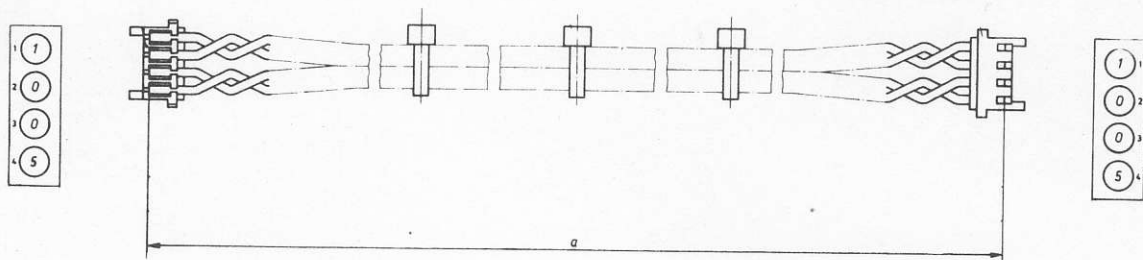


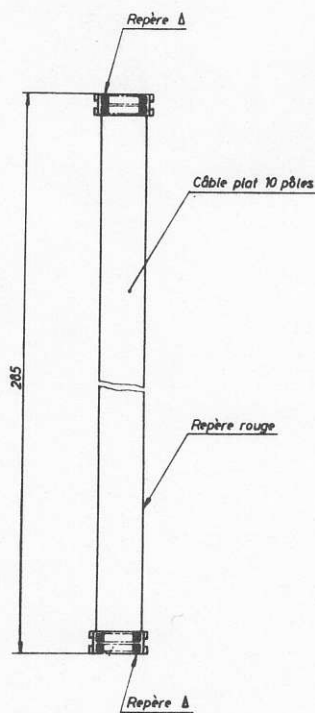
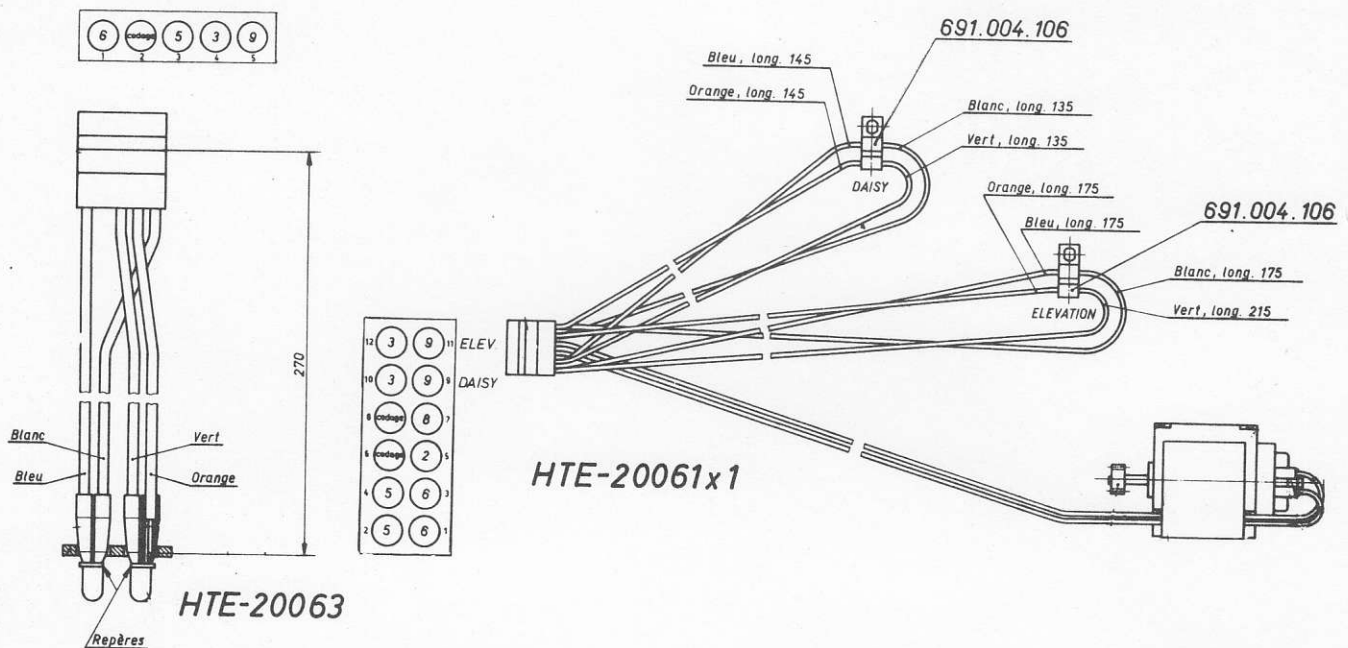
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HT-82-A

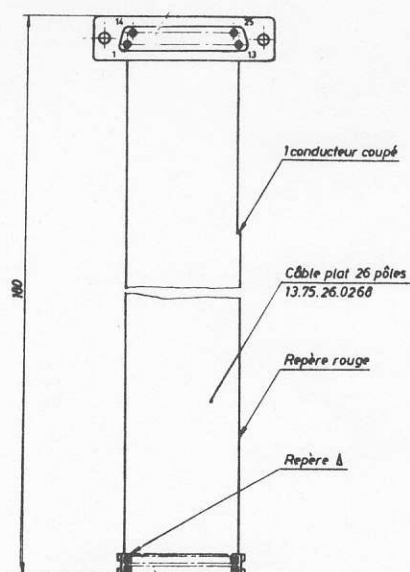
SERVICE MANUAL



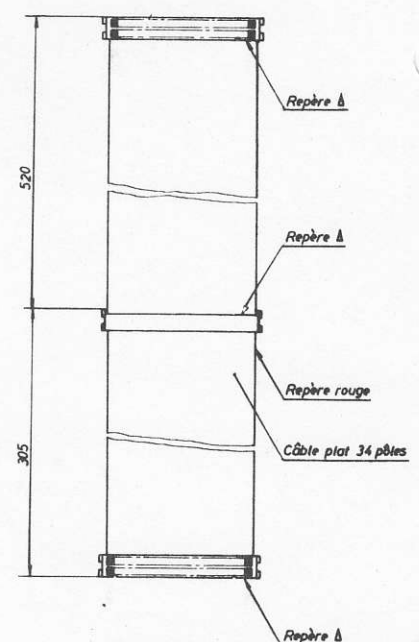
HTE-20059-J $a = 970 \text{ mm}$.
HTE-20059-H $a = 800 \text{ mm}$.



HTE-20070



HTE-20072



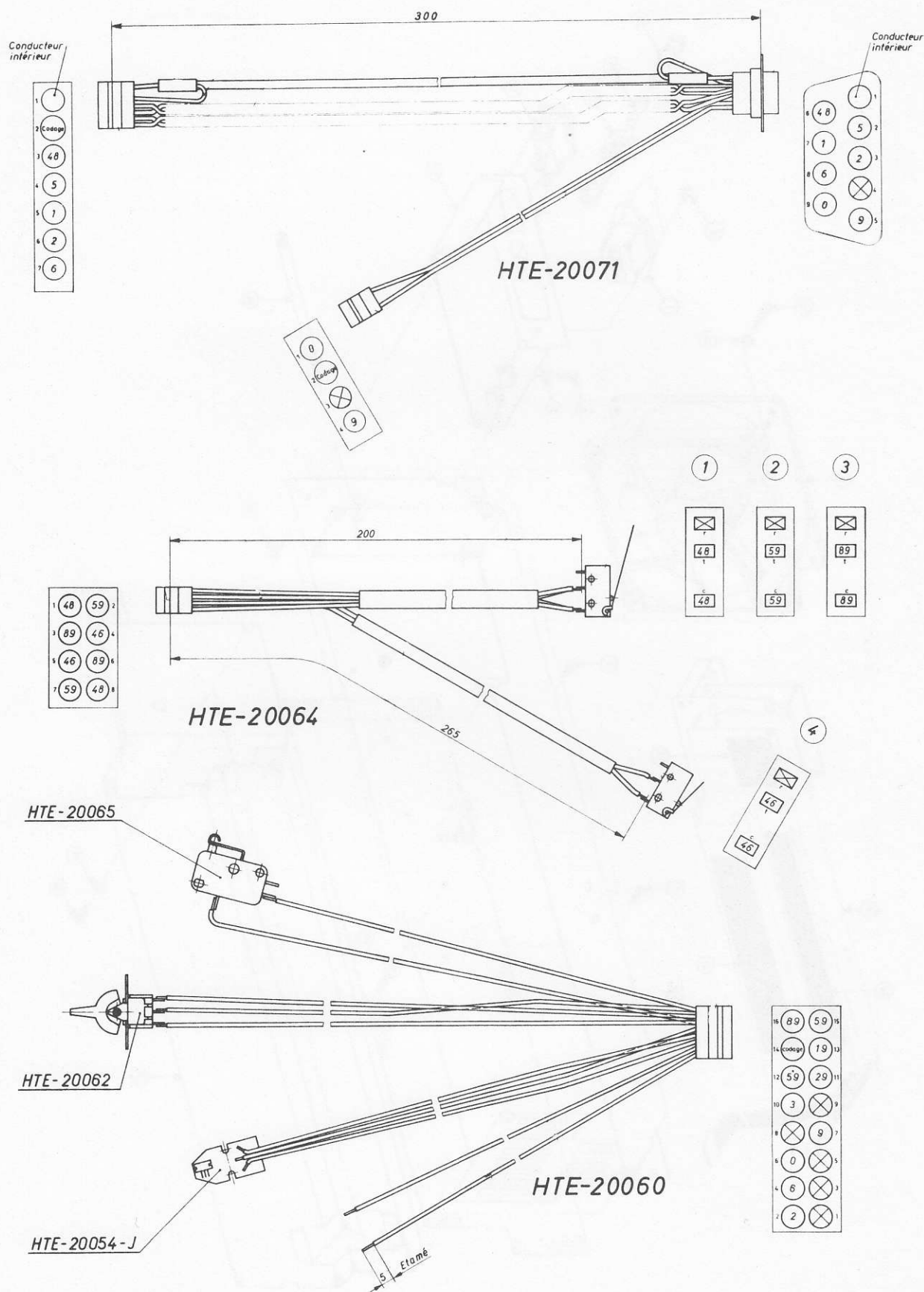
HTE-20073

ABCDEFGHIJKLMNOPQRSTUVWXYZ

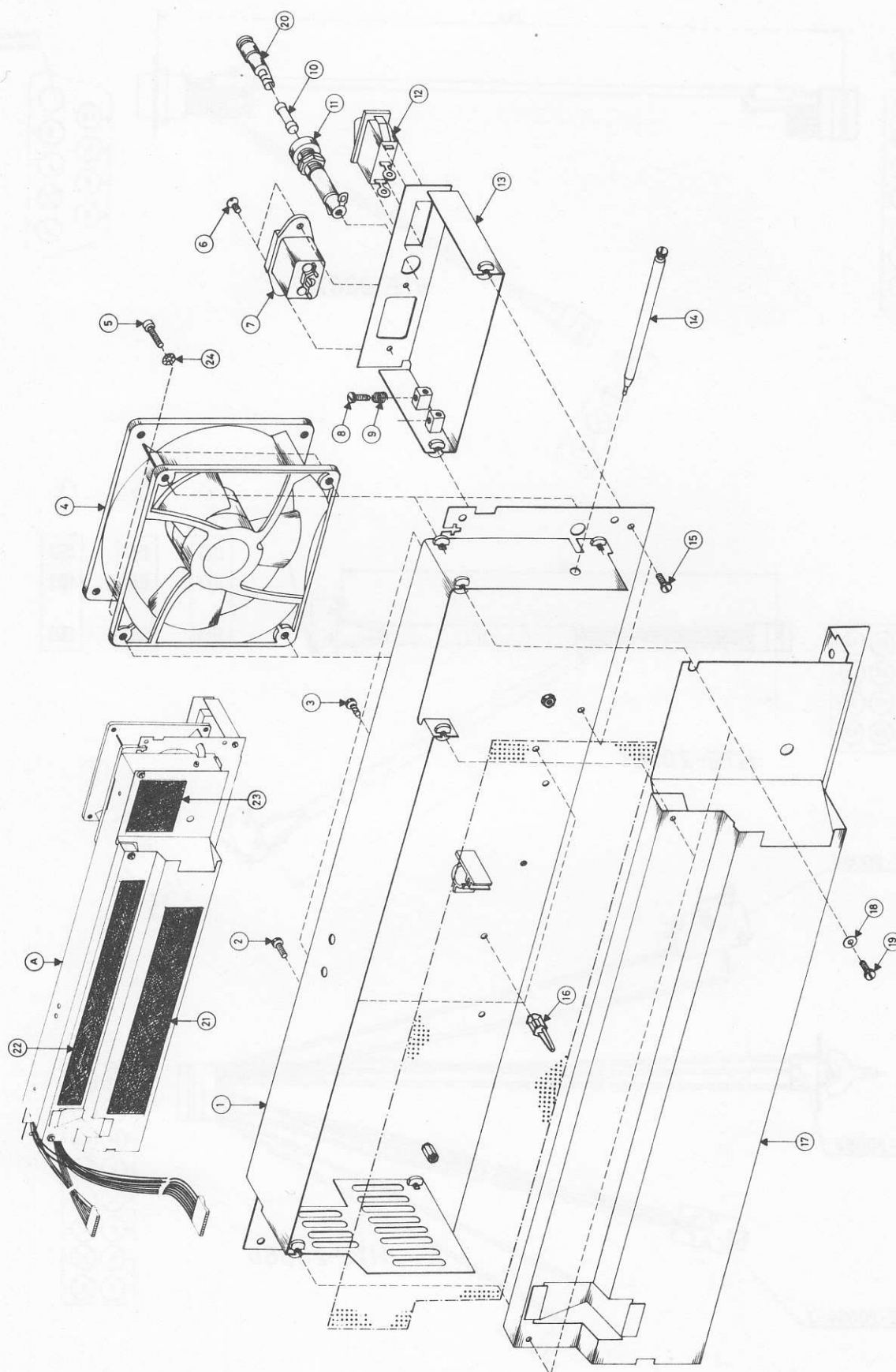
HT-82-A

SERVICE MANUAL

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ABCDEFGHIJKLMNOPQRSTUVWXYZ



BCDEFGHIJKLMNOPQRSTUVWXYZ

HT-82-A

SERVICE MANUAL

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REF NUMBER	PART NUMBER	POWER SUPPLY
		COMMENT
A	HTE-20204-A HTE-20204-B HTE-20204-C	Power supply assy. 220-240V, Europe Power supply assy. 120V UL Power supply assy. 100-115V, Europe
1	HTE-20310	
2	100. 30. 221	
3	189. 35.1013	
4	AE - 708-BB AE - 708-BC	(220V) (110V)
5	107. 30.4003	
6	120. 30. 201	
7	HTE-20085	
8	189. 35.1012	
9	900. 53. 11	
10	611.200. 12 611.315. 12 611.315. 14	(220V) /2A (110V) /3,15A (110VUL) /3,15A
11	HTE-20086	
12	672.101.1001	
13	HTE-20317-H	
14	HT -20318	
15	100. 30. 221	
16	698. 91. 19	
17	HTE-20330	
18	302. 32. 11	
19	100. 30. 221	
20	AE - 558-BB AE - 558-BC	for european fuse for UL fuse
21	KP - 678-S	
22	KP - 678-R	
23	KP - 678-K	
24	321. 32. 11	

BCDEFGHIJKLMNOPQRSTUVWXYZ

POWER SUPPLY

Schéma HS-206 M4

PART NUMBER

PCB Complètement équipé
Fully equipped
vollausgerüstet

HTE-20008-A (220V)
HTE-20008-B (110V)

IC

IC1, IC2	696. 11. 28	LM317T
IC3	694. 15. 23	LM339N
IC4	692.006. 107	BY-224-600
IC5	696. 11. 23	TDA 1060

CAPACITORS

C1, C2, C22	657.685.1025	6,8 uF/25V
C3, C9, C13, C21	649.683.1003	68 nF/250V
C4, C5, C26, C28	655.106. 18	10 uF/63V
C6	655.337. 14	330 uF/10V
C7	655.228. 14	2200 uF/10V
C8	655.107. 16	100 uF/25V
C10	641.152. 21	1,5 nF/50V
C11	641.472. 21	4,7 nF/50V
C12	655.157. 18	150 uF/63V
C14	641.473. 21	47 nF/50V
C15, C20	649.474.1006	0,47 uF/300V
C16, C17, C18, C19	649.222.1002	2,2 nF/250V (220V)
	649.222.1003	2,2 nF/250V UL (110V)
C24	651.101. 12	100 pF/63V
C25	649.202.1001	2 nF/160V
C27, C29, C31	641.103. 21	10 nF/50V
C30	659.337.8385	330 uF/385V (220V)
	659.687.8200	680 uF/200V (110V)

RESISTORS

R1, R3, R17, R24	623.152. 15	1,5 K
R5, R26, R36, R37, R38	623.102. 15	1 K
R6	623.100. 15	10
R8	631.151. 12	150 4W
R9	623.220. 15	22
R10	631.391. 12	390 4W
R11, R13, R14, R16, R18, R27, R28	623.103. 15	10 K
R21	631.392. 14	3,9 K/15W
R22	KC-2584-T	Pont
R23	623.153. 15	15 K
R29	629.682.2001	6,81K/1%
R35	623.105. 15	1 M
R41	629.080.6101	PTC / 0,5W
R42	629.150.6001	NTC 15 2,2A
P1, P2	682.102. 12	1 K
P3, P4	682.103. 12	10 K
P5	682.472. 12	4,7 K

ABCDEFGHIJKLMNOPQRSTUVWXYZ

HT-82-A

SERVICE MANUAL

POWER SUPPLY (continued)

PART NUMBER

RESISTORS (continued)

R2,R4	623.221.	15	220
R7	625.101.	12	100 /0,5W
R12,R15	623.683.	15	68 K
R19	626.124.	11	120 K/1W (220V)
R19	626.473.	11	47 K/1W (110V)
R20	631.562.	12	5,6 K/5W (220V)
	631.222.	12	2,2 K/4W (110V)
R25	623.333.	15	33 K (220V)
	623.104.	15	100 K (110V)
R30	625.221.	12	220 /0,5W
R31	623.473.	15	47 K
R32	623.682.	15	6,8 K
R33	626.681.	11	680 /1W
R34	KC-2584-JV		0,15 (220V)
	KC-2584-JZ		0,08 (110V)
R39	623.822.	15	8,2 K
R40	623.472.	15	4,7 K

TRANSISTORS

Tr1	693.071.	601	TIP 50
Tr2	693.099.	103	IRF 830 (220V)
	693.099.	107	IRF 741 (110V)
Tr3,Tr4	693.051.	141	MPS-A06
Tr5	693.051.	161	MPS-A56
Th1	693.091.	107	2 N 6401
Th2	693.091.	103	TIC 45

DIODES

D1,D2,D3,D4	692.002.	121	1 N 4003
D6	692.009.	201	MBR 2535 CT
D7,D9	692.009.	202	BYW 32-200
D10,D12,D18	692.002.	101	1 N 914
D15	692.002.	161	BYW 95 C
D16,D17	692.002.	146	1 N 4934
Dz5	692.011.	109	ZF 5,6
Dz8	692.011.	103	ZF 3,3
Dz11	692.012.	118	ZD 13
Dz13	692.013.1242		BZT-03 C 240 (220V)
	692.012.	137	ZD 82 (110V)
Dz14	692.013.1242		BZT-03 C 240

ABCDEFGHIJKLMNOPQRSTUVWXYZ

POWER SUPPLY (continued)

PART NUMBER

TRANSFORMER / INDUCTORS

T1	HTE-20083-A	(220V)
	HTE-20083-B	(110V)
L1	636.050. 12	5 uH
L2	HTE-20076	
L3,L4	HTE-20080	
L5,L6	636.103. 31	10 mH (220V)
	636.332. 31	3,3 mH (110V)
L7	636.002. 11	2,2 mH

CONNECTORS

Printer supply cable	HTE-20069-B	
CPU supply cable	HTE-20075	
AA	773.301.1101	AMP3P
AB,AC	774.318.1404	4 Pins with latch
AD	774.311.1004	Mini Berg 4P

FUSE

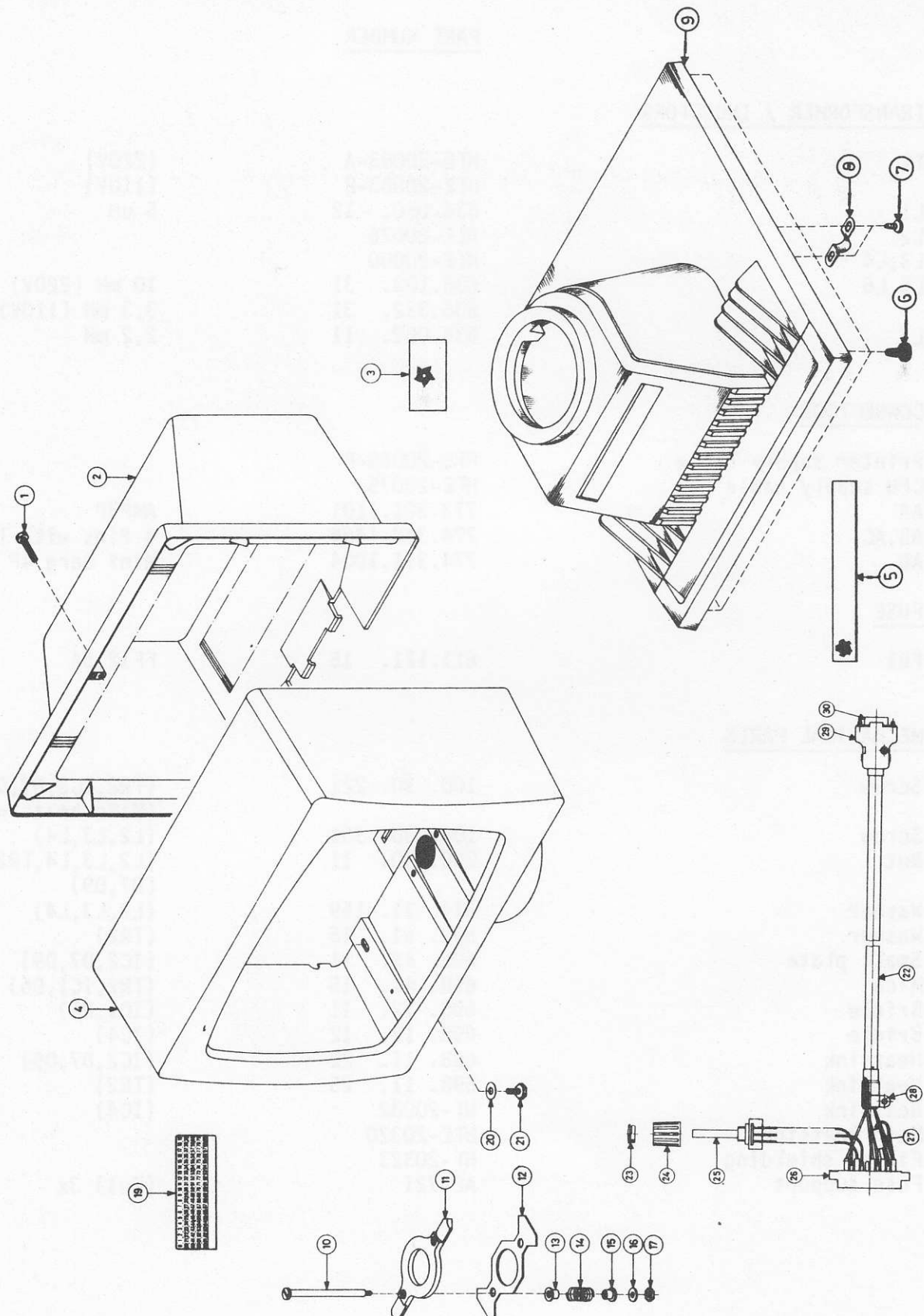
Fu1	611.121. 15	FF12,5A
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MECHANICAL PARTS

Screw	100. 30. 221	(TR2,IC2,D7,D9, (Main heatsink)
Screw	100. 30. 351	(L2,L3,L4)
Nut	200. 30. 11	(L2,L3,L4,TR2,IC2 (D7,D9)
Washer	314. 31. 159	(L2,L3,L4)
Washer	698. 51. 15	(TR2)
Small plate	698. 42. 11	(IC2,D7,D9)
Mica	698. 41. 15	(TR2,IC1,D6)
Bridle	698. 12. 11	(IC1,D6)
Bridle	698. 12. 12	(IC4)
Heatsink	698. 11. 22	(IC2,D7,D9)
Heatsink	698. 11. 25	(TR2)
Heatsink	HT-20082	(IC4)
Main heatsink	HTE-20320	
Filter shielding	HT-20323	
Fuse support	AE-721	(Fu1) 3x

HT-82-A

SERVICE MANUAL



ABCDEFGHIJKLMNOPQRSTUVWXYZ

HT-82-A

SERVICE MANUAL

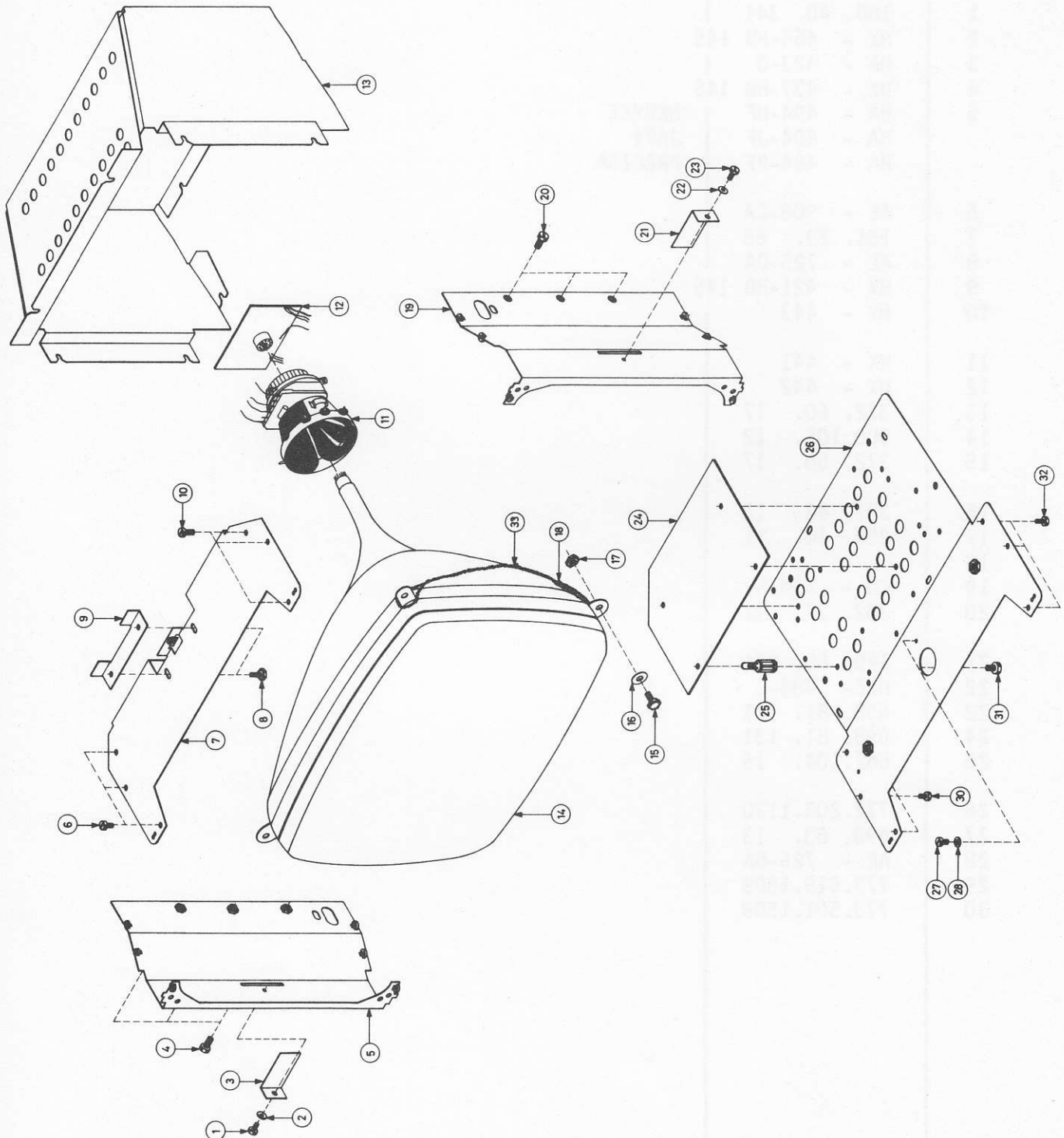
1255

REF NUMBER	PART NUMBER	COMMENT
1	100. 40. 341	
2	HX - 465-HB	145
3	HA - 423-Q	
4	HX - 437-HB	145
5	HA - 494-HF	HERMES
	HA - 494-JF	JAPY
	HA - 494-PF	PRECISA
6	AE - 908-CA	
7	181. 29. 65	
8	AE - 725-DA	
9	HX - 421-HB	145
10	HX - 443	
11	HX - 441	
12	HX - 442	
13	372. 60. 17	
14	900.105. 12	
15	372. 60. 17	
16	302. 43. 12	
17	200. 40. 11	
18		
19	KD - 534-H	
20	302. 37. 11	
21	140. 50. 251	
22	HXE- 484-C	
23	698. 81. 141	
24	698. 81. 131	
25	682.104. 15	
26	772.203.1120	
27	698. 63. 13	
28	AE - 725-BA	
29	773.519.1509	
30	773.501.1509	

BCDEFGHIJKLMNOPQRSTUVWXYZ

HT-82-A

SERVICE MANUAL



ABCDEFGHIJKLMNOPQRSTUVWXYZ

HT-82-A

SERVICE MANUAL

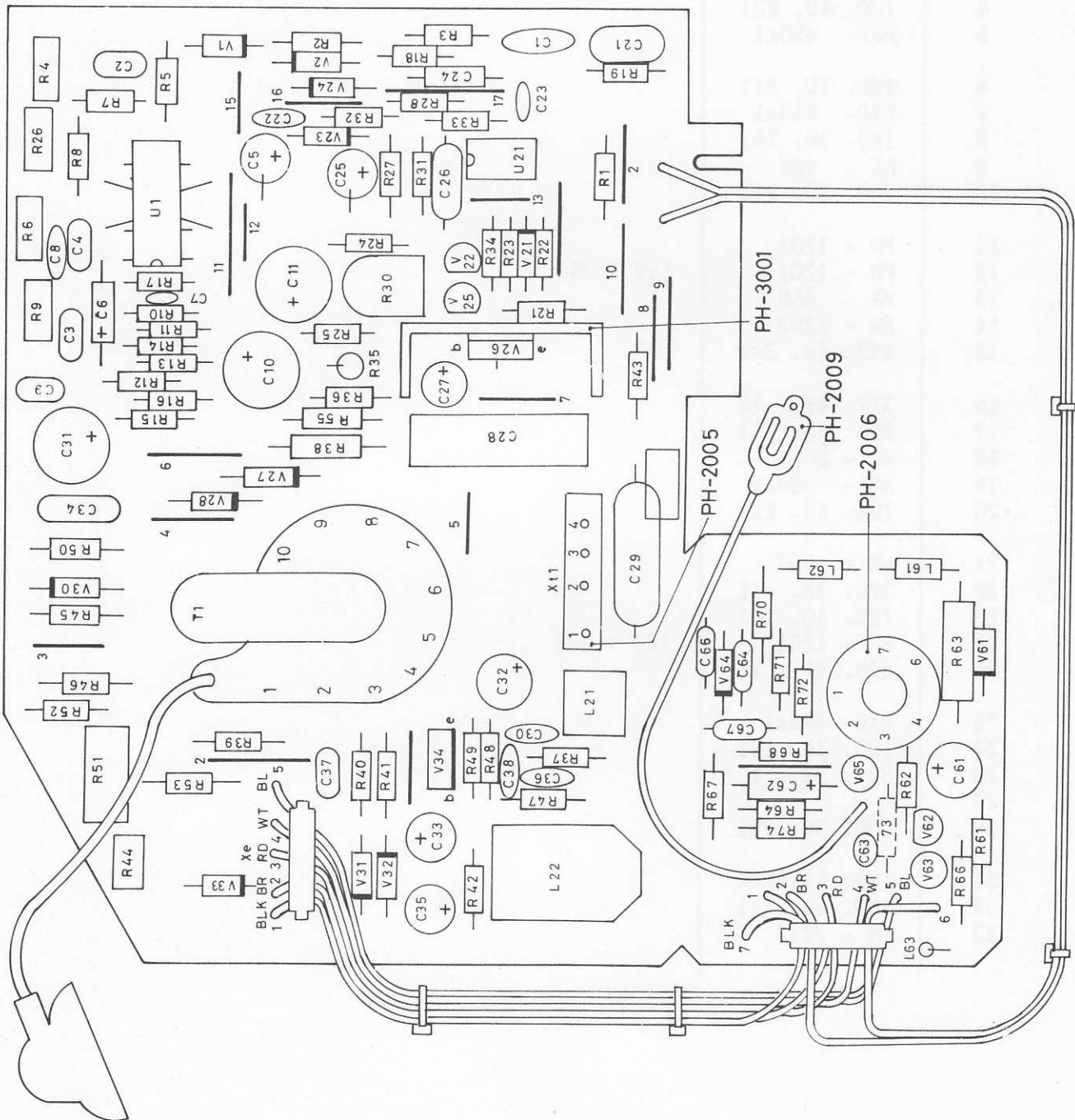
1257

REF NUMBER	PART NUMBER	COMMENT
1	100. 30. 181	
2	320. 32. 11	
3	HX - 453	
4	100. 40. 221	
5	HXE- 450x1	
6	100. 30. 211	
7	HXE- 454x1	
8	140. 30. 181	
9	HX - 466	
10	100. 30. 211	
11	PH - 1203	
12	PH - 1201	(12 + 24)
13	HX - 459	
14	PH - 1202	
15	140. 40. 241	
16	312. 42. 12	
17	200. 40. 11	
18	PH - 2011	
19	HXE- 450x1	
20	100. 40. 221	
21	HX - 453	
22	320. 32. 11	
23	100. 30. 181	
24	PH - 1201	(24 + 12)
25	698. 91. 19	
26	HXE- 446x1	
27	100. 30. 181	
28	302. 32. 12	
29		
30	100. 30. 211	
31	189. 35.1014	
32	100. 30. 211	
33	PH - 2210	

ABCDEFGHIJKLMNOPQRSTUVWXYZ

HT-82-A

SERVICE MANUAL



ABCDEFGHIJKLMNOPQRSTUVWXYZ

CRT DRIVER

Schéma HS-220 M0

PART NUMBER

PCB Complètement équipé
Fully equipped
vollausgerüstet

PH-1201

IC

V1,V21	692.002. 101	1N 4148
V2	PH-9334.981.90000	1N 4001 G
V22	PH-9331.976.40000	BC 548
V23	PH-9331.177.40000	BZx79 C6V2
V24	PH-9331.012.20000	1N370
V25	PH-9332.219.50000	BC-636
V26	PH-2004	BU-806
V27,V28	PH-9335.001.70000	BYV-95B
V33	PH-9331.178.80000	BZx79 C24
V34	PH-9332.715.70000	BUX 87
V61	PH-9331.012.20000	BAW 62
V63	PH-9330.219.20000	BSX 20
V64	PH-9331.892.00000	BAV 20
V65	PH-9282.200.00000	NEON LAMP GL5
U1	PH-1002	TDA 1170S
U21	694. 15. 14	NE-555V

CAPACITORS

C1	PH-2222.630.19272	2,7 nF/100V
C2,C3,C4,C9,C64,C66	PH-2222.368.25104	100 nF/100V
C5,C25	PH-2222.030.86101	100 uF/25V
C6	PH-2222.630.23689	68 uF/6,3V
C7	PH-2222.683.10399	39 pF/100V
C8	PH-2222.630.19221	220 pF/100V
C10,C11	PH-2222.035.65102	1000 uF/16V
C21,C26	PH-2222.368.25105	1 uF/100V
C22,C30	PH-2222.630.19102	1 nF/100V
C23	PH-2222.630.19221	220 pF/100V
C24	PH-2222.428.74702	4,7 nF/63V
C27	PH-2222.030.88108	1 uF/63V
C28	PH-2222.357.82103	10 nF/1500V
C29	PH-2222.368.25475	4,7 uF/100V
C31	PH-2222.035.66681	680 uF/25V
C32	PH-2222.031.39339	33 uF/100V
C34	PH-2222.368.65333	33 nF/630V
C35	PH-2222.030.89109	10 uF/100V
C36	PH-2222.630.19472	4,7 nF/100V
C37,C67	PH-2222.368.65103	10 nF/630V
C38	PH-2222.630.19122	1,2 nF/100V
C61	PH-2222.035.58479	47 uF/63V
C62	PH-2222.030.36229	22 uF/25V
C63	PH-2222.683.19479	47 pF/100V

BCDEFGHIJKLMNOPQRSTUVWXYZ

CRT DRIVER (continued)

		<u>PART NUMBER</u>	
<u>RESISTORS</u>			
R1,R39,R41		623.101. 15	100
R2		623.102. 15	1K
R3		623.183. 15	18K
R4,R6		682.104. 12	100K (Pot)
R5,R7		PH-2322.181.64184	180K
R8		PH-2322.181.64824	820K
R9,R44		682.224. 12	220K
R10		623.823. 15	82K
R11		PH-2322.181.64273	27K
R12,R13		PH-2322.181.64562	5,6K
R14		623.229. 15	2,2
R15		PH-2322.181.64188	1,8
R16,R33		PH-2322.181.64472	4,7K
R17		623.124. 15	120K
R18		623.569. 15	5,6
R19		623.183. 15	18K
R20	not fitted		
R21		623.562. 15	5,6K
R22,R45		623.103. 15	10K
R23,R70		623.102. 15	1K
R24,R62		623.332. 15	3,3K
R25,R34		623.100. 15	10
R26		682.472. 12	4,7K
R27,R36		623.561. 15	560
R28		PH-2322.181.64122	1,2K
R30		682.472. 11	4,7K
R32		PH-2322.181.64222	2,2K
R35		623.151. 15	150
R37		623.471. 15	470
R38		631.004. 11	047
R40		623.339. 15	3,3
R42		623.153. 15	15K
R43,R46		623.225. 15	2,2M
R47		623.333. 15	33K
R48		623.822. 15	8,2K
R49		623.472. 15	4,7K
R50		625.334. 12	330K
R51		PH-2130.350.00124	2,2M
R53		623.155. 15	1,5M
R61		623.223. 15	22K
R63		626.102. 11	1K
R64		623.689. 15	6,8
R66,R74		623.820. 15	82
R67		623.274. 15	270K
R68		623.221. 15	220
R71,R72		623.473. 15	47K

ABCDEFGHIJKLMNOPQRSTUVWXYZ

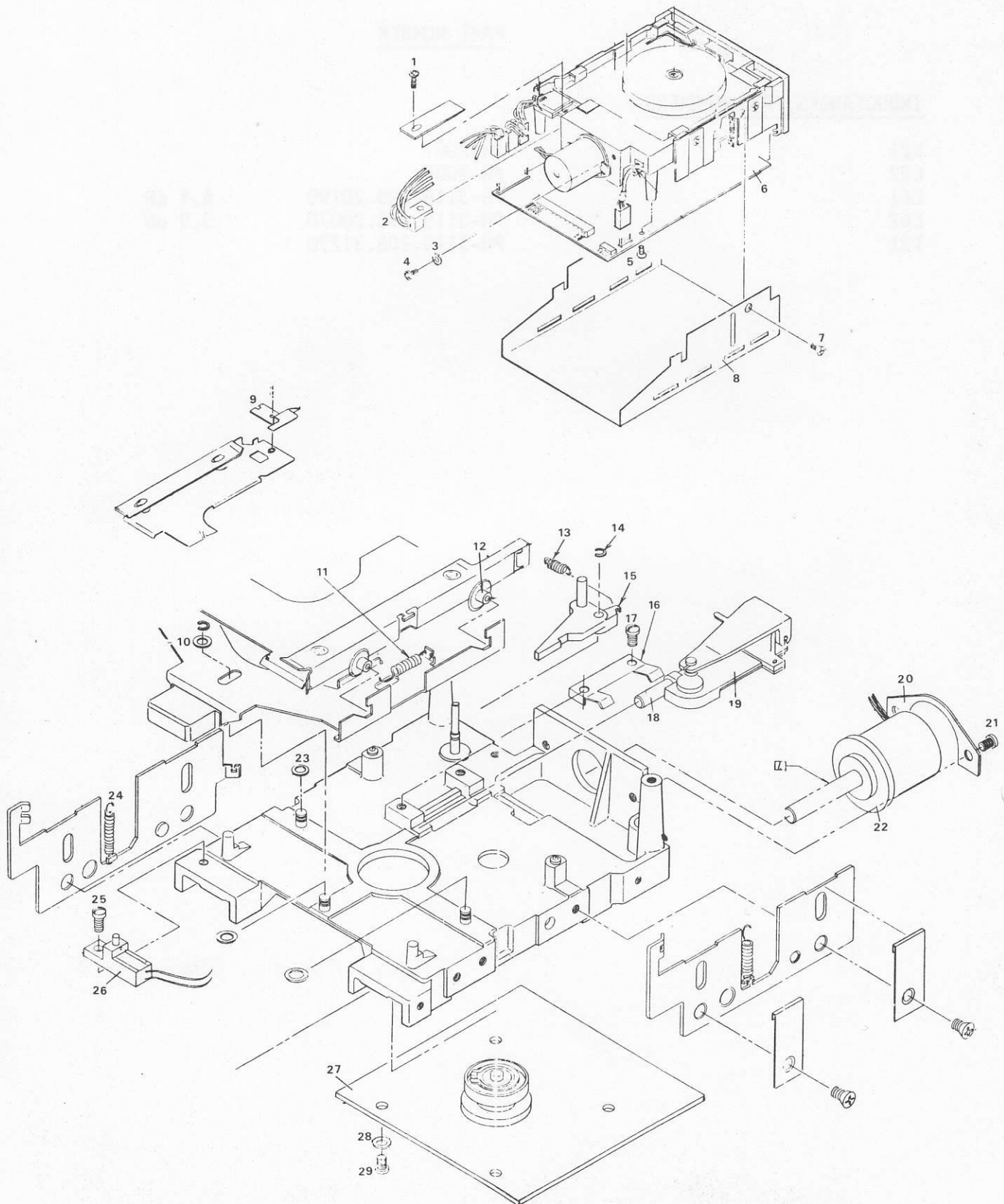
CRT DRIVER (continued)

PART NUMBER

INDUCTANCES, TRANSFORMERS

L21	PH-2007	
L22	PH-2008	
L61	PH-3119.208.20190	6,4 uH
L62	PH-3119.208.20070	3,9 uH
T21	PH-3119.208.31270	

3,5" DRIVE MECHANICAL ASSEMBLY



BCDEFGHIJKLMNOPQRSTUVWXYZ

HT-82-A

SERVICE MANUAL

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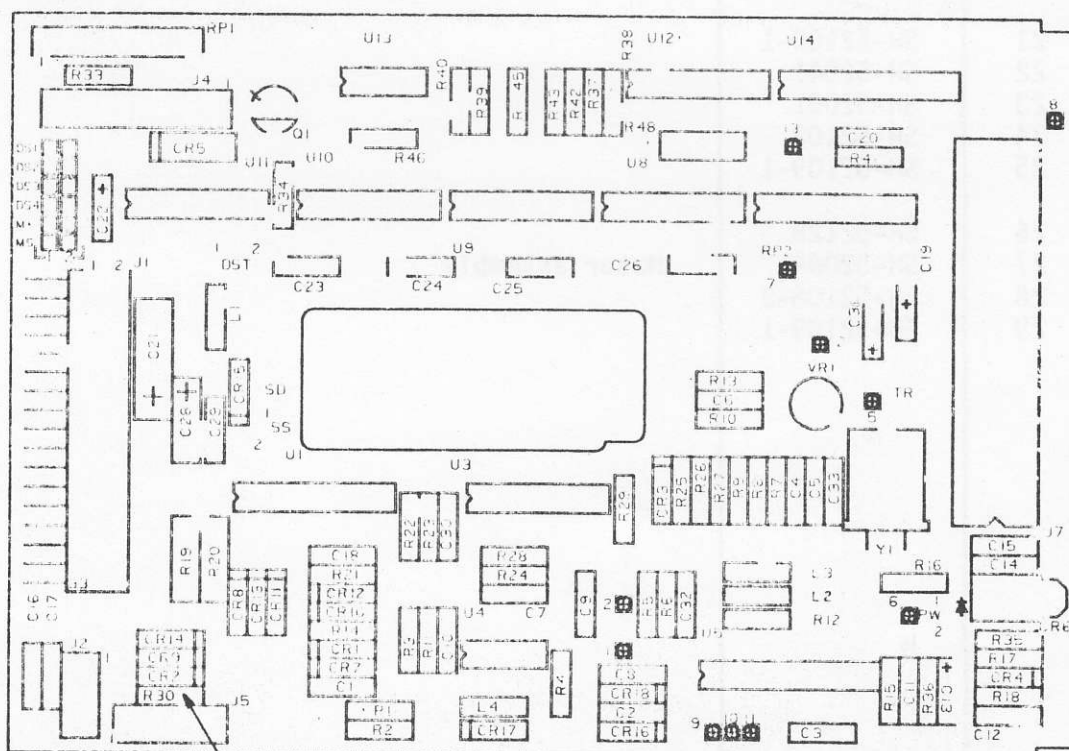
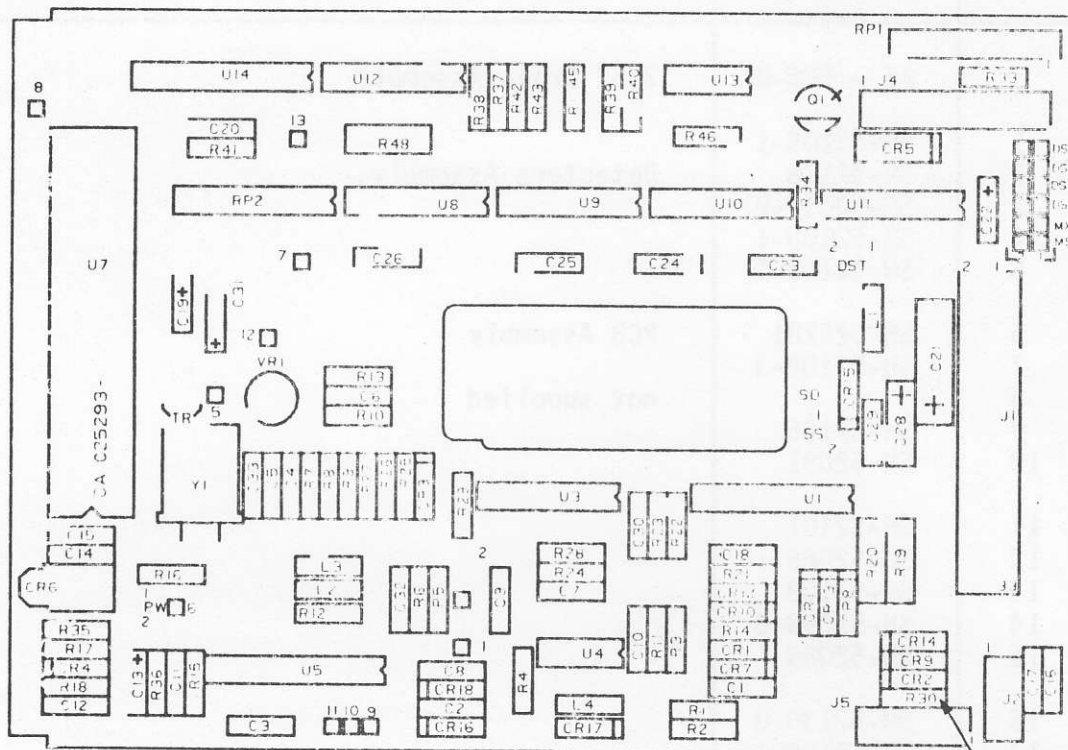
<u>3,5" DRIVE ASSEMBLY</u>		
REF NUMBER	PART NUMBER	COMMENT
	AE - 906-BA	3,5" Drive Assembly
1	SH-52109-1	Detectors Assembly
2	SH-52128	
3	SH-52117-0	
4	SH-52109-1	
5	SH-52109-1	
6	SH-025281	PCB Assembly
7	SH-52109-3	
8		
9	SH-52105	not supplied
10	SH-52091	
11	SH-52101	
12	SH-52085	
13	SH-52103	
14	SH-52099-0	
15	SH-52089	
16	SH-52130-0	
17	SH-52109-1	
18	SH-52052	
19	SH-52038	
20	SH-52054	
21	SH-52109-1	Head carriage assembly
22	SH-52041	
23	SH-52091	
24	SH-52102	
25	SH-52109-1	
26	SH-52128	Motor assembly
27	SH-52064	
28	SH-52108-2	
29	SH-52109-1	

BCDEFGHIJKLMNOPQRSTUVWXYZ

HT-82-A

SERVICE MANUAL

CONTROL PCB 3,5" DRIVE



BCDEFGHIJKLMNOPQRSTUVWXYZ

CONTROL PCB 3,5" DRIVE

Schéma HS-220

PART NUMBER

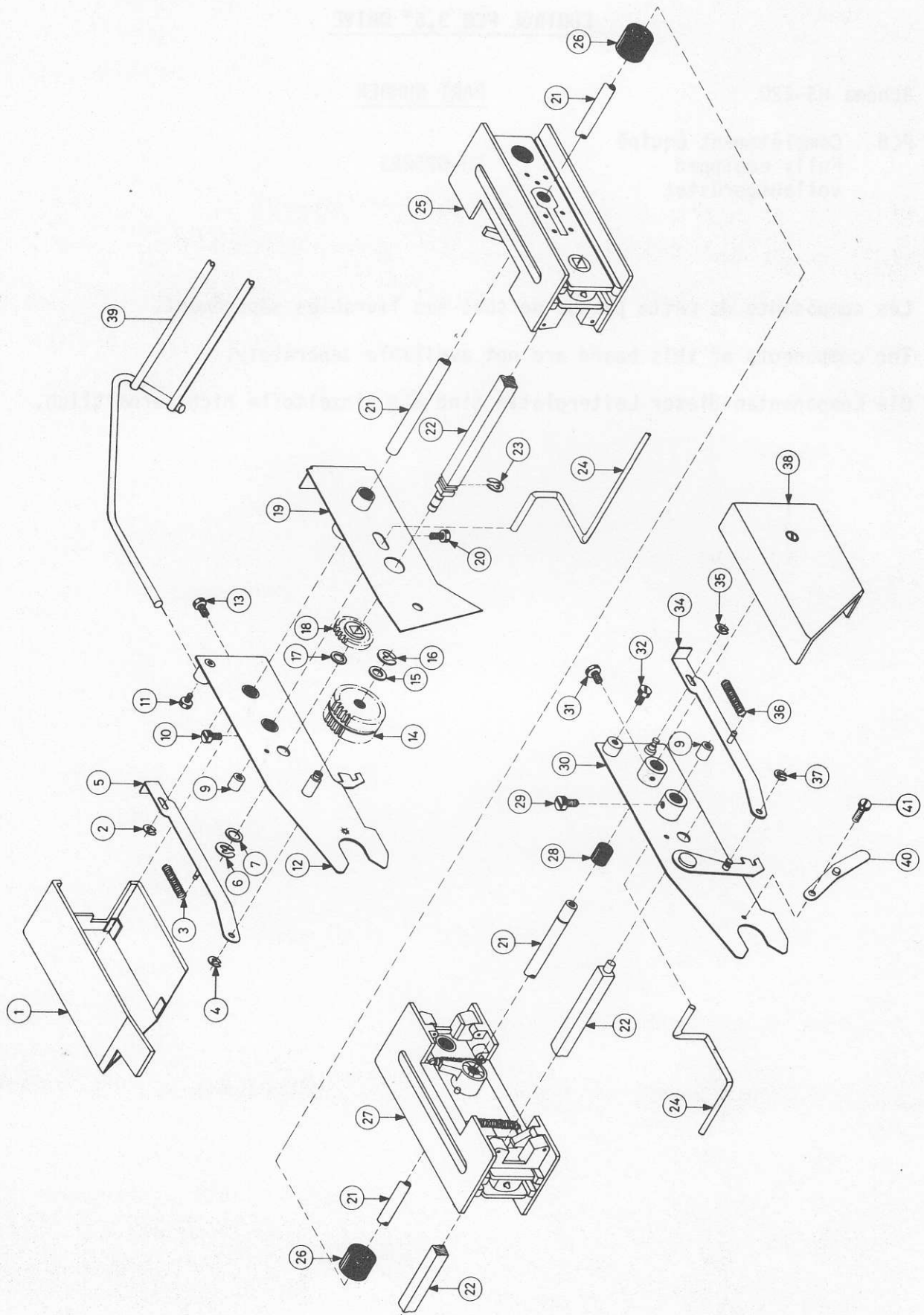
PCB Complètement équipé
Fully equipped
vollausgerüstet

SH-025281

Les composants de cette plaque ne sont pas livrables séparément.

The components of this board are not available separately.

Die Komponenten dieser Leiterplatte sind als Einzelteile nicht erhältlich.



BCDEFGHIJKLMNOPQRSTUVWXYZ

CONTINUOUS FORM FEED

REF NUMBER	PART NUMBER	COMMENT	REF NUMBER	PART NUMBER
	TR-14	Assembly		
1	KX - 1177-HB		35	362. 32. 11
2	362. 32. 11		36	910. 40. 54
3	910. 40. 54		37	362. 32. 11
4	362. 32. 11		38	KX - 1178-HB
5	KXE- 1162-H		39	KXE- 1180-H
6	362. 50. 11		40	KX - 1172
7	312. 61. 11		41	100. 25. 201
8				
9	371. 52.2005			
10	100. 40. 201			
11	100. 30. 161			
12	KXE- 1155-H			
13	109. 40.5002			
14	KX - 1165			
15	312. 61. 11			
16	362. 50. 11			
17	312. 61. 11			
18	KX - 1164-H			
19	KX - 1174-H 91			
20	100. 30. 181			
21	KX - 1166-H			
22	KX - 1167-Hx1			
23	362. 50. 11			
24	KX - 1168-H			
25	AE - 916-H	4 picots		
	AE - 916-K	6 picots		
26	AEE- 917			
27	AE - 916-J	4 picots		
	AE - 916-L	6 picots		
28	371. 75.2002			
29	100. 40. 201			
30	KXE- 1155-J			
31	109. 40.5002			
32	100. 30. 161			
33				
34	KXE- 1162-J			

BCDEFGHIJKLMNOPQRSTUVWXYZ

SHEET FEEDER

Le sheet feeder est publié dans un document séparé DOC-SF-32/32

The sheet feeder is released in a separate document DOC-SF-31/32

Das Einzelblatteinzugsgerät ist in einem separaten Dokument DOC-SF-31/32 behandelt

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HT-82-A

SERVICE MANUAL

PARTS NEEDED FOR ASSEMBLING THE OPTIONS

V-24/RS-232-C OPTION

PART NUMBER

1x PCB	HTE-20012	
1x Guide	AE - 904-AD	
2x Câbles	HTE-20072	
4x Nuts	773.504.1501	
4x Grower washers	321. 32. 11	
4x Washers	312. 31. 12	
1x Tag	HA-500-HA	"V24-1"
1x Tag	HA-500-HB	"V24-2"

MEMORY OPTION

PART NUMBER

1x PCB	HTE-20002	
2x Clips	698. 91. 19	
2x Washers	314. 41. 119	
2x Screws	181. 35. 95	

3,5" DRIVE ASSY.

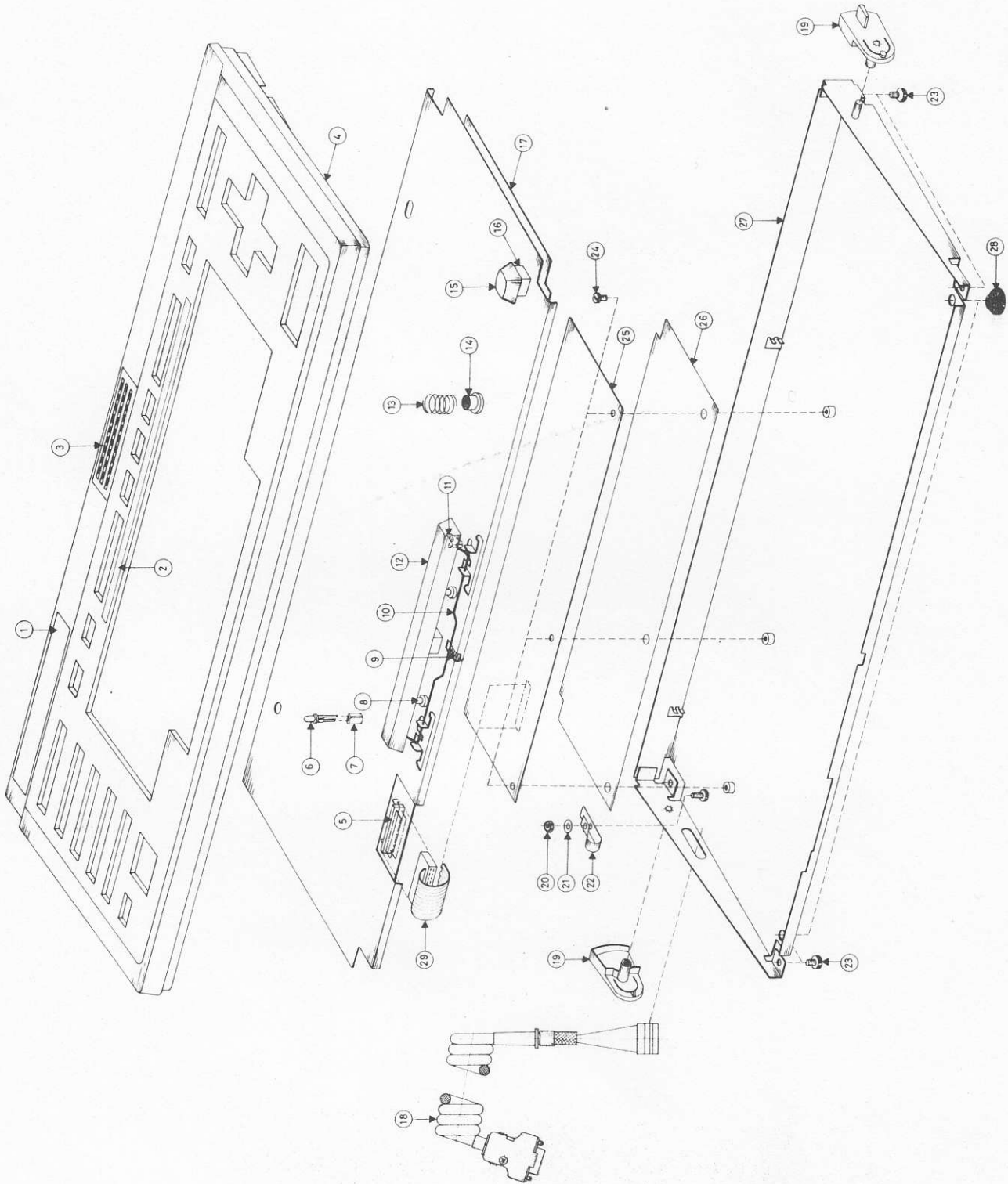
PART NUMBER

1x Drive assy.	AE - 906-BA	
1x Frame	HT -20343	
3x Screws	100. 30. 181	
3x Screws	149. 35.1001	

ABCDEFGHIJKLMNOPQRSTUVWXYZ

HT-82-A

SERVICE MANUAL



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1283

KEYBOARD		
REF NUMBER	PART NUMBER	COMMENT
1		See ref. number 5, page 1255
2		See page 1289
3	HC - 1085-H	
4		See page 1289
5	774.312.1013 774.313.1013	Lower Upper
6	691.002. 110	
7	HC - 1052	
8	HT -18714	
9	910. 30. 24	
10	450. 21. 112	
11	450. 21. 111	
12	450. 31. 11	
13	900.110. 14	
14	HC - 1053	
15		See from page 1289
16	675.101.1002	
17	HCE- 1010-A HCD-1010-A	without keytops with keytops. Specify the keyboard number (see p. 1289)
18	HCE- 1020	
19	HC - 1060-H	
20	200. 30. 11	
21	312. 31. 12	
22	HT -20348	
23	100. 40. 201	
24	100. 30. 181	
25	HCE- 1012-B	
26	HC - 1067	
27	HCE- 1086	
28	AE - 908-AC	
29	HCE- 1021	

BCDEFGHIJKLMNOPQRSTUVWXYZ



KEYBOARD CONTROLLER

Schémas HS-215 M2A

PART NUMBER

PCB sans IC enfichable
without pluggable ICs HCE- 1012-B
ohne einsteckbare ICs

IC

IC3, IC5	694. 22. 156	74LS156
IC4	694. 15. 14	555
IC6	694. 22. 132	74LS132
IC7	694. 22. 02	74LS02
IC9	694. 22. 244	74LS244
IC10	694. 22. 04	74LS04
IC11	694. 22. 00	74LS00
IC13	694. 22. 373	74LS373

CAPACITORS

C1	655.107. 14	100 uF 10V
C2	653.336. 11	33uF T
C3	641.103. 21	10nF
C4	652.103. 12	10nF 10%
C5, C12	652.104. 14	100nF

RESISTORS

R1	623.151. 15	150 $\frac{1}{2}$ W
R2	623.223. 15	22K
R3	623.682. 15	6,8K $\frac{1}{2}$ W
R4	623.333. 15	33K
R5, R7	623.222. 15	2,2K $\frac{1}{2}$ W
R8	623.221. 15	220 $\frac{1}{2}$ W
RN1	629.222.7001	9x2,2 K
RN2, RN3	629.680.7002	4x68

TRANSISTORS

T01	693. 51. 141	MPS A05
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DIODES

D1, D2, D3	692.002. 101	Diode 1N 914
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KEYBOARD CONTROLLER (continued)

Schémas HS-215 M2A

PART NUMBERCRYSTALS

XT1	697. 11. 27	12 MHz
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BUZZER

TR1	699. 11. 11	Buzzer
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TP/SWITCHES/BRIDGES

TP1,TP2,W1,W3,W5,W6	774.311.1002	Berg 2P
W4	774.312.1002	Berg 2P
W7	774.311.1003	Berg 3P

SOCKETS

28 PIN	AE -803 O	(IC12)
40 PIN	AE -803 P	(IC8)

CONNECTORS

J1	774.312.1008	Berg 8P
J2	774.313.1006	Berg 6P
J3	774.312.1006	Berg 6P

MECHANICAL PARTS

Bridge	AE -877-H	(W1-W6)
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KEYBOARD CONTROLLER

PART NUMBER

PCB	complètement équipé Fully equipped vollausgerüstet	HCE- 1012-BA
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avec/with/mit

IC8	694. 17. 122	uP 8031
IC12	AE -1530	EPROM 2764 (694.13.41)

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