SERVICE MANUAL

The Fisher®

4020
4060
4025
474
495
674
895

4/2-Channel Stereo Receiver

WORLD LEADER IN HIGH QUALITY STEREO

TABLE OF CONTENTS

REQUIRED TEST EQUIPMENT	2	TUNER SCHEMATIC (All Models)	7
HARMONIC DISTORTION CHECK	2	4060/674/895 SCHEMATICS	8, 9
FM TUNER ALIGNMENT	3	4060/674/895 PARTS LISTS	8, 9
AM TUNER ALIGNMENT	4, 5	LAMP BOARD PARTS LIST (4060 Only)	9
CHASSIS PARTS LIST (All Models)	6	4020/4025/474/495 SCHEMATICS	10,11
TUNER PARTS LIST (All Models)	7	4020/4025/474/495 PARTS LISTS	10, 12

REQUIRED TEST EQUIPMENT

The following test equipment is required to test and align the Receiver:

- Line Voltage Autotransformer or Voltage Regulator
- AC DC Multimeter
- Accurately Calibrated AC Voltmeter
- Oscilloscope (Flat to 100 kHz Minimum)
- Low-Distortion Audio Sine-Wave Generator
- Harmonic Distortion Analyzer
- Four (4) Load Resistors, 8-ohms, 50 Watts (Minimum Rating)
- Low-Distortion AM-FM Signal Generator 10.7 MHz Sweep Generator
- Multiplex Generator
- 455 kHz Sweep Generator

CAUTION: This precision high-fidelity instrument should be serviced only by qualified personnel, trained in the repair of transitorized equipment and printed circuitry.

HARMONIC DISTORTION CHECK

To perform the harmonic distortion check proceed as follows:

CAUTION: Measure one channel at a time. Limit Full Power On periods to five minutes. Use a load resistor with a rating of at least 50 watts.

(1) Set BASS and TREBLE controls flat, SELECTOR switch to AUX 1, and POWER/SPKRS switch to AC OFF.
(2) Connect a low distortion sine wave signal generator between L AUX FRONT IN jack and chassis ground. Set the generator output at 1000 Hz, minimum output.
(3) Connect an 8-ohm load resistor between L MAIN SPKR and COM terminals. Connect an AC VTVM, scope, and harmonic distortion analyzer across the 8-ohm load.
(4) Set the POWER/SPKRS switch to 2-CH. Set FRONT BALANCE (or VOLUME/BALANCE) control(s) to full LEFT position. Turn VOLUME control slowly up to maximum.
(5a) For Models 4020/4025/474/495, adjust the generator output until the VTVM indicates 9 volts RMS. The distortion analyzer should indicate less than 1% harmonic distortion.
(5b) For Models 4060, 674, 895, adjust the generator output until the VTVM indicates 11 volts RMS. The distortion analyzer should indicate less than 1% harmonic distortion.
6. Repeat steps 3 through 5b for RIGHT FRONT channels.

TUNER ALIGNMENT

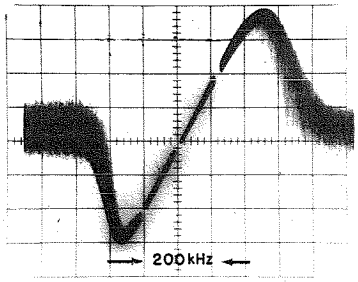
FM ALIGNMENT—FM MUTING OFF
MODE to 2-CH, SELECTOR to FM, VOLUME to MIN, TAPE MONITOR OFF.

Maintain generator output as low as possible for suitable indication.

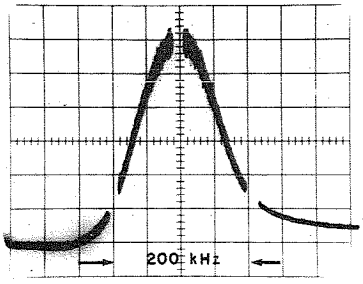
ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
Note: The FM IF circuit utilizes a non-tunable ceramic filter which establishes the IF bandpass. To insure symmetrical tuning and selectivity, the IF must be aligned precisely to the center of the filter bandpass, rather than to 10.7 MHz as in conventional LC circuits.				
1. IF ALIGNMENT	Connect to 10.7 MHz sweep through 2 pF capacitor and 22K resistor to TP1 (FM IN). Connect ground lead to rear of chassis. Markers are not required.	Position of non-interference.	Scope vertical input to TP2 (FM OUT). Ground lead to rear of chassis.	Short FM oscillator variable capacitor (section nearest L4) with a clip lead. Detune T9 by turning core up (CCW). Adjust T5, T3, T2, T1, for curve as shown in photograph. Repeat as required to obtain best shape. Adjust T9 for best shape (widest bandpass, not for max amplitude).
2. PRELIMINARY DETECTOR ALIGNMENT	Readjust generator output to 100 uV. Reduce output amplitude as much as possible throughout this procedure.		Scope vert input through a 100K resistor to TP3 (DISCRI).	Adjust T7 top and bottom for best gain and symmetry. S-curve should appear as shown in photograph.
Note: 120-ohm composition resistors in series with each lead from the RF generator match the 50-ohm output to the 300-ohm input impedance. Generator output voltage is reduced to one-half at antenna terminals. Signal voltages specified in this table are generator output levels, not antenna voltages.				
3. FRONT END ALIGNMENT		Tuning knob fully CCW.		Center dial pointer on 0 and cement it in place.
4.	Connect FM RF generator through two 120-ohm resistors to FM ANT screw terminals. Set generator to position of non-interference near 90 MHz, modulate with 400 Hz to provide ± 75 kHz deviation. Output amplitude should be sufficient to provide a reading of 3 on receiver front panel meter.	Position of non-interference near 90 MHz.	Receiver front panel meter. Note: To ensure that meter is not indicating a local broadcast station connect scope for step 5, below.	Adjust L4 for maximum gain. Adjust L2, then L7 for maximum gain. Repeat the two steps above as required.
5.	Change generator setting to position of non-interference near 106 MHz.	Position of non-interference near 106 MHz.		Adjust TC3 for maximum gain. Adjust TC1, then TC2, for maximum gain. Repeat the two steps above as required.
6. FINAL DETECTOR ALIGNMENT	As above, except set to position of non-interference near 100 MHz. Set output amplitude to 1 mV (500 mV at receiver antenna terminals).	Position of non-interference near 100 MHz.	Distortion meter to RCDR OUT jack. DC VTVM through 100K resistor to TP3 (DISCRI).	Adjust top core of T7 for zero point on 0.1 scale. Adjust bottom core of T7 for minimum distortion (should be below 1%) on distortion meter.
7. FM OUTPUT	As above (100 MHz), deviation set to ±22.5 kHz.	Position of non-interference near 100 MHz.	VTVM and scope to RCDR OUT jack.	Adjust VR1 (FM Level Adjust) for 350 mV at RCDR OUT jack.

TUNER ALIGNMENT
(CONT'D)

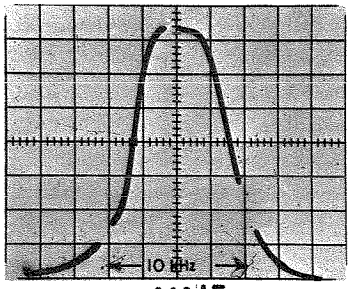
ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
8. SIGNAL STRENGTH (0-5) METER ADJUSTMENT	As above; set amplitude of generator output to 1 Millivolt.	Position of non-interference near 100 MHz.	Receiver Signal Strength (0-5) Meter.	Adjust VR5 (FM Meter Drive Adjust) so the front panel meter reads 4.
9. CENTER CHANNEL METER ADJUSTMENT (4060 only)			Receiver Center Channel (Arrows) Meter.	Slowly tune receiver above, then below generator signal. Needle should go from center (on signal) to right (above signal), then to left (below signal). Meter should remain centered when not near signal. If meter does not perform as described above, repeat steps 2 through 6 to produce properly shaped curves in IFs and Detector, as shown in photographs.
10. MUTING LEVEL ADJUSTMENT	Same except generator output set to 16 uV.		VTVM and scope to RCDR OUT jack.	Set MUTING ON-OFF switch on receiver front panel to ON. Adjust VR6 (Muting Adjust) until generator output signal overcomes MUTING (until signal shows on scope).
11. STEREO SEPARATION			Move VTVM and scope to TP5 (19 kHz) and GND. Move VTVM and scope to TP6 (38 kHz).	Set VR2 (Separation adjust) to the middle of its rotation. Adjust L6 and L9 (19 kHz) for maximum output. Adjust L7 for maximum.
12.	Change amplitude of 19 kHz modulation to 8%, and modulate with 400 Hz. Main signal (Left) amplitude should be sufficient to produce 42 kHz deviation.		Scope and VTVM to Right RCDR OUT jack.	Adjust L9 for maximum output. If L9 requires more than ½ turn, readjust L6, then L9 several times, to get best settings for maximum. Adjust VR2 for minimum.
13.	As above,except 19 kHz amplitude to produce 3.75 kHz deviation.		Move scope and VTVM to Left RCDR OUT jack.	Adjust VR7 so the STEREOBEACON just lights. Reduce amplitude of modulation until the STEREOBEACON just goes out. Note the amount of deviation. Increase the deviation until the light comes ON again. The STEREOBEACON should light and go out between 3 and 4.



FM DETECTOR



FM IF



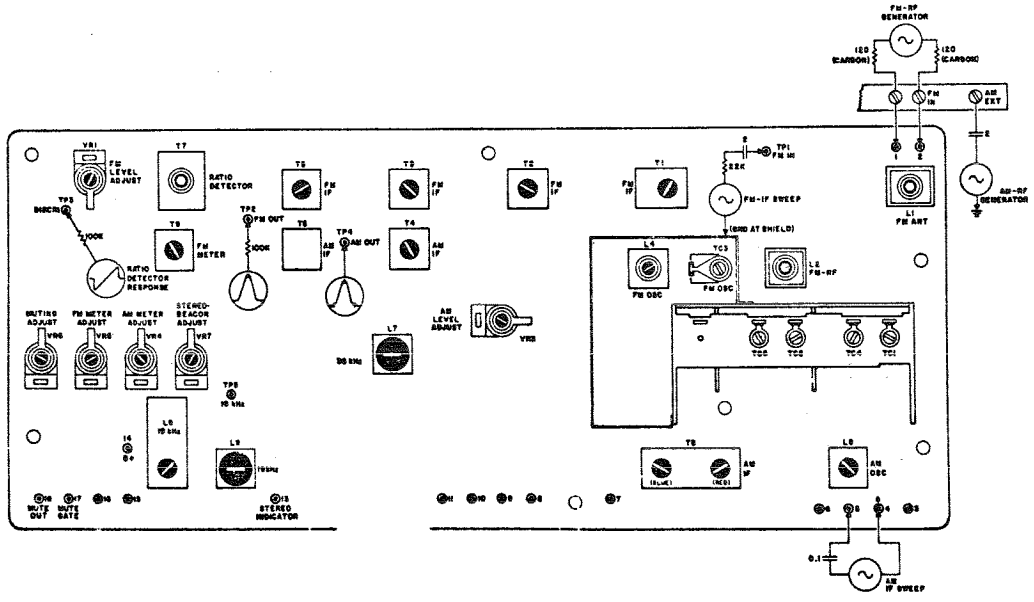
AM IF

TUNER ALIGNMENT
(CONT'D)

AM ALIGNMENT—SAME FRONT PANEL SETTINGS as FM ALIGNMENT EXCEPT SELECTOR SET to AM

Maintain generator output as low as possible for suitable indication.

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
1. AM IF	Connect 445 kHz sweep generator to AM EXT ANT terminals. Note: After each adjustment reduce generator output as required to keep front panel m meter near 2.5.	Position of non-interference.	Scope vertical input to TP4 (AM OUT).	Adjust T8 for maximum gain. Adjust T4 for maximum.gain. Repeat above two steps as required.
2. AM RF	Connect RM AM generator to antenna terminals and set output position of non-interference near 550 kHz, modulated 30% with 1 kHz audio, amplitude 5 mV.	Position of non-interference near 550 kHz	Scope and VTVM to RCDR OUT jack.	Adjust L8 (AM Osc) for maximum.
3.	Change the RF output frequency to position of non-interference near 1,600 kHz.	Position of non-interference near 1,600 kHz.		Adjust TC5 for maximum.
4. 5.	Reset the output frequency to position of non-interference near 600 kHz. Reset output to 1,600 kHz.	Position of non-interference near 600 kHz. Position of non-interference near 1,400 kHz.		Repeat steps 2 and 3, above for maximum at both 600 and 1,400 kHz. Remove tape from ferrite antenna case and adjust slide for maximum gain signal. Repeat steps 4 and 5.
6. AM OUTPUT	Reset generator output to position of non-interference near 1,000 kHz, amplitude 5 mV.	Position of non-interference near 1,000 kHz.		Adjust VR3 (AM Output) for 315 mV.
7. AM SIGNAL STRENGTH METER (0-5) ADJUSTMENT	Reset generator output to position of non-interference near 1,000 kHz, amplitude 5 mV.	Position of non-interference near 1,000 kHz.	Receiver Signal Strength (0-5) meter.	Adjust VR4 (AM Meter Adjust) so that signal meter reads 4.



CHASSIS PARTS LIST

Ref. Des.	Description	Part Number
	Cabinet (4020/4025)	9403023
	Cabinet (474/495)	9403022
	Cabinet (4060)	9403919
	Cabinet (674/895)	9403025
	Washer, square, for cabinet assembly	4370451
	Screw, for above	4504582
	Front Panel (4020)	3242773
	Front Panel (4025)	3242777
	Front Panel (474)	3242771
	Front Panel (495)	3242721
	Front Panel (4060)	3242921
	Front Panel (674)	3242922
	Front Panel (895)	3280791
	Dial Glass (4020/4025)	3198692
	Dial Glass (474/495)	3198691
	Dial Glass (4060)	3198671
	Dial Glass (674/895)	3198671
	Knob, Tuning (4020/4025/4060)	3280791
	Knob, Tuning (474/495/674/895)	3280795
	Knob, SELECTOR, MODE, (4020/4025/4060)	3280802
	Knob, SELECTOR, MODE, (474/495/674/895)	3290906
	Knob, VOLUME, BALANCE, FRONT (4020/4025/4060)	3218722
	Knob, VOLUME, BALANCE, FRONT (474/495/674/895)	3218752
	Knob, VOLUME, BALANCE, REAR (4020/4025/4060)	3281751
	Knob, VOLUME, BALANCE, REAR (474/495/674/895)	3281723
	Pushbutton, LOUDNESS, MUTING (4020/4025/4060)	EK20046-3
	Pushbutton, LOUDNESS, (474/495/674/895)	EK20046-4
	Tuning Shaft assembly (4020/4025/474/495)	4561482
	Tuning Shaft assembly (674/895)	4381051
	Tuning Shaft Assembly (4060)	4566071
	Dial Pointer (4020/4025/474/495)	3386671
I9	Dial Pointer, w/lamp (4060/674/895)	3386441
I9	Lamp, only for above	2767094
M101	Tuning Meter (4020/4025)	2577122
M101	Tuning Meter (474/495)	25577129
M101	Tuning Meter (4060/674/895)	2787302
M102	Center Channel Meter (4060)	2787301
I58, I10	Lamp, Dial and Meter, fuse type, 6.3V, 250 mA	2767201
	Lamp, STEREOBEACON, 8V, 30 mA	2767333
I1-4	Lamp, MON, 2-CH, SQ, 4-CH, 6.3V, 65 mA	2767116
	Lamp holder (rubber)	2720022
S7	POWER/SPKRS switch (4020/4025/474/495)	2617352
S5	POWER/SPKRS switch (4060/674/895)	2617351
T 1	Power Transformer (4020/4025/474/495)	2217731
T1	Power Transformer (4060)	2217711
T1	Power Transformer (674/895)	2217741
C001	Capacitor, ceramic, 4700 pF	0243873
C002	Capacitor, electrolytic, 2200 UF, 63V	0250131
C005	Capacitor, electrolytic, 100 UF, 50V	1252831
R001	Resistor, 2.7 M	0139005
R003, 004	Resistor, 470, 1/2W (PHONES)	0134369
F001	Fuse, 2 A, 125V, (POWER, (4020/4025/474/495)	FL51313-13
F001	Fuse, 2.5 A, 125V (POWER 4060/674/895)	FL51313-28
F002	Fuse, 3 A, 125V, pigtail slo blow (Lamp ckt.)	FL51313-14
F003	Fuse, 2 A, 125V (OUTPUT)	FL51313-29
	Fuseholder	2727241
	Jack, PHONES	2677061
	Antenna, AM, Ferrite, incl. mtg. bracket	2757126
	Terminal Strip, Antenna	2687353
	Terminal Strip, Speakers	2687321
	Terminal Strip, I/O, 6 RCA jacks	2677131
	Terminal Strip, I/O, 8 RCA jacks	2677161
	Terminal Strip, DISC OUT jack	2677181
	AC Outlet	2657211
	Line cord	2740241
	Spring, meter retaining (4020/4025/474/495)	3337103
	Pulley, dial cord (metal, 3-1/2") (4020/4025/474/495)	3346045
	Spring, for above	4564711
	Spring, tuning backlash assembly (4060/674/895)	0662084
	Lamp Chassis, less lamps (4020/4025/474/495)	2518786
	Lamp Chassis, less lamps (674/895)	3918751
	Lamp Board, less lamps (4060)	3918729

Printed Circuit Boards Complete (incl. components)

Tuner (4020/4025/474/495)	2519198
Tuner (4060/674/895)	2519196
Preamp/Control/SQ (4020/4025/474/495)	2519662
Preamp/Control (674/895)	2519631
SQ (674/895)	2519641
Preamp/Control/SQ (4060)	2579531
Power Supply/Amp (4020/4025)	2519523
Power Supply/Amp (474/495)	2519661
Power Supply/Amp (4060)	2519521
Power Supply/Amp (674/895)	2519522

Note: Chassis mounted components may also be listed on the parts list of the circuit with which they function electrically.

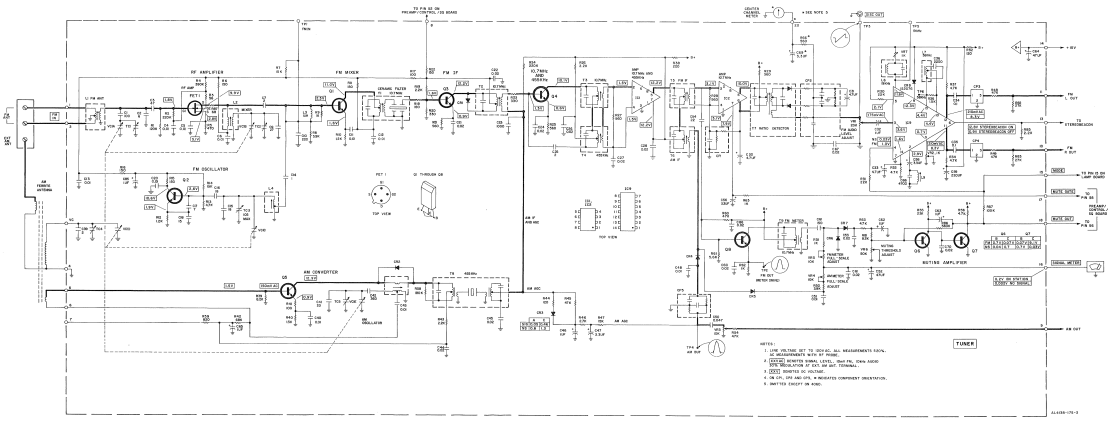
TUNER PARTS LIST

Ref. Des.	Description	Part Number
C1	Ceramic, 100 pF	0248234
C2	Ceramic, 6 pF	0248418
C3	Ceramic, 47 pF	0248676
C4, 5, 6, 11, 12, 13, 20	Ceramic, 0.01 uF	1245017
C7, 21, 39	Ceramic, 2 pF	0248632
C9	Ceramic, 27 pF	0248403
C10	Ceramic, 220 pF	0248362
C14, 55	Ceramic, 1 pF	0248631
C15, 16	Ceramic, 18 pF	0248676
C17	Ceramic, 7 pF	0248417
C18	Ceramic, 15 pF	0248444
C19, 22, 24, 26, 31, 35, 44, 45, 53, 60, 67, 70, 81, 86	Ceramic, 0.02 uF	1245018
C23	Mylar, 1000 pF	1274011
C30, 31, 33	Electrolytic, 4.7 uF, 50V	1252815
C32, 34, 36, 63, 65, 66	Electrolytic, 1 uF, 50V	1252811
C34, 35	Mylar, 0.1 uF	1276011
C38	Polystyrene, 2200 pF	0238343
C40, 43, 48, 51	Mylar, 0.01 uF	1275011
C41	Ceramic, 33 pF	0248687
C42	Ceramic, 1950 pF	0248663
C47, 56, 58, 69	Electrolytic, 3.3 uF, 50V	1253813
C50	Mylar, 0.047 uF	1275015
C52, 64	Electrolytic, 47 uF, 16V	1252535
C54	Ceramic, 22 pF	0248668
C59	Electrolytic, 220 uF, 16V	1252532
C61, 62	Ceramic, 470 pF	0248655
C68	Polystyrene, 4700 pF	0231513
CF1	Encapsulated Circuit, Filter	0186022
CF2	Encapsulated Circuit, Filter	0186041
CF3, 4	Encapsulated Circuit, Deemphasis Network	0186051
CF5	Encapsulated Circuit, Audio	0186031
CR1, 2, 3, 8	Diode, IS2076	2331011
CR4, 5	Diode, IN34A	0576022
CR6, 7	Diode, IN66F	0576019
FET 1	FET, 3SK46	2327431
IC1	Integrated Circuit, 10.7 MHz, HA1137	2327313
IC2	Integrated Circuit, 10.7 MHz, HA1302	2327411
IC9	Integrated Circuit, MPX, HA1137W	2327422
L1	FM Antenna, Coil	2134411
L2	FM RF, Coil	2134419
L3	Choke, 1 uH	2227081
L4	FM Oscillator, Coil	2134412
L6	19 kHz, Coil	2134352
L7	38 kHz, Coil	2134323
L8	AM Oscillator, Coil	2134431
L9	19 kHz, Coil	2134371

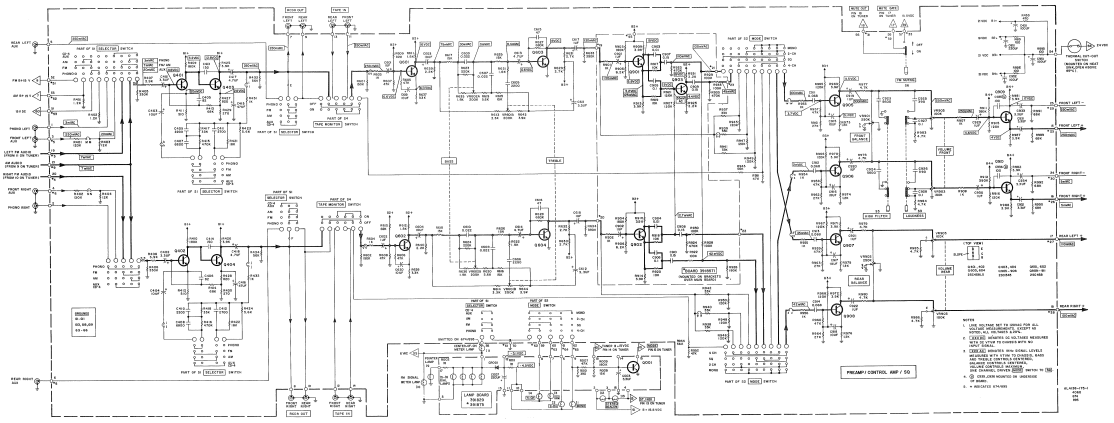
Ref. Des.	Description	Part Number
Q1	Transistor, NPN, 2SC535 (B)	0573510
Q2	Transistor, NPN, 2SC461 (B)	0573507
Q3, 4, 8	Transistor, NPN, 2SC460 (B)	0573466
Q5	Transistor, NPN, 2SC454 (B)	0573401
Q6, 7	Transistor, NPN, 2SC458 (C)	2320063
R1	120K	0114133
R2, 24	220K	0114393
R3	2.2K	0114068
R4	390K	0114295
R5	470	0114141
R6, 11, 15, 16, 22	150	0114135
R7, 39, 47	15K	0114205
R8, 58	3.9K	0114175
R9, 51, 62, 63	1K	0114161
R10, 12	1.2K	0114163
R13, 32, 36, 37, 53, 56	4.7K	0114177
R14	100	114131
R16	180	RD2156F-101J
R19, 26, 43, 55	2.2K	0114168
R20, 23	330	0114143
R21, 25, 27, 28, 29, 66	560	0114145
R30, 31, 50	22K	0114209
R34, 40	1.5K	0114165
R38	220	0114139
R39, 61	6.2K	114183
R42	68K	0114221
R44, 52	120	0114133
R45, 46, 49, 54	47K	0114217
R48	2.7K	0114171
R57	100K	0114281
R68	180K	0114287
R69	820	0114153
R81	5.6K	0114179
R82, 83	27K	0114211
R84	330K	0114297-84J
R87	33K	0114213
T1	Ceramic Filter, 10.7 MHz	2154012
T2, 5	Transformer, 10.7 MHz	0322003
T3	Transformer, 10.7 MHz	2154160
T4	Transformer, 455 kHz	2154161
T6	Transformer, 455 kHz	2154122
T7	Transformer, 455 kHz	2154162
T8	Transformer, 455 kHz	2154163
T9	Transformer, FM Meter	2140156
TC3	Capacitor, Trimmer, 105 uH	0262121
VC1	Capacitor, Gang, FM/AM	0261169
VR1	Resistor, Variable, 20K	0151301
VR2, 7	Resistor, Variable, 1K	0151202
VR3, 4, 5	Resistor, Variable, 100K	0151302
VR6	Resistor, Variable, 50K	0151225

All resistors are Deposited Film, 5%, 1/4W unless otherwise noted.
K = Kilohm

TUNER SCHEMATIC (All Models)



4060/674/895 SCHEMATIC



4060/674/895 PARTS LIST

PREAMPLIFIER/CONTROL/SQ

Ref. Des.	Description	Part Number
C401, 402, 611, 612, 613, 614	Electrolytic, 3.3 uF, 35V	1253813
C403, 604, 605, 606, 615, 620, 915 thru 918	Electrolytic, 10 uF, 25V	1252621
C405, 406	Ceramic, 82 pF	0248722
C407, 408	Mylar, 6800 pF	1274016
C409, 410, 609, 610	Mylar, 2200 pF	1274013
C411, 412	Mylar, 2700 pF	1274014
C413, 414	Ceramic, 150 pF	0248728
C415, 416	Electrolytic, 47 uF, 16V	1252629
C417, 418, 613, 614	Electrolytic, 4.7 uF, 50V	1253810
C601, 602	Electrolytic, 100 uF, 50V	1252831
C901, 902, 617, 618, 901, 902, 919, 920, 921, 922, 923, 924	Electrolytic, 1 uF, 50V	CE22342-2
C907 thru 910	Mylar, 0.033 uF	1276013
C915, 916	Ceramic, 47 pF	0248676
C951	Electrolytic, 2200 uF, 50V	0252881
C903, 904	Mylar, 0.01 uF	1276011
C905, 906, 907, 908	Mylar, 0.1 uF	1276017
C907 thru 910	Mylar, 015 uF	1276012
C911 thru 914	Mylar, 0.068 uF	1276016
C923, 924	Mylar, 5600 pF	1274035
C925, 926	Polystyrene, 350 pF	0228325
C929, 930	Ceramic, 39 pF	0248724
Q401, 402	Transistor, NPN, 2SC458TG (D) 2SC458TG (E) 2SC458TG (F)	2327254
Q403, 404, 905 thru 908	Transistor, NPN, 2SC1345 (E)	2327363
Q601, 602, 901, 902, 903, 909, 910	Transistor, NPN, 2SC458 (C)	2330963
Q655, 656	Transistor, NPN, 2SC458TG (C)	2330373
R003 thru 006	Composition, 470	0134389
R401, 402, 615, 616, 621, 622, 960, 968 thru 968	120K	0114283
R403, 404	12K	0114233
R405, 406	330K	0114293
R407, 408, 425, 426, 640, 644, 909, 910, 913, 914, 969 thru 972, 981, 982, 985, 986, 610, 903, 904, 928	3.9K	0114175
R411, 412	510	0114148
R413, 414, 909 thru 912, 923, 924, 929, 930, 931		
R415, 416, 921, 926, 927	470K	0114297
R417, 418, 937 thru 940	33K	0114267
R419, 420, 615, 620	5.6K	0114119
R427, 428	820	0114153
R429, 430	270	0114141
R431, 432, 603, 604, 901, 902, 961, 962 thru 966	1K	0114161
R433, 434, 943, 944	99K	0114219
R601, 602	1.2K	0114163
R605 thru 608, 961, 962, 967 thru 969	470	0114147
R609, 610	150K	0114285
R611, 612, 621, 622, 635, 636	82K	0114223
R613, 614, 637, 638	3.3K	0114173
R615 thru 618, 635, 636, 637, 638	15K	0114205
R623, 624	220K	0114289
R627, 628	680K	0114301
R629 thru 632	27K	0114171
R633, 634, 911, 912	390K	0114295
R639, 640	2.2K	0114169
R725, 931	8.2K	114183
R951 thru 956	78K	0114201
R952		
R953, 938, 932, 930, 935	100K	0114281
R961 thru 964	27K	RC0768F273J
R977 thru 980, 983, 984, 986	4.7K	0114177
R985, 987	100	0114131
S1, 2, S3 thru 6	Switch, SELECTOR, MODE Switch, TAPE MONITOR, LOUDNESS, FM MUTING, HIGH FILTER	2617233 2837401
VR601A, B, 602A, B	Potentiometer, dual, 200K	0151710
VR901, 902	Potentiometer, 250K	0151706
VR903	Potentiometer, 100K	0158252

All resistors are Deposited Film, 5%, 1/4W unless otherwise noted. K=K-Ohm

4060/674/895 PARTS LIST

(CONTINUED)

LAMP BOARD (4060 Only)

Ref. Des.	Description	Part Number
C003	Electrolytic, 3.3 uF, 50V	1252813
C007	Electrolytic, 220 uF, 10V	1252332
CR0001	Diode, IS2016 (1-2)	2337011
Q001	Transistor, NPN, 2N2468 (C)	2329063
R002	1B	1114047
R007	47K	1114213
R008	15K	1114205
R009	100K	1114221
R010	3M	1114145
R011	1Q	1114041

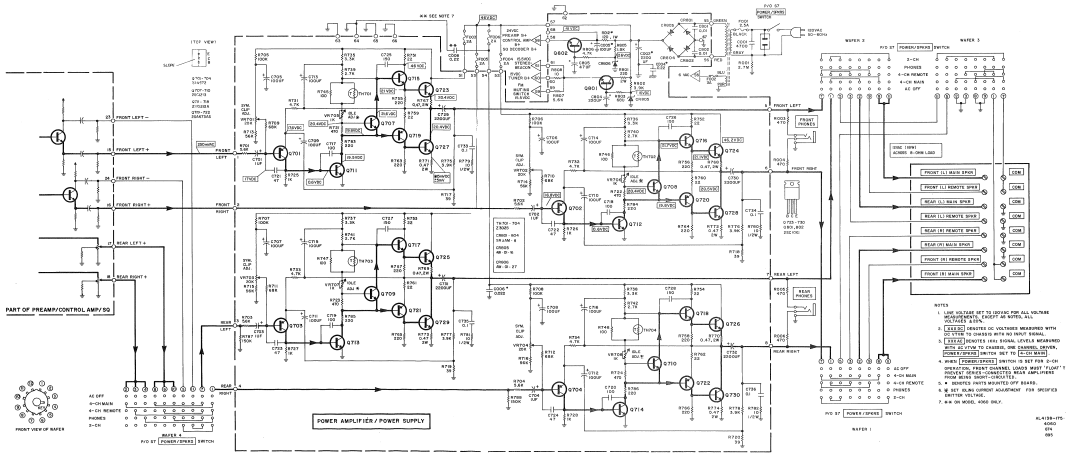
All resistors are Deposited Film, 5%, 1/4W unless otherwise noted.
K = Kilohm

POWER AMPLIFIER

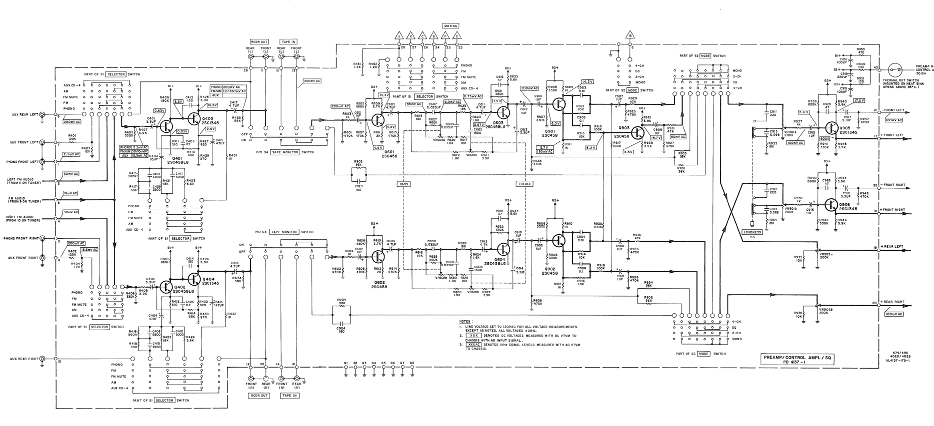
Ref. Des.	Description	Part Number
C003	Electrolytic, 2200 uF, 35V	0259137
C004	Ceramic, 0.22 uF	0276011
C005	Electrolytic, 1.0 uF, 50V	0253931
C101 thru 104	Electrolytic, 1.0 uF, 50V	0253931
C105 thru 116	Electrolytic, 100 uF, 50V	1252831
C117 thru 120	Ceramic, 100 pF	0248724
C121 thru 124	Ceramic, 47 pF	0248676
C125 thru 128	Ceramic, 150 pF	0248730
C129 thru 132	Electrolytic, 2000 uF, 35V	1252742
C133 thru 136	Ceramic, 1 nF	1276011
C801, 802	Mylar, 0.01 uF	1276031
C804	Electrolytic, 220 uF, 25V	1252632
C805	Electrolytic, 4.7 uF, 50V	1252835
CR801 thru 804	Diode, BR34M8	2337111
CR805	Diode, Zener, AM93-16	2337005
Q101 thru 104	Transistor, PNP, AM91-27	2327070
Q701 thru 704	Transistor, PNP, 2SA673 (C)	2327252
Q707 thru 710	Transistor, NPN, 2SC1213 (C)	2327253
Q711 thru 718	Transistor, NPN, 2SC1213A (C)	2327253
Q719 thru 722	Transistor, NPN, 2SA673A (C)	2327197
Q723 thru 730, 801, 802	Transistor, NPN, 2SC1061 (C) Q	2327153
R001, 012	12Q, 2W	RS20W012JJ
R701, 702, 807	5.6K	0114109
R703, 704	2.2K	0139139
R705 thru 708	100K	0114201
R708 thru 712	68K	0114221
R713 thru 716	56K	0114219
R717 thru 720	3Q	0114099
R721 thru 724	3Q	0114149
R725 thru 728	1K	0114181
R731 thru 734, 739	4.7K	0114177
R735 thru 738	3.3K	0114173
R739 thru 742	2.2K	0114171
R745 thru 748	10Q	RC07BF10SJ
R751 thru 754, 758 thru 761	22	0114049
R755 thru 757, 762 thru 764	220	0114139
R765 thru 768	1Q0, 1W	Wirewound, 0.47, 2W
R767 thru 770, 771 thru 774	150K	Wirewound, 0.47, 2W
R775 thru 778	3.9K	0114175
R779 thru 782, 801	1Q, 1/4W	0134089
R802	3.9K, 1W	0134080
R803	680, 1/4W	0134371
R805	1.8K, 1W	0134016
TH701 thru 704	Thermistor, 2302S	0616041
VR701 thru 704	Potentiometer, 20K	0151281
VR705, 706	Variable, 1K	0151282

All resistors are Deposited Film, 5%, 1/4W unless otherwise noted.
K = Kilohm

4060/674/895 SCHEMATIC



4020/4025/474/495 SCHEMATIC



4020/4025/474/495 PARTS LIST

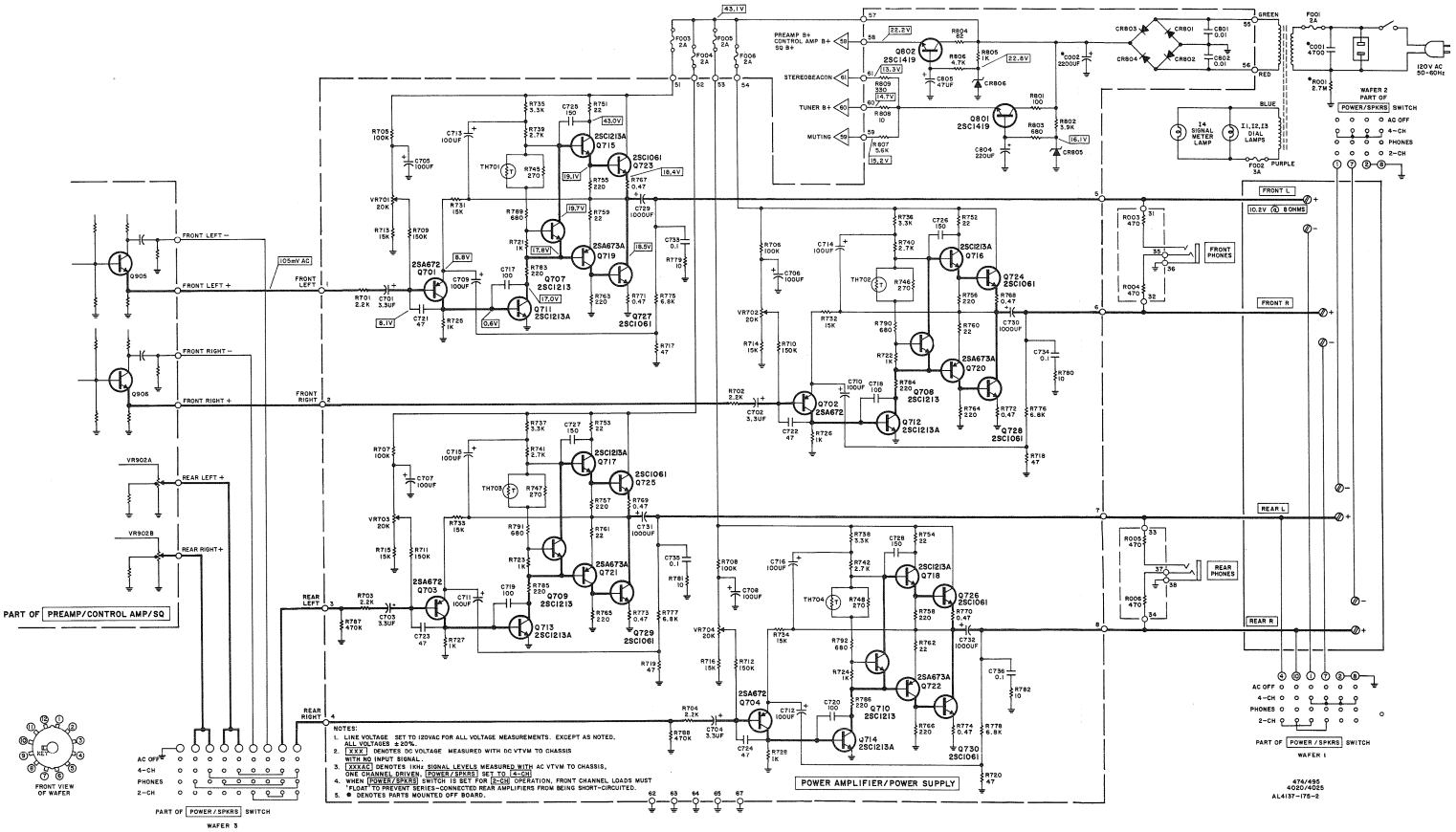
PREAMPLIFIER/ CONTROL / SQ

Ref. Des.	Description	Part Number
C401, 402, 613, 614	Electrolytic, 3.3 uF, 50V	1252813
C403, 404	Electrolytic, 10 uF, 25V	1252621
C405, 406	Ceramic, 82 pF	0248727
C407, 408	Mylar, 6800 pF	1274016
C409, 410	Mylar, 2200 pF	1274013
C411, 412	Mylar, 3000 pF	1274243
C413, 414	Ceramic, 150 pF	0248728
C415, 416	Electrolytic, 47 uF, 16V	1252525
C417, 418, 603, 604, 611, 612	Electrolytic, 4.7 uF, 50V	1252815
C451, 921	100 uF, 50V	1252831
C601, 602, 617, 618, 901, 902, 907, 908, 909, 910, 915, 916, 917, 918	Electrolytic, 1 uF, 50V	1252811
C605, 606	Mylar, 1500 pF	1274012
C607 thru 610	Mylar, 0.033 uF	1275014
C615, 616, 925, 926	Ceramic, 47 pF	0248676
C903, 904	Mylar, 0.01 uF	1275011
C905, 906	Mylar, 0.1 uF	1276011
C911, 912	Mylar, 220 pF	0228319
C913, 914	Mylar, 0.068 uF	1275016
C919	Electrolytic, 2200 uF	1252632
C923, 924	Ceramic, 180 pF	0248730
Q401, 402	Transistor, NPN, 2SC458LG (D)	2327254
Q403, 404	Transistor, NPN, 2SC1345 (E)	2327363
Q601, 602, 901, 902, 903, 905, 906	Transistor, NPN, 2SC458 (C)	2320063
Q603, 604	Transistor, NPN, 2SC458LG (C)	2320073
R401, 402	120K	0114283
R403, 404	12K	0114203
R405, 406, 905, 906, 907, 908, 941, 942	330K	0114293
R407, 408, 425, 426, 921, 923, 943, 944, 945, 946	3.9K	0114175
R409, 410	180K	0114287
R411, 412	510	0114148
R413, 414	68K	01144221
R415, 416	560K	0114299
R417, 418	33K	0114213

Ref. Des.	Description	Part Number
R421, 422, 615, 616, 617, 618, 625, 626	18K	0114207
R423, 424, 633, 634	5.6K	0114179
R427, 428	820	0114153
R429, 430	270	0114141
R431, 432, 603, 604, 909 thru 912, 937, 938	1K	0114161
R433, 434	56K	0114219
R601, 602, 607, 608, 613, 614, 635, 636, 925 thru 928, 947, 948	470K	0114297
R605, 606, 631, 632, 939, 940	680K	0114301
R609, 610	2.7K	0114171
R611, 612	2K	0114168
R619, 620, 623 624, 626, 630	1.8K	0114167
R621, 622, 921, 923	3.9K	0114175
R627, 628	820K	0114303
R901 thru 904, 953, 954	56K	0114219
R913, 914, 917, 918, 919, 920	100K	0114281
R915, 916, 933, 934, 935, 936	10K	0114201
R929, 930 931	47K	0114217
R939, 940	680K	0114301
R949, 951	100	0114131
R953	470	0114147
S1, 2	Switch, SELECTOR, MODE	2617361
S3, 4	Switch, TAPE MONITOR, LOUDNESS CONTOUR	2637531
VR601, 602	Potentiometer, dual, 200K	0151710
VR901A, B, 902A, B	Potentiometer, 200K	0151710

All resistors are Deposited Film, 5%, ¼W unless otherwise noted.
K = Kilohm

4020/4025/474/495 SCHEMATIC



NOTES:
1. LINE VOLTAGE SET TO 120VAC FOR ALL VOLTAGE MEASUREMENTS. EXCEPT AS NOTED, ALL VOLTAGES ± 20%.
2. XXX DENOTES DC VOLTAGE MEASURED WITH DC VTVM TO CHASSIS WITH NO INPUT SIGNAL.
3. XXXAC DENOTES 1KHz SIGNAL LEVELS MEASURED WITH AC VTVM TO CHASSIS, ONE CHANNEL DRIVEN. POWER/SPKRS SET TO 4-CH.
4. WHEN POWER/SPKRS SWITCH IS SET FOR 2-CH OPERATION, FRONT CHANNEL LOADS MUST 'FLOAT' TO PREVENT SERIES-CONNECTED REAR AMPLIFIERS FROM BEING SHORT-CIRCUITED.
5. ● DENOTES PARTS MOUNTED OFF BOARD.

4020/4025/474/495 PARTS LIST

POWER AMPLIFIER

Ref. Des.	Description	Part Number
C701 thru 704	Electrolytic, 3.3 uF, 50V	1252813
C705 thru 716	Electrolytic, 100 uF, 50V	1252831
C717 thru 720	Ceramic, 100 pF	0246464
C721 thru 724	Ceramic, 47 pF	0248676
C725 thru 728	Ceramic, 150 pF	0248728
C729 thru 732	Electrolytic, 1000 uF, 35V	1252741
C733 thru 736	Mylar, 0.1 uF	1276011
C801, 802	Ceramic, 0.01 uF	0245408
C804	Electrolytic, 220 uF	1252632
C805	Electrolytic, 47 uF	1252825
CR801 thru 804	Diode, SR3AM-8	2337111
CR805	Diode, Zener, AW01-16	2337065
CR806	Diode, Zener, AW01-22	2337063
Q701 thru 704	Transistor, PNP, 2SA672 (C)	2327263
Q707 thru 710	Transistor, NPN, 2SC1213 (C)	2327333
Q711 thru 718	Transistor, NPN, 2SC1213A (C)	2327293
Q719 thru 722	Transistor, PNP, 2SA673A (C)	2327283
Q723 thru 730	Transistor, NPN, 2SC1061 (C)	2327153
Q801, 802	Transistor, NPN, 2SC1419 (C)	2327593
R701 thru 704	2.2K	0114169
R705 thru 708	100K	0114281
R709 thru 712	150K	0114285
R713 thru 716, 731 thru 734	15K	0114205
R717 thru 720	47	0114057
R721 thru 728	1K	0134373
R735 thru 738	3.3K	0114173
R739 thru 742	2.7K	0114171
R745 thru 748	270	RC20BF271J
R751 thru 754, 759 thru 762	22	0114049
R755 thru 758, 763 thru 766, 783 thru 786	220	0114139
R767 thru 774	Wirewound, 0.47, 2W	RP3WR47J
R775, 776	6.8K	0114181
R779 thru 782, 808	Composition, 10, ½W	0134289
R787, 788	470K	0138217
R801	Metal Oxide Fixed Film, 100, 2W	0111410
R802	Composition, 3.9K, ½W	0134380
R803	Composition, 680, ½W	0134371
R804	Composition, 82, ½W	0134300
R805	Composition, 1K, ½W	0134373
R806	4.7K	0114177
R807	5.6K	0114179
R809	330, ½W	RC20BF331J
VR701 thru 704	Potentiometer, 20K	0151281

All resistors are Deposited Film, 5%, ¼W unless otherwise noted.
K = Kilohm

Fisher
We invented high fidelity.

FISHER RADIO • 11-40 45th ROAD • LONG ISLAND CITY • NEW YORK 11101

NL 4137-103