment tape onto the recorder.
2. Adjust the three spring-loaded mounting screws until the top of the tape is aligned evenly with the top edge of the record head lamination.
3. To adjust for maximum frequency response, adjust the two front spring-loaded screws.
4. Recheck the head height.

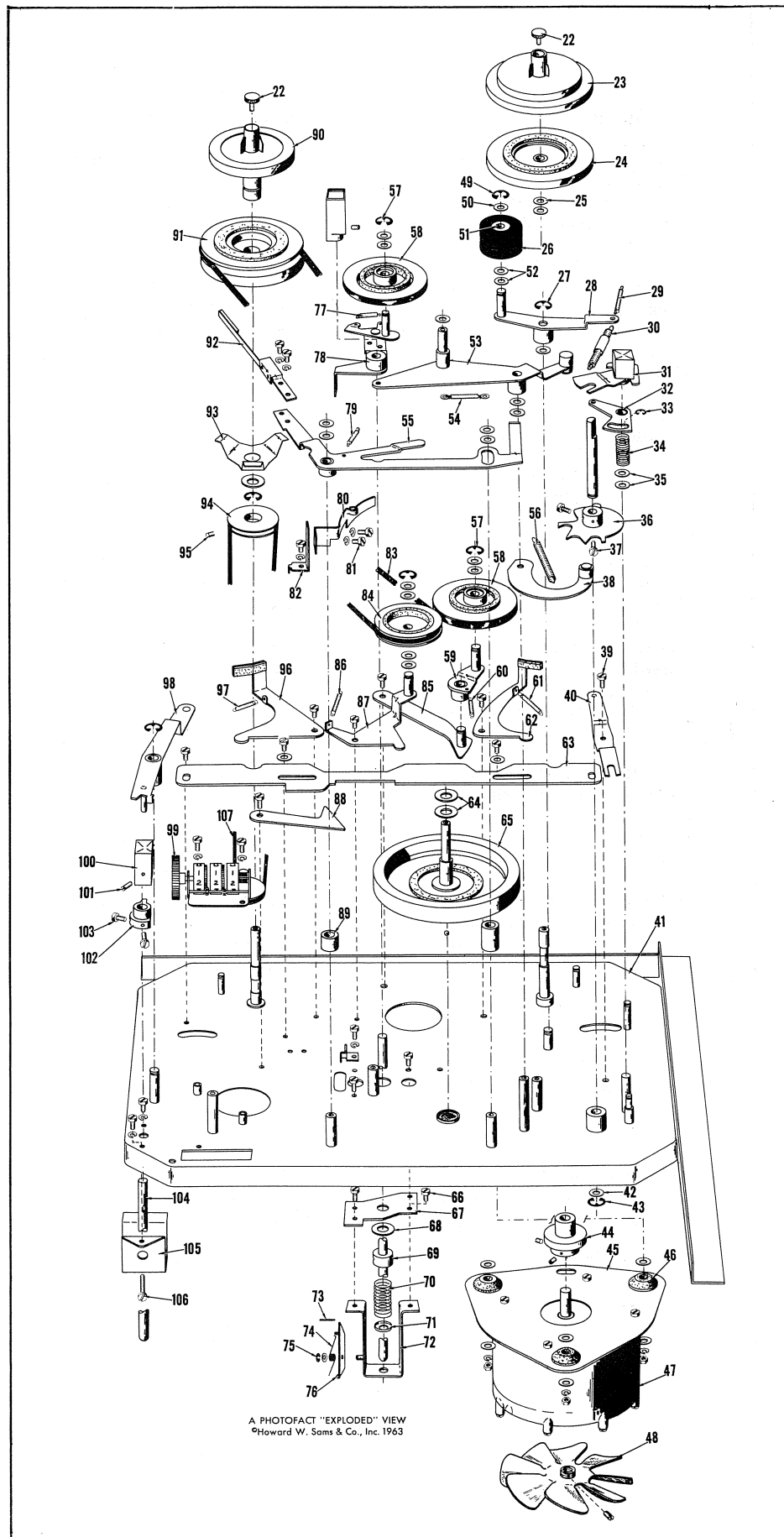
Erase Head

1. Thread a tape onto the recorder.
2. Adjust the three spring-loaded screws until the erase head is parallel with the tape and the top edge of the tape is aligned evenly with the top edge of the erase head lamination.

TROUBLE CHART



Symptom	Cause	Remedy
No fast forward .	<ol style="list-style-type: none"> 1. Drive idler tension spring (60) broken or missing. 2. Fast forward pressure roller tension spring (30) broken or missing. 	<ol style="list-style-type: none"> 1. Replace drive idler tension spring (60). 2. Replace tension spring (30).
No rewind.	<ol style="list-style-type: none"> 1. Rewind drive belt (83) oily or broken. 2. Idler tension spring (86) broken or missing. 	<ol style="list-style-type: none"> 1. If oily, clean with alcohol. If broken, replace. 2. Replace idler tension spring (86).
No takeup in play or record position.	<ol style="list-style-type: none"> 1. Capstan drive idler wheel (58) oily. 2. Tension spring (77) broken or missing. 	<ol style="list-style-type: none"> 1. Clean with alcohol. 2. Replace tension spring (77).
Counter inoperative.	<ol style="list-style-type: none"> 1. Drive belt (107) broken. 2. Counter binding. 	<ol style="list-style-type: none"> 1. Replace drive belt (107). 2. If dirty, clean; if jammed, re-place.
Pressure roller does not contact the capstan firmly.	<ol style="list-style-type: none"> 1. Pressure roller (2) worn. 2. Pressure lever tension spring (54) broken or missing. 	<ol style="list-style-type: none"> 1. Replace pressure roller (2). 2. Replace pressure lever tension spring (54).
Pressure pads do not hold tape against heads.	<ol style="list-style-type: none"> 1. Tension spring in pressure pad shield broken. 2. Tension spring (21A) broken and not pulling tape lever in against the tape. 	<ol style="list-style-type: none"> 1. Replace pressure pad shield assembly. 2. Replace tension spring (21A).
No playback or record.	<ol style="list-style-type: none"> 1. Defective Play-Recordhead (5). 2. Broken lead to Play-Record head. 3. Defective component in amplifier. 	<ol style="list-style-type: none"> 1. Replace Play-Record head (5). 2. Repair or replace broken lead. 3. Check voltages and resistances per schematic.
No erase.	<ol style="list-style-type: none"> 1. Defective erase head (20). 2. Broken lead to erase head. 3. Defective component in amplifier. 	<ol style="list-style-type: none"> 1. Replace erase head (20). 2. Repair or replace broken lead. 3. Check voltages and resistances per schematic.
Speed change mechanism will not stay in the 7 1/2 ips position.	<ol style="list-style-type: none"> 1. Spring (74) broken or missing. 	<ol style="list-style-type: none"> 1. Replace spring (74).
Speed change mechanism will not stay in the 3 3/4 ips position.	<ol style="list-style-type: none"> 1. Compression spring (70) broken or weak. 	<ol style="list-style-type: none"> 1. Replace compression spring (70).
Tape spills when going from rewind or fast forward to stop.	<ol style="list-style-type: none"> 1. Brake pads worn. 2. Brake lever tension spring (61) or (97) broken or missing. 	<ol style="list-style-type: none"> 1. Replace brake pads. 2. Replace brake lever tension spring (61) or (97).
Weak recording and playback.	<ol style="list-style-type: none"> 1. Play-Record head (5) dirty. 2. Pressure pad worn. 3. Defective component in amplifier. 	<ol style="list-style-type: none"> 1. Clean the pole pieces of the head with head solvent. 2. Replace pressure pad. 3. Check voltages and resistances per schematic.



MECHANICAL PARTS LIST

Ref. No.	Description	Ref. No.	Description
1	Screw, Pressure Roller Retaining	58*	*Drive Idler, Fast Forward & Capstan Drive
2*	* Pressure Roller	59	Lever, Fast Forward Drive Idler
3	Escutcheon	60	Tension Spring, Fast Forward Drive Idler
4	Screw, Head Adjusting	61	Tension Spring, Takeup Brake
5	Play-Record Head	62	Brake Ass'y., Takeup
6	Spring, Head Tension	63	Main Slide
7	Screw, Tape Lifter Retaining	64	Washer, Fiber
8	Tape Lifter Assembly	65	Flywheel and Capstan Ass'y.
9	Screw, Capstan Sleeve Retaining	66	Screw
10	Sleeve, Capstan	67	Plate, Retaining
11	Screw, Pressure Pad Retaining	68	Washer, Fiber
12	Lock Washer	69	Shaft, Speed Selector
13	Washer	70	Spring, Compression
14	Pressure Pad Ass'y., Play-Record Head	71	Retainer, Spring
15	Washer, Nylon	72	Bracket, Speed Selector
16	Plate, Head Mounting	73	Pin
17	Screw	74	Spring, Spiral
18	Lock Washer	75	"C" Washer
19	Tape Guide	76	Lever, Locking
20	Erase Head	77	Tension Spring, Capstan Drive Idler
21	Pressure Pad Ass'y., Erase Head	78	Lever Ass'y., Capstan Drive Idler
21A	Spring, Tape Lifter Tension	79	Tension Spring, Stop Lever
22	Screw, Spindle Retainer	80	Guide Bracket, Capstan Drive Idler
23	Spindle, Takeup	81	Screw
24	Clutch, Takeup	82	Mtg. Brkt., Capstan Drive Idler Guide Brkt.
25	Washer, Fiber	83*	*Drive Belt, Rewind
26*	*Drive Roller, Fast Forward	84	Idler, Rewind
27	"C" Washer	85	Lever, Takeup Idler
28	Idler Arm, Fast Forward Drive Roller	86	Tension Spring, Rewind Idler
29	Tension Spring	87	Lever, Rewind Idler
30	Tension Spring	88	Lever, Capstan Drive Idler Disengaging
31	Actuating Lever Assy., Fast Forward	89	Spacer
32	Lever, Fast Forward	90	Spindle, Rewind
33	"C" Washer	91	Clutch, Rewind
34	Spring, Compression	92	Brake, Instant Stop
35	Washer, Fiber	93	Plate, Tension
36	Cam, Detent	94	Pulley, Counter
37	Set Screw	95	Set Screw
38	Locking Lever, Detent Cam	96	Brake Ass'y., Rewind
39	Screw	97	Tension Spring, Brake Lever
40	Actuating Lever, Main Slide	98	Lever, Record Lock
41	Deck Plate	99	Counter
42	Washer, Fiber	100	Knob, Record Lock
43	"C" Washer	101	Set Screw
44	Pulley, Motor	102	Cam, Record Lock
45	Mounting Plate, Motor	103	Set Screw
46	Grommet	104	Shaft, Record Lock
47	Motor	105	Bracket, Record Lock
48	Fan	106	Set Screw
49	"C" Washer	107*	*Belt, Counter
50	Washer, Fiber		
51	Washer, Felt		
52	Washer, Fiber		
53	Lever, Pressure Roller		
54	Tension Spring, Pressure Roller Lever		
55	Lever, Stop		
56	Tension Spring, Detent Cam Locking Lever		
57	"C" Washer		

- * 2 Pressure Roller, WALSCO Part #1458-01
- *26 Drive Roller, Fast Forward, WALSCO Part #1458-02
- *58 Drive Idler, Fast Forward & Capstan Drive, WALSCO Part #1483-01
- *83 Drive Belt, Rewind, WALSCO Part #1410-59
- *107 Belt, Counter, WALSCO Part #1410-62