Leak Stereo 20 Power Amplifier
Refurbishment Parts List

Total Cost £109.91

Capacitors

Qty	Designator	Specified µF	Specified V	Original Component	Application	Form	Replacement Component	Supplier SKU	Size mm dia x len	Space Available	Net Price	Gross Cost
2	C1	0.001	350	1nF 350V	Bypass (Cathode)	Axial	0.001uF 630Vdc Vishay Polyester 1813 Series	V1813-010	4 x 11	5 x 18	£1.04	£2.50
6	C2,7-8	50	25	50uF 25V electrolytic	Bypass (Cathode)	Axial	50µF 50V Vishay Sprague Atom TVA-040	TVA-040	8 x 22	12 x 50	£2.02	£14.54
2	C3	0.1	350	0.1uF, 350V Visconol	Coupling	Axial	0.1uF 630V Mundorf MCap MKP Capacitor	MKP-440	10 x 19	12 x 50	£2.22	£5.33
4	C4,6	0.25	350	0.25uF, 350V Visconol	Coupling	Axial	0.33uF 630Vdc Claritycap SA Range polypropylene	CCSA-040	20 x 25	20 x 50	£2.83	£13.58
2	C5	0.02	350	0.02uF, 350V electrolytic	Bypass (Cathode)	Axial	0.022uF 630Vdc Mallory M150 Polyester Capacitor	150M-170	7 x 16.5	12 x 50	£0.90	£2.16
2	C9	0.0002	25	200pF SRC	-ve Feedback	Axial	200pF 630V Polystyrene Capacitor	CPS20/200	5 x 9	18 x 18	£2.20	£5.28
2	C10-13	32	400	32µF+32uF, 450V TCC	Smoothing	Radial	32uF+32uF 500V Mundorf M-Lytic HV Radial Capacitor	MLSL5002-020	35 x 50	34 x 62	£12.49	£29.98
											TOTAL	£73.37

C10-13: originals are 2 x "TCC 32uf+32uf 450V Radial Capacitor, 35 x 60mm".
Constraints: hole in chassis is 36.2mm diameter or 34mm inside existing TCC Capacitor can if hollowed out. Therefore, any replacement capacitor must be same dimensions as the TCC or suitable for either painting gold to match chassis or they needs to be less that 34mm diameter to fit inside a hollowed-out can.
Options:
1. 32uF+32uF 500V Mundorf M-Lytic HV Radial Capacitor, MLSL5002-020, 33 x 50mm, plastic case will need to be painted gold to match the chassis?
2. 33uF+33uF 450V Mundorf M-Lytic HV Axial Capacitor, MLAL4502-020, 25 x 49mm, will fit inside existing can, preserving original appearance.

Resistors

Qty	Designator	Specified Ω	Specified W	Application	Form	Replacement Component	Supplier SKU	Size mm dia x len	Space Available	Net Price	Gross Cost
6	R1,12,13	1M	1/2 W	Grid Leak	Metal Film	2 x 470K 2W Kiwame Resistor	RES-2K570	4.2 x 12	8 x 18	£0.70	£5.04
2	R2	22K	1/2 W	Grid Stopper	Metal Film	22K 2W Kiwame Resistor	RES-2K410	4.2 x 12	5 x 15	£0.70	£1.68
2	R3	2K2	1/2 W	Cathode V1	Metal Film	22K 2W Kiwame Resistor	RES-2K290	4.2 x 12	5 x 15	£0.70	£1.68
2	R4	100R	1/2 W	Cathode	Metal Film	100R 2W Kiwame Resistor	RES-2K130	4.2 x 12	5 x 15	£0.70	£1.68
2	R5	100K	1/2 W	Load	Metal Film	100K 2W Kiwame Resistor	RES-2K490	4.2 x 12	8 x 50	£0.70	£1.68
4	R6,11	3M3	1/2 W	Cathode V2	Metal Film	3M3, 2W Multicomp MGRF2WJ0335AA9	Farnell	6 x 17	5 x 15		£0.00
2	R7	91K	1/2 W	Load	Metal Film	91K 2W Kiwame Resistor	RES-5K560	4.2 x 12	8 x 50	£1.55	£3.72
2	R8	1K	1/2 W	Cathode V2	Metal Film	1K 2W Kiwame Resistor	RES-2K250	4.2 x 12	8 x 50	£0.70	£1.68
2	R9	22K	1 W	Cathode V2	Metal Film	22K 2W Kiwame Resistor	RES-2K410	4.2 x 12	8 x 50	£0.70	£1.68
2	R10	100K	1 W	Load	Metal Film	100K 2W Kiwame Resistor	RES-2K490	4.2 x 12	8 x 50	£0.70	£1.68
4	R14,15	270R	2 W	Cathode V3	Metal Film	270R 5W Kiwame Resistor	RES-5K260	9 x 24	8 x 18	£1.55	£7.44
4	R16,17	10K	1/2 W	Grid Stopper	Metal Film	10K 2W Kiwame Resistor	RES-2K370	4.2 x 12	8 x 50	£0.70	£3.36
2	R18	12K	1/2 W	-ve Feedback	Metal Film	12K 2W Kiwame Resistor	RES-2K380	4.2 x 12	5 x 15	£0.70	£1.68
1	R19	47K	1/2 W	Load	Metal Film	47K 2W Kiwame Resistor	RES-2K450	4.2 x 12	5 x 15	£0.70	£0.84
1	R20	4K7	1/2 W	Load	Metal Film	4K7K 2W Kiwame Resistor	RES-2K330	4.2 x 12	5 x 15	£0.70	£0.84
1	R21	100R	3 W	Load/Fuse	Metal Film	100R 5W Kiwame Resistor + Fuse	RES-5K210	9 x 24	5 x 15	£1.55	£1.86
										TOTAL	£36.54

Original 1/2 Watt Load Resistors were under-rated so I decided to replace them with 1W Allen Bradley or 2W Kiwame Resistors

Aleternative Resistors using Allen Bradley Carbon Composition

Qty	Designator	Specified Ω	Specified W	Application	Form	Replacement Component	Supplier SKU	Size mm dia x len	Space Available	Net Price	Gross Cost
6	R1,12,13	1M	1/2 W	Grid Leak	Metal Film	2 x 470K 2W Kiwame Resistor	RES-2K570	6 x 15	8 x 18	£0.70	£5.04
2	R2	22K	1/2 W	Grid Stopper	Carbon	1W Allen Bradley Resistor		6 x 15	5 x 15	£0.70	£1.68
2	R3	2K2	1/2 W	Cathode V1	Carbon	1W Allen Bradley Resistor		6 x 15	5 x 15	£0.70	£1.68
2	R4	100R	1/2 W	Cathode	Carbon	1W Allen Bradley Resistor		6 x 15	5 x 15	£0.70	£1.68
2	R5	100K	1/2 W	Load	Carbon	1W Allen Bradley Resistor		6 x 15	8 x 50	£0.70	£1.68
4	R6,11	3M3	1/2 W	Cathode V2	Carbon	1W Allen Bradley Resistor		6 x 15	5 x 15	£0.90	£4.32
2	R7	91K	1/2 W	Load	Carbon	1W Allen Bradley Resistor		6 x 15	8 x 50	£1.55	£3.72
2	R8	1K	1/2 W	Cathode V2	Carbon	1W Allen Bradley Resistor		6 x 15	8 x 50	£0.70	£1.68
2	R9	22K	1 W	Cathode V2	Metal Film	22K 2W Kiwame Resistor	RES-2K410	4.2 x 12	8 x 50	£0.70	£1.68
2	R10	100K	1 W	Load	Metal Film	100K 2W Kiwame Resistor	RES-2K490	4.2 x 12	8 x 50	£0.70	£1.68
4	R14,15	270R	2 W	Cathode V3	Metal Film	270R 5W Kiwame Resistor	RES-5K260	9 x 24	8 x 18	£1.55	£7.44
4	R16,17	10K	1/2 W	Grid Stopper	Carbon	1W Allen Bradley Resistor		6 x 15	8 x 50	£0.70	£3.36
2	R18	12K	1/2 W	-ve Feedback	Carbon	1W Allen Bradley Resistor		6 x 15	5 x 15	£0.70	£1.68
1	R19	47K	1/2 W	Load	Carbon	1W Allen Bradley Resistor		6 x 15	5 x 15	£0.70	£0.84
1	R20	4K7	1/2 W	Load	Carbon	1W Allen Bradley Resistor		6 x 15	5 x 15	£0.70	£0.84
1	R21	100R	3 W	Load/Fuse	Metal Film	100R 5W Kiwame Resistor + Fuse	RES-5K210	9 x 24	5 x 15	£1.55	£1.86
										TOTAL	£40.86

Valves

Qty	Designator	Original Component	Application	Form	Replacement Component	Supplier SKU	Net Price	Gross Cost
1	V1	ECC83 / 12AX7 / B339	Input (L+R)	Octal	ECC83 Mullard		£0.00	£0.00
2	V2	ECC83 / 12AX7 / B339	Phase Inverter	Octal	Jan-5751 USA		£0.00	£0.00
4	V3,4	EL84 / N709 / 6BQ5	Output Valve	Octal	EL84 Harma		£0.00	£0.00
1	V5	GZ34 / 5AR4	Rectifier	Octal	GZ34 Mullard, JJ, NL		£0.00	£0.00
							TOTAL	£0.00