DATE 19 February 1964 SHEET 1 OF 11	**TMC SPECIFICATION NO. S-817**	A
T. WHITING COMPILED	CHECKED	**TITLE:**
APPROVED		

ALDC MODIFICATION

KIT-130

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 439M

DATE 19 February 1964	TMC SPECIFICATION NO. S-817	A
SHEET 2 OF 11		
COMPILED / CHECKED	TITLE: ALDC MODIFICATION - KIT-130	
APPROVED		

A. PURPOSE

1. To provide automatic load and drive control (ALDC) on Model PAL-1K.

2. To permit compatibility with sideband exciters (SBE-2 & SBE-3) and controlled harmonic generators (CHG-2) now containing ALDC provisions.

B. EQUIPMENT AFFECTED

1. PAL-1K (RFD-1 & PS-4)

2. GPT-1K

3. SBT-1K

4. SY1023 (TOC flyaway system)

C. MATERIALS REQUIRED

ITEM NO.	TMC PART NO.	QTY	DESCRIPTION
1.	UG625*/U	1	Connector, Recept.
2.	RV4NAYSA503BYY	1	Resistor, Variable
3.	ST22N	1	Switch, Toggle
4.	MP102-3	1	Knob, Instrument
5.	CD101-1MW	12'	Cord, Lacing
6.	TE 104-1	1	Terminal, Lkng.
7.	MWC22(7)U3	7'	Wire, Ins.
8.	MWC22(7)U96	4'	Wire, Ins.
9.	MWC22(7)U9	3'	Wire, Ins.
10.	MWC22(7)U5	3'	Wire, Ins.
11.	MWC22(7)U7	4'	Wire, Ins.
12.	MWC22(7)U4	3'	Wire, Ins.
13.	-----	1	Bit, Drill, 3/8"
14.	-----	1	Bit, Drill, 15/32"
15.	-----	1	Bit, Drill, 7/16"
16.	PX104-1-042	1'	Sleeving, Ins.
17.	MWC22(7)SJ2	1'	Cable, Shld., Jkt.
18.	NP362-20	2	Plate, Ident.
19.	UG260*/U	1	Connector, Plug
20.	LD1462	1	Marking, ALDC
21.	LD1463-1	1	Marking, ALDC
22.	LD1463-2	1	Marking, Int.
23.	LD1463-3	1	Marking, Ext.
24.	LD1463-4	1	Marking, Ext. ALDC

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D. PROCEDURE

1. Remove all power to the system.

2. Use a grounding rod to ensure all H.V. points are de-energized.

3. Remove RFD-1 and PS-4 units from the system.

4. Remove top and bottom covers from RFD-1 and PS-4.

5. Cut or unsolder the 3 wires on R201 (ALDC BIAS ADJ) of RFD-1.

6. Remove R201 and discard.

7. Remove the four mounting screws on TB-201.

8. Refer to Fig. I (color coding of wires may differ from that shown). Unsolder the yellow wire side of R226, and the green wire side of R227 (both mounted on TB-201).

9. TurnRFD-1 over and unsolder the violet wire from L239 (top LHS blower compartment).

10. Remove the green, yellow, and violet wires from the main chassis cable.

11. Remove the rear cover of meter panel (M201 & M202).

12. Refer to Fig. 2. Mark front panel as shown, center punch, and drill ALDC hole with Item 13.

13. Refer to Fig. 1. Solder wires, Items 10, 11, 12 to Item 2 as shown.

14. Mount potentiometer (Item 2) in the new ALDC hole (Step 12) with the wired contacts facing the top of the RFD, (see Fig. 1).

15. Attach Item 4, (indicator dot on knob should be fully CCW when shaft is fully CCW).

16. Affix Item 20 to the front panel under knob.

17. Pass the 3 wires from the ALDC pot through the rubber grommet into the bottom section of the RFD-1 and lace with Item 5 to the main chassis cable so that they can be soldered to components (ref. Fig. 1).

18. Trim off surplus wire and solder.

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19. Refer to Fig. 3. Unsolder and remove from the main chassis cable the continuous wire from L240 to L242, (L242 is mounted on TB-201; L240 is mounted top LHS blower compartment).

20. Use Item 14 to enlarge hole vacated in Step 6 (ref. Fig. 4).

21. Refer to Fig. 3. Solder wires, Items 7, 8, & 9, to Item 3 as shown. Mount Item 3 in enlarged hole (Step 20).

22. Disconnect P201.

23. Arrange the 3 wires from the ALDC switch so that they can be soldered to components (ref. Fig. 3). The blue/white stripe wire will go to L240 (Step 19). The white wire goes to L242 (Step 19), the orange wire goes to Pin "b" P201. Lace wires with Item 5 wherever possible.

24. Trim off surplus wire and solder (NB. The orange lead requires 1 inch of Item 16 for Pin "b").

25. Affix Items 21, 22, 23 to the side of and underneath S209. (NOTE: Item INT. goes to the white wire side of S209, and Item 23,EXT, goes to the orange wire side).

26. Replace mounting screws in TB-201.

27. Reconnect P201.

NOTE: In the SBT-1K systems, P201 makes with CA-491 mounted in RAK-9. This cable is already wired between Pin "b" J-605 to Pin "b" P614 so no cabinet wiring is required.

28. Refer to Fig. 5. Mark, center punch, and drill EXT ALDC hole in PS-4 chassis with Item 15, as shown.

29. Mount Item 1 in EXT ALDC hole.

30. Mount Item 6 to the closest convenient ground (suggest one of the securing screws for J303), and disconnect J303.

31. Solder Item 17 to connect Item 1 to Pin "b" J303, and situate or lace with Item 5 to avoid any possibility of the shielded wire causing a short. Ground the shielded wire by soldering to Item 6 (Step 30).

NOTE: One inch of sleeving, Item 16, is required for the connection at Pin "b" J303.

32. Reconnect J303.

33. Affix Item 24 under Item 1.

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To check out the modification, connect an ohmmeter between L240 and L242 (RFD) with ALDC switch in the INT POSN. The meter should read less than 4 ohms. In the EXT POSN, meter reads higher than 40K ohms.

With the ohmmeter connected between L240 and the center probe of the PS-4 EXT ALDC BNC connector, the meter should read less than 40 ohms with S209 ALDC switch in EXT POSN. Also check L240 to ground to ensure no short in INT or EXT positions.

34. Carefully check all work, and clean off any solder blobs or metal filings from the units.

35. Replace the covers on RFD-1 and PS-4 and reconnect these units to the system. Use UG260/U plug (supplied as loose item), to construct cable for connecting ALDC output of PS-4 to ALDC input of exciter.

36. Affix one KIT-130 IDENTIFICATION PLATE (Item 18) to the front panel of RFD-1 under the model identification plate. Affix the second IDENTIFICATION PLATE to the front panel of the PS-4 under its model identification plate.

37. Apply power to the system and with S209 in the INT position. Observe that ALDC control is established by varying the ALDC pot. As the ALDC pot is turned CW, it dedreases the quantity of back bias on diode CR204, allowing CR204 to rectify more and more of the RF from the P.A. stage and, hence, progressively returns a higher negative potential to decrease the drive from V201.

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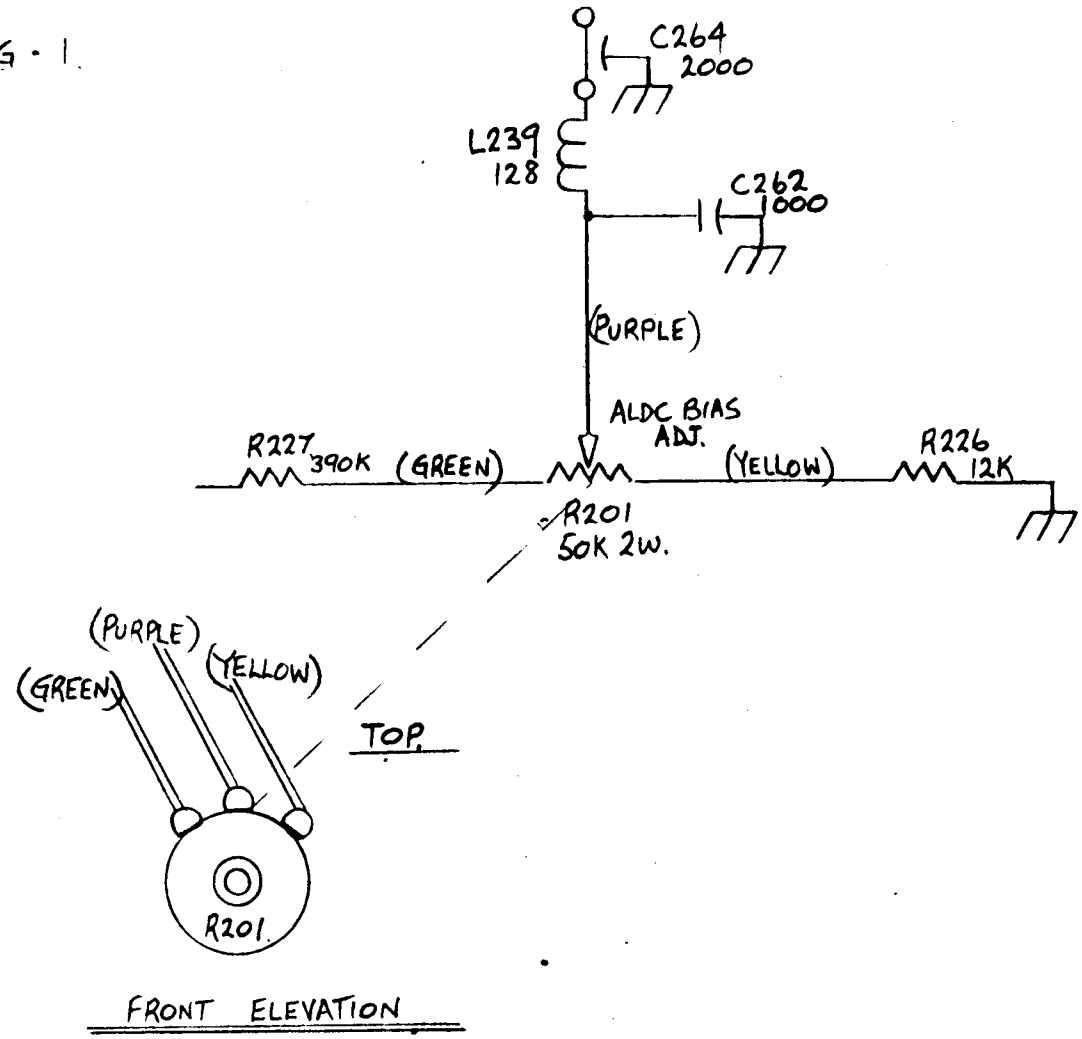
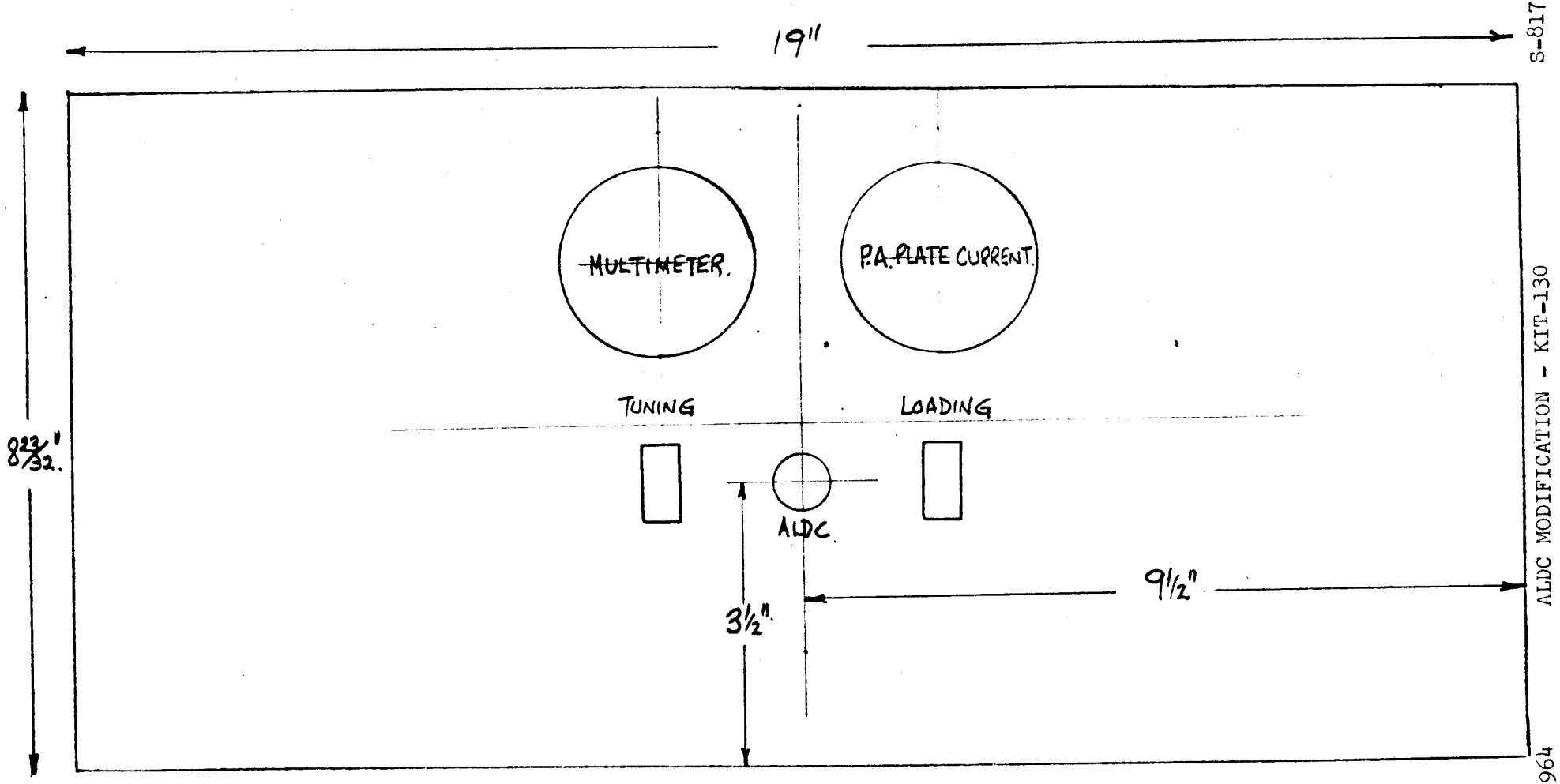
FIG - 1



FRONT ELEVATION

FIG-2

TOP



FRONT ELEVATION RFD-1

DRILLING PLAN

ALDC HOLE 3/8" (.375) DIAMETER

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FIG-3

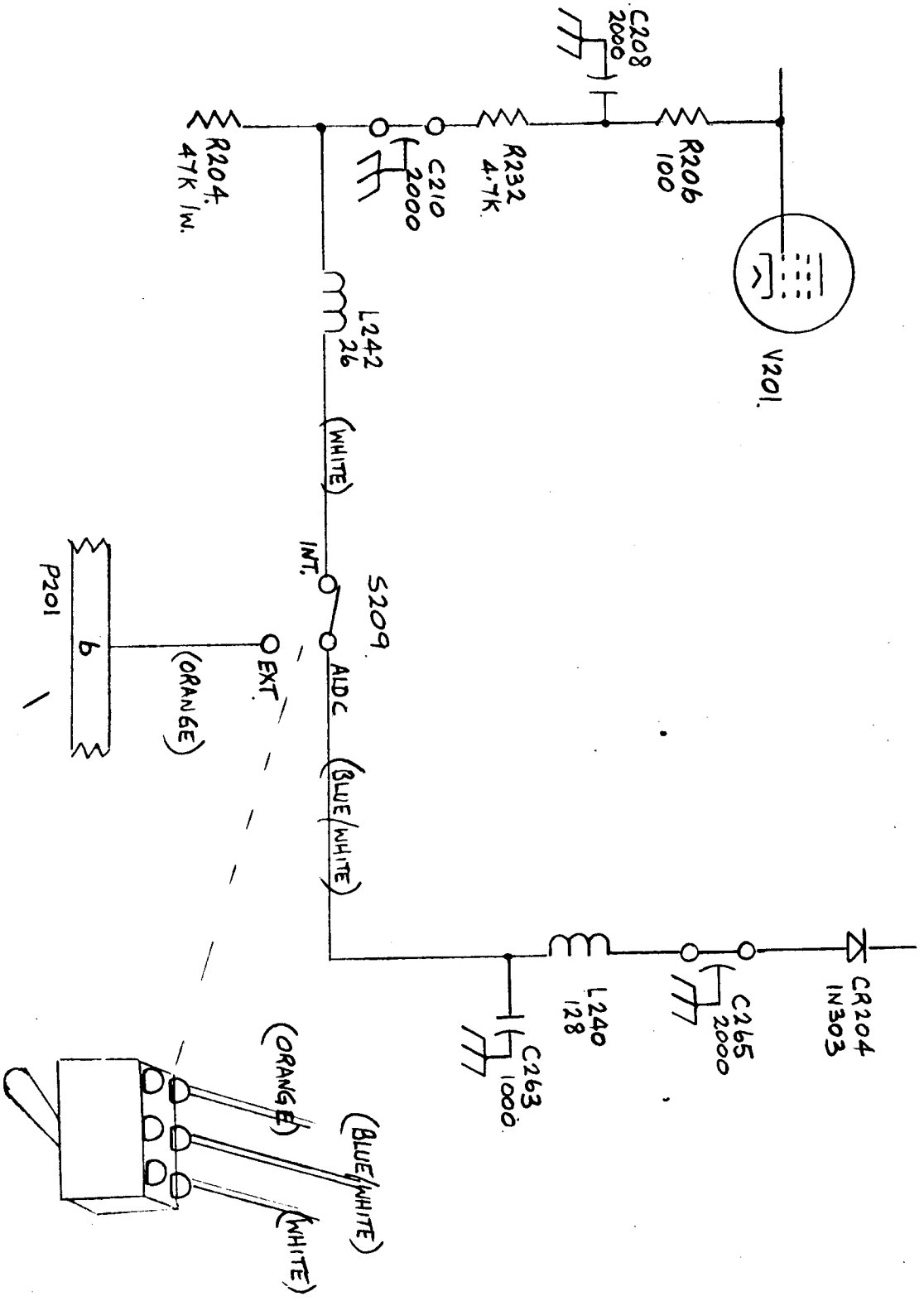
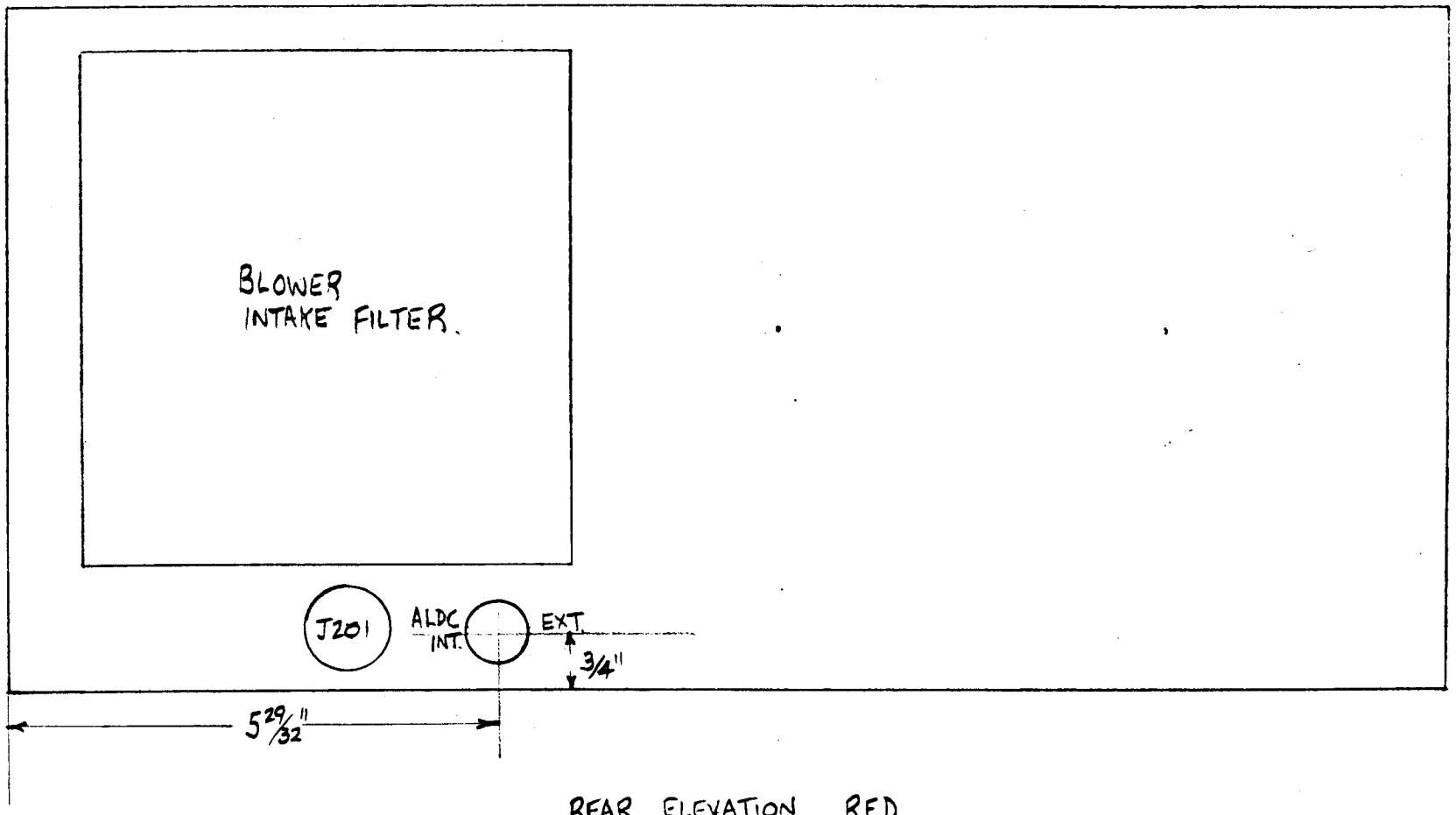

C208
2000
R206
100
V201
R232
4.7K
C210
2000
R204
47K 1W.
L242
26
(WHITE)
INT.
S209
EXT
ALDC
(BLUE/WHITE)
P201
6
(ORANGE)
L240
12B
C265
2000
CR204
IN303
C263
1000
(ORANGE)
(BLUE/WHITE)
(WHITE)

FIG. 1

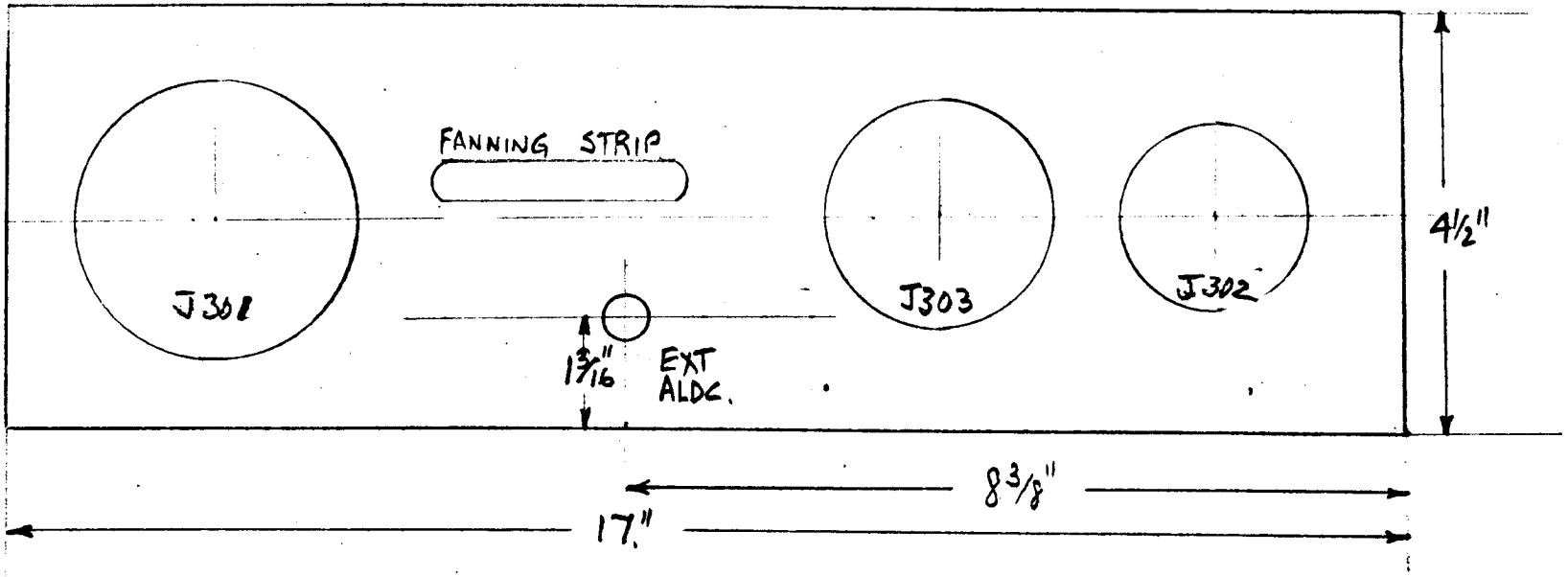
TOP



REAR ELEVATION RFD

DRILLING PLAN

ALDC SWITCH HOLE 15/32" DIAMETER.



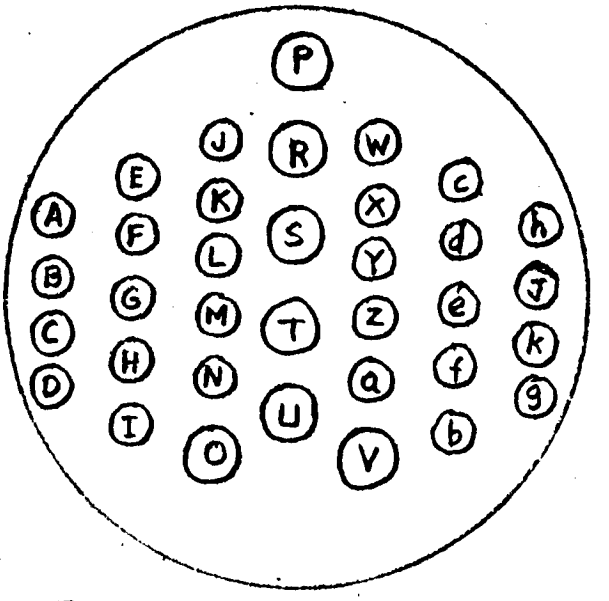
REAR ELEVATION PS-4.

CHASSIS REAR ONLY.

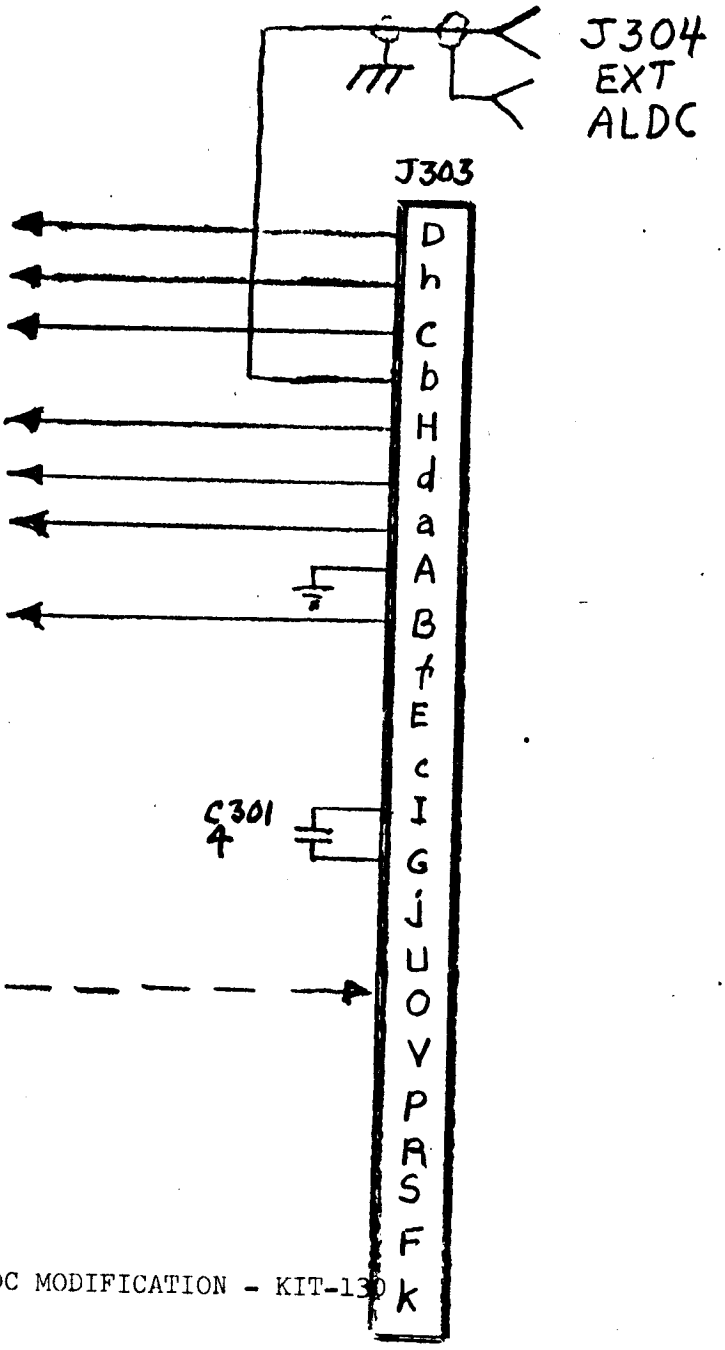
DRILLING PLAN

EXT ALDC HOLE 7/16" DIAMETER.

FIGURE 6



J303
(VIEWED FROM CONTACT END)



REF.
CK-408