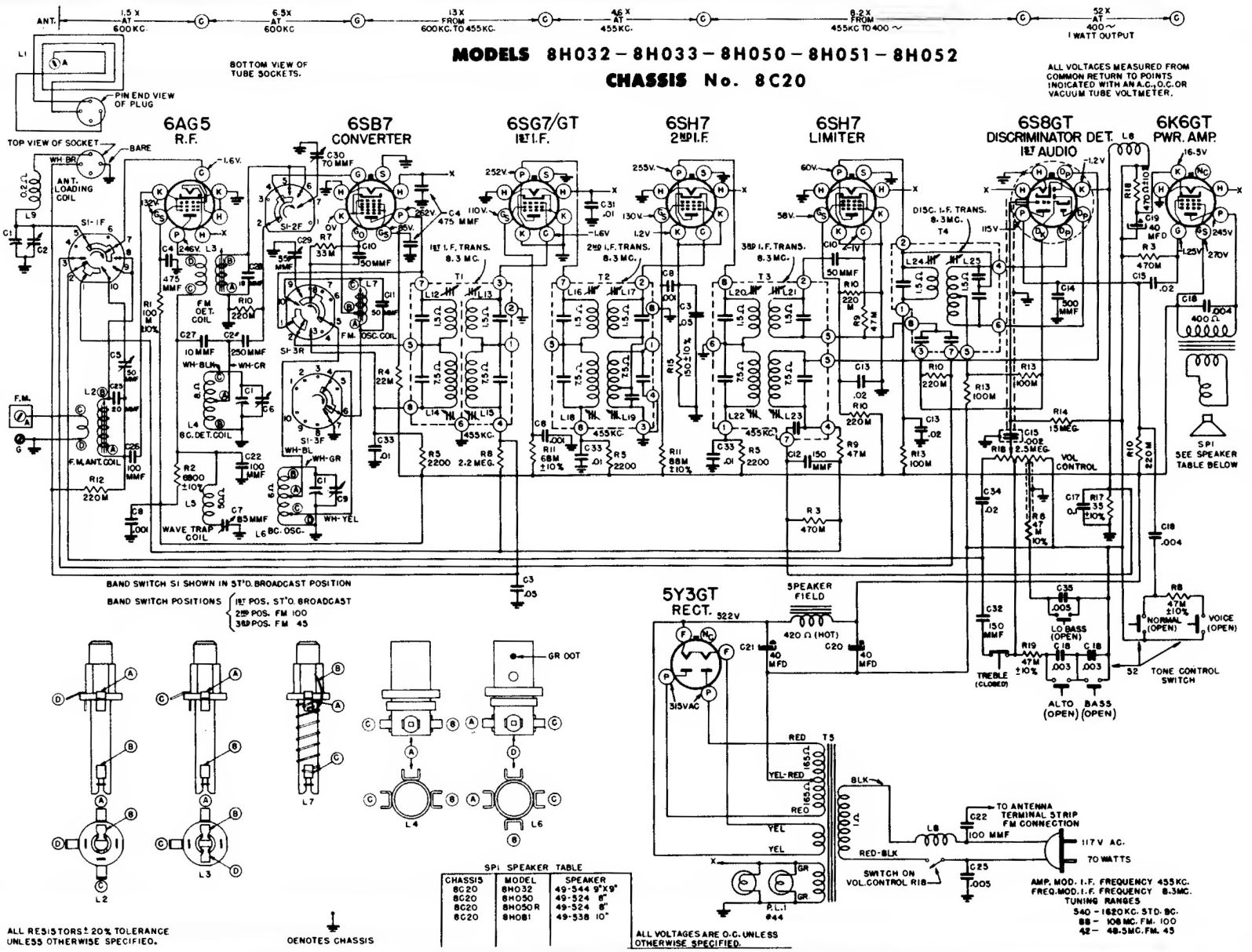
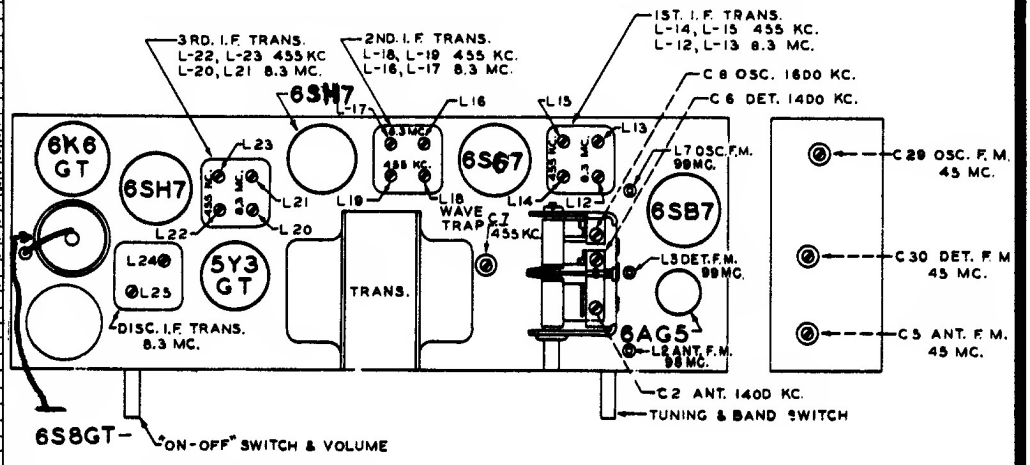

ANT.
1.5 X AT 600 KC.
6.5X AT 600KC
13X FROM 600KC. TO 455KC.
46 X AT 455KC.
9.2 X FROM 455KC TO 400 ~
52 X AT 400 ~
1 WATT OUTPUT
MODELS 8H032 – 8H033 – 8H050 – 8H051 – 8H052
CHASSIS No. 8C20
BOTTOM VIEW OF TUBE SOCKETS.
ALL VOLTAGES MEASURED FROM COMMON RETURN TO POINTS INDICATED WITH AN A.C., D.C. OR VACUUM TUBE VOLTMETER.
PIN END VIEW OF PLUG
TOP VIEW OF SOCKET
6AG5 R.F.
6SB7 CONVERTER
6SG7/GT 1ST I.F.
6SH7 2ND I.F.
6SH7 LIMITER
6S8GT DISCRIMINATOR DET. 1ST AUDIO
6K6GT PWR. AMP.
ANT. LOADING COIL
FM OET. COIL
FM OSC. COIL
BC. OET. COIL
BC. OSC.
WAVE TRAP COIL
1ST I.F. TRANS. 8.3 MC.
2ND I.F. TRANS. 8.3 MC.
3RD I.F. TRANS. 8.3 MC.
DISC. I.F. TRANS. 8.3 MC.
VOL. CONTROL
SPI SEE SPEAKER TABLE BELOW
BAND SWITCH S1 SHOWN IN ST'D. BROADCAST POSITION
BAND SWITCH POSITIONS
1ST POS. ST'D. BROADCAST
2ND POS. FM 100
3RD POS. FM 45
5Y3GT RECT.
SPEAKER FIELD
420 Ω (HOT)
315VAC
TREBLE (CLOSED)
LO BASS (OPEN)
ALTO (OPEN)
BASS (OPEN)
NORMAL (OPEN)
VOICE (OPEN)
52 TONE CONTROL SWITCH
TO ANTENNA TERMINAL STRIP FM CONNECTION
117 V AC.
70 WATTS
SWITCH ON VOL. CONTROL R18
P.L.I. #44
AMP. MOD. I.F. FREQUENCY 455 KC.
FREQ. MOD. I.F. FREQUENCY 8.3 MC.
TUNING RANGES
540 – 1620 KC. STD. BC.
88 – 108 MC. FM. 100
42 – 49.5 MC. FM. 45
SPI SPEAKER TABLE
CHASSIS 8C20 MODEL 8H032 SPEAKER 49-544 9"X9"
8C20 8H050 49-524 8"
8C20 8H050R 49-524 8"
8C20 8H081 49-538 10"
ALL RESISTORS ± 20% TOLERANCE UNLESS OTHERWISE SPECIFIED.
DENOTES CHASSIS
ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.

Zenith Radio, Chassis 8C20, Models 8H032, 8H033, 8H050, 8H051, 8H052.

DIAG No	PART No.	DESCRIPTION
C1	22-1268	3-GANG VARIABLE
C2	DN C1	BROADCAST ANT. TRIM.
C3	22-829	.05 MFD. 200 V.
C4	27-87	475 MMFD. MICA DISC.
C5	22-1485	90 MMF TRIMMER
C6	ON C1	BROADCAST DET. TRIM.
C7	ON L5	WAVETRAP TRIMMER
C8	22-1431	.001 MFD. 600 V.
C9	ON C1	BROADCAST OSC. TRIM
C10	22-1367	50 MMFD. 500 V.
C11	22-1492	50 MMFD. CER.
C12	22-470	150 MMFD. 600 V.
C13	22-830	.02 MFD 800 V.
C14	22-1138	500 MMF. 600 V.
C15	22-1445	.002 MFD. 600 V.
C16	22-288	.003 MFD 600 V.
C17	22-827	.1 MFD. 200 V.
C18	22-448	.004 MFD. 600 V.
C19		40 MFD. ELECTRD 25 V.
C20	22-1382	40 MFD. " 450 V.
C21		40 MFD. " 450 V.
C22	22-162	100 MMFD. 600 V.
C23	22-1041	.005 MFD. 400 V.
C24	22-182	250 MMFD. 600 V.
C25	22-1491	20 MMFD. CER.
C26	22-1488	100 MMFD. 300 V.
C27	22-1489	10 MMFD. CER.
C28	22-1490	18 MMFD. CER.
C29	22-1487	55 MMF TRIMMER
C30	22-1488	70 MMF "
C31	22-1385	.01 MFD. 200 V.
C32	22-1137	150 MMFD 500 V.
C33	22-196	.01 MFD. 600 V.
C34	22-188	.02 MFD. 400 V.
C35	22-1135	.005 MFD 600 V.



TUBE AND TRIMMER LOCATION

AM Alignment: The alignment of this chassis on the standard broadcast band is conventional. The alignment slugs in the IF transformers are threaded and screw into the coil forms. The slugs are slotted for a small-size fiber screw driver. Do not press hard on the aligning tool (fiber screw driver) or the threads in the coil forms will strip and adjustment will be impossible.

FM RF Alignment: The same coil slug arrangement which tunes the 100 MC FM band also tunes the 45 MC band. However, on 45 MC the band switch connects trimmer condensers in parallel and padding wires in series with the 100 MC coils. The tuning slugs are attached to threaded shafts and the slugs are varied in the field of the coils by turning the shafts clockwise or counter-clockwise. After adjustments the shafts must be secured with a drop of speaker cement.

FM IF Alignment: The same type of tuning slugs for aligning the AM IF Amplifier are used for the FM I.F.'s. The second 8.3 Mc IF stage is overcoupled. When an overcoupled stage is aligned with an unmodulated signal, the stage must be loaded. A 300 ohm carbon resistor soldered across the secondary of the second IF transformer provides a satisfactory load for this circuit.

When aligning a loaded stage, it will be found that considerable signal from the generator will be required.

FM Discriminator Alignment: When the secondary of the discriminator is aligned (operation 6) use sufficient signal input to get a good positive and negative indication before setting the slug for zero reading. A center zero indicating meter is recommended for this adjustment, but is not absolutely necessary. Reversing the leads of a non-zero center meter, or observing closely when this meter starts to go to the left (negative) of zero will give the same results. See table on page 186.

ALIGNMENT PROCEDURE **MODELS** 8H032 – 8H033 – 8H050 – 8H051 – 8H052

The signal generator output should be kept just high enough to get an indication on the meter.

(a) Vacuum Tube Voltmeter pin 5 on discriminator transformer to chassis (half discriminator load.)
(b) Vacuum Tube Voltmeter pin 7 on discriminator transformer to chassis (full discriminator load.)
(c) Vacuum Tube Voltmeter 6SH7 limiter grid (pin 4) to chassis.
(d) 300 ohm ⅓ watt carbon resistor soldered across the secondary L17 (pin 2 and 3 of 2nd, IF trans.).

CHASSIS No. 8C20

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial To	Adj. Trimmers	Purpose
1	Pin 8 on Converter Tube 6SB7 Socket	.05 Mfd.	455 Kc. Modulated	BC	600 Kc.	L-14,15,18,19 22 and 23	Align I.F. channel for maximum output
2	Pin 1 on R.F.tube 6AG5 socket	.05 Mfd.	455 Kc. Modulated	BC	600 Kc.	C7	Adjust wavetrap for minimum output
3	2 turns loosely cpld. to wavemagnet		1600 Kc. Modulated	BC	1600 Kc.	C9	Set oscillator to dial scale
4	2 turns loosely cpld. to wavemagnet		1400 Kc. Modulated	BC.	1400 Kc.	C8 & C6	Align det. and ant. stages.
5(a)	Pin 4(grid)on 6SH7 limiter socket	.05 Mfd.	8.3 Mc. Unmodulated	FM 45		L24 coil slug Primary discr.	Align primary of discriminator for maximum reading
6(b)	Pin 4(grid)on 6SH7 limiter socket	.05 Mfd.	8.3 Mc. Unmodulated	FM 45		L25 coil slug sec. of disc.	Adjust secondary of discriminator for zero reading
7(c)	Pin 4 (grid) on 6SH7 2nd IF tube socket	.05 Mfd.	8.3 Mc. Unmodulated	FM 45		L20 & L21 Prim.&sec. of 3rd IF trans.	Align 3rd IF transformer for maximum reading
8(c)(d)	Pin 4 (grid) on 6SG7 1st IF tube socket	.05 Mfd.	8.3 Mc. Unmodulated	FM 45		L16 & L17 primary and sec. of 2nd IF transformer	Align 2nd IF transformer for maximum reading
9(c)(d)	Pin 8(grid)on 6SB7 converter tube socket	.05 Mfd.	8.3 Mc. Unmodulated	FM 45		L12 & L13 Primary & Sec. of 1st IF transformer	Align 1st IF transformer for maximum reading
10(c)	Antenna Post (Remove line ant.)	270 ohms	98 Mc. Unmodulated	FM 100	98 Mc.	L7 Osc. Coil slug	Set oscillator to dial scale
11(c)	Antenna Post (Remove line ant.)	270 ohms	98 Mc. Unmodulated	FM 100	98 Mc.	L2 & L3 Det. and RF coil slugs	Align det. and ant. stages to maximum reading
12(c)	Antenna Post (Remove line ant.)	270 ohms	45 Mc. Unmodulated	FM 45	45 Mc.	C29	Set oscillator to dial scale
13(c)	Antenna Post (Remove line ant.)	270 ohms	45 Mc. Unmodulated	FM 45	45 Mc.	C5 and C30	Align detector & ant. stages for maximum reading