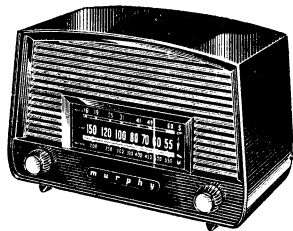


MURPHY SERVICE INSTRUCTIONS



SPECIFICATION

BATTERY SUPPLY:	H.t.:	90 V
	L.t.:	1.5 V
CONSUMPTION:	H.t.:	10 mA (no signal)
	L.t.:	0.25A
WAVE BANDS:	M:	528-1615 Kc/s (568-186 m.)
	S:	4.75-15.45 Mc/s (63.1-19.4 m.)
INTERMEDIATE FREQUENCY:		470 Kc/s
VALVES:	Ediswan or Mazda:	1C2, 1F3, 1FD9, 1P11
LOUDSPEAKER:	Type:	5 in. (12.7 cm.) dia., permanent magnet
	Impedance:	3 ohms
OVERALL DIMENSIONS:		10 ³ / ₈ in. (35 cm.) wide, 7 in. (17.8 cm.) high, 5 ⁵ / ₈ in. (13.5 cm.) deep
WEIGHT:		5 ¹ / ₂ lb. (2.5 Kg.)

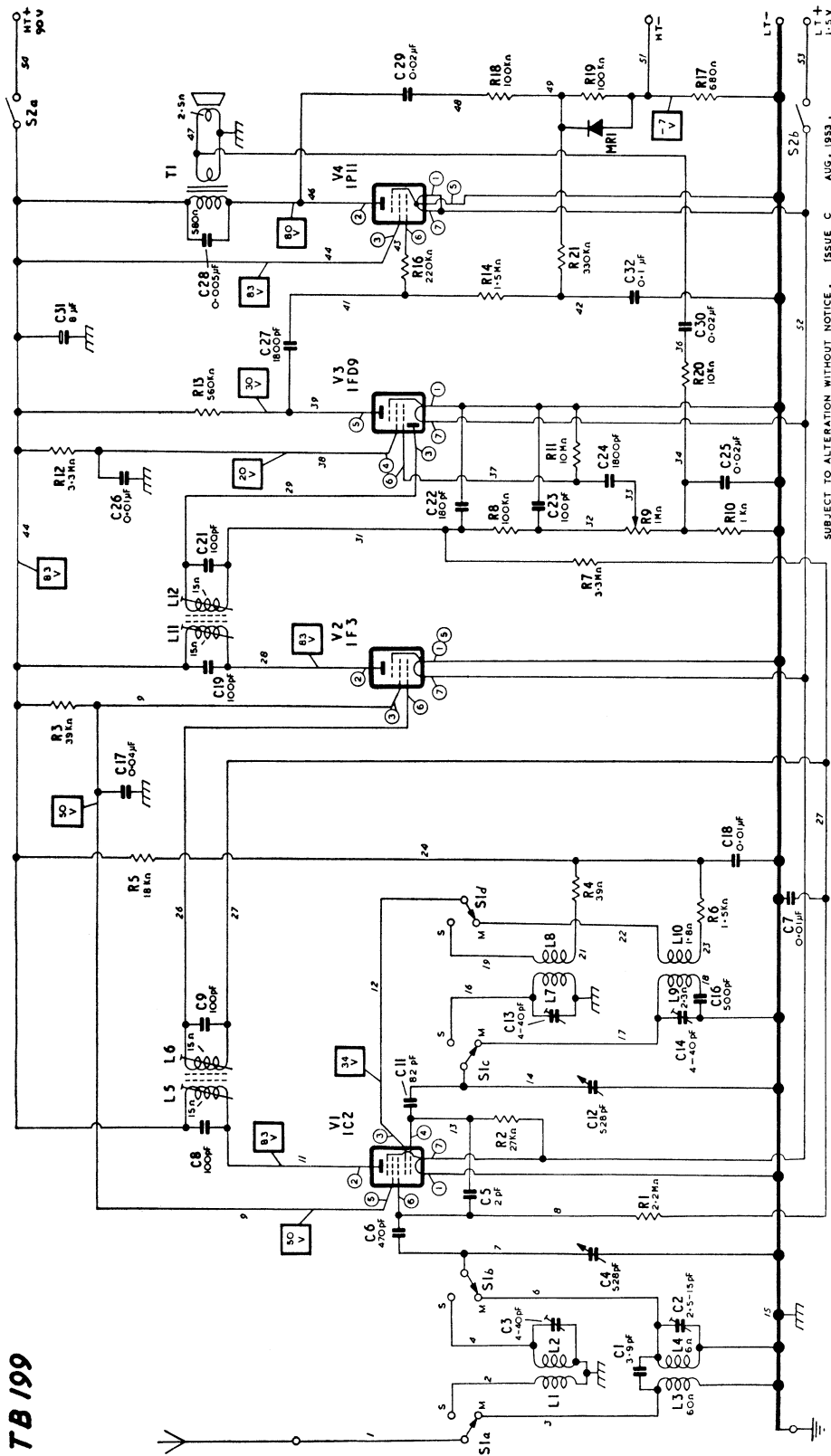
Issued by

**MURPHY RADIO LTD • WELWYN GARDEN CITY
HERTS • ENGLAND**

WELWYN GARDEN 3434

FOREIGN TELEGRAMS AND CABLES: RADMURPHY, LONDON

TB 199

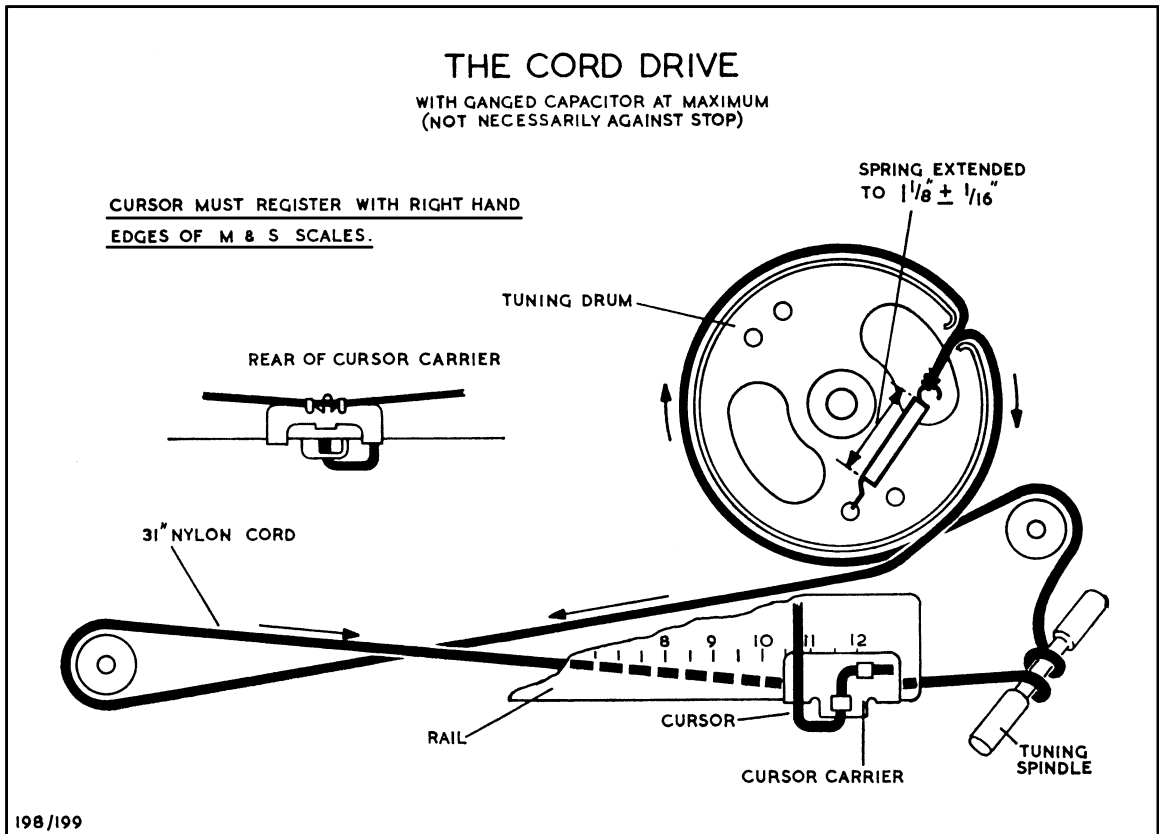


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Circuit voltages are shown within squares and were measured between chassis and the point indicated using a 20,000 Ω/V meter while the receiver was switched to the M band under no-signal conditions.
 Where the resistance of a coil is less than one ohm, the value is omitted.
 Component terminals and connecting leads are identified by test

point (t.p.) numbers which correspond with those appearing on the chassis drawings.

The valve pin numbers are shown within small circles.
 Ediswan or Mazda valve types are shown in the diagram. Alternative types are as follows:
 Mullard: V1, DK92; V2, DF91; V3, DAF91; V4, DL94.
 American: V2, 1T4; V3, 1S5; V4, 3V4.



BATTERY DETAILS

L.t. (A Battery) — 1.5V, high capacity H.t. (B Battery) — 90V
 Suitable types: Berc B103; Siemens S103

PARTS LIST (Electrical Components)

ABBREVIATIONS

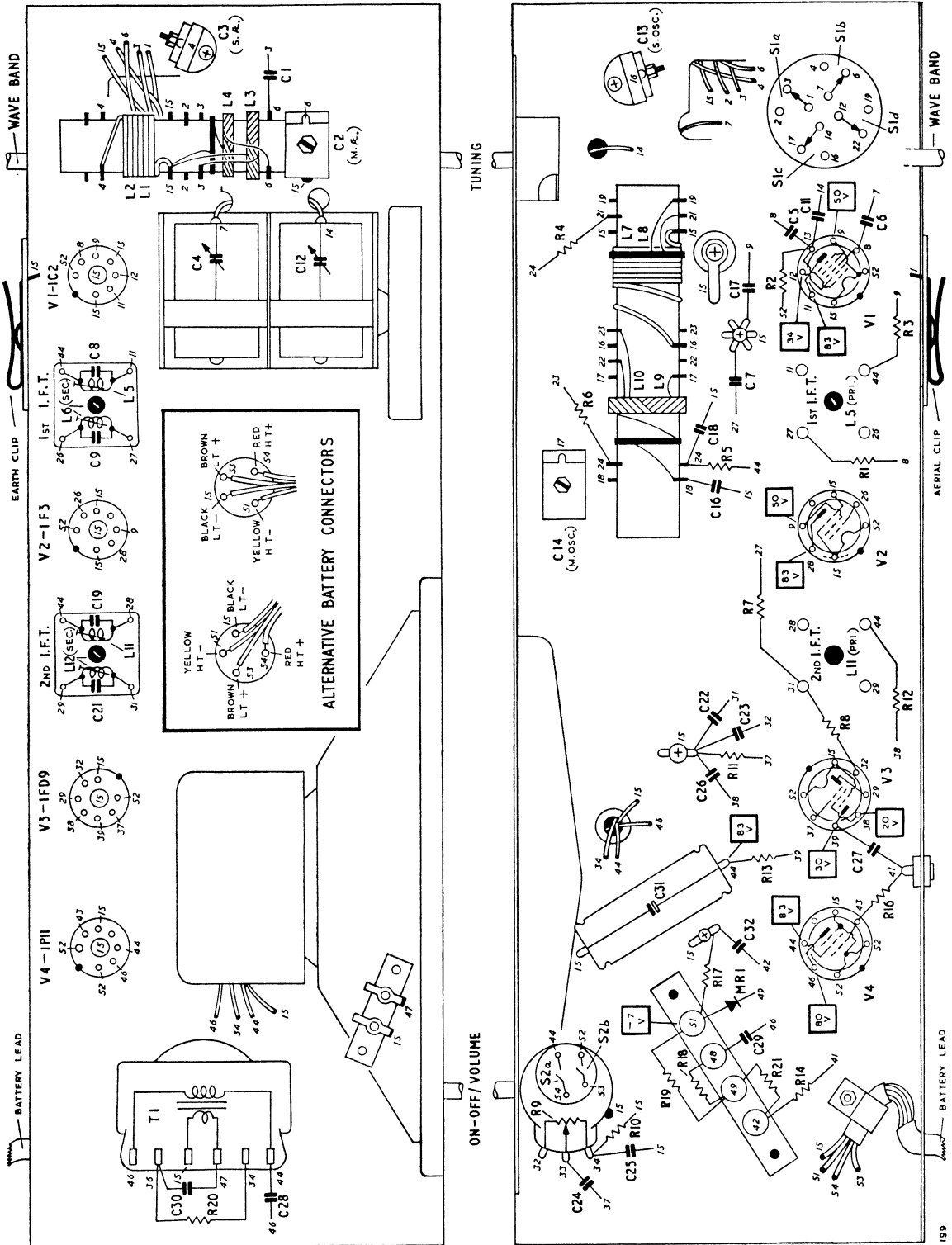
cer. — ceramic	elec. — electrolytic
p.s.m. — protected silvered mica	V d.c. — d.c. voltage rating
tub. — paper tubular	W — wattage rating
m.tub. — metallized paper tubular	log. — logarithmic law

PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS	PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
52147	C1	3.9 pF	20%, cer., 500V d.c.	52830	C9	100 pF	5%, p.s.m., 350V d.c.
56326	C2	2.5-15 pF	Trimmer, M ae.	23662	C11	82 pF	10%, p.s.m., 350V d.c.
56323	C3	4-40 pF	Trimmer, S ae.	60763	C12	528 pF	Ganged capacitor, osc. section
60763	C4	528 pF	Ganged capacitor, ae. section	56323	C13	4-40 pF	Trimmer, M osc.
	C5	2 pF	Twisted wire	56322	C14	4-40 pF	Trimmer, M osc.
54083	C6	470 pF	20%, cer., 500V d.c.	28350	C16	500 pF	1%, p.s.m., 350V d.c.
49447	C7	0.01 µF	25%, m.tub., 150V d.c.	49454	C17	0.04 µF	25%, m.tub., 150V d.c.
52630	C8	100 pF	5%, p.s.m., 350V d.c.	49447	C18	0.01 µF	25%, m.tub., 150V d.c.

PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS	PART NO.	CIRCUIT NO.	VALUE	TOLERANCE AND REMARKS
52630	C19	100 pF	5%, p.s.m., 350V d.c.	24869	R17	680 Ω	10%, 0.4W
52630	C21	100 pF	5%, p.s.m., 350V d.c.	27269	R18	100 KΩ	20%, 0.4W
23678	C22	180 pF	10%, p.s.m., 350V d.c.	27269	R19	100 KΩ	20%, 0.4W
54070	C23	100 pF	20%, cer., 500V d.c.	25317	R20	10 KΩ	10%, 0.4W
54090	C24	1800 pF	20%, cer., 500V d.c.	27365	R21	330 KΩ	20%, 0.4W
49455	C25	0.02 μF	25%, m.tub., 150V d.c.				
49447	C26	0.01 μF	25%, m.tub., 150V d.c.				
54090	C27	1800 pF	20%, cer., 500V d.c.				
41409	C28	0.005 μF	25%, tub., 500V d.c.				
49455	C29	0.02 μF	25%, m.tub., 150V d.c.				
49455	C30	0.02 μF	25%, m.tub., 150V d.c.				
31376	C31	8 μF	+100% -20%, elec. 150V d.c.				
41404	C32	0.1 μF	20%, tub., 350V d.c.				
27525	R1	2.2 MΩ	20%, 0.4W				
25477	R2	27 KΩ	10%, 0.4W				
25541	R3	39 KΩ	10%, 0.4W				
24389	R4	39 Ω	10%, 0.4W				
25413	R5	18 KΩ	10%, 0.4W				
24997	R6	1.5 KΩ	10%, 0.4W				
27557	R7	3.3 MΩ	20%, 0.4W				
27269	R8	100 KΩ	20%, 0.4W				
52834	R9	1 MΩ	Volume control, log.				
24933	R10	1 KΩ	10%, 0.4W				
27653	R11	10 MΩ	20%, 0.4W				
27557	R12	3.3 MΩ	20%, 0.4W				
25989	R13	560 KΩ	10%, 0.4W				
27493	R14	1.5 MΩ	20%, 0.4W				
27333	R16	220 KΩ	20%, 0.4W				
				PART NO.	CIRCUIT NO.	RESISTANCE (D.C.)	REMARKS
				61494	L1	—	Coupling
					L2	—	Tuned
					L3	60 Ω	Coupling
					L4	6 Ω	Tuned
				58116	L5	15 Ω	Pri.
					L6	15 Ω	Sec. } 1st i.f.t.
					L7	—	Tuned
				61495	L8	—	Coupling
					L9	2.3 Ω	Tuned
					L10	1.8 Ω	Coupling
				58116	L11	15 Ω	Pri.
					L12	15 Ω	Sec. } 2nd i.f.t.
				61496	T1	580 Ω	Pri.
						—	Sec. } o.t.

PARTS LIST (Mechanical Components)

PART NO.	DESCRIPTION	REMARKS	PART NO.	DESCRIPTION	REMARKS
61499	Back	for cabinet	61506	Plate, mounting (4)	for valve holders
60761	Bearing	for tuning spindle	62315	Plug, battery	American
			62314	Plug, battery	British
60742	Cabinet		58850	Pulley (2)	for tuning drive
42580	Circlip	for tuning spindle	60774	Rail	for cursor
14347	Clamp	for battery lead	58528	Rectifier, metal (MR1)	STC type M1
14337	Clamp	for C31	60776	Reflector	for tuning scale
61501	Clip (2)	for aerial and earth	53434	Retainer (4)	for i.f.t. cores
14770	Collar (3)	inside ganged capacitor mounting grommets			
1871/2	Compound	for i.f.t. cores	61680	Scale, tuning	
3962/1	Cord	for tuning drive	10419	Screw, grub, 2BA ⅜ in. (3)	for control knobs
46910	Core, iron dust (4)	for i.f. transformers	103904	Screw, self tapping, 6Y ¼ in. (5)	for fastening cabinet back and top of loudspeaker
60771	Cursor and carrier	for tuning scale	103878	Screw, self tapping, 8Y ⅜ in. (2)	for fastening chassis rear to cabinet
61209	Disc, indicator	for on-off switch	60762	Spindle, tuning	
60873	Drum, tuning	for ganged capacitor	47478	Spring	for tuning drive cord
			61976	Strip, Clamping (2)	for ae. and osc. coils
56622	Grommet (3)	for ganged capacitor mounting	60779	Switch	wave band
61210	Knob (2)	for volume and tuning controls	56217	Valve holder (4)	B7G
60757	Knob, lever	for wave band switch	58554	Washer (3)	for ganged capacitor mounting grommets
62178	Label	for cabinet back	14949	Washer (2)	for lower screws fastening cabinet back
62078	Loudspeaker	5 in. (12.7 cm.) diameter	14983	Washer	for upper screw fastening cabinet back
61213	Pad, felt	between cabinet front and on-off indicator disc	34588	Washer, felt	for tuning knob
60777	Pad, plastic, scale retaining (4)	for corners of reflector	16649	Washer, shakeproof ⅜ in. (2)	for volume control and wave band switch
62477	Panel and clips	for aerial and earth	47967	Washer, spacing	between reflector and loudspeaker
49506	Pin (2)	for tuning drive pulleys	58572	Washer, spring (3)	for loudspeaker fixing screws



The layout of the top and the underside of the chassis.

CIRCUIT ALIGNMENT

Accessibility. The oscillator and aerial trimmers can be adjusted without removing the chassis from the cabinet.

Receiver output. Make all adjustments for maximum output with the volume control at maximum. Adjust the signal generator attenuator so that this output does not exceed 50 mW, or approximately 0.4V across the loud-speaker speech coil.

Trimming tool. A non-metallic tool must be used for adjusting the i.f.t. cores.

Tuning pointer (cursor) setting. Before commencing r.f. alignment while the chassis is outside the cabinet, make sure that when the ganged capacitor plates are fully meshed the left-hand edge of the cursor carrier registers with 10.4 on the carrier rail. When the chassis is inside the cabinet,

the cursor itself must register with the right-hand edges of the M and S scales; move the scale to the right or left as required or, if necessary, move the cursor.

Receiver oscillator frequency. On both wave bands this is higher than the signal frequency.

Replacement osc. and ae. coils. The inductance of the S band tuned windings must be adjusted after fitting. Referring to the S band section of the circuit alignment table, commence at 6.09 Mc/s and, where it states "No adjustments", adjust the spacing of the end turns of the coils. Then adjust the trimmers at 15.23 Mc/s. Repeat these adjustments until there is no further improvement and finally seal the windings with wax.

CIRCUIT ALIGNMENT TABLE

CIRCUIT	NOTES	SIG. GEN. FREQUENCY	SIG. GEN. TERMINATION	CONNECT SIG. GEN. TO	RECEIVER SETTING	ADJUSTMENTS
2nd i.f.t.	Unscrew sec. core (top of can) before starting adjustments	470 Kc/s	Via 0.01 μF capacitor	V2 grid I (pin 6)	10.4 cm.	L11 (pri.) below chassis L12 (sec.) top of can DO NOT RE-ADJUST PRI. CORE
1st i.f.t.	As above. Switch to M band.	470 Kc/s	As above	C4 stator (t.p. 7)	10.4 cm.	L5 (pri.) below chassis L6 (sec.) top of can DO NOT RE-ADJUST PRI. CORE
M		1364 Kc/s (220 m.)	Dummy aerial	Aerial Clip	2.3 cm.	C14 (osc.) below chassis C2 (ae.) above chassis
		600 Kc/s (500 m.)	As above	As above	8.51— 8.72 cm.	No adjustments
S		15.23 Mc/s (19.7 m.)	As above	As above	1 cm.	C13 (osc.) below chassis C3 (ae.) above chassis
		6.09 Mc/s (49.3 m.)	As above	As above	7.71— 7.9 cm.	No adjustments