

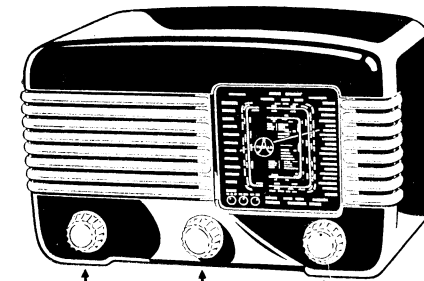
C	Capacitors	Value	Working Voltage D. C.	Order No.	Notes
11	Mica	10 pF ± 10%	500 V	TC 200 10/A	
12	Mica	20 pF ± 5%	500 V	TC 200 20/B	
13	Wire-wound	25 pF		PN 700 00	
14	Wire-wound	25 pF		PN 700 00	
15	Wire-wound	25 pF		PN 700 00	
16	Paper	1000 pF ± 20%	1000 V	TC 105 1k	
17, 18	Variable	2 × 500 pF		PN 705 11	
19, 20	Electrolytic	2 × 32 μF	275 V	TC 517 32/32M	
21—24	Mica	103 pF ± 5%	500 V	TC 200 103/B	
25	Mica	50 pF ± 5%	500 V	TC 200 50/B	
26	Paper	0.1 μF ± 20%	250 V	TC 102 M1	
27	Wire-wound	25 pF		PN 700 00	
29	Paper	0.1 μF ± 20%	160 V	TC 101 M1	
30	Mica	50 pF ± 10%	500 V	TC 200 50/A	
31	Wire-wound	25 pF		PN 700 00	
32	Wire-wound	25 pF		PN 700 00	
33	Mica	490 pF ± 2%	500 V	TC 201 490/C	
34	Mica	2200 pF ± 2%	500 V	TC 201 2k2/C	
35	Paper	500 pF ± 20%	1000 V	TC 105 500	
36	Mica	200 pF ± 10%	500 V	TC 201 200/A	
37	Paper	10000 pF ± 20%	400 V	TC 103 10k	
38	Paper	64000 pF ± 20%	250 V	TC 102 64k	
39	Mica	200 pF ± 10%	500 V	TC 201 200/A	
40	Paper	10000 pF ± 20%	400 V	TC 103 10k	
41	Paper	10000 pF ± 20%	1000 V	TC 405 10k	
42	Paper	0.64 μF ± 20%	160 V	TC 101 M64	
43	Paper	5000 pF ± 20%	1000 V	TC 105 5k	
44	Paper	10000 pF ± 20%	400 V	TC 103 10k	
45	Paper	5000 pF ± 20%	1000 V	TC 105 5k	
46	Mica	7 pF ± 10%	500 V	TC 200 7/A	

R	Resistors	Value	Load	Order No.	Notes
1	Wire-wound	700 Ω ± 10%	7.00 W	PF 674 00	} with on/off switch
2	Wire-wound	200 Ω ± 10%	3.20 W		
3	Carbon	32000 Ω ± 13%	1.00 W	TR 103 32k	
4	Potentiometer	0.5 M Ω log.		WN 695 03	
5	Carbon	10000 Ω ± 13%	1.00 W	TR 103 10k	
6	Carbon	100 Ω ± 5%	1.00 W	TR 103 100/B	
7	Carbon	20 Ω ± 13%	0.25 W	TR 101 20	
8	Carbon	2000 Ω ± 13%	2.00 W	TR 104 2k	
9	Carbon	50000 Ω ± 13%	0.25 W	TR 101 50k	
11	Carbon	0.5 M Ω ± 13%	0.25 W	TR 101 M5	
12	Carbon	1 M Ω ± 13%	0.25 W	TR 101 1M	
13	Carbon	0.1 M Ω ± 13%	0.25 W	TR 101 M1	
14	Carbon	0.1 M Ω ± 13%	0.50 W	TR 102 M1	
15	Carbon	0.8 M Ω ± 13%	0.25 W	TR 101 M8	
16	Carbon	1 M Ω ± 13%	0.25 W	TR 101 1M	
17	Carbon	1 M Ω ± 13%	0.25 W	TR 101 1M	
18	Carbon	50000 Ω ± 13%	0.25 W	TR 101 50k	

SERVICE MANUAL AND TECHNICAL DESCRIPTION OF THE TESLA "TALISMAN 306 U" RADIO RECEIVER



Apply for 306 U-5, 306 U-5z and 306 U-7



Mains switch and
volume control

Tuning

Waveband switch

CIRCUIT

3+1 valve superheterodyne with six circuits for operation on A. C./D. C. mains.

WAVEBANDS

- I. Short waves
16—46 m (18.75—6.52 Mc/s)
- II. Short waves
46—136 m (6.52—2.2 Mc/s)
- III. Medium waves
187—572 m (1604—525 kc/s)

VALVES

UCH 21 — mixer and oscillator
UCH 21 — I. F. and A. F. amplifier
UBL 21 — detector and power amplifier
UY 1 N — half-wave rectifier

Two pilot lamps (6—7 V/0.3 A).

INTERMEDIATE FREQUENCY

452 kc/s

BANDWIDTH

For voltage ratio 1:10 approx. I. F. 13.3 kc/s
1500 kc/s 13 kc/s
1000 kc/s 12 kc/s
550 kc/s 11.2 kc/s

MAINS SUPPLY

A. C./D. C. 120 and 220 V; 30—100 c/s

CONSUMPTION

32 W at 120 V,
45 W at 220 V.
Primary current 220 mA ± 10% at 220 V.

POWER OUTPUT

1.5 W at 220 V (at 10% distortion)
0.7 W at 120 V.

LOUDSPEAKER

Permanent magnet moving coil, diameter 100 mm, speech coil impedance approx. 4 Ω.

DIMENSIONS AND WEIGHTS

	Receiver	Receiver incl. packing
Width . . .	260 mm	330 mm
Height . . .	160 mm	215 mm
Depth . . .	155 mm (incl. knobs)	210 mm
Weight . . .	2.80 kg	3.70 kg

ALIGNMENT CHART

Order of adjustment	Circuit to be aligned	Signal generator		Setting of receiver controls		Sequence of components to be adjusted	Output meter deflection
		Frequency	Connection	Waveband switch	Dial pointer		
1.	I. F. amplifier	452 kc/s	to signal grid of first UCH 21 via a 30000 pF capacitor	Medium-wave range	beginning of MW range (200 m)	iron cores of L 24 + 24' - L 23 - L 22 - L 21*	maximum
2.		452 kc/s	to aerial socket via normal dummy aerial		end of MW range (550 m)	iron core of L 40	minimum
3.	Short-wave range 16—46 m	7 Mc/s	to aerial socket via short wave dummy aerial (400 Ω)	Short-wave range 16—46 m	42.8 m mark	iron cores of L 28 and L 27	maximum
4.		17 Mc/s			17.6 m mark	capacitors C 14 and C 13	maximum
5.	Short-wave range 46—136 m	2.4 Mc/s	to aerial socket via short wave dummy aerial (400 Ω)	Short-wave range 46—136 m	125 m mark	iron cores of L 32 and L 31	maximum
6.		6 Mc/s			50 m mark	capacitors C 31 and C 27	maximum
7.	Medium-wave range 187—572 m	550 kc/s	to aerial socket via normal dummy aerial	Medium-wave range 187—572 m	550 m mark	iron cores of L 36 and L 35	maximum
8.		1500 kc/s			200 m mark	capacitors C 32 and C 15	maximum

* L 24 and L 21 are upper coils of both I. F. transformers.

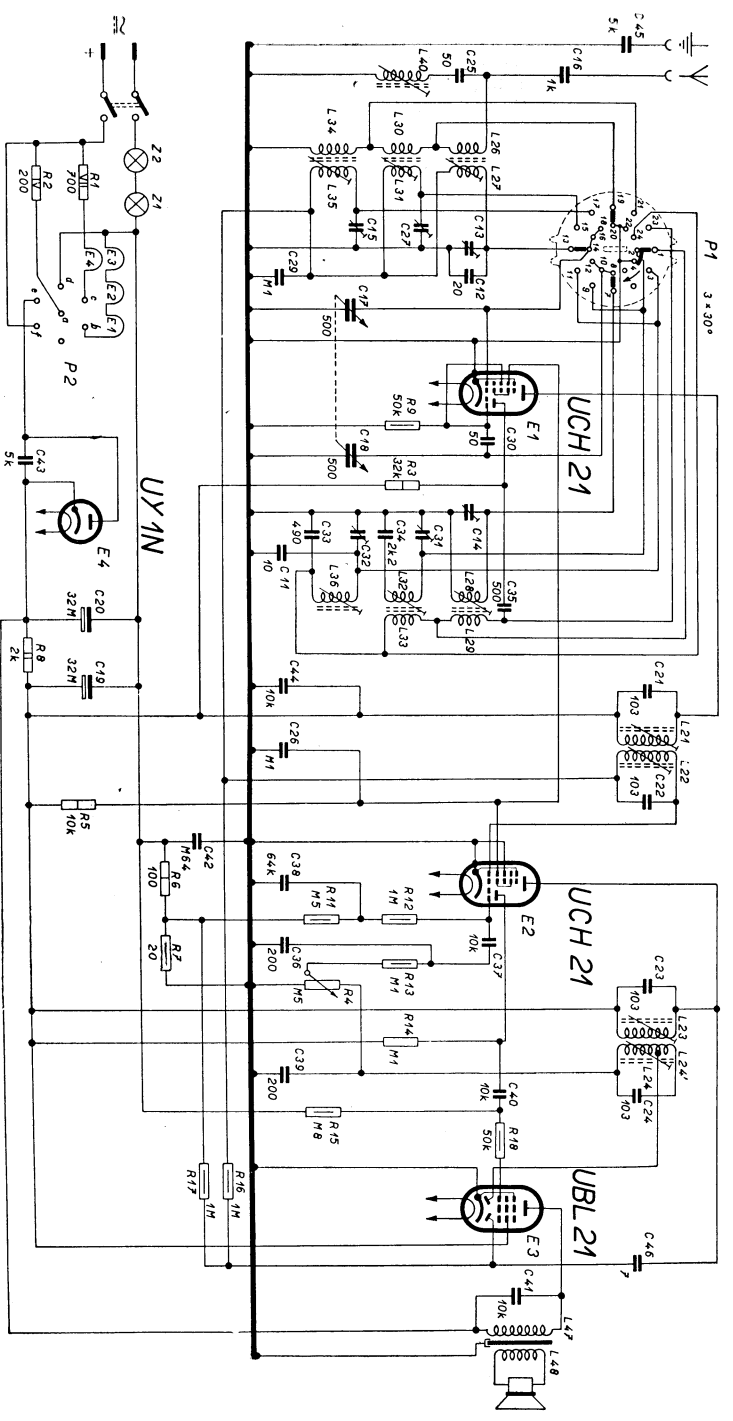
SPARE PARTS

Item	Mechanical Parts	Order No.	Notes
1	Cabinet brown, bare	PA 257 07	
1a	Cabinet brown, complete	PF 257 08	
2	Large ornamental lattice, left	PF 739 00	
3	Small ornamental lattice, right	PF 739 01	
4	Rear panel	PA 132 37	306 U-5z
4a	Rear panel	PA 132 21	
5	Knob, volume control and tuning	PA 243 14	
6	Waveband switch knob	PF 243 19	
7	Fastening screw, bottom	CP 771 39	
8	Dial	PF 157 71	306 U-5
8a	Dial	PF 157 75	306 U-7
9	Rubber ring for dial	PA 889 03	
10	Screen	PF 836 34	
11	Clip for speaker	PF 668 09	
11a	Clip for dial	PF 668 18	
12	Dial lamp 6—7 V/0.3 A, Z 1, Z 2	8046 P-00	
13	Dial lamp holder	PF 498 06	
14	Dial pointer	PF 165 03	
15	Driving disc	CP 770 62	
16	Tension spring	CP 770 63	
17	Cord	M 4-38	
18	Tuning spindle	PA 726 19	
19	Spring washer	NTN 028-3.2 St	
20	Input coil assembly	PK 050 29	
21	Oscillator coil assembly with switch	PK 050 28	
22	Waveband switch	PN 533 20	
23	Waveband switch plate	PK 533 23	
24	Voltage selector plate	CP 750 13	
25	Voltage selector knob	CP 770 33	
26	Valve socket for U 21	PK 497 01	
27	Valve socket for UY 1 N	PK 497 02	
28	Mains cord with plug	28 502 66	
29	Mains cord cleat	PA 666 00	
30	Aerial - Earth label	PF 806 52	
31	Rubber bushing of variable capacitor	PA 231 01	
32	Bracket for I. F. transformer	PA 668 10	
33	Loudspeaker, complete (brown cover)	PN 632 12	
34	Cone with speech coil	PF 759 04	
35	Felt ring	PA 029 03	
36	Interleaving ring	PA 265 00	
37	Linen cover, loudspeaker (brown)	PV 791 10	

ELECTRICAL PARTS

L	Coils	Value	Order No.	Notes
26, 27	Input; short waves I	<1 Ω, <1 Ω	PK 585 93	
30, 31	Input; short waves II	<1 Ω, <1 Ω	PK 585 95	
34, 35	Input; medium waves	50 Ω, 3 Ω	PK 585 97	
28, 29	Oscillator; short waves I	<1 Ω, <1 Ω	PK 585 87	
32, 33	Oscillator; short waves II	<1 Ω, <1 Ω	PK 585 89	
36	Oscillator; medium waves	6.7 Ω	PK 585 91	
21, 22	1st I. F. transformer	9.4 Ω, —	PK 854 17	
23, 24, 24'	2nd I. F. transformer	9.4 Ω, 10 Ω	PK 854 19	
40	I. F. rejector	35 Ω	PK 852 03	
47, 48	Output transformer		PN 673 12	

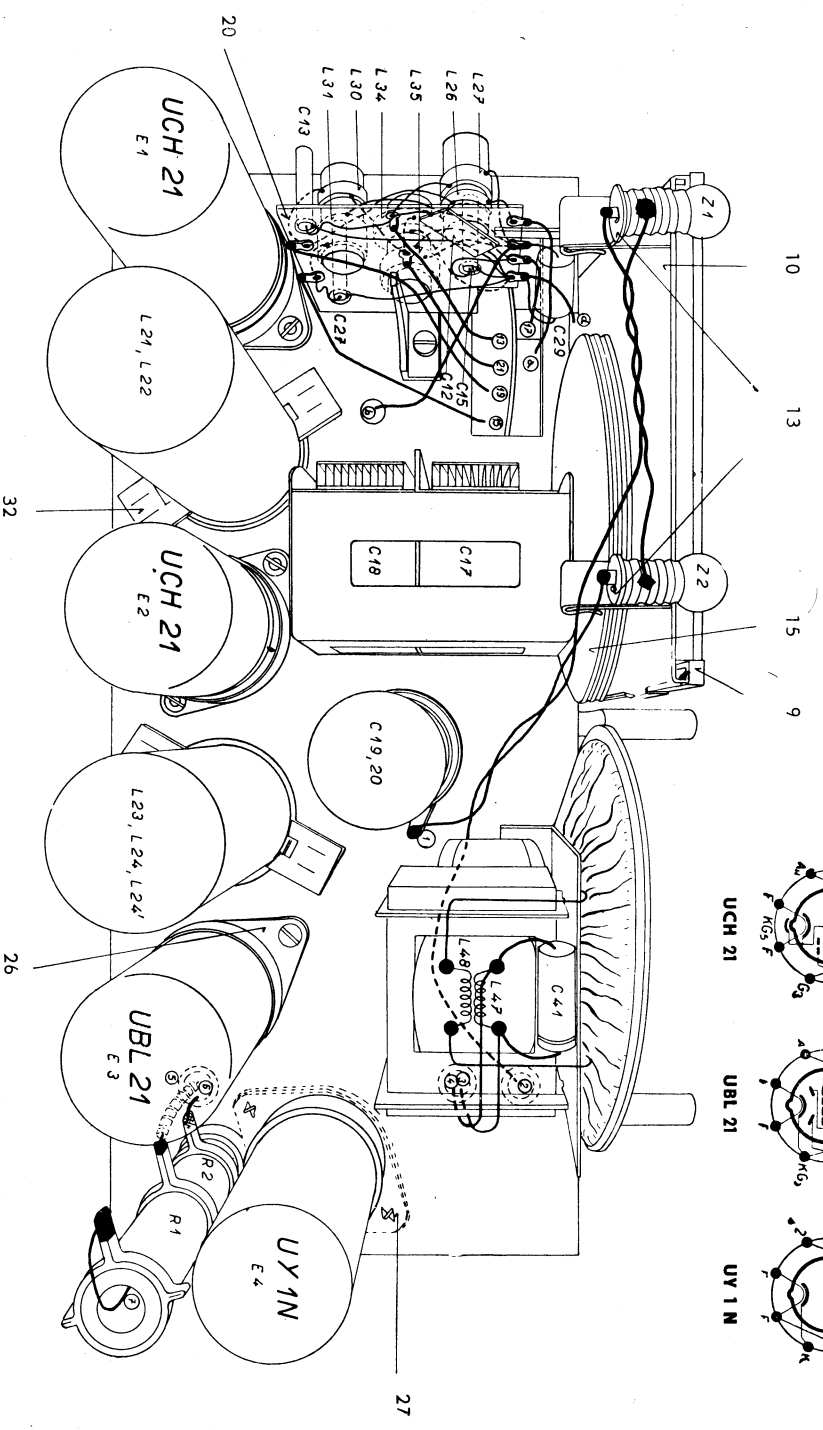
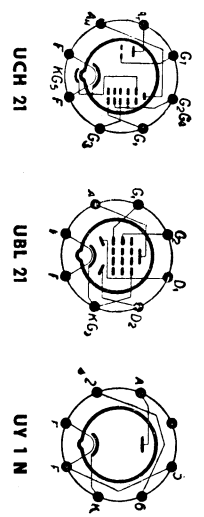
R	1 2	9	3	6	14	18 15	16 17	46	41	
C	45 16 25	27 15 13 12 29 17	30 16 43	143 134 32 33 11 35	20 19 21 44	26	22	42 38	37 36 23	47 48
L	40	26 30 34 27 31 35		28 32 36 29 33	21 22				23 24 24	



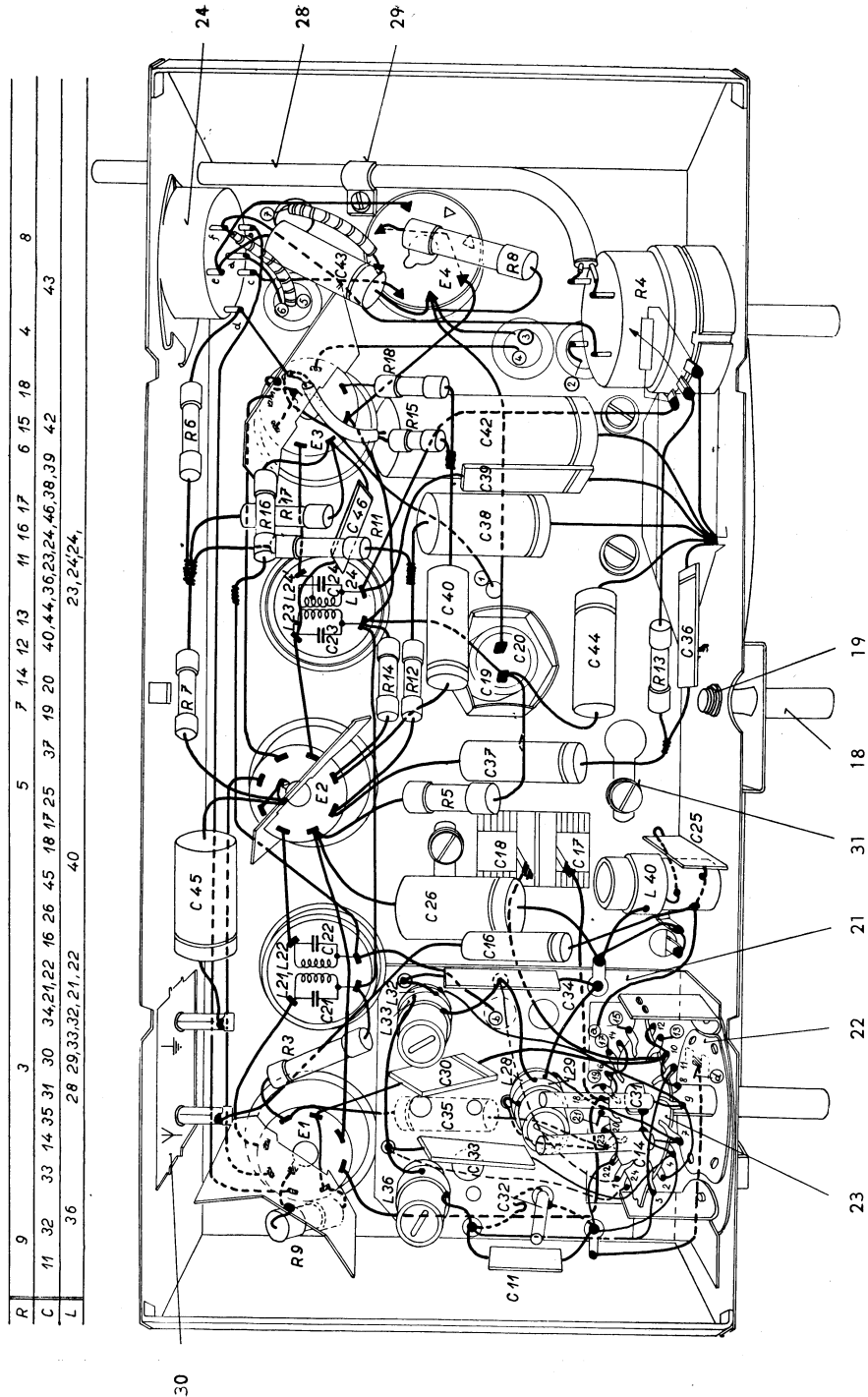
TESLA "TALISMAN 306 U"

WAVE RANGES	WAFER
I	16—46 m
II	46—136 m
III	187—572 m

100 Ω	100 pF	0.25 W
10k Ω	10000 pF	0.5 W
1M Ω	1 μF	1 W
100 Ω	100 Ω	2 W
10k Ω	10000 Ω	3 W
1M Ω	1M Ω	4 W



Top view of chassis



Under-chassis view

Valves and Currents :		at 220 V				at 120 V				Vf V
		Va V	Vg2 V	Ia mA	Ig2 mA	Va V	Vg2 V	Ia mA	Ig2 mA	
UCH 21	heptode	145	68	1.7	4.6	90	60	1.7	2.2	20
	triode	72	—	2.1	—	42	—	1.5	—	
UCH 21	heptode	145	68	4.6	3.2	90	60	2.3	1.1	20
	triode	40	—	1	—	22	—	0.7	—	
UBL 21	duodiode	176	145	44	6.2	110	90	25	4.2	55
	pentode									
UY 1 N	half-wave rectifier	200	—	68	—	115	—	38	—	50
Electrolytic capacitors		190 V D. C. on C 20, 145 V D. C. on C 19.				115 V D. C. on C 20, 90 V D. C. on C 19.				

All voltages have been measured by a 1000 Ω/V meter.

SERVICE INSTRUCTIONS FOR RECEIVER ALIGNMENT

• **IMPORTANT**

When aligning or carrying out any other adjustment or test with receiver switched on, the receiver must be connected to the mains via an insulating transformer, i. e. a transformer with separate secondary winding and of high insulation resistance between primary and secondary windings. The receiver chassis, which would otherwise be connected directly to the mains, may now be earthed; it can then be handled just as safely as a normal A. C. receiver with transformer.

• **GENERAL**

Before alignment the receiver must be adjusted both mechanically and electrically. Original valves which will be used henceforward with the receiver must be inserted.

During alignment the receiver should be normally heated and removed from the cabinet.

With the tuning capacitor closed (the stator- and rotor plates fully meshed), the station pointer must be vertical and should coincide with the vertical mark in the lower part of the tuning dial. When turned 90°, the pointer should coincide with the centre of the scale and with the horizontal mark. The local oscillator frequency is on all wave ranges by 452 kc/s higher than the signal frequency.

The iron cores are adjusted by a special insulated screwdriver, the capacitors C 13, C 14, C 15, C 27, C 31 and C 32 by reeling off the appropriate length of thin wire. When adjusting the capacitors, take care not to pass over optimum alignment, as the whole capacitor would have to be replaced. Connect output meter to secondary of output transformer directly or through a matching transformer (speech coil leads), earth receiver and set volume control to maximum.