

The following equipment is required to completely test and align the 504 Receiver:

- Line Voltage Autotransformer or Voltage Regulator
 - DC Vacuum Tube Voltohmmeter
 - Accurately Calibrated AC Vacuum Tube Voltmeter
 - Oscilloscope (Flat to 100 kHz Minimum)
 - Low-Distortion Audio Sine-Wave Generator
 - Harmonic Distortion Analyzer
 - 4 Load Resistors, 4-Ohms, 250 Watts (Minimum Rating)
- Low-Distortion AM-FM Signal Generator
 - 10.7 MHz Sweep Generator (Fisher 3024*)
 - Multiplex Generator (Fisher 1536*)
 - 455 kHz Sweep Generator (Fisher 3025*)
 - Soldering Iron with Small Tip, Fully Insulated from AC Line
 - Suction Desoldering Tool
 - Sound Source and Speakers for Listening Tests

*Requires Power Supply (Fisher 1561)

PLEASE READ CAREFULLY: The parts list on this and following pages do not include shipping charges. Please include the serial number of the Fisher equipment for which the part(s) are intended. Send your order to:

PARTS DEPARTMENT, FISHER RADIO, 11-40 45th Road, Long Island City, N.Y. 11101

Symbol	Description	Part Number	Sug. Ret.
PANEL			
--	Knob, TUNING	EK20042-1	1.05
--	Knob, MASTER BALANCE	EK20044	.45
--	Knob, Pushbutton	EK20030-3	.80
--	Knob, Slide	EK20043-1	.30
--	Knob, Rotary	EK20041-1	1.10
--	Dress Panel Assembly	AS4094-147	25.05
	Nameplate '504'	NP22653-1	.85
	Insert, Upper (Window)	AD23062-1	2.65
	Spring, Window Retainer	AN51427	.30
	Insert, Lower	AD23061-1	2.15
	Bushing, Pushbutton	EA51413	.30
	End Strip, Right	AD23065-3	1.45
	End Strip, Left	AD23065-4	1.45
--	Speed Nut, Dress Panel Retainer	HN24015-1	.30
CR505	L.E.D.-STEREOBEACON	TR19001	1.40
CR865, 866	L.E.D.-2/4 SPEAKERS (with mounting clip and retainer)	TR19003	2.05
--	Tuning Shaft/Bushing Assembly	AS20725	1.50
--	Dial Pointer	AP20507-1	.75
--	Dial Glass (Acrylic)	AS4094-162	2.80
I1, 2, 3, 4	Lamp, Dial	LM21434	1.00
I5, 6	Lamp, Meter	AS21410-6	.75
I8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18	Lamp - Mode, Selector, Display	LM21421-4	.70
M1	Signal Meter	MC21620	3.90
M2	Center-of-Ch Meter	MC21619EX	3.90
--	Mounting Pad, Meter	EM21126	.30
R124A, B	Control, MIDRANGE	RP50160-286	3.00
R132A, B, 133A, B, 138A, B, 139A, B	Control, FRONT/REAR BASS, FRONT/REAR TREBLE	RP50160-285	2.75
R297A, B, C, D	Control, MASTER BALANCE	RP50160-289	10.30
--	Bezel, MASTER BALANCE	EA4094-136	.40
R298A, B, C, D	Control, MASTER VOLUME	RP50160-287	7.10
S1	Switch, POWER	SP50200-65	2.95
S1	*Switch, POWER	SP50200-64	2.55
S11	Switch, SELECTOR	SR4094-150	7.50
S81	Switch, MODE/MONITOR	SR4094-154	6.75
S275, 276, 277, 278	4-Switch Assembly, SQ DECODER, REDUCED VOLUME, FM MUTING OFF, FM NOISE FILTER	SP50200-60	3.45
S283, 284, 285, 286	4-Switch Assembly, LOW FILTER, LOUDNESS, HIGH FILTER, AM DNL	SP50200-59	3.45

Symbol	Description	Part Number	Sug. Ret.
S865	Switch, AUDIO DISPLAY	SP50200-62	.95
S866	Switch, SPEAKERS	SR4094-151	7.95
--	Jack, TO RCDR, PHONES	JK20627-5	1.10
CHASSIS-REAR			
--	Terminal Strip, Antenna	ET51329	.85
--	Terminal Strip, Speakers	ET51340-1	5.10
--	Connector, Single Jack Female	J50465	.40
--	Connector, 22 Jack Female	JK20696	5.90
--	Cover, Output Transistor	AM2155-113	.85
J1	AC Outlet	JK20665	.60
--	Line Cord	W50023-1	1.20
--	Strain Relief	EM21116-7	.30
--	Fuse Holder	EA51408	.95
--	*Line Cord (3-Conductor)	WR20678	3.20
--	*Strain Relief	E51A110	.25
S2	*Switch, Fused Voltage Selector	SR51304-1	1.90
BOARDS			
--	PCB, AM-FM Tuner	PB2301-1	77.60
--	*PCB, AM-FM Tuner	PB2301-2	77.50
--	PCB, AM Dynamic Noise Limiter	PB2310-1	3.30
--	PCB, Preamplifier	PB2303-1	8.00
--	PCB, Control Amplifier	PB2304-1	41.30
--	PCB, SQ Decoder	PB2302-1	21.05
--	PCB, Switch Board	PB2323-1	6.35
--	PCB, Switch Board	PB2322-1	9.25
--	PM, Power Amplifier Module	PM2155-2	91.15
--	PCB, Predriver (p/o PA)	PB2306-2	38.85
--	PCB, Audio Display	PB2320-1	6.00
--	PCB, Phones	PB2315-1	2.10
--	PCB, Power Supply	PB2305-1	26.05
--	*PCB, Power Supply	PB2305-2	26.55
--	PCB, Mode Lamp Board	PB2326-1	2.15
--	PCB, Dial Lamp Board	PB2316-1	6.45
--	PCB, Selector Lamp Board	PB2328-1	2.50
--	PCB, Display Lamp Board	PB2327-1	2.50
MISCELLANEOUS			
--	Cabinet Assembly	AS4094-155	49.10
--	Cabinet (only)	KK4094-148	33.60
--	Grille, Cabinet	EA51406	.90
--	Foot, Plastic	E51A172	.30
--	Cover, Bottom	AA4094-119	7.95
--	Mounting Pad, Cover	EM51293	.30
T1	Transformer, Power	TD4094-115	36.70
T1	*Transformer, Power	TE4094-215	41.15
L300	Antenna, AM Ferrite	AS4094-160	2.95
--	Bracket, AM Antenna Support	EA24006	1.20
--	Dial Drum Assembly	AS4094-166	.95
--	Connector, 12-Pin Male-Male	HH20686-12	.95
--	Coupling, Extension Shaft	H50A799	.35

*Used in Export Units

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

REMOVING CABINET

- (1) Unplug AC power cord.
- (2) Remove the ten retaining screws from the underside of cabinet.
- (3) Slide cabinet off rear of chassis.

REPLACING DIAL LAMPS

- (1) Unplug AC power cord and remove cabinet.
- (2) Disconnect the two leads between the dial lamp board and terminal strip below the board. (It is unnecessary to disconnect meter lamp leads.)
- (3) Remove dial lamp board mounting screws and tilt out board.
- (4) Snap replacement lamps in holders and position the lamps so that the clear surface of each lamp faces the dial glass.

REPLACING METER LAMP ASSEMBLIES

- (1) Unplug AC power cord and remove cabinet.
- (2) Unsolder the meter lamp leads from the dial lamp board.
- (3) Squeeze long sides of the lamp assembly together and pull out.
- (4) Snap replacement lamp assembly into cutout and reconnect leads.

REPLACING MODE, SELECTOR, AND DISPLAY LAMPS

- (1) Unplug AC power cord and remove cabinet.
- (2) Label and disconnect leads from the appropriate lamp board.
- (3) Spread top and bottom of lamp housing apart to release board.
- (4) Remove old lamp and solder replacement lamp on board.

REMOVING DRESS PANEL

- (1) Unplug AC power cord and remove cabinet.
- (2) Gently pull all knobs from their shafts *except* the push-button knobs and the MASTER BALANCE knob. (These knobs need not be removed.)
- (3) Label and disconnect the leads of the Light Emitting Diodes located above the SPEAKERS switch. (Failure to observe proper polarity will destroy the LED's when reconnected.)
- (4) Remove the six flat-head screws holding the dress panel to the chassis (2 on top, 4 on bottom). Remove panel.

REMOVING DIAL GLASS AND METERS

- (1) Remove cabinet and dress panel.
- (2) Remove pointer from rail. (It is unnecessary to separate pointer from dial cord.)

- (3) Remove the nine round-head phillips screws from the front and top dial glass retainers (6 on front, 3 on top). Remove the retainers.
- (4) Label and disconnect LED and meter wires to permit the dial glass (with meters attached) to be removed.
- (5) Remove meters from the dial glass as follows:
 - (a) Remove tape holding light hood to meter and remove hood.
 - (b) Gently pry meter from dial glass. Avoid scratching the black-out finish on the dial glass with sharp or pointed instruments.
 - (c) Peel off residual adhesive from dial glass.

REMOVING PC BOARDS

Remove the cabinet for access to boards. Label and remove interconnecting leads. Most boards come out by removing the screws that secure the board to the chassis. Some boards require different or additional procedures for removal:

POWER SUPPLY

Remove the mounting screws and the four screws on the outside of the chassis which hold the heat sink to the chassis.

SQ DECODER

Displace the couplings that secure the two extender shafts of the SPEAKERS and MODE/MONITOR switches. The extender shafts tilt upward sufficiently to allow the board to be removed.

PREAMPLIFIER

Take out the board (with mounting brackets attached) by removing the two screws on the *outside* of the chassis.

SWITCH BOARDS

Remove the dress panel for access to mounting screws.

CONTROL AMPLIFIER

Remove the dress panel for access to the four hex mounting screws which hold the slide control/circuit board assembly to the front panel. Remove the module from the bottom of the chassis.

REMOVING TUNING SHAFT ASSEMBLY

- (1) Remove cabinet and dress panel.
- (2) Remove dial glass and dial cord.
- (3) Rotate flywheel to align set-screw with hole on top. Loosen set-screw and remove flywheel.
- (4) Remove lock-nut and washer from shaft and remove the tuning shaft/bushing assembly.

CAUTION:

- (A) Limit tests to 10 minutes.
- (B) Use load resistors with minimum power ratings of 250 watts each.

Unplug AC power cord. Depress AUDIO DISPLAY push-button, release all others. Set TONE CONTROLS, and MASTER BALANCE control to center positions. Set SPEAKERS switch to MAIN-4, MODE/MONITOR switch to 4-CH, and SELECTOR switch to AUX1.

ONE CHANNEL DRIVEN

- (1) Connect a low-distortion sine wave generator to AUX 1 IN FRONT LEFT jack. Set generator frequency to 1kHz, and output to minimum.
- (2) Connect a 4-ohm load resistor between MAIN SPEAKERS FRONT LEFT and COM terminals. Connect a Harmonic Distortion analyzer across the load.
- (3) Connect AC power cord and depress POWER pushbutton. Slide MASTER VOLUME to MAX.
- (4) Increase generator output for 52 watts RMS (14.4V across 4-ohm load). HD meter should indicate 0.5% or less.
- (5) Repeat preceding steps for FRONT RIGHT, REAR LEFT, and REAR RIGHT channels.

ALL CHANNELS DRIVEN

Connect a 4-ohm load across each of the four MAIN SPEAKERS output terminals. Set the MODE/MONITOR switch to MONO and check for distortion of 0.5% or less at 52 watts on each channel with all channels driven simultaneously.

CAUTION: When amplifiers are switched for 2-channel operation, inspect load connections carefully before testing or troubleshooting. Front-channel amplifier loads must be 'floating' (ungrounded). If any of the front-channel speakers COM terminals are grounded through common load returns, or through test equipment grounds connected to the load, the output of each series-connected rear amplifier will be short-circuited. This may trigger the auto shutdown circuit. The circuit can be reset by momentarily jumping pin AA (B+) to pin 99 (on the power amplifier), or turning off the receiver for 30 seconds or more.

