

Kolster Radio Corp.

Model: **K-70**

Chassis:

Year: **Pre June 1932**

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

Riders Volume 2 - KOLSTER 2-2

Riders Volume 2 - KOLSTER 2-3

Riders Volume 2 - KOLSTER 2-5

Riders Volume 1 - KOLSTER 1-12

MODELS K-60, K-62, K-70, K-72**K-80, K-82, K-90, K-92****Condenser & Resistor Data****KOLSTER RADIO, INC.****MODELS K-60—K-62**

Condenser, Electrolytic, 475 volts, 8 mfd. (C6-C7)
 Condenser, Electrolytic, 430 volts, 8 mfd. (C8)
 Condenser, fixed, Mica, .000725 mfd. (Yellow) (C2)
 Condenser, fixed, Mica, .0002 mfd. (Gray) (BC-4)
 Condenser, fixed, Mica, .001 mfd. (Orange) (C1)
 Condenser, fixed, Mica, .0015 mfd. (Blue) (SC-1)
 Condenser, fixed, Mica, .003 mfd. (Pink) (SC-2)
 Condenser, fixed, paper, .025 mfd. (200 volts) (C4)
 Condenser, fixed, paper, .1 mfd. (200 volts) (BC-6)
 Condenser, fixed, paper, .1 mfd. (400 volts) (C-5)
 Condenser, variable, 3 gang, comp. (VC-1, VC-2, VC-3)
 Condenser block (4 sections) (BC-1, BC-2, BC-3, C3)
 Resistor, fixed, carbon, 200 ohms (Body red, tip black, dot brown) (R5)
 Resistor, fixed, carbon, 10000 ohms (Body brown, tip black, dot orange) (R2)
 Resistor, fixed, carbon, 25000 ohms (Body red, tip green, dot orange) (R6)
 Resistor, fixed, carbon, 100000 ohms (Body brown, tip black, dot yellow) (R3)
 Resistor, fixed, carbon, .25 megohms (Body red, tip green, dot yellow) (R4, R7, R8, R9, R10)
 Resistor, fixed, carbon, 1 megohm (Body brown, tip black, dot green) (R1)
 Resistor, vitreous, tapped (R11, R12, R13, R14)

MODELS K-70—K-72

Condenser, Electrolytic, 475 volts, 8 mfd. (C6-C7)
 Condenser, Electrolytic, 430 volts, 8 mfd. (C8)
 Condenser, fixed, Mica, .000725 mfd. (Yellow) (C2)
 Condenser, fixed, Mica, .0002 mfd. (Gray) (BC-5)
 Condenser, fixed, Mica, .0005 mfd. (Red) (C4)
 Condenser, fixed, Mica, .001 mfd. (Orange) (C1)
 Condenser, fixed, Mica, .0015 mfd. (Blue) (SC-1)
 Condenser, fixed, Mica, .003 mfd. (Pink) (SC-2)
 Condenser, fixed, paper, .025 mfd. (200 volts) (C-10)
 Condenser, fixed, paper, 0.1 mfd. (200 volts) (C3, C-9, BC-1, BC-4, BC-7, BC-8)
 Condenser, fixed, paper, 0.1 mfd. (400 volts) (C5), BC-11
 Condenser, fixed, paper, 1.0 mfd. (K-72) (C11)
 Condenser, variable, 3 gang, comp. (VC-1, VC-2, VC-3)
 Condenser block (5 sections) (BC-2, BC-3, BC-6, BC-9, BC-10)
 Resistor, fixed, carbon, 200 ohms (Body red, tip black, dot brown) (R2)
 Resistor, fixed, carbon, 5000 ohms (Body green, tip black, dot red) (R9, R21)
 Resistor, fixed, carbon, 10000 ohms (Body brown, tip black, dot orange) (R3)
 Resistor, fixed, carbon, 20000 ohms (Body red, tip black, dot orange) (R11)
 Resistor, fixed, carbon, 25000 ohms (Body red, tip green, dot orange) (R8, R16)
 Resistor, fixed, carbon, 100000 ohms (Body brown, tip black, dot yellow) (R4)
 Resistor, fixed, carbon, .25 megohms (Body red, tip green, dot yellow) (R1, R5, R17, R18, R19, R20)
 Resistor, fixed, carbon, 2 megohms (Body red, tip black, dot green) (R6, R7)
 Resistor, vitreous, tapped (R12, R13, R14, R15)

MODELS K-80—K-82

Condenser, Electrolytic, 475 V. (C6-C7)
 Condenser, Electrolytic, 430 V. (C8)
 Condenser, fixed, Mica, .000725 Mfd. (Yellow) (C2)
 Condenser, fixed, Mica, .0005 Mfd. (Red) (SC-1, C4)
 Condenser, fixed, Mica, .001 Mfd. (Orange) (C1, BC-6)
 Condenser, fixed, Mica, .002 Mfd. (Green) (SC-2, BC-9)
 Condenser, fixed, paper, .025 Mfd. (200 volts) (C9)
 Condenser, fixed, paper, .1 Mfd. (200 volts) (BC-1, BC-5, C3)
 Condenser, fixed, paper, .1 Mfd. (400 volts) (C5) (BC-10)
 Condenser, fixed, paper, 1 Mfd. (200 volts) (K-82) (C10)
 Condenser, variable, 3 gang comp. (VC-1, VC-2, VC3)
 Condenser block (5 sections) (BC-2, BC-3, BC-4, BC-7, BC-8)
 Resistor, fixed, carbon, 200 ohms (Body red, tip black, dot brown) (R2)
 Resistor, fixed, carbon, 5000 ohms (Body green, tip black, dot red) (R18) (K-82)
 Resistor, fixed, carbon, 10000 ohms (Body brown, tip black, dot orange) (R3, R17)
 Resistor, fixed, carbon, 20000 ohms (Body red, tip black, dot orange) (R9)
 Resistor, fixed, carbon, 25000 ohms (Body red, tip green, dot orange) (R13, R14)
 Resistor, fixed, carbon, 50000 ohms (Body green, tip black, dot orange) (R15, R16)
 Resistor, fixed, carbon, 100000 ohms (Body brown, tip black, dot yellow) (R4)
 Resistor, fixed, carbon, .25 megohms (Body red, tip green, dot yellow) (R1)
 Resistor, fixed, carbon, 2 megohms (Body red, tip black, dot green) (R11, R12)
 Resistor, vitreous, tapped (R5, R6, R7, R8)

MODELS K-90—K-92

Condenser, Electrolytic, 475 V. (C6-C7)
 Condenser, Electrolytic, 430 V. (C8)
 Condenser, fixed, Mica, .000725 Mfd. (Yellow) (C2)
 Condenser, fixed, Mica, .0005 Mfd. (Red) (SC-1, C4)
 Condenser, fixed, Mica, .001 Mfd. (Orange) (BC-6, C1)
 Condenser, fixed, Mica, .002 Mfd. (Green) (SC-2, BC-9)
 Condenser, fixed, paper, .025 Mfd. (200 volts) (C9-C10)
 Condenser, fixed, paper, .1 Mfd. (200 volts) (BC-1, BC-5, C3)
 Condenser, fixed, paper, 1 Mfd. (400 volts) (C5)
 Condenser, fixed, paper, 1 Mfd. (200 volts) K-92 (C11)
 Condenser, variable, 4 gang, comp. (VC-1, VC-2, VC-3, VC-4)
 Condenser block (5 sections) (BC-2, BC-3, BC-4, BC-7, BC-8)
 Resistor, fixed, carbon, 200 ohms (Body red, tip black, dot brown) (R2)
 Resistor, fixed, carbon, 5000 ohms (Body green, tip black, dot red) (R19)
 Resistor, fixed, carbon, 8000 ohms (Body gray, tip black, dot red) (R11)
 Resistor, fixed, carbon, 10000 ohms (Body brown, tip black, dot orange) (R3-R20)
 Resistor, fixed, carbon, 12000 ohms (Body brown, tip red, dot orange) (R-10)
 Resistor, fixed, carbon, 25000 ohms (Body red, tip green, dot orange) (R13-R14)
 Resistor, fixed, carbon, 50000 ohms (Body green, tip black, dot orange) (R15-R16-R19)
 Resistor, fixed, carbon, 100000 ohms (Body brown, tip black, dot yellow) (R4)
 Resistor, fixed, carbon, .25 megohms (Body red, tip green, dot yellow) (R1-R5)
 Resistor, fixed, carbon, 1 megohm (Body brown, tip black, dot green) (R17-R18)
 Resistor, vitreous, tapped (R6-R7-R8-R9)

Model K 80,82 sets as originally manufactured employed 15,000 ohm volume control unit, (Stamped No. 62018). To improve volume control action, this unit has been replaced with 15,000 ohm potentiometer, (Stamped No. 62025).

In addition to replacing the volume control unit as just described, a 1,000 ohm fixed resistor, Part No. 6569-15, is installed in the Cathode circuit of the automatic volume control tube. This should be connected between the end of the volume control unit (R-10) and the 20,000 ohm resistor (R-9).

KOLSTER RADIO, INC.

MODELS K-60, K-62, K-70, K-72,

K-80, K-82, K-90, K-92

Condenser Adjustments, Data

Models K-60—K-62—K-70—K-72—K-80—K-82—K-90—K-92

**R.F. TUNING AND OSCILLATOR TRIMMING CONDENSER
ADJUSTMENTS**

Located on the front of the gang condenser are three trimmer condensers (TC-1-2-3) which are provided for aligning the R.F. circuits. The 600 K.C. trimmer condenser (OC-1) for the OSCILLATOR will be found on the right hand top of the chassis base directly in front of the '80 socket and opposite the coil shield. Poor tone, lack of sensitivity and selectivity, or complete inoperation of the receiver may be caused by these condensers being out of adjustment.

(a) Place the oscillator in operation at exactly 1400 K.C. and couple it to the antenna. Connect the output device in accordance with the type used. Tune in the oscillator signal and adjust the coupling between the oscillator and the antenna lead of the set, or increase the volume control setting until a deflection is obtained in the output meter.

(b) With an insulated screw driver adjust each of the trimmer condensers mounted on the gang condenser frame until a maximum deflection is obtained in the output meter. If the pointer goes off scale reduce the coupling or the volume control.

(c) Set the oscillator now at 600 K.C. Tune in this signal with the receiver and adjust coupling or volume control for a deflection in the output meter. Now adjust the oscillator 600 K.C. trimmer condenser (OC-1) until a maximum deflection is obtained. In making this adjustment it is advisable to rock the tuning condenser back and forth a few degrees each side of the normal position.

(d) Change the setting of the oscillator back to 1400 K.C. and readjust the three trimmer condensers.

If attention is given to the adjustments the R.F. and oscillator circuits will be properly aligned and satisfactory results should be obtained. If not the next step is to adjust the I.F. circuits.

I.F. CIRCUIT ADJUSTMENTS

A single intermediate frequency stage with two transformers is used in band-pass arrangement. Each transformer has both the primary and secondary windings tuned accurately for 175 K.C.

To adjust these circuits proceed as follows:

(a) Set the previously mentioned oscillator at 175 K.C.

(b) Connect the output device.

(c) Remove the oscillator tube, which is the type '27 adjacent to the type '80, and make a good ground connection to the chassis.

(d) Connect the output of the oscillator to the Control Grid cap of the first detector, which is the type '24 tube.

(e) Adjust the oscillator output or the receivers volume control until a deflection is obtained in the output device.

(f) Place the chassis on end and the adjusting screws for the I.F. transformer condensers (IC-1-2-3-4) will be found through holes in the under side of the base after the bottom shield has been removed.

(g) Adjust the secondary and primary of the second and first I.F. transformers in the order just mentioned until a maximum deflection is obtained in the output meter. Make these adjustments the second time to insure proper aligning. It is now advisable to recheck the R.F. and oscillator condensers again.

LINE VOLTAGE VARIATIONS Models K-60—K-62 and Models K-70, K-72

These models were tested on 115 volts, and are therefore suitable for operation on line voltages ranging from 110 to 120 volts. Should lower line voltages be encountered it will be necessary to remove the chassis from the cabinet and unsolder the BLUE lead, which comes from the under side of the power transformer and is connected to one side of the line switch mounted on the rear of the volume control. In its place solder the GREEN lead, taping the end of the Blue lead just removed so that it will not short against other leads in the chassis. In locations where the line voltages exceed 120 volts, a suitable resistor will be necessary to reduce the voltage applied to the correct value.

CAUTION

**NEVER TURN ON THE POWER TO THE SET WHEN THE
SPEAKER IS DISCONNECTED**

KOLSTER RADIO, INC.

MODEL K-70, K-72

Test Data

Voltage

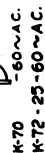
From Chassis To	Correct	Incorrect	From Chassis To	Correct	Incorrect
All tubes removed from sockets and AC plug disconnected from power supply Speaker disconnected. Volume control maximum unless otherwise stated.			AVC Plate	2,000,000 ohms	See RF Control Grid See 1 Det Control Grid
Aerial	1.55 ohms		'80 Anode to '80 Anode	166 ohms	TO
RF Control Grid	2,250,000 ohms	TC- rf Cg-Y	'80 Anode to AVC Cathode*	15,483 ohms	TC
RF Control Grid to Stator of first tuning condenser	5.4 ohms	BC- rf K-Y (.25 mfd)	'80 Anode to 80 Filament *	53,483 ohms	TC
RF Cathode	200 ohms	BC-Y (1 mfd)	Across Filament contacts of speaker plug	830 ohms	
RF Screen	23,000 ohms	BC-Osc P-Y	Across Grid- Plate contacts of speaker plug	650 ohms	
RF Plate	6,028 ohms	BC- rf P wdg-Y	Across Voice Coil only	7.5 ohms	
RF Plate to '47 Screen	25 ohms		Across Output Transformer secondary only	0.92 ohms	
1 Detector Control Grid	26 ohms		Across AC Plug (110-120 V)	1.9 ohms	
1 Detector Cathode	10,003.9 ohms		Note- Field coil resistance 830 ohms		
1 Detector Screen Grid	23,000 ohms	BC across 10,000 ohms	Output transformer primary 650 ohms		
1 Detector Plate	6,060 ohms	Osc Cplg wdg-3.9 ohms	Speaker Connected		
		See RF Screen	'47 Plate to '47 Screen	650 ohms	
		See RF Plate	Model 72		
		TC- if Tr wdg	Everything as in model 70, except for the following-		
		250,000 ohm resistor	Speaker Disconnected		
1 Detector Plate to '47 Screen	50 ohms	across IF Tr primary			
IF Control Grid	2,000,060 ohms	TC- if Tr	'80 Anode to AVC Cathode	20,483 ohms	
IF Control Grid to AVC Plate	50 ohms	TC- if Cg TC-Y	'80 Anode to '80 Filament	58,483 ohms	
IF Cathode	200 ohms	TC- if Tr sec			
IF Screen Grid	23,000 ohms	See RF Cathode			
IF Plate	6,060 ohms	See RF Screen			
		TC- IF Tr pri			
		See RF Plate			
IF Plate to '47 Screen	50 ohms	TC- IF Tr			
2 Detector Control Grid	50 ohms	TC- 2 D Cg-Y			
2 Detector Cathode	250,000 ohms	BC- 2 D K-Y			
2 Detector Screen	253,000 ohms	BC- 2 D Sg-Y			
2 Detector Plate	256,185 ohms	BC- 2 D P- 2 D K			
2 Detector Plate to '47 Screen	250,000 ohms	BIG- 2 DP-'47 Cg			
'47 Control Grid	502,200 ohms	BLC-'47 Cg- 2 DP			
		BC-'47 Cg filter res-Y			
'47 Filament	2,000 ohms	TC- Control condensers			
'47 Screen	6,000 ohms	TC			
'47 Screen to '80 Fil	0 ohms	See IF Plate			
AVC Control Grid	2,032,000 ohms	CC AVC Cg- if P			
AVC Control Grid to AVC Cathode	2 megohms				
AVC Cathode	32,000 ohms				
AVC Screen Grid	27,000 ohms				

Volume control at maximum. Tone control at natural position.

Tube	Control Grid Voltage	Screen Grid Voltage	Cathode Voltage	Plate Voltage	Plate Current
RF	.5*	80.	80.	199.	.25 ma
1 Det	5.	50.	84.	180.	.6
IF	3.	75.	80.	185.	1.
AVC	.25	25.	50.	20.	-
2 Det	4.	24*	80.	100*	.25
Pwr	4.*	260.		235.	35.
Osc.	2.5	50.		80.	5.
Rect.					48. per anode

* Indicates incorrect reading due to high resistance in circuit.

175 KC



CAPACITY	COLOR	VALUE	BODY	TIP	DOT
.0002	GREY	200	RED	BLACK	BROWN
.0003	RED	5,000	GREEN	BLACK	RED
.000725	YELLOW	10,000	BROWN	BLACK	ORANGE
.001	ORANGE	15,000	BROWN	GREEN	ORANGE
.0015	BLUE	20,000	RED	BLACK	ORANGE
.003	PINK	25,000	RED	GREEN	ORANGE
		100,000	BROWN	BLACK	YELLOW
		0.25 MEG.	RED	GREEN	YELLOW
		2 NEG.	RED	BLACK	GREEN

Power Consumption 95 Watt

KOLSTER — INTERNATIONAL RADIO MODELS K-70—K-72