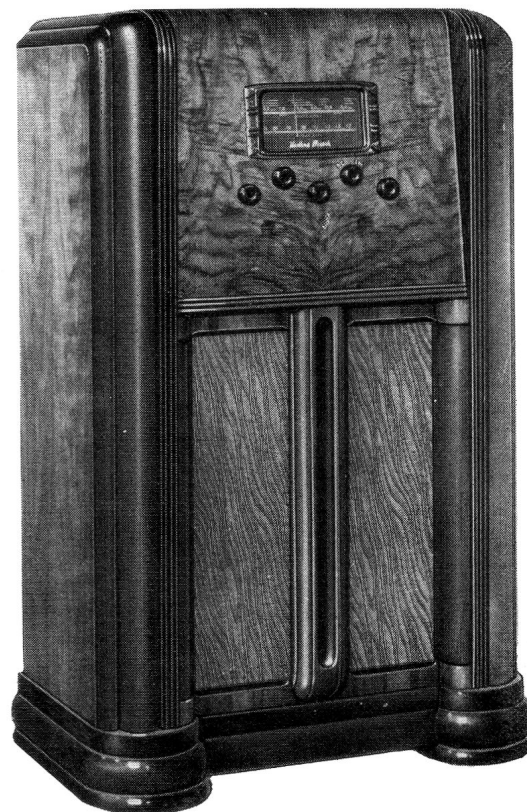


Models 734, 735

Battery Operated Radio Receivers



Specifications

Frequency Range:

Broadcast—535 to 1.72 megacycles
Short Wave—5.6 to 15.6 megacycles

I.F.:

470 K.C.

Tubes:

Type	Function
1D7G	1st Detector
1H4G	Oscillator
1D5GP	I.F. Amplifier
1F7G	2nd Detector
	1st A.F. Amplifier
1H4G	Driver
1H4G	Output amplifier
1H4G	Output amplifier

Power Supply:

The filament supply of two or three volts requires 540 milliamperes. A two-volt storage cell, six or eight No. 6 dry cells in series-parallel or an Eveready type 600 "Air Cell" may be used. Insert plug on terminal strip at rear depending on type of battery used. (See battery connection diagram.)

"B" supply: two or three Eveready No. 385 or 386 batteries. If two batteries only used the third plug must be inserted in the shorting dummy socket.

"C" supply: Two Eveready No. 771 batteries. If two "B" batteries are used the unmarked plug and plug with blue dot should be inserted in the "C" batteries. If three "B" batteries are used the unmarked plug and plug with red dot should be plugged in the "C" batteries. In either case the unused plug should be plugged in the non-shorting dummy socket.

A.V.C.:

Applied to types 1D7G and 1D5GP.

Controls:

Left to Right—Battery switch; volume control; tone control; wave-change switch; tuning control.

Loudspeaker:

Model 734: Eight inch permanent magnet.
Model 735: Ten inch permanent magnet.

Cabinets:

Model 734—Table model.
Model 735—Console model.

REPLACEMENT PARTS LIST

Item	Description	Part No.	Item	Description	Part No.
1	Broadcast Ant. Transformer Primary...	K-3831-4	65	Capacitor .001 mf. 400 volt.....	K-2228-1
2	Broadcast Ant. Transformer Secondary		66	Input Transformer Assembly.....	K-2496-4
3	Iron Core.....		67	Capacitor 450 mmf. Mica.....	K-1611-16
4	Coupling Capacitor—5 mmf.....		68	Capacitor .003 mf. 400 volt.....	K-2228-3
5	Antenna Primary Switch—Part of...	K-2675-2	69	Capacitor 450 mmf. Mica.....	K-1611-16
6	S.W. Antenna Transformer Primary...	K-4032	70	Resistor 20,000 ohms.....	K-2226-8
7	S.W. Antenna Transformer Secondary		71	Output Transformer Assembly.....	K-4046-2
8	Trimmer Capacitor.....	K-3860-3	72	Loudspeaker Assembly Model 734...	K-3994-1
9	Antenna Secondary Switch—Part of...	K-2675-2	72-A	Loudspeaker Assembly Model 735...	K-3108
10	Gang Cap. Sect. 466 mmf. max. Part of	K-3853-1	73	Dial Lamp (2.0 volt).....	K-2589-1
11	Trimmer Capacitor 2.5-15 mmf. Part of...	K-3853-1	74	Dial Lamp (2.0 volt).....	K-2589-1
12	Bdct. Osc. Coil Grid Winding	K-4031	75	Capacitor .5 mf. 200 volt.....	K-2227-11
13	Bdct. Osc. Coil Plate Winding		76	Capacitor 30 mf. 150 volt Electrolytic	K-4013
14	Trimmer Capacitor.....	K-3860-3	77	Resistor 0.4 ohms.....	K-2252-14
15	Lag Trimmer Capacitor.....	K-3324-2	78	Resistor 1.4 ohms.....	K-2252-6
16	Capacitor 300 mmf. Mica.....	K-1611-4	79	Battery Plug.....	K-4004
17	Osc. Grid Winding Switch, Part of	K-2675-2	80	Battery Plug & Receptacle.....	K-4006
18	S.W. Osc. Grid Winding.....	K-4033	81	Battery Cable.....	K-4005
19	S.W. Osc. Plate Winding.....		82	"B" Battery Plug.....	K-2457
20	Trimmer Capacitor.....	K-3860-2	83	"B" Battery Plug.....	K-2457
21	Capacitor 3100 mmf. Mica.....	K-1952-23	84	Dummy "B" Battery Socket.....	K-2492
22	Gang Cap. Sect. 466 mmf. max. Part of	K-3853-1	85	"B" Battery Plug.....	K-2457
23	Osc. Plate Winding Switch.....	K-2675-2	86	Battery Switch.....	K-4020
24	Capacitor 100 mmf. Mica.....	K-1611-2	87	"C" Battery Plug.....	K-2515
25	Capacitor 100 mmf. Mica.....	K-1611-2	88	"C" Battery Plug.....	K-2515
26	Resistor 50,000 ohms.....	K-2226-6	89	Dummy "C" Battery Socket.....	K-4064
27	Resistor 10,000 ohms.....	K-2226-10	90	"C" Battery Plug.....	K-2515
28	Resistor 20,000 ohms.....	K-2226-8	91	Capacitor 100 mmf. Mica.....	K-1611-2
29	Capacitor .05 mf. 200 volt.....	K-2227-8			
30	Capacitor .1 mf. 200 volt.....	K-2227-9			
31	Capacitor 4 mf. 150 volt Electrolytic.	K-2963			
32	Capacitor 2 mf. 150 volt Electrolytic.				
33	Resistor 75,000 ohms.....	K-2226-27			
34	1st I.F. Transformer Assembly.....	K-3984			
35	Primary I.F. Transformer.....	K-3985			
36	Secondary I.F. Transformer.....				
37	Trimmer Capacitor 30 - 130 mmf.....	K-2134-1			
38	Trimmer Capacitor 30 - 130 mmf.....				
39	Capacitor .1 mf. 200 volt.....	K-2227-9			
40	Capacitor .1 mf. 200 volt.....	K-2227-9			
41	2nd I.F. Transformer Assembly.....	K-3986			
42	Primary I.F. Transformer.....	K-3987			
43	Secondary I.F. Transformer.....				
44	Trimmer Capacitor 30-130 mmf.....	K-2932			
45	Trimmer Capacitor 30-130 mmf.....				
46	Capacitor 100 mmf.....				
47	Resistor 50,000 ohms.....	K-2226-6			
48	Resistor 50,000 ohms.....	K-2226-6			
49	Resistor 2 megohms.....	K-2226-1			
50	Capacitor .02 mf. 200 volt.....	K-2227-7			
51	Capacitor .02 mf. 200 volt.....	K-2227-7			
52	Volume Control 2 megohms.....	K-3858-1			
53	Resistor ½ megohm.....	K-2226-3			
54	Resistor 2 megohms.....	K-2226-1			
55	Resistor 1 megohm.....	K-2226-2			
56	Capacitor .1 mf. 200 volt.....	K-2227-9			
57	Capacitor 100 mmf. Mica.....	K-1611-2			
58	Capacitor .01 mf. 200 volt.....	K-2227-6			
59	Resistor ¼ megohm.....	K-2226-4			
60	Resistor ½ megohm.....	K-2226-3			
61	Resistor 750 ohms.....	K-2226-17			
62	Resistor 6,500 ohms.....	K-2226-65			
63	Resistor 3,500 ohms.....	K-2226-69			
64	Tone Control ¼ megohm.....	K-4014			

MISCELLANEOUS:

Sockets.....	K-1924-1
Tube Shield Base.....	K-2390-2
Battery Terminal Strip.....	K-2763
Single Stand-offs.....	K-2594
Dial frame Assy.....	K-3818-5
Pulley.....	K-3682
Light Shield.....	K-3874
Spring for drive pulley.....	K-3923
Slider & Indicator Assy.....	K-4012-2
Dial Cable.....	K-1929
Dial Scale.....	K-4024
Dial Backing.....	K-3830-1
Lamp Sockets.....	K-2835-2
Vernier Drive.....	K-3824
Clamp for Elect. Caps.....	K-4281
Tube Shield.....	K-2267-2
Grid Clip.....	K-3030-2
Tube Shield.....	K-2267-1
D.E. Clamp.....	K-2520-1
Seven prong Receptacle.....	K-4007
Cord Tip.....	K-3314
Chassis Mounting Screws.....	K-1122-12
Chassis Mounting Washers.....	K-1725-2
Escutcheon Mounting Screws.....	K-3746-3
Escutcheon.....	K-3839-5
Knob—Tuning.....	K-3961-2
Knob—Tone.....	K-3961-7
Knob—On-Off.....	K-3961-6
Knob—Volume.....	K-3961-11
Knob—Band.....	K-3961-8
Felt Washers for Knobs.....	K-2491-4
Indicator (wave-change).....	K-3977
Instruction Folder.....	K-4044
Tuning Wrench (All models).....	K-836

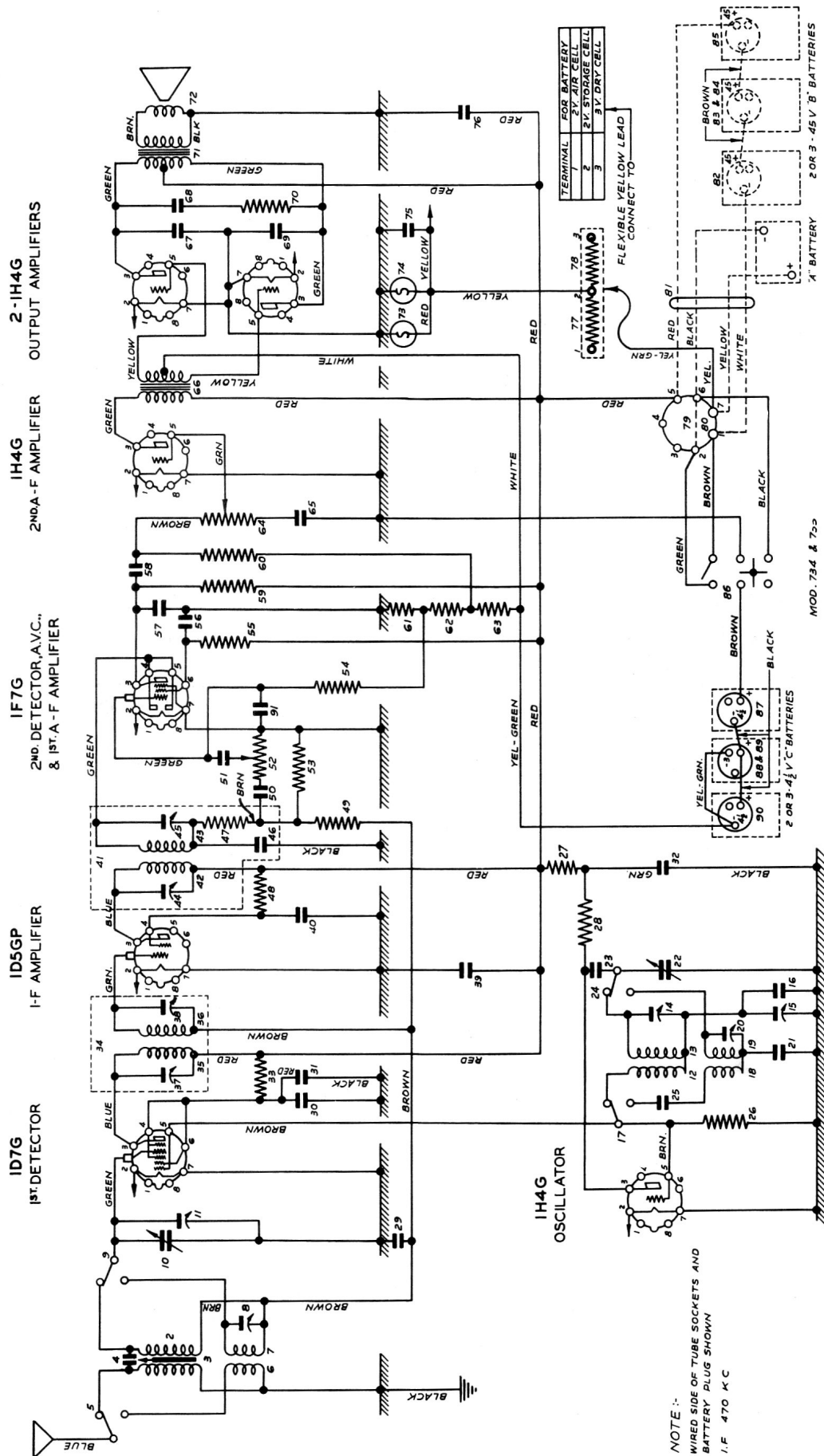


Fig. 5.—Schematic Circuit Diagram.

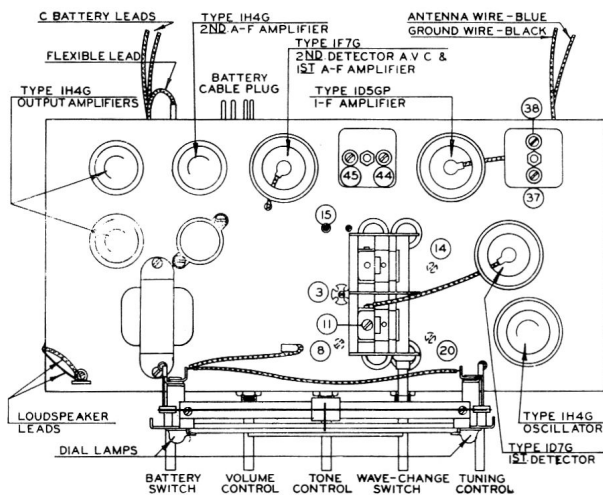


Fig 1.—Chassis Layout showing controls and tube positions.

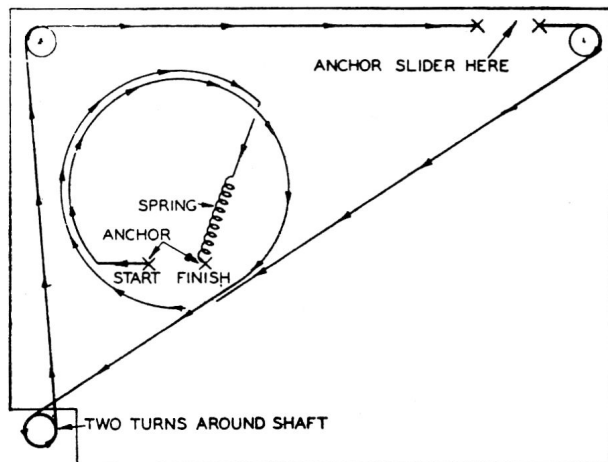


Fig. 2.—Stringing Diagram.

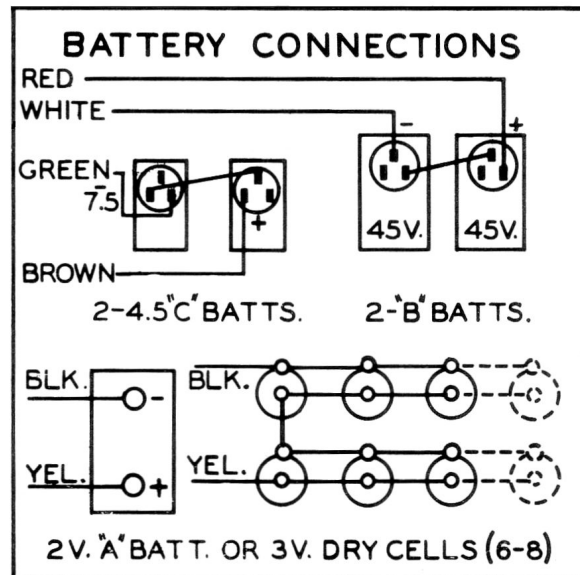


Fig. 3.—Battery Connections.

K 4019-1

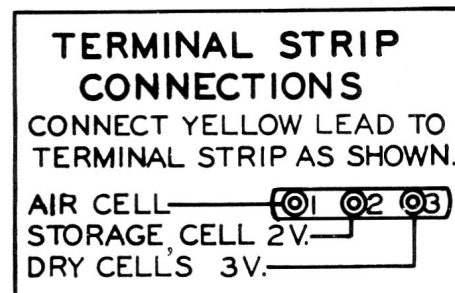


Fig. 4.—Strip Connections.

D.C. RESISTANCE OF COILS—OHMS

Description	Resistance
Broadcast Antenna Primary.....	20
Broadcast Antenna Secondary.....	2.8
Short-Wave Antenna Primary.....less than	0.5
Short-Wave Antenna Secondary....less than	0.5
Broadcast Oscillator, Plate Winding.....	6.0
Broadcast Oscillator, Grid Winding.....	1.2
Short-Wave Oscillator, Plate Winding less than	0.5
Short-Wave Oscillator, Grid Winding	.8

Description	Resistance
1st I-F Transformer, Primary.....	12.5
1st I-F Transformer, Secondary.....	12.5
2nd I-F Transformer, Primary.....	12.5
2nd I-F Transformer, Secondary.....	12.5
Input A-F Transformer, Primary.....	633
Input A-F Transformer, Secondary.....	1710
Output Transformer, Primary.....	584
Output Transformer, Secondary.....	.4
Loudspeaker Voice Coil.....	2.0

REALIGNING INSTRUCTIONS

To secure full advantage of the performance characteristics of this receiver any realignment necessary should be carried out carefully. A reliable test oscillator or signal generator and also a high resistance output meter should be used.

I.F. ALIGNMENT

- (a) Set the signal generator to 470 kc. and connect its output through a 0.1 mf. capacitor to the grid cap of the type 1D7G 1st detector tube. Set the receiver dial at 600 kc.
- (b) Adjust trimmers, items 37, 38, 44 and 45 until maximum sensitivity is obtained.
- (c) Reduce the output from the signal generator to as low a value as will give an output reading and check alignment of these four trimmers. All should peak properly.

R.F. ALIGNMENT, BROADCAST BAND

- (a) With gang all in, check the position of the pointer. It should line up with the end of the calibration line. Put the wave-change switch in the broadcast position.

- (b) Couple the signal generator to the antenna lead (blue) through a 100 mmf. mica capacitor. Connect the ground lead (black) to ground.
- (c) Set the generator and the receiver at 600 kc. Adjust the lag trimmer capacitor, item 15, to bring in the signal.
- (d) Adjust iron core, item 3, for maximum sensitivity.
- (e) Set the receiver and generator to 1600 kc. and adjust trimmer, item 14, to bring in the signal.
- (f) Adjust trimmer, item 11, for maximum sensitivity.
- (g) Recheck at 600 kc. and realign if necessary.

R.F. ALIGNMENT, SHORT-WAVE BAND

- (a) Substitute a 400 ohm carbon resistor for the capacitor in the lead from the signal generator. Turn the wave-change switch to the short-wave position.
- (b) Set signal generator and receiver at 15 mc. Adjust trimmer, item 20, to bring in the signal. Then adjust trimmer, item 8, for maximum sensitivity while rocking the gang. Check for image at 15.9 mc.

SOCKET VOLTAGE AND CURRENT READINGS

These readings were taken with a "B" battery of 96 volts and an "A" storage cell of 2.05 volts. Voltage readings can be duplicated using any good voltmeter having a resistance of 1000 ohms per volt, such as the Weston Model 663 Volt-Ohm-meter or the Weston Model 772 having a resistance of 20,000 ohms per volt. Current readings can be duplicated with the Model 772 using a Model 666-1A Adapter. When taking readings with the analyzer adapter, connect a 0.1 mf. capacitor from the grid of the tube in the analyzer to the chassis, to prevent oscillation.

TUBE	VOLTAGES				CURRENTS—M.A.		
	Filament	Screen	Plate	Grid	Screen	PLATE	
						Normal Bias	Bias red 4 ½ V.
1D7G 1st Detector	2.05	22	96	—	.6	.29	.29
1H4G Oscillator	2.05	—	40	—	—	1.6	1.6
1D5GP I-F Amplifier	2.05	42	96	—	.9	2.7	2.8
1F7G, 2nd Detector & 1st A.F. Amplifier	2.05	9	16	4①	.04	.18	.19
1H4G Driver	2.05	—	94	.4②	—	.21	6.7
1H4G Output Amplifier	2.05	—	96	7.4 ③	—	.7	4.5
1H4G Output Amplifier	2.05	—	96	7.4 ③	—	.7	4.5

① Measured across resistor, item 61.

② Measured across resistors, items 61 and 62.

③ Measured across resistors, items 61, 62 and 63.

SOCKET RESISTANCE READINGS—OHMS

TUBE	TOP CAP (Cont. Grid)	PIN No. 1 N. C.	PIN No. 2 Filament	PIN No. 3 Plate	PIN No. 4 Screen	PIN No. 5	PIN No. 6	PIN No. 7 Filament	PIN No. 8 N. C.
1D7G 1st Detector	2.5 meg.	—	0①	12.5②	75,000②	50,000	75,000 ②	0	—
1H4G Oscillator	—	—	0①	30,000②	—	50,000	—	0	—
1D5GP I.F. Amplifier	2.5 meg.	—	0①	12.5②	50,000②	—	—	0	—
1F7G, 2nd Detector, A.V.C. & 1st A.F. Amplifier	2 meg.	—	0①	.25 meg. ②	.55 meg.	.55 meg.	1 meg ②	0	—
1H4G 2nd A.F. Amplifier	—	—	0①	633②	—	.5 meg.	—	0	—
1H4G, Push-Pull Output Amplifier	—	—	0①	292②	—	11,600	—	0	—
1H4G, Push-Pull Output Amplifier	—	—	0①	292②	—	11,600	—	0	—

These readings were taken with battery switch in "off" position, batteries disconnected and with the tone control in the extreme counter-clockwise position.

① Measured to A+ with flexible connection in socket No. 2.

② Measured to B+.