AK2

Radio-lampen
VADE=MECUM

SERVICE GEGEVENS OVER AMERIKAANSCHE
EN EUROPEESCHE RADIOLAMPEN

GJ8-G

VERZAMELD DOOR
P. H. BRANS
RADIOTECHNICUS

P——H
BR

Radioboekhandel P. H. BRANS
Isabellalei, 97 — ANTWERPEN

PHILIPS

„MINIWATT"

ROODE SERIE

1938
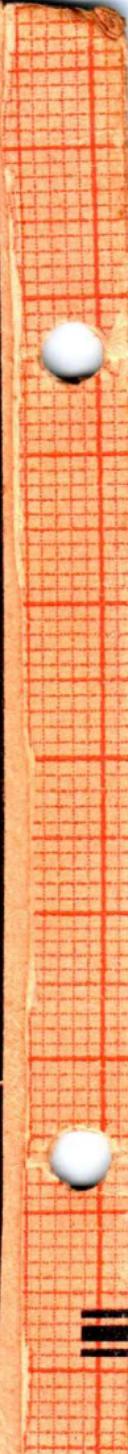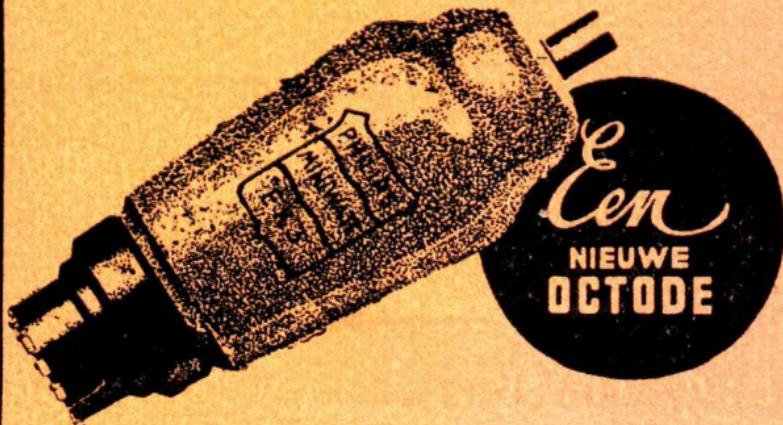
Een
NIEUWE
OCTODE

# RADIO-LAMPEN VADE-MECUM

SERVICE GEGEVENS
OVER AMERIKAANSCHE
EN EUROPEESCHE
RADIOLAMPEN

VERZAMELD DOOR
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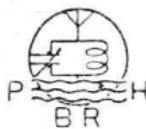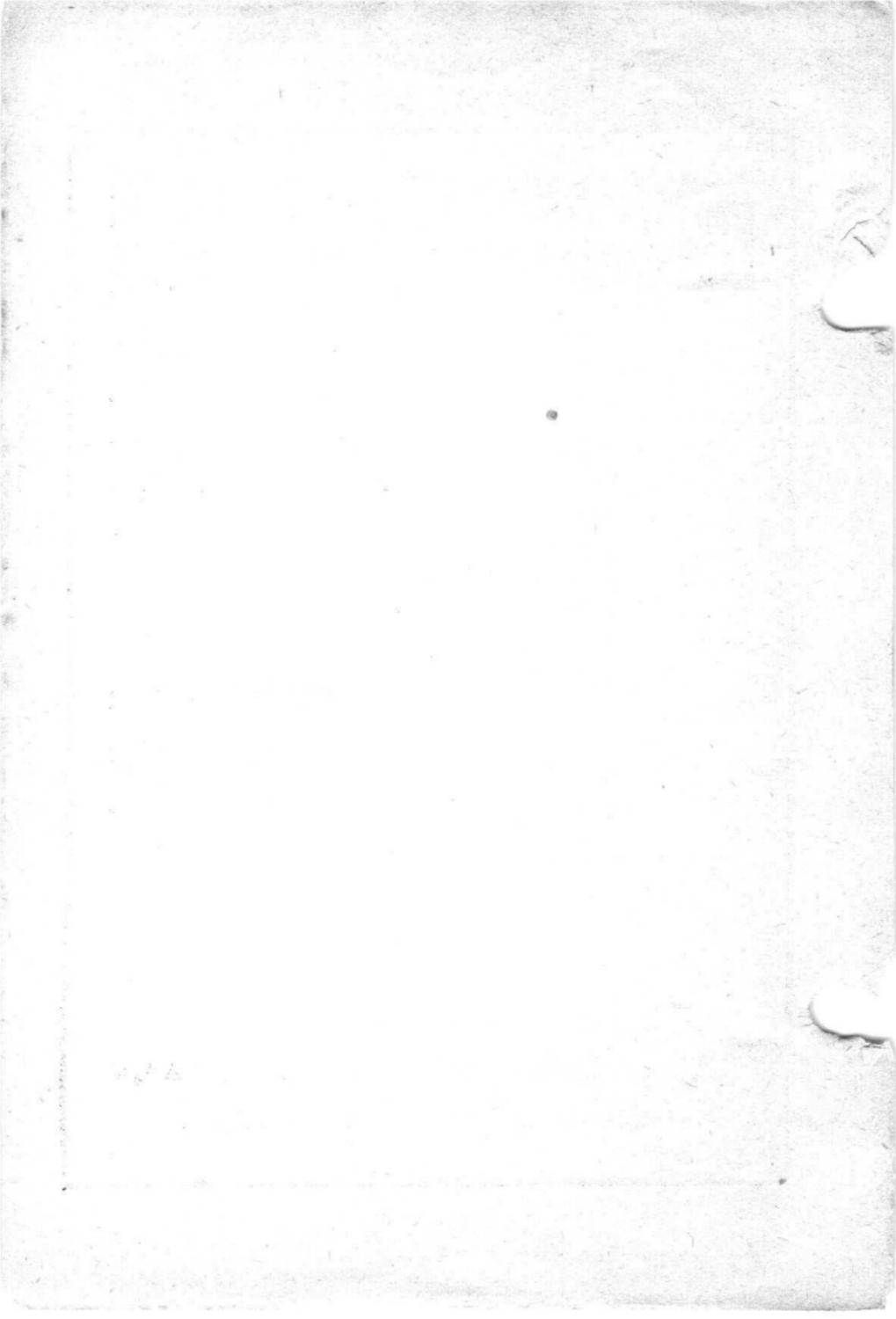
VOORWOORD.

Bij het samenstellen van dit « Radiolampen vade-mecum », hebben wij er naar gestreefd alle voor de service praktijk nuttige gegevens over radiolampen samen te brengen zonder onderscheid te maken tusschen lamptypes van Amerikaansch en Europeesch fabrikaat.

Er is zooveel mogelijk getracht, om het werk in een « handig » formaat te kunnen uitvoeren, de noodige plaatsruimte tot het uiterste te beperken. Daarom werd gebruik gemaakt van allerlei ofkortingen en conventionneele teekens waarvan hierbij de lijst gegeven is.

Teneinde het zoeken te vereenvoudigen werd in de bovenhoeken van elke pagina de typeering (naam van de lamp) vermeld waarvan de karakteristieken zich op die bladzijde bevinden. De opgegeven getallen zijn bedrijfswaarden die voor de praktijk gelden.

Voor elke lamp wordt de huls-schakeling, den aard der lampen en het gebruik ervan opgegeven. Voor de Europeesche lampen is de hulsschakeling voorgesteld met het lampenschema **buiten** de huls terwijl voor de Amerikaansche lampen de methode van de R.M.A. gebruikt werd m.a.w. het lampschema binnen in het « hulsplan ». Hierdoor verkrijgt men onmiddellijk een **onderscheid** tusschen beide fabrikaten.

De volgorde waarin de **lampkarakteristieken** geklasseerd zijn, werd als volgt bepaald: De rangschikking geschiedt op basis van de **typeering**, alfabetisch en in de getallenorde **waarbij** voorrang gegeven wordt aan de let-

ters (b.v. CY2 komt vóór C1, AZ1 komt vóór A409, enz.) en zonder rekening te houden met het fabrikaat (merk) van de lamp.

De steilheid werd, zoowel voor de Amerikaansche als voor de Europeesche lampen uitgedrukt in mA/V. Wat dit betreft is dus vergelijking van twee willekeurige lamptypes vereenvoudigd.

Het was onmogelijk en trouwens ook nutteloos de karakteristieken van al de in den handel zijnde lampen der verschillende merken op te nemen. Wij hebben ons bepaald tot die der « leidende » merken en hebben achteraan in het werk een tabel toegevoegd waarin al de ons bekende lamptypes vermeld zijn en waarin ook de daarmede overeenstemmende lamp is opgegeven waarvan de karakteristieken zijn opgenomen. Ook voor deze lijst werd dezelfde rangschikking gebruikt zonder onderscheid van fabrikaat te maken wat o.i. de meeste voordeelen biedt.

Een werk als dit zou zeer vlug onvolledig zijn ware het niet dat de dokumentatie geregeld zal worden aangevuld met de karakteristieken der nieuwe lampen.

In dit eerste gedeelte zijn slechts de karakteristieken der meest voorkomende ontvanglampen en enkele zendlampen opgenomen, maar het ligt in de bedoeling het werk uit te breiden door het uitgeven van bijvoegsels waarin, zoo hiervoor voldoende belangstelling bestaat, ook de karakteristieken van speciale versterker- en zendlampen gegeven worden alsmede van kathodestraalbuizen, thermokoppels, photo-electrische cellen enz.

Op die wijze hopen wij een lampendokumentatie ter beschikking van de belanghebbenden te stellen, zooals bij ons weten nog niet gepubliceerd werd en die eenvormig, algemeen, volledig en handig is en vlug en gemakkelijk te raadplegen is.

Ongetwijfeld zijn op dit oogenblik al de lampen, waarvan de karakteristieken opgenomen zijn, niet meer even interessant en zijn ze ook niet alle nog algemeen in gebruik. Wij hebben nochtans niet geaarzeld deze karakte-

ristieken op te nemen voor zoover dit nog eenigbins diens-
tig kon zijn bij het « opknappen » van oudere toestellen
waarvan de eigenaars soms zóó moeilijk kunnen scheiden.

De lijst achter in het werk zal vooral dienstig zijn bij
het opzoeken van overeenstemmende lamptypes wat veel
te pas komt bij het hernieuwen van lampen in oude toe-
stellen indien de oorspronkelijke lampen niet courant zijn.

Deze dokumentatie werd samengesteld naar ons beste
weten en, voor zoover onze ervaring ons heeft kunnen
leiden, naar de eischen der praktijk.

Vanwege de Philips laboratoria genoten wij de zeer
gewaardeerde medewerking alsmede van de firma's
Adzam, Tungsram en Sylvania.

Wij betuigen hier aan al deze firma's onzen oprechten
dank.

Vanzelfsprekend zouden wij graag het oordeel. de be-
vindingen en zoo mogelijk suggesties van de gebruikers
van dit werk ontvangen en zullen er in zoo ruim moge-
lijke mate rekening mede houden.

<div align="right">

P. H. B.
1 Juli 1938.

</div>

Belangrijk Bericht

AAN AL DE GEBRUIKERS VAN DIT WERK.

Zooals wij in het voorwoord mededeelden zullen bijvoegsels van dit boek worden uitgegeven.

Deze ontvangt U kosteloos tot 31 December 1938 wanneer U onderstaand formulier invult en terugzendt aan den uitgever

RADIOBOEKHANDEL P. H. BRANS

ISABELLALEI, 97, ANTWERPEN.

De verzending der bijvoegsels geschiedt per post rechtstreeks door den uitgever aan het adres van den gebruiker. U wordt dus verzocht duidelijk naam en **volledig** adres op te geven en eventueele woonstverandering bekend te maken met een der hierbijgevoegde formulieren.

Gelieve één formulier **dadelijk** terug te zenden daar wij niet kunnen instaan voor geregelde levering der bijvoegsels wanneer wij niet tijdig in het bezit zijn van Uw naam en adres (of van eventueel nieuw adres).

De leveringsvoorwaarden voor de bijvoegsels, die nà 1 Januari 1939 verschijnen worden U tijdig medegedeeld.

Radiolampen-vade-mecum

BERICHT VAN ADRESVERANDERING.

Naam: ....

Voornaam: ....

Oud adres: ....straat, n°.........

te ....

Nieuw adres: ....straat, n°.........

te ....

Terug te zenden aan:

RADIOBOEKHANDEL P. H. BRANS
ISABELLALEI, 97, ANTWERPEN.

GEBRUIK DRUKLETTERS bij het invullen van dit formulier.

ALFABETISCHE LIJST DER GEBRUIKTE TEEKENS EN VERKORTINGEN.

A = ampère.

A = anode (hulsverbinding van Amerikaansche lampen).

A . DET_T = anode detector gevolgd door transformator-koppeling.

A . DET_W = anode detector gevolgd door weerstand-koppeling.

A . I = afstem indicator (kathodestraalkruis — toover-oog).

Ca = capaciteit tusschen de anode en al de andere elec-trodes.

Cag_1 = capaciteit tusschen de anode en het 1ᵉ rooster.

CAP = topklem bij Amerikaansche lampen.

Cd_1-d_2 = capaciteit tusschen de diodes Nr 1 en 2.

Cd_1-g = capaciteit tusschen de 1ᵉ diode en rooster (bij diode-triodes).

Cd_1-k = capaciteit tusschen de 1ᵉ diode en kathode.

CgI = capaciteit tusschen het 1ᵉ rooster en al de andere electrodes.

Cgl-g_4 = capaciteit tusschen het 1ᵉ en 4ᵉ rooster.

Cg_2 = capaciteit tusschen het 2ᵉ rooster en al de andere electrodes.

$\bar{C}g_4$ = capaciteit tusschen het 4^e rooster en al de andere electrodes.

Ci = ingangscapaciteit (input-capacity).

Co = uitgangscapaciteit (output-capacity).

Cpg = waarde van den koppelcondensator tusschen de plaat en het rooster der volgende lamp.

D = maximum diameter van de lamp.

d DET = diode detector.

d DET+LF = diode detector met laagfrequentversterker in één lamp.

d % = % vervorming.

d % (tot) = % totale vervorming.

Dp = diode-plaat (Amerikaansche hulsverbindingen).

E = eindlamp.

E_A = klasse A-eindversterker.

E_B = klasse B-eindversterker.

F = gloeidraad (Amerikaansche lampen).

FB = (fixed bias) vaste voorspanning.

g = versterkingsfactor.

G = (grid) rooster bij Amerikaansche lampen (Stuur-rooster).

Ga = anoderooster (Amerikaansche hulsverbindingen).

GAS = (gelijkrichterlamp) met gasvulling.

$G . DET_T$ = roosterdetector gevolgd door transformator gekoppelde versterkingstrap.

$G . DET_W$ = roosterdetector gevolgd door weerstand-gekoppelde versterkingstrap.

Gon = modulatorrooster (bij hulsverbinding van Ameri-kaansche lampen).

Go = oscilatorrooster (bij hulsverbinding van Amerikaansche lampen).

H = (heater) gloeidraad (bij Amerikaansche hulsverbindingen).

Hc = (heater center) midden van gloeidraad (Amerikaansche hulsverbindingen).

Hex = hexode.

HF = hoogfrequentversterker.

HFS = Hoogfrequent seinspanning.

Hg = kwikdamp gelijkrichter.

Ia = plaatstoom (anodestroom).

Iap = (tijdelijke) topwaarde van den plaatstroom.

Ic = kathodestroom.

Ico = gemiddelde waarde van de gelijkrichterstroom.

Id (max) = maximum diodestroom (gelijkrichter).

If = gloeistroom.

Ig3+5 = roosterstroom van 3e en 5e rooster.

Inv = omkeerlamp (phase inverter).

Is = schermroosterstroom.

K = kathode (Amerikaansche lampen).

kΩ = kilo-ohm.

L = lengte der lamp.

LF_T = transformatorgekoppelde laagfrequentlamp.

LF_W = weerstand gekoppelde laagfrequentlamp.

mA = milliampère.

mA/V = milliampère per Volt.

MF = middenfrequentversterker.

MET = metalen lamp.

MOD = modulatorlamp.

mWtt = milliwatt.

$M\Omega$ = megohm.

Nc = niet verbonden (Amer. hulpsverbindingen).

NM = niet-microfonische lamp.

No = niet-verbonden (Amer. hulsverbindingen).

OSC = oscillatorlamp (generatorlamp).

OSC-MOD. = oscillator-modulatorlamp.

P = plaat (bij Amerk. lampen).

(pl.) = per lamp (na een opgegeven waarde of een andere verkorting).

$p \rightarrow p$ = tusschen de platen (uitgebalanceerde schakelingen).

p. pl. = per plaat.

Ra = belastingsweerstand in den plaatkring.

Ra (p.p.) = belastingsweerstand tusschen de platen van een balansversterker.

Rfk (max) = hoogst toelaatbare weerstand tusschen gloeidraad en kathode.

Ri (norm) = normale inwendige weerstand.

Rk = kathodeweerstand (voor automatische roostervoorspanning).

Rp = weerstand in den plaatkring (bij weerstand gekoppelde lamp).

S = (shield) metalliseering of afscherming bij Amer. lampen.

S (max) = maximum steilheid.

S (norm) = normale steilheid.

SB = (self-bias) automatische roostervoorspanning.

Sc = conversiesteilheid.

ST = stuurlamp voor klasse B (driver).

Su = (suppressor) remrooster (Amerikaansche hulsverbindingen).

T = (target) hulpanode bij AI.

TR = transformatorkoppeling.

(tri) = triode.

TEL = lamp gebruikt voor televisie.

Univ = lamp voor algemeen gebruik.

V = volt.

Va = plaatspanning.

Va (max) = maximum plaatspanning.

VAC = hoogvacuum (gelijkrichterlamp).

Vc = gelijkstroomspanning (gelijkgericht).

Vd (max) = maximum spanning op de anode eener diode.

Vf = gloeispanning.

Vfk (max) = hoogste toelaatbare spanning tusschen gloeidraad en kathode.

$Vgco$ = roosterspanning waarbij de plaatstroom tot nul valt.

Vg (min) = minimum roostervoorspanning.

Vg_1 = spanning op het 1^e rooster.

Vg_2 = spanning op het 2^e rooster.

Vg_{3-5} = spanning van het 3^e en 5^e rooster.

Vg_4 = spanning op het 4^e rooster.

Vi = max. toelaatbare anodewisselspanning.

$Vinv$ = omgekeerde topspanning (max).

Vl = spanningsval in de lamp (gelijkrichterlampen).

Vo = output wisselspanning.

Vop = uitgangs topspanning (bij weerstandversterkers).

$Vosc$ = opgewekte wisselspanning in oscillatorgedeelte.

Vs = schermroosterspanning.

W = weerstandkoppeling.

Wa (max) = hoogste vermogen door de anode op-
genomen.

Wi = ingangs (input) vermogen bij klasse B versterkers.

Wo = beschikbaar, nuttig vermogen.

Wo (10 %) = beschikbaar, nuttig vermogen met 10 %
vervorming.

Wtt = watt.

XS = afscherming (uitwendig), (bij Amerikaansche huls-
verbindingen).

Z = zendlamp.

μ = micro (1/1.000.000).

$\mu\mu$ = micro-micro (1/1.000.000.000.000).

Ω = ohm.

Θ = lichtsector bij afstemindicatoren (in ° uitgedrukt).

▢ = topklem (Amer. hulsverbindingen).

→ = nok van octalhuls (Amer. hulsverbindingen).

2 lp = 2 lampen.

DUODIODE - TRIODE
(dDET + LF)

Vf	=	4.0	V.
If	=	0,65	A.
Va(max)	=	250	V.
Ia	=	4.0	mA.
Vgl	=	—7	V.
S(max)	=	3.6	mA/V.
S(norm)	=	2.0	mA/V.
g	=	27	
Ri(norm)	=	13.500	Ω
Ra	=	1750	Ω
Cagl		<0.003	$\mu\mu$F.

ABC1
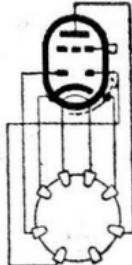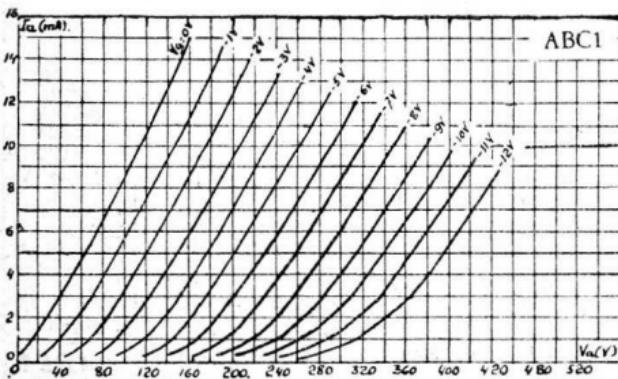
DUODIODE - PENTHODE
(d DET - E)

Vf	=	4,0	V.
If	=	2,25	A.
Va(max)	=	250	V.
Ia	=	36	mA.
Vgl	=	—6	V.
Vg2	=	250	V.
Ig2	=	5	mA.
S(norm.)	=	9,5	mA/V.
Ri(norm)	=	50.000	Ω
Ra	=	7.000	Ω
Rk	=	150	Ω

ABL1-EBL1
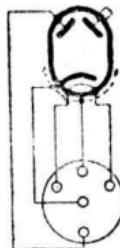
ABL 1

DUO - DIODE
(d DET)

Vf	=	4,0	V.
If	=	0,65	A.
Vd(max)	=	200	V.
Id(max)	=	0,8	mA.
Vfk(max)	=	50	V.
Rfk(max)	=	20.000	Ω

AB1

DUO - DIODE
(d DET)

Vf	=	4,0	V.
If	=	0,65	A.
Vd(max)	=	200	V.
Id(max)	=	0,8	mA.
Vfk(max)	=	50	V.
Rfk(max)	=	20.000	Ω

AB 2

TRIODE - HEXODE
(OSC - MOD)

Vf	=		4	V.
If	=		1.0	A.
Va(max)	=		300 (1) 150 (2)	V.
Ia	=	5.0	2,5 (2) 0,01 (2)	n A.
Vg1	=		—2 —20	V.
Vg2	=		70	V.
Vgosc	=		15 (3)	V.
Vg4	=		70	V.
S(norm)	=	1,8	<0,002	mA/V.
g(triode)	=		13	
Ri(norm)	=	0,8	>10	M.Ω
Cagl. hex	=		<0,1	$\mu\mu$F.
Cag. tri	=		1,8	$\mu\mu$F.

(1) Triode
(2) V_{osc} = ca 15 V.
(3) over $\Big\}$ 20.000 Ω
   à travers
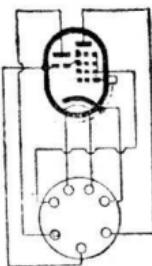
ACH1

TRIODE
(OSC - DET$_T$ - LF$_T$ - LF$_W$)

Vf	=	4,0	V.
If	=	0,65	A.
Va(max)	=	250	V.
Ia	=	6,0	mA.
Vgl	=	—5,5	V.
S(max)	=	3,5	mA/V.
S(norm)	=	2,5	mA/V.
g	=	30	
Ri(norm)	=	12.000	Ω
Rk	=	900	Ω
Cagl	=	1,7	$\mu\mu$F.

AC2-CC2-EC2

AC2
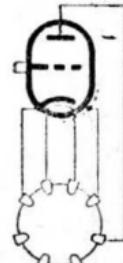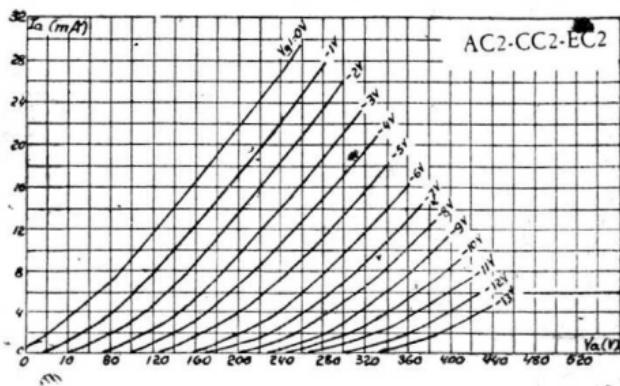
TRIODE
(E)

Vf	=	4,0	V.
If	=	0,95	A.
Va(max)	=	250	V.
Ia	=	60	mA.
Vgl	=	—45	V.
S(norm)	=	6,4	mA/V.
g	=	4	
Ri(norm)	=	670	Ω
Ra	=	2.300	Ω
Rk	=	750	Ω
Wa(max)	=	15	Wtt.
Wo(10%)	=	4,2	Wtt.
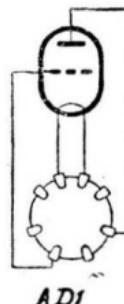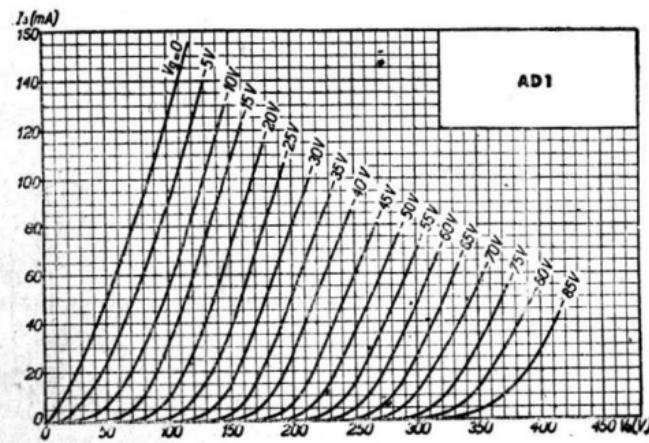
PENTHODE - SELECTODE
(HF - MF)

Vf	=		4	V.
If	=		1,1	A.
Va(max)	=		200	V.
Ia	=	4,25	<0,015	mA.
Vg1	=	—2	—22	V.
Vg2	=		100	V.
Ig2	=		1,8	mA.
S(max)	=		3,2	mA/V.
S(norm)	=	2,5	<0,002	mA/V.
g	=		3.500	
Ri(norm)	=	1,4	>10	M.Ω
Cag1	=		<0,006	$\mu\mu$F.

AF2
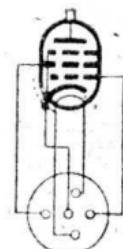
PENTHODE - SELECTODE
(HF - MF)

Vf	=		4	V.
If	=		0,65	A.
Va(max)	=		250	V.
Ia	=	8,0	<0,015	mA.
Vg1	=	—3,0	—55	V.
Vg2	=		100	V.
Ig2	=		2,6	mA.
Vg3—(5)	=		0	V.
S(max)	=		2,8	mA/V.
S(norm)	=	1,8	<0,002	mA/V.
g	=		2.200	
Ri(norm)	=	1,2	>10	M.Ω
Cagl	=		<0,003	μμF.

AF3
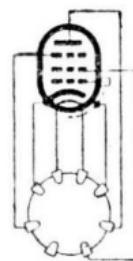
PENTHODE
(HF - MF - A . DET$_w$ - LF$_w$)

Vf	=	4	V.
If	=	0,65	A.
Va(max)	=	250	V.
Ia	=	3,0	mA.
Vg1	=	—2,0	V.
Vg2	=	100	V.
Ig2	=	1,1	mA.
Vg3	=	0	V.
S(max)	=	2,4	mA/V.
S(norm)	=	2,1	mA/V.
g	=	4.000	
Ri(norm)	=	2	M.Ω
Cag1	=	<0,003	$\mu\mu$F.

AF7
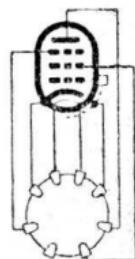
AH 1

HEXODE - SELECTODE
(HF - MF - MOD)

Vf	=		4	V.
If	=		0,65	A.
Va(max)	=		250	V.
Ia	=	3,0	<0,015	mA.
Vg1	=	—2	—24	V.
Vg2	=		80	V.
Ig2 + Ig4	=	2,6	1,1	mA.
Vg3—(5)	=	—2	—24(2)	V.
Vg4	=		80	V.
S(max	=		3,0	mA/V.
S(norm)	=	1,8	<0,002(1)	mA/V.
Ri(norm)	=	2	>10	M.Ω
Cag1			<0,003	$\mu\mu$F.

(1) Vosc = 9 Veff.

(2) HF - MF.

AH1
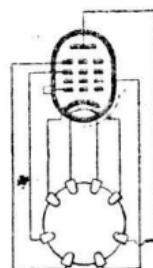
OCTODE
(OSC - MOD)

V_f	=		4	V.
I_f	=		0,65	A.
$V_a(max)$	=		200	V.
I_a	=	1,6	<0,015	mA.
V_{g1}	=		—1,5	V.
V_{g2}	=		90	V.
I_{g2}	=		2,0	mA.
V_{g3}—(5)	=		70	V.
V_{g4}	=	—1,5	—25	V.
$S(norm)$	=	0,6(1)	<0,002(1)	mA/V.
$R_i(norm)$	=	1,5	10	M.Ω
C_{ag4}	=		<0,06	$\mu\mu$F.

(1) V_{osc} = 8,5 Veff.

AK1
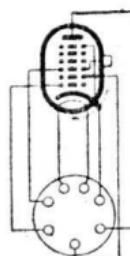
OCTODE
(OSC - MOD)

V_f	=		4	V.
I_f	=		0,65	A.
$V_a(max)$	=		250	V.
I_a	=	1,6	<0,015	mA.
V_{g1}	=		—1,5	V.
V_{g2}	=		90	V.
I_{g2}	=		2,0(1)	mA.
V_{g3}—(5)	=		70	V.
V_{g4}	=	—1,5	—25	V.
$S(norm)(2)$	=	0,6	<0,002	mA/V.
$R_i(norm)$	=	1,6	>10	M.Ω
C_{ag4}	=		<0,06	$\mu\mu$F.

(1) $I_{g_3} + I_{g_5} = 3,8$ mA.
(2) $V_{osc} = 8,5$ V$_{eff}$.

AK2
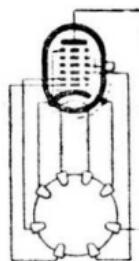
PENTHODE
(E)

Vf	=	4,0	V.
If	=	1,1	A.
Va(max)	=	250	V.
Ia	=	36	mA.
Vg1	=	—15	V.
Vg2	=	250	V.
Ig2	=	6,8	mA.
S(norm)	=	2,8	mA/V.
Ri(norm)	=	43.000	Ω
Ra	=	7.000	Ω
Rk	=	340	Ω
Wa(max)	=	9	Wtt.
Wo 10%	=	3,1	Wtt.
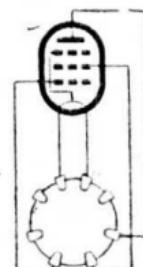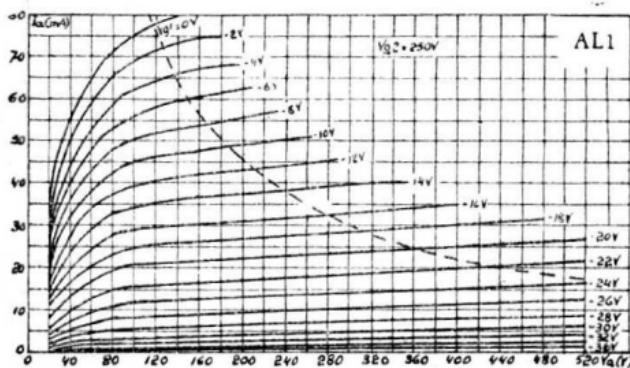
PENTHODE
(E)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	250	V.
Ia	=	36	mA.
Vg1	=	—25	V.
Vg2	=	250	V.
Ig2	=	5	mA.
S(norm)	=	2,6	mA/V.
Ri(norm)	=	60.000	Ω
Ra	=	7.000	Ω
Rk	=	610	Ω
Wa(max)	=	9	Wtt.
Wo(10%)	=	3,8	Wtt.
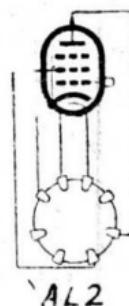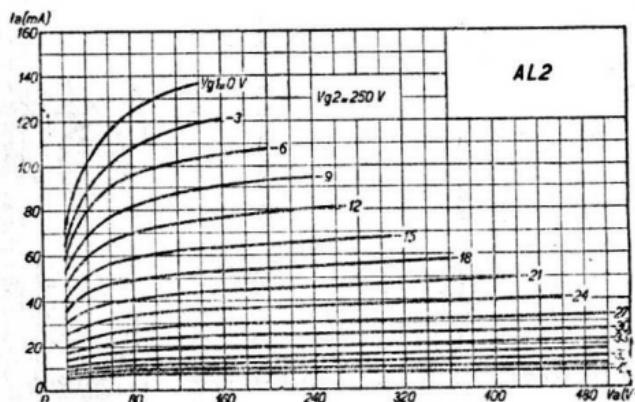
PENTHODE
(E)

Vf	=	4,0	V.
If	=	1,85	A.
Va(max)	=	250	V.
Ia	=	36	mA.
Vg1	=	—6,5	V.
Vg2	=	250	V.
Ig2	=	4	mA.
S(norm)	=	9	mA/V.
g	=	55	
Ri(norm)	=	50.000	Ω
Ra	=	7.000	Ω
Rk	=	160	Ω
Wa(max)	=	9	Wtt.
Wo(10%)	=	4,5	Wtt.

PENTHODE
(E)

Vf	=	4,0	V.
If	=	1,75	A.
Va(max)	=	250	V.
Ia	=	36	mA.
Vg1	=	—6	V.
Vg2	=	250	V.
Ig2	=	5	mA.
S(norm)	=	9,5	mA/V.
Ri(norm)	=	50.000	Ω
Ra	=	7.000	Ω
Rk	=	150	Ω
Wa(max)	=	9	Wtt.
Wo(10%)	=	4,3	Wtt.

PENTHODE
(E)

Vf	=	4,0	V.
If	=	2,1	A.
Va(max)	=	250	V.
Ia	=	72	mA.
Vg1	=	—16	V.
Vg2	=	250	V.
Ig2	=	7,5	mA.
S(norm)	=	7	mA/V.
Ri(norm)	=	33.000	Ω
Ra	=	3.500	Ω
Rk	=	200	Ω
Wa(max)	=	18	Wtt.
Wo(10%)	=	7,7	Wtt.

(A . I)
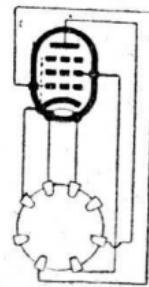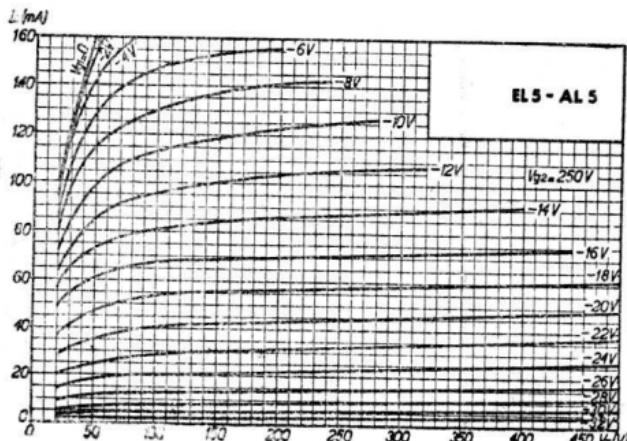
Vf	=	4,0	V.
If	=	0,3	A.
Va(max)	=	250	V.
Ia	=	0,095	mA.
Vgl	=	0	V.
Ra	=	2	M.Ω

A M1
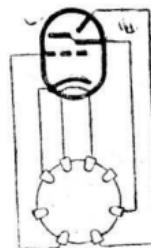
(A . I)

Vf	=	4,0	V.
If	=	0,32	A.
Va	=	250	V.
Ia	=	3	mA.
Vg	=	—3,5	V.
S(norm)	=	2,0	mA/V.
g	=	50	
Ri(norm)	=	25.000	Ω

Lichtschermspanning Vs = 250 V.
Tension de l'Ecran fluorescent Vs = 250 V.

Lichtsector - Secteur fluorescent	3°	150°	160°
Va (Triode)	250	250	250
Vg'	—4	0	+3

AM2
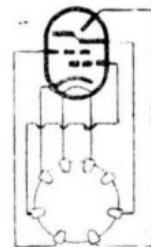
GELIJKRICHTERLAMP
REDRESSEUSE
(GAS)

Vf	=	4,0	V.
If	=	2,0	A.
Va(max)	=	2 × 500	V.
Ia(tot)	=	125	mA.

A X 1
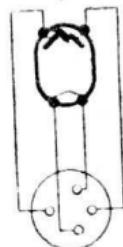
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=		4,0		V.
If	=		1,1		A.
Va$\sim$	=	2×500 V. $\rightarrow$ Ia		=	60 mA.
Va$\sim$	=	2×400 V. $\rightarrow$ Ia		=	75 mA.
Va$\sim$	=	2×300 V. $\rightarrow$ Ia		=	100 mA.
L	=	$110 \, ^{m}/_{m}$	D	=	$53 \, ^{m}/_{m}$

AZ1
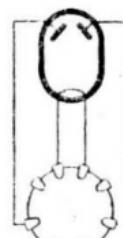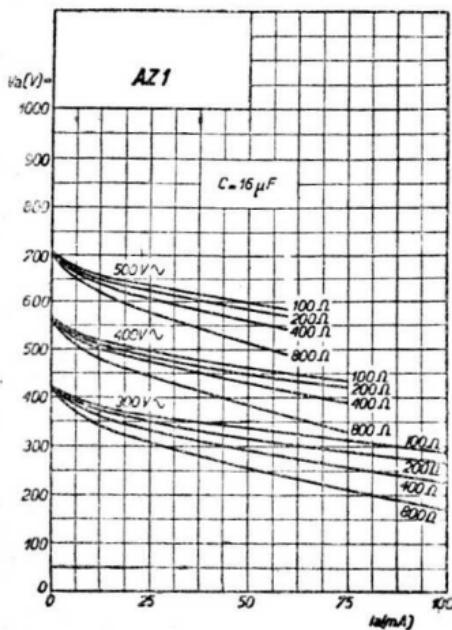
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=		4		V.
If	=		2,3		A.
Va	=	2×500	2×400	2×300	V.
Ia	=	120	150	200	mA.

AZ 4
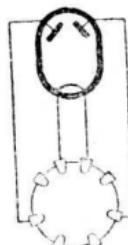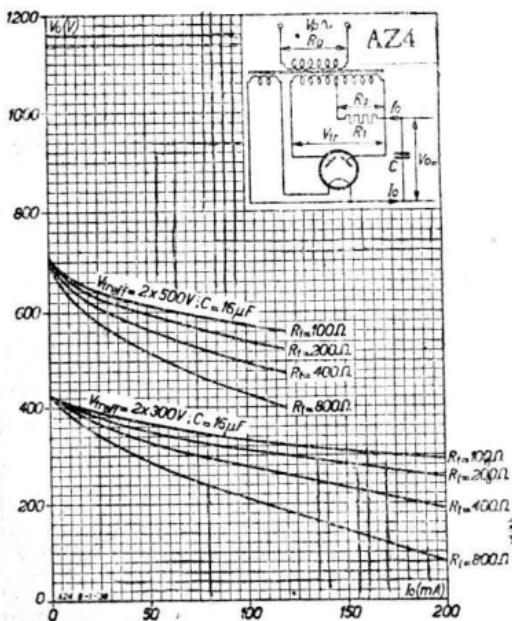
TRIODE
(OSC - G . DET$_T$ - LF$_T$)

Vf	=	4,0	V.
If	=	0,065	A.
Va(max)	=	150	V.
Ia	=	3,5	mA.
Vgl	=	—9	V.
S(max)	=	1,2	mA/V.
S(norm)	=	0,9	mA/V.
g	=	9	
Ri(norm)	=	10.000	Ω
Rk	=	2.600	Ω
Cagl	=	4	$\mu\mu$F.
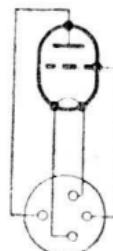
A 409

TRIODE
(OSC - G. .DET$_T$ - LF$_T$)

Vf	=	4,0	V.
If	=	0,06	A.
Va(max)	=	150	V.
Ia	=	3,5	mA.
Vgl	=	—9	V.
S(max)	=	1,2	mA/V.
S(norm)	=	0,9	mA/V.
g	=	9	
Ri(norm)	=	10.000	Ω
Rk	=	2.600	Ω
Cagl	=	4	$\mu\mu$F.
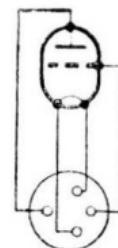
A 410(N)

TRIODE (N . M)
(OSC - G . DET$_T$ - LF$_T$)

Vf	=	4	V.
If	=	0,08	A.
Va(max)	=	150	V.
Ia	=	4	mA.
Vgl	=	—4,5	V.
S(max)	=	2	mA/V.
S(norm)	=	1,5	mA/V.
g	=	14	
Ri(norm)	=	7.000	Ω
Rk	=	1.125	Ω
Cagl	=	2,5	$\mu\mu$F.
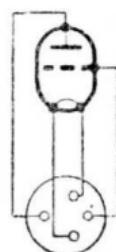
A414k

TRIODE
(OSC - G . DET$_T$ - LF$_T$)

Vf	$=$	4,0	V.
If	$=$	0,085	A.
Va(max)	$=$	150	V.
Ia	$=$	4,0	mA.
Vgl	$=$	—4,0	V.
S(max)	$=$	2,0	mA/V.
S(norm)	$=$	1,5	mA/V.
g	$=$	15	
Ri(norm)	$=$	10.000	Ω
Rk	$=$	1.000	Ω
Cagl	$=$	4,5	$\mu\mu$F.
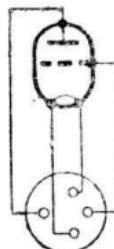
A 415

TRIODE
(G . DET$_w$ - A . DET$_w$ - LFw)

Vf	=		4,0	V.
If	=		0,065	A.
Va(max)	=		200	V.
Ia	=	0,25	0,1	mA.
Vgl	=		—2,5	V.
S(max)	=		1,2	mA/V.
g	=		25	
Ri(norm)	=	0,08	0,25	M.Ω
Cagl	=		3	$\mu\mu$F.
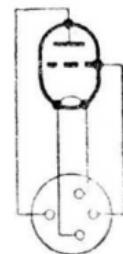
A 425

DUBBELROOSTERLAMP
BIGRILLE
(OSC - MOD)

V_f	=	4	V.
I_f	=	0,08	A.
$V_a(max)$	=	100	V.
I_a	=	4,0	mA.
V_{g1}	=	0	V.
V_{g2}	=	4	V.
S_{g1}	=	0,3	mA/V.
S_{g2}	=	1,0	mA/V.
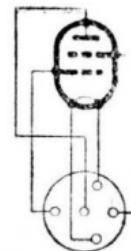
A 441 N

TETRODE
(HF - MF - A . DET - LF$_w$)

Vf	=	4,0	V.
If	=	0,06	A.
Va(max)	=	200	V.
Ia	=	4,0	mA.
Vg1	=	—1	V.
Vg2	=	100	V.
S(max)	=	0,8	mA/V.
S(norm)	=	0,7	mA/V.
g	=	280	
Ri(norm)	=	400.000	Ω
Cag1	=	0,01	$\mu\mu$F.
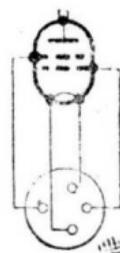
A 442

TRIODE
$(OSC - G' . DET_T - LF_T)$

Vf	=	2,0	V.
If	=	0,1	A.
Va(max)	=	150	V.
Ia	=	4,5	mA.
Vgl	=	—3	V.
S(max)	=	1,4	mA/V.
S(norm)	=	1,3	mA/V.
g	=	17	
Ri(norm)	=	13.000	Ω
Rk	=	660	Ω
Wa(max)	=	0,9	Wtt.
Cagl	=	5,5	$\mu\mu$F.
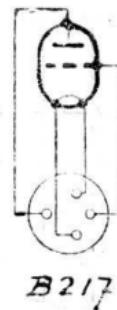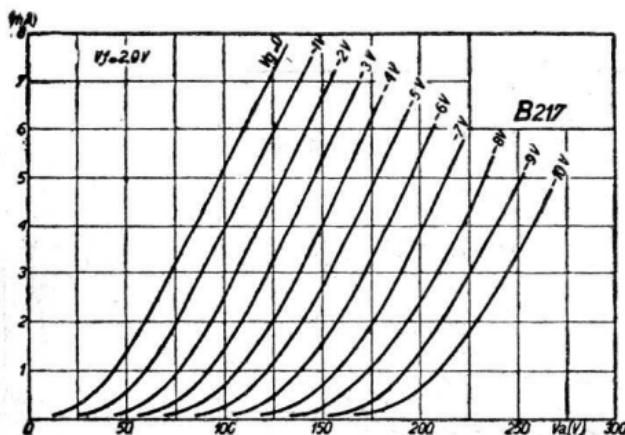
TRIODE
(G . DET$_W$ - LF$_W$)

Vf	=	2,0	V.
If	=	0,1	A.
Va(max)	=	150	V.
Ia	=	2,0	mA.
Vgl	=	—2	V.
S(max)	=	1,3	mA/V.
S(norm)	=	1,2	mA/V.
g	=	28	
Ri(norm)	=	2.300	Ω
Rk	=	1.000	Ω
Cagl	=	5,5	$\mu\mu$F.
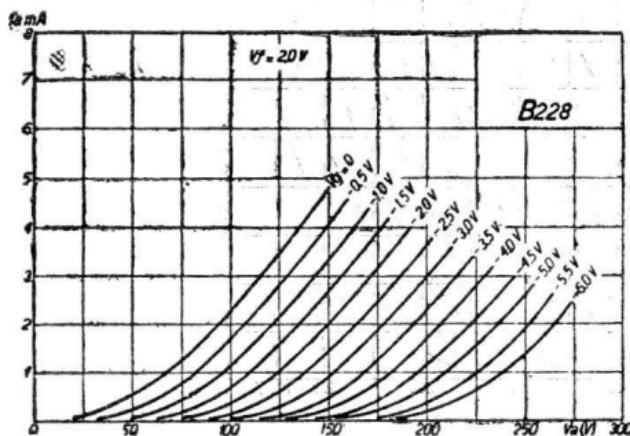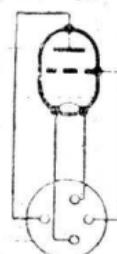
DUOTRIODE
(E)

Vf	=	2,0	V.
If	=	0,2	A.
Va(max)	=	150	V.
Ia1	=	1,5	mA.
Ia2	=	1,5	mA.
Vgl	=	0	V.
Ra1 - a2	=	14.000	Ω
Wo (10%)	=	1,0(1)	Wtt.

(1) Va = 120 V.
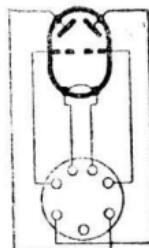
B240

TETRODE
(HF - MF)

Vf	=		2,0	V.
If	=		0,18	A.
Va(max)	=		150	V.
Ia	=	1,8	0,1	mA.
Vg1	=	−0,5	−7	V.
Vg2	=		90	V.
Ig2	=		0,4	mA.
S(max)	=		1,3	mA/V.
S(norm)	=	1,2	0,014	mA/V.
g	=		400	
Ri(norm)	=		0,33	M.Ω
Cag1	=		0,008	$\mu\mu$F.
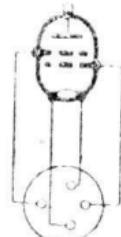
B255

TETRODE
(HF - MF)

Vf	=	2,0	V.
If	=	0,18	A.
Va	=	150	V.
Ia	=	2,0	mA.
Vg1	=	—0,5	V.
Vg2	=	90	V.
Ig2	=	0,4	mA.
S(max)	=	1,4	mA/V.
S(norm)	=	1,3	mA/V.
g	=	500	
Ri(norm)	=	0,4	M.Ω
Cag1	=	0,008	μμF.
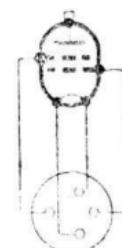
B 262

TRIODE
(E)

Vf	=	4,0	V.
If	=	0,15	A.
Va(max)	=	150	V.
Ia	=	15	mA.
Vgl	=	—30	V.
S(max)	=	1,5	mA/V.
g	=	3	
Ri(norm)	=	2.000	Ω
Rk	=	2.000	Ω
Wa(max)	=	2,2	Wtt.

B 403

TRIODE
(E)

Vf	=	4,0	V.
If	=	0,15	A.
Va(max)	=	150	V.
Ia	=	11	mA.
Vgl	=	—20	V.
S(max)	=	2,0	mA/V.
S(norm)	=	1,6	mA/V.
g	=	5	
Ri(norm)	=	3.000	Ω
Rk	=	1.800	Ω
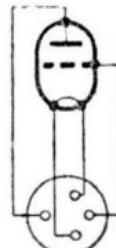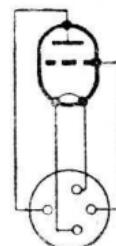
B405

TRIODE
(E)

Vf	=	4,0	V.
If	=	0,1	A.
Va(max)	=	150	V.
Ia	=	8,0	mA.
Vgl	=	—15	V.
S(max)	=	1,4	mA/V.
S(norm)	=	1,3	mA/V.
g	=	6	
Ri(norm)	=	4.500	Ω
Rk	=	1.900	Ω
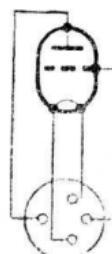
B 406

TRIODE
(E)

Vf	=	4,0	V.
If	=	0,15	A.
Va(max)	=	250	V.
Ia	=	12	mA.
Vgl	=	—18	V.
S(max)	=	2,0	mA/V.
S(norm)	=	1,8	mA/V.
g	=	9	
Ri(norm)	=	5.000	Ω
Ra	=	12.000	Ω
Rk	=	1.500	Ω
Wa(max)	=	3	Wtt.
Wo (10%)	=	0,65	Wtt.
Cagl	=	5,2	μμF.
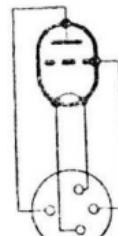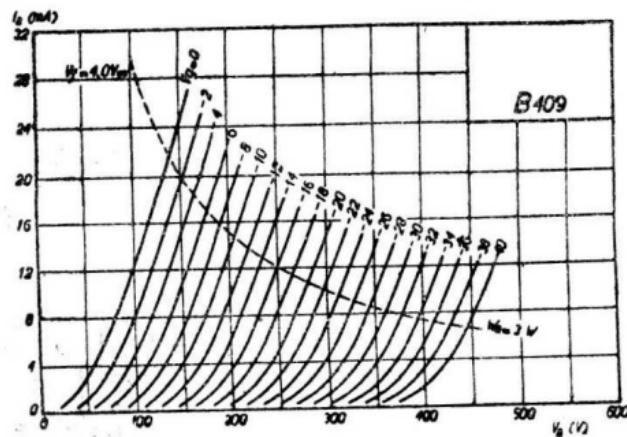
B 424
B 424 Serie

TRIODE
$(OSC - G . DET_T - LF_T)$

Vf	$=$	4,0	V.
If	$=$	0,1	A.
$Va(max)$	$=$	200	V.
Ia	$=$	6,0	mA.
Vgl	$=$	—3	V.
$S(max)$	$=$	3,0	mA/V.
$S(norm)$	$=$	2,5	mA/V.
g	$=$	24	
$Ri(norm)$	$=$	9.000	Ω
Rk	$=$	500	Ω
$Cagl$	$=$	4	$\mu\mu F.$
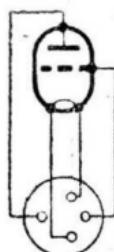
B 424

TRIODE
(G . DET$_\text{w}$ - A . DET$_\text{w}$ - LF$_\text{w}$)

Vf	$=$		4,0	V.
If	$=$		0,1	A.
Va(max)	$=$		200	V.
Ia	$=$	0,2	0,05	mA.
Vgl	$=$		—2,5	V.
S(max)	$=$		2,0	mA/V.
g	$=$		38	
Ri(norm)	$=$	0,17	0,4	M.Ω
Ra	$=$	0,3	10	M.Ω
Cagl	$=$		4	$\mu\mu$F.
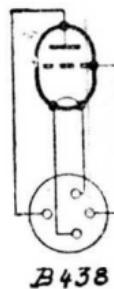
B 438

B 442
B 442 Serie

TETRODE
(HF - MF)

Vf	=	4,0	V.
If	=	0,1	A.
Va(max)	=	200	V.
Ia	=	4,5	mA.
Vg1	=	—1,0	V.
Vg2	=	100	V.
S(max)	=	0,9	mA/V.
S(norm)	=	0,9	mA/V.
g	=	350	
Ri(norm)	=	0,4	M.Ω
Cag1	=	0,005	$\mu\mu$F.
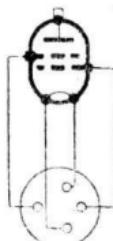
B 442
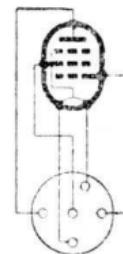
B 443

PENTHODE
(E)

Vf	=	4,0	V.
If	=	0,15	A.
Va(max)	=	250	V.
Ia	=	12	mA.
Vg1	=	—19	V.
Vg2	=	150	V.
Ig2	=	2,4	mA.
S(norm)	=	1,3	mA/V.
g	=	60	
Ri(norm)	=	45.000	Ω
Ra	=	20.000	Ω
Rk	=	1250	Ω
Wa(max)	=	3	Wtt.
Wo (10%)	=	1,35	Wtt.
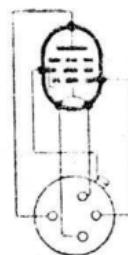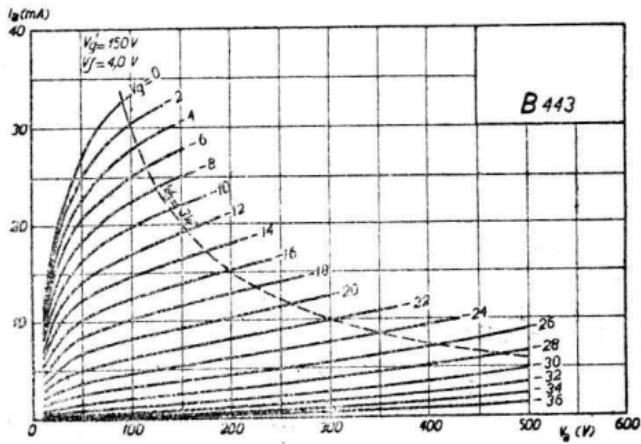
B 443 S

PENTHODE
(E)

Vf	=	4,0	V.
If	=	0,15	A.
Va(max)	=	250	V.
Ia	=	12	mA.
Vg1	=	—12	V.
Vg2	=	80	V.
Ig2	=	2,0	mA.
S(max)	=	2,0	mA/V.
S(norm)	=	1,6	mA/V.
g	=	100	
Ri(norm)	=	60.000	Ω
Ra	=	22.000	Ω
Wa(max)	=	3	Wtt.
Wo (10%)	=	1,12	Wtt.
Cag1	=	1,4	μμF.
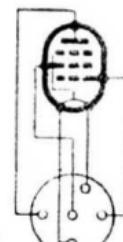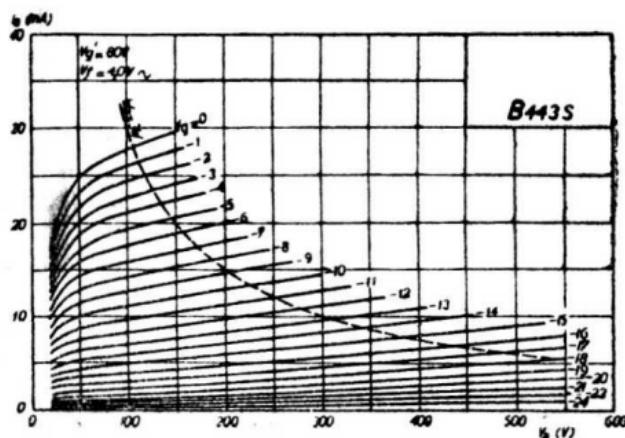
B 443 S

PENTHODE
(E)

V_f	$=$	5,0	V.
I_f	$=$	0,1	A.
$V_a(max)$	$=$	200	V.
I_a	$=$	12	mA.
V_{g1}	$=$	—15	V.
V_{g2}	$=$	150	V.
$S(norm)$	$=$	1,3	mA/V.
$R_i(norm)$	$=$	45.000	Ω
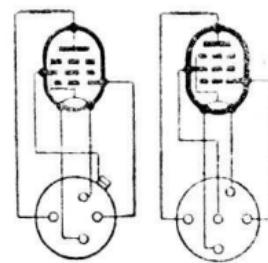
B543   B543

TRIODE
(E)

Vf	=	20	.V.
If	=	0,18	A.
Va(max)	=	200	V.
Ia	=	15	mA.
Vgl	=	—18	V.
S(max)	=	2,5	mA/V.
S(norm)	=	1,6	mA/V.
g	=	6	
Ri(norm)	=	4.000	Ω
Ra	=	16.000	Ω
Rk	=	1.200	Ω
Wa(max)	=	3	Wtt.
Wo(10%)	=	0,2	Wtt.
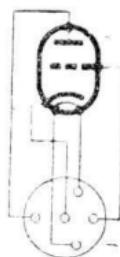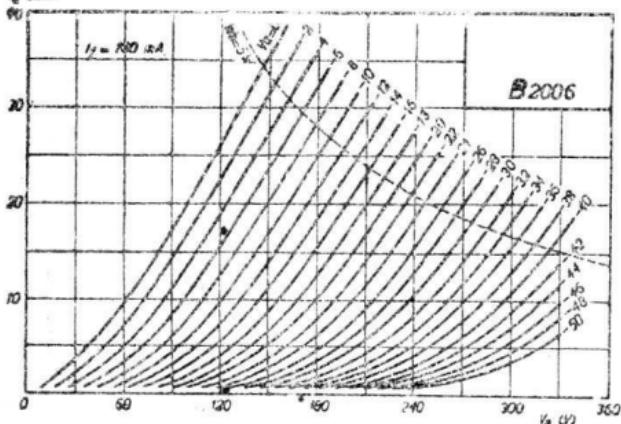
TRIODE
(OSC - G . DET$_T$ - A . DET$_W$ - LF$_T$ - LF$_W$)

Vf	=	20	V.
If	=	0,18	A.
Va(max)	=	200	V.
Ia	=	6,0	mA.
Vgl	=	—3,0	V.
S(max)	=	3,5	mA/V.
S(norm)	=	2,3	mA/V.
g	=	33	
Ri(norm)	=	14.000	Ω
Rk	=	500	Ω
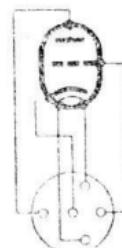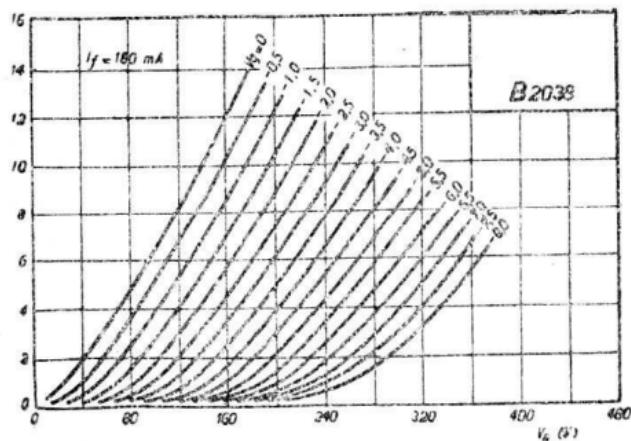
DUBBELROOSTERLAMP
BIGRILLE
(OSC - MOD)

Vf	=	20	V.
If	=	0,18	A.
Va(max)	=	100	V.
Ia	=	2,5	mA.
Vg1	=	0	V.
Vg2	=	0	V.
S(norm)	=	0,1(1) 1,0(2)	mA/V.

(1) g_1
(2) g_2
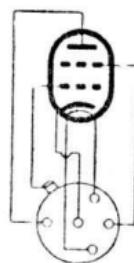
B 2041

TETRODE
(HF - MF - MOD)

Vf	=	20	V.
If	=	0,18	A.
Va(max)	=	200	V.
Ia	=	4,0	mA.
Vgl	=	—2,0	V.
Vg2	=	60	V.
Ig2	=	1,9	mA.
S(max)	=	1,1	mA/V.
S(onrm)	=	1,0	mA/V.
g	=	400	
Ri(norm)	=	0,4	MΩ
Cagl	=	0,003	μμF.
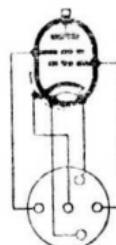
B2042

B 2043

PENTHODE
(E)

Vf	=	20	V.
If	=	0,18	A.
Va(max)	=	200	V.
Ia	=	20	mA.
Vg1	=	—18	V.
Vg2	=	200	V.
Ig2	=	8	mA.
S(max)	=	2,5	mA/V.
S(norm)	=	1,7	mA/V.
g	=	70	
Ri(norm)	=	40.000	Ω
Ra	=	10.000	Ω
Rk	=	900	Ω
Wa(max)	=	5	Wtt.
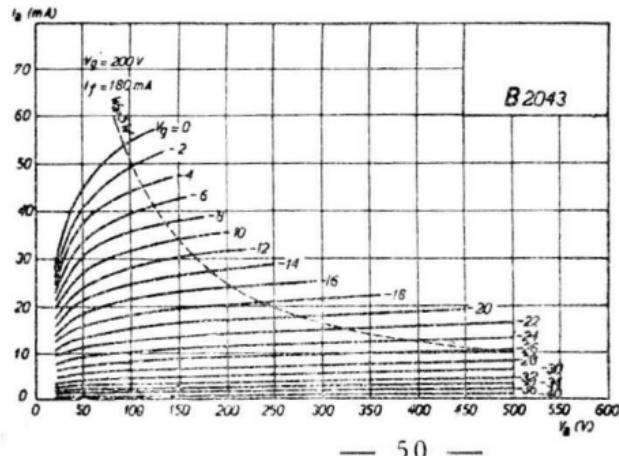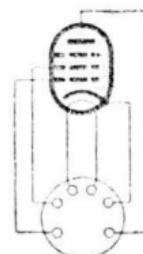
DIODE - TETRODE
(d DET + LF)

Vf	=		20	V.
If	=		0,18	A.
Va(max)	=		200	V.
Ia	=	0,29	0,76	mA.
Vg1	=	—3,2	—4,0	V.
Vg2	=	40	60	V.
Ig2	=		0,5	mA.
S(max)	=		2,8	mA/V.
g	=	700	600	
Ri(norm)	=	2,4	1,2	M.Ω
Ra	=	0,32	0,1	M.Ω
Rk	=		3.200	Ω
Cag1	=		0,003	$\mu\mu$F.
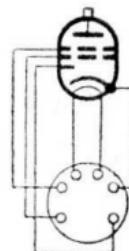
B 2044

DIODE - TRIODE
(d DET + LF)

Vf	=	20	V.
If	=	0,18	A.
Va(max)	=	200	V.
Ia	=	6,0	mA.
Vgl	=	—3	V.
S(max)	=	2,0	mA/V.
S(norm)	=	1,8	mA/V.
g	=	30	
Ai(norm)	=	16.000	Ω
Rk	=	500	Ω
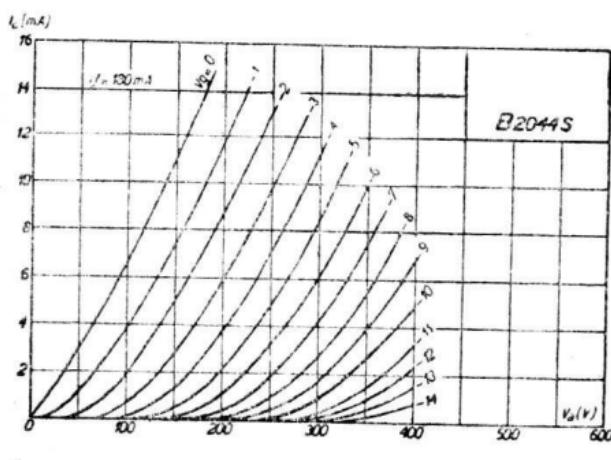
B 2044 S

TETRODE
(HF - MF - MOD)

Vf	$=$		20	V.
If	$=$		0,18	A.
Va(max)	$=$		200	V.
Ia	$=$	4,0	0,01	mA.
Vg1	$=$	—2	—40	V.
Vg2	$=$		60	V.
Ig2	$=$		0,9	mA.
S(max)	$=$		1,2	mA/V.
S(norm)	$=$	1,0	0,005	mA/V.
g	$=$		400	
Ri(norm)	$=$	0,4	>10	M.Ω
Cagl	$=$		0,004	$\mu\mu$F.
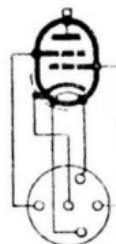
B 2045

PENTHODE
(HF - MF - MOD - A . DET$_w$ - LF$_w$)

Vf	=	20	V.
If	=	0,18	A.
Va(max)	=	200	V.
Ia	=	3,0	mA.
Vg1	=	—2	V.
Vg2	=	100	V.
Ig2	=	1,1	mA.
S(max)	=	3,5	mA/V.
S(norm)	=	2,2	mA/V.
g	=	5.000	
Ri(norm)	=	2,2	M.Ω
Cag1	=	<0,006	$\mu\mu$F.
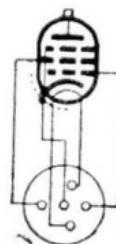
B 2046

PENTHODE
(HF - MF - MOD)

Vf	=		20	V.
If	=		0,18	A.
Va(max)	=		200	V.
Ia	=		4,0	mA.
Vg1	=	−2	−50	V.
Vg2	=		100	V.
Ig2	=		1,8	mA.
S(max)	=		3,0	mA/V.
S(norm)	=	2,0	<0,002	mA/V.
g	=		2.200	
Ri(norm)	=	1,1	>10	M.Ω.
Cag1	=		<0,006	μμF.

B 2047

HEXODE
(OSC - MOD)

Vf	=	20	V.
If	=	0,18	A.
Va(max)	=	200	V.
Ia	=	3,0	mA.
Vg1	=	—1,5	V.
Vg2	=	100	V.
Ig3	=	8,5	mA.
Vg3	=	200	V.
Vg4	=	—4(1)	V.
S(norm)	=	0,58(1)	mA/V.
Ri(norm)	=	⩾0,15	M.Ω

(1) $V_{osc} = 6,3$ Veff
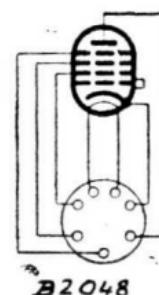
B2048

HEXODE
(HF - MF)

Vf	$=$		20	V.
If	$=$		0,18	A.
Va(max)	$=$		200	V.
Ia	$=$		3,0	mA.
Vg1	$=$	-2	-8	V.
Vg2	$=$		80	V.
Vg3—(5)	$=$	-2	-8	V.
Vg4	$=$		80	V.
S(max)	$=$		3,0	mA/V.
S(norm)	$=$	0,8	$<0,001$	mA/V.
Ri(norm)	$=$	0,45	>50	M.Ω
Cag1	$=$		$<0,002$	$\mu\mu$F.
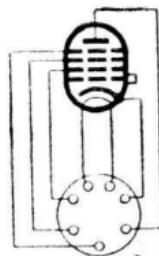
B2049

B 2052 T

TETRODE
(HF - MF - MOD - A . DET$_W$ - LF$_W$)

Vf	=	20	V.
If	=	0,18	A.
Va(max)	=	200	V.
Ia	=	3,0	mA.
Vg1	=	—2	V.
Vg2	=	100	V.
Ig2	=	0,2	mA.
S(max)	=	3,0	mA/V.
S(norm)	=	2,0	mA/V.
g	=	900	
Ri(norm)	=	0,45	M.Ω
Cag1	=	0,003	$\mu\mu$F.
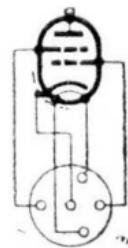
B2052T

TRIODE
(LF$_W$)

Vf	=		20	V.
If	=		0,18	A.
Va(max)	=		200	V.
Ia	=	0,2	0,08	mA.
Vgl	=		—1,6	V.
S(max)	=		3,0	mA/V.
g	=		99	
Ri(norm)	=	0,1	0,33	M.Ω
Ra	=	1	0,3	M.Ω
Cagl	=		1,5	$\mu\mu$F.
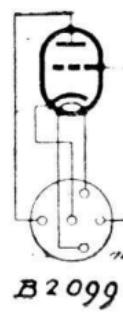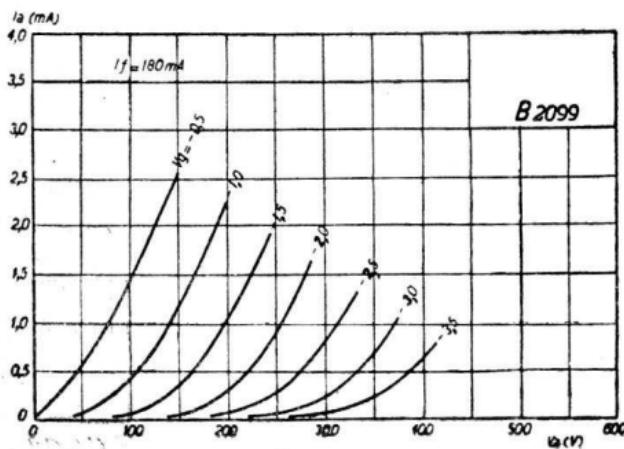
DUODIODE - TRIODE
(d DET + LF)

V_f	=		13,0	V.
I_f	=		0,2	A.
V_a	=	200	100	V.
I_a	=	4,0	2,0	mA.
V_{g1}	=	—5	—2,5	V.
$S(max)$	=		3,6	mA/V.
$S(norm)$	=	2,0	1,8	mA/V.
g	=		27	
$R_i(norm)$	=	13.500	15.000	Ω
R_k	=		1.250	Ω
$W_a(max)$	=		1,5	Wtt.
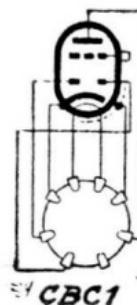
CBC1

DUODIODE - PENTHODE
(d DET - E)

Vf	=	44,0	V.
If	=	0,2	A.
Va(max)	=	200	V.
Ia	=	45	mA.
Vg1	=	—8,5	V.
Vg2	=	200	V.
Ig2	=	6	mA.
S(norm)	=	8	mA/V.
Ri(norm)	=	35.000	Ω
Ra	=	4.500	Ω
Rk	=	170	Ω
Wa(max)	=	9	Wtt.
Wo(10%)	=	4	Wtt.

DUODIODE
(d DET)

Vf	=	13,0	V.
If	=	0,2	A.
Vd(max)	=	200	V.
Ia	=	0,8	mA.

CB1

DUODIODE
(d DET)

Vf	=	13,0	V.
If	=	0,2	A.
Vd(max)	=	200	V.
Ia	=	0,8	mA.

CB 2
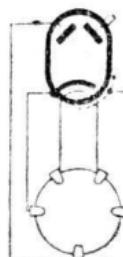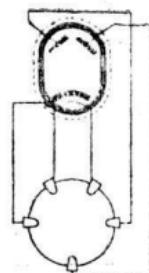
TRIODE

(OSC - G . DET_T - LF_T - LF_W)

Vf	=		13,0	V.
If	=		0,2	A.
Va	=	200	100	V.
Ia	=	6,0	2,0	mA.
Vgl	=	—4	—2,5	V.
S(max)	=		3,5	mA/V.
S(norm)	=	2,5	1,8	mA/V.
g	=		30	
Ri(norm)	=	12.000	16.000	Ω
Rk	=	660	1.250	Ω
Wa(max)	=		2	Wtt.
Cagl	=		1,7	μμF.

AC2-CC2-EC2

CC2

(A I)

Vf	=	6,3	V.
If	=	0,2	A.
Va(max)	=	250	V.
Ia	=	3,5(1)	mA.
Vgl	=	—1,5	V.
S(norm)	=	2,0	mA/V.
g	=	50	
Ra	=	2	M.Ω

(1) Triode
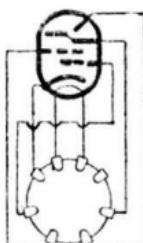
CEM2

PENTHODE
(HF - MF - A . DET$_w$ - LF$_w$)

Vf	$=$		13,0	V.
If	$=$		0,2	A.
Va	$=$	200	100	V.
Ia	$=$		3,0	mA.
Vg1	$=$		-2	V.
Vg2	$=$		100	V.
Ig2	$=$		0,9	mA.
S(max)	$=$		3,2	mA/V.
S(norm)	$=$		2,3	mA/V.
g	$=$	4.000	1.450	
Ri(norm)	$=$	1,7	0,6	M.Ω
Cag1			$<$0,003	$\mu\mu$F.

CF1
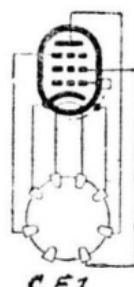
PENTHODE
(HF - MF)

Vf	=		13,0	V.
If	=		0,2	A.
Va	=	200	100	V.
Ia	=	4,5	$<0,015$	mA.
Vg1	=	—2	—22	V.
Vg2	=		100	V.
Ig2	=		1,4	mA.
S(max)	=		2,8	mA/V.
S(norm)	=	2,20	$<0,002$	mA/V.
g	=	3.000	800	
Ri(norm)	=	0,4	>10	M.Ω
Cag1			$<0,003$	$\mu\mu$F.

CF 2
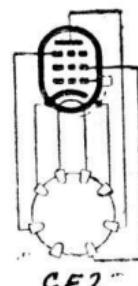
PENTHODE
(HF - MF)

V_f	=		13,0	V.
I_f	=		0,2	A.
V_a	=	200	100	V.
I_a	=	8,0	<0,015	mA.
V_{g1}	=	—3	—55	V.
V_{g2}	=		100	V.
I_{g2}	=		2,6	mA.
V_{g3}	=		0	V.
S(norm)	=	1,8	<0,002	mA/V.
g	=	1.600	450	
R_i(norm)	➡	0,25	>10	M.Ω
C_{ag1}			<0,003	$\mu\mu$F.

CF3
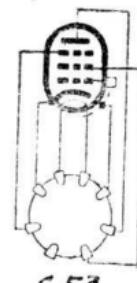
PENTHODE
(HF - MF - A . DET$_w$ - LF$_w$)

Vf	=		13,0	V.
If	=		0,2	A.
Va(max)	=	200	100	V.
Ia	=		3,0	mA.
Vg1	=		—2	V.
Vg2	=		100	V.
Ig2	=		1,1	mA.
Vg3	=		0	V.
S(max)	=		2,4	mA/V.
S(norm)	=		2,1	mA/V.
g	=	4.000	1.500	
Cag1			<0,003	$\mu\mu$F.

CF7
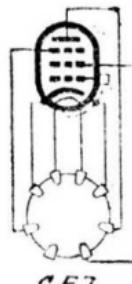
HEXODE
(HF - MF - MOD)

Vf	=		13	V.
If	=		0,2	A.
Va(max)	=		200	V.
Ia	=	4,0	<0,015	mA.
Vg1	=	—2	—24	V.
Vg2	=		100	V.
Ig2	=	4	2,0(1)	mA.
Vg3 - (5)	=	—2(2)	—24	V.
Vg4	=		50	V.
S(max)	=		2	mA/V.
S(norm)	=	2	<0,002	mA/V.
Ri(norm)	=	2	>10	M.Ω
Cagl			0,003	$\mu\mu$F.

(1) $I_{g_4} = 0,25$ mA.

(2) $Vg = const/Rg_3 = 0,5$ M.Ω
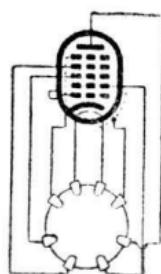
CH1

OCTODE
(OSC - MOD)

Vf	=		13,0	V.
If	=		0,2	A.
Va	=	200	100	V.
Ia	=	1,6	$<0,015$	mA.
Vg1	=		$-1,5$	V.
Vg2	=		90	V
Ig2	=		2(1)	mA.
Vg3 - (5)	=		70	V.
Vg4	=	$-1,5$	-25	V.
S(norm)	=	0,6(2)	$<0,002$	mA/V.
Ri(norm)	=	1	>10	M.Ω
Cag4	=		$<0,06$	$\mu\mu$F.

(1) $Ig_3 + Ig_5 = 3,8$ mA.

(2) $Vosc = 9$ Veff

CK1
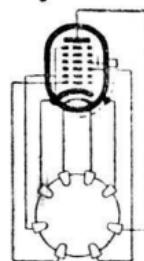
OCTODE
(OSC - MOD)

Vf	=		23	V.
If	=		0,2	A.
Va	=	100	200	V.
Ia	=	1,2	2	mA.
Vg1	=	8	8	V.
Vg2	=	100	135	V.
Ig2	=	3,2	6	mA.
Vg3 - (5)	=	90	100	V.
Vg4	=	—1,5	—2	V.
S(max)	=	3,5	4	mA/V.
Sc	=	500	600	μA/V.
Ri	=	1,4	2	M.Ω
Rg1	=		50.000	Ω
Cag4	=		<	$\mu\mu$F.
Ca	=		16	$\mu\mu$F.
Cg1	=		10	$\mu\mu$F.
Cg1 g4	=		1,7	$\mu\mu$F.
Cg2	=		5,5	$\mu\mu$F.
Cg4	=		14	$\mu\mu$F.

CK3

PENTHODE
(E)

Vf	$=$		13,0	V.
If	$=$		0,2	A.
Va	$=$	250	200	V.
Ia	$=$	32	25	mA.
Vg1	$=$	—19	—14	V.
Vg2	$=$	250	200	V.
Ig2	$=$	3,3	2,4	mA.
S(norm)	$=$	2,6	2,5	mA/V.
Ri(norm)	$=$	48.000	50.000	Ω
Ra	$=$	7.000	8.000	Ω
Rk	$=$	540	510	Ω
Wa(max)	$=$	8	5	Wtt.
Wo(10%)	$=$	2,8	1,7	Wtt.

PENTHODE
(E)

Vf	=		24,0	V.
If	=		0,2	A.
Va	=	200	100	V.
Ia	=	40	50	mA.
Vg1	=	—19—11	—15	V.
Vg2	=	100 75	100	V.
Ig2	=	5 4,5	8	mA.
S(norm)	=	3,1 3,7	3,8	mA/V.
Ri(norm)	=	23.000 19.000	16.000	Ω
Ra	=	5.000	2.000	Ω
Rk	=	420 250	260	Ω
Wa(max)	=	8	5	Wtt.
Wo(10%)	=	3,0 2,5	1,7	Wtt.

PENTHODE
(E)

Vf	=	33,0	V.
If	=	0,2	A.
Va(max)	=	200	V.
Ia	=	45	mA.
Vg1	=	—8,5	V.
Vg2	=	200	V.
Ig2	=	6,0	mA.
S(norm)	=	8,0	mA/V.
Ri(norm)	=	45.000	Ω
Ra	=	4.500	Ω
Rk	=	170(1) 140(2)	Ω
Wa(max)	=	9	Wtt.
Wo(10%)	=	4	Wtt.

(1) $\rightarrow E_B$ (2) $\rightarrow E_A$
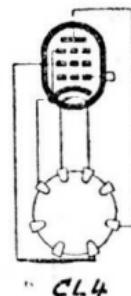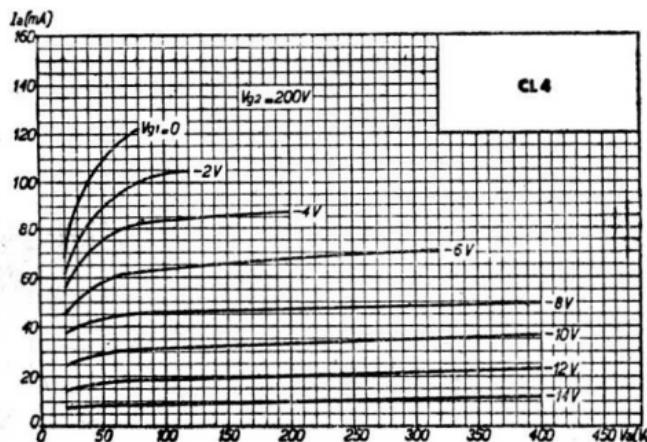
PENTHODE
(E)

Vf	=		35	V.
If	=		0,2	A.
Va	=	100	200	V.
Ia	=	50	40	mA.
Vg1	=	—8,25	—10,5	V.
Vg2	=	100	100	V.
Ig2	=	9	5	mA.
S(max)	=	8,5	8	mA/V.
Ri(norm)	=	16.000	22.000	Ω
Ra	=	2.000	5.000	Ω
Rk(max)	=	140	235	Ω
Va(max)	=		8	Wtt.
Wo	=	2,2	3,5	Wtt.

C L 6
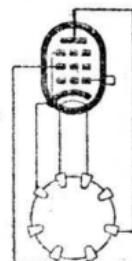
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	20	V.
If	=	0,2	A.
Va	=	250	V.
Ia	=	80	mA.
L	=	102	mm.
D	=	43	mm.

CY1
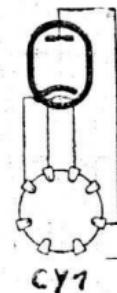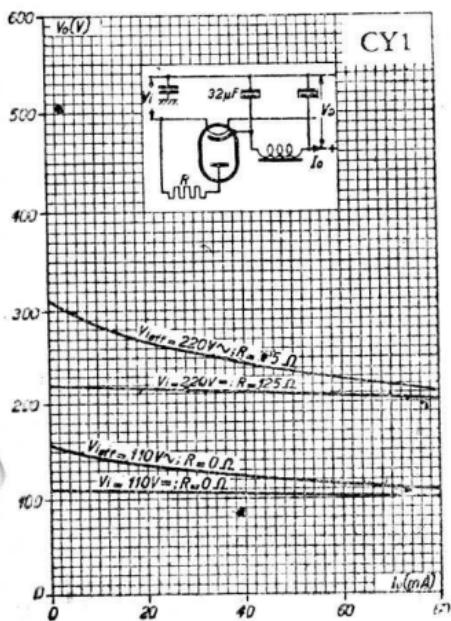
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	30	V.
If	=	0,2	A.
Va	=	1×250	V.
Va	=	127(1)	V.
Ia	=	120	mA.
Ia	=	60(1)	mA.
D	=	44	mm.
L	=	100	mm.

(1) Als spanningsverdubbelaar — Comme doubleur de tension.
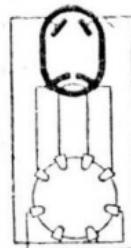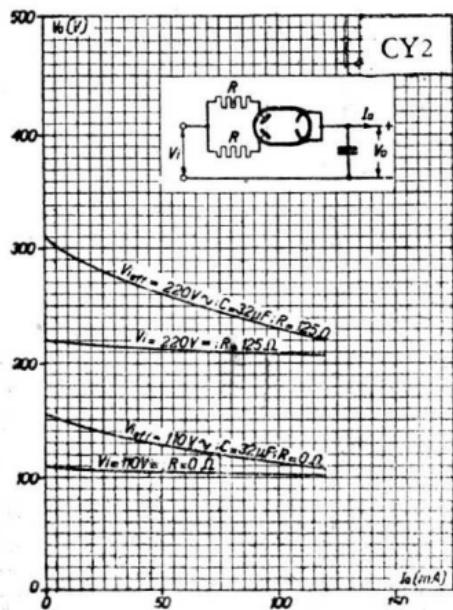
CY 2

STROOMREGULATOR
REGULATRICE DE COURANT

V_f	=	80	230	V.
I_f	=		0,2	A.
$V(max)$	=		200	V.
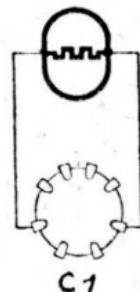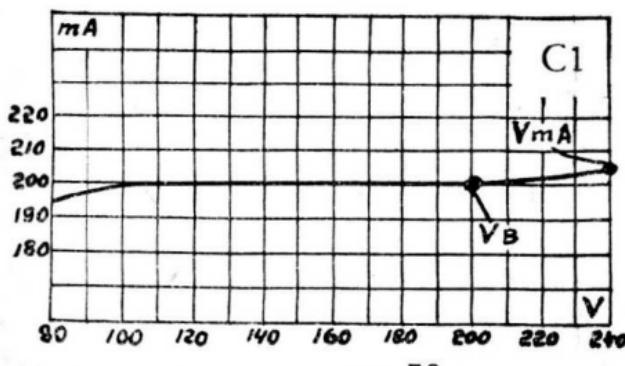
STROOMREGULATOR
REGULATRICE DE COURANT

Vf	=	35	100	V.
If	=		0,2	A.
V(max)	=		110	V.
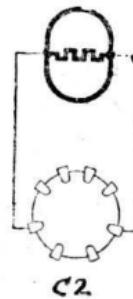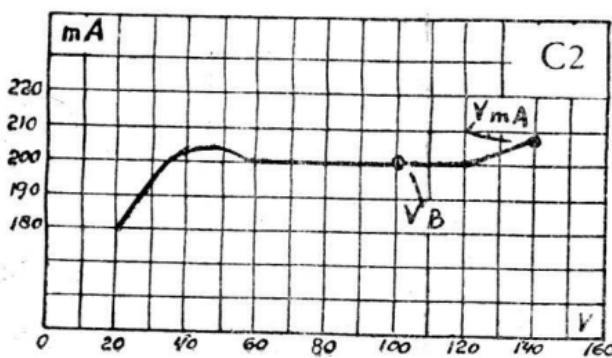
STROOMREGULATOR
REGULATRICE DE COURANT

Vf	=	110	200	V.
If	=		0,2	A.
V(max)	=		240	V.
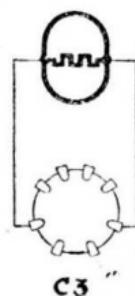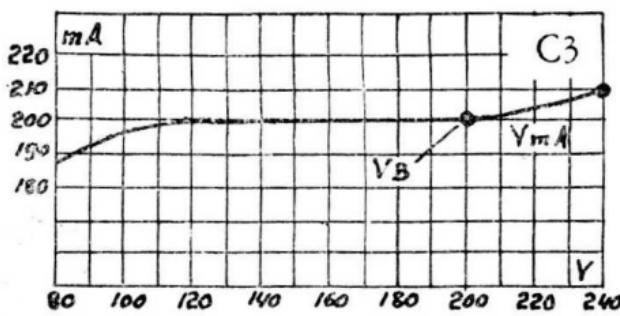
STROOMREGULATOR
REGULATRICE DE COURANT

V_f	=	80	230	V.
I_f	=		0,2	A.
$V(max)$	=		200	V.

Speciale lamp voor Philipstoestellen.
Lampe spéciale pour appareils Philips.

C 8
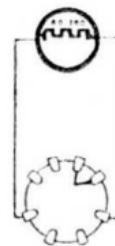
STROOMREGULATOR
REGULATRICE DE COURANT

Vf	=	35	100	V.
If	=		0,2	A.
Va(max)	=		100	V.

Speciale lamp voor Philipstoestellen.
Lampe spéciale pour appareils Philips.
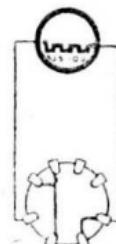
STROOMREGULATOR
REGULATRICE DE COURANT

Vf	=	(	35	100	)	V.
		(	80	200	)	V.
If	=		0,2			A.
V(max)	=	(	200	)		
		(	100	)		V.
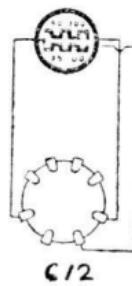
C/2

TETRODE
(HF)

Vf	=	1,0	V.
If	=	0,25	A.
Va(max)	=	150	V.
Ia	=	1,7	mA.
Vg1	=	—1,5	V.
Vg2	=	75	V.
S(max)	=	0,8	mA/V.
S(norm)	=	0,6	mA/V.
g	=	300	
Ri(norm)	=	0,5	M.Ω
Cag1	=	0,01	μμF.
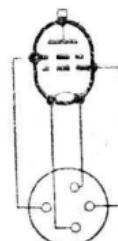
C 142

C 243 N

PENTHODE
(E)

V_f	$=$	2,0	V.
I_f	$=$	0,2	A.
$V_a(\text{max})$	$=$	150	V.
I_a	$=$	9,5	mA.
V_{g1}	$=$	$-4,5$	V.
V_{g2}	$=$	150	V.
$S(\text{norm})$	$=$	2,4	mA/V.
$R_i(\text{norm})$	$=$	75.000	Ω
R_a	$=$	15.000	Ω
R_k	$=$	500	Ω
$W_a(\text{max})$	$=$	1,5	Wtt.
$W_o(10\%)$	$=$	0,58	Wtt.

C 243 N
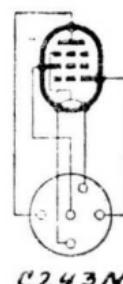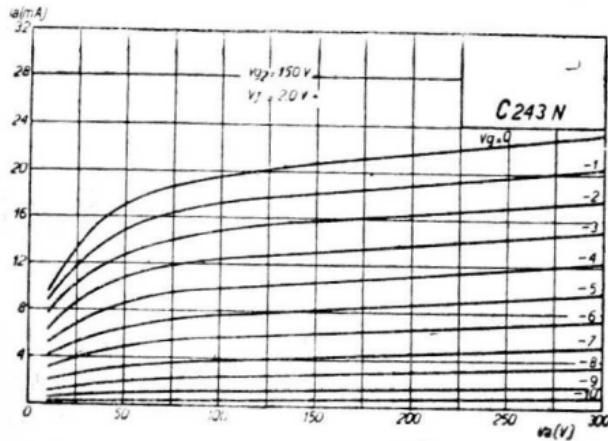
TRIODE
(E)

Vf	=	4,0	V.
If	=	0,3	A.
Va(max)	=	250	V.
Ia	=	20	mA.
Vgl	=	—32	V.
S(max)	=	2,0	mA/V.
S(norm)	=	1,9	mA/V.
g	=	5	
Ri(norm)	=	2.600	Ω
Ra	=	5.200	Ω
Rk	=	1.600	Ω
Wa(max)	=	5	Wtt.
Wo(10%)	=	1,1	Wtt.
Cagl	=	4,8	μμF.
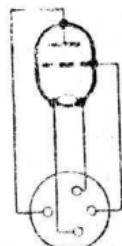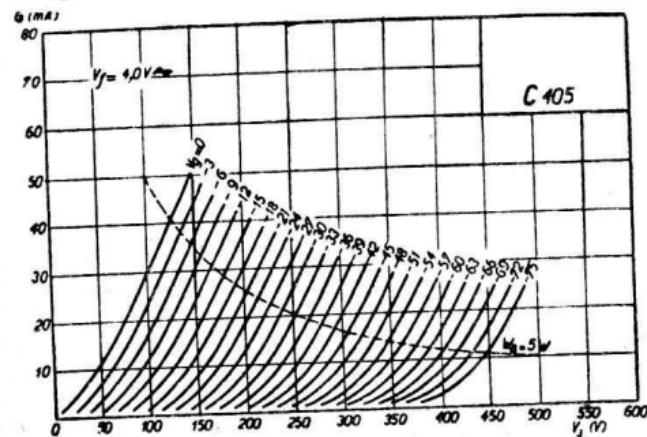
PENTHODE
(E)

Vf	=	4	V.
If	=	0,25	A.
Va(max)	=	300	V.
Ia	=	20	mA.
Vg1	=	—25	V.
Vg2	=	200	V.
Ig2	=	4,5	mA.
S(max)	=	2,0	mA/V.
S(norm)	=	1,7	mA/V.
g	=	60	
Ri(norm)	=	35.000	Ω
Ra	=	15.000	Ω
Rk	=	1.250	Ω
Wa(max)	=	6	Wtt.
Wo	=	2,8	Wtt.

PENTHODE
(E)

Vf	=	4,0	V.
If	=	0,25	A.
Va(max)	=	300	V.
Ia	=	20	mA.
Vg1	=	—42	V.
Vg2	=	200	V.
Ig2	=	0,4	mA.
S(max)	=	1,8	mA/V.
S(norm)	=	1,5	mA/V.
g	=	37	
Ri(norm)	=	25.000	Ω
Ra	±	15.000	Ω
Rk	=	2.000	Ω
Wa(max)	=	6	Wtt.
Wo(10%)	=	3,0	Wtt.

C 443 N

PENTHODE

(E)
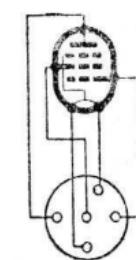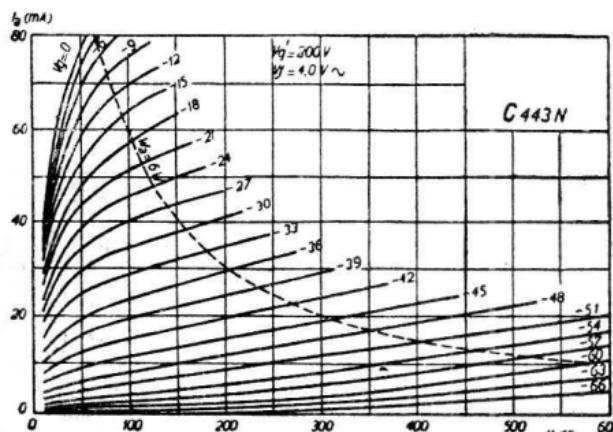
V_f	=	$\pm 4{,}0$	V.
I_f	=	0,25	A.
$V_a(max)$	=	300	V.
I_a	=	20	mA.
V_{g1}	=	—20	V.
V_{g2}	=	150	V.
$S(max)$	=	2,0	mA/V.
$S(norm)$	=	1,5	mA/V.
g	=	50	
$R_i(norm)$	=	33.000	Ω
R_k	=	1.000	Ω
$W_a(max)$	=	6	Wtt.

C 443 Ns

PENTHODE
(E)

Vf	=	4,0	V.
If	=	0,25	A.
Va(max)	=	300	V.
Ia	=	20	mA.
Vg1	=	—25	V.
Vg2	=	200	V.
Ig2	=	4,5	mA.
S(max)	=	2,0	mA/V.
S(norm)	=	1,7	mA/V.
g	=	60	
Ri(norm)	=	35.000	Ω
Ra	=	15.000	Ω
Rk	=	1.000	Ω
Wa(max)	=	6	Wtt.
Wo(10%)	=	2,8	Wtt.
Cag1	=	1,3	$\mu\mu$F.

C 453
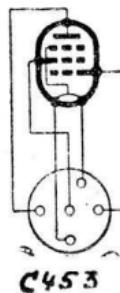
GELIJKRICHTERLAMP
REDRESSEUSE
(Hg)

Vf	=	2,0	V.
If	=	5,0	A.
Vinv	=	3.000	V. max.
Ia	=	150	mA. max.
Vl	=	16	V.
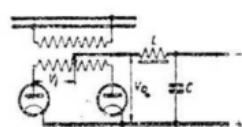
Fig. 1
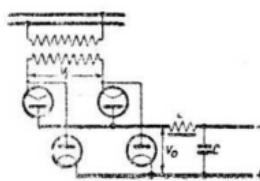
Fig. 4
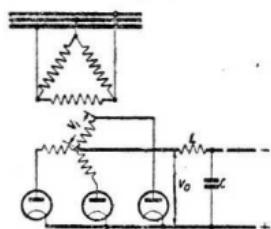
Fig. 2
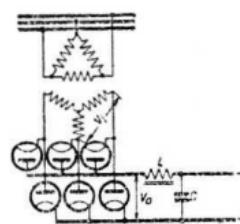
Fig. 5
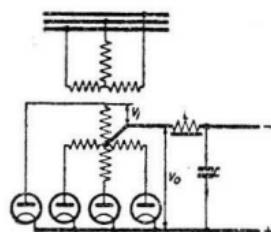
Fig. 3
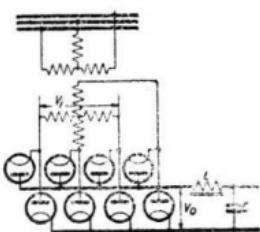
Fig. 6

	Vi	Vo	Io (max)	Wo
fig. 1	1050 V	950 V	300 mA	285 Wtt
fig. 2	1050 V	1200 V	450 mA	540 Wtt
fig. 3	1050 V	1350 V	600 mA	810 Wtt
fig. 4	2100 V	1900 V	300 mA	570 Wtt
fig. 5	2100 V	2900 V	450 mA	1300 Wtt
fig. 6	2100 V	2700 V	600 mA	1620 Wtt

D max $= 47 \, {}^{m}/_{m}$
L max $= 135 \, {}^{m}/_{m}$
Huls-Culot: Edison

GELIJKRICHTERLAMP
REDRESSEUSE
(Hg)

V_f	=	5,0	V.
I_f	=	10	A.
V_{inv}	=	500	V. max.
I_a	=	1	A. max.
V_l	=	16	V.

	Vi	**Vo**	**Io** (max)	**Wo**
fig. 1 (1)	1750 V	1600 V	2,0 A	3200 Wtt
fig. 2	1750 V	2100 V	3,0 A	6300 Wtt
fig. 3	1750 V	2250 V	4,0 A	9000 Wtt
fig. 4	3500 V	3200 V	2,0 A	6400 Wtt
fig. 5	3500 V	4700 V	3,0 A	14100 Wtt
fig. 6	3500 V	4500 V	4,0 A	18000 Wtt

$D = 95 \, {}^{m}/_{m}$

$L = 254 \, {}^{m}/_{m}$

Huls-Culot: Edison

(1) DCG $^{1}/_{150}$

GELIJKRICHTERLAMP
REDRESSEUSE
(Hg)

Vf	=	2,5	V.	
If	=	5,0	A.	
Vinv	=	10.000	V. max.	
Ia	=	250	mA. max.	
Vl	=	16	V.	

	Vi	**Vo**	**Io (max)**	**Wo**
fig. 1 (1)	3500 V	3150 V	500 mA	1575 Wtt
fig. 2	3500 V	4100 V	750 mA	3075 Wtt
fig. 3	3500 V	4500 V	1000 mA	4500 Wtt
fig. 4	7000 V	6300 V	500 mA	3150 Wtt
fig. 5	7000 V	9500 V	750 mA	7125 Wtt
fig. 6	7000 V	9000 V	1000 mA	9000 Wtt

$D = 38 \, {}^m\!/_m$

$L = 170 \, {}^m\!/_m$

Huls-Culot: Edison

(1) DCG $^1\!/_{150}$

GELIJKRICHTERLAMP
REDRESSEUSE
(Hg)

Vf	=	5,0	V.
If	=	10	A.
Vinv	=	10.000	V.
Ia	=	500	mA. max.
Vl	=	16	V.

	Vi(max)	**Vc**	**Ico**
fig. 1(1)	3500 V	3150- 5000 V	1 A
fig. 2	3500 V	4100- 5000 V	1,5 A
fig. 3	3500 V	4500- 5000 V	2 A
fig. 4	7000 V	6300-10000 V	1 A
fig. 5	7000 V	9500-10000 V	1,5 A
fig. 6	7000 V	9000-10000 V	2 A

$Wo = 1600$-2400 Wtt

$D = 90 \, ^m/_m$

$L = 315 \, ^m/_m$

Huls-Culot: Edison

(1) DCG $^1/_{150}$

PENTHODE
(E)

Vf	=	1,0	V.
If	=	0,6	A.
Va(max)	=	150	V.
Ia	=	12	mA.
Vg1	=	—15	V.
Vg2	=	150	V.
S(max)	=	1,2	mA/V.
S(norm)	=	1,2	mA/V.
g	=	60	
Ri(norm)	=	50.000	Ω
Rk	=	1.250	Ω
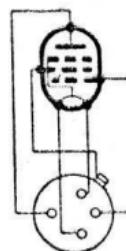
D 143

TRIODE
(E)

Vf	=	4,0	V.
If	=	0,65	A.
Va(max)	=	250	V.
Ia	=	40	mA.
Vgl	=	—40	V.
S(max)	=	3,5	mA/V.
S(norm)	=	2,7	mA/V.
$\overset{z}{g}$	=	3,5	
Ri(norm)	=	1.300	Ω
Ra	=	3.500	Ω
Rk	=	1.000	Ω
Wa(max)	=	10	Wtt.
Wo(10%)	=	1,7	Wtt.
Cagl	=	7	$\mu\mu$F.

D 404
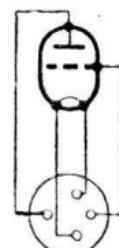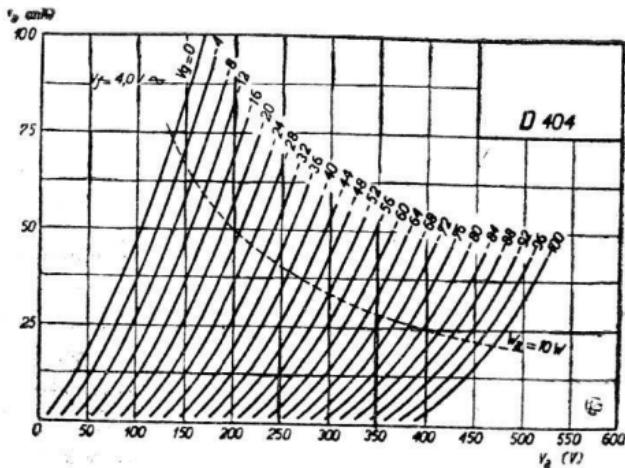
TRIODE
(E)

Vf	=	4,0	V.
If	=	0,45	A.
Va(max)	=	250	V.
Ia	=	30	mA.
Vgl	=	—16	V.
S(max)	=	60	mA/V.
S(norm)	=	4,0	mA/V.
g	=	10,0	
Ri(norm)	=	2.500	Ω
Rk	=	500	Ω
Wa(max)	=	7,5	Wtt.
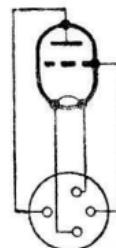
D 410

TRIODE
(Univ)

Vf	=	4,0	V.
If	=	0,7	A.
Va(max)	=	200	V.
Ia	=	1,7	mA.
Vgl	=	—9	V.
S(max)	=	0,4	mA/V.
g	=	10	
Ri(norm)	=	25.000	Ω

E
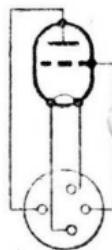
TRIPLE DIODE

Vf	$=$	6,3	V.
If	$=$	0,2	A.
Cd1 - d2	$=$	$<0,65$	$\mu\mu$F.
Cd1 - d3	$=$	$<0,08$	$\mu\mu$F.
Cd2 - d3	$=$	$<0,4$	$\mu\mu$F.
Cd1k	$=$	1	$\mu\mu$F.
Cd2k	$=$	1,45	$\mu\mu$F.
Cd3k	$=$	2,25	$\mu\mu$F.
Vd1	$=$	200	V. max.
Vd2	$=$	200	V. max.
Vd3	$=$	200	V. max.
Id1	$=$	0,8	mA.
Id2	$=$	0,8	mA.
Id3	$=$	0,8	mA.
Vfk	$=$	75	V.
Rfk	$=$	20.000	Ω

Vd_1 ($Id_1 = 0,3 \ \mu A$) $= -1,3$ V
Vd_2 ($Id_2 = 0,3 \ \mu A$) $= -1,3$ V
Vd_3 ($Id_3 = 0,3 \ \mu A$) $= -1,3$ V

EAB 1
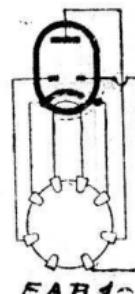
EBC 3

DUODIODE - TRIODE
(d DET + LF)

Vf	=	6,3	V.
If	=	0,2	A.
Va(max)	=	250	V.
Ia	=	5	mA.
Vgl	=	—5,5	V.
S(norm)	=	2,0	mA/V.
g	=	30	
Ri(norm)	=	15.000	Ω
Rk	=	1.100	Ω

EBC3
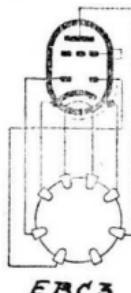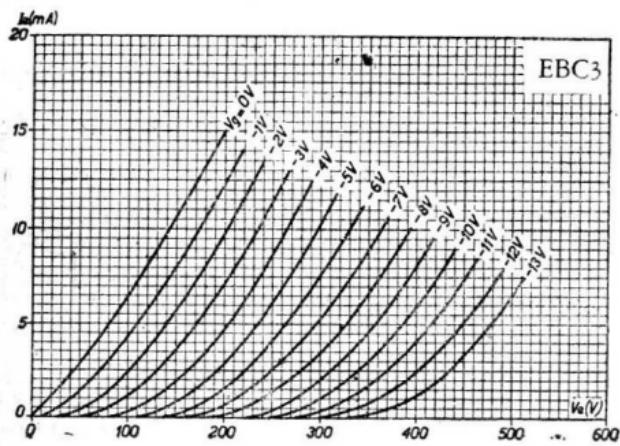
DUODIODE - PENTHODE
(MF - d DET + LF - LF$_w$)

Vf	=	6,3	V.
If	=	0,3	A.
Va(max)	=	250	V.
Ia	=	9	mA.
Vg1	=	—3	V.
Vg2	=	125	V.
Ig2	=	2,3	mA.
Vg3 - (5)	=	0	V.
S(norm)	=	1,1	mA/V.
g	=	730	
Ri(norm)	=	650.000	Ω
Cagl	=	0,007	$\mu\mu$F.

EBF1
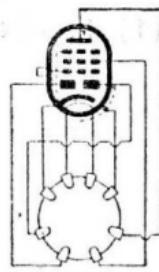
DUODIODE - PENTHODE
(MF)

Vf	=		6,3	V.
If	=		0,2	A.
Va	=		275	V.
Ia	=	6	<0,015	mA.
Vg1	=	—2	—55	V.
Vg2	=	100	275	V.
Ig2(1)	=	1,9	0	mA.
Vg3	=	0	0	V.
S(1)	=	1,8	<0,002	mA/V.
g(1)	=		2150	
Ri(norm)	=	1,2	>10	M.Ω
Rg2	=		90.000	Ω
Cd1 - a			<0,2	$\mu\mu$F.
Cd2 - a			<0,3	$\mu\mu$F.
Cd1 - g			<0,005	$\mu\mu$F.
Cd2 - g			<0,005	$\mu\mu$F.
Cd1 - d2			<0,5	$\mu\mu$F.
Cag			<0,003	$\mu\mu$F
Ci	=		4	$\mu\mu$F.
Co	=		6,8	$\mu\mu$F.

(1) Ia = 6 mA.
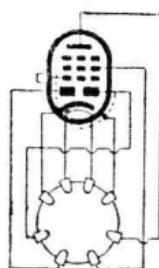
EBF 2

DUODIODE - PENTHODE
(d DET - E)

Vf	=	6,3	V.
If	=	1,5	A.
Va(max)	=	250	V.
Ia	=	36	mA.
Vg1	=	—6	V.
Vg2	=	250	V.
Ig2	=	5	mA.
S(norm)	=	9,5	mA/V.
Ri(norm)	=	50.000	Ω
Ra	=	7.000	Ω
Rk	=	150	Ω
Wa(max)	=	9	Wtt.
Wo	=	4,3	Wtt.

ABL1-EBL1

EBL1

DUODIODE
(d DET)

Vf	=	6,3	V.
If	=	0,25	A.

ᵐ EB1
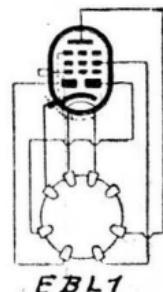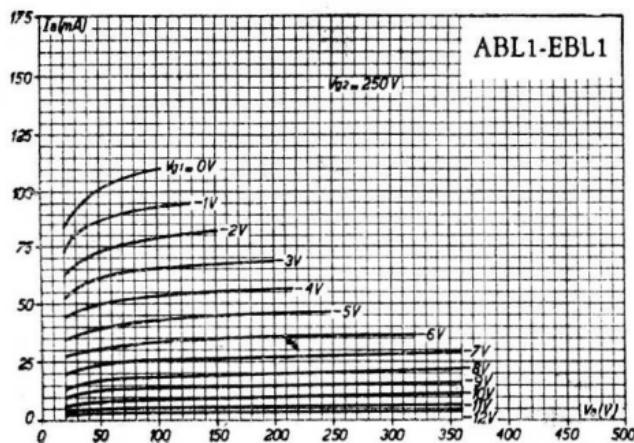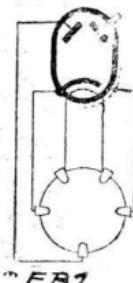
DUODIODE
(d DET)
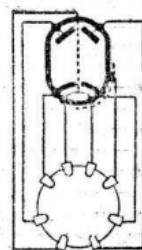
Vf	=		6,3	V.
If	=		0,2	A.

TRIODE
(OSC - G . DET$_T$ - LF$_T$ - LF$_W$)

Vf	=	6,3	V.
If	=	0,4	A.
Va(max)	=	250	V.
Ia	=	6,0	mA.
Vgl	=	—5,5	V.
S(norm)	=	2,5	mA/V.
g	=	30	
Ri(norm)	=	12.000	Ω
Rk	=	900	Ω
Cagl	=	1,7	$\mu\mu$F.

AC2-CC2-EC2

EC 2
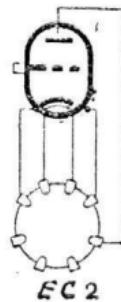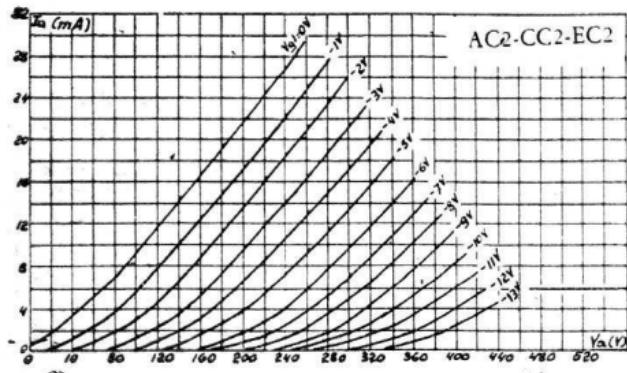
EFM 1 EFM 1

(A - I)

Vf	=		6,3	V.
If	=		0,2	A.
Va	=		275	V.
Ra	=		0,13	M.Ω
Vg2	=		275	V.
Rg2	=		0,17	M.Ω
Vg1	=	—2	—30	V.
Ia	=		1,3	mA.
Ig2	=		1,2	mA.
Vg1	=		0	V.
g	=	75	15	
Lichtsector		310°	350°	
Secteur lumineux				
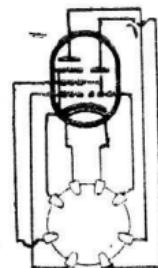
EFM 1

PENTHODE
(HF - MF - A . DET$_W$ - LF$_W$)

Vf	=	6,3	V.
If	=	0,4	A.
Va(max)	=	250	V.
Ia	=	3,0	mA.
Vg1	=	—2,0	V.
Vg2	=	100	V.
Ig2	=	0,9	mA.
S(norm)	=	2,3	mA/V.
g	=	4000	
Ri(norm)	=	1,7	M.Ω
Cag1	=	<0,003	$\mu\mu$F.

E F l
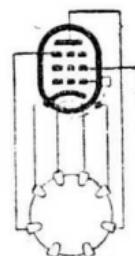
PENTHODE
(HF - MF)

Vf	=		6,3	V.
If	=		0,4	A.
Va(max)	=		250	V.
Ia	=	4,5	<0,015	mA.
Vg1	=	—2	—22	V.
Vg2	=		100	V.
Ig2	=		1,4	mA.
S(norm)	=	2,2	<0,002	mA/V.
g	=		3000	
Ri(norm)	=	1,4	10	M.Ω
Cag1	=		<0,003	$\mu\mu$F.

E F 2
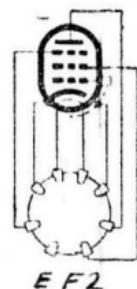
PENTHODE
(HF - MF)

V_f	=	6,3	V.				
I_f	=	0,2	A.				
V_a(max)	=	250		250		250	V.
I_a	=	8	<0,015	7,5	<0,015	4	<0,015 mA.
V_{g1}	=	−3	−50	−2	−45	−2	−35 V.
V_{g2}	=	100		85		60	V.
I_{g2}	=	2,6		2,3		1,3	mA.
V_{g3-5}	=	0		0		0	V.
S(norm)	=	1,7	<0,002	1,85	<0,002	1,4	<0,002 mA/V.
g	=	2000		2200		2000	
R_i(norm)	=	2,5		1,2	>10	1,2	>10 M.Ω
C_{ag1}		<0,003					

EF5
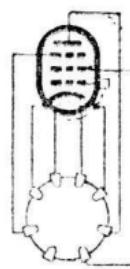
PENTHODE

(HF - MF - G . DET$_w$ - A . DET$_w$ - LF$_w$)

Vf	=	6,3	V.
If	=	0,2	A.
Va(max)	=	250	V.
Ia	=	3	mA.
Vg1	=	—2	V.
Vg2	=	100	V.
Ig2	=	1,1	mA.
Vg3 - (5)	=	0	V.
S(norm)	=	2,0	mA/V.
g	=	5.000	
Ri(norm)	=	2,5	M.Ω
Cag1		<0,003	$\mu\mu$F.

E F 6
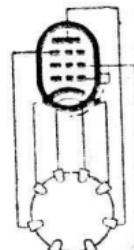
HEXODE (2)
(H F)

Vf	=		6,3	V.
If	=		0,2	A.
Va	=		275	V.
Ia	=		8	mA.
Vg1	=	—2,5	—3,3	V.
Vg2	=		0	V.
Ig3(1)	=	0,22	0,28	mA.
Vg3	=	250	275	V.
Vg4	=		0	V.
S(1)	=	1,8	1,5	mA/V.
g(1)	=	650	600	
Ra(1)	=	0,36	0,4	M.Ω
Cag	=		<0,007	μμF.
Cg1	=		4,9	μμF.
Ca	=		7,8	μμF.

(1) Ia = 8 mA.
(2) Geruischloos — à faible bruit de fond

EF 8
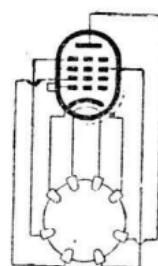
PENTHODE
(HF - MF)

Vf	=		6,3	V.
If	=		0,2	A.
Va	=		275	V.
Ia	=	6	$<$0,015	mA.
Vg1	=	—2	—55	V.
Vg2	=	100	275	.V
Ig2	=	1,8	0	mA.
S(1)	=	2,1	$<$0,002	mA/V.
g(1)	=		3100	
Ri(1)	=	1,5	$>$10	M.Ω
Rg2	=		95.000	Ω
Cag	=		$<$0,003	$\mu\mu$F.
Cg1	=		5,2	$\mu\mu$F.
Ca	=		7,0	$\mu\mu$F.

(1) Ia = 6 mA.

EF9

HEPTODE
(MOD - HF - MF)

Vf	=		6,3	V.
If	=		0,2	A.

MOD

Va(max)	=		250		V.
Ia	=	1,85	<0,015	1,80	<0,015 mA.
Vgl	=	—3		—25	V.
Vg2	=	100		80	V.
Ig2 + Ig4	=	3,8		3,5	mA.
Rg3	=	0,5			M.Ω
Vg3-5	=		10		V.
Vg4	=	100		80	V.
S(norm)	=	0,4(1)	<0,01	0,4(2)	<0,01mA/V.
Ri(norm)	=	2		>10	M.Ω

(1) Vosc = 14 Veff.
(2) Vosc = 10 Veff.

EH2
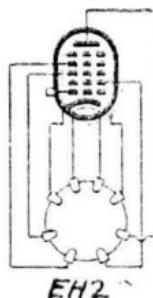
HF - MF

$V_a(max)$	=		250	250		V.
I_a	=	4,2	<0,015	4,0	<0,015	mA.
V_{g1}	=	—3	—25	—2	—20	V.
V_{g2}	=	100		80		V.
$I_{g2}+I_{g4}$	=	2,8		2,5		mA.
$V_{g3}+5$	=	—3	—25	—2	—20	V.
V_{g4}	=	100		80		V.
$S(norm)$	=	1,4	<0,002	1,4	<0,002	mA/V.
$R_i(norm)$	=	1		>10		M.Ω
C_{ag1}	=			0,0015		$\mu\mu$F.

OCTODE
(OSC - MOD)

Vf	=		6,3	V.
If	=		0,4	A.
Va(max)	=		250	V.
Ia	=	1,6	<0,015	mA.
Vg1	=		—1,5	V.
Vg2	=		90	V.
Ig2	=		2(1)	mA.
Vg3 - (5)	=		70	V.
Vg4	=		—1,5 —25	V.
S(norm)	=	0,6(2)	<0,001	mA/V.
Ri(norm)	=	1,6	>10	M.Ω
Cag4	=		<0,06	$\mu\mu$F.

(1) Ig_{3+5} = 3,8 mA.
(2) Vosc = 8,5 Veff.

EKI
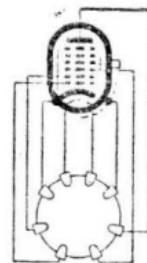
OCTODE
(OSC - MOD)

Vf	=		6,3	V.
If	=		0,2	A.
Va	=	200	250	V.
Ia	=	1,2	$<0,015$	mA.
Vg1	=		0	V.
Vg2	=		200	V.
Ig2	=		2,1(1)	mA.
Vg3 - (5)	=	50(2)	80(3)	V.
Vg4	=	—2	—25	V.
S(norm)	=	0,55(4)	$<0,002$	mA/V.
Ri(norm)	=	1,5	>10	M.Ω
Cag4	=		$<0,07$	$\mu\mu$F.

(1) $Ig_3 + Ig_5 = 1,1$ mA.
(2) 100 - 1500 kHz.
(3) $>$1500 kHz.
(4) Vosc $= 9$ V.eff.

EK 2
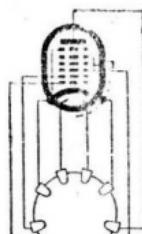
OCTODE
(OSC - MOD)

Vf	$=$		6,3	V.
If	$=$		0,73	A.
Va	$=$	100	275 (max)	V.
Ia	$=$	1,2	2	mA.
Vg1	$=$	8	8	Veff.
Vg2	$=$	100	135	V.
Ig2	$=$	3,2	6	mA.
Ig2(1)	$=$	16	20	mA.
Vg3 + 5	$=$	90	100	V.
Vg4	$=$	—1,5	—2	V.
Ig1	$=$	190	190	μA.
Ig3 + 5	$=$	5	7	mA.
Sc	$=$	500	650	μA/V.
Rg1	$=$	50.000	50.000	Ω

(1) $Vg_1 = 0$ V.

EK3
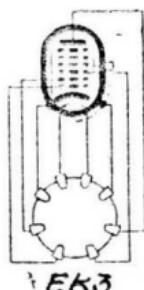
ELL 1 ELL 1

DUO - PENTHODE
(E)

Vf	=	6,3	V.
If	=	0,45	A.
Va	=	250	V.
Ia	=	2×15	mA.
Vg2	=	265	V.
Ig2	=	$2 \times 2,5$	mA.
Ra	=	16.000	Ω
Rk	=	600	Ω
Wo(3,7%)	=	5,4	Wtt.
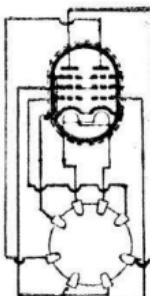
ELL1

PENTHODE
(E)

V_f	=	6,3	V.
I_f	=	0,4	A.
$V_a(max)$	=	250	V.
I_a	=	32	mA.
V_{g1}	=	—19	V.
V_{g2}	=	250	V.
I_{g2}	=	3,3	mA.
$S(norm)$	=	2,6	mA/V.
$R_i(norm)$	=	48.000	Ω
R_a	=	7.000	Ω
R_k	=	540	Ω
$W_a(max)$	=	8	Wtt.
W_o	=	2,8	Wtt.

EL 1

PENTHODE
(E)

Vf	$=$		6,3	V.
If	$=$		0,2	A.
Va(max)	$=$	250	200	V.
Ia	$=$	32	25	mA.
Vg1	$=$	—18	—14	V.
Vg2	$=$	250	200	V.
Ig2	$=$	5	4	mA.
S(norm)	$=$	2,8	3	mA/V.
Ri(norm)	$=$		70.000	Ω
Ra	$=$		8.000	Ω
Rk	$=$	490	480	Ω
Wa(max)	$=$		8	Wtt.
Wo	$=$	3,6	2,3	Wtt.

PENTHODE
(E)

V_f	=	6,3	V.
I_f	=	1,2	A.
$V_a(max)$	=	250	V.
I_a	=	36	mA.
V_{g1}	=	—6	V.
V_{g2}	=	250	V.
I_{g2}	=	5	mA.
$S(norm)$	=	9,5	mA/V.
$R_i(norm)$	=	50.000	Ω
R_a	=	7.000	Ω
R_k	=	150	Ω
$W_a(max)$	=	9	Wtt.
W_o	=	4,3	Wtt.
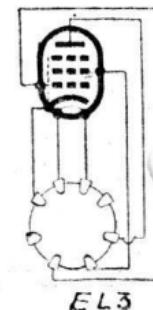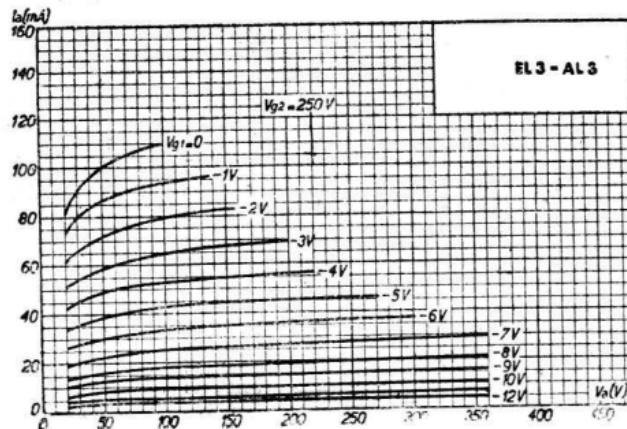
PENTHODE
(E)

Vf	=		6,3	V.
If	=		1,35	A.
Va(max)	=	250(1)	250(2)	V.
Ia	=	72	2×58(3)	mA.
Vg1	=		—14	V.
Vg2	=	275	275	V.
Ig2	=	7	$2 \times 6,25$	mA.
S(norm)	=		8,5	mA/V.
Ri(norm)	=		22.000	Ω
Ra	=	3500	4500	Ω
Rk	=	175	120	Ω
Wa(max)	=		18	Wtt.
Wo	=	8,8	19,5	Wtt.

(1) E_A. (2) E_B. (3) Ia(max) = 2×65 mA.
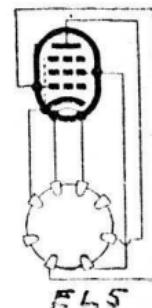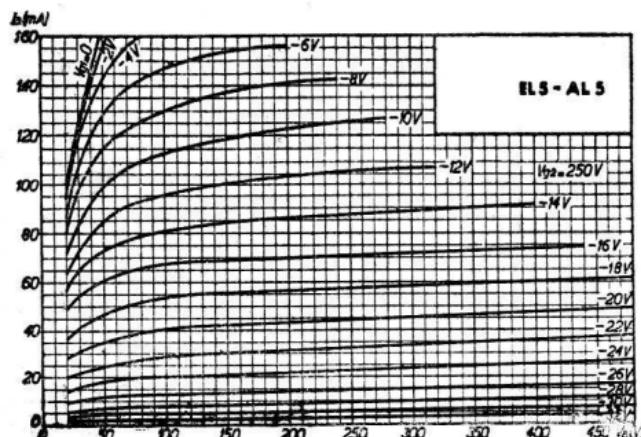
PENTHODE
(E)

Vf	=	6,3	V.
If	=	1,35	A.
Va(max)	=	250	V.
Ia	=	72	mA.
Vg1	=	—8	V.
Vg2	=	265	V.
Ig2	=	8,5	mA.
S(norm)	=	14,5(1)	mA/V.
Ri(norm)	=	17.500(1)	Ω
Ra	=	3.500	Ω
Rk	=	100	Ω
Wa(max)	=	18	Wtt.
Wo	=	8,5	Wtt.

(1) Ia = 72 mA.

EL6

EM 1   EM 1

(A 1)
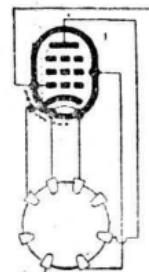
Vf	=		6,3	V.
If	=		0,2	A.
Va(max)	=		250	V.
Ia	=	0,095	0,021	mA.
Vgl	=	0	—5	V.
(-)	=	10°	90°	
Is	=	0,13	0,14	mA.
Ra(norm)	=		2,0	M Ω

EM 3   EM 3

(A 1)

Vf	=		6,3	V.
If	=		0,2	A.
Va	=	200	250	V.
Ra	=	1	1	MΩ
Vg	=	0	0	V.
Is(Vg=oV)	=	0,25	0,3	mA.
0a(Vg=oV)	=	175	220	μA.
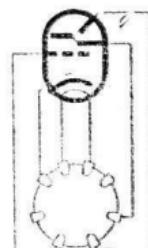
EMI
EM 3

31-12-38

EZ 1

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	6,3	V.
If	=	0,5	A.
Va(max)	=	2×250	V.
Ia	=	50	mA.

EZ1
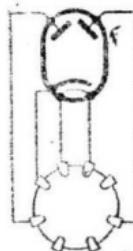
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

V_f	=		6,3	V.
I_f	=		0,4	A.
V_a	=	2×350 V.	I_a = 60	mA.
V_a	=	2×300 V.		
D	=		37	$^m/_m$
L	=		85	$^m/_m$
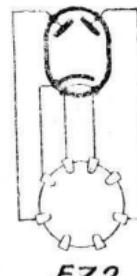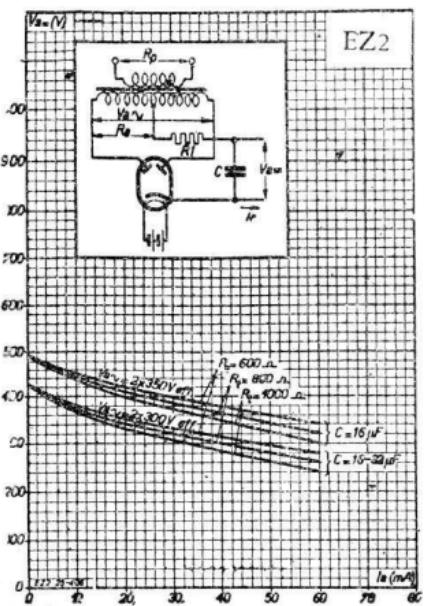
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC) (1)

Vf	=		6,3		V.
If	=		0,65		A.
Va(max)	=	2×300	2×350	2×400	V.
Ia(max)	=	100	100	100	mA.
C(max)(2)	=	32	16	16	μF.

(1) De kathode steeds met gloeidraad verbinden.

(1) Connecter toujours la cathode au filament.

(2) Eerste afvlakcondensator.

(2) Premier condensateur de filtrage.
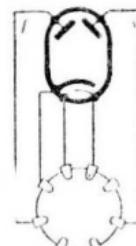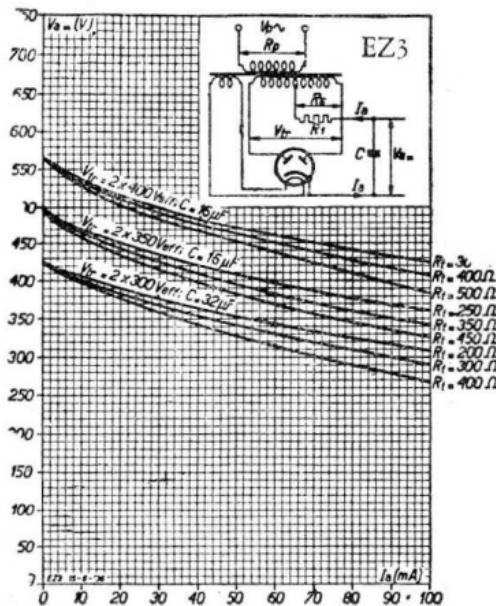
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=		6,3	V.
If	=		0,9	A.
		(	2×400	V.
Va	=	(	2×350	V.
		(	2×300	V.
Ia	=		175	mA.
L	=		85	m/m
D	=		37	m/m

EZ4

2x400 V. C=16 µF
2x350 V. C=16 µF
2x300 V. C=32 µF

R1=300 Ω
400 Ω
250 Ω
300 Ω
400 Ω

200 Ω
300 Ω
400 Ω

EZ 4
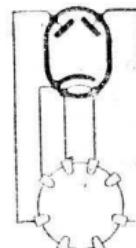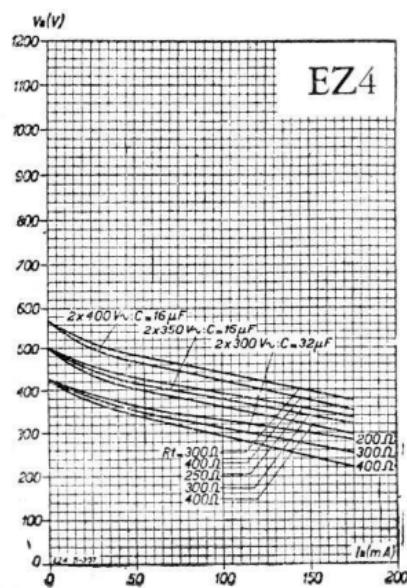
Vf	$=$	4,0	V.
If	$=$	1,0	A.
Va(max)	$=$	250	V.
Ia	$=$	48	mA.
Vgl	$=$	—24	V.
S(max)	$=$	6,0	mA/V.
S(norm)	$=$	4,0	mA/V.
g	$=$	6	
Ri(norm)	$=$	1,500	Ω
Ra	$=$	2.500	Ω
Rk	$=$	460	Ω
Wa(max)	$=$	12	Wtt.
Wo(10%)	$=$	1,75	Wtt.
Cagl	$=$	2,9	$\mu\mu$F.

E 406

E 406
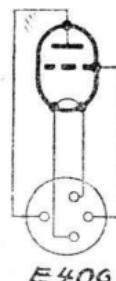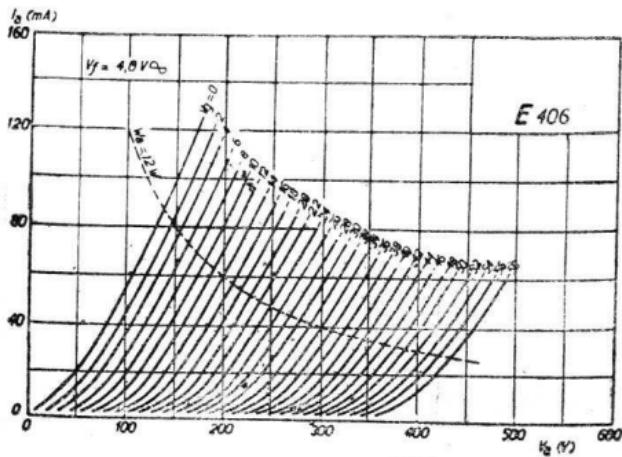
TRIODE
(E)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	400	V.
Ia	=	30	mA.
Vgl	=	—36	V.
S(max)	=	4,5	mA/V.
S(norm)	=	2,7	mA/V.
g	=	8	
Ri(norm)	=	3.000	Ω
Ra	=	6.000	Ω
Rk	=	1.200	Ω
Wa(max)	=	12	Wtt.
Wo(10%)	=	2,6	Wtt.
Cagl	=	6,8	$\mu\mu$F.
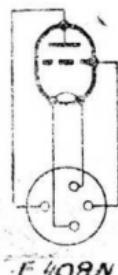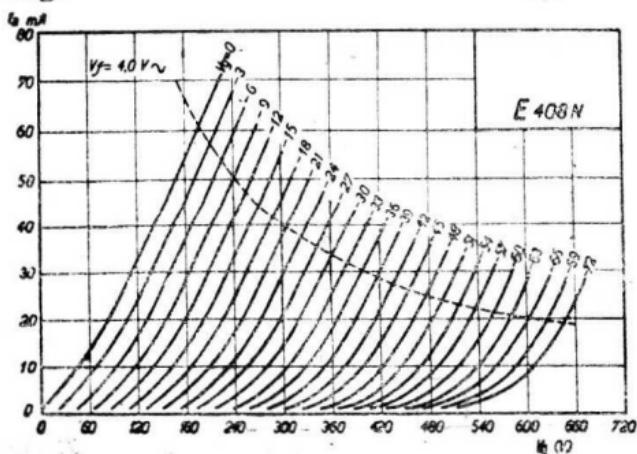
TRIODE
(E)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	200	V.
Ia	=	12	mA.
Vgl	=	—16	V.
S(max)	=	4	mA/V.
S(norm)	=	1,3	mA/V.
g	=	9	
Ri(norm)	=	7.000	Ω
Rk	=	1.330	Ω
Wa(max)	=	3	Wtt.
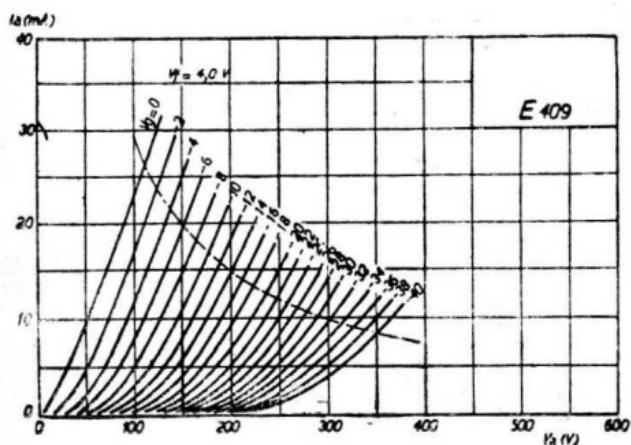
TRIODE
(OSC - G . DET$_{TW}$ - LF$_{TW}$)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	200	V.
Ia	=	6,0	mA.
Vgl	=	—8	V.
S(max)	=	2,4	mA/V.
S(norm)	=	1,4	mA/V.
g	=	15	
Ri(norm)	=	11.000	Ω
Cagl	=	3,5	$\mu\mu$F.

— 135 —
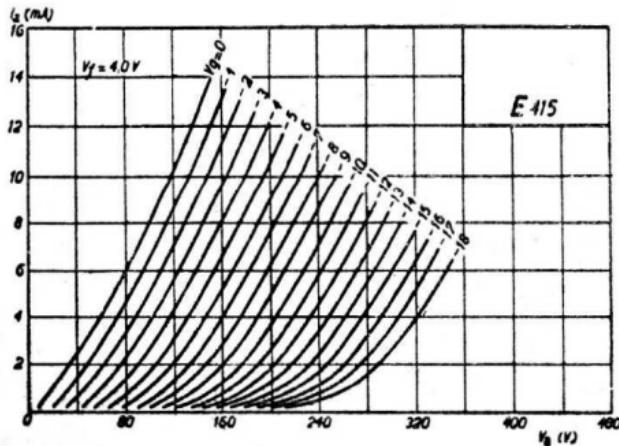
E 424

TRIODE

(OSC - G . DET$_{TW}$ - LF$_{TW}$)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	200	V.
Ia	=	6,0	mA.
Vgl	=	—35	V.
S(max)	=	3,5	mA/V.
S(norm)	=	2,4	mA/V.
g	=	30	
Ri(norm)	=	12.500	Ω
Cagl	=	2	$\mu\mu$F.
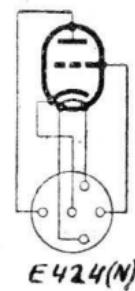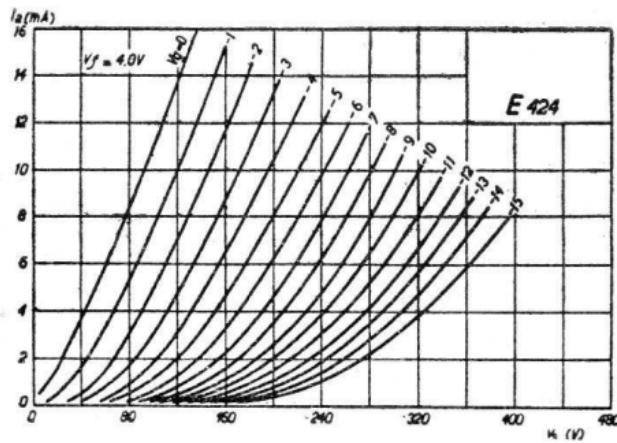
E 424(N)

TRIODE
(OSC - DET - LF)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	200	V.
Ia	=	6	mA.
Vgl	=	3,5	V.
S(max)	=	3,5	mA/V.
S(norm)	=	2,4	mA/V.
g	=	24	
Ri(norm)	=	10.000	Ω
Rk	=	580	Ω
Cagl	=	2,0	$\mu\mu$F.
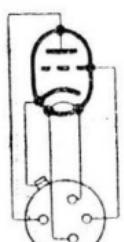
E424(N)

E 424 N
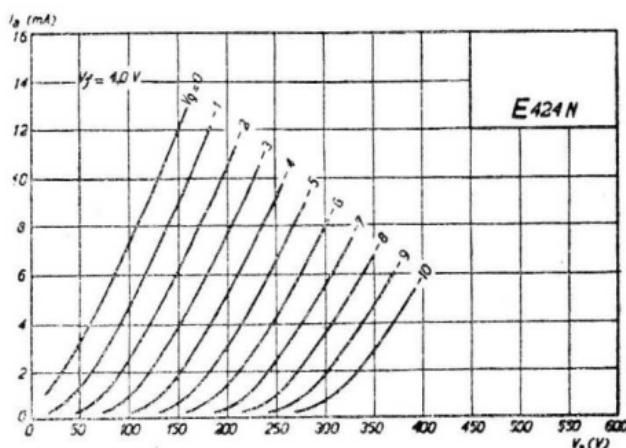
TRIODE
(OSC - G . DET$_{TW}$ - LF$_{TW}$)

Vf	$=$	4,0	V.
If	$=$	0,88	A.
Va(max)	$=$	150	V.
Ia	$=$	3	mA.
Vgl	$=$	—4,5	V.
S(max)	$=$	3	mA/V.
g	$=$	25	
Ri(norm)	$=$	8.500	Ω
Rk	$=$	1.500	Ω
Cagl	$=$	2,5	$\mu\mu$F.
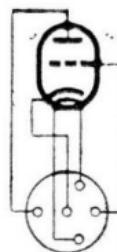
E 425

TRIODE

(OSC - DET$_T$ - G . DET$_W$ - LF$_T$ - LF$_W$)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	200	V.
Ia	=	6,0	mA
Vgl	=	—3,5	V.
S(max)	=	3,5	mA/V.
S(norm)	=	2,4	mA/V.
g	=	28	
Ri(norm)	=	11.500	Ω
Rk	=	580	Ω
Cagl	=	2	$\mu\mu$F.
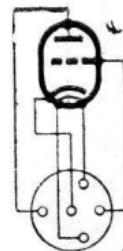
E 428

TRIODE
(G . DET$_W$ - A . DET$_W$ - LF$_W$)

Vf	=		4,0	V.
If	=		1,0	A.
Va(max)	=		200	V.
Ia	=	0,3	0,1	mA.
Vgl	=		—2,5	V.
S(max)	=		1,5	mA/V.
g	=		38	
Ri(norm)	=	0,12	0,4	M.Ω
Ra	=	0,3	1	M.Ω
Rk	=	8	25	k.Ω
Cagl	=		3,0	$\mu\mu$F.
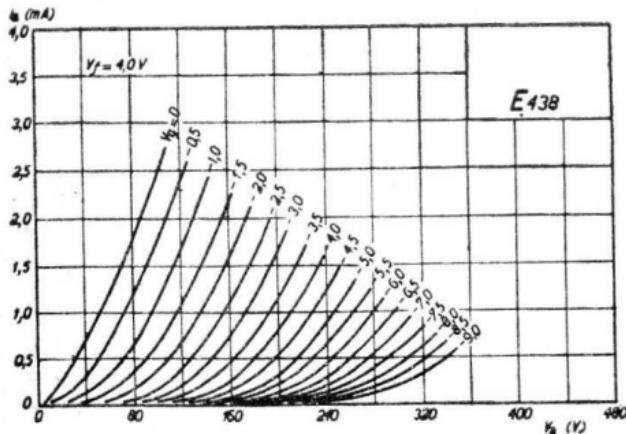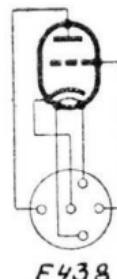
DUBBELROOSTERLAMP
BIGRILLE
(OSC - MOD)

Vf	=	4,0	V.
If	=	0,9	A.
Va(max)	=	100	V.
Ia	=	1,7	mA.
Vg1	=	0	V.
Vg2	=	0	V.
S(norm)	=	0,1(1) 1,0(2)	mA/V.

(1) g_1
(2) g_2

E441(N)   E441(N)
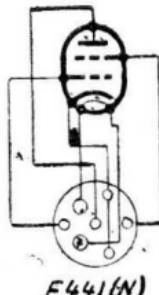
TETRODE
(HF - MF)

V_f	$=$	4,0	V.
I_f	$=$	1,0	A.
$V_a(max)$	$=$	200	V.
I_a	$=$	1,5	mA.
V_{g1}	$=$	$-1,3$	V.
V_{g2}	$=$	100	V.
I_{g2}	$=$	0,6	mA.
$S(max)$	$=$	1,2	mA/V.
$S(norm)$	$=$	0,9	mA/V.
g	$=$	700	
$R_i(norm)$	$=$	0,8	$M.\Omega$
C_{ag1}	$=$	0,005	$\mu\mu F.$

E 442   E 442
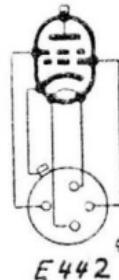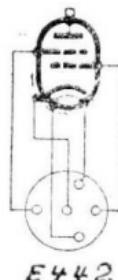
TETRODE
(HF - MF - A . DET$_W$ - LF$_W$)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	200	V.
Ia	=	4,0	mA.
Vg1	=	—2,0	V.
Vg2	=	60	V.
Ig2	=	0,5	mA.
S(max)	=	1,1	mA/V.
S(norm)	=	1,0	mA/V.
g	=	400	
Ri(norm)	=	0,4	M.Ω
Cag1	=	0,02	$\mu\mu$F.
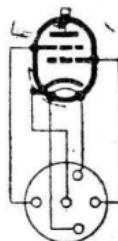
E442S

E 443 H

PENTHODE
(E)

Vf	$=$	4,0	V.
If	$=$	1,1	A.
Va(max)	$=$	250	V.
Ia	$=$	36	mA.
Vg1	$=$	—15	V.
Vg2	$=$	250	V.
Ig2	$=$	6,8	mA.
S(max)	$=$	3,5	mA/V.
S(norm)	$=$	3,0	mA/V.
g	$=$	130	
Ri(norm)	$=$	43.000	Ω
Ra	$=$	7.000	Ω
Rk	$=$	330	Ω
Wa(max)	$=$	9	Wtt.
Wo(10%)	$=$	3,1	Wtt.
Cag1	$=$	1,1	$\mu\mu$F.
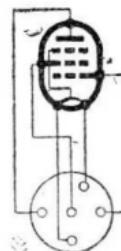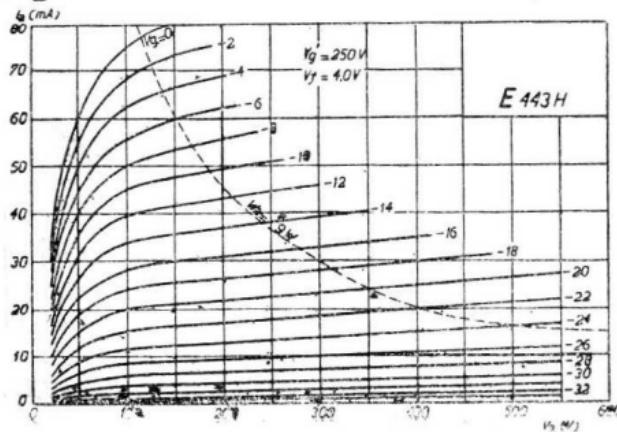
E 443 H

PENTHODE
(E)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	400	V.
Ia	=	30	mA.
Vg1	=	—40	V.
Vg2	=	200	V.
Ig2	=	5,4	mA.
S(max)	=	3,5	mA/V.
S(norm)	=	1,9	mA/V.
g	=	75	
Ri(norm)	=	40.000	Ω
Ra	=	14.000	Ω
Rk	=	1.330	Ω
Wa(max)	=	12	Wtt.
Wo	=	5,4	Wtt.
Cag1	=	0,9	$\mu\mu$F.

E 443 N
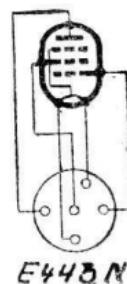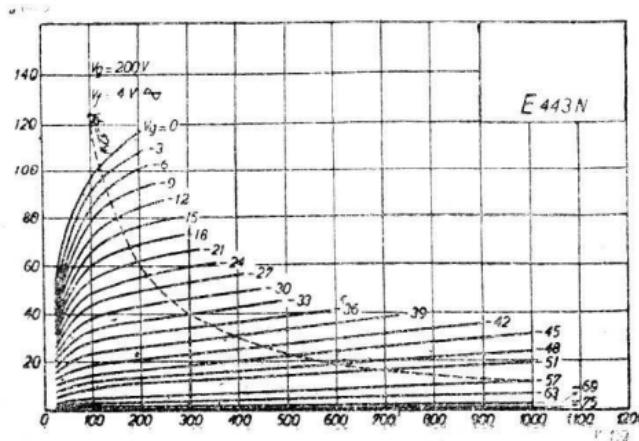
DIODE - TETRODE
(d DET + LF)

Vf	=		4,0	V.
If	=		1,1	A.
Va(max)	=		200	V.
Ia	=	0,35	0,9	mA.
Vg1	=		—2,3	V.
Vg2	=	33	45	V.
S(max)	=		3,0	mA/V.
g	=		1000/800	
Ri(norm)	=	2,5	1	M.Ω
Ra	=	0,3	0,1	M.Ω
Cagl	=		0,003	μμF.

E 444   E 444
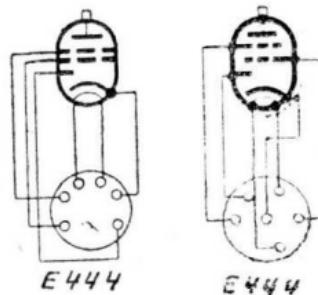
DIODE - TRIODE
(d DET + LF)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	200	V.
Va	=	6,0	mA.
Vgl	=	—3,5	V.
S(max)	=	2,5	mA/V.
S(norm)	=	2,0	mA/V.
g	=	30	
Ri(norm)	=	15.000	Ω
Rk	=	580	Ω
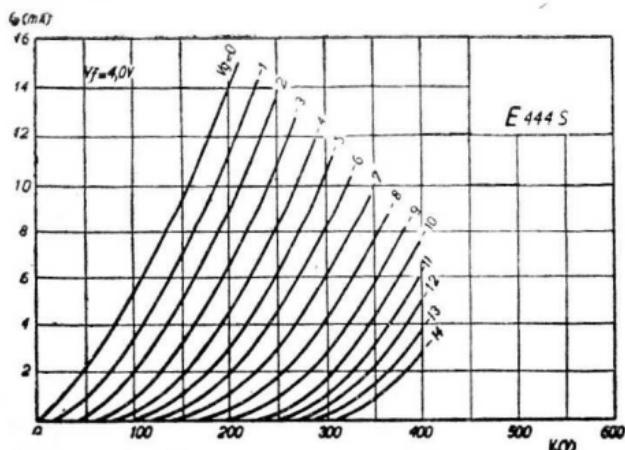
TETRODE - SELECTODE
(HF, MF, MOD)

V_f	$=$		4,0	V.
I_f	$=$		1,1	A.
$V_a(max)$	$=$		200	V.
I_a	$=$	6,0	0,01	mA.
V_{g1}	$=$	—2,0	—40	V.
V_{g2}	$=$		100	V.
I_{g2}	$=$		0,8	mA.
$S(max)$	$=$		1,2	mA/V.
$S(norm)$	$=$	1,0	0,005	mA/V.
g	$=$		300	
$R_i(norm)$	$=$	0,3	$>$10	M.Ω
C_{ag1}	$=$		0,003	$\mu\mu$F.

E445
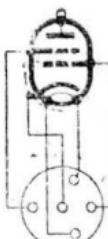
PENTHODE
$(HF - MF - MOD - A . DET_w - LF_w)$

Vf	$=$	4	V.
If	$=$	1,1	A.
$Va(max)$	$=$	200	V.
Ia	$=$	2	mA.
$Vg1$	$=$	—2	V.
$Vg2$	$=$	100	V.
$Ig2$	$=$	1,1	mA.
$S(max)$	$=$	3,5	mA/V.
$S(norm)$	$=$	2,3	mA/V.
g	$=$	5.000	
$Ri(norm)$	$=$	2,2	$M.\Omega$
$Cag1$	$=$	$<0,006$	$\mu\mu F.$
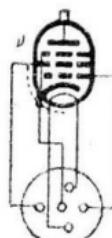
E446

PENTHODE - SELECTODE
(HF - MF - MOD)

Vf	=		4	V.
If	=		1,1	A.
Va(max)	=		200	V.
Ia	=	4,5	0,01	mA.
Vg1	=	−2	−50	V.
Vg2	=		100	V.
Ig2	=		1,8	mA.
S(max)	=		3,5	mA/V.
S(norm)	=	2,3	0,002	mA/V.
g	=		2.300	
Ri(norm)	=	1	>0,002	M.Ω
Cag1	=		<0,006	μμF.
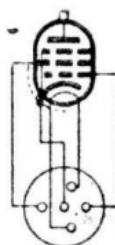
E 447

HEXODE
(OSC - MOD)

Vf	=	4	V.
If	=	1,2	A.
Va(max)	=	200	V.
Ia	=	3	mA.
Vg1	=	—1,5	V.
Vg2	=	100	V.
Ig3	=	8,5	mA.
Vg3 - (5)	=	200	V.
Vg4	=	—4	V.
S(norm)	=	<0,58(1)	mA/V.
Ri(norm)	=	>0,15	M.Ω

(1) V_{osc} = 9 V eff.

E 448
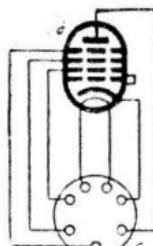
HEXODE - SELECTODE
(HF - MF)

Vf	=		4	V.
If	=		1,2	A.
Va(max)	=		200	V.
Ia	=		3	mA.
Vg1	=	—2	—15	V.
Vg2	=		80	V.
Vg3 - (5)	=	—2	—7	V.
Vg4	=		80	V.
S(max)	=		3,0	mA/V.
S(norm)	=	1,8	<0,002	mA/V.
Ri(norm)	=	0,5	>5	M.Ω
Cag1			<0,002	$\mu\mu$F.
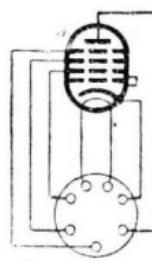
E449

E 451   E 451

TETRODE
(LF$_T$ - E)

Vf	=		4,0		V.
If	=		1,1		A.
Va(max)	=	250	300	400	V.
Ia	=	22	2×4	2×6	mA.
Vgl	=	—33	0(1)	0(1)	V.
S(norm)	=		2,4		mA/V.
g	=		5,5		
Ri(norm)	=		2400		Ω
Ra	=	6.400(2)	5.200(3)	5.800(3)	Ω
Rk	=		1.500		Ω
Wo(10%)	=	1,25	16	20	Wtt.

(1) Cl. B TRIODE $G_1 \rightarrow G_2$
(2) × 2 Vr ST.
(3) p → p
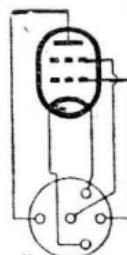
E451

TETRODE

(HF - MF - A . DET$_w$ - G . DET$_w$ - LF$_w$)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	200	V.
Ia	=	3,0	mA.
Vg1	=	—2	V.
Vg2	=	100	V.
Ig2	=	0,7	mA.
S(max)	=	3,0	mA/V.
S(norm)	=	2,0	mA/V.
g	=	900	
Ri(norm)	=	450.000	Ω
Rk	=	660	Ω
Cag1	=	0,003	$\mu\mu$F.

E452T

PENTHODE
(E)

Vf	=	4,0	V.
If	=	1,1	A.
Va(max)	=	250	V.
Ia	=	24	mA.
Vg1	=	—15	V.
Vg2	=	250	. V.
Ig2	=	10	mA.
S(max)	=	3,5	mA/V.
S(norm)	=	2,5	mA/V.
g	=	175	
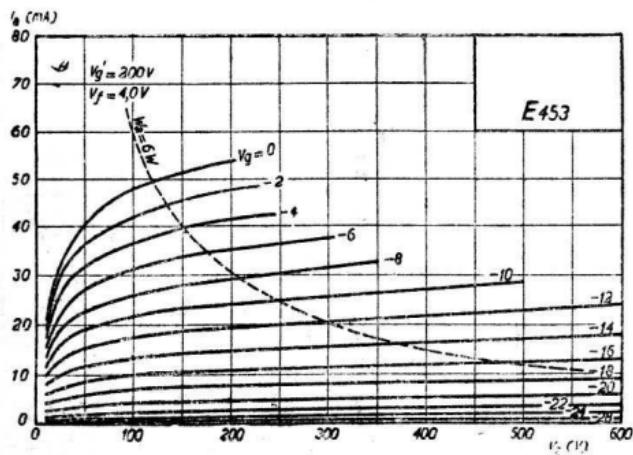
TETRODE - SELECTRODE
(HF - MF - MOD)

Vf	=		4,0	V.
If	=		1,0	A.
Va(max)	=		200	V.
Ia	=	3,00	0,01	mA.
Vg1	=	—1,5	— 40	V.
Vg2	=		100	V.
Ig2	=		0,8	mA.
S(max)	=		3,0	mA/V.
S(norm)	=	2,0	0,005	mA/V.
g	=		700	
Ri(norm)	=	0,35	>10	M.Ω
Rk	=	500Ω	4	M.Ω
Cag1	=		0,003	μμF.

E 455

TETRODE
(HF - MF - A . DET$_W$ - LF$_W$)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	200	V.
Ia	=	3,0	mA.
Vg1	=	—2,0	V.
Vg2	=	100	V.
Ig2	=	0,7	mA.
S(max)	=	3,0	mA/V.
S(norm)	=	2,0	mA/V.
g	=	900	
Ri(norm)	=	450.000	Ω
Rk	=	660	Ω
Cag1	=	0,003	$\mu\mu$F.
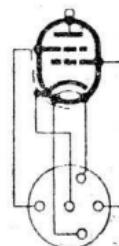
E 462

PENTHODE
(E)

Vf	=	4,0	V.
If	=	1,35	A.
Va(max)	=	250	V.
Ia	=	36	mA.
Vg1	=	—22	V.
Vg2	=	250	V.
Ig2	=	3,2	mA.
S(max)	=	4,0	mA/V.
S(norm)	=	2,7	mA/V.
g	=	100	
Ri(norm)	=	37.000	Ω
Ra	=	8.000	Ω
Rk	=	560	Ω
Wa(max)	=	9	Wtt.
Wo(10%)	=	4,1	Wtt.
Cag1	=	1	μμF.

$V_f = 4.0$ V
$V_g = 250$ V

E 463

Vg=0
—3
—6
—9
—12
—15
—18
—21
—24
—27
—30
—33
—36 —39
—42
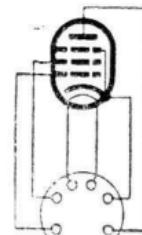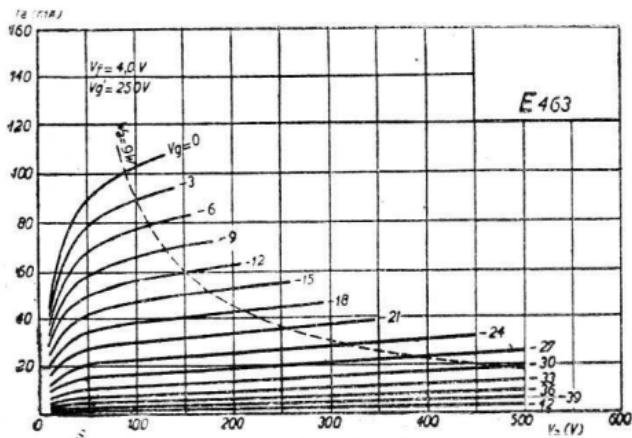
E 463

TRIODE
(G . DET$_W$ - A . DET$_W$ - LF$_W$)

Vf	=		4,0	V.
If	=		1,0	A.
Va(max)	=		200	V.
Ia	=	0,2	0,08	mA.
Vgl	=	—1,6	—1,5	V.
S(max)	=		4,0	mA/V.
g	=		99	
Ri(norm)	=	0,1	0,33	M.Ω
Ra	=	0,3	1	M.Ω
Rk	=	8.000	18.750	Ω
Cagl	=		1,5	$\mu\mu$F.

E 499

E 499
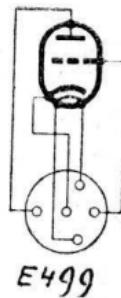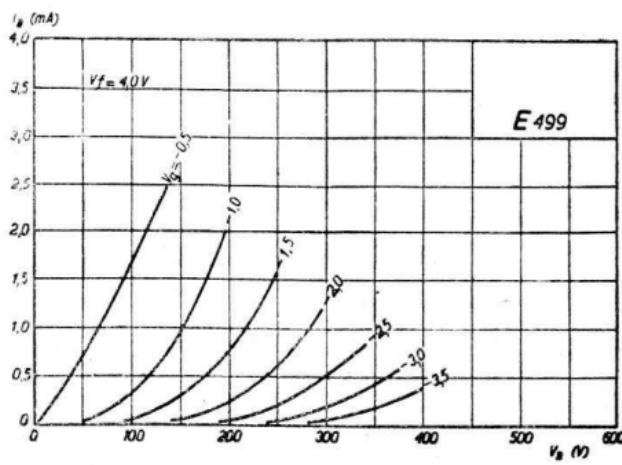
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	13	V.
If	=	0,25	A.
Va	=	2×250	V.
Ia	=	50	mA.
D	=	37	$^m/_m$
L	=	91	$^m/_m$

FZ1

$2 \times 250 V \sim$

FZ 1
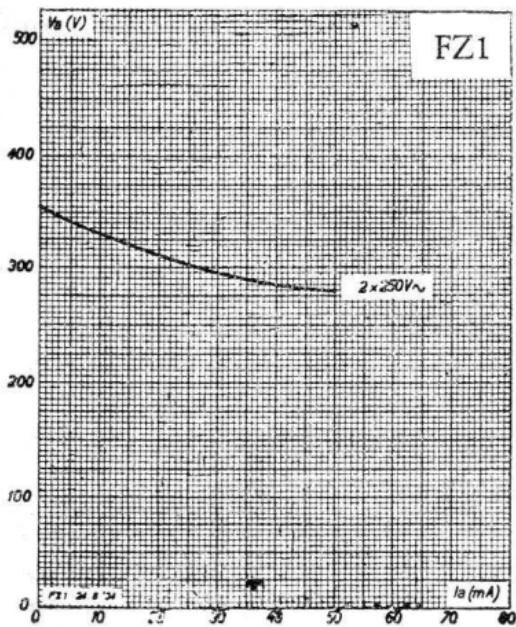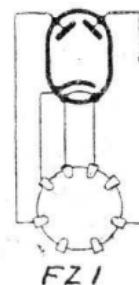
TRIODE
$(DET_T - LF_T)$

Vf	=	2,5	V.
If	=	1,5	A.
Va(max)	=	150	V.
Ia	=	6,5	mA.
Vgl	=	—6	V.
S(max)	=	2,0	mA/V.
S(norm)	=	1,7	mA/V.
g	=	15	
Ri(norm)	=	9.000	Ω
Rk	=	900	Ω

F2/5
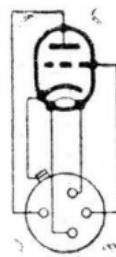
TRIODE
(E)

Vf	=	4,0	V.
If	=	2,0	A.
Va(max)	=	550	V.
Ia	=	45	mA.
Vgl	=	—36	V.
S(max)	=	8,0	mA/V.
S(norm)	=	4,0	mA/V.
g	=	10	
Ri(norm)	=	2.500	Ω
Ra	=	7.000	Ω
Rk	=	800	Ω
Wa(max)	=	25	Wtt.
Wo(10%)	=	5,9	Wtt.
Cagl	=	6	$\mu\mu$F.
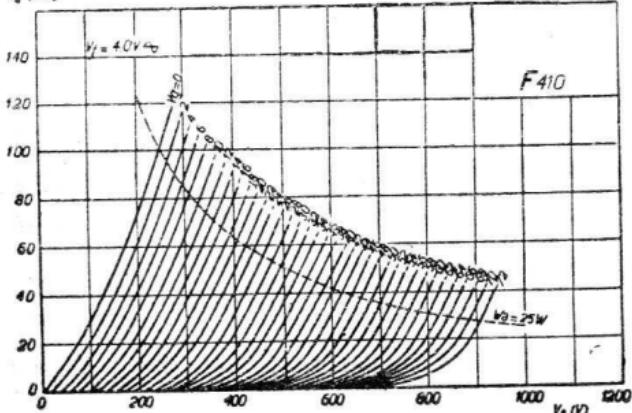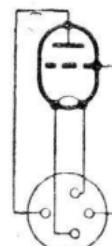
PENTHODE
(E)

Vf	=	4,0	V.
If	=	2,0	A.
Va(max)	=	550	V.
Ia	=	45	mA.
Vg1	=	—40	V.
Vg2	=	200	V.
Ig2	=	6,5	mA.
S(max)	=	5,0	mA/V.
S(norm)	=	3,0	mA/V.
g	=	100	
Ri(norm)	=	33.000	Ω
Ra	=	14.000	Ω
Rk	=	900	Ω
Wa(max)	=	25	Wtt.
Wo(10%)	=	11,5	Wtt.
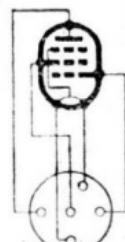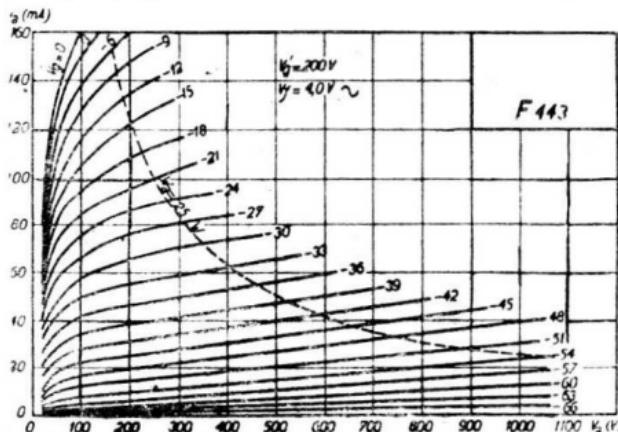
PENTHODE
(E)

Vf	=		4,0	V.
If	=		2,0	A.
Va	=	300	550	V.
Ia	=	83	45	mA.
Vgl	=	—40	—30	V.
Vg2	=	300	200	V.
Ig2	=	4,6	1,4	mA.
S(max)	=		6,0	mA/V.
S(norm)	=	3,9	3,2	mA/V.
g	=	80	100	
Ri(norm)	=	20.000	30.000	Ω
Ra	=	3.500	12.000	Ω
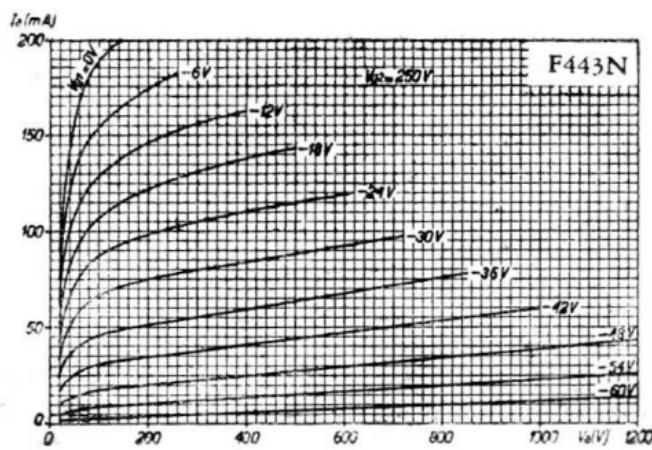
F 443 (N)

TRIODE
(LF$_T$)

Vf	=	4,0	V.
If.	=	1,4	A.
Va(max)	=	250	V.
Ia	=	10	mA.
Vgl	=	—2	V.
S(max)	=	7,0	mA/V.
S(norm)	=	5,5	mA/V.
g	=	60	
Ri(norm)	=	11.000	Ω
Rk	=	200	Ω
Cagl	=	2	$\mu\mu$F.
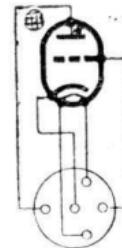
F460

TRIODE
(E)

Vf	=	7,5	V.
If	=	1,25	A.
Va(max)	=	450	V.
Ia	=	55 ·	mA.
Vgl	=	—84	V.
S(max)	=	2,1	mA/V.
g	=	3,8	
Ri(norm)	=	1.800	Ω
Ra	=	4.350	Ω
Rk	=	650	Ω
Wa(max)	=	25	Wtt.
Wo(10%)	=	4,6	Wtt.

F704
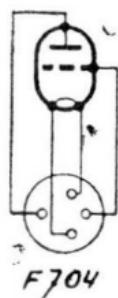
DUODIODE - TRIODE
(d . DET + LF)

Vf	=		2,0	V.
If	=		0,1	A.
Va(max)	=		135	V.
Ia	=		2,5	mA.
Vgl	=		—4,5	V.
S(norm)	=		1,0	mA/V.
g	=		16	
Ri(norm)	=		16.000	Ω
Rk	=		1.800	Ω

DUODIODE
(d . DET)

Vf	=	2,0	V.
If	=	0,095	A.

KB2
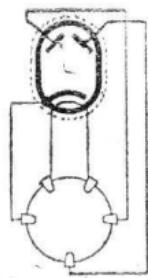
TRIODE

V_f	=		2,0	V.
I_f	=		0,065	A.
V_a	=	90	135	V.
I_a	=	0,3	1,2	mA.
V_{g1}	=	—1,5	—1,5	V.
S(norm)	=	0,4	0,6	mA/V.
R_i(norm)	=	60.000	48.000	Ω
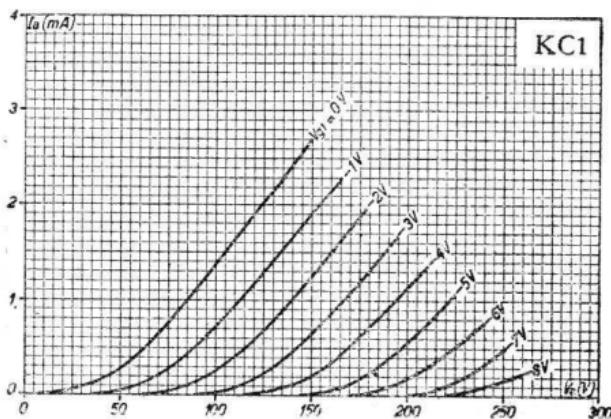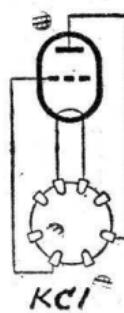
TRIODE
(LF_T)

Vf	=		2,0	V.
If	=		0,21	A.
Va(max)	=		135	V.
Ia	=		3,0	mA.
Vgl	=		—2,8	V.
S(norm)	=		2,5	mA/V.
g	=		30	
Ri(norm)	=		12.000	Ω
Rk	=		930	Ω
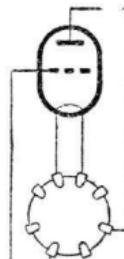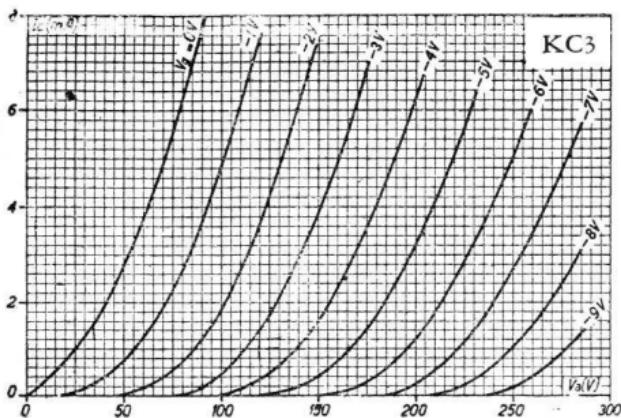
TRIODE
(L F$_w$)

Vf	=		2,0	V.
If	=		0,1	A.
Va(max)	=	90	135	V.
Ia	=	0,5	2,2	mA.
Vgl	=	—1,5	—1,5	V.
S(norm)	=	0,8	1,4	mA/
g	=	30	30	
Ri(norm)	=	37.500	21.500	Ω

KC4
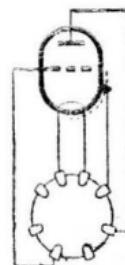
DUOTRIODE

(E_B)

Vf	=	2,0	V.
If	=	0,22	A.
Va(max)	=	135	V.
Ia	=	(2 × 1,5	mA.
		(2 × 15	
Vgl	=	0	V.
Ral-a2	=	10.000	Ω
Wo(10%)	=	2,0	Wtt.
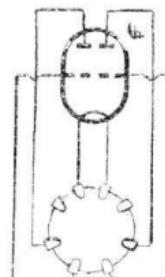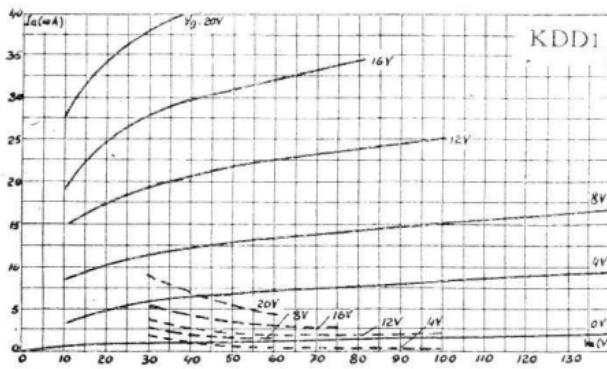
KDD1

KDD1

PENTHODE

$(HF - MF - G . DET_W - LF_W)$

V_f	$=$	2,0	V.
I_f	$=$	0,2	A.
$V_a(max)$	$=$	135	V.
I_a	$=$	3,0	mA.
V_{g1}	$=$	0	V.
V_{g2}	$=$	135	V.
V_{g3}	$=$	0	V.
I_{g2}	$=$	1	mA.
$S(max)$	$=$	1,8	mA/V.
$S(norm)$	$=$	1,8	mA/V.
g	$=$	1.600	
$R_i(norm)$	$=$	0,9	$M.\Omega$
C_{ag1}		$<0,01$	$\mu\mu F.$

KFI
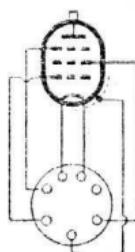
PENTHODE
(HF - MF)

Vf	=		2,0	V.
If	=		0,2	A.
Va	=		135	V.
Ia	=	3,0	0,01	mA.
Vg1	=	0	—16	V.
Vg2	=		135	V.
S(max)	=		1,3	mA/V.
S(norm)	=	1,3	<0,002	mA/V.
g	=		1.400	
Ri(norm)	=	1,1	10	M.Ω
Cag1	=		<0,01	$\mu\mu$F.

KF2
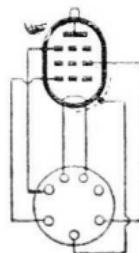
PENTHODE
(HF - MF)

V_f	=		2,0	V.
I_f	=		0,045	A.
$V_a(max)$	=		135	V.
I_a	=	2,0	$<0,015$	mA.
V_{g1}	=	$-0,5$	-15	V.
V_{g2}	=		135	V.
I_{g2}	=		0,6	mA.
V_{g3}	=		0	V.
$S(norm)$	=	0,65	$<0,002$	mA/V.
g	=		850	
$R_i(norm)$	=	1,3	10	$M.\Omega$
C_{ag1}	=		$<0,006$	$\mu\mu F.$

KF3
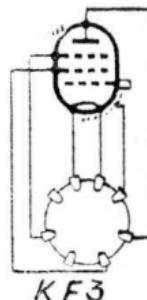
PENTHODE
(HF - MF - G . DET$_w$ - LF$_w$)

Vf	$=$	2,0	V.
If	$=$	0,065	A.
Va(max)	$=$	135	V.
Ia	$=$	2,6	mA.
Vg1	$=$	—0,5	V.
Vg2	$=$	135	V.
Ig2	$=$	1,0	mA.
Vg3	$=$	0	V.
S(norm)	$=$	0,8	mA/V.
g	$=$	800	
Ri(norm)	$=$	1	M.Ω
Cag1		$<0,006$	$\mu\mu$F.

KF4

HEXODE
(HF - OSC - MOD)

		OSC. MOD.		HF	
Vf	=			2,0	V.
If	=			0,135	A.
Va(max)		135		135	V.
Ia	=	1,5-0,015	2	0,01	mA.
Vg2	=	60		60	V.
Vg3	=	10		60	V.
Vg4	=	60		0	V.
Ig2 + 4	=	1			mA.
Ig2 + 3	=			0,6	mA.
S(norm)	=			1,5-<0,002	mA/V.
Sc	=	0,4-0,002			mA/V.
g	=			1800	
Ri(norm)	=	0,5 >10		0,7 >10	M.Ω

KHI
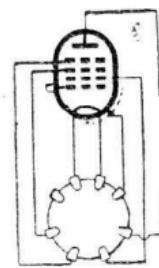
OCTODE
(OSC - MOD)

Vf	=		2,0	V.
If	=		0,13	A.
Va(max)	=		135	V.
Ia	=	0,7	<0,015	mA.
Vg1	=		0	V.
Vg2	=		135	V.
Ig2	=		2,1(1)	mA.
Vg3-(5)	=		45	V.
Vg4	=		—0,5 —12	V.
S(norm)	=	0,27(2)	<0,002	mA/V.
Ri(norm)	=	2,5	>10	M.Ω
Cag4			<0,07	$\mu\mu$F.

(1) $Ig_3 + Ig_5 = 0,7$ mA.
(2) Sc/Vosc = 8,5 Veff.

KK2
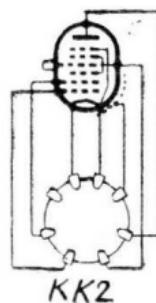
PENTHODE
(E)

Vf	=		2,0	V.
If	=		0,265	A.
Va	=	90	135	V.
Vgl	=	—7,5	—12	V.
Vg2	=	90	135	V.
Ia	=	11	18	mA.
Ig2	=	0,9	2	mA.
S(1)	=		2	mA/V.
S(2)	=	1,8		mA/V.
Ri(1)	=		30	K.Ω
Ri(2)	=	30		K.Ω

(1) $Vg_1 = -12$ V.
(2) $Vg_1 = -7,5$ V.
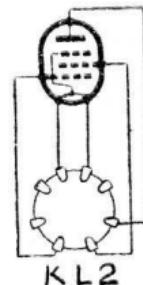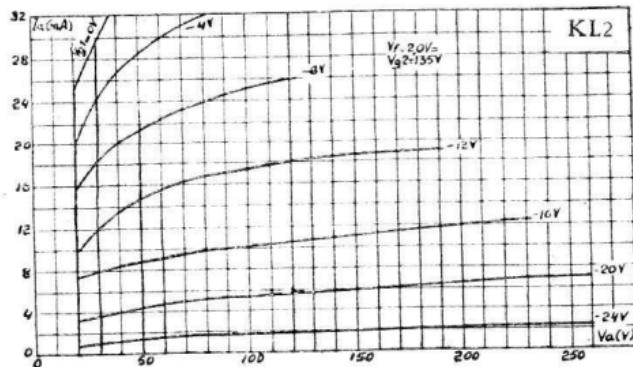
PENTHODE
(E)

Vf	=		2,0	V.
If	=		0,14	A.
Va(max)	=	135	90	V.
Ia	=	6,5	4,7	mA.
Vg1	=	—5	—2,6	V.
Vg2	=	135	90	V.
Ig2	=	1,0	0,7	mA.
S(norm)	=		2,1	mA/V.
Ri(norm)	=	0,15	0,7	M.Ω
Ra	=		19.000	Ω
Wo	=	0,44	0,16	Wtt.
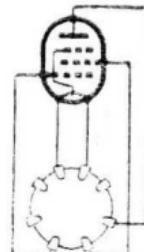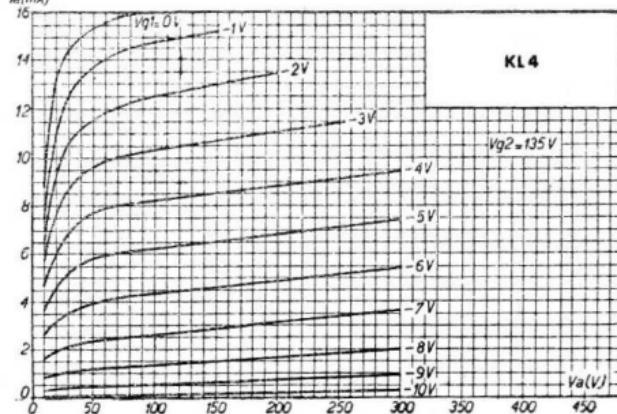
TRIODE
(E - Z)

Vf	=		10	V.
If	=		1,1	A.
Va	=	700	1000	V.
S(norm)	=		4	mA/V.
S(max)	=		7	mA/V.
g	=		10	
Ri	=		2.500	Ω
D	=		51	m/m
L	=		184	m/m

PHILIPS
MC 1/50-III

PHILIPS
MC 1/50-III
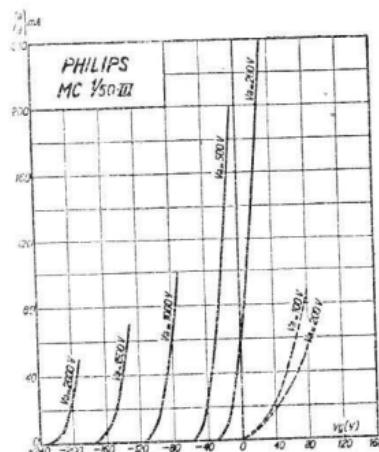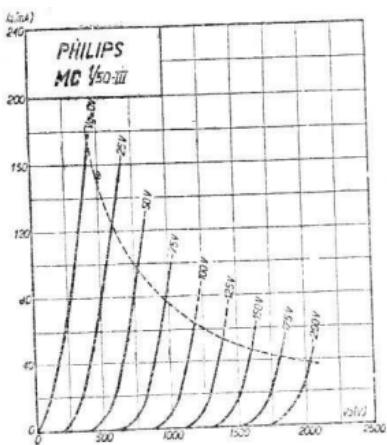
TRIODE
(Z)

Vf	=	4,0	V.
If	=	3,3	A.
Va	=	1000	V.
Ia	=	75	mA.
S(max)	=	11	mA/V.
S(norm)	=	6	mA/V.
g	=	12,5	
Ri(norm)	=	2.100	Ω
Wa(max)	=	75	Wtt.

TRIODE
(MOD - Z)

Vf	=		11		V.
If	=		2,5		A.
Va	=	1000		2000	V.
S(max)	=		10		mA/V.
S(norm)	=		6		mA/V.
g	=		15		
Ri(norm)	=		2.500		Ω
Wa(max)	=		250		Wtt.
D	=		97		m/m
L	=		370		m/m
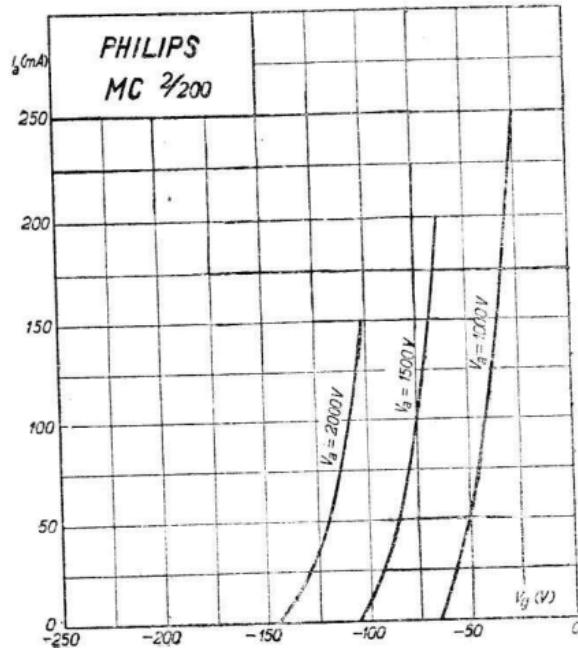
PHILIPS
MC 2/200

PENTHODE
(Z)

Vf	$=$		4,0	V.
If	$=$		2,0	A.
Va	$=$	500	1000	V.
Vg2	$=$	100	300	V.
S(max)	$=$		3,5	mA/V.
S(norm)	$=$		1,5	mA/V.
Wa(max)	$=$		35	Wtt.
Wg2	$=$		10	Wtt.
D	$=$		51	m/m
L	$=$		182	m/m
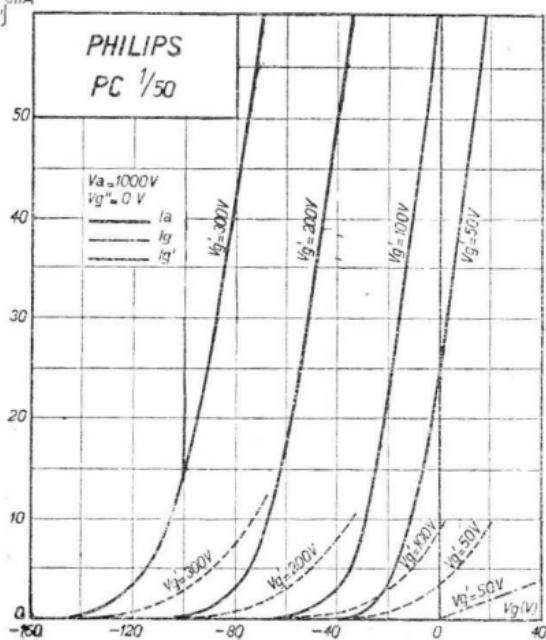
PENTHODE
(Z)

Vf	=		10	V.
If	=		2,0	A.
Va	=		1500	V.
Vg2	=	100	450	V.
S(max)	=		4,0	mA/V.
S(norm)	=		1,7	mA/V.
g	=		2,7(g2)	
Wa(max)	=		75	Wtt.
Wg2	=		25	Wtt.
D	=		66	m/m
L	=		262	m/m
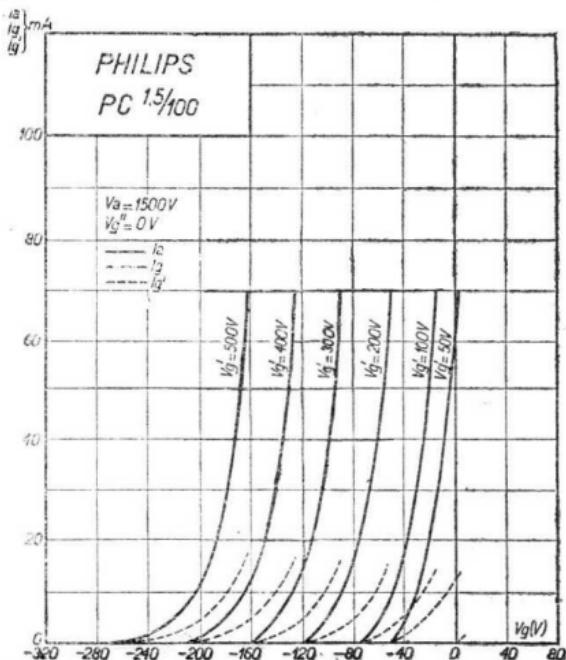
PENTHODE
(Z)

Vf	=		12	V.
If	=		0,37	A.
Va(max)	=		500	V.
Vg2	=	100	300	V.
S(max)	=		2,5	mA/V.
S(norm)	=		1,5	mA/V.
Ik(max)	=		85	mA.
Wa(max)	=		15	Wtt.
Wg2	=		5	Wtt.
D	=		51	m/m
L	=		150	m/m
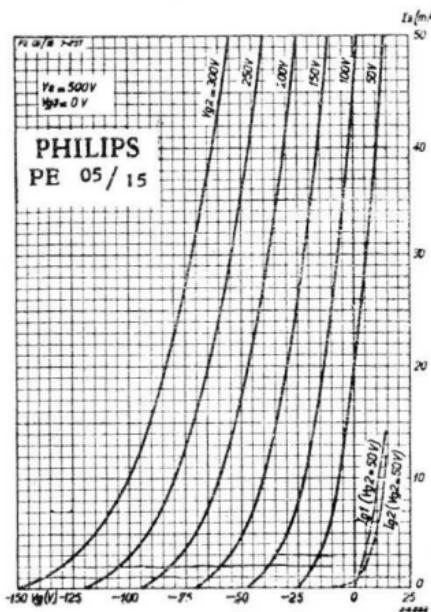
PENTHODE
(Z)

Vf	=		10	V.
If	=		3,25	A.
Va	=	1500	3000	V.
Vg2	=	300	500	V.
S(max)	=		3	mA/V.
S(norm)	=		1,5	mA/V.
g	=		6,3(g2)	
Wa(max)	=		100	Wtt.
Wg2	=		25	Wtt.

PENTHODE
(Z)

Vf	=		4,0	V.
If	=		1,1	A.
Va	=	400	500	V.
Vg2	=	75	125	V.
S(max)	=		2,5	mA/V.
S(norm)	=		1,5	mA/V.
g	=		2,9 (g2)	
Wa(max)	=		15	Wtt.
Wg2	=		6	Wtt.
D	=		70	$^{n}/_{m}$
L	=		160	$^{r}/_{m}$
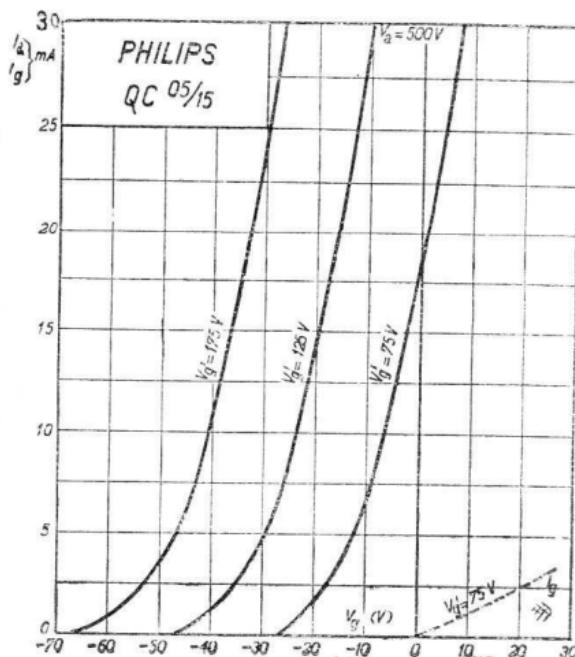
TRIODE
(Z)

Vf	=		10	V.
If	=		1,6	A.
Va(max)	=	800	1500	V.
S(max)	=		8	mA/V.
S(norm)	=		5	mA/V.
g	=		25	
Ri(norm)	=		5.000	Ω
Wa(max)	=		75	Wtt.
D	=		80	m/m
L	=		196	m/m

PHILIPS
TC 1/75
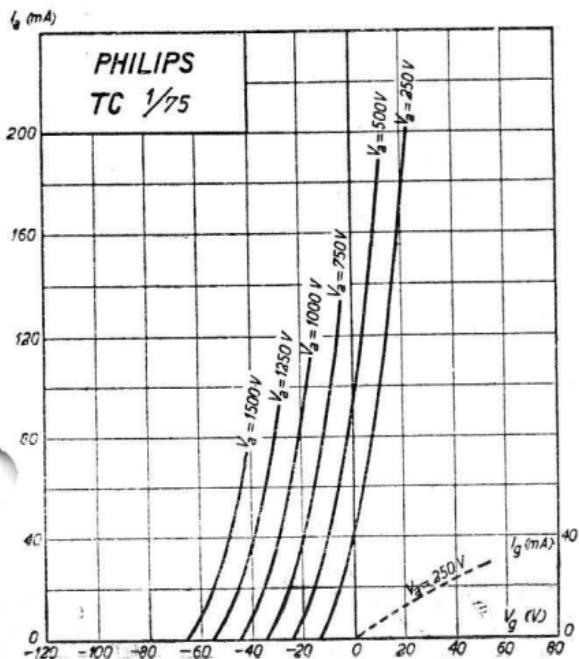
TRIODE
(Z)

Vf	=		11	V.
If	=		2,5	A.
Va	=	1000	2000	V.
S(max)	=		10	mA/V.
S(norm)	=		6	mA/V.
g	=		25	
Ri(norm)	=		4.200	Ω
Wa(max)	=		250	Wtt.
D	=		97	m/m
L	=		370	m/m

$\frac{Ia}{Ig}$] mA

PHILIPS
TC 2/250

Va=500V
Va=1000V
Va=1500V
Va=2000V
Va=2500V
Va=-500V

Vg(V)
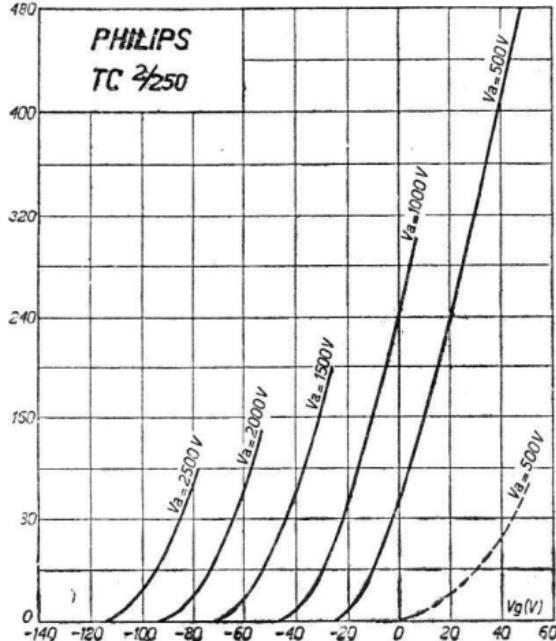
TRIODE
(Z)

Vf	=		4,0	V.
If	=		0,28	A.
Va	=	150	400	V.
S(max)	=		2,3	mA/V.
S(norm)	=		1,5	mA/V.
g	=		6	
Ri(norm)	=		4.000	Ω
Wa(max)	=		6	Wtt.
D	=		50	m/m
L	=		90	m/m

PHILIPS
TC 03/5-1

TRIODE
(Z)

Vf	=		4,0	V.
If	=		1,1	A.
Va	=	200	500	V.
S(max)	=		2,5	mA/V.
S(norm)	=		2,2	mA/V.
g	=		25	
Ri(norm)	=		11.400	Ω
Wa(max)	=		10	Wtt.
D	=		75	m/m
L	=		152	m/m

PHILIPS
TC 04/10-1
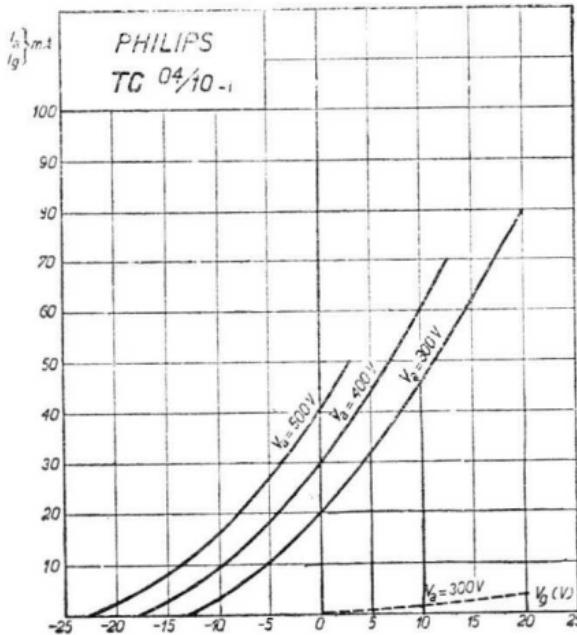
TRIODE
(Z)

Vf	=		4,0	V.
If	=		2,2	A.
Va	=	300	600	V.
S(max)	=		4	mA/V.
S(norm)	=		2,5	mA/V.
g	=		9	
Ri(norm)	=		3.600	Ω
Wa(max)	=		40	Wtt.

DIODE

Spanningsregelaar - Régulateur de tension
Ontstekingsspanning - Tension d'amorçage   180 V.
Bedrijfsspanning - Tension de régime   150 V.

| Bedrijfsstroom |) | min. 5 | mA. |
| Courant de régime |) | max. 30 | mA. |
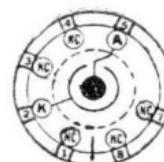
VR 150

TRIODE
(HF - DET - LF)

Vf	$=$	3,0	/ 3,3	V.
If	$=$	0,06	/ 0,063	A.
Va(max)	$=$		90	V.
Vg	$=$		—4,5	V.
Ia	$=$		2,5	mA.
g	$=$		6,6	
Ri	$=$		15.500	Ω
S	$=$		0,425	mA/V.
Rk	$=$		1.800	Ω

v99
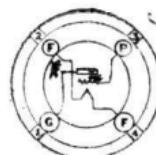
TRIODE
(DET - LF - E)

		DET	LF	E	
Vf	=		1,1		V.
If	=		0,25		A.
		DET	LF	E	
Va	=	45	90	135	V.
Vg	=	+A	—4,5	—10,5	V.
Ia	=		2,5	3,0	mA.
g	=		6,6		
Ri	=		15.500	15.000	Ω
S	=		0,425	0,44	mA/V.
Wo	=		0,007	0,04	Wtt.
Ra	=		15.000	15.000	Ω

WD 11

TRIODE
(HF - DET - LF)

Vf	=	3,0 / 3,3	V.
If	=	0,06 / 0,063	A.
Va(max)	=	90	V.
Vg	=	—4,5	V.
Ia	=	2,5	mA.
g	=	6,6	
Ri	=	15.500	Ω
S	=	0,425	mA/V.
Rk	=	1.800	Ω

X 99

OZ 4 G

GELIJKRICHTERLAMP
REDRESSEUSE

Koude Kathode - Cathode froide

V_a	=		350	Veff.
I_a	=	(	70	mA max.
		(	30	mA min.

074-G

TRIODE
(G . DET)

Vf	=	5,0	V.
If	=	0,25	A.
Va(max)	=	45	V.
Vg	=	0	V.
Ia	=	1,5	mA.
g	=	20	
Ri	=	30.000	Ω
S	=	0,666	mA/V.
Cag	=	8,5	$\mu\mu$F.
Cfg	=	3,2	$\mu\mu$F.
Caf	=	2	$\mu\mu$F.
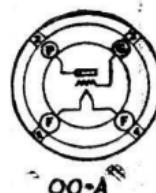
00-A

TRIODE (2)
(HF . G . DET - LF - A . DET)

Vf	=		5	V.
If	=		0,25	A.
Va	=	90	135 (max)	V.
Vg	=	—4,5	—9	V.
Ia	=	2,5	3,0	mA.
g	=	8	8	
Ri	=	11.000	10.000	Ω
S	=	0,725	0,8	mA/V.
Rk	=	2.000	3.000	Ω
Rk(1)	=	40.000	65.000	Ω

(1) A . DET   (2) GAS
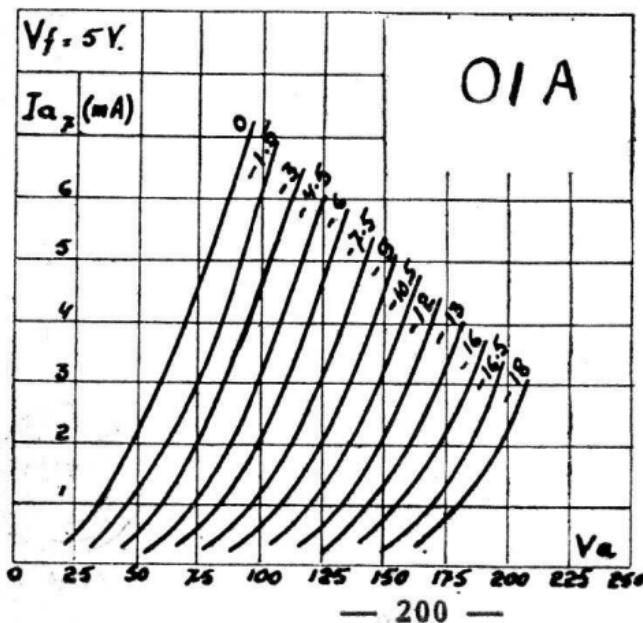
GELIJKRICHTERLAMP (1)
REDRESSEUSE (1)

Vf	=	6,3	V.
If	=	0,3	A.
Va(max)(p.pl)	=	350	V.~
Ia	=	50	mA.

(1) Hg
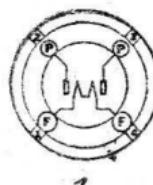
1

1 A 1

REGULATORLAMP
REGULATRICE

Vf	=	1	V.
If	=	500	mA.

TYPE 1A1   500 MA RATING

SOCKET TERMINAL VOLTS

SUPPLY VOLTS

1A1
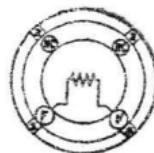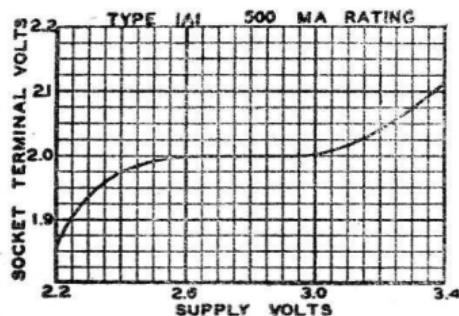
TETRODE
(HF - MF - OSC - MOD)

Vf	=		2,0	V.
If	=		0,06	A.
Va	=	90	180(max)	V.
Vsg	=	67,5	67,5(max)	V.
Vg	=	—3	—3(min)	V.
Ia	=	2,2	2,3	mA.
Isg	=	0,9	0,8	mA.
g	=	425	750	
Ri	=	0,6	1,0	M.Ω
S	=	0,72	0,75	mA/V.
Rk	=		1.000	Ω
Cag	=		0,007(max)	μμF.
Ci	=		5	μμF.
Co	=		11	μμF.
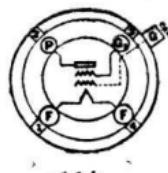
1A4

PENTHODE
(HF)

Vf	=		2,0	V.
If	=		0,06	A.
Va	=	135	180(max)	V.
Vg2	=	67,5	67,5	V.
Vg	=	—3	—3	V.
Ia	=	2,2	2,3	mA.
Ig2	=	0,9	0,8	mA.
g	=	325	600	
Ri	=	0,5	0,85	M.Ω
S	=	0,675	0,7	mA/V.
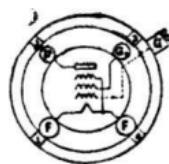
1A4P

1 A 4 T (1) 1 A 4 T (1)

TETRODE
(HF)

Vf	=		2,0	V.
If	=		0,06	A.
Va	=	135	180(max)	V.
Vg2	=	67,5	67,5	V.
Vg	=	—3	—3	V.
Ia	=	2,2	2,2	mA.
Ig2	=	0,7	0,7	mA.
g	=	220	400	
Ri	=	0,35	0,6	MΩ
S	=	0,625	0,65	mA/V.
Rk	=		1.000	Ω

(1) Nieuwe typeering voor 1 A 4
(1) Remplace 1 A 4

1A4T

31-12-38
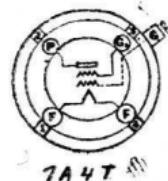
PENTHODE
(Batt E)

Vf	=		1,4	V.
If	=		0,05	A.
Va	=	85	90	V.
Vg2	=	85	90	V.
Vg1	=	—4,5	—4,5	V.
Ia	=	3,5	4,—	mA.
Ig2	=	0,7	0,8	mA.
Ri	=	0,3	0,3	M Ω
S	=	0,8	0,85	mA/V.
g	=	240	255	
Ra	=	25000	25000	Ω
Wo	=	0,1	0,115	Wtt
d% (tot)	=	10	7	%

1A5G

HEPTODE
(OSC - MOD)

V_f	$=$		2,0	V.
I_f	$=$		0,06	A.
V_a	$=$	135	180(max)	V.
V_{g4}	$=$	-3	-3	V.
V_{g3-5}	$=$	67,5	67,5	V.
V_{g2}	$=$	135	135	V.
I_a	$=$	1,2	1,3	mA.
I_{g3-5}	$=$	2,5	2,4	mA.
I_{g2}	$=$	2,3	2,3	mA.
I_{g1}	$=$	0,2	0,2	mA.
S_c	$=$	0,275	0,3	mA/V.
$S_c(V_{g4}=-22,5V)$	$=$		4	mA/V.
R_k	$=$	500	500	Ω
R_{g1}	$=$		500.000	Ω
I_c	$=$	6,2	6,2	mA.

31-12-38

1 A 6

HEPTODE
(Batt-OSC - MOD)

Vf	=	1,4	V.
If	=	0,05	A.
Va	=	90	V.
Vg4	=	0	V.
Vg3-5	=	45	V.
Vg2	=	90	V.
Rg1	=	0,2	M Ω
Ia	=	0,55	mA.
Ig3-5	=	0,6	mA.
Ig2	=	1,2	mA.
Ig1	=	35	μA.
Ik	=	2,4	mA.
Ri	=	0,6	M Ω
Sc	=	0,25	mA/V.
Sc(-2V)	=	0,05	mA/V.
Sc(-3V)	=	0,005	mA/V.

1A7G

REGULATORLAMP
REGULATRICE

Vf	=	1	V.
If	=	360	mA.

31-12-38

TYPE IBI   360 MA RATING

SOCKET TERMINAL VOLTS / SUPPLY VOLTS

1B1
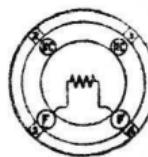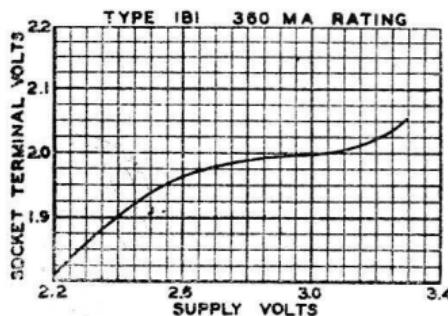
TETRODE
(HF - MF - DET)

Vf	=		2,0	V.
If	=		0,06	A.
Va	=	90	180 (max)	V.
Vsg	=	67,50	67,50	V.
Vg	=	—3	—3	V.
Ia	=	1,6	1,7	mA.
Isg	=	0,7	0,6	mA.
g	=	550	1.000	
Ri	=	1	1,5	M Ω
Rk	=		1.500	Ω
S	=	0,6	0,65	mA/V.
Vgco	=	—8	—8	V.
Cag	=		0,007	$\mu\mu$F.
Ci	=		5	$\mu\mu$F.
Co	=		11	$\mu\mu$F.
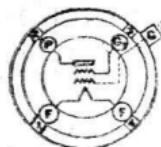
1B4

PENTHODE
(HF)

Vf	=		2,0	V.
If	=		0,06	A.
Va	=	135	180(max)	V.
Vg2	=	67,5	67,5	V.
Vg	=	—3	—3	V.
Ia	=	1,6	1,7	mA.
Ig2	=	0,7	0,6	mA.
g	=	440	700	
Ri	=	0,7	1,1	M.Ω
Rk	=		1.500	Ω
S	=	0,625	0,65	mA/V.
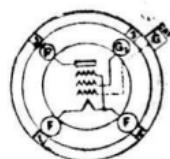
1B4P

DUODIODE - TRIODE
(d DET + LF)

Vf	=	2,0	V.
If	=	0,06	A.
Va(max)	=	135	V.
Vg	=	—3	V.
Ia	=	0,8	mA.
g	=	20	
Ri	=	35.000	Ω
S	=	0,575	mA/V.
Rk	=	3.750	Ω

1B5
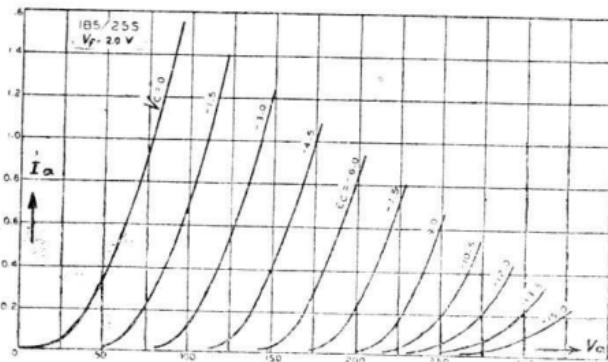
1 C 1   1 C 1

REGULATRICE

If	=	745	mA.
Vf	=	1	V.

1 C 5 G   1 C 5 G

PENTHODE
(E)

Vf	=	1,4		V.
If	=	0,1		A.
Va	=	83	90	V.
Vg1	=	—7	—7,5	V.
Ia	=	7	7,5	mA.
Ig2	=	1,6	1,6	mA.
Ri	=	110.000	115.000	Ω
S	=	1,5	1,55	mA/V.
g	=	165	180	
Ra	=	9000	8000	Ω
Wo	=	0,2	0,24	Wtt
d%(tot)	=	10	10	%

TYPE IC1 745 MA RATING

1C1
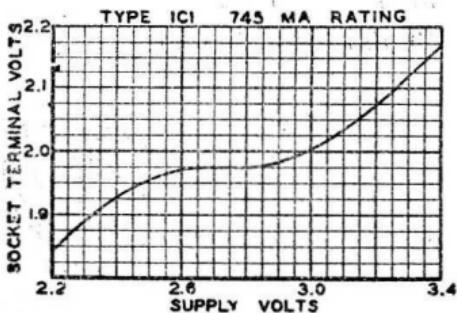
1C5G

31-12-38
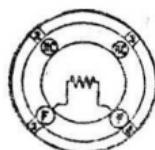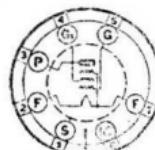
1 C 6
1 C 7 G

HEPTODE
(OSC - MOD)

Vf	=		2,0	V.
If	=		0,12	A.
Va	=	135	180(max)	V.
Vg3-5	=	67,5	67,5	V.
Vg2	=	135(1)	180(1)	V.
Vg4	=	—3	—3	V.
Ia	=	1,3	1,5	mA.
Ig3-5	=	2	2	mA.
Ig2	=	2,6	3,3	mA.
Ig1	=	0,2	0,2	mA.
Ic	=	6,5	7	mA.
Ri	=	0,55	0,75	M Ω
Sc	=	0,3	0,325	mA/V.
Sc(Vg4=14V) =		4		mA/V.
Rg1	=		50.000	Ω
Rk	=	400	350	/

(1) Over R = 20.000 Ω C = 0,1 μF.
   A travers R = 20.000 Ω C = 0,1 μF.

1C6
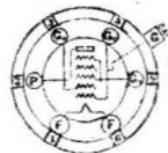
REGULATORLAMP
REGULATRICE

If	=	240	mA.
Vf	=	1	V.

31-12-38

TYPE ID1 240 MA RATING

SOCKET TERMINAL VOLTS

SUPPLY VOLTS

1D1
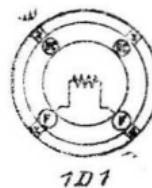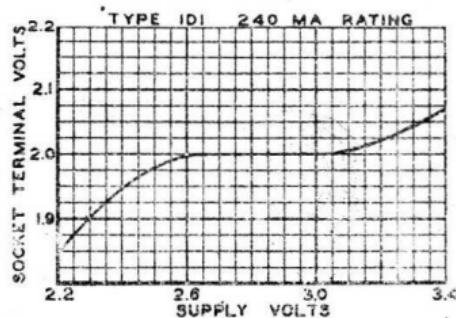
1 D 5 G(1)　　　　　　　**1 D 5 G(1)**
1 D 5 GP(1)　　　　　　**1 D 5 GP(1)**
1 D 5 GT(1)　　　　　　**1 D 5 GT(1)**

PENTHODE
(HF)

Vf	=		2,0	V.
If	=		0,06	A.
Va	=	135	180(max)	V.
Vsg	=	67,5	67,5	V.
Vg	=	—3	—3	V.
Ia	=	2,2	2,3	mA.
Ig2	=	0,9	0,8	mA.
g	=	325	600	
Ri	=	0,5	0,85	M.Ω
S	=	0,675	0,7	mA/V.

(1) V. 1 A 4 P

1D5-G　　　　1D5-GT　　　　1D54P
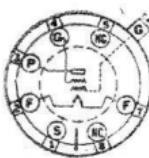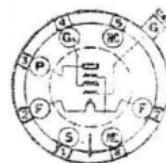
1 D 7 G   1 D 7 G

HEPTODE
(OSC - MOD)

Vf	=		2,0	V.
If	=		0,06	A.
Va	=	135	180 (max)	V.
Vg4	=	—3	—3	V.
Vg3-5	=	67,5	67,5	V.
Vg2	=	135	135	V.
Ia	=	1,2	1,3	mA.
Ig3-5	=	2,5	2,4	mA.
Ig2	=	2,3	2,3	mA.
Igl	=	0,2	0,2	mA.
Sc	=	0,275	0,3	mA/V.
Sc (Vg4 = 22,5V) =		4		mA/V.
Rk	=	500	500	Ω
Rgl	=		50.000	Ω
Ic	=		6,2	mA.

31-12-38
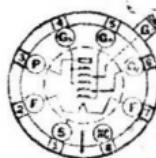
1D7-G

REGULATORLAMP
REGULATRICE

| If | $=$ | 480 | mA. |
| Vf | $=$ | 1 | V. |

TYPE IE1   460 MA RATING

SOCKET TERMINAL VOLTS

SUPPLY VOLTS

1E1
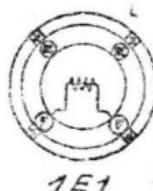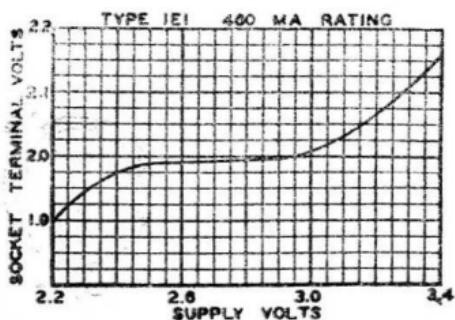
1 E 5 G
1 E 5 GP

TETRODE
(HF)

Vf	=		2,0	V.
If	=		0,06	A.
Va	=	135	180 (max)	V.
Vsg	=	67,5	67,5	V.
Vg	=	−3	−3	V.
Ia	=	1,6	1,7	mA.
Ig2	=	0,7	0,6	mA.
g	=	440	700	
Ri	=	0,7	1,1	M.Ω
S	=	0,625	0,65	mA/V.
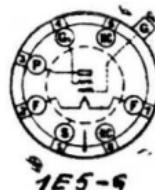
1E5-G

DUO - PENTHODE
(E)

V_f	=		2,0	V.
If	=		0,24	A.
$V_a(max)$	=		135	V.
V_{g2}	=		135	V.
V_g	=		$-7,5$	V.
Ia	=	$2 \times$	6,5	mA.
I_{g2}	=	$2 \times$	2,5	mA.
g	=		350	
R_i	=		220.000	Ω
S	=		1,6	mA/V.
W_o	=		0,65	Wt..
$R_a(p.p)$	=		24.000	Ω
R_k	=		900	Ω

1E7-G

REGULATORLAMP
REGULATRICE

Vf	=	1,0	V.
If	=	720	mA.

1F1
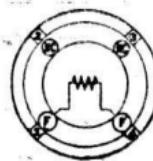
1 F 4
1 F 5 G

PENTHODE
(E)

Vf	=		2,0	V.
If	=		0,12	A.
Va	=	90	135(max)	V.
Vg2	=	90	135	V.
Vgl	=	—3	—4,5	V.
Ia	=	4	8	mA.
Ig2	=	1,3	2,6	mA.
g	=		340	
Ri	=	0,24	0,2	M.Ω
S	=	1,4	1,7	mA/V.
Wo	=	0,12	0,34	Wtt.
Ra	=	20.000	16.000	Ω
Rk	=	566	425	Ω
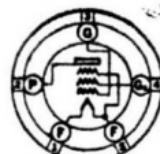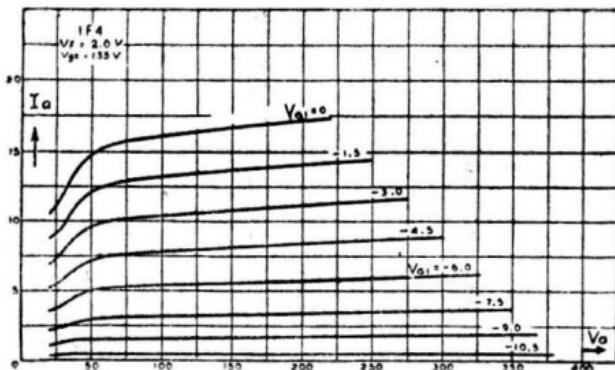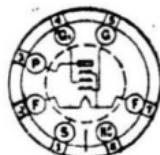
1 F 6
1 F 7 G

<div align="right">

1 F 6
1 F 7 G

</div>

DUODIODE - PENTHODE
(HF - MF - d DET - d DET + LF)

Vf	=	2	V.
If	=	0,06	A.
Ci	=	4	$\mu\mu$F.
Co	=	9	$\mu\mu$F.
Cag	=	<0,007	$\mu\mu$F.

HF - MF - PENTH.

Va	=	180	V.
Vg2	=	67,5	V.
Vg1	=	—1,5	V.
Ia	=	2,0	mA.
Ig2	=	0,6	mA.
Ri	=	1	M.Ω
g	=	650	
S	=	0,65	mA/V.
S(Vg1 = —12 V)	=	0,015	mA/V.
Rk	=	600	Ω
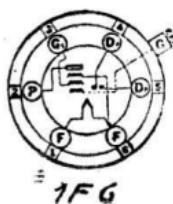
1 F G   1 F 7-G'

PENTHODE
(LF)

Va	=		135	135		V.
Vg2	=		135	135		V.
Vg1	=		—1	—2		V.
Ia	=		34-42	34-42		mA.
Rp	=		0,25	0,25		M.Ω
Rg ¹)	=	1,0	0,5	1,0	0,5	M.Ω
g	=	48	43	46	41	
d %	=	5	5	5	5	
Vop	=	30,8	28	28	25,2	V.
Rk	=		2.500			Ω

¹) voor de volgende lamp

1 F 7-G

1 F 6
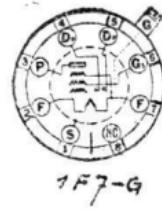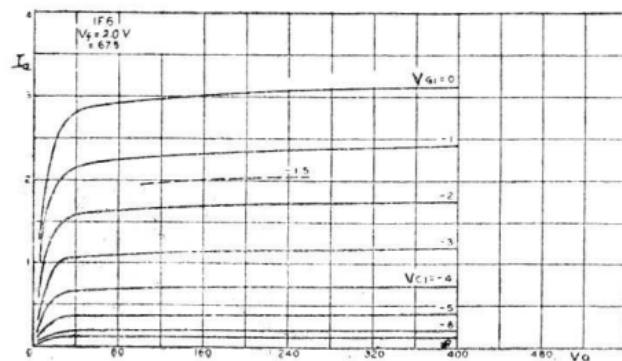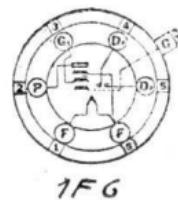
1 G 1

REGULATORLAMP
REGULATRICE

Vf	=	1,0	V.
If	=	420	mA.

31-12-38

TYPE IG1   420 MA RATING

1 G 1
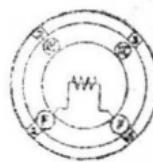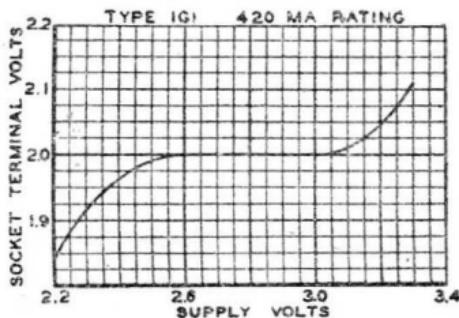
PENTHODE
(E)

Vf	=	2,0	V.
If	=	0,12	A.
Va(max)	=	90	V.
Vg2	=	90	V.
Vg	=	—6,0	V.
Ia	=	8,5	mA.
Ig2	=	2,7	mA.
g	=	200	
Ri	=	135.000	Ω
S	=	1,5	mA/V.
Wo	=	0,3	Wtt.
Ra	=	8.500	Ω
Rk	=	660	Ω

TRIODE
(DET - E_{AB}) (1)

Vf	=		2		V.
If	=		0,06		A.

E_A

Va	=	90	135	180 (max)	V.
Vg	=	—4,5	—9	—13,5	V.
Ia	=	2,5	3,0	3,1	mA.
Ri	=	11	10,3	10,3	kΩ
g	=	9,3	9,3	9,3	
S	=	0,85	0,9	0,9	mA/V.
Rk	=	1,8	2,9	2,9	kΩ

2 lp E_B

Va	=	157,5	V.
Vg	=	—15	V.
Ia	=	1	mA.
Ra(p.p)	=	8.000	Ω
Wo	=	2,1	Wtt.

(1) V. type '30.

1 H 4 - G

31-12-38
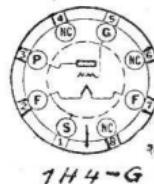
DIODE - TRIODE
(D.det + LF)

Vf	=	1,4	V.
If	=	0,05	A.
Va	=	90	V.
Vg	=	0	V.
Ia	=	0,14	mA.
Ri	=	0,24	M.Ω
S	=	0,275	mA/V.
g	=	65	

1 H 5 G
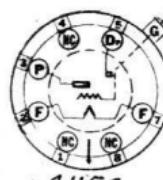
DUODIODE - TRIODE
(d DET + LF$_T$) (1)

Vf	=	2,0	V.
If	=	0,06	A.
Va(max)	=	135	V.
Vg	=	—3	V.
Ia	=	0,8	mA.
g	=	20	
Ri	=	35.000	Ω
S	=	0,575	mA/V.
Rk	=	3.750	Ω

(1) V. 1 B 5.
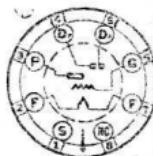
1 H 6 - G

31-12-38

STROOMREGULATOR
REGLATRICE

Vf	=	1	V.
If	=	0,620	A.

TYPE 1J1 620 MA RATING

SOCKET TERMINAL VOLTS / SUPPLY VOLTS

1J1

DUOTRIODE
(E_B)

Vf	=			2,0	V.
If	=			0,24	A.
Va(max)	=	135	135	135	V.
Vg	=	—6	—3	0	V.
Ia(1)	=	0,5	2	5	mA.
Wi	=	0,095	0,13	0,17	m.Wtt.
Wo	=	1,6	1,9	2,1	Wtt.
Ra(p.p)	=		10.000		Ω

(1) Zonder sein - En absence de signal.

STROOMREGULATOR
REGULATRICE

| Vf | = | 1,0 | V. |
| If | = | 550 | mA. |

1K1

1 N 5 G   1 N 5 G

PENTHODE
(HF - MF)

Vf	$=$	1,4	V.
If	$=$	0,05	A.
Va	$=$	90	V.
Vg2	$=$	90	V.
Vgl	$=$	0	V.
Ia	$=$	1,2	mA.
Ig2	$=$	0,3	mA.
Ri	$=$	1,5	M.Ω
S	$=$	0,75	mA/V.
g	$=$	1160	
S(—3,2V)	$=$	0,05	mA/V.
S(—4V)	$=$	0,005	mA/V.

1N5G

1 R 1-G

STROOMREGULATOR
REGULATRICE
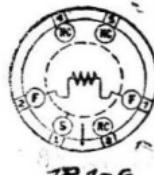
Vf	=	1,0	V.
If	=	540	mA.

1R 1-G

STROOMREGULATOR
REGULATRICE

Vf	=	1,0	V.
If	=	560	mA.
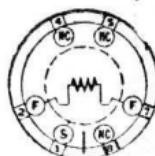
1T1-G

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	6,3	V.
If	=	0,3	A.
Va	=	350	V$\sim$ (max)
Ia	=	50	mA. (max)
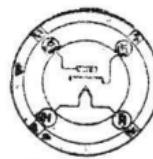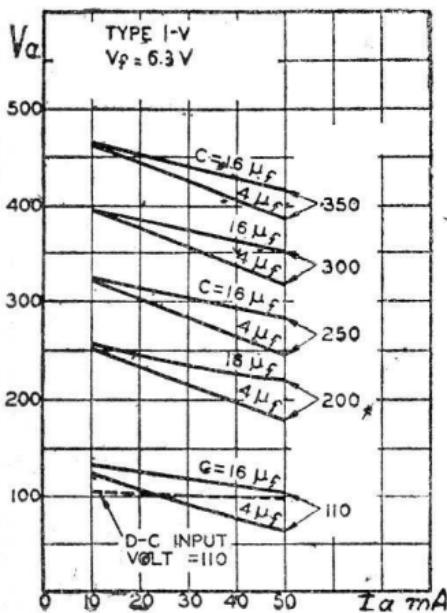
1 Y 1

STROOMREGULATOR
REGULATRICE

Vf	=	1,0	V.
If	=	540	mA.

1Y1

1 Z 1

STROOMREGULATOR
REGULATRICE

Vf	=	1,0	V.
If	=	0,9	A.

1Z1

STROOMREGULATOR
REGULATRICE

Vf   =   9,0   V.
If   =   0,3   A.
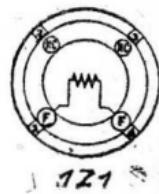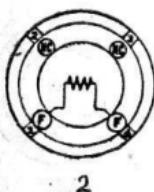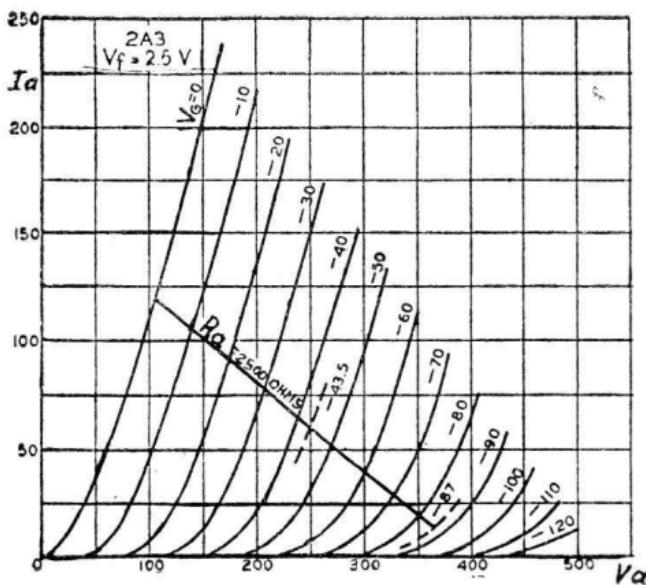
TRIODE
(E_{AB})
Ea

Vf	=	2,5	V.
If	=	2,5	A.
Va(max)	=	250	V.
Vg	=	—45	V.
Ia	=	60	mA.
g	=	4,2	
Ri	=	800	Ω
S	=	5,25	mA/V.
Wo	=	3,5	**Wtt.**
Ra	=	2500	Ω
Rk	=	750	Ω

2 pl E_{AB}

		F.B	S.B	
Vf	=	2,5	2,5	V.
Va(max)	=	300.—	300.—	V.
Vg	=	—62	—	V.
Rk	=	—	780	Ω
Ia(p.l.)	=	40	40	mA.
Ra(pp)	=	3000	5000	Ω
d %	=	2,5	5	
Wo	=	15	10	**Wtt**

2A3
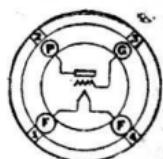
TRIODE
(E_{AB})

Vf	=		2,5	V.
If	=		2,8	A.
Va(max)	=	300	300	V.
Vg	=	—62	—62	V.
Ia	=	80-100	80-150	mA.
Wo	=	10	15	Wtt.
Ra	=	5,000	3,000	Ω
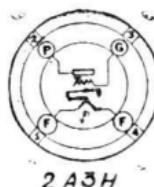
2 A3H

PENTHODE
(E_{AB})

Vf	=		2,5		V.
If	=		1,75		A.

E_{A1}

		PENTHODE		TRIODE	
Va	=	250	315	250	V.
Vg2	=	250	315	—	V.
Vg1	=	—16,5	—22	—20	V.
Ia	=	34	42	31	mA.
Ig2	=	6,5	8	—	mA.
Ri	=	80	100	2,7	K.Ω
g	=	190	260	6,2	
S(norm)	=	2,35	2,6	2,3	mA/V.
d %	=	7	7	5	
Wo	=	3	5	0,65	Wtt.
Rk	=	400	450	600	Ω
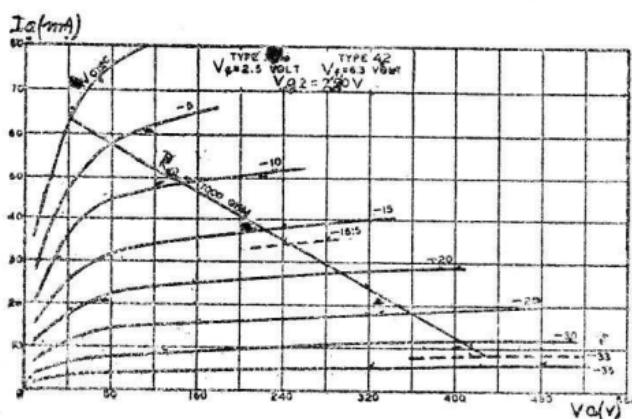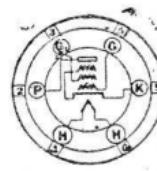
2 A 5

E_{AB}

PENTHODE

		FB	SB	
Va(max)	=	375	375	V.
Vg2	=	250	250	V.
Vgl	=	—26	—	V.
Rk	=	—	340	Ω
Ia	=	34	54	mA.
Ig2	=	5	8	mA.
Ra	=	10.000	10.000	Ω
d %	=	5	5	
Wo	=	19	19	

TRIODE

		FB	SB	
Va(max)	=	350	350	V.
Vgl	=	—38	—	V.
Rk	=	—	730	Ω
Ia	=	45	50	mA.
Ra	=	6.000	10.000	Ω
d %	=	7	7	
Wo	=	18	14	

DUODIODE - TRIODE
(d DET - LF$_w$)

Vf	=	2,5	V.
If	=	0,8	A.
Va(max)	=	250	V.
Vg	=	—2	V.
Ia	=	0,8	mA.
g	=	100	
Ri	=	91.000	Ω
S	=	1,1	mA/V.
Rk	=	2.600 / 17.400	Ω
Cag	=	1,7	μμF.
Ci	=	1,7	μμF.
Co	=	3,8	μμF.

2AG
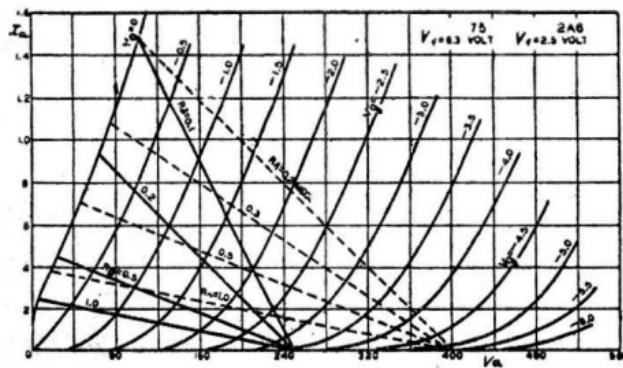
2 A 7
2 A 7 S

<div align="right">

2 A 7
2 A 7 S

</div>

<div align="center">

HEPTODE
(OSC . MOD)

</div>

Vf	=		2,5	V.
If	=		0,8	A.
Ci	=		8,5	$\mu\mu$F.
Co	=		9.0	$\mu\mu$F.
Va	=	100	250	V.
Vg3-5	=	50	100	V.
Vg2	=	100	200	V.
Vg4(min)	=	1,5	—3	V.
Rg1	=	10.000	50.000	Ω
Ia	=	1,3	3,5	mA.
Ig3-5	=	2,5	2,2	mA.
Ig2	=	3,3	4,0	mA.
Ig1	=	1,2	0,7	mA.
Ik	=	8,3	10,4	mA.
Rk	=	150	300	Ω
Ri	=	0,6	0,36	M.Ω
Sc	=	0,35	0,52	mA/V.
Vg4(1)	=	—20	—45	V.

(1) Sc = 0,002 mA/V.

2A7/S

DUODIODE - PENTHODE
(d DET + LF$_w$)

$\sqrt{f}$	=	2,5	V.			
If	=	0,8	A.			
Va	=	100	180	250	250 (max)	V.
Vg2	=	100	75	100	125 (max)	V.
Vg1 (min) =		—3	—3	—3	—3	V.
Ia	=	5,8	3,4	6,0	9,0	mA.
Ig2	=	1,7	0,9	1,5	2,3	mA.
Ri	=	0,8	1,0	0,8	0,65	M.Ω
g	=	285	840	800	730	
S (norm)	=	0,95	0,84	1,0	1,125	mA/V.
Vg1 (max) =		—17	—13	—17	—21	V.
Rk	=	2.000	à	6.000		Ω
Co	=	9,5	$\mu\mu$F.			
Ci	=	3,5	$\mu\mu$F.			

A.I.

Vf	=		2,5	V.
If	=		0,8	A.
Va	=	100	250	V.
Vs	=	100	250(1)	V.
Vg1	=	0	0	V.
Ia	=	0,19	0,24	mA.
Is	=	4,5	4,5	mA.
Vg(min)	=	—3,3	—8	V.
Ra	=	0,5	1	M.Ω

(1) min 90 V.

2 E 5

2 S/4 S

DUODIODE
(d DET)

Vf	=	2,5	V.
If	=	1,35	A.
Va(max)	=	50	V.
Ia(max)	=	40	mA.

2 S/4 S
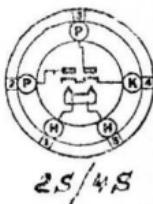
2 Z 2

GELIJKRICHTER
REDRESSEUSE

Vf	=	2,5	V.
If	=	1,50	A.
Va(max p.pl)	=	350	V.$\sim$
Ia	=	50	mA.

984/2 Z2
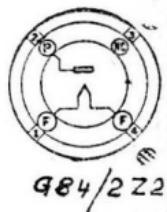
3   **3**

STROOMREGULATOR
REGULATRICE
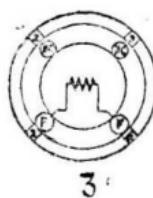
Vf   =   128   V.
If   =   0,3   A.

3

4   **4**

STROOMREGULATOR
REGULATRICE

Vf   =   115   V.
If   =   0,4   A.

4

STROOMREGULATOR
REGULATRICE

| Vf | = | 115 | V. |
| If | = | 0,46 | A. |

S
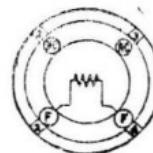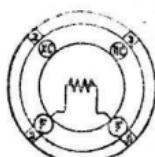
GELIJKRICHTERLAMP
REDRESSEUSE

Vf	=	5,0	V.
If	=	2,0	A.
Va(max)	=	450	V.$\sim$
Ia	=	250	mA.

5 T 4
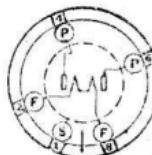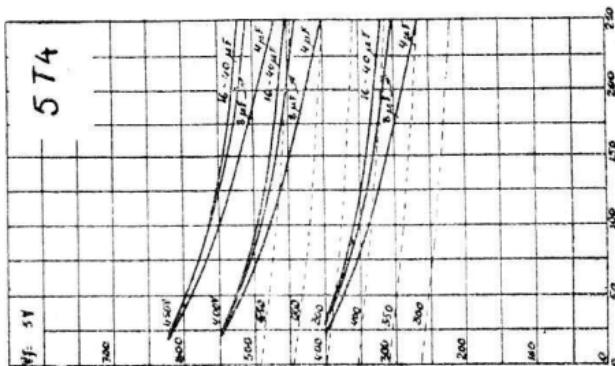
5 U 4-G   5 U 4-G

GELIJKRICHTERLAMP - REDRESSEUSE
(VAC) (1)

Vf	=	5,0	V.
If	=	3,00	A.
Va(max p pl)	=	500	V.$\sim$
Ia	=	250	mA.

(1) V. 5Z3.

5 U 4-G
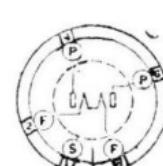
5 U 4-G   5 U 4-G

GELIJKRICHTERLAMP
REDRESSEUSE
(Hg) (1)

Vf	=	5,0	V.
If	=	2,0	A.
Va(max)	=	500	V.$\sim$
Ia(max)	=	250	mA.
Iap	=	800	mA.
Vl	=	15	V.

(1) V. type 80.

5 V 4-G

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	5,0	V.
If	=	1,5	A.
Va	=	350	V. $\sim$ (max)
Ia	=	110	mA. (max)

5 W 4
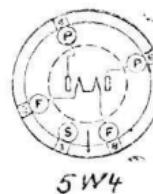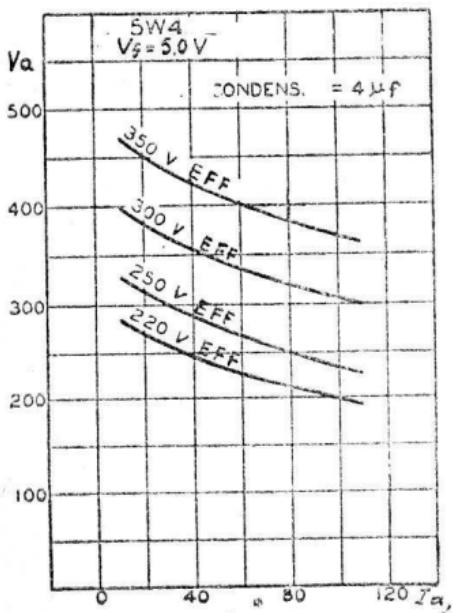
5 X 4-G

GELIJKRICHTER
REDRESSEUSE
(VAC) (1)

Vf	=	5,0	V.
If	=	2,0	A.
Va(max p. pl)	=	500	V.$\sim$
Ia(max)	=	250	mA.

(1) V. type 5 Z 3
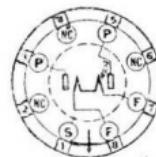
5X4-G

5 Y 3-G

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC) (1)

Vf	=	5,0	V.
If	=	2,0	A.
Va(max p. pl)	=	500	V.$\sim$
Ia(max)	=	135	mA.

(1) V. type 80.
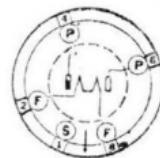
5Y3-G

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC) (1)

Vf	=	5,0	V.
If	=	2,0	A.
Va(max p. pl) =		550	V. $\sim$
Ia(max)	=	135	mA.

(1) V. type 80

5 Y4-G

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	5,0	V.	
If	=	3,0	A.	
Va	=	500	V.$\sim$ (max)	
Ia	=	250	mA. (max)	

5 Z 3
Vf = 5.0 V

—— CONDENSER INPUT
—— CHOKE INPUT

5 Z 3
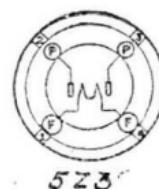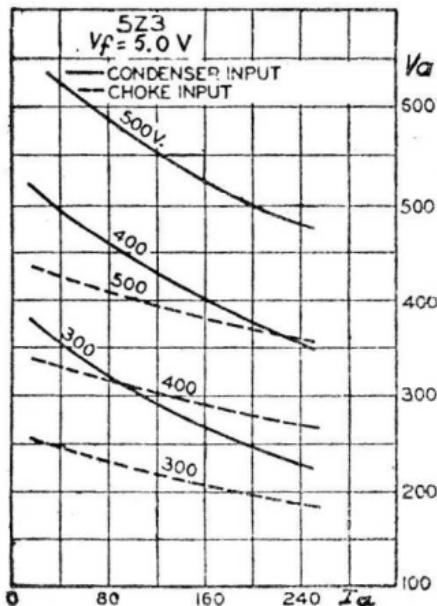
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	5,0	V.
If	=	2,0	A.
Va	=	400	V. $\sim$ (max)
Ia	=	125	mA. (max)

31-12-38

STROOMREGULATOR
REGULATRICE

| Vf | = | 1,0 | V. |
| If | = | 0,685 | A. |
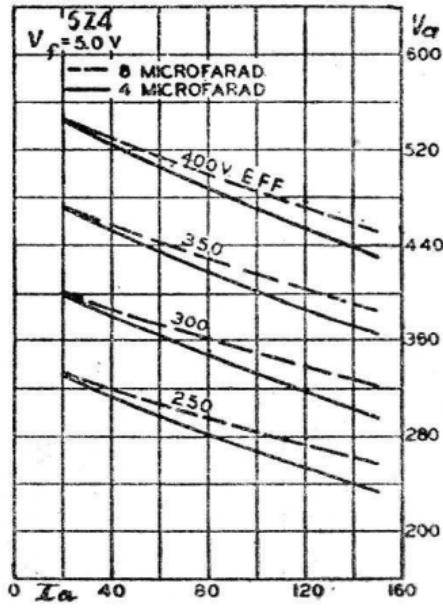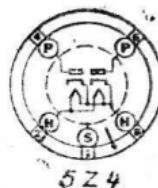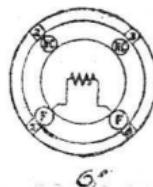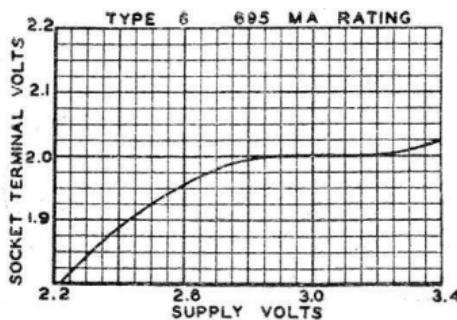
TYPE 6   695 MA RATING

TRIODE
(E_{AB})

Vf	=		6,3	V.
if	=		0,4	A.
Va(max)	=	250	250	V.
Vg	=	+13	+70	V.
Ia	=	32	2,5(pl)	mA.
g	=		125	
Ri	=		36.700	
S	=		3,4	mA/V.
Wo	=	3,7	8	Wtt.
Ra	=	7.000	10.000	Ω
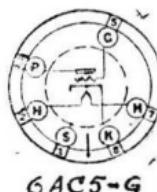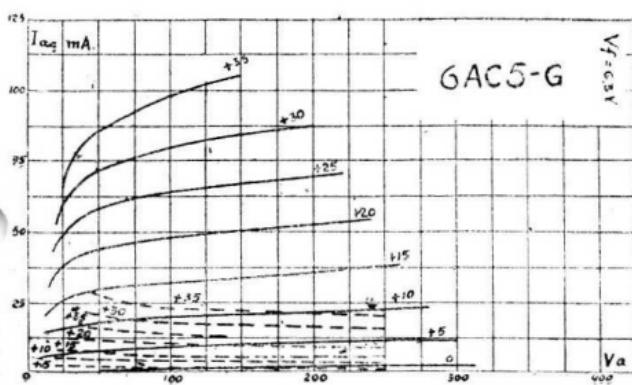
TRIODE
(E_{AB}) (1)

Vf	=		6,3		V.
If	=		1,0		A.
Va	=	250	325	325	V.
			FB	SB	
Vg	=	45	68		V.
Ia	=	60	40	40	mA.
g	=		4,2		
Ri	=		800		Ω
S	=		5,25		mA/V.
Wo	=	3,2	15	10	Wtt.
Ra	=	2.500	3.000	5.000	Ω
Rk	=	750		800	Ω

(1) V. type 2 A 3.

6A3

PENTHODE
(E)

Vf	=			6,3		V.
If	=			0,3		A.
Va(max)	=	100	135	165	180	V.
Vg2	=	100	135	165	180	V.
Vg1	=	—6,5	—9	—11	—12	V.
Ia	=	9	14	20	22	mA.
Ig2	=	1,6	2,5	3,5	3,9	mA.
g	=			100		
S	=	1,2	1,9	2,1	2,2	mA/V.
Wo	=	0,31	0,7	1,2	1,4	Wtt.
Rk	=	615	545	470	465	Ω
Ri	=	83.250	52.600	48.000	45.500	Ω
Ra	=	11.000	9.500	8.000	8.000	Ω

GA4
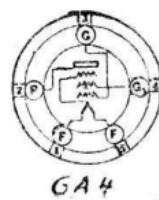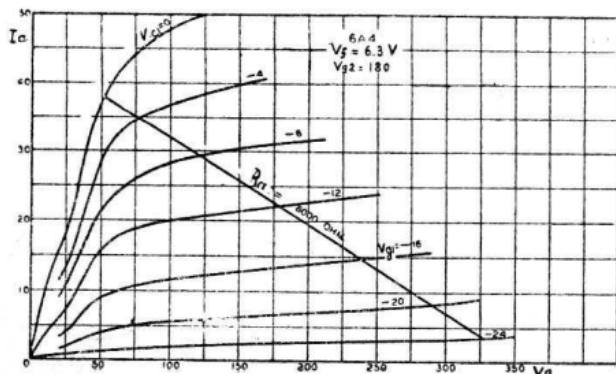
TRIODE
(E_{AB})

			FB	SB	
Vf	=		6,3		V.
If	=		1,25		A.
Va(max)	=	250	325	325	V.
Vg	=	—45	—68		V.
Ia	=	60	40(p.pl)	40	mA.
g	=		4,2		
Ri	=		800		Ω
S	=		5,25		mA/V.
Wo	=	3,7	15	10	Wtt.
Ra	=	3.000	3.000	7.000	Ω

6A5-G
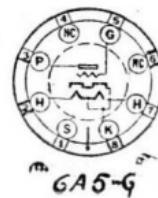
DUOTRIODE
(ST - E$_{AB}$)

Vf	=	6,3		V.
If	=	0,8		A.

		E$_B$		
Va	=	250	300	V.
Vg	=	0	0	V.
Ia(1)	=	14	17,5	mA.
Ra(pp)	=	8.000	10.000	Ω
Wo	=	8	10	Wtt.

		E$_A$/ST		
Va	=	250	294	V.
Vg	=	—5	—6	V.
Ia	=	6	7	mA.
Ri	=	11.300	11.000	Ω
S(norm)	=	3,1	3,2	mA./V.
g	=	35	35	
Rk	=	850	850	Ω
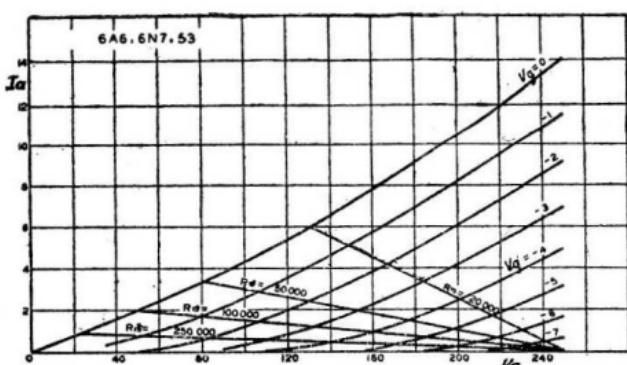
andere krommen zie :
6N7 en 53
autres courbes voir
6N7 et 53

6A6
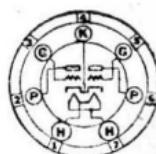
HEPTODE
(OSC . MOD)

Vf	=		6,3	V.
If	=		0,3	A.
Ci	=		8,5	$\mu\mu$F.
Co	=		9.0	$\mu\mu$F.
Va	=	100	250	V.
Vg3-5	=	50	100	V.
Vg2	=	100	200	V.
Vg4(min)	=	—1,5	—3	V.
Rg1	=	10.000	50.000	Ω
Ia	=	1,3	3,5	mA.
Ig3-5	=	2,5	2,2	mA.
Ig2	=	3,3	4,0	mA.
Ig1	=	1,2	0,7	mA.
Ik	=	8,3	10,4	mA.
Rk	=	150	300	Ω
Ri	=	0,6	0,36	M.Ω
Sc	=	0,35	0,52	mA/V.
Vg4(1)	=	—20	—45	V.

(1) Sc = 0,002 mA/V.

6A7/S

6 A 8
6 A 8-G

HEPTODE
(OSC . MOD)

Vf	=		6,3	V.
If	=		0,3	A.
Ci	=		12,5	$\mu\mu$F.
Co	=		12,5	$\mu\mu$F.
Va	=	100	250(max)	V.
Vg3-5	=	50	100	V.
Vg2	=	100	250(1)	V.
Vg4	=	—1,5(min)	—3	V.
Rg1	=		50.000	Ω
Ia	=	1,2	3,3	mA.
Ig3-5	=	1,5	3,2	mA.
Ig2	=	1,6	4,0	mA.
Ig1	=	0,25	0,5	mA.
Ri	=	0,6	0,36	M.Ω
Sc	=	0,35	0,5	mA/V.
Vg4(2)	=	—20(min)	—45	V.
Rk	=	300	300	Ω

(1) over R = 20.000 Ω en 0,1 μF condensator.

(1) à travers R = 20.000 Ω et 0,1 μF.

(2) Sc = 0,002 mA/V.

6 A8

TRIODE
(E_{AB})

Vf	=		6,3		V.
If	=		1,0		A.
Va	=	250	325	325	V.
			FB	SB	
Vg	=	45	−68		V.
Ia	=	60	40	40	mA.
g	=		4,2		
Ri	=		800		Ω
S	=		5,25		mA/V.
Wo	=	3,2	15	10	Wtt.
Ra	=	2.500	3.000	5.000	Ω
Rk	=	750		800	Ω

6 B 4-G

6 B 5

DUOTRIODE (1)
(E)

		Input	Output	
Vf	=		6,3	V.
If	=		0,8	A.
Va(max)	=	300	300	V.
Vg	=	0	0	V.
Ia	=	9	42	mA.
g	=		58	
Ri	=		2.400	Ω
S	=		2,4	mA/V.
Wo	=		4	Wtt.
Ra	=		7.000	Ω

(1) Triode - Tetrode.

6B5
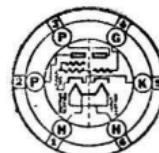
31-12-38

DUO - DIODETRIODE
(D.det + LF)

Vf	$=$	6,3	V.
If	$=$	0,3	A.
Va	$=$	250	V.
Vg	$=$	—2	V.
g	$=$	100	
Ri	$=$	91.000	Ω
S	$=$	1,1	mA/V.
Ia	$=$	1	mA.

6B6G

DUOTRIODE - PENTHODE
($\dashv$ DET + LF$_W$) (1)

Vf	=			6,3		V.
If	=			0,3		A.
Va	=	100	180	250	250 (max)	V.
Vg2	=	100	75	100	125 (max)	V.
Vgl (min)	=	—3	—3	—3	—3	V.
Ia	=	5,8	3,4	6,0	9,0	mA.
Ig2	=	1,7	0,9	1,5	2,3	mA.
Ri	=	0,8	1,0	0,8	0,65	M.Ω
g	=	285	840	800	730	
S (norm)	=	0,95	0,84	1,0	1,125	mA/V.
Vgl (max)	=	—17	—13	—17	—21	V.
Rk	=	2.000	à	6.000		Ω
Co	=	9,5				$\mu\mu$F.
Ci	=	3,5				$\mu\mu$F.

(1) V. type 2 B 7.

31-12-38

6 B 8
6 B 8-G

DUODIODE - PENTHODE
(HF - MF - d DET - LF)

Vf	=	6,3	V.
If	=	0,3	A.
Va(max)	=	250	V.
Vg2	=	125	V.
Vg1	=	—3	V.
Ia	=	10	mA.
Ig2	=	2,3	mA.
g	=	800	
Ri	=	0,6	M.Ω
S	=	1,325	mA/V.
Vgco	=	—21	V.
Rk	=	250 - 10.000	Ω(1)
Ci	=	6	$\mu\mu$F.
Co	=	9	$\mu\mu$F.

(1) Volgens de functie der lamp.

Suivant la fonction de la lampe.

— 261 —
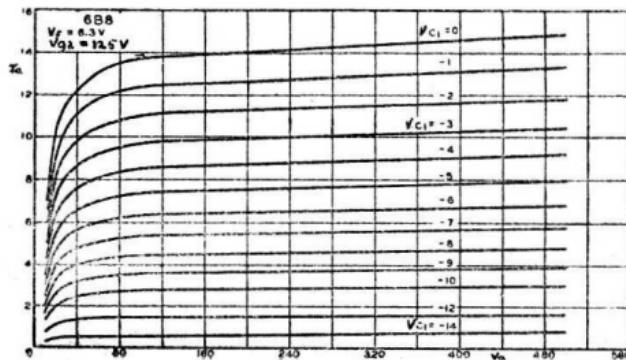
6 C 5
6 C 5-G

TRIODE
(HF - MF - OSC - DET - LF$_{TW}$)

Vf	=		6,3	V.
If	=		0,3	A.
		TR	W	
Va(max)	=	250	250	V.
Vg	=	—8	—5	V.
g	=	20	14	
Ri	=		10.000	Ω
S	=		2	mA/V.
Rk	=	1.000	2.500/3.500	Ω
Ci	=		4	$\mu\mu$F.
Co	=		13	$\mu\mu$F.

6 C 5

6 C 5-G

PENTHODE
(A. DET - LF$_w$)

Vf	=		6,3	V.
If	=		0,3	A.
Va	=	100	250 (max)	V.
Vg3	=	Vc		
Vg2	=	100	100 (1)	V.
Vg1	=	—3	—3	V.
Ia	=	2	2	mA.
Ig2	=	0,5	0,5	mA.
g	=	1.185	>1.500	
Ri	=	1,0	>1,5	M.Ω
S	=	1,185	1,225	mA/V.
Ci	=		7	μμF.
Co	=		12	μμF.
Vg1co	=	—7	—7	V.
Rk	=	3.500	3.500	Ω

(1) max 125 V
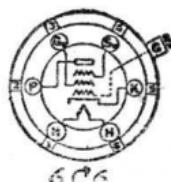
6 C 6

31-12-38

6 C 6   6 C 6

A . DET

Va	100	100	250	250	V.
Vg2	12	30	50	100	V.
Vg1	—1,16	—1,83	—2	—43	V.
Rk	18.000	10.000	3.000	10.000	Ω
Ik	0,63	0,183	0,65	0,43	mA.
Rp	1,0	0,25	0,25	0,5	M.Ω
Cpg	0,01	0,01	0,25	0,25	μF.
Rg	1,0	0,5	0,25	0,25	M.Ω
HFS(1)	1,05	1,6	1,18	1,37	V.

(1) Deze spanningen op 20 % gemoduleerd geven
17V. output sp. (voldoende om een 6 F 6 vol
uit te sturen).
Ces tensions, modulés à 20 % donnent une
tension de sortie de 17 V. suffisante pour
alimenter une 6 F 6.

6 C 7   6 C 7

DUODIODE - TRIODE
(d DET - LF)

Vf	=	6,3	V.
If	=	0,3	A.
Va(max)	=	250	V.
Vg	=	—9	V.
Ia	=	4,5	mA.
g	=	20	
Ri	=	16.000	Ω
S	=	1,25	mA/V.
Rk	=	2.000	Ω

6C7
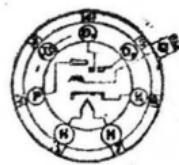
DUOTRIODE
(LF - Inv.)

		LF	Inv.	
Vf	=		6,3	V.
If	=		0,3	A.
		LF	Inv.	
Va(max)	=	250	250	V.
Vg	=	—4,5	—3	V.
Ia	=		3,1	mA.
g	=	38	45	
Ri	=	26.000		Ω
S	=	1,45		mA/V.
Vo	=		60	Veff.
Ra	=		50.000	Ω
Rk	=		900	Ω

6 C 8-G
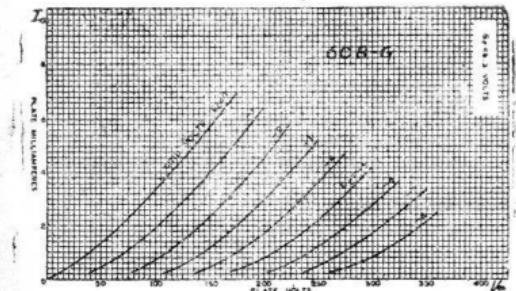
TRIODE
(E$_{AB}$)

		A	B	
Vf	=		6,3	V.
If	=		0,7	A.
Va(max)	=	275	300	V.
Vg	=	—40	—50	V.
Ia	=	31	23(p.l)	mA.
g	=	4,7		
Ri	=	2.250		Ω
S	=	2,1		mA/V.
Wo	=	1,4	5,0	Wtt.
Ra	=	7.200	5.000(p.p)	Ω
Rk	=	1.300		Ω

6D5

PENTHODE
(HF - MF)

Vf	=		6,3	V.
If	=		0,3	A.
Va	=	100	250(max)	V.
Vg2	=	100	100(max)	V.
Vg1(min)	=	—3	—3	V.
Ia	=	8	8,2	mA.
Ig2	=	2,2	2,0	mA.
g	=	375	1.280	
Ri	=	0,25	0,8	$M.\Omega$
S(max)	=	1.500	1.600	mA/V.
Ci	=		4,7	$\mu\mu F.$
Co	=		6,5	$\mu\mu F.$
Rk	=	400	400	Ω

6 D 6

6 D 7   6 D 7

PENTHODE
(A . DET - LF$_W$)(1)

(1) V. type 6 C 6.

6 D 8-G   6 D 8-G

HEPTODE
(OSC . MOD)

Vf	=		6,3	V.
If	=		0,15	A.
Va	=	100	250	V.
Vg3-5	=	50	100	V.
Vg	=	—1,5	—3	V.
Ia	=	1,0	3,0	mA.
Ig3-5	=	1,7	3,8	mA.
Ri	=	0,55	0,32	M.Ω
S	=	0,3(1)	0,5(2)	mA/V.
Rk	=	300	300	Ω

(1) Vg_{3-5} = 100 V Ig_{3-5} = 1,8 mA.
(2) Gg_{3-5} = 200 V Ig_{3-5} = 4,5 mA.

6 D 8-G

(AI)
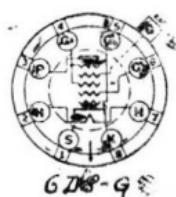
Vf	=		6,3	V.
If	=		0,3	A.
Vf	=		2,5	V.
If	=		0,8	A.
Va	=	100	250	V.
Vs	=	100	250(1)	V.
Vgl	=	0	0	V.
Ia	=	0,19	0,24	mA.
Is	=	4,5	4,5	mA.
Vg(min)	=	—3,3	—8	V.
Ra	=	0,5	1	M.Ω

(1) min 90 V.

6 E 5
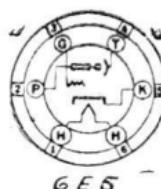
DUOTRIODE
(E_{AB})

Vf	=		6,3	V.
If	=		0,6	A.
Va	=	180	250 (max)	V.
Vg	=	—20	—27,5	V.
Ia(1)	=	23	36	mA.
g	=	6,0	6,0	
Ri	=	8.600	7.000	Ω
S	=	2,8	3,4	mA/V.
Wo	=	0,75	1,6	Wtt.
Ra	=	15.000	14.000	Ω
Rk	=	850	750	Ω

(1) Voor de twee Triodes.   Pour les deux Triodes.

6E6
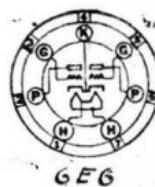
6 F 5
6 F 5-G

TRIODE
(LF$_W$)

Vf	=	6,3	V.
If	=	0,3	A.
Va(max)	=	250	V.
Vg	=	—2	V.
Ia	=	0,9	mA.
g	=	100	
Ri	=	66.000	Ω
S	=	1,5	mA/V.
Ci	=	6	$\mu\mu$F.
Co	=	12	$\mu\mu$F.
Rk	=	1.300 — 14.700	Ω

6 F 5-G

6 F 5
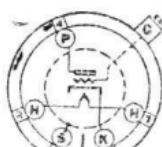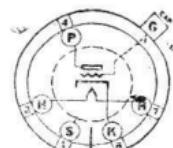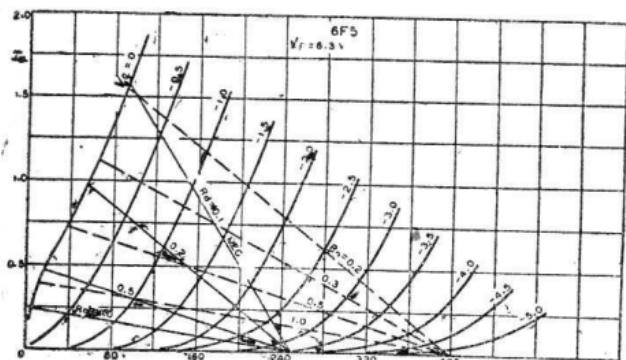
PENTHODE
(E_{AB})

Vf	=		6,3	V.
If	=		0,7	A.

E_A - PENTHODE

Va	=	250	315 (max)	V.
Vg2	=	250	315 (max)	V.
Vg1	=	—16,5	—22	V.
Ia	=	34	42	mA.
Ig2	=	6,5	8,0	mA.
Ri	=	80.000	75.000	Ω
g	=	200	200	
S	=	2,5	2,65	mA/V.
Ra	=	7.000	7.000	Ω
Wo(7%)	=	3	5	Wtt.
Ra	=	400	400	Ω

$6 F 6^r$
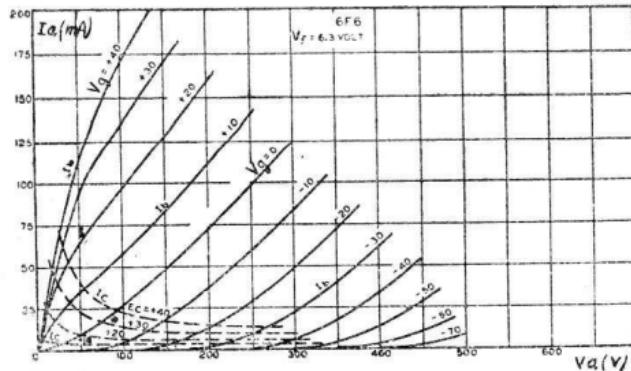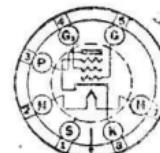
$6 F 6 - G$

6 F 6
6 F 6-G

E_A - TRIODE

Va	=	250	V.
Vgl	=	—20	V.
Ia	=	31	mA.
Ri	=	2.600	Ω
g	=	7	
S	=	2,7	mA/V.
Ra	=	4.000	Ω
Wo(5%)	=	0,85	Wtt.
Rk	=	650	Ω

E_{AB} - PENTHODE

		FB	SB	
Va(max)	=	375	375	V.
Vg2(max)	=	250	250	V.
Vgl	=	—26(min)		V.
Rk	=		340(min)	Ω
Ia	=	34	54	mA.
Ig2	=	5	8	mA.
Ra(pl)	=	2.500	2.500	Ω
Ra(p.p)	=	10.000	10.000	Ω
Wo(5%)	=	19	19	Wtt.

E_{AB} - TRIODE

		FB	SB	
Va(max)	=	350	350	V.
Vgl	=	—38	—	V.
Rk	=	—	730	Ω(min)
Ia	=	45	50	mA.
Ra(pl)	=	1.500	2.500	Ω
Ra(pp)	=	6.000	10.000	Ω
Wo(7%)	=	18	14	Wtt.
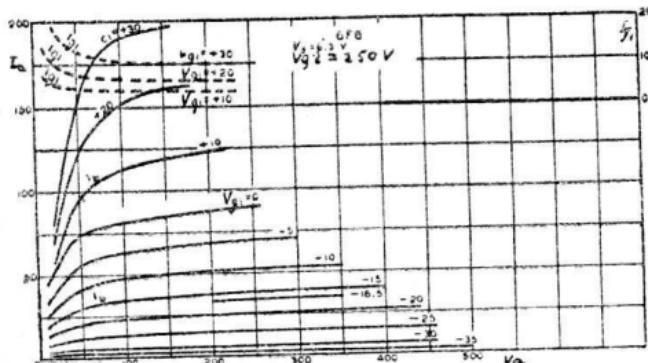
6 F 7
6 F 7-S

TRIODE - PENTHODE
(HF - MF - OSC . MOD)

Vf	=		6,3	V.
If	=		0,3	A.

		TRIODE	PENTHODE	
Ci	=	2,5	3,2	$\mu\mu$F.
Co	=	3,0	12,5	$\mu\mu$F.

HF - MF

		TRIODE	PENTHODE		
Va	=	100 (max)	100	250 (max)	V.
Vg2	=	—	100	100 (max)	V.
Vg1	=	—3 (min)	—3	—3 (min)	V.
Ia	=	3,5	6,3	6,5	mA.
Ig2	=	—	1,6	1,5	mA.
g	=	8	300	900	
Ri	=	16	290	850	k Ω
S	=	0,5	1,05	1,1	mA/V.
S(vg1 = —35V) =			0,009	0,01	mA/V.

6F7/S

— 276 —

(OSC . MOD)

		TRIODE	PENTHODE	
Va	=	100	250	V.
Vg2	=	—	100	V.
Vg1	=	—	—10	V.
Ig	=	0,15	0	mA.
Ia	=	2,4(1)	2,8	mA.
Ig2	=	—	0,6	mA.
Ri	=	—	2,0	Ω
Rk	=	—	1.700	Ω
Sc	=	—	0,3	mA/V.
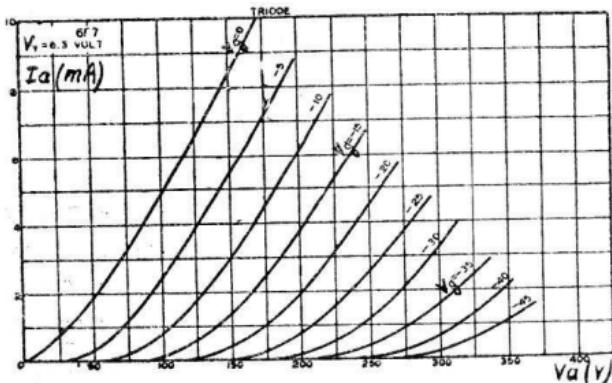
DUOTRIODE
(LF - Inv.)

		LF	Inv.	
Vf	=		6,3	V.
If	=		0,6	A.
Va(max)	=	250	250	V.
Vg	=	—8	—5,5	V.
Ia	=	9,0		mA.
g	=	20	29	
Ri	=	7.700		Ω
S	=	2,6		mA/V.
Vo	=		65	Veff.
Ra	=		50.000	Ω
Rk	=		1.150	Ω

6 F8-G

(A. I.)

V. 6 E 5

6 G 5
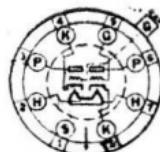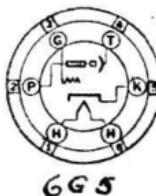
PENTHODE
(E_A)

Vf	=	6,3	V.
If	=	0,15	A.
Va	=	180	V.
Vg2	=	180	V.
Vg1	=	—9	V.
Ia	=	15	mA.
Ri	=	0,175	M.Ω
S	=	2,3	mA/V.
g	=	400	
Ra	=	10.000	Ω
Rk	=	510	Ω
Wo	=	1,1	Wtt.
d% (tot)	=	10	%

6 G 6 G

6 G 5

<div align="right">

6 G 5
</div>

(Al)

V. 6E5

6G5

6 H 6
6 H 6-G

<div align="right">
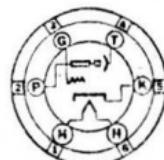
6 H 6
6 H 6-G
</div>

DUODIODE
(d DET)

Vf	=	6,3	V.
If	=	0,3	A.
Va(max)	=	100	V.
Ia	=	4(max)	mA.
Cp-p		<0,02	$\mu\mu$F.
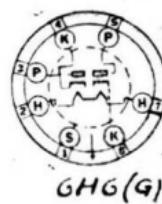
6H6(G)

TRIODE
(LF)

Vf	=	6,3	V.
If	=	0,3	A.
Va(max)	=	250	V.
Vg	=	—8	V.
Ia	=	9	mA.
g	=	20	
Ri	=	7.700	Ω
S	=	2,6	mA/V.
Rk	=	900	Ω

6 J 5
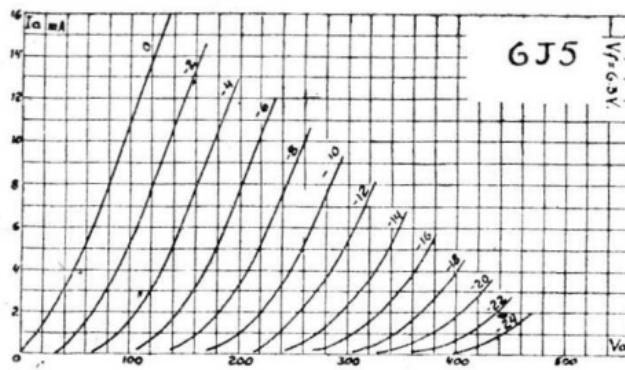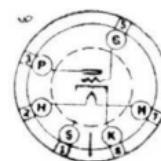
6 J 5 (G)

PENTHODE
(A DET - LF$_w$)

Vf	=		6,3	V.
If	=		0,3	A.
Va	=	250	250	V.
Vg1	=	3,0	4,3	V.
Vg2	=	100	100	V.
Ia	=		2(1)	mA.
Ig2	=		0,5	mA.
Ri	=		1,5	M.Ω
S	=		0,122	mA/V.
g	=		1.500	

(1) Ajust. Ia = 0,1 mA. zonder sein - sans signal.
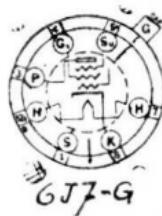
6J7-G

HEPTODE - TRIODE
(OSC . MOD)

Vf	=		6,3	V.
If	=		0,3	A.
Va	=	100	250	V.
Vsg(max)	=	100	100	V.
Vg	=	—3	—3	V.
Ia	=	1,4	1,3	mA.
Va(osc)	=	100	250	V.
Isg	=	3,0	2,9	mA.
Ia(osc)	=	3,0	5,0	mA.
Ig(osc)	=	0,3	0,4	mA.
Vg(osc)	=	—20	—20	V.
Ri	=	0,9	4,0	M.Ω
Sc	=	0,25	0,29	mA/V.
Rg(osc)	=	50	50	kΩ
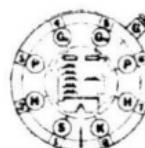
GJ8-G

TRIODE
(HF)

Vf	=		6,3	V.
If	=		0,3	A.
Va	=	100	250 (max)	V.
Vg	=	—1,5	—3	V.
Ia	=	0,35	1,1	mA.
g	=	70	70	
Ri	=	78.000	50.000	Ω
S	=	0,9	1,4	mA/V.

6K5-G

PENTHODE
(E)

Vf	=			6,3		V.
If	=			0,3		A.
Va	=	100	135	180	250 (max)	V.
Vg2	=	100	135	180	250 (max)	V.
Vg	=	—7	—10	—13,5	—18	V.
Ia	=	9,0	12,5	18,5	32	mA.
Ig2	=	1,6	2,2	3,0	5,5	mA.
g	=	150	150	150	150	
Ri	=	103,5	94	81	68	kΩ
S	=	1,45	1,6	1,85	2,2	mA/V.
Wo(10%)	=	0,33	0,75	1,5	3,4	Wtt.
Ra	=	12,0	10,4	9,0	7,6	kΩ
Rk	=	660	680	630	480	Ω

6 K 6-G

PENTHODE
(HF - MF) (1)

Vf	=			6,3	V.
If	=			0,3	A.
Va	=	90	180	250 (max)	V.
Vg3	=	0	0	0	V.
Vg2	=	90	75	125 (max)	V.
Vg1 (min)	=	—3	—3	—3	V.
Vg1 (S=0,002mA/V)	—38,5	—32,5	—52,5		V.
Ia	=	5,4	4,0	10,5	mA.
Ig2	=	1,3	1,0	2,6	mA.
g	=	400	1.100	900	
Ri	=	0,315	1,0	0,6	M.Ω
Rk	=	450	600	250	Ω
S	=	1,27	1,1	1,65	mA/V.
Ci	=		7		$\mu\mu$F.
Co	=		12		$\mu\mu$F.

(1) V. type 78.
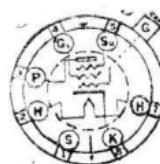
6K7 (G)

TRIODE - HEXODE
(OSC . MOD)

Vf	=		6,3	V.
If	=		0,3	A.
Va(hex)	=	100	250	V.
Vsg	=	100	100	V.
Vg	=	—3—30	—3—30	V.
Va(tri)	=	100	100	V.
Ia(hex)	=	2,3	2,7	mA.
Isg	=	6,9	6,5	mA.
Ia(tri)	=	3,5	3,5	mA.
Ri(hex)	=	0,3	0,6	M.Ω
Sç	=	0,36	0,4	mA/V.

GK 8
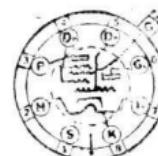
TRIODE
(HF - DET)

V_f	$=$		6,3	V.
I_f	$=$		0,15	A.
V_a	$=$	100	250(max)	V.
V_g	$=$	—3	—9	V.
I_a	$=$	4	8	mA.
g	$=$	15	17	
R_i	$=$	10.000	9.000	Ω
S	$=$	1,5	1,9	mA/V.
R_k	$=$	750	1.125	Ω
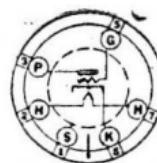
6 L 5-G

6 L 6
6 L 6-G

<div align="right">

6 L 6
6 L 6-G

</div>

BEAM POWER TETRODE
E_A - SB

Vf	=		6,3		V.
If	=		0,9		A.

		E_{A-SB}			
Va	=	375	250	300	V.
Vg2	=	125	250	200	V.
Rk	=	325	170	220	Ω
Ia	=	24	76	53	mA.
Ig2	=	0,7-1,8	5,4-7,2	3-4,6	mA.
Ra	=	14.000	2.500	4.500	Ω
d%(tot)	=	9	10	11	
Wo(max)	=	4	6,5	6,5	Wtt.
Rk	=	365	170	220	Ω
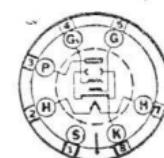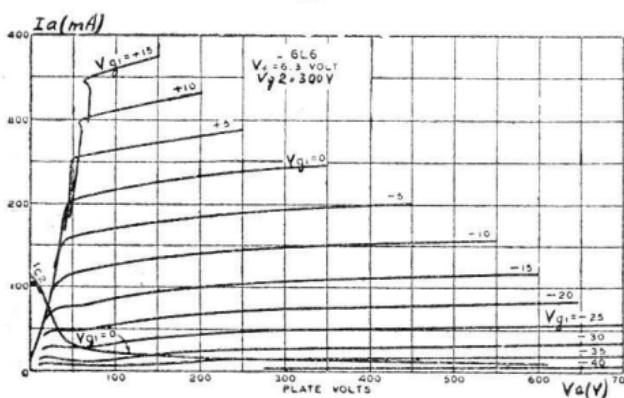
E_A - FB

Va	=	375	250	300	375	V.
Vg2	=	125	250	200	250	V.
Vg1	=	—9	—14	—12,5	—17,5	V.
Ia	=	25	75	52	62	mA.
Ig2	=	0,7-2	5-7,3	2,5-4,7	2,5-6	mA.
Ra	=	14.000	2.500	4.500	4.000	Ω
d%(tot)	=	9	10	11	14,5	
Wo	=	4,2	6,5	6,5	11,5	Wtt.

PUSH-PULL - A

		FB	SB	
Va	=	250	250	V.
Vg2	=	250	250	V.
Vg1	=	—16	—	V.
Rk	=	—	125	Ω
Ia	=	120-140	120-130	mA.
Ig2	=	10-16	10-15	mA.
Ra	=	5.000	5.000	Ω
d%(tot)	=	2	2	
Wo	=	14,5	13,5	Wtt.

PUSH-PULL - AB$_1$

		SB		FB		
Va	=	400	400	400	400	V.
Vg2	=	250	300	250	300	V.
Vg1	=	—	—	—20	—25	V.
Rk	=	190	200	—	—	Ω
Ia	=	96-110	112-128	88-124	102-152	mA.
Ig2	=	4,6-10,8	7-16	4-12	6-17	mA.
Ra	=	8.500	6.600	8.500	6.600	Ω
d%	=	2	2	2	2	
Wo	=	24	32	26,5	34	Wtt.

PUSH-PULL - AB$_2$

Va	=	400	400	V.
Vg2	=	250	300	V.
Vg1	=	—20	—25	V.
Ia	=	88-168	102-230	mA.
Ig2	=	4-13	6-20	mA.
Ra	=	6.000	3.800	Ω
Wo	=	40	60	Wtt.
Rk	=	190	200	Ω

HEPTODE
(HF - MF - OSC . MOD)

Vf	=		6,3	V.
If	=		0,3	A.

OSC - MOD

Va	=	250	250 (max)	V.
Vg2-4	=	100	150 (max)	V.
Vg1	=	—3/—30	—6/—45	V.
Vg3	=	—10	—15	V.
Ia	=	2,4	3,3	mA.
Ig2-4	=	6,2	8,3	mA.
Ri	=		>1	M.Ω
Sc	=	0,35	0,35	mA/V.
Rk	=	350	500	Ω
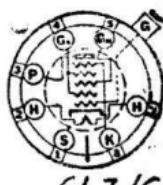
6L7 (G)

6 L 7
6 L 7-G

HF - MF

Va	$=$	250(max)	V.
Vg2-4	$=$	100(max)	V.
Vg1	$=$	—3/—15	V.
Vg3	$=$	—3	V.
Ia	$=$	5,3	mA.
Ig2-4	$=$	5,5	mA.
g	$=$	880	
Ri	$=$	0,8	M.Ω
S	$=$	0,005(1) 1,1	mA/V.
Rk	$=$	300	Ω

(1) $Vg_1 = Vg_3 = —15$ V.

6 N 5

A. I.

Vf	=	6,3	V.
If	=	0,15	A.
Va(max)	=	135(1)	V.
Vsg	=	135	V.
Ia	=	0,5	mA.

(1) Over 0,25 M Ω
(1) A travers 0,25 M Ω

6N5
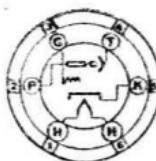
6 N 7
6 N 7-G

DUOTRIODE
(ST - $E_{A \to B}$) (1)

(1) V. type 6 A 6.

6N7(G)

6 P 7-G

PENTHODE - TRIODE
(HF - MF - OSC - MOD)

V. 6 F 7.

6P7-G

DUODIODE - TRIODE
(d DET - LF$_w$)

Vf	$\leftharpoonup$		6,3	V.
If	$\rightleftharpoons$		0,3	A.
Ia	$=$	0,35	1,1	mA.
Va	$=$	100	250(max)	V.
Vg	$=$	—1,5	—3	V.
g	$=$	70	70	
Ri	$=$	87.500	58.000	Ω
S	$=$	0,8	1,2	mA/V.
Rk	$=$		7.000	Ω

6 Q 7 (G)

6 R 7
6 R 7-G

ok

TRIODE
(LF_W)

Vf	=	. 6,3	V.
If	=	0,3	A.
Va(max)	=	250	V.
Vg	=	—2	V.
g	=	100	
Ri	=	66000	Ω
S	=	1500	Ω
Ia	=	0,9	mA.

V. 6 F 5.

31-12-38

6 SF 5

PENTHODE
(DET - LF)

Vf	=		6,3	V.
If	=		0,3	A.
Va	=	100	250 (max)	V.
Vg2	=	100	100	V (max)
Vgi	=	—3	—3	V.
Vg3	=	0	0	V.
g	=	1100	2500	
Ri	=	0,7	1,5	M.Ω
S	=	1.575	1,65	mA/V.
Ia	=	2,9	3,0	mA.
Ig2	=	0,9	0,8	mA.

6 SJ 7

PENTHODE
(HF)

V_f	=		6,3	V.
I_f	=		0,3	A.
V_a	=	100	250 (max)	V.
V_{g2}	=	100	100	V (max)
V_{g1}	=	—3	—3	V (min)
V_{g3}	=	0	0	V.
R_i	=	0,25	0,8	M.Ω
S	=	1,9	2,0	mA/V.
V_{g1} (S=0,001 mA/V)	=	—	—35	V.
I_a	=	8,9	9,2	mA.
I_{g2}	=	2,6	2,4	mA.

6SK7

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DUODIODE - TRIODE
(D det - LF)

Vf	=	6,3	V.
If	=	0,3	A.
Va(max)	=	250	V.
Vg	=	—2	V.
g	=	100	
Ri	=	91.000	Ω
S	=	1,1	mA/V.
Ia	=	0,8	mA.
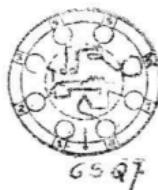
6 TH 8 (G)

TRIODE - HEXODE
(OSC)

Vf	=	6,3	V.
If	=	0,7	A.
Va(max)	=	250	V.
Vgs	=	100	V.
Vgl	=	—3,5	V.
S	=	2,5	mA/V.
Ri	=	1	M.Ω
Ia(norm)	=	6	mA.
Ig	=	2	mA.
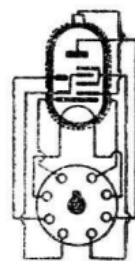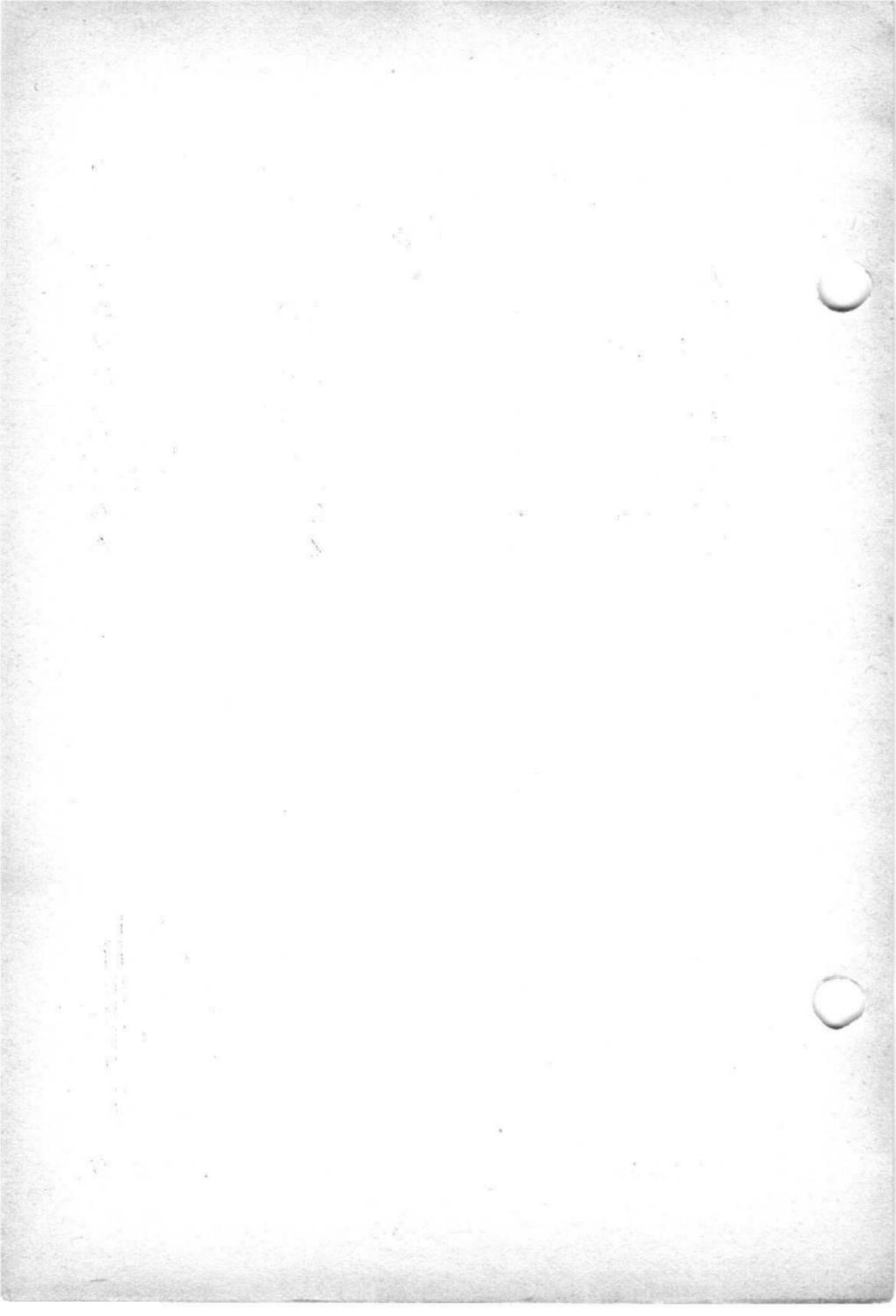
6 TH8-G

PENTHODE
(HF)

Vf	=	6,3	V.
If	=	0,15	A.
Va(max)	=	100	V.
Vsg	=	100	V.
Vg	=	—3	V.
Ia	=	8	mA.
Ig2	=	2,2	mA.
g	=	375	
Ri	=	250.000	Ω
S	=	1,5	mA/V.
Rk	=	300	Ω
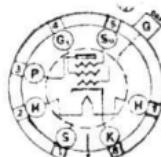
6S7-G

(AI)

Vf	$=$	6,3	V.
If	$=$	0,3	A.
Va(max)	$=$	250	V.
Vg	$=$	—22(1)	V.
Is	$=$	3,0	mA.

(1) Schaduwhoek $= 0°$
Ombre $= 0°$

6 T 5
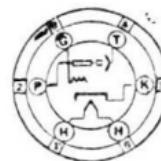
DUODIODE - TRIODE
(DET+LF)

Vf	=		6,3	V.
If	=		0,15	A.
Va(max)	=	100	250	V.
Vg	=	—1,5	—3	V.
Ia	=	0,3	0,9	mA.
g	=	65	65	
Ri	=	95.000	65.000	Ω
S	=	0,68	1,0	mA/V.
Rk	=	5.000	3.300	Ω

6T7-G

6 U 5

(AI)

V. 6E5.

6U5

6 U 7-G

PENTHODE

(1) V. 6 D 6.

6U7-G

BEAM - POWER TETRODE
(E_{A-AB})

		A	AB	push pull	
Vf	=		6,3		V.
If	=		0,45		A.
Va(max)	=	250	250	300	V.
Vsg	=	250	250	300	V.
Vg	=	—12,5	—15	—20	V.
Ia	=	45	35	39	mA.
Isg	=	4,5-6,5	2,5	2,5	mA.
g	=	218			
Ri	=	52.000			
S	=	4,1			mA/V.
Wo	=	4,25	8,5	13,5	Wtt.
Ra	=	5.000	10.000	8.000	Ω
Rk	=	300			Ω

6 V6 - G

6 V6 (G)
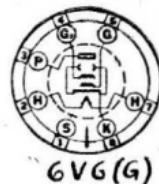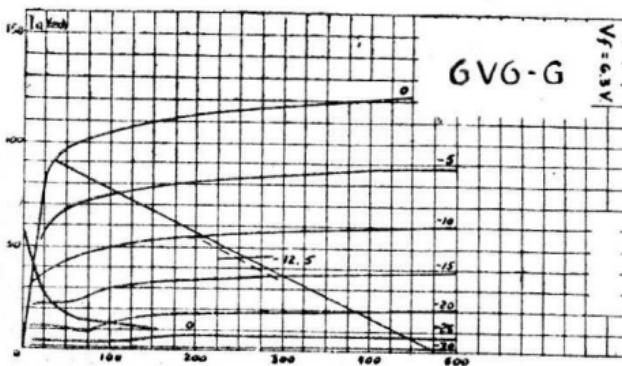
DUODIODE - TRIODE
(dDET + LF) (1)

Vf	=			6,3	V.
If	=			0,45	A.
Va	=	135	180	250(max)	V.
Vg	=	—10,5	—13,5	—20	V.
Ia	=	3,7	6,0	8,0	mA.
g	=	8,3	8,3	8,3	
Ri	=	11	8,5	7,5	kΩ
S	=	0,75	0,975	1,1	mA/V.
Wo	=	0,075	0,16	0,35	Wtt.
Ra	=	25	20	20	kΩ
Rk	=	3000	2250	2500	Ω

(1) V. type 55.

6V7-G

PENTHODE
(A . DET - LF$_w$)

Vf	=	6,3	V.
If	=	0,15	A.
Va(max)	=	250	V.
Vg1	=	—3	V.
Vg2(max)	=	100	V.
Ia	=	2,0	mA.
Ig2	=	0,5	mA.
Ri	=	1,5	M.Ω
S	=	1,225	mA/V.
g	=	1850	

A . DET

Va	=	250	V.
Vg1	=	—4,3	V.
Vg2(max)	=	100	V.
Ra	=	0,25	M.Ω(1)

(1) of met smsp van 500 H. in parallel.
(1) ou avec bobine de choc de 500 H en parallèle.

6 W 7 G

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— 302-1 —
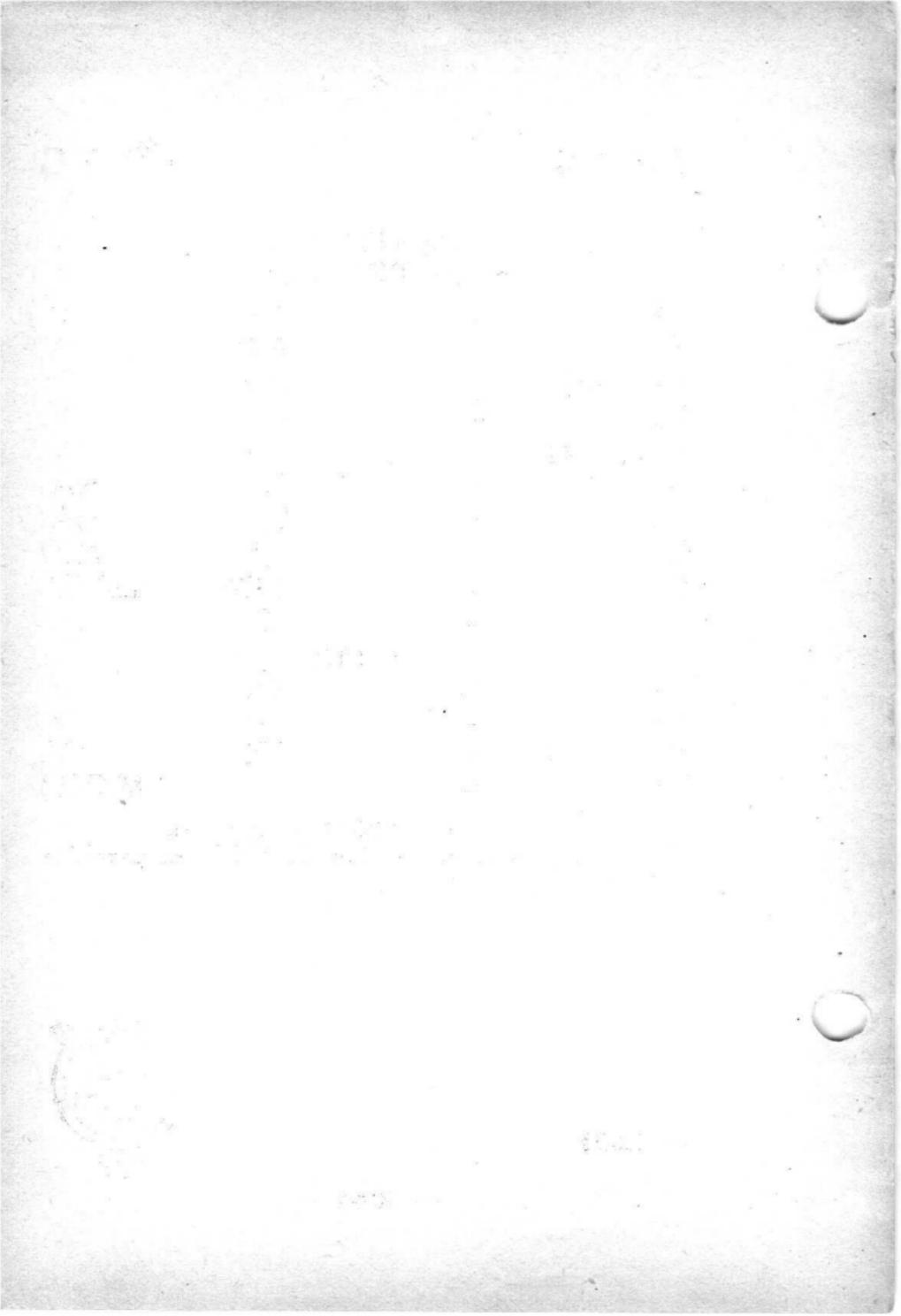
6 X 5
6 X 5-G

GELIJKRICHTERLAMP
REDRESSEUSE

V_f	$=$	6,3	V.
I_f	$=$	0,6	A.
$V_a(max)$	$=$	350	V$\sim$
$I_a(max)$	$=$	75	mA.
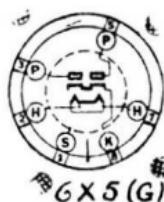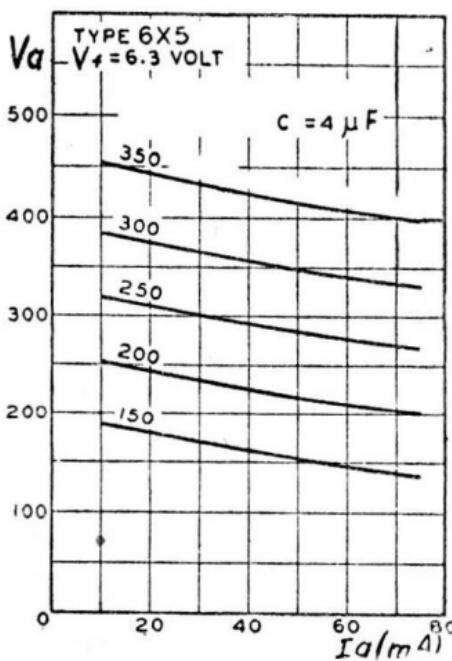
6 X 5 (G)

GELIJKRICHTERLAMP
REDRESSEUSE

V_f	=	6,3	V.
I_f	=	0,8	A.
V_a(max p.pl)	=	350	V. $\sim$
I_a	=	50	mA.

6Y5
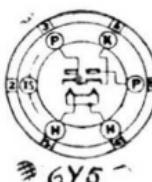
TETRODE
(E)

Vf	=	6,3	V.
If	=	1,25	A.
Va(max)	=	135	V.
Vsg	=	135	V.
Vg	=	—13,5	V.
Ia	=	58	mA.
Isg	=	3,0	mA.
S	=	7	mA/V.
Wo	=	3,6	Wtt.
Ra	=	2.000	Ω
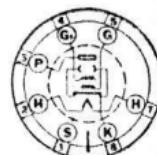
6Y6-G

DUOTRIODE
(E_B)

Vf	$=$		6,3	V.
If	$=$		0,6	A.
Va	$=$	180	250(max)	V.
Vg	$=$	0	0	V.
Ia	$=$	3,8	5,3	mA.
Wi	$=$	0,38	0,38	Wtt.
Wo	$=$	5,5	8,0	Wtt.
Ra(p.p)	$=$	7.000	14.000	Ω
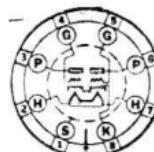
6Y7-G

6 ZY5-G

GELIJKRICHTERLAMP
REDRESSEUSE

Vf	=	6,3	V.
If	=	0,3	A.
Va(max)	=	350	V.$\sim$
Ia	=	35	mA.
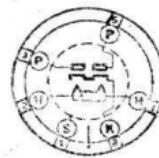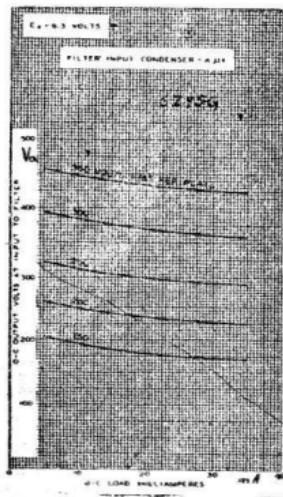
6ZY5-G

31-12-38

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC) (1)

Vf	=	6,3	V.
If	=	0,5	A.
Va(p.pl)	=	350	V.$\sim$ (max)
Ia	=	50	mA. (max)

(1) V. type 84.

FULL-WAVE
TYPE 84
$V_F = 6.3$ VOLTS
INPUT
— COND (C=4 μf)
-- CHOKE
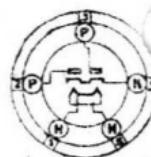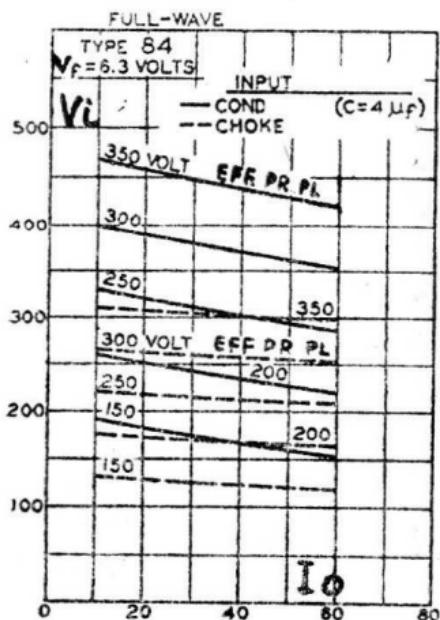
GELIJKRICHTERLAMP
REDRESSEUSE

V_f	$=$	6,3	/	12,6	V.
I_a	$=$	0,8	/	0,4	A.
$V_a(max)$	$=$		230		V.$\sim$
I_a	$=$		60		mA.

6Z5

DUOTRIODE
(E_B)

Vf	=		6,3	V.
If	=		0,3	A.
Va(max)	=	135	180	V.
Vg	=	0	0	V.
Ia(pl)	=	6	8,4	mA.
Wo	=	2,5	4,2	Wtt.
Ra	=	9.000	12.000	Ω
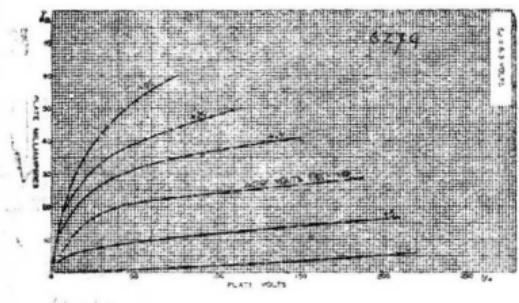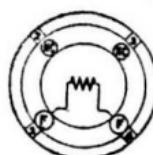
6Z7-G

STROOMREGULATOR
REGULATRICE

Vf	=	176	V.
If	=	0,3	A.

7

STROOMREGULATOR
REGULATRICE

Vf	=	132	V.
If	=	0,3	A.

8
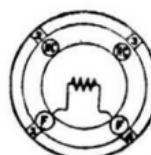
STROOMREGULATOR
REGULATRICE

Vf	=	50	V.
If	=	0,3	A.
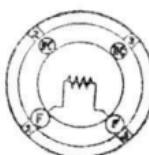
9

TRIODE
(LF - E)

Vf	=		7,5		V.
If	=		1,25		A.
Va	=	250	350	425(max)	V.
Vg	=	—23,5	—32	—40	V.
Ia	=	10	16	18	mA.
g	=	8	8	8	
Ri	=	6.000	5.150	5.000	Ω
S	=	1,33	1,55	1,6	mA/V.
Wo	=	0,4	0,9	1,6	Wtt.
Ra	=	13.000	11.000	10.200	Ω
Rk	=	2.350	2.000	2.220	Ω
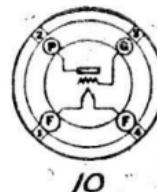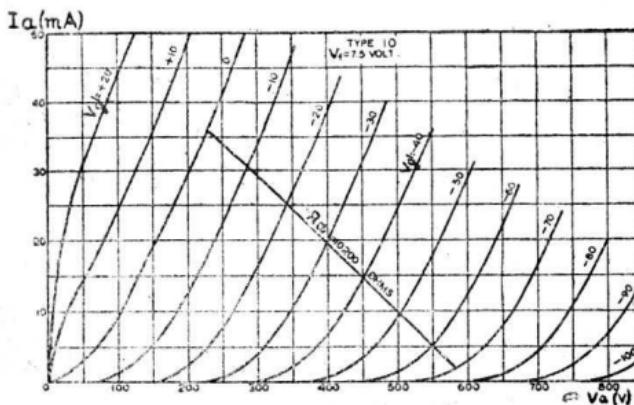
TRIODE
(HF - DET - LF)

Vf	=		1,1	V.
If	=		0,25	A.
Va	=	90	135 (max)	V.
Vg	=	—4,5	—10,5	V.
Ia	=	2,5	3	mA.
g	=		6,6	
Ri	=	15.500	15.000	Ω
S	=	0,425	0,44	mA/V.
Rk	=	1.800	3.500	Ω
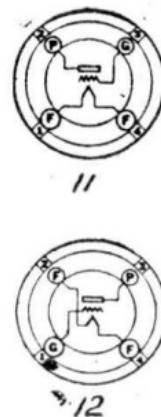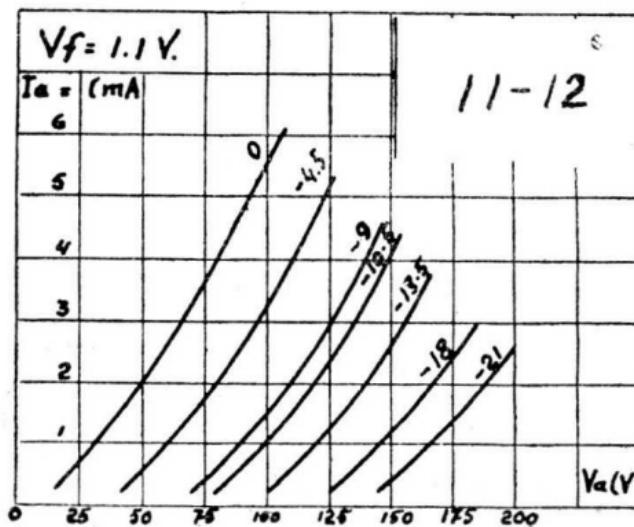
PENTHODE
(E)

Vf	=	12,5	/	6,3	V.
If	=	0,3	/	0,6	A.
Va(max)	=	100		180	V.
Vsg	=	100		180	V.
Vg	=	—15		—27	V.
Ia	=	17		40	mA.
Vsg	=	3,		8,0	mA.
g	=	70		80	
Ri	=	41.000		35.000	Ω
S	=	1,7		2,3	mA/V.
Wo	=	0,7		3	**Wtt.**
Ra	=	4.500		3.800	Ω
Rk	=	750		650	Ω
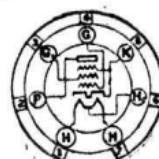
12A5

~~DIODE~~ - PENTHODE
(~~DET - LF~~)

(G - E

		DET	LF	
V_f	=		12,6	V.
I_f	=		0,3	A.
$V_a(max)$	=	125	135	V.
V_{sg}	=		135	V.
V_g	=		—13,5	V.
I_a	=	30(max)	9,0	mA.
I_{sg}	=		2,5	mA.
g	=		100	
R_i	=		102.000	Ω
S	=		0,975	mA/V.
W_o	=		0,55	Wtt.
R_a	=		13.500	Ω
R_k	=		1.250	Ω
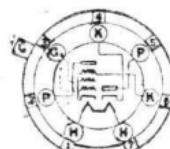
12 A 7

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	12,6	V.
If	=	0,3	A.
Va	=	250	V.∿ (max)
Ia	=	60	mA (max)
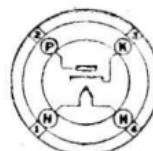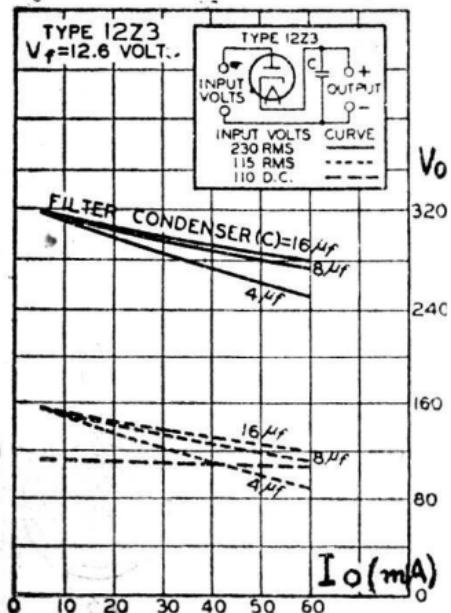
PENTHODE
(HF)

Vf	=		2	V.
If	=		0,22	A.
Va	=	67,5	135 (max)	V.
Vg2	=	67,5	67,5 (max)	V.
Vg	=	—1,5	—1,5	V.
Ia	=	1,85	1,85	mA.
Ig2	=	0,3	0,3	mA.
g	=	450	600	
Ri	=	0,63	0,8	M.Ω
S	=	0,71	0,75	mA/V.
Rk	=		700	Ω

PENTHODE
(E_{AB}) (1)

Vf	=	14,0	V.
If	=	0,30	A.
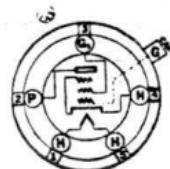
(1) V. type 6 F 6.
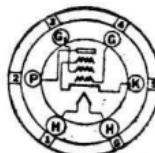
DUOTRIODE
(E_B)

Vf	=		2,0		V.
If	=		0,26		A.
Va(max)	=	135	135	135	V.
Vg	=	—6	—3	0	V.
Ia(1)	=	0,5	2	5	mA.
Wi	=	0,095	0,13	0,17	m.Wtt.
Wo	=	1,6	1,9	2,1	Wtt.
Ra(p.p)	=		10.000		Ω

(1) Zonder sein - en absence de signaux.
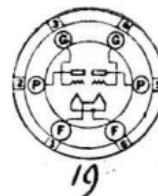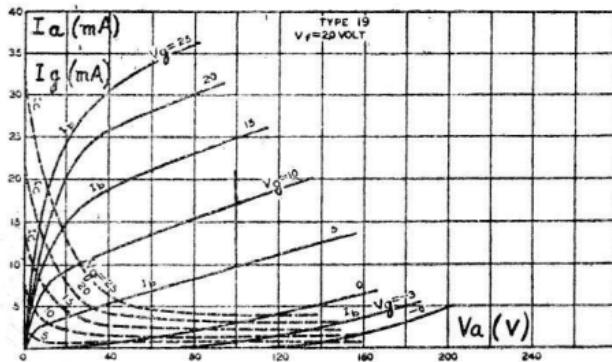
TRIODE
(E)

Vf	=	3,0 /	3,3	V.
If	=	0,125 /	0,132	A.
Va	=	90	135(max)	V.
Vg	=	—16,5	—22,5	V.
Ia	=	3	6,5	mA.
g	=	3,3	3,3	
Ri	=	8.000	6.300	Ω
S	=	0,415	0,255	mA/V.
Wo	=	0,045	0,11	Wtt.
Ra	=	9.600	6.500	Ω
Rk	=	5.500	3.460	Ω

20
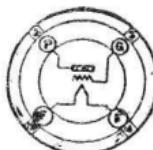
TETRODE
(HF)

Vf	=		3,3	V.
If	=		0,132	A.
Va	=	135	135(max)	V.
Vsg	=	45	67,5(max)	V.
Vg	=	—1,5	—1,5	V.
Ia	=	1,7	3,7	mA.
Isg	=	0,6	1,3	mA.
g	=	270	160	
Ri	=	0,725	0,325	MΩ
S	=	0,375	0,5	mA/V.
Rk	=	600	300	Ω
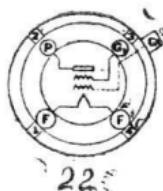
TETRODE
(HF - DET - LF)

Vf	=		2,5	V.
If	=		1,75	A.
Va	=	180	250(max)	V.
Vg2(max)	=	90	90	V.
Vg	=	—3	—3	V.
Ia	=	4	4	mA.
Ig2	=	1,7	1,7	mA.
g	=	400	630	
Ri	=	0,4	0,6	M.Ω
S	=	1	1,05	mA/V.
Rk	=		500	Ω

24A/S

25 A 6
25 A 6-G

PENTHODE
(E)

Vf	=			25	V.
If	=			0,3	A.
Va	=	95	135	180 (max)	V.
Vg2	=	95	135	135 (max)	V.
Vg	=	—15	—20	—20	V.
Ia	=	20	37	38	mA.
Ig2	=	4	8	7,5	mA.
g	=	90	85	100	
Ri	=	45	35	40	kΩ
S	=	2	2,45	2,5	mA/V.
Wo	=	0,9	2	2,75	Wtt.
Ra	=	4.500	4.000	5.000	Ω
Rk	=	625	440	440	Ω
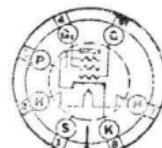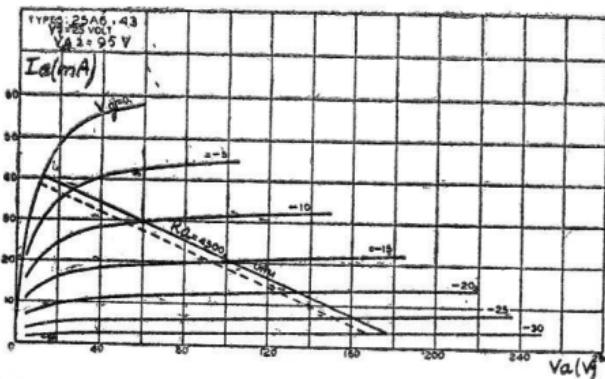
25A6(G)

GELIJKRICHTER MET PENTHODE
REDRESSEUSE AVEC PENTHODE
(LF - VAC)

		VAC	Penth.	
Vf	=		2,5	V.
If	=		0,3	**A.**
Va(max)	=	125	100	V.
Vsg	=		100	V.
Vg	=		—15	V.
Ia	=	75	20,5	mA.
Isg	=		4,0	mA.
g	=		90	
Ri	=		30.000	Ω
S	=		1,8	mA/V.
Wo	=		0,77	Wtt.
Ra	=		4.500	Ω
Rk	=		750	Ω

31-12-38

25A7G

DUOTRIODE
(E)

Vf	=	25		V.
If	=	0,3		A.
Va(max)	=	110	180	V.
Va(inp)	=	110	100	V.
Vg	=	0	0	V.
Ia	=	45	46	mA.
Ia(inp)	=	7	5,8	mA.
g	=	25	25	
Ri	=	11.400	15.200	Ω
S	=	2,2	2,3	mA/V.
Wo	=	2,0	3,8	Wtt.
Ra	=	2.000	4.000	Ω

2SB5
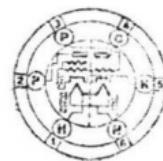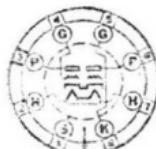
25N6-G

PENTHODE
(E)

Vf	=	25	V.
If	=	0,3	A.
Va(max)	=	95	V.
Vsg	=	95	V.
Vg	=	—15	V.
Ia	=	45	mA.
Isg	=	4	mA.
Wo	=	1,75	Wtt.
Ra	=	2.000	Ω
Rk	=	300	Ω

25B5-G

25 L 6
25 L 6-G

BEAM POWER TETRODE
(E)

Vf	=		25	V.
If	=		0,3	A.
Va(max)	=	110	110	V.
Vg2	=	110	110	V.
Vg	=	—7,5	—7,5	V.
Ia	=	49-54	50	mA.
Ig2	=	4-9	4-11	mA.
Ri	=	10.000	10.000	Ω
S	=	8,2	8,2	mA/V.
Wo(10%)	=	2,1	2,2	Wtt.
Ra	=	1.500	2.000	Ω
Rk	=	1.360	1.340	Ω
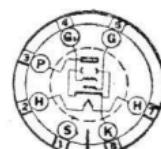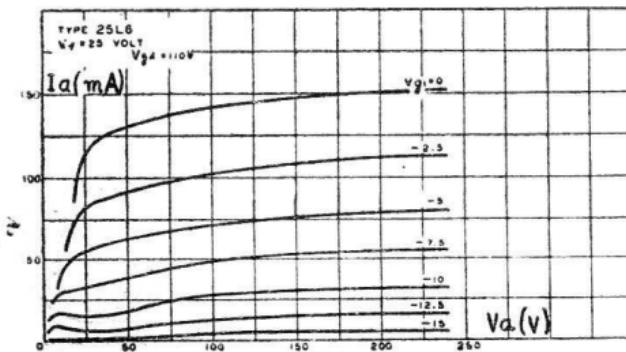
25 Y 5   **25 Y 5**
25 Z 5   **25 Z 5**

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	25	V.
If	=	0,3	A.

SPANNINGSVERDUBBELAAR
DOUBLEUR DE TENSION

Va(max)	=	125	V.$\sim$
Ia(max)	=	100	mA.

EENPHASIGE GELIJKRICHTER
REDRESSEUSE MONOPLAQUE

Va(max)	=	125	250(1)	V.$\sim$
Ia(max)	=	85	85	mA. p.pl

(1) Va $>$ 125 V met 100 Ω in serie met elke plaat.
Va $>$ 125 V avec 100 Ω en série avec chaque plaque.
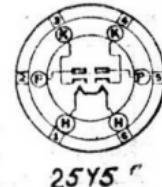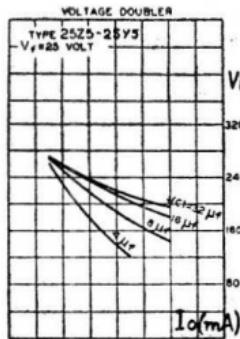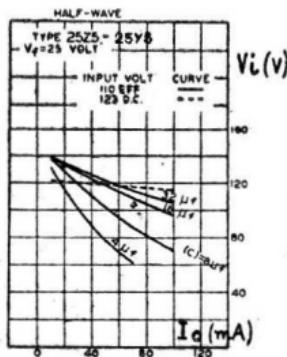
25 Z 6
25 Z 6-G

GELIJKRICHTERLAMP
REDRESSEUSE

| Vf | = | 25 | V. |
| If | = | 0,3 | A. |

SPANNINGSVERDUBBELAAR
DOUBLEUR DE TENSION

| Va(max) | = | 125 | V.∿ |
| Ia(max) | = | 85 | mA. |

EENPHASIGE GELIJKRICHTER
REDRESSEUSE MONOPLAQUE

| Va(max) | = | 125 | 250(1) | V.∿ |
| Ia(max) | = | 85 | 85 | mA. p.pl |

(1) Va >125 V met 100 Ω in serie met elke plaat.
    Va >125 V avec 100 Ω en série avec chaque plaque.

2 5 Z 6 -G
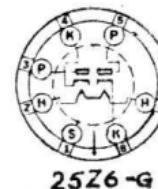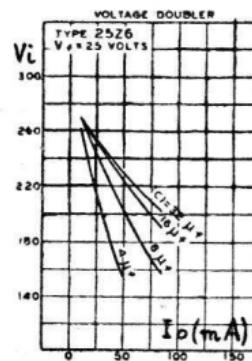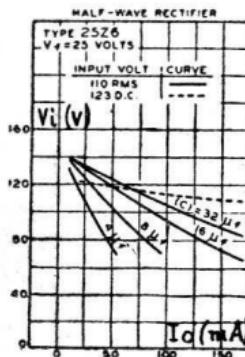
TRIODE
(HF - LF)

Vf	=		1,5		V.
If	=		1,05		A.
Va	=	90	135	180 (max)	V.
Vg	=	—7	—10	—14,5	V.
Ia	=	2,9	5,5	6,2	mA.
g	=	8,3	8,3	8,3	
Ri	=	8.900	7.600	7.300	Ω
S	=	0,935	1,1	1,15	mA/V.
Rk	=	2.400	1.800	2.300	Ω
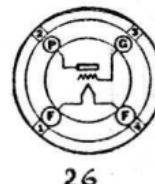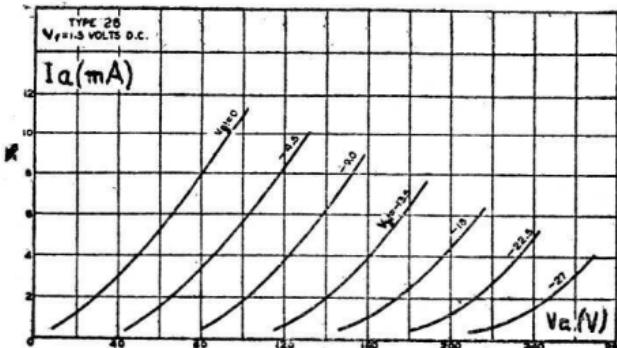
TRIODE
(HF - DET - LF)

Vf	=			2,5		V.
If	=			1,75		A.
Va	=	90	135	180	250(max)	V.
Vg	=	—6	—9	—13,5	—21	V.
Ia	=	2,7	4,5	5,0	5,2	mA.
g	=	9	9	9	9	
Ri	=	11	9	9	9,25	kΩ
S	=	0,82	1,0	1,0	0,975	mA/V.
Rk	=	2,2	2	2,7	4	kΩ

27(S)

TRIODE

(DET - E_{AB})   (1)

Vf	=		2		V.
If	=		0,06		A.

E_A

Va	=	90	135	180(max)	V.
Vg	=	—4,5	—9	—13,5	V.
Ia	=	2,5	3,0	3,1	mA.
Ri	=	11	10,3	10,3	kΩ
g	=	9,3	9,3	9,3	
S	=	0,85	0,9	0,9	mA/V.
Rk	=	1,8	2,9	2,9	kΩ

2lp E_B

Va	=	157,5	V.
Vg	=	—15	V.
Ia	=	1	mA.
Ra(p.p)	=	8.000	Ω
Wo	=	2,1	Wtt.

30(X)

TRIODE
(E)

Vf	=		2,0	V.
If	=		0,13	A.
Va	=	135	180(max)	V.
Vg	=	—22,5	—30	V.
Ia	=	8,0	12,3	mA.
g	=	3,8	3,8	
Ri	=	4.100	3.600	Ω
S	=	0,925	1,05	mA/V.
Wo	=	0,18	0,375	Wtt.
Ra	=	7.000	5.700	Ω
Rk	=	2.815	2.440	Ω
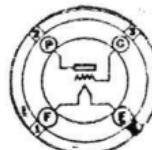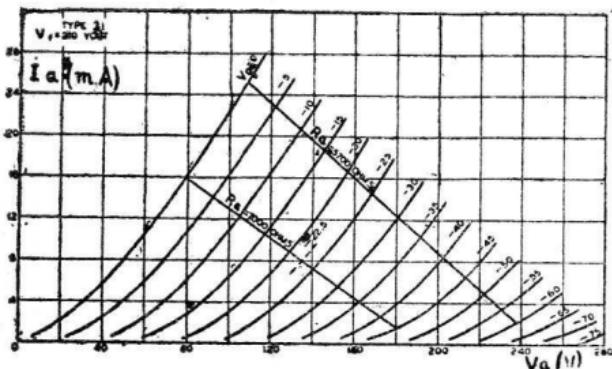
TETRODE
(HF)

Vf	=		2,0	V.
If	=		0,06	A.
Va	=	135	180 (max)	V,
Vg2 (max)	=	67,5	67,5	V.
Vg	=	—3	—3	V.
Ia	=	1,7	1,7	mA.
Ig2	=	0,4	0,4	mA.
g	=	610	780	
Ri	=	0,95	1,2	M.Ω
S	=	0,64	0,78	mA/V.
Rk	=	1.480	1.480	Ω

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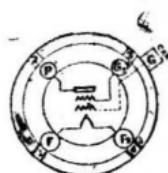
PENTHODE
(E)

Vf	=		2,0	V.
If	=		0,26	A.
Va	=	135	180(max)	V.
Vg2	=	135	180(max)	V.
Vg	=	—13,5	—18	V.
Ia	=	14,5	22	mA.
Ig2	=	3	5	mA.
g	=	70	90	
Ri	=	50	50	kΩ
S	=	1,45	1,7	mA/V.
Wo(7%)	=	0,7	1,4	Wtt.
Ra	=	7.000	6.000	Ω
Rk	=	770	670	Ω
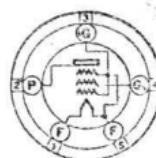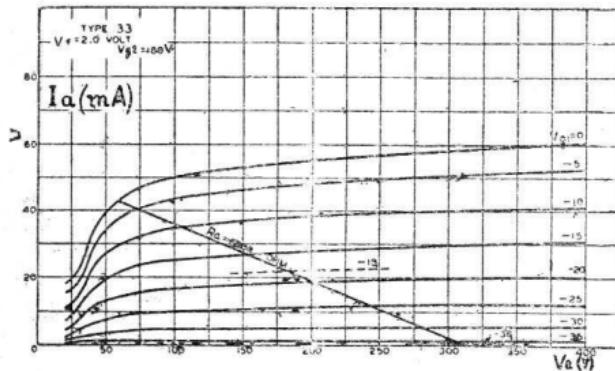
PENTHODE
(HF - MF)

Vf	=		2,0		V.
If	=		0,06		A.
Va	=	67,5(1)	135	180(max)	V.
Vg2	=	67,5	67,5	67,5	V.
Vg1(min)	=	—3	—3	—3	V.
Vg1(max)	=	—22,5	—22,5	22,5	V.
Ia .	=	2,7	2,8	2,8	mA.
Ig2	=	1,1	1,0	1,0	mA.
g	=	224	360	620	
Ri	=	0,4	0,6	1,0	M.Ω
S(max)	=	0,56	0,6	1,0	mA/V.
S(min)	=	0,015	0,015	0,015	mA/V.
Rk	=	850	850	850	Ω

(1) Voor draagbare ontvangers.
   Pour récepteurs portatifs.

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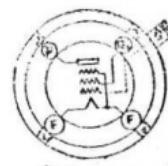
TETRODE
(HF - MF)

Vf	=		2,5	V.
If	=		1,75	A.
Va	=	180	250	V.
Vg2	=	90	90	V.
Vg1 (max)	=	—3	—3	V.
Vg1 (min)	=	—40	—40	V.
Ia	=	6,3	6,5	mA.
Ig2	=	2,5	2,5	mA.
g	=	305	420	
Ri	=	0,3	0,4	M.Ω
S(max)	=	1,02	1,05	mA/V.
S(min)	=	0,015	0,015	mA/V(1)
Rk	=	350	350	Ω

(1) $V_{g_1} = 40$ V.

35/51 (s)
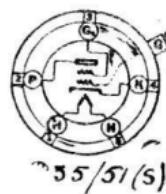
TETRODE
(HF)

Vf	=			6,3	V.
If	=			0,3	A.
Va	=	100	135	180	250(max) V.
Vg2	=	55	67,5	90	90(max) V.
Vgl	=	—1,5	—1,5	—3	—3 V.
Ia	=	1,8	2,8	3,1	3,2 mA.
Ig2	=	—	—	—	1,7(max) mA.
ç	=	470	475	525	595
Ri	=	0,55	0,475	0,5	0,55 M.Ω
S	=	0,85	1,0	1,05	1,08 mA/V.
Rk	=	750	500	850	850 Ω

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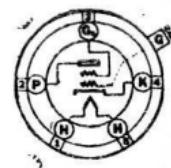
TRIODE
(HF - DET - LF)

Vf	=			6,3		V.
If	=			0,3		A.
Va	=	90	135	180	250	V.
Vg	=	—6	—9	—13	—18	V.
Ia	=	2,5	4,1	4,3	7,5	mA.
g	=	9,2	9,2	9,2	9,2	
Ri	=	11,5	10	10,2	8,4	kΩ
S	=	0,8	0,925	0,9	1,1	mA/V.
Rk	=	2,4	2,3	3	2,4	kΩ
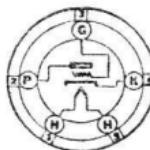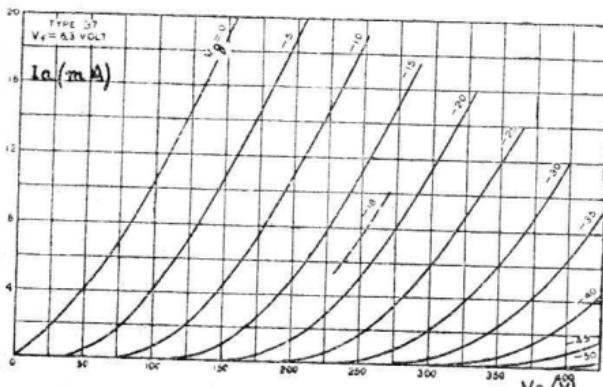
PENTHODE
(E)

Vf	=			6,3		V.
If	=			0,3		A.
Va	=	100	135	180	250(max)	V.
Vg2	=	100	135	180	250(max)	V.
Vg	=	—9	—13,5	—18	—25	V.
Ia	=	7	9	14	22	mA.
Ig2	=	1,2	1,5	2,4	3,8	mA.
g	=	120	120	120	120	
Ri	=	0,14	0,13	0,115	0,1	M.Ω
S	=	0,875	0,925	1,05	1,2	mA/V.
Wo(10%) =		0,27	0,55	1,0	2,5	Wtt.
Ra	=	15	13,5	11,6	10	kΩ
Rk	=	1,1	1,1	1,1	0,97	kΩ
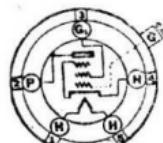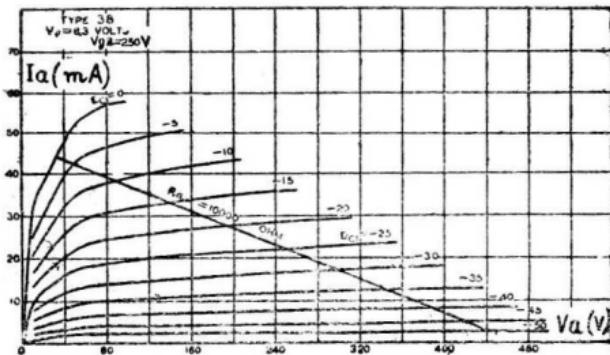
PENTHODE
(HF . OSC . MOD - MF)

Vf	=		6,3		V.
If	=		0,3		A.
Va	=	90	180	250 (max)	V.
Vg2	=	90	90	90 (max)	V.
Vg1 (max)	=	—3	—3	—3	V.
Vg1	=	—42,5	—42,5	—42,5	V.
Ia	=	5,6	5,8	5,8	mA.
Ig2	=	1,6	1,4	1,4	mA.
g	=	360	750	1050	
Ri	=	0,375	0,75	1	M.Ω
S (max)	=	0,96	1,0	1,05	mA./V.
S (min)	=		0,002 (1)		mA/V.
Rk	=	400	400	400	Ω (2)

(1) $V_{g_1} = $ —42,50 V.

(2) MOD → Rk = 2.000 Ω.
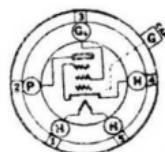
39/44

TRIODE
(LF$_w$)

Vf	=		5,0	V.
If	=		0,25	A.
Va	=	135	180	V.
Vg	=	—1,5	—3	V.
Ia	=	0,2	0,2	mA.
g	=	30	30	
Ri	=	0,15	0,15	M.Ω
S	=	0,2	0,2	mA/V.
Rk	=		15.000	Ω
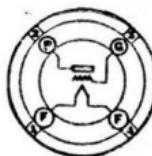
40

PENTHODE
(E)

Vf	=			6,3	V.
If	=			0,4	A.
Va	=	100	135	180	250(max)	V.
Vg2	=	100	135	180	250(max)	V.
Vg	=	—7	—10	—13,5	—18	V.
Ia	=	9,0	12,5	18,5	32	mA.
Ig2	=	1,6	2,2	3,0	5,5	mA.
g	=	150	150	150	150	
Ri	=	103,5	94	81	68	kΩ
S	=	1,45	1,6	1,85	2,2	mA/V.
Wo(10%)	=	0,33	0,75	1,5	3,4	Wtt.
Ra	=	12,0	10,4	9,0	7,6	kΩ
Rk	=	660	680	630	480	Ω

V. 6 K 6 - G

PENTHODE
(E$_{AB}$) (1)

Vf	=	6,3	V.
If	=	0,7	A.

(1) V. type 2A5 6F6.

PENTHODE
(E)

Vf	=			25	V.
If	=			0,3	A.
Va	=	95	135	180 (max)	V.
Vg2	=	95	135	135 (max)	V.
Vg	=	—15	—20	—20	V.
Ia	=	20	37	38	mA.
Ig2	=	4	8	7,5	mA.
g	=	90	85	100	
Ri	=	45	35	40	kΩ
S	=	2	2,45	2,5	mA/V.
Wo	=	0,9	2	2,75	Wtt.
Ra	=	4.500	4.000	5.000	Ω
Rk	=	625	440	440	Ω

V. 25 A 6.

TRIODE
(E_{AB})

Vf	=			2,5	V.
If	=			1,5	A.

E_A

Va	=	180	250	275 (max)	V.
Vg	=	—31,5	—50	—56	V.
Ia	=	31	34	36	mA.
Ri	=	1.650	1.610	1.700	Ω
g	=	3,5	3,5	3,5	
S	=	2,125	2,175	2,050	mA/V.
Ra	=	2,7	3,9	4,6	$k\Omega$
Rk	=	1.020	1.470	1.550	Ω
Wo	=	0,825	1,6	2,0	Wtt.
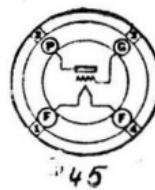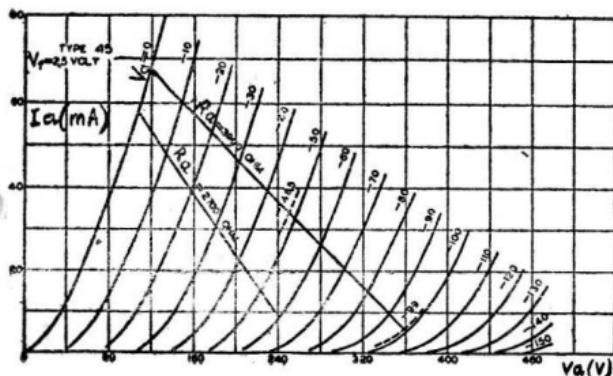
$$E_{AB_2}$$

		FB	SB	
Va	=	275	275	V.
Vg	=	—68	—	V.
Rk	=	—	775	Ω
Ia	=	28-138	72-90	mA.
Ra	=	3.200	5.060	Ω
Wo(5%)	=	18	12	Wtt.

TETRODE
(E_{AB})

Vf	=		2,5	V.
If	=		1,75	A.

$$E_B$$

$g_1 \rightarrow g_2$

Va	=	300	400	V.
Vg	=	0	0	V.
Ia	=	8	12	mA.
Ra(p.p)	=	5.200	5.800	Ω
Wo	=	16(1)	20(2)	Wtt.

(1) $Wi = 0,95$ Wtt.
(2) $Wi = 0,65$ Wtt.

$$E_{A1}$$
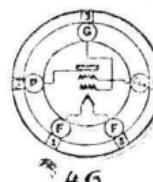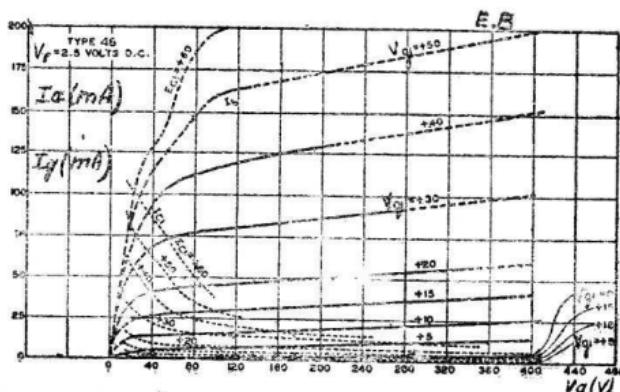
$g_2 \rightarrow pl.$

Va(max)	=	250	V.
Vg	=	—33	V.
Ia	=	22	mA.
Ri	=	2.380	Ω
g	=	5,6	
S	=	2,35	mA/V.
Ra	=	6.400	Ω
Wo	=	1,25	Wtt.
Rk	=	1.500	Ω

46 A 1

STROOMREGULATOR
REGULATRICE

Vf	=	46,1	V.
If	=	0,4	A.
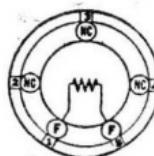
46A1

46 B 1

STROOMREGULATOR
REGULATRICE

Vf	=	46,1	V.
If	=	0,3	A.
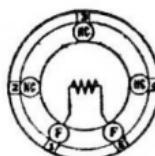
46B1

PENTHODE
(E)

Vf	=	2,5	V.
If	=	1,75	A.
Va(max)	=	250	V.
Vsg(max)	=	250	V.
Vg	=	—16,5	V.
Ia	=	31	mA.
Isg	=	6	mA.
g	=	150	
Ri	=	60.000	Ω
S	=	2,5	mA/V.
Wo(6%)	=	2,7	Wtt.
Ra	=	7.000	Ω
Rk	=	450	Ω
Ci	=	8,6	$\mu\mu$F.
Co	=	13	$\mu\mu$F.
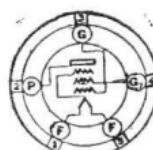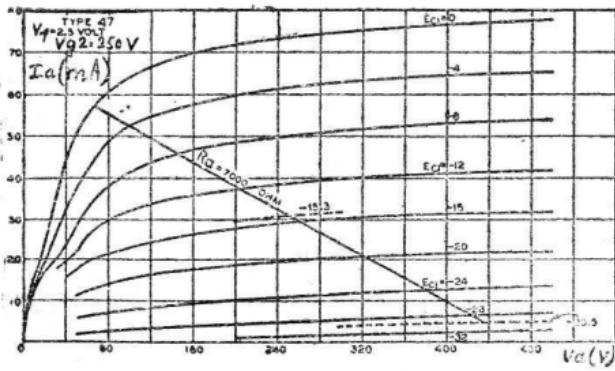
TETRODE
(E_{AB})

Vf	=		30	V.
If	=		0,4	A.

E_A

		TETRODE		TRIODE (1)		
Va	=	96	125 (max)	80	125 (max)	V.
Vg2	=	96	100 (max)	—	—	V.
Vg1	=	—19	—20	—20	—32,5	V.
Ia	=	52	56	31	52	mA.
Ig2	=	9	9,5	—	—	mA.
Ri	=	variab.		760	675	Ω
g	=	variab.		2,5	2,5	
S	=	3,8	3,9	3,3	3,7	mA/V.
Ra	=	1.500	1.500	—	—	Ω
Rk	=	310	310	—	—	Ω
Wo	=	2	2,5	—	—	Wtt.
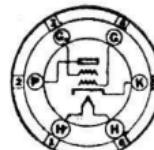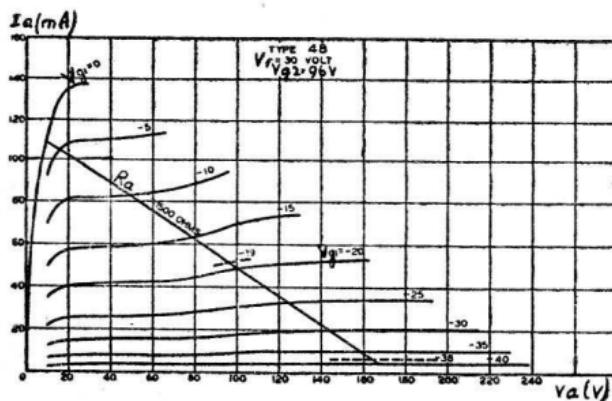
PUSH-PULL - A - 2 lp.

TETRODE   TRIODE (1)

		TETRODE	TRIODE (1)	
V_a	=	125(max)	125(max)	V.
V_{g2}	=	100(max)	—	V.
V_{g1}	=	—20	—32,5	V.
I_a	=	100	100	mA.
R_a(p.p)	=	3.000	1.250	Ω
d %	=	9	2	
W_o	=	5	3	Wtt.

(1) $g_2 \rightarrow$ Pl.

TETRODE
(E_{AB})

Vf	=		2		V.
If	=		0,12		A.

E_B - 2 lp. TRIODE (1)

Va	=	135	180 (max)	V.
Vg	=	0	0	V.
Ia	=	2,6	4	mA.
Ra(p.p)	=	8.000	12.000	Ω
Wo	=	2,3	3,5	Wtt.
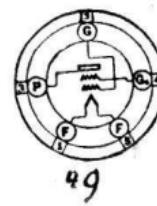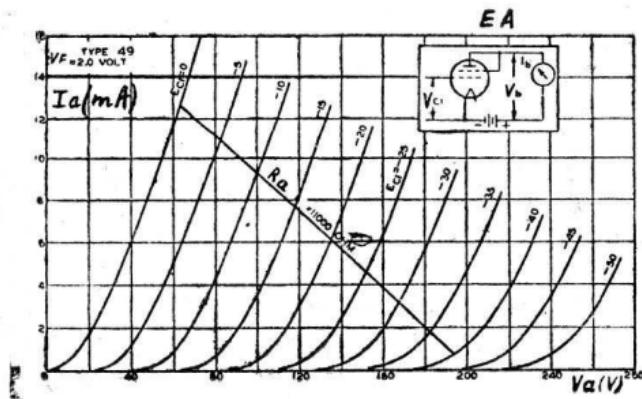
E_A - TRIODE (2)

Va	=	135(max)	V.
Vg	=	—20	V.
Ia	=	6	mA.
Ri	=	4.175	Ω
g	=	4,7	
S	=	1,125	mA/V.
Ra	=	11.000(3)	Ω
Wo	=	0,17	Wtt.
Rk	=	3.500	Ω

(1) $G_1 \rightarrow G_2$

(2) $G_2 \rightarrow P$.

(3) 22.000 Ω als stuurlamp.

      22.000 Ω comme driver.

E.B

TYPE 49
$V_g = 2,0$ VOLT

TRIODE
(E)

Vf	=			7,5	V.
If	=			1,25	A.
Va	=	350	400	450 (max)	V.
Vg	=	—63	—70	—84	V.
Ia	=	45	55	55	mA.
g	=	3,8	3,8	3,8	
Ri	=	1.900	1.800	1.800	Ω
S	=	2,0	2,1	2,1	mA/V.
Wo	=	2,4	3,4	4,6	Wtt.
Ra	=	4.100	3.670	4.350	Ω
Rk	=	1.400	1.275	1.530	Ω

TETRODE
(E_{AB})

		E_A	E_B	
Vf	=		6,3	V.
If	=		0,3	A.
Va(max)	=	110	180	V.
Vg	=	0	0	V
Ia	=	43	6-40	mA.
g	=	5,2		
Ri	=	1.750		Ω
S	=	3		mA/V.
Wo	=	1,5		Wtt.
Ra	=	2.000		Ω

52

DUOTRIODE
(ST - E$_{A-B}$) (1)

Vf	=		2,5	V.
If	=		2	A.

(1) V. type 6 **A** 6.

TYPES: 6A6.6N7.53

I_a (mA)
I_g (mA)

Va(V)

OPERATION CHARACTERISTICS

TYPES: 6A6.6N7.53

INPUT-CLASS A — ONE TYPE 53
WITH GRIDS AND WITH PLATES IN PARALLEL
PLATE VOLTS = 294 GRID VOLTS = 0,0
OUTPUT-CLASS B — ONE TYPE 53
PLATE VOLTS = 300 GRID VOLTS = 0
INPUT TRANSFORMER
— VOLTAGE RATIO = 1/0
— PEAK POWER EFF. = 70 %
OUTPUT LOAD, PLATE TO PLATE = 10000 OHMS

DRIVER SIGNAL VOLTS (RMS)

PLATE CURRENT

POWER OUTPUT

HARMONICS

GRID CURRENT

92C-5321

Andere
krommen
zie :
6A6 - 6N7
Autres
courbes
voir :
6A6 - 6N7

. 53
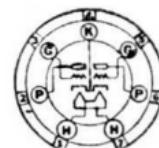
DUODIODE - TRIODE
(dDET + LF) (1)

Vf	=		2,5		V.
If	=		1,0		A.
Va	=	135	180	250(max)	V.
Vg	=	—10,5	—13,5	—20	V.
Ia	=	3,7	6,0	8,0	mA.
g	=	8,3	8,3	8,3	
Ri	=	11	8,5	7,5	kΩ
S	=	0,75	0,975	1,1	mA/V.
Wo	=	0,075	0,16	0,35	Wtt.
Ra	=	25	20	20	kΩ
Rk	=	3000	2250	2500	Ω

(1) V. type 6 V 7 - G.
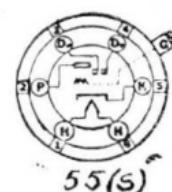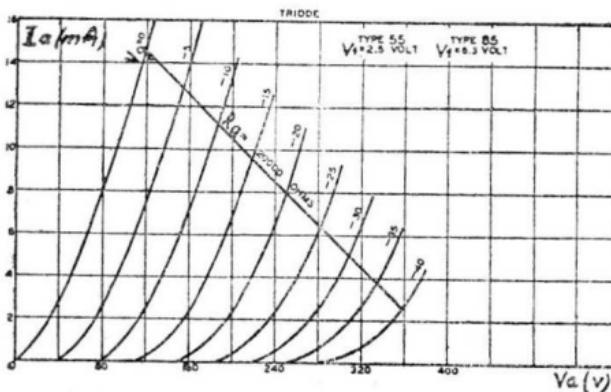
TRIODE
(HF . DET - OSC)

Vf	=		2,5	V.
If	=		1,0	A.
Va	=	100	250(max)	V.
Vg	=	—5	—13,5	V.
Ia	=	2,5	5	mA.
α	=	13,8	13,8	
Ri	=	12.000	9.500	Ω
S	=	1,15	1,45	mA/V.
Rk	=		2.700	Ω

x) Zelfde kan als 76.

56(S)

57 ^{x)}   **57**
57 S   **57 S**
57 AS(1)   **57 AS**(1)

Vf	=		2,5	V.
If	=		1,0	A.
Va	=	250	250	V.
Vg1	=	3,0	4,3	V.
Vg2	=	100	100	V.
Ia	=		2(2)	mA.
Ig2	=		0,5	mA.
Ri	=		1,5	M.Ω
S	=		0,122	mA/V.
g	=		1.500	

(1) If = 0,4 A.
(2) Ajust. Ia = 0,1 mA. zonder sein - sans signal.

x) *zelfde kap. als 6C6.*
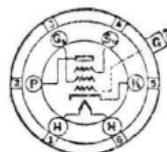
57(S)(AS)

PENTHODE
(HF - MF)

Vf	=		2,5	V.
If	=		1,0	A.
Va	=	100	250(max)	V.
Vg2	=	100	100(max)	V.
Vg1(min)	=	—3	—3	V.
Ia	=	8	8,2	mA.
Ig2	=	2,2	2,0	mA.
g	=	375	1.280	
Ri	=	0,25	0,8	M.Ω
S(max)	=	1.500	1.600	mA/V.
Ci	=		4,7	$\mu\mu$F.
Co	=		6,5	$\mu\mu$F.
Rk	=	400	400	Ω

(1) If $= 0,4$ A.

x) zelfde kar. als 6D6
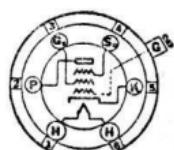
58(S)(AS)

PENTHODE
(E$_{AB}$)

Vf	=		2,5	V.
If	=		2,0	A.

E$_A$

		TRIODE (1)	PENTH. (2)	
Va	=	250(max)	250(max)	V.
Vg2	=	—	250(max)	V.
Vg1	=	—28	—18	V.
Ia	=	26	35	mA.
Ig2	=	—	9	mA.
g	=	6	100	
Ri	=	2.300	40.000	Ω
S	=	2,6	2,5	mA/V.
Ra	=	5.000	6.000	Ω
Rk	=	1.080	410	Ω
Wo	=	1,25	3	Wtt.
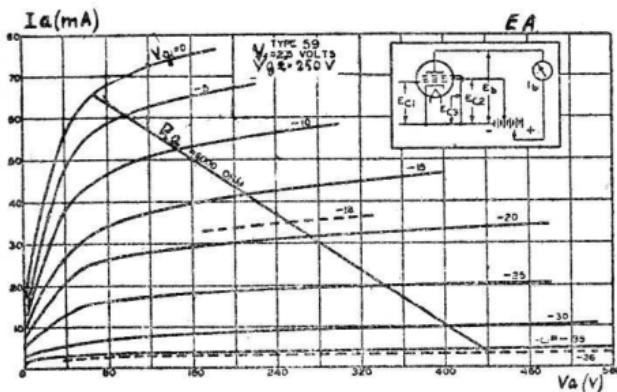
E_B - 2 lp.

TRIODE (3)

Va	=	300	400	V.
Vg	=	0	0	V.
Ia	=	20	26	mA.
Ra(p.p)	=	4.600	6.000	Ω
Wo	=	15	20	Wtt.

(1) $G_2 + G_3 \rightarrow$ anode.
(2) $G_3 \rightarrow$ cath.
(3) $G_1 \rightarrow G_2 - G_3 \rightarrow$ anode.
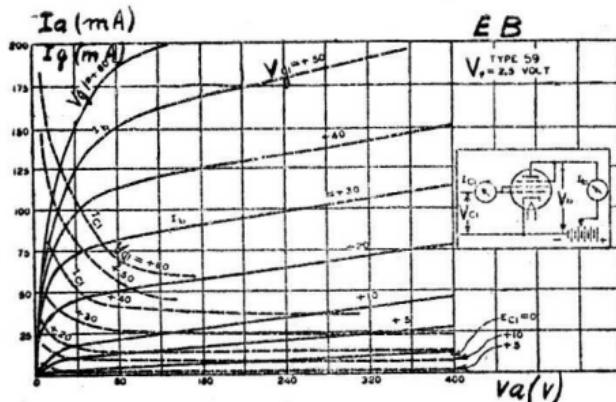
TRIODE
(E)

Vf	=		5		V.
If	=		0,25		A.
Va	=	90	135	180 (max)	V.
Vg	=	—16,5	—27	—40,5	V.
Ia	=	10	17,3	20	mA.
g	=	3	3	3	
Ri	=	2.170	1.820	1.750	Ω
S	=	1,4	1,65	1,7	mA/V.
Wo	=	0,125	0,4	0,79	Wtt.
Ra	=	3.000	3.000	4.800	Ω
Rk	=	1.600	1.700	2.150	Ω
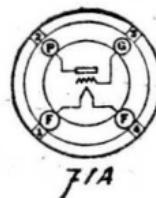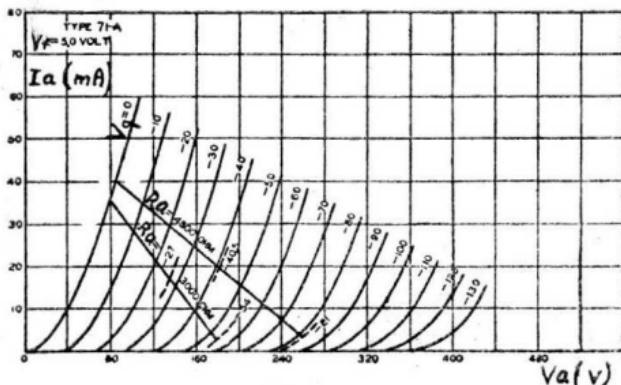
DUODIODE - TRIODE
(d DET + LF$_w$) (1)

Vf	=		6,3	V.
If	=		0,3	A.
Va(max)	=		250	V.
Vg	=		—2	V.
Ia	=		0,8	mA.
g	=		100	
Ri	=		91.000	Ω
S	=		1,1	mA/V.
Rk	=	2.600	/	17.400	Ω
Cag	=		1,7	μμF.
Ci	=		1,7	μμF.
Co	=		3,8	μμF.

(1) V. type 2 A 6.
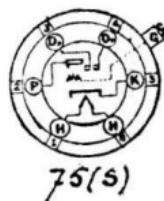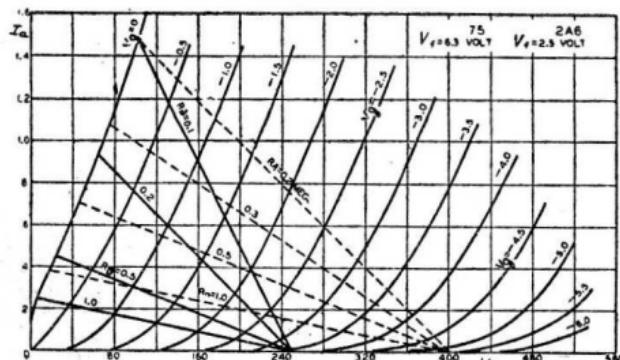
TRIODE
(HF - OSC - MF - DET)

Vf	=		6,3	V.
If	=		0,3	A.
Va	=	100	250 (max)	V.
Vg	=	—5	—13,5	V.
Ia	=	2,5	5	mA.
g	=	13,8	13,8	
Ri	=	12.000	9.500	Ω
S	=	1,15	1,45	mA/V.
Rk	=	2.000	2.700	Ω
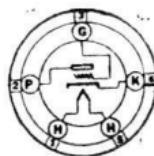
76

PENTHODE
(A . DET)

Vf	=		6,3	V.
If	=		0,3	A.
Va	=	100	250 (max)	V.
Vg2	=	60	100 (max)	V.
Vg1	=	—1,5	—3	V.
Vco	=	—5,5	—7,5	V.
Ia	=	1,7	2,3	mA.
Ig2	=	0,4	0,5	mA.
g	=	715	1.500	
Ri	=	0,65	1,5	M.Ω
S	=	1,1	1,25	mA/V.
Rk	=	700	1.000	Ω

$Vg_3 \rightarrow$ cath.

$\sim 77 \sim$

PENTHODE
(HF - MF)

Vf	=				6,3	V.
If	=				0,3	A.
Va	=	90	180	250	250 (max)	V.
Vg2	=	90	75	100	125 (max)	V.
Vg	=	—3	—3	—3	—3	V.
Vco	=	—38,5	—32,5	—42,5	—52,5	V.
Ia	=	5,4	4,0	7,0	10,5	mA.
Ig2	=	1,3	1,0	1,7	2,6	mA.
g	=	400	1.100	1.160	990	
Ri	=	0.315	1,0	0,8	0,6	M.Ω
Rk	=	450	600	350	250	Ω
S	=	1,275	1,100	1,450	1,650	mA/V.
Ci	=				4,5	$\mu\mu$F.
Co	=				11	$\mu\mu$F.

$G_3 \rightarrow$ Kath.

DUOTRIODE
(E_B) (1)

Vf	=		6,3	V.
If	=		0,6	A.
Va	=	180	250(max)	V.
Vg	=	0	0	V.
Ia	=	3,8	5,3	mA.
Wi	=	0,38	0,38	Wtt.
Wo	=	5,5	8,0	Wtt.
Ra(p.p)	=	7.000	14.000	Ω

(1) V. type 6 Y 7-G.

31-12-38
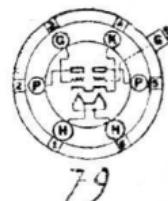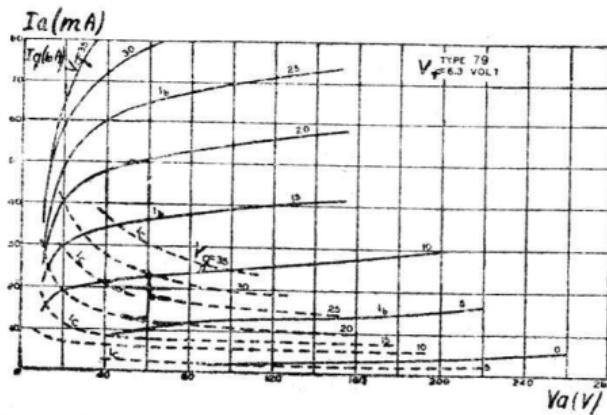
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=			5,0	V.
If	=			2,0	A.
Va~	=	350	400	550(1)	V(max)
Ia	=	125	110	135	mA.(max)

(1) Alleen voor afvlakking met smoorspoel-ingang.
      Seulement pour filtre avec self d'entrée.
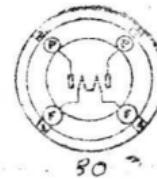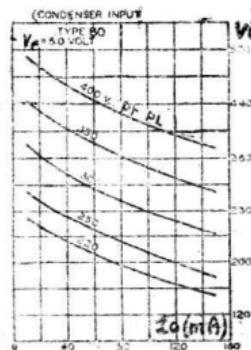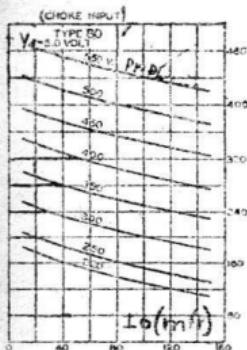
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	7,5	V.
If	=	1,25	A.
Va	=	700	V$\sim$ (max)
Ia	=	85	mA (max)
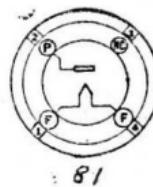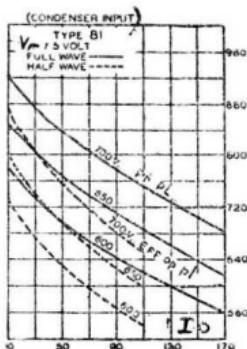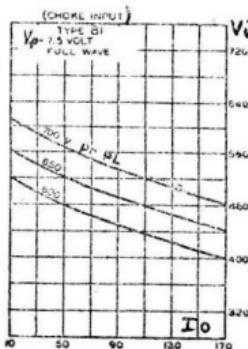
GELIJKRICHTERLAMP
REDRESSEUSE
(Hg)

Vf	=	2,5	V.
If	=	3	A.
Va(pr.pl)	=	500	V$\sim$(max)
Ia	=	125	mA(max)
Iap	=	400	mA(max)
Vl	=	15	V.
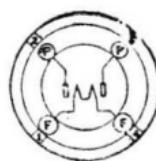
82

GELIJKRICHTERLAMP
REDRESSEUSE
(Hg)

Vf	=	5	V.
If	=	3	A.
Va(pr.pl)	=	500	V$\sim$(max)
Ia	=	250	mA(max)
Iap	=	800	mA(max)
Vl	=	15	V.
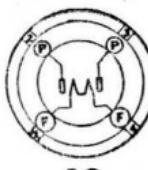
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

V_f	$=$	5,0	V.
I_f	$=$	2,0	A.
V_a(pr.pl)	$=$	400	$V \sim$ (max)
i_a	$=$	200	mA(max)
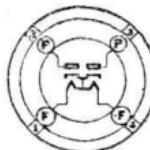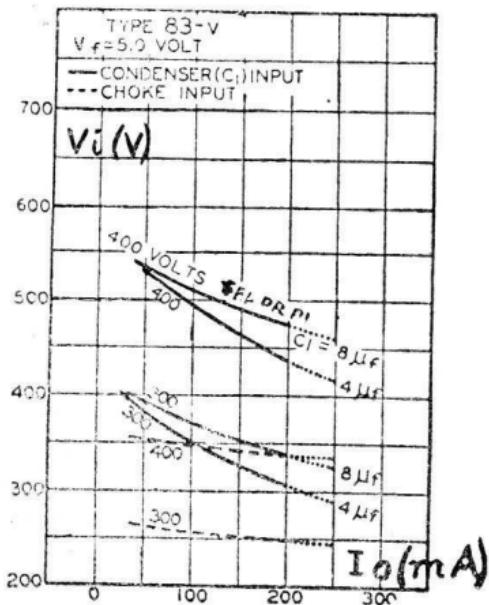
TYPE 83-V
$V_f = 5.0$ VOLT
— CONDENSER (C_i) INPUT
--- CHOKE INPUT

$V_i(V)$

400 VOLTS F_L DR.0.

$C_i = 8 \mu f$

$4 \mu f$

$8 \mu f$

$4 \mu f$

$I_0(mA)$

83V

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC) (1)

Vf	=		6,3	V.
If	=		0,5	A.
Va(p.pl)	=		350	V. $\sim$ (max)
Ia	=		50	mA. (max)

(1) V. type 6 Z 4

HALF-WAVE
TYPE 84
Vf = 6.3 VOLT
CONDENS. INPUT
(C = 8 µf)
350 VOLTS EFF. PL → PL
300
250

84
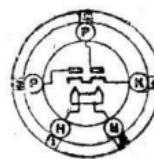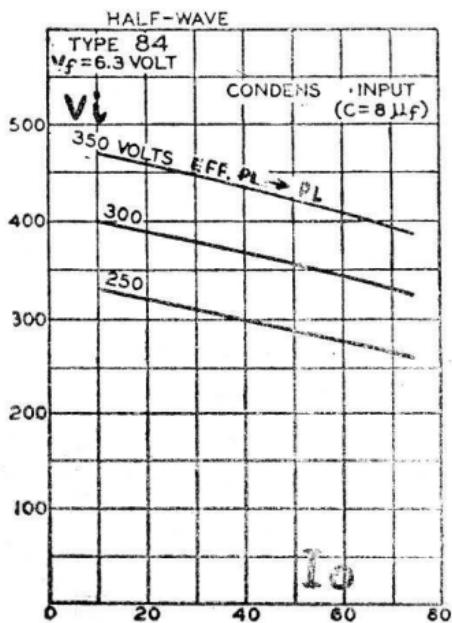
DUODIODE - TRIODE
(d DET + LF)

Vf	=		6,3		V.
If	=		0,3		A.
Va	=	135	180	250(max)	V.
Vg	=	—10,5	—13,5	—20	V.
Ia	=	3,7	6,0	8,0	mA.
g	=	8,3	8,3	8,3	
Ri	=	11	8,5	7,5	kΩ
S	=	0,75	0,975	1,1	mA/V.
Wo	=	0,075	0,16	0,35	Wtt.
Ra	=	25	20	20	kΩ
Rk	=	3000	2250	2500	Ω

(1) V. type 6 V 7 - G.
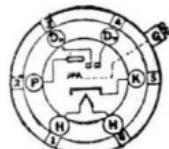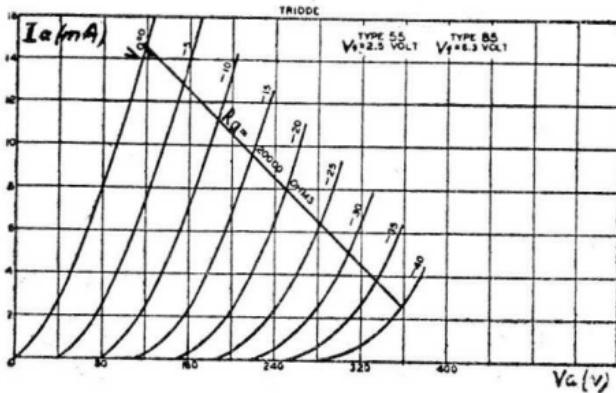
DUODIODE - TRIODE

V_f	=	6,3	V.
I_f	=	0,3	A.
$V_a(max)$	=	250	V.
V_g	=	—9	V.
I_a	=	4,5	mA.
g	=	20	
R_i	=	16.000	Ω
S	=	1,25	mA/V.
R_k	=	2.000	Ω

V. 6 C 7
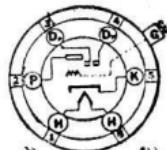
85 AS

PENTHODE
(E_{AB})

Vf	=	6,3	V.
If	=	0,4	A.

E_{A1} TRIODE

		$G_1 \rightarrow$	$G_2 \rightarrow$	el.	
Va	=	160	180	250 (max)	V.
Vgl	=	—20	—22,5	—31	V.
Ia	=	17	20	32	mA.
g	=	4,7	4,7	4,7	
Ri	=	3.300	3.000	2.600	Ω
S	=	1,425	1,55	1,8	mA/V.
Ra(1)	=	7.000	6.500	5.500	Ω
Rk	=	1.180	1.125	970	Ω
Wo	=	0,3	0,4	0,9	Wtt.

(1) Deze waarden zijn de verdubbelen in ST schakelingen.
     Ces valeurs sont à doubler pour « driver ».
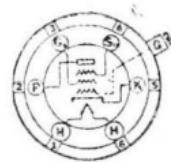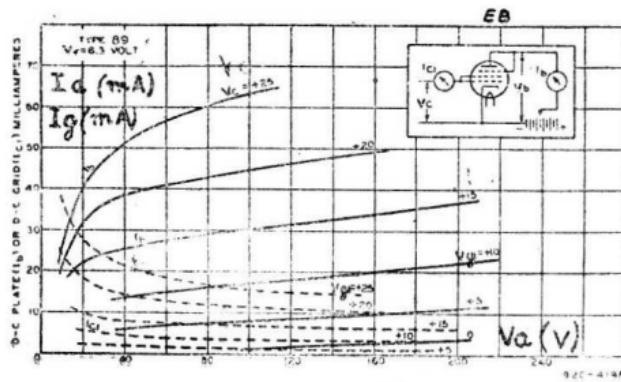
E_{A1} PENTHODE
$G_3 \rightarrow K$

Va	=	100	135	180	250(max)	V.
Vg2	=	100	135	180	250(max)	V.
Vg1	=	—10	—13,5	—18	—25	V.
Ia	=	9,5	14	20	32	mA.
Ig2	=	1,6	2.2	3,0	5,5	mA.
g	=	125	125	125	125	
Ri	=	104	92,5	80	70	kΩ
S	=	1,2	1,35	1,55	1,8	mA/V.
Ra	=	10,7	9,2	8,0	6,75	kΩ
Rk	=	900	830	785	670	Ω
Wo	=	0,33	0,75	1,5	3,4	Wtt.

E_B TRIODE
$G_1 \rightarrow G_2$ $G_3 \rightarrow pl.$

Va	=	180	V.
Vg1	=	0	V.
Ia	=	6	mA.
Ra(p.p)	=	9.400	Ω
Wo	=	3,5	Wtt.

TRIODE
(DET - LF - E)

Vf	=			5,0	V.
If	=			0,25	A.
Va	=	90	135	180 (max)	V.
Vg	=	—4,5	—9	—13,5	V.
Ia	=	5,0	6,2	7,7	mA.
g	=	8,5	8,5	8,5	
Ri	=	5.400	5.100	4.700	Ω
S	=	1,575	1,650	1,8	mA/V.
Wo	=	0,035	0,13	0,285	Wtt.
Ra	=	5,000	9,000	10.650	Ω

TYPE 112-A
Vf = 5,0 VOLT

Ia (mA)

Va (v)

112 A

TRIODE
(E)

Vf	=	5,0	V.
If	=	1,25	A.
Va(max)	=	250	V.
Vg	=	—35	V.
Ia	=	20	mA.
g	=	5	
R:	=	2.500	Ω
S	=	2,0	mA/V.
Wo	=	1,35	Wtt.
Ra	=	4.500	Ω
Rk	=	1.750	Ω
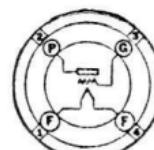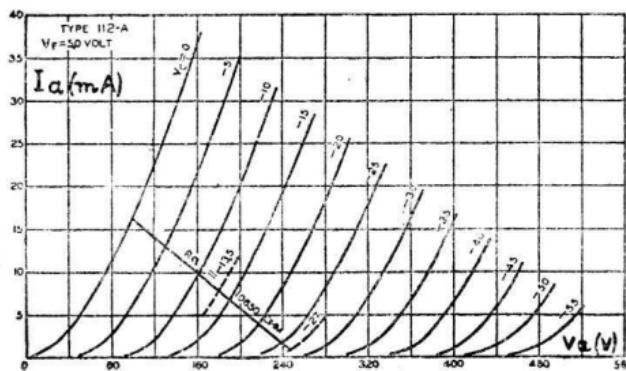
182B
482 B
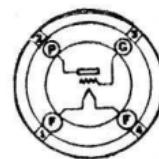
TRIODE
(E)

Vf	=	5,0	V.
If	=	1,25	A.
Va(max)	=	250	V.
Vg	=	—65	V.
Ia	=	20	mA.
g	=	3,0	
Ri	=	2.000	Ω
S	=	1,5	mA/V.
Wo	=	1,8	Wtt.
Ra	=	4.500	Ω
Rk	=	3.250	Ω

183
483
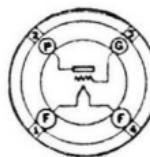
TRIODE (Gas)
(G . DET)

V_f	=	5,0	V.
I_f	=	0,25	A.
$V_a(max)$	=	45	V.
V_g	=	0	V.
I_a	=	1,5	mA.
g	=	20	
R_i	=	30.000	Ω
S	=	0,67	mA/V.

200A

TRIODE
(E)

Vf	=	4,5	V.
If	=	1,6	A.
Va(max)	=	350	V.
Vg	=	—20	V.
Ia	=	35	mA.
g	=	6,5	
Ri	=	3.600	Ω
S	=	1,8	mA/V.
Wo	=	1	Wtt.
Rk	=	570	Ω

205 D

GELIJKRICHTERLAMP (1)
REDRESSEUSE (1)

Vf	=	1,8	V.
If	=	2,8	A.
Va(max)	=	2 × 28	V.
Ia	=	1,3	A.

(1) Accu-lader.
Chargeur d'accumulateurs.

328
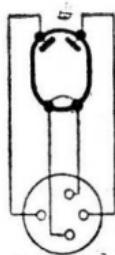
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4	V.
If	=	1	A.
Va	=	220	V.
Ia	=	30	mA.
L	=	105	m/m
D	=	51	m/m

373
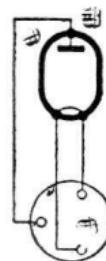
GELIJKRICHTERLAMP (1)
REDRESSEUSE (1)

Vf	=	1,8	V.
If	=	2,8	A.
Va(max)	=	2×16	V.
Ia	=	1,3	A.

(1) Accu-lader.
   Chargeur d'accumulateurs.

TRIODE
(DET - LF)

Vf	=	3,0	V.
If	=	1,25	A.
Va(max)	=	180	V.
Vg	=	—9	V.
Ia	=	5,8	mA.
g	=	12,5	
Ri	=	8.900	Ω
S	=	1,4	mA/V.
Rk	=	1.600	Ω

485
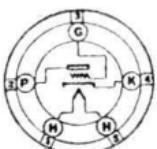
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4	V.
If	=	1	A.
Va	=	400	V.
Ia	=	60	mA.
L	=	116	m/m
D	=	53	m/m
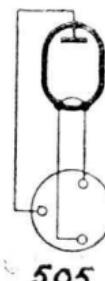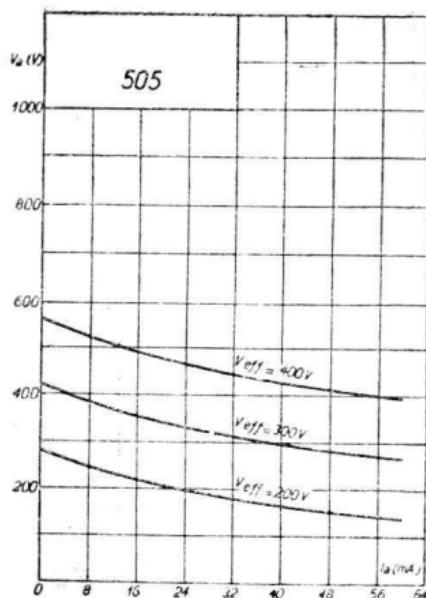
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4,0	V.
If	=	1,0	A.
Va(max)	=	2×300	V.
Ia	=	75	mA.

506
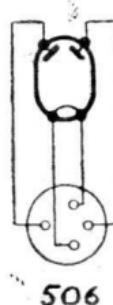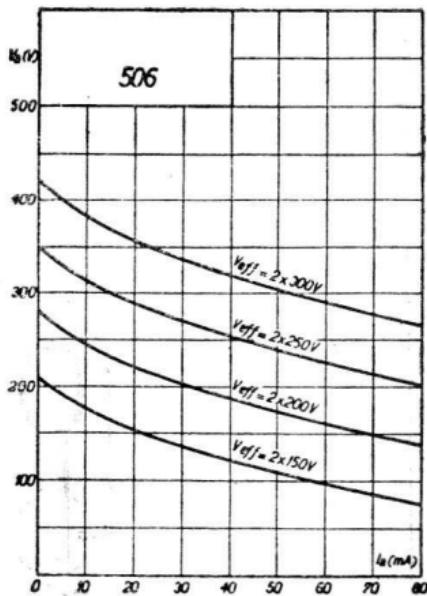
GELIJKRICHTERLAMP (1)
REDRESSEUSE (1)

V_f	=		2,0	V.
I_f	=		4,0	A.
$V_a(max)$	=	28	175	V.
I_a	=	1,3	0,1	A.

(1) Accu-lader.
Chargeur d'accumulateurs.

509
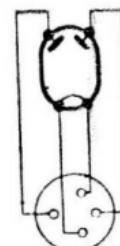
TRIODE
(LF $_w$)

Vf	=	7,5	V.
If	=	1,25	A.
Va(max)	=	1.000	V.
Vg	=	—9	V.
Ia	=	2,2	mA.
g	=	30	
Ri	=	40.000	Ω
S	=	0,75	mA/V.
Vo	=	225	V.
Ra	=	250.000	Ω

841
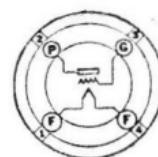
TRIODE
(MOD - E$_A$)

Vf	=		7,5	V.
If	=		1,25	A.
		EA	MOD	
Va(max)	=	425	425	V.
Vg	=	—100	—101	V.
la	=	28	25	mA.
g	=	3,0		
Ri	=	2.500		Ω
S	=	1,2		mA/V.
Wo	=	3,0		Wtt.
Ra	=	8.000		Ω
Rk	=	3.800		Ω

842
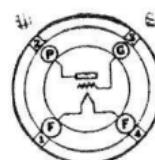
TRIODE
(DET - LF)

Vf	=	1,1	V.
If	=	0,25	A.
Va(max	=	90	V.
Vg	=	—4,5	V.
Ia	=	2,9	mA.
g	=	8,2	
Ri	=	13.500	Ω
S	=	0,61	mA/V.
Rk	=	1.500	Ω

864
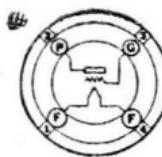
GELIJKRICHTERLAMP
REDRESSEUSE
(Hg)

Vf	=	2,5	V.
If	=	5,0	A.
Va(max)	=	1.750	V∼
Ia	=	400	mA.
Ia(pk)	=	600	mA.
Vl	=	15	V.

866°
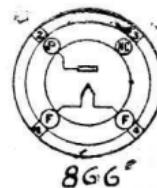
SPANNINGSREGULATORLAMP
REGULATEUR DE TENSION

Ontstekingsspanning Tension d'amorçage	min 125 V.
Bedrijfsspanning Tension de régime	90 V.
Bedrijfsstroom Courant de régime	10-50 mA.

374
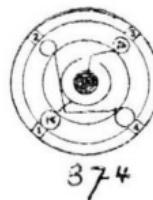
PENTHODE
(E)

Vf	=	2,0	V.
If	=	0,12	A.
Va(max)	=	135	V.
Vsg	=	135	V.
Vg	=	—16,5	V.
Ia	=	7	mA.
g	=	70	
Ri	=	50.000	Ω
S	=	1,45	mA/V.
Wo	=	0,45	Wt..
Ra	=	7.000	Ω
Rk	=	770	Ω

V. type 23.
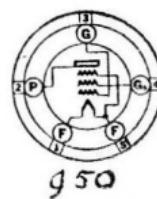
950

GELIJKRICHTERLAMP (1)
REDRESSEUSE (1)

V_f	=	1,8	V.
I_f	=	2,8	A.
$V_a(max)$	=	160	V.
I_a	=	0,1	A.

(1) Accu-lader.
      Chargeur d'accumulateurs.
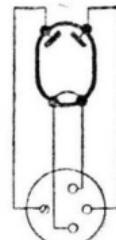
1002

PENTHODE (NM)
(A . DET - LF$_w$)

V. 6 C 6.
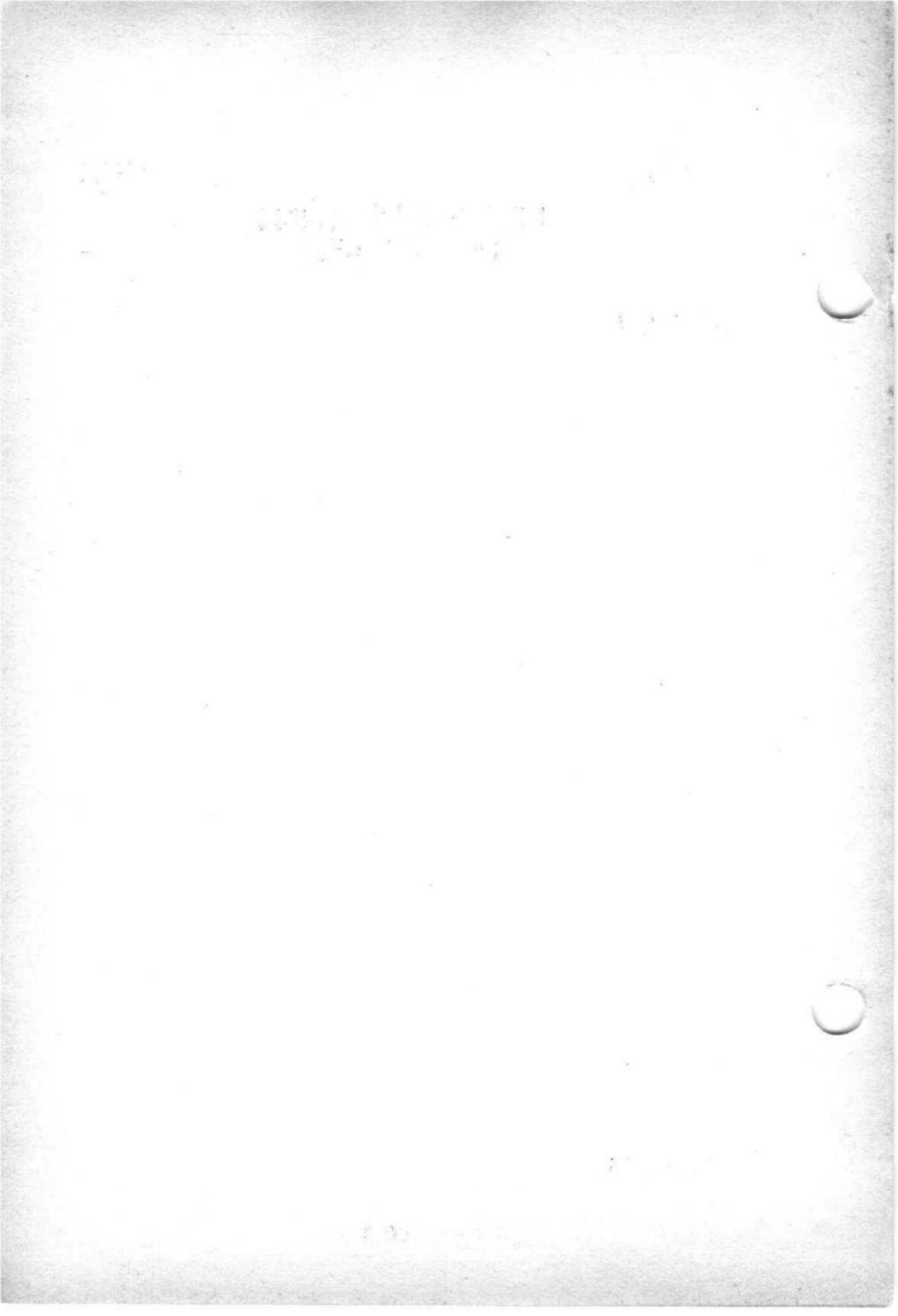
PENTHODE
(TEL)

Vf	=		6,3		V.
If	=		0,45		A.
		PENTH.	TETR.	TRIODE	
Va	=	300	300	250	V.
Vg2	=	150	150	(1)	V.
Rk	=	200	200	400	Ω
G3	=	→K	→G2	→Pl.	
Ia	=	10	12	13	mA.
Ig2	=	2,5	0,5	—	mA.
Ri	=	700	540	5,2	kΩ
S	=	0,55	0,65	0,63	mA/V.
g	=	3.850	3.500	33	

(1) $G_2 \rightarrow$ Pl.
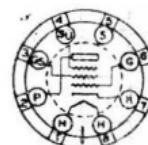
1231

GELIJKRICHTERLAMP
REDRESSEUSE

Vf	=		4			V.
If	=		2			A.
Va	=	2×500 V.	→	Ia	=	120 mA.
Va	=	2×350 V.	→	Ia	=	160 mA.
L	=		125			$^m/_m$
D	=		51			$^m/_m$

GELIJKRICHTERLAMP
REDRESSEUSE

Vf	$=$	7,5	V.
If	$=$	1,25	A.
Va(max)	$=$	750	V.
Ia	$=$	110	mA.
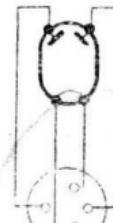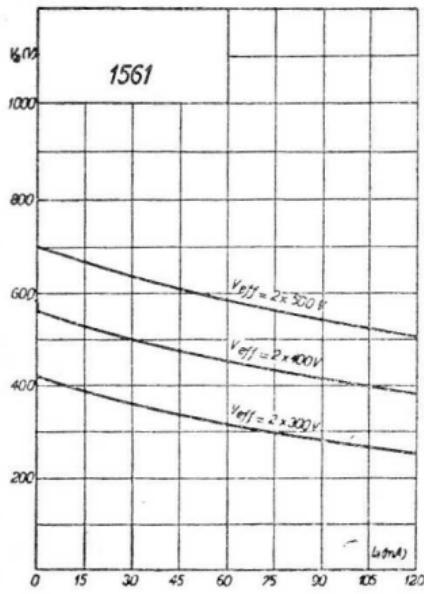
1562
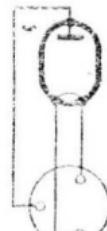
GELIJKRICHTERLAMP
REDRESSEUSE

Vf	=	4	V.
If	=	0,5	A.
Va	=	2×250	V.
Ia	=	30	mA.
L	=	93	m/m
D	=	47	m/m
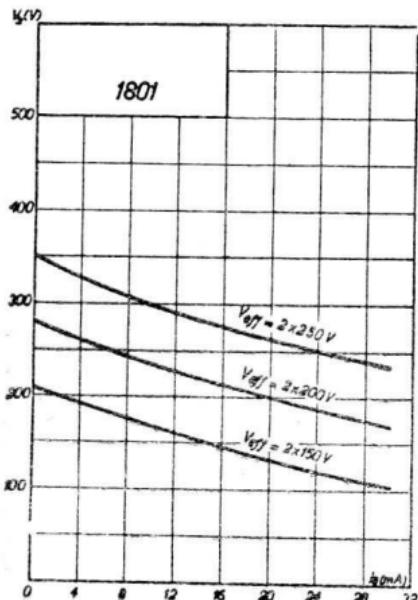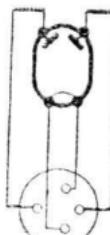
1801

GELIJKRICHTERLAMP
REDRESSEUSE

Vf	=	4	V.
If	=	0,4	A.
Va	=	250	V.
Ia	=	30	mA.
L	=	92	m/m
D	=	46	m/m
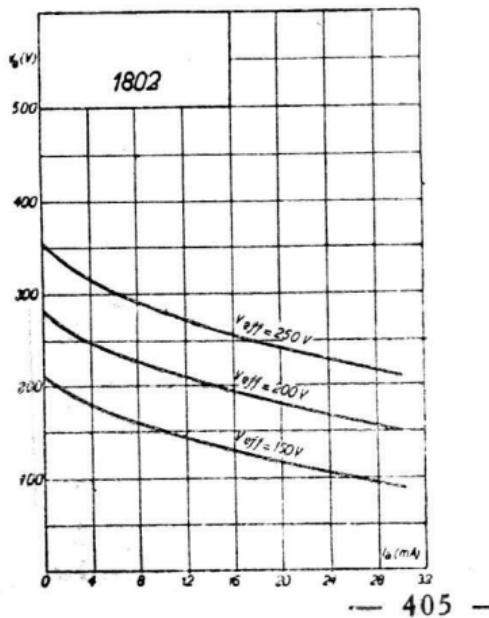
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4	V.
If	=	1	A.
Va	=	2×500	V.
Ia	=	60	mA.
L	=	116	$^m/_m$
D	=	53	$^m/_m$
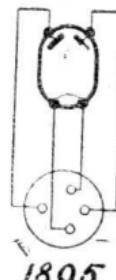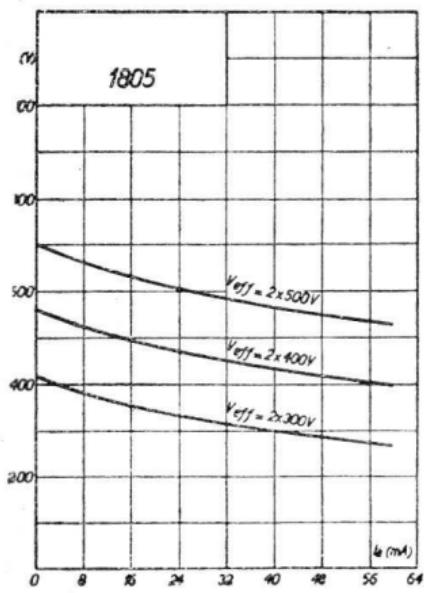
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4	V.
If	=	2,5	A.
Va	=	2×500	V.
la	=	180	mA.
L	=	145	$^m/_m$
D	=	59	$^m/_m$
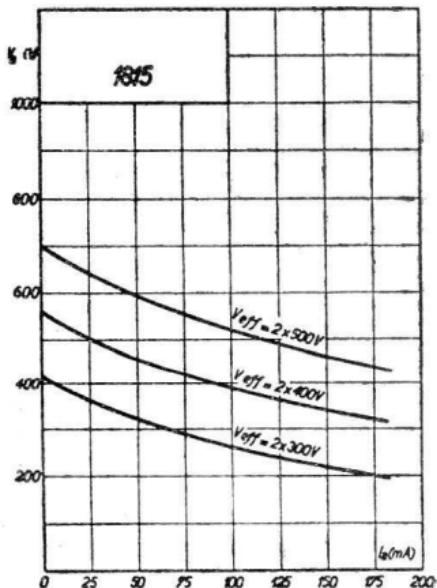
1815

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4	V.
If	=	4	A.
Va	=	2 × 350	V.
Ia	=	300	mA.
L	=	160	m/m
D	=	67	m/m
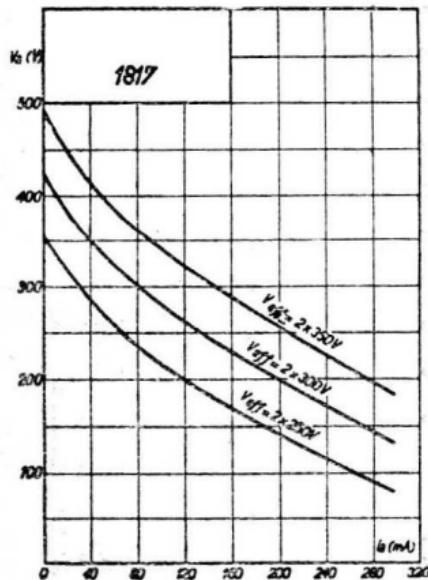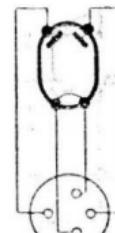
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4	V.
If	=	1	A.
Va	=	2×300	V.
Ia	=	75	mA.
L	=	105	$^m/_m$
D	=	51	$^m/_m$

1823

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4	V.
If	=	1	A.
Va	=	2×700	V.
Ia	=	60	mA.
L	=	145	m/m
D	=	59	m/m
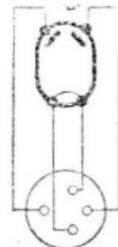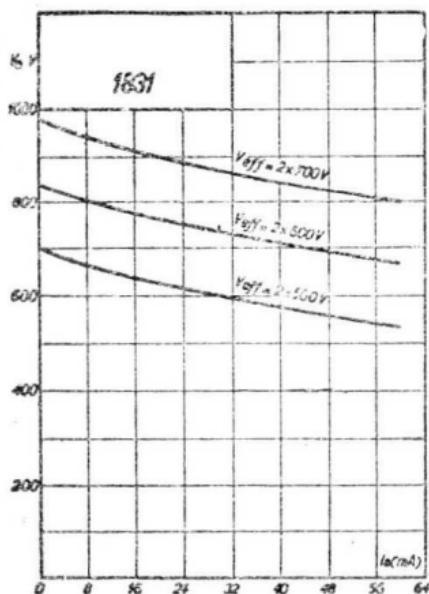
1831

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4	V.
If	=	1,3	A.
Va	=	700	V.
Ia	=	120	V.
L	=	145	m/m
D	=	60	m/m

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)
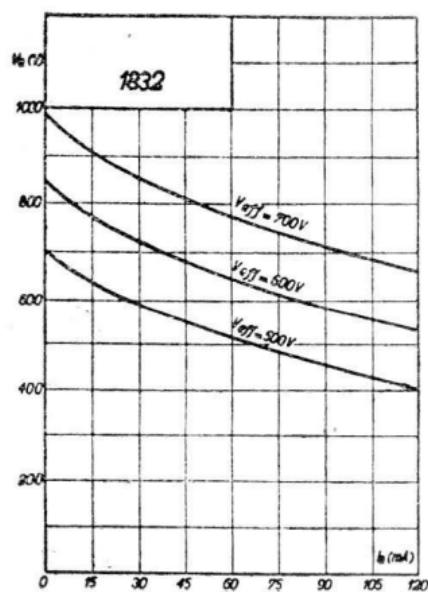
V_f	=	4	V.
I_f	=	2,3	A.
$V_a(\text{max})$	=	7.000	V.
I_a	=	5	mA.

1875

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

Vf	=	4,0	V.
If	=	0,3	A.
Va(max)	=	850	V.
Ia	=	5	mA.
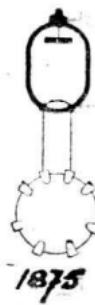
1876

GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

V_f	=	5	V.
I_f	=	2	A.
$V_a \sim$	=	2×350	V.
$I_a (max)$	=	125	mA.
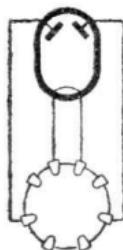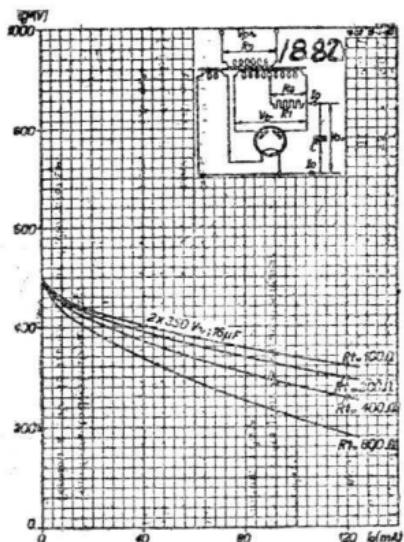
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

V_f	=	5	V.
I_f	=	1,6	A.
$V_a\sim$	=	2×350	V.
$I_a(max)$	=	125	mA.

1883
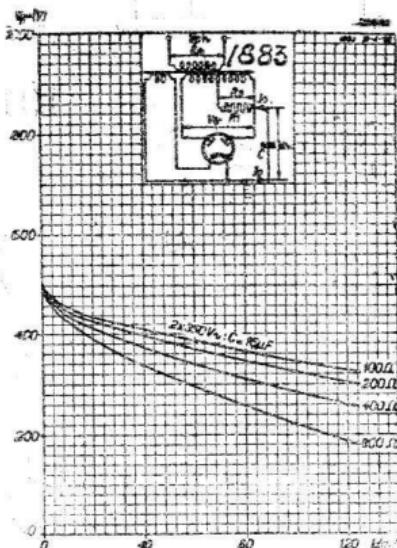
31-12-38
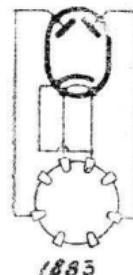
1904

STROOMREGULATOR
REGULATRICE
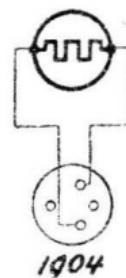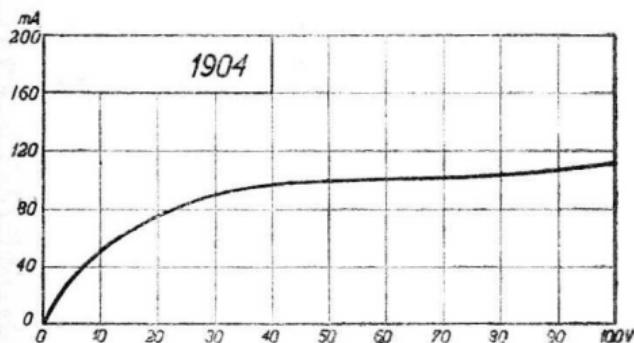
Vf	=	50 — 70	V.
If	=	0,1	A.

1915

STROOMREGULATOR
REGULATRICE

Vf	=	50 — 70	V.
If	=	0,24	A.

STROOMREGULATOR
REGULATRICE

Vf	=	50 — 70	V.
If	=	0,25	A.
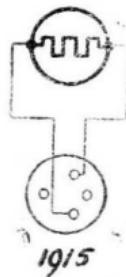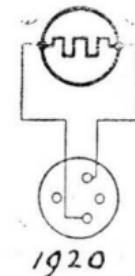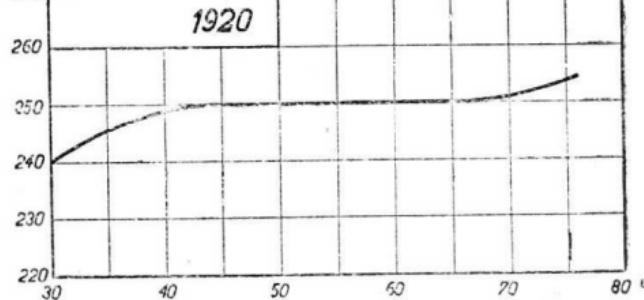
STROOMREGULATOR (1)
REGULATRICE (-)

If	=	0,18	A.

(1) Met constante weerstand.
A résistance fixe.
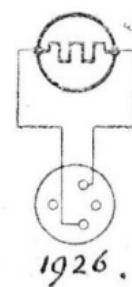
STROOMREGULATOR
REGULATRICE DE COURANT

Vf	$=$	35	$-$	100	V.
If	$=$		0,18		A.
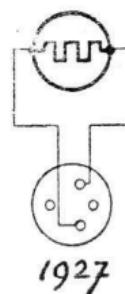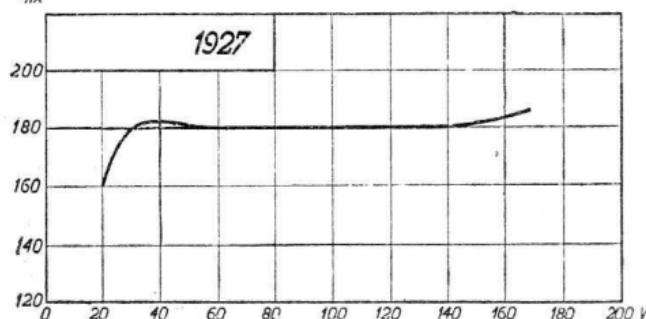
STROOMREGULATOR
REGULATRICE DE COURANT

Vf	$=$	100	$-$	225	V.
If	$=$		0,18		A.
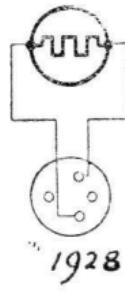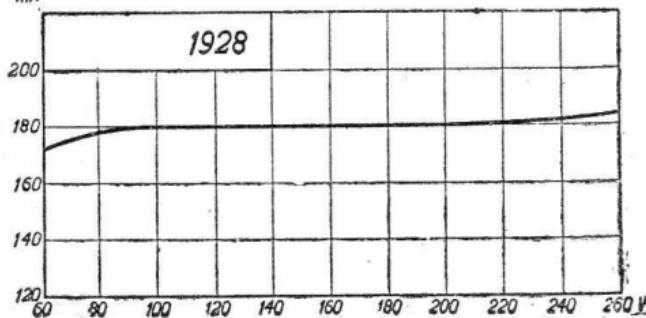
STABILISATOR

V_a	=	90	100		V(1)
I_a	=	20	45(max)		mA.
$R\sim$	=		100		Ω
L(max)	=		106		$^m/_m$
D(max)	=		60		$^m/_m$

(1) Ontstekingsspanning: 100-110 V.
      Tension d'amorçage: 100-110 V.
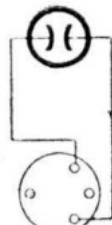
4357

STABILISATOR

V_a	=	90	100	V(1)
I_a	=		45(max)	V.
$R\sim$	=		100	Ω
L(max)	=	115		$^m/_m$
D(max)	=	60		$^m/_m$
Huls(culot)	=	Edison		

(1) Ontstekingsspanning: 100-110 V.
     Tension d'amorçage: 100-110 V.

STABILISATOR

V_a	$=$	$105 \; - \; 115$	V(1)
I_a	$=$	$45(\text{max})$	mA.
$R\sim$	$=$	80	Ω
L(max)	$=$	115	$^m/_m$
D(max)	$=$	60	$^m/_m$
Huls(culot)	$=$	Edison	

(1)　Ontstekingsspanning: 130-140 V.
　　　Tension d'amorçage: 130-140 V.

TRIODE
(E)

Vf	=		4,0	V.
If	=		2,0	A.
Va(max)	=	1.000	1.000	V.
Ia	=	2×25	2×25	mA.
Vgl	=	—82	—96	V.
Ra	=	40	18	kΩ
Rk	=	1.600		Ω
Wo	=	27,5(1)	43(2)	Wtt.

(1) d % = 1.
(2) d % = 4,8.

4641
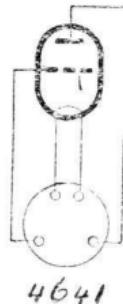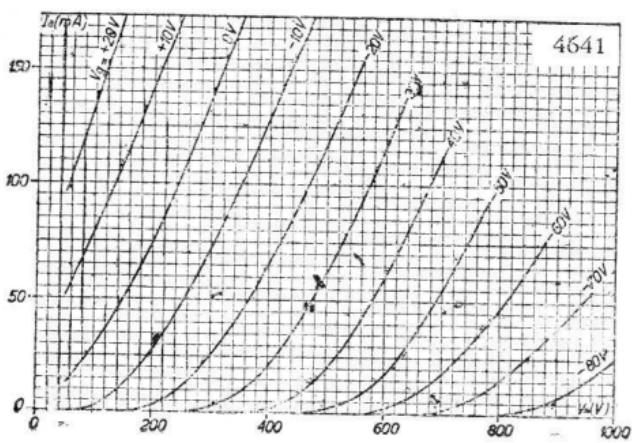
GELIJKRICHTERLAMP
REDRESSEUSE
(VAC)

V_f	=	4,0	V.
I_f	=	1,3	A.
$V_a(max)$	=	1.000	V.
I_a	=	75	mA.

4646

PENTHODE
$(HF - MF - G . DET_w - A . DET_w - LF_w)$

Vf	$=$	$4,0$	V.
If	$=$	$1,35$	A.
$Va(max)$	$=$	250	V.
Ia	$=$	8	mA.
$Vg1$	$=$	$-2,5$	V.
$Vg2$	$=$	200	V.
$Ig2$	$=$	$1,5$	mA.
$S(max)$	$=$	7	mA/V.
$S(norm)$	$=$	5	mA/V.
g	$=$	7.500	
$Ri(norm)$	$=$	$1,5$	$M.\Omega$
$Cag1$	$=$	$0,01$	$\mu\mu F.$

4673

PENTHODE
(E) Push-Pull

		FB	SB	
Vf	=	4		V.
If	=	1		A.
Va	=	375	375	V.
Vg2	=	250	250	V.
Ia(max)	=	2×45	2×29	mA.
Ig2(max)	=	$2 \times 5,5$	2×4	mA.
Vg1	=	—32		V.
Ra	=	9.000	15.000	Ω
Wo	=	19	14	Wtt.
d	=	1,5	5,2	%
Vi	=	21,5	16,5	V eff

TRIODE
(E)

Vf	=	4	V.
If	=	0,95	A.
Va	=	350	V.
Ia(max)	=	2×70	mA.
Ra	=	5.000	Ω
Wo(max)	=	20	Wtt.
d	=	2,1	%
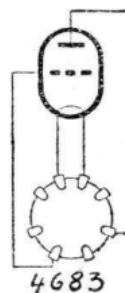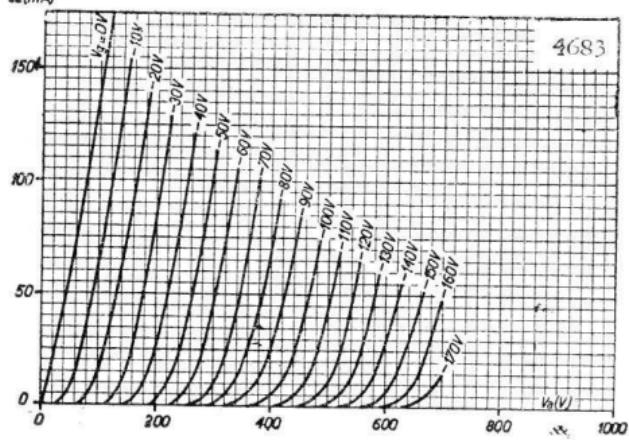
PENTHODE
(E) Push-Pull

Vf	$=$	4	V.
If	$=$	1,75	A.
Va	$=$	375	V.
Vg2	$=$	250	V.
Ia(max)	$=$	2×30	mA.
Ig2(max)	$=$	$2 \times 5,3$	mA.
Rk	$=$	142	Ω
Ra	$=$	13.000	Ω
Wo(max)	$=$	12	Wtt.
d	$=$	2,3	%
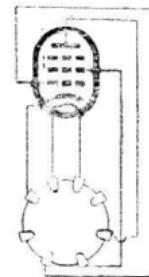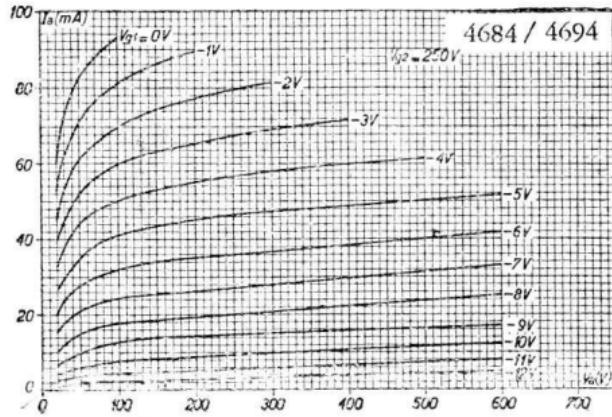
4684 / 4694

4684

STABILISATOR

Va	=	90	V. (1)
Ia(max)	=	40	mA.
R$\sim$	=	180	Ω
L(max)	=	94	$^m/_m$
D(max)	=	29	$^m/_m$
Huls(culot)	=	P26	

(1) Ontstekingsspanning: 105 V.
      Tension d'amorçage: 105 V.

PENTHODE
(E) Push-Pull

Vf	=	4	V.
If	=	2	A.
Va	=	375	V.
Vg2	=	275	V.
Rk	=	165	Ω
Ia(max)	=	2×62	mA.
Ig2(max)	=	2×9	mA.
Ra	=	6.500	Ω
Wo(max)	=	28,5	Wtt.
d	=	2,25	%

4688 / 4689

4688

PENTHODE
(E) Push-Pull

Vf	=	6,3	V.
If	=	1,35	A.
Va	=	375	V.
Vg2	=	275	V.
Rk	=	165	Ω
Ia(max)	=	2 × 62	mA.
Ig2(max)	=	2 × 9	mA.
Ra	=	6.500	Ω
Wo(max)	=	28,5	Wtt.
d	=	2,25	%
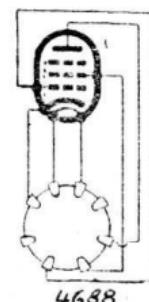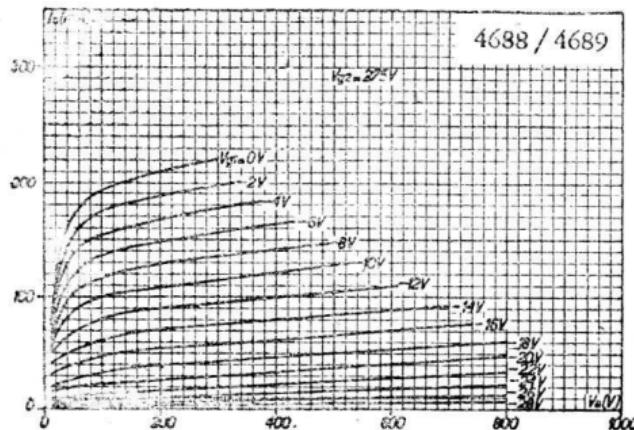
4688 / 4689

4689
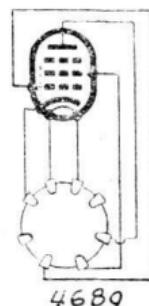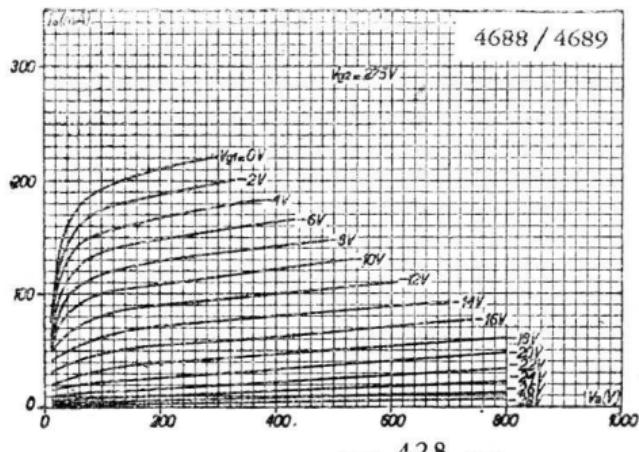
PENTHODE
(E) Push-Pull

Vf	=	6,3	V.
If	=	1,2	A.
Va	=	375	V.
Vg2	=	250	V.
Ia(max)	=	2×30	mA.
Ig2	=	$2 \times 5,3$	mA.
Rk	=	142	Ω
Ra	=	13.000	Ω
Wo(max)	=	12	Wtt.
d	=	2,3	%

4694

Krommen zie 4684
Courbes v. 4684
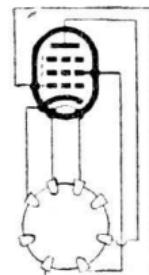
PENTHODE
(E)

Vf	=	6,3	V.
If	=	1,3	A.

2 Ip PUSH-PULL

Va	=	300	V.
Vg2	=	325	V.
Rk	=	100	Ω
Ia(max)	=	2×67	mA.
Ig2	=	$2 \times 6,25 \rightarrow 2 \times 14$	mA.
Ra	=	5000	Ω
Wo	=	25,5	W.
d(tot)	=	2,5	%
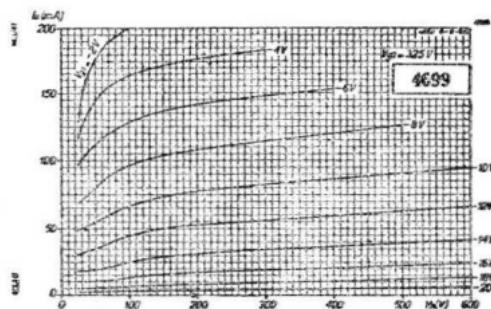
31-12-38
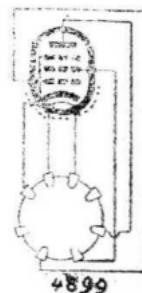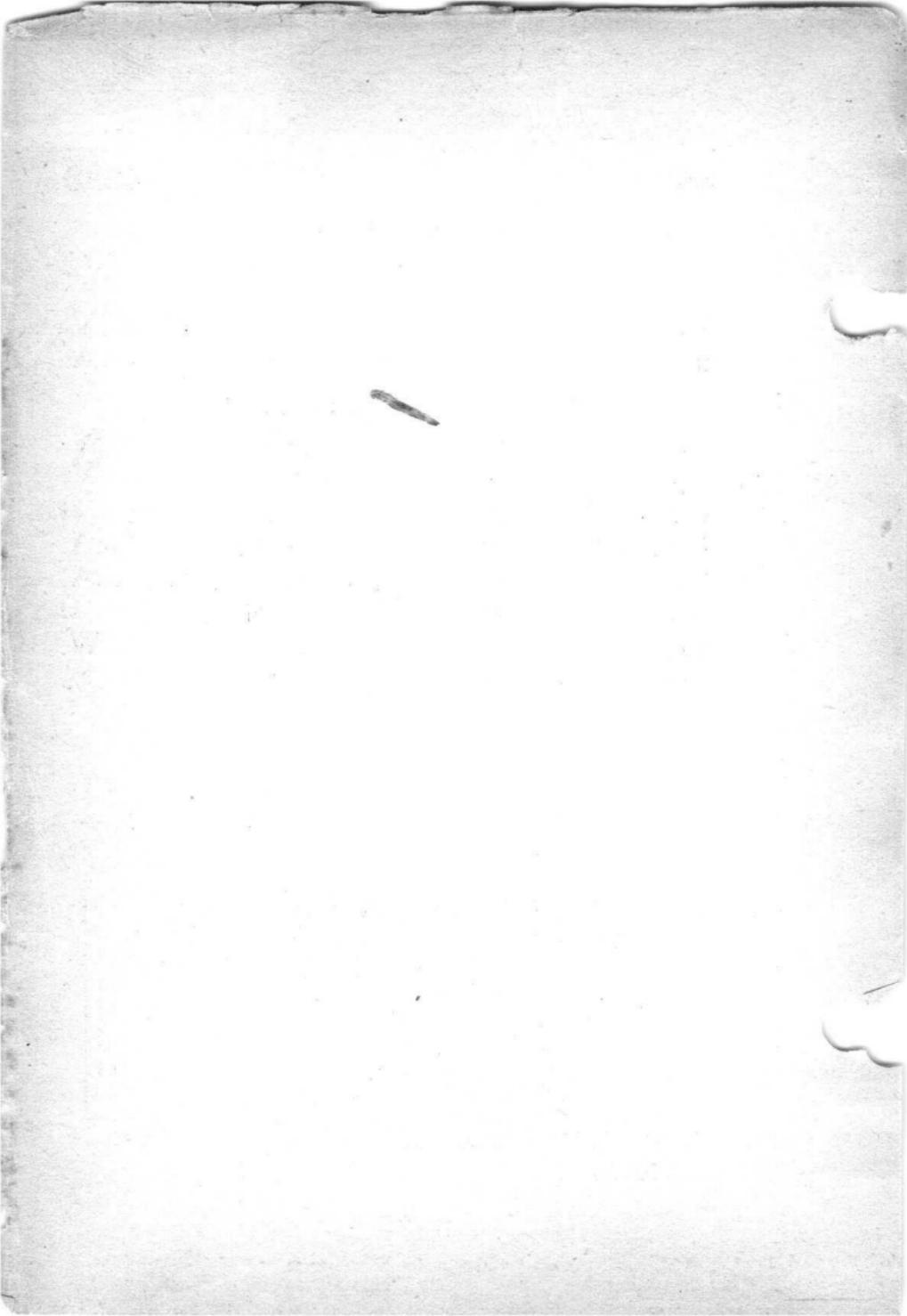
VERGELIJKINGSTABEL

der

Amerikaansche en

Europeesche lampen

—

Tableau d'EQUIVALENCE

des lampes

Americaines et

Européennes
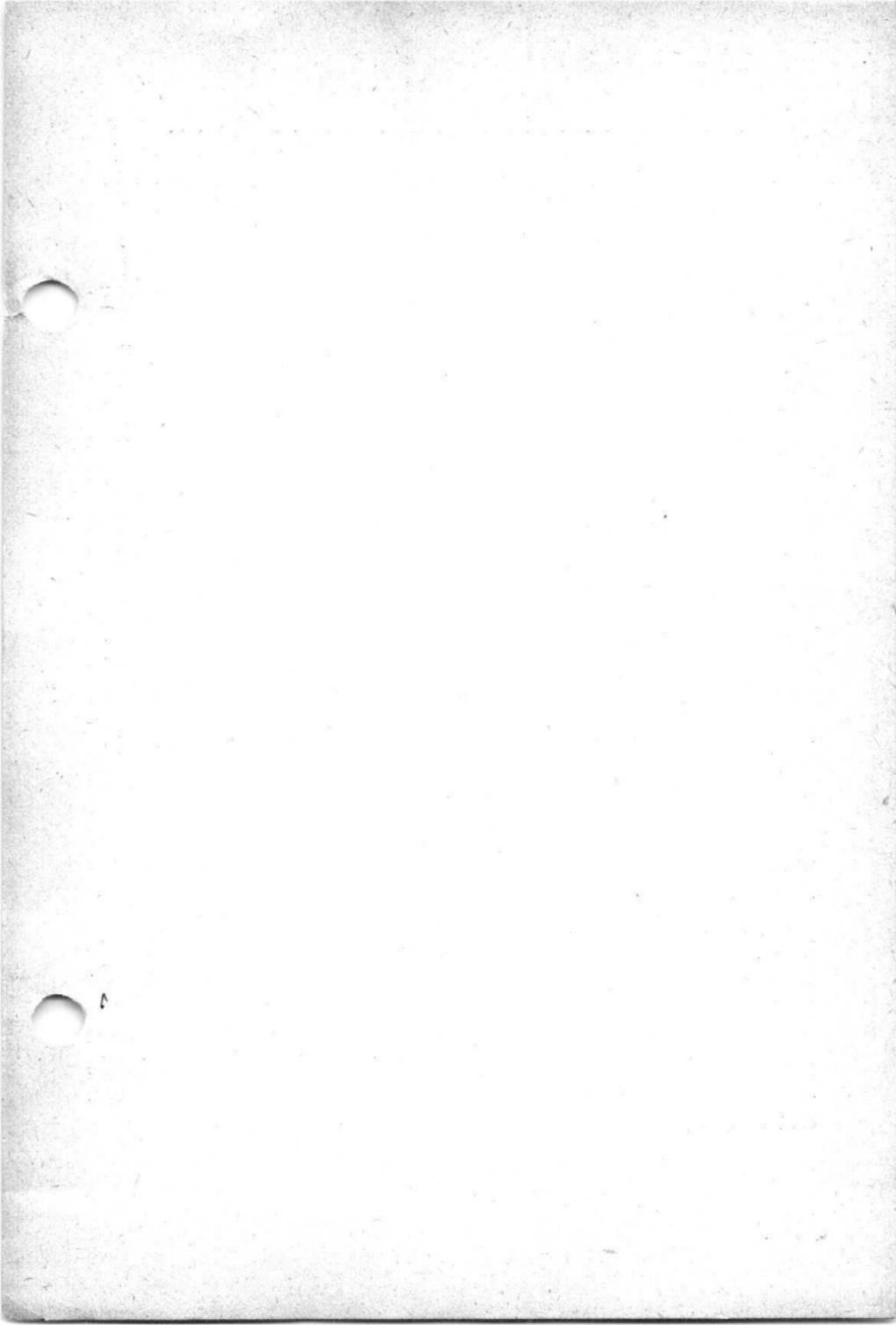
VERGELIJKINGSTABEL VAN ALLE EUROPEESCHE EN AMERIKAANSCHE LAMPEN

Deze tabel werd samengesteld zonder rekening te houden van het merk of den aard der lampen.

De rangschikking werd gedaan volgens dezelfde methode als die welke in het eerste deel van dit werk gebruikt werd.

In de eerste kolom zijn alfabetisch en in de getallenorde àl de ons bekende lamptypes gerangschikt.

De tweede kolom geeft het merk. (Dario is vermeld als « Radiotechn » en Dario Impex door « Impex » om onoderscheid te maken tusschen deze twee merken. — Marconi — Osram en Geco, die dezelfde lampentypeering gebruikten werden voorgesteld door de verkorting « Ge. Mar. Os. » om de lijst niet nutteloos langer te maken.)

Daar de Amerikaansche lampenfabrikanten op weinig na voor de meeste lampen dezelfde typeering gebruiken, hebben wij hier geen merk opgegeven maar wel de verkorting *Amer* in italiek, zoodat hierdoor tevens gemakkelijk een Europeesche van een Amerikaansche lamp te onderscheiden is.

In de 3e kolom komt de overeenstemmende lamp voor waarvan de karakteristieken opgegeven zijn in het eerste deel van dit werk.

Wanneer kleine verschillen in de karakteristieken voorkomen waardoor de lamp niet in àlle gevallen die in de 1e kolom vermeld vervangen kan, is het lamptype in de 3e kolom tusschen haakjes geplaatst.

Ingeval er geen volkomen overeenstemming bestaat tusschen de lampen in de 1e en 3e kolom, dan wordt in de 4e kolom zoo mogelijk een tweede lamptype opgegeven dat eveneens die in de 1e kolom kan vervangen.

De huls der overeenstemmende lampen in de 1e en 3e kolom is niet steeds dezelfde. Deze en andere bijzonderheden zijn aangegeven door verwijzingen waarvan hieronder de lijst gegeven is:

(1) Met pin-huls; de overeenstemmende lamp in de 3e kolom heeft een huls met zijcontacten.

(2) Uitgerust met huls fig. 1 hiernaast.

(3) Uitgerust met huls fig. 2 hiernaast.

Fig. 1   Fig. 2

(4) De metalen lampen en de G (glas) lampen zijn verwisselbaar maar het bijtrimmen der kringen kan noodzakelijk zijn. In sommige gevallen is een uitwendige afscherming voor de G lampen noodig wanneer zij in de plaats van metalen lampen gebruikt worden.

(5) Voor Auto-Radio toestellen of wisselstroom ontvangers waarin de gloeidraden niet in serie geschakeld zijn.

(6) komt weinig voor.

(7) wanneer voor deze lamp voldoende belangstelling mocht bestaan, zullen wij trachten later in een bijvoegsel, de daarmede overeenstemmende lamp op te geven.

(8) Gloeistroomsterkte verschilt.

(9) niet zonder meer te vervangen.
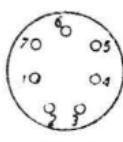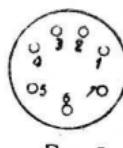
Voor lampen die niet kunnen vervangen worden door een der in deze dokumentatie opgenomen types, is in de 3e kolom niets vermeld.

De hiernavolgende gegevens werden grootendeels ontleend aan documentaties verstrekt door de Philips Laboratoria.

TABLEAU DE COMPARAISON
DES LAMPES EUROPEENNES
ET AMERICAINES

Ce tableau est composé sans tenir compte de la marque ou du genre de lampes.

Le classement est fait d'après la méthode employée dans la première partie de cet ouvrage.

Dans la première colonne on trouve les différentes lampes, classées alphabéthiquement et par ordre numérique.

La deuxième colonne donne le nom du fabricant (Dario est représenté par « Radiotechn » et Dario Impex par « Impex » pour faire la distinction entre ces deux marques. — Marconi Osram et Geco, qui emploent les mêmes notations, sont renseignés par l'abréviation Ge. Mar. Os.).

Comme les lampes américaines, le plus souvent, sont désignées uniformément par tous les fabricants, nous n'avons pas renseigné de marque dans la deuxième colonne mais bien l'abréviation *Amer* en italiques.

La lampe correspondante est donnée dans la troisième colonne. Les caractéristiques de cette lampe se trouvent dans la première partie du livre.

Lorsqu'il existe de légères différences dans les caractéristiques électriques par suite desquelles il est possible que le tube indiqué dans la 3ᵉ colonne ne puisse pas toujours remplacer cette lampe, la dénomination du tube est donnée entre parenthèses.

Pour les cas où la correspondance n'est pas complète on trouvera dans la 4ᵉ colonne une lampe qui, également, peut remplacer celle de la première colonne et qui souvent donne des résultats considérablement meilleures.

Le culottage n'est pas toujours le même pour les lampes dans la première et troisième colonne. Celà, et d'autres détails aussi sont indiqués par des renvois dont on trouve la liste ci-dessous.

(1) Munie d'un culot à broches; la lampe équivalente est munie du culot à contacts latéraux.

(2) Munie d'un culot fig. 1 (page).

(3) Munie d'un culot fig. 2 (page).

(4) Les lampes « métal » ou « G » sont interchangeables mais un réalignement des circuits peut être nécessaire. — Dans certains cas un blindage extérieur des lampes « verre » est nécessaire quand ils remplacent des lampes métalliques.

Fig. 1   Fig. 2

(5) Seulement pour l'emploi en récepteurs automobile ou pour secteur alternatif là où les filaments ne sont pas en série.

(6) Type très peu courant.

(7) Nous nous proposons de donner la correspondance dans un de nos compléments si nos lecteurs en expriment le vœu.

(8) L'intensité de filament est différente.

(9) Types non directement remplaçables par d'autres.
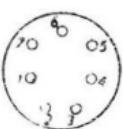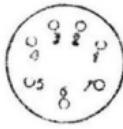
Les lampes pour lesquelles il n'y a pas d'équivalent dans la documentation sont marquées pour un blanc dans la 3e colonne.

La majorité des données ci-après ont été empruntées de documentations spéciales fournies par les Laboratoires Philips.

A

ABC1	Longlife	ABC1	E472
ABC1	Mullard	ABC1	
ABC1	Radiotechn	ABC1	
ABC1	Telefunken	ABC1	
ABC1	Valvo	ABC1	
AB1	Longlife	AB1	
AB1	Mullard	AB1	
AB1	Telefunken	AB1	
AB1	Thermion	AB1	
AB1	Valvo	AB1	
AB2	Longlife	AB2	
AB2	Mullard	AB2	
AB2	Radiotechn	AB2	
AB2	Telefunken	AB2	
AB2	Valvo	AB2	
AB4	Adzam	A441N	
AC/DD	Hivac	AB1	
AC/DD(1)	Mazda	(AB2)	
AC/DDT(1)	Hivac	ABC1	
AC/DG	Mullard	E441	
AC/FC2	Mazda		
AC/HL	Hivac	(E424N)	
AC/HL	Mazda	(E424N)	
AC/HL	Record	(E424N)	
AC/HL/DD(1)	Mazda	(ABC1)	

ACHI	Radiotechn	ACHI	
ACHI	Mullard	ACHI	
ACHI	Telefunken	ACHI	
ACHI	Valvo	ACHI	
AC/HL/DDD	Mazda		
AC/HP	Clarion	E446	
AC/HP	Hivac	E446	
AC/L	Hivac	(E409N)	
AC/P	Mazda	(E409N)	
AC/P	Record		
AC/Pen(2)	Mazda	E463(3)	
AC Polyodion	Impex	E453	
AC/PT	Record	(E463)	
AC/PI	Mazda		
AC/Q	Mazda		
AC/S	Record	(E452T)	E446
AC Screen ⎰ Odion ⎱	Impex	E442	E452T
AC/SG	Clarion	E452T	E446
AC/SG	Lissen	E452T	E446
AC/SG	Mazda	(E452T)	E446
AC/SGV	Lissen	E455	E447
AC/SGVM	Mazda	E455	E447
AC/SH	Hivac	(E452T)	E446
AC/SL	Hivac	E452T	E446
AC/SP	Lissen	E446	
AC/SPV	Lissen	AF2	
AC/SPI	Mazda		
AC super ⎰ Detector ⎱	Impex	(E424N)	

AC super HF	Impex	E438	
AC Super power	Impex	E409N	
AC Super Screen odion	Impex	E452T	E446
AC/S/1/VM	Mazda	E455	E447
AC/S2	Mazda	E452T	E446
AC/S2 Pen	Mazda	E446	
AC/TP	Mazda		
AC/S1VM	Mazda	(E445)	E455
AC/S2	Mazda	(E452T)	E446
AC/S2/Pen	Mazda	(E446)	
AC/V	Hivac		
AC Var. Mu Screen odion B	Impex	E455	
AC Var. Mu Screenodion AC	Impex	E445	E455
AC/VH	Hivac	(E455)	E447
AC/VHP	Clarion	AF2	
AC/VP	Hivac	E447	
AC/VP1	Mazda		
AC/VP2	Mazda		
AC/VS	Clarion	E455	E447
AC/VS	Hivac	E455	E447
AC/VS	Record	(E455)	E447
AC/Y	Hivac	(E453)	
AC/Z(1)	Hivac	AL4	
AC042	Mullard		
AC044	Mullard	(E406N)	

AC044X	Mullard	D404	
AC054	Mullard	E406N	
AC064	Mullard	(C405)	
AC064X	Mullard	D404	
AC084	Mullard	E408	
AC084N	Mullard	(E408N)	
AC084NX	Mullard	E408N	
AC2	Longlife	AC2	
AC2	Mullard	AC2	
AC2	Radiotechn	AC2	
AC2	Telefunken	AC2	
AC2	Valvo	AC2	
AC2/HL	Mazda	(F460)	
AC2/Pen(1)	Mazda	(AL4)	
AC2/Pen DD	Mazda		
AC3	Mullard		
AC3/Pen(1)	Mazda	(AL4)	
AC4	Mullard		
AC104	Mullard	(E409N)	
AD	*Amer*	IV	
AD1	Mullard	AD1	
AD1	Radiotechn	AD1	
AD1	Telefunken	AD1	
AD1	Valvo	AD1	
AD4	Triotron	A409	A415
AD9	Adzam	A409	
AD15	Adzam	A425	B424
AD77	Radiotechn	AM1	
AD510	Triotron	A409	A415
AF	*Amer*	82	

AF	Castilla	A425	B438
AF1	Castilla	(A415)	B424
AF2	Longlife	AF2	
AF2	Mullard	AF2	
AF2	Telefunken	AF2	
AF2	Thermion	AF2	
AF2	Valvo	AF2	
AF3	Longlife	AF3	
AF3	Mullard	AF3	
AF3	Radiotechn	AF3	
AF3	Telefunken	AF3	
AF3	Valvo	AF3	
AF7	Longlife	AF7	
AF7	Mullard	AF7	
AF7	Radiotechn	AF7	
AF7	Telefunken	AF7	
AF7	Valvo	AF7	
AG	*Amer*	83	
AG495	Tungsram	E424N	
AG2018	Vatea	B2038	
AG4100	Tungsram	E415	E424N
AG4101	Tungsram	E415	E424N
AH1	Longlife	AH1	
AH1	Mullard	AH1	
AH1	Radiotechn	AH1	
AH1	Telefunken	AH1	
AH1	Valvo	AH1	
AH10	Adzam	(A409)	A415
AH150	Adzam	B442	
AH4100	Tungsram	E446	

AH4105	Tungsram	E447	
AI620	Cyrnos	C443	E443H
AI1212	Cyrnos	E415	E424N
AI15008	Cyrnos	E442S	E452T
AK1	Longlife	AK1	
AK1	Mullard	AK1	
AK1	Telefunken	AK1	
AK1	Thermion	AK1	
AK1	Valvo	AK1	
AK2	Longlife	AK2	
AK2	Mulard	AK2	
AK2	Radiotechn	AK2	
AK2	Telefunken	AK2	
AK2	Valvo	AK2	
AL1	Longlife	AL1	
AL1	Mullard	AL1	
AL1	Radiotechn	AL1	
AL1	Telefunken	AL1	
AL1	Valvo	AL1	
AL2	Longlife	AL2	
AL2	Mullard	AL2	
AL2	Radiotechn	AL2	
AL2	Telefunken	AL2	
AL2	Valvo	AL2	
AL3	Longlife	AL3	
AL3	Radiotechn	AL3	
AL4	Longlife	AL4	
AL4	Mullard	AL4	
AL4	Radiotechn	AL4	
AL4	Telefunken	AL4	

AL4	Valvo	AL4	
AL5	Mullard	AL5	
AL5	Telefunken	AL5	
AL5	Valvo	AL5	
AL410	Ge. Mar. Os.	B415	B424
AL435	Cyrnos	D404	
AL495	Tungsram	(E409N)	
AL735	Cyrnos	D404	
AL1025	Cyrnos	E408N	
Amplitron A	Elektra-Mars	B409	
Amplitron B	Elektra-Mars	A409	B415
AM1	Mullard	AM1	
AM1	Radiotechn	AM1	
AM1	Valvo	AM1	
AN4	Triotron	E438	
AN2127	Valvo	B2044	
AN2718	Valvo	B2044S	
AN4092	Valvo	E444S	
AN4126	Valvo	E444	
APP495	Tungsram	C443	E443H
APP4100	Tungsram	E453	
APP4120	Tungsram	E453	
APP4130	Tungsram	E463	
APV4100	Tungsram	1561	
APV4200	Tungsram		
AP4	Mullard	4676	
AP495	Tungsram	E409N	
AR23	Loewe	A409	A415
AR25	Adzam	A425	B438
AR4100	Tungsram	E438	

AR4101	Tungsram	E438	
AR4120	Tungsram	E499	
AS	Elektra-Mars	A409	A415
AS4	Triotron	A425	B438
AS494	Tungsram	E452T	
AS495	Tungsram	E452T	E446
AS2004	Record	(B442)	
AS4100	Tungsram	E442S	E452T
AS4100D	Tungsram	E442S	E452T
AS4101	Tungsram	E442S	E452T
AS4104	Tungsram	(E445)	E455
AS4105	Tungsram	E445	E455
AS4120	Tungsram	E452T	E446
AS4125	Tungsram	E455	E447
AT4	Mullard	4675	
AV4100	Vatea	E438	
AX	*Amer*	01A	
AX1	Valvo	AX1	
AZ1	Longlife	AZ1	
AZ1	Mullard	AZ1	
AZ1	Radiotechn	AZ1	
AZ1	Telefunken	AZ1	
AZ1	Valvo	AZ1	
AZ920	Metal	A109	
A2	Zenith	(B228)	
A4	Zenith	B438	
A4	Sator	A409	A415
A4A	Castilla	E455	
A6-AF	Castilla	E438	
A4AM	Castila	E446	

A4-AMS	Castilla	E447	
A4-AMS2	Castilla	AF2	
A4-AMS3	Castilla	AF3	
A4-AM7	Castilla	AF7	
A4-A1	Castilla	E442S	
A4-A2	Castilla	E452T	E445
A4-BF	Castilla	B405	
A4-BS	Castilla	E409N	
A4-CAT	Castilla	AM1	
A4-D	Castilla	E415	E424N
A4-DD	Castilla	AB1	
A4-DP	Castilla	E444	
A4-DP1	Castilla	E444S	
A4-DR	Castilla	E499	
A4-D1	Castilla	(E424N)	
A4-FF2	Castilla	AL2	
A4-FF4	Castilla	AL4	
A4-GAF	Castilla	E442	E452T
A4-GBF	Castilla	C443	E443H
A4-GDR	Castilla	AK1	
A4-IF	Castilla	E453	
A4S	Castilla	E443H	
A4-WM	Castilla	E445	
A9	Fotos	(A409)	
A10	Sator	(A409)	A415
A11	Sator	(A409)	A415
A11B	Everready		
A11C	Everready		
A11D	Everready		
A12	Sator	(A409)	A415

A14	Sator	A425	B438
A16	Sator	A409	A415
A18	Sator	A409	A415
A19	Sator	(B405)	
A20	Sator	A209	
A20B(1)	Everready	AB2	
A21	Sator	(A409)	A415
A22	*Amer*	(9)	
A22	Sator	A425 -	B438
A23	Sator	(A409) -	A415
A23A(1)	Everready	ABC1	
A24	Sator	(B405)	
A25	Fotos	A425	B438
A25	Sator	(B405)	
A26	*Amer*	(9)	
A30	*Amer*	(9)	
A30B	Everready	(F460)	
A30D	Everready	(E438)	
A32	*Amer*	(9)	
A36A(1)	Everready	(ACH1)	
A40	*Amer*	(9)	
A40M	Everready	E455	
A41	Sator	(A409) -	A415
A42	Sator	A425 -	B438
A43	Sator	A425 -	B438
A48	*Amer*	(9)	
A49	Sator	A409 -	A415
A50A	Everready	E446	
A50B	Everready		
A50M	Everready	E447	

A50N	Everready	AF2	
A50P	Everready		
A65	Sator	A409 -	A415
A70B(1)	Everready	AL2	
A70C(1)	Everready	AL4	
A70D(1)	Everready	AL4	
A80A(1)	Everready	AK2	
A199	Sator	A409	A415
A206	Valvo	A209	
A211	Valvo	B228	
A214	Triotron	B217	
A408	Valvo	A415	B424
A410	Valvo	B415	B424
A411	Valvo	B424	
A420	Triotron	A415	B424
A430	Triotron	B424	
A430N	Triotron	E424N	
A440N	Triotron	E499	
A520	Ostar	B2038	
A537	Ge. Mar. Os		
A1005	Cyrnos	A409	A415
A2002	Record	B252	B262
A2004	Record	(B442)	
A2004S	Record	B442	
A2030N	Triotron	B2038	
A2040N	Triotron	B2099	
A2118	Valvo	B2038	
A2200W	Valvo	F215	
A4090	Valvo	E424N	
A4100	Valvo	E415	E424N

A4110	Valvo	E424N
A4115	Valvo	E424N
A5004	Record	E438
A15008	Cyrnos	(B442)

B

B	Adzam	(A409)	A415
B	*Amer*	V99	
BA	*Amer*	(7)	
BA9	Fotos	A209	
BBC12	Impex	KBC1	
BC1	S.I.F.	B442	
BC2	S.I.F.	E442S	E452T
BC6	S.I.F.	E452T	E446
BC9	Fotos	A209	
BC9D	Fotos	(B217)	
BC18	Fotos	(B217)	
BC18D	Fotos	(B228)	
BC40	Fotos	(B228)	
BC150	Fotos	(B252)	B262
BD5	Fotos	B205	
BD9	Fotos		
BD100	Fotos	(C243N)	
BF	Castilla	(A409)	A415
BFF	Castilla	(B405)	
BF1	Fotos	(B405)	
BF2	Fotos	B405	
BF5	Cyrnos	B405	
BF6	Cyrnos	(B405)	
BF9	Cyrnos	B409	
BF32	Impex	KF3	

BF42	Impex	KF4	
BF43	Cyrnos	B443	C443
BF50	Cyrnos	D404	
BF100	Cyrnos	C443	E443H
BF100	Fotos	(C243N)	
BG4	Ge. Mar. Os.	A441N	
BH	*Amer*	(7)	
Bigrille	Cyrnos	A441N	
Bigr./Ampl.	Fotos	(A441N)	
Bigr./BF	Fotos	(A441N)	
Bigr./Osc./40V	Fotos	(A441N)	
Bigr./Osc./80V	Fotos	(A441N)	
BI4090	Zenith	E438	
BK22	Impex	KK2	
BL22	Impex	KL2	
BM35	Mégam	A441N	
BO9	Fotos	B205	
BR	*Amer*	(7)	
BR	Fotos	(A441N)	
BS	Elektra-Mars.	A409	A415
BS215	Mazda	(B252)	
BS1212	Celsior	E441	E441N
BU200	Mazda	329	
BW3	Metal	(C243N)	
BW303	Metal	(B205)	
BW602	Metal		
BW704	Metal	(B205)	
BW1304	Metal		
BX20	Vatea	B240	
BX604	Metal	(B205)	

B21	Mazda	A225	B228
B22	Mazda	A209	
B23	Mazda	A209	
B25	Fotos	A425	B438
B30	Ge. Mar. Os.		
B80	Cyrnos	1561	
B210L	Mazda	A209	
B215P	Mazda	B205	
BY1	Metal	(A241)	
BY2	Metal	(B252)	B262
BY3	Metal	(C243N)	
BY6	Metal	(B252)	B262
BY1013	Metal	A209	
BY1210	Metal	(A209)	
BY1814	Metal	B217	
BY1815	Metal	B217	
BY2010	Metal	(B228)	
BY2020	Metal	(B217)	
BY2023	Metal	(B228)	
B1	Cyrnos	1801	
B1	S.I.F.	A441N	
B2	S.I.F.	E441	E441N
B2	Zenith	(B228)	
B3	Cyrnos	1801	
B4	Zenith	B438	
B7	Mazda	A609	
B9	Fotos	A410N	
B9	Sator	A441N	
B10	Sator	A441N	
B11	Mazda	C603	

B11	Orion	A441N	
B11	Sator	A441N	
B12	Mazda	E703	
B13	Mullard	C1	
B13A	Mullard	C2	
B13B	Mullard	C3	
B20 oxyde	Cyrnos	1802	
B21(2)	Ge. Mar. Os.	(B240)(3)	
B220	Celsior	1801	
B220(2)	Hivac	B240(3)	
B230	Celsior	506	
B230(2)	Hivac	(B240)(3)	
B350	Celsior	506	
B420	Cyrnos	1801	
B430N	Triotron	E444	
B435N	Triotron	E444S	
B440	Cyrnos	506	
B480	Cyrnos	1561	
B491	Zenith	(F460)	
B520	Celsior	A441N	
B720	Cyrnos	(B405)	
B1003	Cyrnos	1561	
B1209	Cyrnos	A409	A415
B2030N	Triotron	B2044	
B2035N	Triotron	B2044S	
B4125	Cyrnos	1561	

C

C	Adzam	(B405)
CA171	Castilla	C603
CA201A	Castilla	C509A
CBC1	Mullard	CBC1
CBC1	Radiotechn	CBC1
CBC1	Telefunken	CBC1
CBC1	Valvo	CBC1
CB1	Mullard	CB1
CB1	Radiotechn	CB1
CB1	Telefunken	CB1
CB1	Valvo	CB1
CB2	Mullard	CB2
CB2	Radiotechn	CB2
CB2	Telefunken	CB2
CB2	Valvo	CB2
CB212	Tungsram	
CB220	Tungsram	(B240)
CB410D	Tungsram	
CB510	Celsior	A441N
CC2	Mullard	CC2
CC2	Radiotechn	CC2
CC2	Telefunken	CC2
CC2	Valvo	CC2
CF1	Mullard	CF1
CF1	Radiotechn	CF1

CF1	Telefunken	CF1	
CF1	Valvo	CF1	
CF2	Mullard	CF2	
CF2	Radiotechn	CF2	
CF2	Telefunken	CF2	
CF2	Valvo	CF2	
CF3	Longlife	CF3	
CF3	Mullard	CF3	
CF3	Radiotechn	CF3	
CF3	Telefunken	CF3	
CF3	Valvo	CF3	
CF7	Longlife	CF7	
CF7	Mullard	CF7	
CF7	Radiotechn	CF7	
CF7	Telefunken	CF7	
CF7	Valvo	CF7	
CH1	Mullard	CH1	
CH1	Radiootechn	CH1	
CH1	Telefunken	CH1	
CH1	Valvo	CH1	
CI	Metal	C443	E443H
CI409	Cyrnos	E415	E424N
CI415	Cyrnos		
CI424	Cyrnos	E424N	
CI438	Cyrnos	E438	
CI441	Cyrnos	E441	E441N
CI442	Cyrnos	E452T	
CI442S	Cyrnos	E442S	E452T
CI4090	Zenith	E415	E424N
CK1	Longlife	CK1	

CKI	Mullard	CKI	
CKI	Radiotechn	CKI	
CKI	Telefunken	CKI	
CKI	Valvo	CKI	
CLI	Mullard	CLI	
CLI	Radiotechn	CLI	
CLI	Telefunken	CLI	
CLI	Valvo	CLI	
CL2	Longlife	CL2	
CL2	Mullard	CL2	
CL2	Radiotechn	CL2	
CL2	Telefunken	CL2	
CL2	Valvo	CL2	
CL4	Mullard	CL4	
CL4	Radiotechn	CL4	
CL4	Telefunken	CL4	
CL4	Valvo	CL4	
CL25	Metal	(A415)	B424
CL52	Metal	(A209)	
CL62	Metal	(A209)	
CL64B	Metal	A415	B424
CL104	Metal	(B405)	
CL124	Metal	(B409)	
CL125	Metal	B217	
CL162	Metal	(A209)	
CL164	Metal	(A425)	
CL202	Metal	(A209)	
CL252	Metal	(A209)	
CL254	Metal	(A415)	
CL504	Métal	A425	B438

CL1257	Métal	E708	
CR2	Mazda	1802	
CS	Elektra-Mars	A409	A415
CT06	Radiotechn	B2006	
CT38	Rariotechn	B2038	
CT41	Radiotechn	B2041	
CT42	Radiotechn	B2042	
CT43	Radiotechn	B2043	
CT44	Radiotechn	B2044	
CT44S	Radiotechn	B2044S	
CT45	Radiotechn	B2045	B2047
CT46	Radiotechn	B2046	
CT47	Radiotechn	B2047	
CT48	Radiotechn	B2048	
CT49	Radiotechn	B2049	
CT52	Radiotechn	B2052T	B2046
CT55	Radiotechn	B2045	
CV1	Vatea	C1	
CV2	Vatea	C2	
CV3	Vatea	C3	
CWN4	Triotron	E442S	E.452T
CX171	Castilla	C603	
CX201A	Castilla	C509A	
Cyrnos Ampli	Cyrnos	A409	A415
CY1	Longlife	CY1	
CY1	Mullard	CY1	
CY1	Radiotechn	CY1	
CY1	Telefunken	CY1	
CY1	Valvo	CY1	
CY2	Mullard	CY2	

CY2	Radiotechn	CY2	
CY2	Telefunken	CY2	
CY2	Valvo	CY2	
CY9	Cyrnos	A409	A415
CY10	Cyrnos	A409	A415
CY15	Cyrnos	B415	B424
CY25	Cyrnos	A425	B438
CY41N	Cyrnos	A441N	
CY42	Cyrnos	(B442)	
CI	Mullard	CI	
CI	Valvo	CI	
C2	Mullard	C2	
C2	Valvo	C2	
C2	Zenith	A209	
C3	Mullard	C3	
C3	Valvo	C3	
C9	Fotos	A409	A415
C10B(1)	Everready	CY1	
C20C(1)	Everready	CB2	
C25	Fotos	A425	B438
C30B	Everready		
C50B	Everready		
C50N	Everready		
C70D(1)	Everready	CL4	
C80B(1)	Everready	CK1	
C106	Zenith	A109	
C150	Fotos	(B442)	
C208	Zenith	A209	
C303B	Castilla	(B405)	
C306A	Castilla	(A409)	A415

C306B	Castilla	(B405)	
C309A	Castilla	A409	A415
C325A	Castilllla	A425	B438
C406	Zenith	A415	B424
C412	Zenith	A415	B424
C491	Zenith	E424N	
C512	Zenith	A615	
C1220	Celsior	A441N	

D

D	Adzam	A409	A415
D	Castilla	A409	A415
DA	Ferranti		
DA1	Mullard		
DA2	Mullard		
DA30	Ge. Mar. Os.		
DA60	Ge. Mar. Os.		
DA100	Ge. Mar. Os.		
DA406	Zenith	(B442)	
DA412	Zenith	B442	
DA1050	Zenith	C142	
DB	Astron	506	
DB4	Adzam	A441N	
DB240	Hivac		
DC/HL	Mazda		
DC/P	Mazda		
DC/Pen	Mazda		
DC Polyodion	Impex	B2043	
DC Screenodion	Impex	B2042	B2052T
DC/SG	Mazda		
DC Super Det	Impex	B2038	
DC Superpower	Impex	B2006	
DC Super Screenodion	Impex	B2052T	B2046
DC/2 HLDD	Mazda		

DC2/P	Mazda		
DC2/Pen	Mazda		
DC2/SG	Mazda		
DC2/SGVM	Mazda		
DC3/HL	Mazda		
DDA1	Standard	(AB1)	
DD/Pen	Cossor	B2043	
DDS	Thermion		
DDT(1)	Cossor	KBC1	
DDT16	Cossor		
DDT 220(1)	Hivac	KBC1	
DDU412	Vatea		
DD4	Cossor	(AB1)	
DD465	Tungsram	AB1	
DD620(1)	Mazda	(CB2)	
DD818	Tungsram		
DEHL210	Ge. Mar. Os.		
DEH210	Ge. Mar. Os.	(B228)	
DEH410	Ge. Mar. Os.	(B438)	
DEH610	Ge. Mar. Os.	A630	
DEH612	Ge. Mar. Os.	(A615)	
DEL210	Ge. Mar. Os.	A209	B217
DEL410	Ge. Mar. Os.	(A415)	B424
DEL610	Ge. Mar. Os.	A615	
DEL612	Ge. Mar. Os.	A609	
DEP215	Ge. Mar. Os.	(B205)	
DEP240	Ge. Mar. Os.	(B205)	
DEP410	Ge. Mar. Os.	(A209)	B217
DEP610	Ge. Mar. Os.	(A609)	
DEQ	Ge. Mar. Os.		

DER	Ge. Mar. Os.	(A209)	B217
Detection	Fotos	A409	A415
Detector/Bivolt	Impex	A225	
DET5	Ge. Mar. Os.	(F410)	
DEV	Ge. Mar. Os.		
DEVC	Ge. Mar. Os.		
DEVX	Ge. Mar. Os.		
DE1	*Amer*	27	
DE2HF	Ge. Mar. Os.	(B217)	
DE2LF	Ge. Mar. Os.	(A209)	B217
DE3	Ge. Mar. Os.	A409	A415
DE4	Ge. Mar. Os.	(A409)	A415
DE5	Ge. Mar. Os.	(A609)	A615
DE5A	Ge. Mar. Os.	(B605)	
DE5B	Ge. Mar. Os.	(A630)	
DE6	Ge. Mar. Os.	(B205)	
DE8HF	Ge. Mar. Os.	(A615)	
DE8LF	Ge. Mar. Os.	(A609)	A615
DG	Metal	A441N	
DGP3	Vatea	(A441N)	
DGP4	Vatea	(A241)	
DG2	Ge. Mar. Os.	(A241)	
DG2	Thermion		
DG4	Sator	A441N	
DG4	Thermion	1561	
DG20	Mullard	B2041	
DG102	Thermion	506	
DG406	Astron	A441N	
DG407	Tungsram	A441N	
DG407/0	Tungsram	A441N	

DG2018	Tungsram	B2041	
DG2018	Vatea	B2041	
DG4100	Tungsram	E441	
DG4101	Tungsram	E441N	
DH	Ge. Mar. Os.		
DHD	Ge. Mar. Os.		
DHL	Cossor		
DHL	Ge. Mar. Os.		
DH4	Mullard	E448	
DH20	Mullard	B2048	
DH30	Ge. Mar. Os.		
DH204	Record	E447	
DH504	Record	E446	
DI2	Radiotechn		
DI3	Radiotechn		
DI4090	Zenith	E441	
DL	Ge. Mar. Os.		
DLP51	Sator	AL1	
DLS1	Mazda	(4152)	
DLS10	Mazda		
DL2	Record	B217	
DL4	M.P.	A409	A415
DL4A	M.P.	A415	B424
DL4B	M.P.	B415	B424
DL4V	M.P.	E424N	
DL40	Ge. Mar. Os.		
DM15	Record	A241	
DM154	Record		
DM300	Record	A441N	
DN30	Ge. Mar. Os.		
DN41	Ge. Mar. Os.		

DN44	Record	E441N	
DN64	Record	(E409N)	
DN124	Record		
DN154	Record	E415	E424N
Dn254	Record	E424N	
Dn284	Record	E424N	
Dn404	Record	E438	
DN406	Vatea	(A441N)	
Dn754	Record	(E499)	
Dn904	Record	E453	
Dn1004	Record	E443N	
Dn2004	Record	E442S	E452T
Dn3004	Record	(E452T)	E446
Dn5004	Record	E445	E455
Dn9014	Record	(E452T)	E446
DO2-30B	Metal	1801	
DO20	Mullard	(F704) = Aw 50	
DO24	Mullard	F410	
DO25	Mullard		
DO26	Mullard		
DO27	Mullard	E707	
DO34	Mullard	4641	
DO60	Mullard		
DO230B	Mazda	1801	
DP	Cossor		
DP/Pen	Cossor		
DPT	Ge. Mar. Os.		
DPT30	Ge. Mar. Os.		
DR	Record	(A441N)	
DR2	Mazda	A209	
DS	Ge. Mar. Os.		

DSB	Ge. Mar. Os.		
DS/Pen	Cossor		
DSP1	Ge. Mar. Os.		
DS1	Thermion	B442	
DS228	Tungsram	(B2044)	
DS1610	Celsior	E415	E424N
DS2408	Celsior	E424N	
DS4100	Tungsram	E444	
DS4101	Tungsram	(E444)	
DT215	Triotron	KBC1	
DT436	Triotron	ABC1	
DT491	Zenith	(E444)	
DT620	Triotron	EBC3	
DT1336	Triotron	CBC1	
DU1	Mullard	1802	
DU2	Mullard	(506)	
DU/2X	Mullard	506	
DU3	Mullard	1803	
DU4	Mullard	505	
DU5	Mullard	506	
DU10	Mullard	(505)	
DU15	Mullard	(1562)	
DU412	Vatea	(E441N)	
DU412	Zenith	(B405)	
DU415	Zenith	B443	C443
DVG51	Sator	AZ1	
DVP1	Ge. Mar. Os.	B2047	
DVSG	Cossor		
DVS/Pen	Cossor		
DV4100	Vatea	E441	

DW1	Metal	(E441)	
DW1	Mullard	1801	
DW1B	Metal	(E441)	
DW2	Metal	(E442S)	
DW2	Mullard	(506)	
DW2X	Mullard	506	
DW3	Metal	C443	E443H
DW3	Mullard	(1561)	
DW4	Mullard	1561	
DW5	Mullard	1832	
DW6	Metal	E442	E452T
DW7	Metal	E452T	E446
DW7	Mullard	4646	
DW7X	Mullard	1805	
DW8	Metal	E455	E447
DW8	Mullard	(1560)	
DW9	Metal	E443H	
DW11	Mazda	E443H	
DW11	Metal	E443H	
DW15	Mullard		
DW16	Mullard	(1560)	
DW302	Metal	(D404)	
DW601	Metal	E406N	
DW702	Metal		
DW704	Metal	(E409N)	E415
DW1003	Metal	(E409N)	E415
DW1011	Metal	(E424N)	
DW1111	Metal	(E409N)	E415
DW1508	Metal	E415	E424N
DW3020	Metal	E438	

DW3559	Metal	E438	
DW4011	Mazda		
DW4011	Metal	(E424N)	
DW4023	Metal	E438	
DX3	Metal	B443	
DX106	Vatea	A141	
DX406	Vatea	A441N	
DX414	Vatea	A441N	
DX502	Metal	B405	
DY604	Metal	(B405)	
DX804	Metal	B409	
DZ1	Metal	A441N	
DZ2	Metal	B442	
DZ811	Metal	A409	A415
DZ813	Metal	A409	A415
DZ908	Metal	A409	A415
DZ1508	Metal	A415	B424
DZ1623	Metal	A415	B424
DZ2222	Metal	A425	B438
DZ3529	Metal		
D ½	*Amer*	81	
D1	*Amer*	80	
D1	Castilla	A409	A415
D2	Zenith	A241	
D2-30	Metal	1802	
D2-30B	Metal	1801	
D3-50B	Metal	506	
D3-80B	Metal	506	
D4	Ferranti	E424N	
D4	Zenith	A441N	

D5	Fotos	B405	
D5-125B	Metal	1561	
D9	Fotos	B409	
D15	Fotos	A415	B424
D28	Thermion	373	
D40	Fotos	A425	B438
D41(1)	Ge. Mar. Os.	AB2	
D60	Fotos	(C443)	E443H
D70	Fotos	C443	E443H
D94	Thermion	B405	
D100	Fotos	B443	C443
D100N	Fotos	C443	E443H
D163	Thermion	A415	B424
D200	Triotron	KB2	
D201	Triotron	KB1	
D210	Hivac	B217	
D230	Mazda	1802	
D230B	Mazda	1801	
D350B	Mazda	506	
D380B	Mazda	506	
D400	Triotron	AB2	
D401	Triotron	AB1	
D410	Triotron	A441N	
D410N	Triotron	E441	
D418	Tungsram	(AB2)	
D430B	Mazda	1801	
D480B	Mazda	506	
D495	Zenith	(E441)	
D502	Thermion	(A425)	B438
D601	Triotron	EB1	

D1208	Celsior	B415	B424
D1300	Triotron	CB2	
D1301	Triotron	CB1	
D2010N	Triotron	B2041	
D5125B	Mazda	1561	

E

E	Adzam	A225
E	*Amer*	20
E	Tungsram	
EB	Astron	506
EBC1	Mullard	EBC1
EBC1	Telefunken	EBC1
EBC1	Valvo	EBC1
EBC3	Mullard	EBC3
EBC3	Radiotechn	EBC3
EBC3	Valvo	EBC3
EB1	Telefunken	EB1
EB1	Valvo	EB1
EB2	Valvo	EB2
EB2 Cubi	Telefunken	EB2
EB4	Mullard	EB4
EB4	Radiotechn	EB4
EB4	Valvo	EB4
EC2	Mullard	EC2
EC2	Telefunken	EC2
EC2	Valvo	EC2
ED78	Radiotechn	EM1
EF1	Telefunken	EF1
EF1	Valvo	EF1
EF2	Telefunken	EF2
EF2	Valvo	EF2

EF3	Valvo	EF3
EF3 Cubi	Telefunken	EF3
EF5	Mullard	EF5
EF5	Radiotechn	EF5
EF5	Valvo	EF5
EF6	Mullard	EF6
EF6	Radiotechn	EF6
EF6	Valvo	EF6
EF7	Valvo	EF7
EF7 Cubi	Telefunken	EF7
EG1	Thermion	
EG4	Thermion	(1832)
EG50	Ostar	
EG100	Ostar	
EG101	Thermion	373
EG403	Sator	1802
EG406	Sator	373
EG410	Sator	1832
EG420	Sator	1832
EG430	Eagle	1802
EG2403	Hoges	1810
EG5003	Hoges	1803
EH	Tungsram	
EHG	Tungsram	
EHP4V	M.P.	E447
EHP20	M.P.	B2047
EH1	Mullard	EH1
EH1	Telefunken	EH1
EH1	Valvo	EH1
EK1	Telefunken	EK1

EK1	Valvo	EK1	
EK2	Mullard	EK2	
EK2	Radiotechn	EK2	
EK2	Valvo	EK2	
EL1	Telefunken	EL1	
EL1	Valvo	EL1	
EL1 Cubi	Telefunken	EL1	
EL2	Mullard	EL2	
EL2	Radiotechn	EL2	
EL2	Valvo	EL2	
EL3	Mullard	EL3	
EL3	Radiotechn	EL3	
EL3	Valvo	EL3	
EL5	Mullard	EL5	
EL5	Radiotechn	EL5	
EL5	Valvo	EL5	
EM1	Mullard	EM1	
EM1	Radiotechn	EM1	
EM1	Valvo	EM1	
E O	Fotos	(1803)	
ESG4V	M.P.	E455	E447
ESG20	M.P.	B2045	
ES32	Celsior	E452T	E446
ES33	Celsior	E442S	E452T
ES100	Tekade	E442	E452T
ES300/200	Celsior	E442S	E452T
Eureka	Eureka	A409	A415
EZ1	Radiotechn	EZ1	
EZ1	Telefunken	EZ1	
EZ1	Valvo	EZ1	

EZ1 Cubi	Telefunken	EZ1	
EZ2	Mullard	EZ2	
EZ2	Valvo	EZ2	
EZ3	Mullard	EZ3	
EZ3	Radiotechn	EZ3	
EZ3	Valvo	EZ3	
EZ4	Mullard	EZ4	
EZ4	Radiotechn	EZ4	
EZ4	Valvo	EZ4	
E1	Fotos		
E1	Metal	(B409)	
E2	Fotos		
E4	Sator	B409	
E4A	M.P.	1802	
E4B	M.P.	1832	
E4C	M.P.	1801	
E4D	M.P.	506	
E4E	M.P.	1561	
E4F	M.P.	1815	
E4G	M.P.	1817	
E10	Sator	(A409)	A415
E11	Sator	(A409)	A415
E14	Sator	A425	B438
E15	Sator	A409	A415
E23	Celsior	(B442)	
E43	Sator	(C443)	E443
E100	Sator		
E105A	Radiotechn	E708	
E105B	Radiotechn	E708	
E105C	Radiotechn	E708	

Ł107A	Radiotechn	E408N	
E107B	Radiotechn	(E406N)	
E155B	Radiotechn		
E165A	Radiotechn	F704	
E165B	Radiotechn	F704	
E200/300	Celsior	B442	
E201/A	Elektra-Mars	A409	A415
E220B	Triotron	(B240)	
E235	Triotron		
E381	Ge. Mar. Os.	(E499)	
E414	Triotron	B405	
E420	Triotron	B405	
E422	Triotron	B409	
E425	Triotron	C405	
F430N	Triotron	E409N	
E491	Zenith	(E448)	
E495	Zenith	(F449)	
E615	Triotron	C643	
E2020N	Triotron	B2006	

F

FB12	Fotos	B240	
FB220	Fotos	B240	
FC2	Mullard	(KK2)	
FC2A(1)	Mullard	KK2	
FC4(1)	Mullard	AK2	
FC13(1)	Mullard	CK1	
FC1320	Mazda		
FH4105	Tungsram	E449	
FK1	Loewe		
FV250	Mazda	F704	
FW1	Impex	506	
FW2	Impex	1561	
FW3	Impex	1561	
FW350	Record	1561	
FW402	Metal	C603	
FZ1	Mullard	FZ1	
FZ1	Radiotechn	FZ1	
FZ1	Telefunken	FZ1	
FZ1	Valvo	FZ1	
FZ906	Metal	A609	
F4	Sator	B415	B424
F5	Fotos	(E406N)	
F5N	Fotos	(E406N)	
F10	Fotos	D410	
F10N	Fotos	D410	
F100	Fotos	C443	E443H
F100N	Fotos	(E443H)	

G

G	*Amer*	40	
G	Elektra-Mars	A425	B438
GA	*Amer*	(9)	
GA24	Triotron	506	
GD24	Triotron	506	
GE	Triotron	506	
GE15	Triotron	373	
GE25	Triotron	506	
GL4	Sator	1561	
GL4/0,15	Sator	1802	
GL4/0,30	Sator	1801	
GL4/0,40	Sator	1802	
GL4/0,6D	Sator	1801	
GL4/0,6E	Sator	373	
GL4/0,60	Sator	506	
GL4/0,80	Sator	506	
GL4/1	Sator	506	
GL4/1D	Sator	506	
GL4/1E	Sator	505	
GL4/2	Sator	1561	
GL4/2D	Sator	1561	
GL4/2E	Sator	1832	
GM	Metal	(A441N)	
GN14	Triotron	1802	
GN24	Triotron	1801	

GP2	Mazda	A209	B217
GP4	Mazda	(A409)	A415
GP210	Mazda	(A209)	B217
GP407	Mazda	(A415)	B424
GP406	Astron	A409	A415
GP607	Mazda	(A615)	
GT1	Ge. Mar. Os.		
GT4H	Mullard	4686	
GT130	Tekade	506	
GT138	Tekade	505	
GU1	Ge. Mar. Os.		
GVG3010	Hoges		
GW302	Metal	E703	
GW402	Metal	F704	
G2	*Amer*	2S/4S	
G4	*Amer*	2S/4S	
G7-85	Metal	1562	
G84	*Amer*	2Z2/G84	
G84/2Z2	*Amer*	2Z2/G84	
G100	Fotos	E443N	
G102	Record	(B2006)	
G132	AEG		
G138	AEG	1201	
G203	Marathon	451	
G204	Marathon	373	
G206	Tungsram		
G210	Tungsram	A209	B217
G213	Marathon	328	
G214	Marathon	506	
G215	Tungsram	(B205)	

G223	Marathon	AX1	
G224	Marathon	1561	
G234	Marathon	1562	
G252	Record	B2038	
G354	Valvo	1810	
G405	Longlife	B405	
G405	Tungsram	(A409)	A415
G406	Tungsram	(A409)	A415
G407	Tungsram	A409	A415
G408	Tungsram	A409	A415
C409	Longlife	A409	A415
G409	Tungsram	A415	B424
G410	Tungsram	A414K	
G411	Tungsram	A415	B424
G412	Tungsram	B409	
G415	Longlife	A415	B424
G415	Valvo	(1802)	
G424	Longlife	B424	
G425	Longlife	A425	B438
G425	Valvo	1810	
G429	Triotron	1802	
G430	Triotron	1803	
G431	Triotron	1801	
G435	Valvo	1802	
G440	Splendor	506	
G442	Longlife	B442	
G450	Splendor	506	
G450	Triotron	505	
G459	Triotron	AZ1	
G460	Triotron	1805	

G461	Triotron	1831
G470	Triotron	506
G495	Valvo	505
G504	Valvo	1801
G564	Valvo	1803
G607	Tungsram	A615
G608	Tungsram	A609
G614	Tungsram	(A609)
G615	Tungsram	A615
G650	Triotron	EZ1
G660	Triotron	EZ2
G715	Valvo	1562
G752	Record	(B2099)
G1002	Record	B2043
G1054	Valvo	506
G1064	Valvo	1805
G1380	Triotron	FZ1
G1404	Valvo	1832
G1503	Valvo	1201
G2004	Valvo	1561
G2005	Valvo	1560
G2018	Tungsram	B2038
G2080	Triotron	CY1
G2125	Valvo	1703
G2185	Valvo	1700
G2200	Valvo	1702
G2340	Valvo	1701
G2504	Valvo	1815
G2506	Valvo	1326
G3060	Triotron	CY2

G3412	Triotron		
G4004	Valvo	1817	
G4110	Triotron	1832	
G4110	Triotron	1561	
G4120	Triotron	1561	
G4120	Valvo	1831	
G4120	Triotron		
G4150	Triotron		
G4180	Triotron	1815	
G4300	Triotron	1817	
G5002	Record	B2045	
G9002	Record	B5052T	B2046

H

H.	Adzam	(B405)	
H	*Amer*	00A	
HAD	Ferranti		
HAI	Ge. Mar. Os.		
HA130	Tekade	E415	E424N
HD2	Triotron	(B217)	
HD21(1)	Ge. Mar. Os.	KBC1	
HD22(1)	Ge. Mar. Os.	KBC1	
HD410	Tungsram	B415	
HF	Fotos		
HF Bivolt	Impex	(B228)	
HF Forvolt	Impex	(A425)	
HF29	Loewe		
HF30	Loewe		
HF210	Mazda	B217	
HF406	Astron	B415	B424
HF407	Mazda	A425	B438
HF410	Mazda	A425	B438
HF607	Mazda	A630	
HF610	Mazda	A630	
HG1	Valvo	(1875)	
HH2018	Tungsram	B2048	
HH2118	Tungsram	B2049	
HH4100	Tungsram	E448	
HLA	Standard	(E499)	

HLA1	Standard	(E499)	
HLA2	Standard	(F460)	
HLB1	Standard	B228	
HLDD1320(1)	Mazda	(CBC1)	
HL2	Ge. Mar. Os.	B228	
HL2	Mazda	B228	
HL2/C	Ge. Mar. Os.	A225	B228
HL2/K	Ge. Mar. Os.	(B228)	
HL13	Mullard	CC2	
HL13C(1)	Mullard	CC2	
HL20	Mullard	B2038	
HL21/DD	Mazda		
HL210	Ge. Mar. Os.	B228	
HL210	Mazda	B228	
HL410	Ge. Mar. Os.	A425	B438
HL610	Ge. Mar. Os.	A630	
HL607	Mazda	A630	
HL610	Mazda	A630	
HL1320(1)	Mazda	(CC2)	
HM4A	M.P.	A425	B438
HM4B	M.P.	B438	
HM4V	M.P.	E438	
HM20	M.P.	B2038	
HPT220	Cossor		
HPT230	Cossor	(C243N)	
HP2	Ferranti	B240	
HP4V	M.P.	E446	
HP20	M.P.	B2046	
HP100/63	Celsior	B443	C443
HP206	Tungsram		

HP212(1)	Tungsram	(KF1)(2)	
HP215(2)	Hivac	KF1(3)	
HP215(1)	Tungsram	(KF2)(2)	
HP220(1)	Tungsram	KF1(2)	
HP221(1)	Tungsram	KF2(2)	
HP501	Celsior	D404	
HP604	Celsior	(B405)	
HP1604	Celsior		
HP1608	Celsior	A415	B424
HP2018	Tungsram	B2046	
HP2118	Tungsram	B2047	
HP4100	Tungsram	E446	
HP4101	Tungsram	E446	
HP4105	Tungsram	E447	
HP4106	Tungsram	E447	
HP4115	Tungsram	AF2	
HP5025	Celsior	E443N	
HR206	Tungsram		
HR210	Tungsram	B228	
HR406	Tungsram	A425	B438
HR410	Tungsram	A425	B438
HR607	Tungsram	A630	
HSD	Ferranti		
HVR1	Mullard		
HV4100	Vatea	(E424N)	
HX210	Vatea	(B217)	
HX406	Vatea	(A415)	B424
HX410S	Vatea	(B424)	
Hyper-Power ⎱ Bivolt ⎰	Impex		

Hyper-Power / Forvolt	Impex	(B405)	
HZ50	*Amer*	12Z3	
HZ420	Valvo		
H2	Ge. Mar. Os.	A225	B228
H2	Mazda		
H2	Record	B228	
H2D(1)	Ferranti	(KBC1)	
H2-10	*Amer*	879	
H4	Sator	A415	B424
H4D(1)	Ferranti	ABC1	
H11	Ge. Mar. Os.		
H13	Mullard	CC2	
H20	Mullard	B2099	
H30	Ge. Mar. Os.		
H80	Sator	A415	B424
H100	Sator	B415	B424
H107	Valvo	A109	
H125D	Valvo	C142	
H125 spez	Valvo		
H206	Valvo	A209	
H206D	Valvo	B262	
H206 spez.	Valvo		
H208D	Valvo	B255	
H210	Ge. Mar. Os.	(B228)	
H210	Hivac	B228	
H210	Mazda		
H210	Tungsram	A225	B228
H217	Vatea	(B217)	
H406	Valvo	A409	A415

H406	Vatea	(A409)	A415
H406D	Valvo	A442	B442
H407	Tungsram	B438	
H407 spez.	Valvo	(A410N)	
H410	Ge. Mar. Os.	(B438)	
H410D	Valvo	B442	
H412	Triotron	(A409)	A415
H425	Triotron	AH1	
H425N	Triotron	E448	
H426N	Triotron	E449	
H606	Valvo	A609	
H607	Mazda	(A630)	
H610	Ge. Mar. Os.	A630	
H610	Mazda	(A630)	
H615	Triotron	A409	A415
H1325	Triotron	CH1	
H1818D	Valvo	B2052T	B2046
H1918D	Valvo	B2045	
H2018D	Valvo	B2042	B2052T
H2025N	Triotron	B2048	
H2026N	Triotron	B2049	
H2518D	Valvo	B2046	
H2618D	Valvo	B2047	
H4080D	Valvo	E442S	E452T
H4100	Valvo	E415	E424N
H4100D	Valvo	E442	E452T
H4111D	Valvo	E452T	E446
H4115D	Valvo	E455	E447
H4125D	Valvo	E445	E455
H4128D	Valvo	E446	
H4129D	Valvo	E447	

I	Adzam	B409	
IFWI	Impex	1861	
IG4	Thermion	E409N	E415
IG4V	Thermion	E409N	E415
IG101	Thermion		
IKA	Sator	A409	A415
IP3	Thermion	C443N	
IP4	Thermion		
ISV	Thermion	E445	E455
IS3	Thermion	E442S	E452T
IS4	Thermion	E452T	E446
IS104	Thermion	E452T	E446
IT103	Thermion	C443	E443H
IW2	Mullard		
IW2A	Mullard		
IW3	Mullard		
IW3B	Mullard		
IW4	Mullard		
IW4/350	Mullard		
IW4/500	Mullard		
I163	Thermion	E415	E424N
I253	Thermion	E424N	
I503	Thermion	E438	
I758	Thermion		
I803	Thermion	(F460)	

11126	Thermion		
11304	Thermion	E424N	
12575	Radiotechn		
12592	Radiotechn		
14053	Radiotechn	E441	E424N
14076	Radiotechn	E415	
14077	Radiotechn	(E424N)	
14078	Radiotechn	E438	E452T
14081	Radiotechn	(E442)	E452T
14091	Radiotechn	E442	
14092	Radiotechn		
14093	Radiotechn		E446
14094	Radiotechn	E452T	

J

JB441	Elecson	E441	E441N
JPV45	Elecson	(E445)	E455
J15	Elecson	E415	E424N
J25	Elecson	E424N	
J40	Elecson	E438	
J150	Elecson	E442S	E452T
J200	Elecson	E452T	
J240	Hivac		
J300	Elecson	E452T	E446

K

K	Adzam	A109
KBC1	Mullard	KBC1
KBC1	Radiotechn	KBC1
KBC1	Telefunken	KBC1
KBC1	Valvo	KBC1
KB1	Telefunken	KB1
KB1	Valvo	KB1
KB2	Mullard	KB2
KB2	Radiotechn	KB2
KB2	Telefunken	KB2
KB2	Valvo	KB2
KC1	Mullard	KC1
KC1	Telefunken	KC1
KC1	Valvo	KC1
KC3	Mullard	KC3
KC3	Radiotechn	KC3
KC3	Telefunken	KC3
KC3	Valvo	KC3
KDD1	Mullard	KDD1
KDD1	Telefunken	KDD1
KDD1	Valvo	KDD1
KD0.30	Mazda	1802
KD02.30B	Metal	1801
KD0.380B	Metal	1561
KD05.125B	Metal	1561

KFl	Mullard	KFl	
KFl	Telefunken	KFl	
KFl	Valvo	KFl	
KF2	Mullard	KF2	
KF2	Telefunken	KF2	
KF2	Valvo	KF2	
KF3	Mullard	KF3	
KF3	Radiotechn	KF3	
KF3	Telefunken	KF3	
KF3	Valvo	KF3	
KF4	Mullard	KF4	
KF4	Radiotechn	KF4	
KF4	Telefunken	KF4	
KF4	Valvo	KF4	
KF7	Telefunken	KF7	
KF7	Valvo	KF7	
KF8	Telefunken	KF8	
KF8	Valvo	KF8	
KG1500	Thermion		
KH1	Ge. Mar. Os.	E438	
KK2	Mullard	KK2	
KK2	Radiotechn	KK2	
KK2	Valvo	KK2	
KL1	Ge. Mar. Os.	E409N	E415
KL1	Telefunken	(KL4)	
KL1	Valvo	(KL4)	
KL1/ACR	Ge. Mar. Os.	E409N	E415
KL2	Mullard	KL2	
KL2	Radiotechn	KL2	
KL2	Telefunken	KL2	

KL2	Valvo	KL2
KL4	Mullard	KL4
KL4	Telefunken	KL4
KL4	Valvo	KL4
KR1	*Amer*	1V
KR5	*Amer*	6A4/LA
KR20	*Amer*	(9)
KR22	*Amer*	(9)
KR25	*Amer*	2A5
KR28	*Amer*	84
KR31	*Amer*	(9)
KSE12/I	Loewe	
KSE/II	Loewe	
KSE18/I	Loewe	
KSE18/II	Loewe	
K4	Sator	(E408N)
K12	Triotron	(D404)
K23A(1)	Everready	(KBC1)
K30	Metal	1562
K30A	Everready	
K30B	Everready	(A209)
K30C	Everready	B228
K30D	Everready	B217
K30E	Fverready	(B217)
K30G	Everready	
K33A	Everready	B240
K33B	Everready	
K40B	Everready	B262
K40N	Everready	B255
K50B(2)	Everready	KF1(3)

K50M(2)	Everready	KF2(3)
K70B	Everready	C243N
K70D	Everready	
K77A	Everready	
K80A(1)	Everready	(KK2)
K158	A.E.G.	E707
K430/10	Triotron	(E406N)
K435/10	Triotron	D404
K445/12	Triotron	E408N
K450/25	Triotron	
K450/40	Triotron	
K450/50	Triotron	
K480	Triotron	F410

L

LA	*Amer*	6A4/LA	
LAP513	Loewe	B442S	
LA203	Loewe	E424N	
LD210	Tungsram	B217	
LD406	Tungsram	(A409)	A415
LD408	Tungsram	A415	B424
LD410	Tungsram	B415	B424
LF210	Mazda	(A209)	
LF215	Mazda	B205	
LF407	Mazda	A409	A415
LF410	Mazda	A415	B424
LF410A	Mazda	B409	
LF418	Astron	B415	B424
LF607	Mazda	A609	
LF610	Mazda	A615	
LG210	Tungsram	A209	
LG607	Tungsram	A615	
LG2018	Vatea	B2006	
LI4090	Zenith	E409N	E415
LK430	Valvo	C405	
LK460	Valvo	D404	E406N
LK4100	Valvo	(E408N)	
LK4110	Valvo	E408N	
LK4111	Valvo	E451	
LK4112	Valvo	E406N	

LK4140	Valvo	F460	
LK4200	Valvo	F410	
LK4250	Valvo	4641	
LK4330	Valvo	4642	
LK7110	Valvo	E707	
LK7115	Valvo	E704	
LK8100	Valvo	E708	
LL4	Sator	D404	
LL25	Sator	(B405)	
LL415	Sator	B443	
LL416	Sator	B443S	
LL610	Sator	B543	
LM	Elektra-Mars	A409	A415
LP2	Ge. Mar. Os.		
LP2	Record		
LP2/C	Ge. Mar. Os.	B205	
LP4	Ferranti	(E406N)	
LP220	Tungsram		
LS1	Ge. Mar. Os.		
LS2	Ge. Mar. Os.		
LS3	Ge. Mar. Os.		
LS5	Ge. Mar. Os.		
LS5a	Ge. Mar. Os.		
LS5b	Ge. Mar. Os.		
LS6a	Ge. Mar. Os.		
LS7	Ge. Mar. Os.		
LS7B	Ge. Mar. Os.		
LS8	Ge. Mar. Os.		
LS9B	Ge. Mar. Os.		
LU4	M.P.	(B405)	

LU4A	M.P.	B409	
LU4B	M.P.	B405	
LV3	Triotron	(A225)	
LX414	Vatea	B405	
LX625	Valvo	C603	
L2	Ferranti	(A209)	
L2	Mazda	B217	
L2	Record	(B217)	
L2/B	Ge. Mar. Os.	B217	
L2/DD(1)	Mazda	(KBC1)	
L4	Sator	B405	
L4	Zenith	A415	B424
L4S	Sator	(B405)	
L10	Triotron	(A209)	
L11	Ge. Mar. Os.		
L20	Mullard	B2006	
L21	Ge. Mar. Os.	(B217)	
L21/DD(1)	Mazda	(KBC1)	
L24	Sator	(B405)	
L30	Ge. Mar. Os.		
L43	Sator	B443	
L44	Sator	(B405)	
L100	Sator	B605	
L103	Sator	B543	
L115	Valvo	B105	
L160	Valvo	D105	
L160D	Valvo	D143	
L190	Tungsram	D105	
L210	Ge. Mar. Os.	A209	B217
L210	Hivac	(A209)	B217

L210	Mazda	B217	
L210	Tungsram	B217	
L210	Valvo	B217	
L215	Valvo	B205	
L220B	Valvo	B240	
L227D	Valvo	C243N	
L306	Marathon	(B405)	
L307	Marathon	A425	B438
L308	Marathon	A415	B424
L312	Vatea	(B405)	
L316	Marathon	B409	
L328	Longlife	328	
L408	Zenith	A415	B424
L409	Marathon	B442	
L410	Ge. Mar. Os.	A415	B424
L410	Valvo	(B405)	
L412	Zenith	A425	B438
L413	Valvo	B409	
L414	Tungsram	B409	
L414	Valvo	B405	
L415	Tungsram	(B409)	
L415	Valvo	(B405)	
L415D	Valvo	B443	C443
L416D	Valvo	B443S	
L425D	Valvo	C443	E443H
L427D	Valvo	C443N	
L430	Vatea	(B405)	
L491D	Valvo	E443N	
L495D	Valvo	F443	
L496D	Valvo	E443H	

L497D	Valvo	F443N
L506	Marathon	B543
L510D	Valvo	B543
L610	Ge. Mar. Os.	A615
L610	Tungsram	B605
L610D	Valvo	B605
L1010	Longlife	1010
L1525	Ostar	B2006
L2218	Valvo	B2006
L2318D	Valvo	B2043
L4100	Valvo	(E409N)
L4138D	Valvo	E463
L4150D	Valvo	E453

M

M	Adzam	A415	B424
MBG4	Ge. Mar. Os.	E441	
MD4	Triotron	A441N	
MF	Fotos	(A425)	B438
MF2	Telefunken		
MF1520	Celsior	A425	B438
MG2018	Vatea	B2045	B2047
MHD4	Ge. Mar. Os.		
MHF	Cossor	E438	
MHL4	Ge. Mar. Os.	E415	E424N
MHL4C	Ge. Mar. Os.	E415	E424N
MHSD4	Ge. Mar. Os.	E415	E424N
MH4	Ge. Mar. Os.	(E424N)	
MH4 Catkin	Ge. Mar. Os.	(E424N)	
MH4C	Ge. Mar. Os.	(E424N)	
MH40	Ge. Mar. Os.	(E438)	
MH41	Ge. Mar. Os.	(F460)	
MH42	Ge. Mar. Os.	(F460)	
MH1118	Tungsram		
MH4100	Tungsram	E448	
MH4105	Tungsram		
Micro	Cyrnos	A409	A415
Micro	Elektra-Mars	A409	A415
MI41LF	Mazda	E415	E424N
MI41RC	Mazda	E438	

MLF	Cossor	E415	E424N
ML4	Ge. Mar. Os.	(E409N)	
ML40	Ge. Mar. Os.		
MM4V	Ge. Mar. Os.	E445	E455
MM4V	Mullard	E455	
MM20	Mullard	(B2047)	
MN4	Triotron	E441	
MO10	S.I.F.	D404	
MO12	S.I.F.	E408N	
MO44	Loewe		
MO210	Tungsram	KK2	
MO465	Tungsram	(AK1)	
MP/Pen	Cossor	(E453)	
MP/Pen A(1)	Cossor	AL2	
MP2	Ge. Mar. Os.		
MPT4	Ge. Mar. Os.	(E463)	
MPT4 Catkin	Ge. Mar. Os.	(E463)	
MPT41	Ge. Mar. Os.	E463	
MPT42	Ge. Mar. Os.		
MR/AC1	Mazda	(4686)	
MRC	Cossor	E438	
MR2	Tungsram	(A409)	A415
MR3	Tungsram	(A409)	A415
MSG	Cossor	E452T	E446
MSG/HA	Cossor	(E452T)	E446
MSG/LA	Cossor	E452T	E446
MS/Pen	Cossor	E446	
MS/Pen A	Cossor	E446	
MS/Pen	Mazda		

MSP4	Ge. Mar. Os.	E446	
MS4	Ge. Mar. Os.	(E442S)	E452T
MS4B	Ge. Mar. Os.	(E452T)	E446
MS4B Catkin	{ Ge. Mar. Os.	(E452T)	E446
MS4C	Ge. Mar. Os.	E442S	E452T
MS4V	Ge. Mar. Os.	(E445)	E455
MS70	Ostar	B2045	
MT2118	Vatea	B2047	
MT4110	Vatea	E447	
MT4120	Vatea	AF2	
MU1	Mazda		
MU2	Mazda		
MU12	Ge. Mar. Os.		
MU14	Ge. Mar. Os.		
MVSG	Cossor	E455	
MVS/Pen	Cossor	(E447)	
MVS/Pen	Mazda		
MV4100	Vatea	E445	
MV4110	Vatea	E455	E447
MX20	Fotos	(A441N)	
MX40	Fotos	(A441N)	
MX40(2)	Ge. Mar. Os.	(AK1)(3)	
MX80	Fotos	(A441N)	
MX218	Vatea	B255	
M4	Sator	C405	
M15	Record	A209	
M20	Fotos	(A441N)	
M40	Fotos	(A441N)	
M41LF	Cossor	E415	E424N

M43	Sator	C443	E443H
M54	Record	(B405)	
M64	Record	C405	
M72	Record	B205	
M80	Fotos	(A441N)	
M92	Record		
M94	Record	(B409)	
M96	Record	(B605)	
M102	Record	A209	
M104	Record	B409	
M142	Record	B217	
M144	Record	A415	B424
M144S	Record	B415	B424
M204	Record	(A415)	B424
M212	Record	B217	
M220	Celsior	1802	
M240	Zenith		
M254	Record	B424	
M300	Record	(A409)	A415
M300S	Record	(B415)	B424
M350	Record	A425	B438
M350S	Record	B438	
M400	Record	(B405)	
M405	Cyrnos	506	
M504	Record	(B438)	
M604	Record	C443	E443H
M704	Record	C443	E443H
M1002	Record	(C243N)	
M1004	Record	B443	C443
M1006S	Record	B543	

N

N	Tungsram		
NA4	Sator	E409N	
NCC4	Sator	E452T	E446
NC4	Sator	E442	E452T
NC4A	Sator	(E442)	E452T
NC4B	Sator	(E442)	E452T
NDDT15	Sator	ABC1	
NDD40	Sator	AB1	
NDD51	Sator	AB2	
NDG4	Sator	E441	
NDG480	Sator	B2041	
NDS42	Sator	E444	
NDS182	Sator	B2044	
ND4	Sator	E424N	
NEG2002	Sator		
NEP51	Sator	AF3	
NE4	Sator	E409N	
NE43	Sator	E453	
NE180	Sator	B2006	
NE183	Sator	B2043	
NF2	Telefunken		
NF4	Telefunken		
NG100	Ostar		
NG3020	Loewe		
NG6020	Loewe		

NHP51	Sator	AF7	
NH41	Sator	E415	E424N
NMO46	Sator	AK1	
NMO51	Sator	AK2	
NM4	Sator	E424N	
NN4	Sator	(E415)	E424N
NPG45	Sator	B2042	B2052T
NP43	Sator	E463	
NR4	Sator	(E499)	
NR41	Sator	E499	
NSS4	Sator	(E442S)	E452T
NSS42	Sator	E452T	E446
NSS43	Sator	E446	
NSS44	Sator	E449	
NSS45	Sator	E448	
NSS180	Sator	B2052T	
NSS183	Sator	B2046	
NS4	Sator	(E452T)	E446
NS180	Sator	B2042	B2052T
NT51	Sator	AC2	
NU4	Sator	E424N	
NU41	Sator	(E424N)	
NU180	Sator	B2038	
NVG4002	Sator		
NVS4	Sator	E445	E455
NVS42	Sator	E455	E447
NVS43	Sator	E447	
NVS180	Sator	B2045	B2047
NVS183	Sator	B2047	
NVSS180	Sator		

NW4	Sator	E438	
NW4/1	Sator	E438	
NW180	Sator	(B2038)	
NX306	Valvo		
NZ420	Valvo		
NZ4200	Valvo		
N2	Triotron	4662	
N30	Ge. Mar. Os.		
N31	Ge. Mar. Os.		
N40(1)	Ge. Mar. Os.	AL2	
N41(1)	Ge. Mar. Os.	AL4	
N43	Sator	B443S	
N46	Valvo	4662	
N406	Valvo	A409	A415
N440	Zenith	(B405)	

O

O	Elektra-Mars	A409	A415
OD4	Triotron	(A425)	B438
OE4	Triotron	(A425)	B438
OV4110	Vatea	AK1	
Oxyde	Cyrnos	1801	
O15/400	Tungsram	E408N	
O202	Triotron	KK2	
O406	Triotron	AK2	
O407	Triotron	AK1	
O606	Triotron	EK2	
O607	Triotron	EK1	
O1307	Triotron	CK1	

P

P	Adzam	B442	
PA1	Standard		
PA4	Standard	B405	
PA20	Mazda		
PBC1	Radiotechn	KBC1	
PB1	Standard		
PB2	Radiotechn	KB2	
PB2	Triotron	C243N	
PB4	Triotron	B443	C443
PB172	Impex	B217	
PC3	Radiotechn	KC3	
PD4	Triotron	C443	E443H
PD5	Triotron	B543	
PD210	Tungsram	B217	
PD220(2)	Mazda	(B240)(3)	
PD220	Tungsram	B217	
PD220A(2)	Mazda	(B240)(3)	
PenA1(1)	Standard	AL2	
PenA4(1)	Mullard	AL4	
PenB1	Standard	C243N	
PenB4(1)	Mullard	AL5	
PenDD1360	Mazda		
PenDD4020	Mazda		
Pent. Bivolt	Impex	(C243N)	
Pent. Forvolt	Impex	B443	

Pen4V	Mullard	(E453)	E463
Pen4VA(1)	Mullard	AL2	
Pen4VB(1)	Mullard	AL4	
Pen4VX	Mullard	E453	E463
Pen13	Mullard	CL1	
Pen13A	Mullard	CL4	
Pen13C(1)	Mullard	CL1	
Pen20	Mullard	B2043	
Pen26	Mullard	CL2	
Pen36	Mullard		
Pen36C(1)	Mullard	CL4	
Pen220	Mazda	C243N	
Pen220A	Mazda	C243N	
Pen230	Mazda	(C243N)	
Pen 231	Mazda		
Pen425	Mazda	C443	
Pen1330	Mazda		
Pen1340	Mazda		
Pen1360	Mazda		
Pen2020(1)	Mazda	CL2	
Pen3520(1)	Mazda	CL4	
PF1	Radiotechn	KF1	
PF2	Radiotechn	KF2	
PF3	Radiotechn	KF3	
PF462	Impex	KF1	
PF472	Impex	KF2	
PMP	Cosson	E409N	
PM1A	Mullard	(A225)B228	
PM1DG	Mullard	(A241)	
PM1HF	Mullard		

PM1HL	Mullard	B228	
PM1LF	Mullard	A209	
PM2	Mullard	B205	
PM2A	Mullard		
PM2B	Mullard	B240	
PM2BA	Mullard		
PM2DL	Mullard	(B217)	
PM2DT	Mullard	(B217)	
PM2DX	Mullard	B217	
PM3	Mullard	A410	A415
PM3A	Mullard	(B438)	
PM3AX	Mullard	A425	B438
PM3B	Mullard	(B438)	
PM3BX	Mullard	(B438)	
PM3D	Mullard	B424	
PM3DC	Mullard	B424	
PM3X	Mullard	A409	A415
PM4	Mullard	(B409)	
PM4A	Mullard	(A409)	A415
PM4B	Mullard	(A425)	B438
PM4C	Mullard	B409	
PM4DG	Mullard	A441N	
PM4DS	Mullard	A414K	
PM4DX	Mullard	A415	
PM4V	Mullard	(B409)	
PM4X	Mullard	(B405)	
PM5	Mullard	(A630)	
PM5A	Mullard	(A630)	
PM5B	Mullard	(A630)	
PM5D	Mullard	A630	

PM5X	Mullard	(A615)	
PM6	Mullard	(B605)	
PM6D	Mullard	A615	
PM11	Mullard	(C142)	
PM12	Mullard	B252	B262
PM12A	Mullard	B262	
PM12M	Mullard	B255	
PM12V	Mullard	(B255)	
PM12X	Mullard	(B255)	
PM13	Mullard	B442	
PM13DC	Mullard	(B442)	
PM13X	Mullard	B442	
PM14	Mullard	A442	B442
PM16	Mullard	(A642)	
PM21	Mullard	(D143)	
PM22	Mullard	C243	
PM22A	Mullard	C243N	
PM22C	Mullard		
PM22D	Mullard		
PM22K	Mullard	(C243N)	
PM22P	Mullard	(C243N)	
PM24	Mullard	B443	C443
PM24A	Mullard	C443	E443H
PM24AC	Mullard	C443N	E443H
PM24B	Mullard	(E443N)	
PM24C	Mullard	E443N	
PM24D	Mullard	F443	
PM24DC	Mullard	C443N	
PM24E	Mullard	F443N	
PM24M	Mullard	E443H	

PM24X	Mullard		
PM25	Mullard	B543	
PM25DC	Mullard	B543	
PM26	Mullard	C643	
PM202	Mullard		
PM252	Mullard	(B205)	
PM254	Mullard	(C405)	
PM254X	Mullard	(B405)	
PM256	Mullard	C606	
PM256A	Mullard		
Polyodion Bivolt	Impex	(C243N)	
PO1	Fotos	B205	
PP3/250	Mazda	(E406N)	
PP3/425	Mazda	E703	
PP5/400	Mazda	(E408N)	
PP220	Hivac		
PP220	Tungsram	C243N	
PP222	Tungsram	C243N	
PP230	Record	C243N	
PP230	Tungsram	(C243N)	
PP415	Tungsram	B443	C443
PP416	Tungsram	B442S	
PP430	Tungsram	C443	E443H
PP431	Tungsram	C443N	
PP610	Tungsram	B543	
PP615	Tungsram		
PP616	Tungsram	(C642)	
PP2018	Tungsram	B2043	
PP2018d	Tungsram	B2043	

PP3521(1)	Mazda	(CL4)	
PP4018	Tungsram		
PP4018d	Tungsram		
PP4100	Tungsram	(E443N)	
PP4101	Tungsram	E443H	
PTA	Ferranti		
PTAD	Ferranti		
PTS	Ferranti		
PTSD	Ferranti		
PTZ(1)	Ferranti		
PT2	Ferranti	C243N	
PT2	Ge. Mar. Os.	(C243N)	
PT2	Record	(C243N)	
PT2K	Ge. Mar. Os.	C243N	
PT4(1)	Ferranti	AL4	
PT4	Ge. Mar. Os.	E443H	
PT4D	Ferranti		
PT8	Ge. Mar. Os.	(D143)	
PT16	Ge. Mar. Os.	(E443N)	
PT25	Ge. Mar. Os.	(F443N)	
PT25H	Ge. Mar. Os.		
PT30	Ge. Mar. Os.		
PT41	Cossor	E443H	
PT41B	Cossor	(E443N)	
PT43	Ostar	B2043	
PT230	Cossor	(C243N)	
PT235	Ge. Mar. Os.	(C243N)	
PT240	Ge. Mar. Os.	(C243N)	
PT415	Cossor	B443	
PT425	Ge. Mar. Os.	C443	E443H

PT425X	Ge. Mar. Os.	C443	E443H
PT615	Cossor	(C643)	
PT625	Ge. Mar. Os.	C643	
PU801	Celsior	E408N	
PU1002	Celsior	E408N	
PV2	Mazda	B205	
PV6/45	Tungsram	367	
PV215	Mazda	B205	
PV225	Mazda	(B205)	
PV400	Tungsram	373	
PV410	Mazda	(B405)	
PV425	Mazda	(B405)	
PV430	Tungsram	1801	
PV475	Tungsram	506	
PV495	Tungsram	506	
PV610	Mazda	B605	
PV625	Mazda	(B605)	
PV625a	Mazda	(C603)	
PV3018	Tungsram		
PV4100	Tungsram	1805	
PV4200	Tungsram	1561	
PV4201	Tungsram	1015	
PV4300	Tungsram	1561	
PV6145	Tungsram		
PX2	Ge. Mar. Os.		
PX4	Ge. Mar. Os.	(E406N)	
PX4C	Ge. Mar. Os.	D404	E406N
PX25	Ge. Mar. Os.	(F410)	
PX25A	Ge. Mar. Os.		
PX230	Hivac		

PX430	Vatea	C405	
PX460	Vatea	D404	E406N
PX4100	Vatea	(E406N)	
PX4200	Vatea	F410	
PZ	*Amer*	47	
PZH	*Amer*	(7)	
P1	Lnglife	373	
P2	Ge. Mar. Os.		
P2	Longlife	506	
P2	Record	B205	
P2/B	Ge. Mar. Os.	(B205)	
P3	Adzam	(B405)	
P3	Longlife	1805	
P4	Ferranti	E406N	
P4	Longlife	1561	
P4	Sator	E406N	
P5	Adzam	B405	
P6	Adzam	(B405)	
P6	Fotos		
P9	Adzam	B409	
P10	Fotos	(D404)	E406N
P12	Fotos		
P13	Fotos	(E408N)	
P16	Fotos	(E408N)	
P20	Fotos	(F704)	
P43	Sator	E443H	
P60/500	Tungsram		
P190	Tungsram	D105	
P205	Sator	A409	A415

P207	Sator	(B405)	
P209	Sator	A409	A415
P210	Triotron	(KL4)	
P211	Sator	(A409)	A415
P215	Ge. Mar. Os.	(B205)	
P215	Hivac		
P215	Mazda	(B205)	
P215	Triotron	(C243N)	
P215	Tungsram	B205	
P220	Hivac		
P220	Mazda		
P220	Triotron	KL2	
P220	Tungsram	(B205)	
P220A	Mazda		
P225	Triotron	C243N	
P226	Triotron	KL4	
P227	Mazda	(B205)	
P240	Ge. Mar. Os.	(B205)	
P240	Mazda		
P404	Elecson	D404	
P408	Elecson	E408N	
P409	Elecson	B409	
P410	Ge. Mar. Os.	(B409)	
P410	Tungsram	(B405)	
P414	Tungsram	B405	
P415	Mazda	B405	
P415	Tungsram	(B405)	
P420	Triotron	B443	C443
P420	Zenith	(F410)	
P421	Triotron	B443S	

P422	Triotron	C443N	
P425	Ge. Mar. Os.	(B405)	
P425	Mazda	(B405)	
P425	Triotron	C443	E443H
P430	Triotron	E443N	
P430	Tungsram	C405	
P434	Triotron	AL1	
P435	Triotron	E443H	
P440	Triotron	F443N	
P440N	Triotron	E453	
P441N	Triotron	E463	
P443	Elecson	C443	E443H
P445	Triotron	AL2	
P450	Zenith	D404	E406N
P455	Tungsram		
P460	Triotron	F443N	
P460	Tungsram	D404	
P469	Triotron	AL5	
P496	Triotron	AL4	
P520	Triotron	B543	
P610	Ge. Mar. Os.	B605	
P614	Tungsram	B605	
P615	Mazda	(B605)	
P615	Tungsram	A609	
P625	Ge. Mar. Os.		
P625A	Ge. Mar. Os.	(B605)	
P625A	Mazda		
P625B	Mazda		
P626	Triotron	EL1	
P628	Triotron	EL2	

P650	Mazda		
P861	*Amer*	84	
P1320	Triotron	CL1	
P2018	Tungsram	B2006	
P2018d	Tungsram	B2006	
P2020N	Triotron	B2043	
P2060	Triotron	CL2	
P3580	Triotron	CL4	
P4100	Tungsram	E408N	
P4100	Zenith	D404	E406N
P4105	Tungsram	(E408N)	
P4150	Fotos	(E452T)	E446

Q

QF2118	Vatea	B2049	
QF4100	Vatea	E449	
QP21	Ge. Mar. Os.		
QP22	Mullard		
QP22A	Mullard		
QP240	Hivac		
QP240	Mazda		
QT4100	Vatea	E449	
QV2118	Vatea	B2048	
QV4100	Vatea	E448	
QX	Ge. Mar. Os.		
Q4V	Mullard	(E453)	E463
Q461	Triotron	1831	

R

R	Tungsram		
RA	Adzam	E462S	
RA	Ferranti		
Radiofotos	Fotos	A409	A415
Radiomicro	Radioclub micro	A409	A415
Radio Micro	Radiotechn	(A409)	A415
RA1	Amer	(9)	
RA1881	Radiotechn	(B252)	
RA3873	Radiotechn	A441	
RB	Adzam	(E424N)	
RB2118	Vatea	B2044S	
RB4110	Vatea	E444S	
RC	Adzam	E438	
RC Bivolt	Impex	B228	
RC Forvolt	Impex	A425	B438
RC210	Astron	A225	
RC406	Astron	A425	B438
RD	Adzam	C443	E443N
RD4	Triotron	A409	A415
RD15	Adzam	E425	E424N
RD24	Adzam	(E406N)	
RD509	Triotron	A409	A415
RED104	Telefunken		
Reico 500	Rectron	506	
RENS1204	Telefunken	E442S	

RENS1214	Telefunken	E445	E455
RENS1224	Telefunken	E448	
RENS1234	Telefunken	E449	
RENS1254	Telefunken	E444	
RENS1264	Telefunken	E452T	E446
RENS1274	Telefunken	E455	E447
RENS1284	Telefunken	E446	
RENS1294	Telefunken	E447	
RENS1374d	Telefunken	E453	E463
RENS1384	Telefunken	E463	
RENS1818	Telefunken	B2052T	B2046
RENS1819	Telefunken	B2045	B2047
RENS1820	Telefunken	B2042	B2052T
RENS1823d	Telefunken	B2043	
RENS1824	Telefunken	B2048	
RENS1834	Telefunken	B2049	
RENS1854	Telefunken	B2044	
RENS1884	Telefunken	B2046	
RENS1894	Telefunken	B2047	
RENZ2104	Telefunken		
REN704d	Telefunken	E441N	
REN804	Telefunken	E415	E424N
REN904	Telefunken	E424N	
REN914	Telefunken	E499	
REN924	Telefunken	E444S	
REN1004	Telefunken	E438	
REN1004w	Telefunken	E438	
REN1104	Telefunken	E409N	
REN1104w	Telefunken	E409N	
REN1814	Telefunken	B2099	

REN1817d	Telefunken	B2041	
REN1821	Telefunken	B2038	
REN1822	Telefunken	B2006	
REN1826	Telefunken	B2044S	
REN2204	Telefunken	E409N	
REN2204w	Telefunken	E409N	
Resistron Bivolt	Impex	A225	
Resistron Forvolt	Impex	A425	B438
RES044	Telefunken	(B442)	
RES094	Telefunken	(B442)	
RES094 spez	Telefunken	(B442)	
RES105	Telefunken	B543	
RES164	Telefunken	B443S	
RES164d	Telefunken	B443S	
RES174d	Telefunken	B443	C443
RES182	Telefunken	B262	
RES192	Telefunken	B255	
RES212	Telefunken	C243N	
RES364	Telefunken	C443	E443H
RES374	Telefunken	C443N	E443H
RES374d	Telefunken	C443N	E443H
RES664d	Telefunken	(E443N)	
RES964	Telefunken	E443H	
REZ126	Telefunken		
REZ139	Telefunken		
REZ147	Telefunken		
REZ364	Telefunken		
REZ404	Telefunken		

RE1	*Amer*	80	
RE2	*Amer*	81	
RE034	Telefunken	A425	B438
RE052	Telefunken	A225	
RE052t	Telefunken	A225	
RE054	Telefunken	(A425)	B438
RE061	Telefunken	(A109)	
RE062	Telefunken	(A209)	
RE062t	Telefunken	(A209)	
RE062t spez	Telefunken	(A410)	A415
RE074	Telefunken	A409	
RE074d	Telefunken	A441N	
RE074 neutro	Telefunken	(A409)	
RE074t	Telefunken	(A409)	
RE076	Telefunken	A609	
RE084	Telefunken	A415	B424
RE102	Telefunken	B228	
RE112	Telefunken	B217	
RE114	Telefunken	(B405)	
RE122	Telefunken	B205	
RE124	Telefunken	B405	
RE134	Telefunken	B409	
RE134t	Telefunken	B409	
RE144	Telefunken	(A409)	A415
RE144t	Telefunken	(A409)	A415
RE144 super	Telefunken	(A409)	A415
RE154	Telefunken	(B405)	
RE154t	Telefunken	(B405)	
RE209	Telefunken	(B405)	B409
RE304	Telefunken	C405	

RE352	Telefunken	(B205)
RE354	Telefunken	(B409)
RE402b	Telefunken	B240
RE425	Vatea	1802
RE450	Vatea	1801
RE460	Vatea	1803
RE504	Telefunken	(B405)
RE504t	Telefunken	(B405)
RE604	Telefunken	D404
RE604K	Telefunken	E406N
RE614	Telefunken	E408N
RE1330	Vatea	FZ1
RE2020	Vatea	CY1
RE3020	Vatea	CY2
RE4100	Vatea	506
RE4110	Vatea	1805
RE4111	Vatea	1831
RE4120	Vatea	1832
RE4200	Vatea	1561
RG	Tungsram	
RGN354	Telefunken	1802
RGN504	Telefunken	1801
RGN564	Telefunken	1803
RGN1054	Telefunken	506
RGN1064	Telefunken	1805
RGN1203	Telefunken	
RGN1304	Telefunken	(505)
RGN1404	Telefunken	1832
RGN1500	Telefunken	
RGN1503	Telefunken	1201

RGN1504	Telefunken	506	
RGN2004	Telefunken	1561	
RGN2005	Telefunken	1560	
RGN2504	Telefunken	1815	
RGN4004	Telefunken	1817	
RG22	Record		
RG24	Record	(1817)	
RG2118	Vatea	B2099	
RH1	Mazda	1562	
RH40T	Visseaux	(A409)	A415
RH500	Adzam	E443S	
RH4041	Visseaux	A441N	
RK1	Telefunken		
RL100	Castilla	1904	
RL180	Castilla	1928	
RM	Metal	A441N	
ROC1875	Radiotechn	A209	
ROC1876	Radiotechn	B217	
ROC1877	Radiotechn	B205	
ROC1878	Radiotechn	A225	
RO4010	Visseaux	A409	A415
RO4109	Visseaux	A409	A415
RO4125	Visseaux	A425	B438
RO4141	Visseaux	A441N	
RO4142	Visseaux	(B442)	
RO4181	Visseaux	(A441N)	
RO4206	Visseaux	(B405)	
RO4215	Visseaux	A415	B424
RO4243	Visseaux	B443	C443
RO4305	Vnsseaux	B405	

RO4309	Visseaux	B409	
RO4320	Visseaux	B424	
RO4342	Visseaux	B424	
RO4343	Visseaux	C443	E443H
RO4404	Visseaux	D404	
RO4410	Visseaux	D410	
RO4610	Visseaux		
RRR45	Record	1802	
RRR46	Record		
RRR134	Record		
RRR145	Record	505	
RRR156	Record		
RRR234	Record		
RRR245	Record	506	
RR36	Adzam	E438	
RR100	Vatea	1904	
RR180	Vatea	1926	
RR1180	Vatea	1927	
RR2180	Vatea	1928	
RS	Ferranti		
RS2	Triotron	(A209)	
RS2512	Celsior	E438	
RS4141	Visseaux	E441	
RS4142	Visseaux	E442	E452T
RS4142N	Visseaux	E442S	E452T
RS4143	Visseaux	B443	
RS4144	Visseaux	E444	
RS4145P var	Visseaux	E445	E455
RS4215	Visseaux	E415	E424N
RS4230	Visseaux	E438	

RS4238	Visseaux	E438	
RS4309	Visseaux	E409N	E415
RS4324	Visseaux	E424N	
RS4341	Visseaux	(E441)	
RS4342	Visseaux	E452T	E446
RS4343	Visseaux	C443	E443H
RS4345P var	Visseaux	E445	E455
RS4346	Visseaux	E446	
RS4347P var	Visseaux	E447	
RS4543	Visseaux	E443H	
RS4553	Visseaux	E453	
RT1873	Radiotechn	A225	
RV24	Telefunken		
RV25	Telefunken		
RV27	Telefunken		
RV30	Telefunken		
RV70	Telefunken		
RV209	Telefunken		
RV216	Telefunken		
RV218	Telefunken		
RV222	Telefunken		
RV230	Telefunken		
RV239	Telefunken	E704	
RV240	Telefunken		
RV246	Telefunken		
RV258	Telefunken	E707	
RV271	Telefunken		
RV273	Telefunken		
RV275	Telefunken		

RV278	Telefunken		
RV322 spez	Telefunken		
RV490	Vatea	E438	
RV2300	Telefunken		
RV2400	Telefunken		
RV2500	Telefunken		
RV4100	Vatea	E424N	
RV4104	Vatea	(E499)	
RV4110	Vatea	E499	
RX75	Adzam	506	
RX210	Vatea	(B228)	
RX220	Vatea	B228	
RX406	Vatea	A425	B438
RX410	Vatea	B424	
RX411	Vatea	B438	
RZ(1)	Ferranti	CY1	
R1	Standard		
R2	Standard		
R3	Standard		
R4	Ferranti	1561	
R4A	Ferranti	1561	
R4B	Ferranti	505	
R5	Ferranti	1560	
R5V	Ge. Mar. Os.		
R7ZA	Rectron	3510	
R8ZB	Rectron	3531	
R9TA	Rectron	3512	
R10M	Zenith	1562	
R10T	Rectron	3513	
R11T	Rectron	3515	

R12G	Rectron	3530	
R12T	Rectron	3515	
R12Y	Rectron		
R14	Radiotechn	(A409)	A415
R14	Record	1802	
R15	Radiotechn	(A409)	A415
R18	Radiotechn	A441	
R19	Radiotechn		
R20A	Zenith		
R20B	Zenith		
R20M	Zenith		
R21	Rectron	1700	
R21H	Rectron		
R22	Rectron	(1010)	
R24	Radiotechn	A425	B438
R24	Record	1801	
R24/6	Rectron	367	
R29	Radiotechn	C509A	
R31	Radiotechn	(B405)	
R33	Rectron	(1010)	
R36	Radiotechn	(A409)	A415
R36D	Radiotechn	(A409)	A415
R41	Radiotechn	A409	A415
R42	Radiotechn	(A409)	A415
R43	Radiotechn	(A441)	
R43M	Radiotechn	(A441N)	
R43O	Radiotechn	A441	
R43P	Radiotechn	A441	
R44	Rectron	328	
R45	Rectron	(1326)	

R45B	Rectron	(1326)	
R50	Radiotechn	(A409)	A415
R55	Radiotechn	A409	
R55	Rectron	451	
R56	Radiotechn	(B405)	
R60	Rectron	(1325)	
R62	Radiotechn	A425	B438
R63	Radiotechn	A435	
R64	Radiotechn	B405	
R67	Radiotechn		
R69	Radiotechn		
R73	Radiotechn	A409	A415
R75/1000	Record	4646	
R76	Radiotechn	A415	B424
R77	Radiotechn	B405	
R78	Radiotechn	A425	B438
R78	Record	1562	
R79	Radiotechn	B443	C443
R80	Radiotechn	D410	
R81	Radiotechn	(B442)	
R83	Radiotechn	A441N	
R85	Radiotechn	B409	
R86	Radiotechn	4606	
R87	Radiotechn	4607	
R88	Radiotechn	4605	
R89	Radiotechn	C443	E443H
R99	Radiotechn	4620	
R100	Radiotechn	4621	
R100	Zenith	1802	
R101	Radiotechn	4609	

R104	Record	1832	
R105	Marathon	452	
R110E/P	Rectron	(1325)	
R110/1/II	Rectron	1325	
R115	Marathon	329	
R120/1,3	Rectron	1325	
R134	Record	505	
R138	Record		
R145	Record	505	
R200	Record	328	
R200	Tungsram	328	
R200/1,3/III	Rectron	1060	
R202	Record	1002	
R204	Record	1702	
R208	Tungsram	A225	
R215	Record	328	
R215	Vatea	A225	B228
R216	Record	451	
R220	Rectron	1702	
R223	Record	1201	
R233	Record	506	
R234	Record	506	
R235	Record	1805	
R238	Record		
R240	Record	1561	
R241	Record	1561	
R245	Record	506	
R250	Rectron	1701	
R254	Rectron	1701	
R256	Record	1560	

R278	Record	1562	
R0337	Rectron	1201	
R354	Castilla	1802	
R405	Tungsram	A425	B438
R406	Tungsram	A425	B438
R408	Castilla	373	
R0423	Rectron	1801	
R0424	Rectron	1802	
R0431	Rectron	1561	
R0433	Rectron	1817	
R0437	Rectron	506	
R0446	Rectron	505	
R0452	Rectron	1815	
R0453	Rectron	1803	
R0457	Rectron	1805	
R470	Record	(505)	
R0481	Rectron	1832	
R0500	Rectron	1072	
R0531	Rectron	1560	
R561	Castilla	1561	
R740	Record		
R0771	Rectron	1562	
R801	Castilla	1801	
R805	Castilla	AZ1	
R1000	Rectron	(1074)	
R1000/III	Rectron		
R1029	Rectron		
R1054	Castilla	506	
R1064	Castilla	1805	
R1709	Rectron	367	

R1767	Rectron	
R1836	Radiotechn	A209
R1855	Radiotechn	(A209)
R1856	Radiotechn	B205
R1862	Radiotechn	A225
R2000	Rectron	1762
R2005	Rectron	1763
R2018	Tungsram	B2038
R2050	Rectron	1763
R2150	Rectron	1765
R3000	Rectron	1077
R3867	Radiotechn	A441N
R3880	Radiotechn	B409
R4000	Rectron	1062
R4050	Zenith	1802
R4100	Zenith	506
R4100/a	Zenith	506
R4200	Zenith	1561
R5100	Zenith	1560
R5200	Zenith	(1560)
R7200	Zenith	

S

S	Adzam	B443	C443
SA2004	Record	(B442)	
SB2118	Vatea	B2044	
SB4110	Vatea	E444	
SCG4	Triotron	B442	
SCN4	Triotron	E442	E452T
Screenodion Bivolt	Impex	B252	B262
Screenodion Forvolt	Impex	(B252)	B262
SC2	Triotron	(B252)	
SC4	Triotron	(B442)	
SD	Ferranti	(AB1)	
S Det ACI4076	Radiotechn	E415	E424N
SD1	Telefunken		
SD2	Triotron		
SD4	Mullard	E444	
SD4	Triotron	A415	B424
SD15	Triotron	A415	B424
SD20	Mullard	B2044	
SE220	Tungsram	(B255)	
SE2018	Tungsram	B2045	
SF1	Telefunken		
SGA1	Standard	E452T	E446
SG/D	Mullard	E444	

SG	Forvolt	Impex	
SG-VM	Fotos	B255	
SG4	Iriotron	B415	B424
SG4A	M.P.	A442	B442
SG4B	M.P.	B442	
SG4V	M.P.	E452T	E446
SG20	M.P.	B2052T	B2046
SG20	Mullard	B2052T	B2046
SG20A	Mullard	B2042	
SG207	Mazda	B242	B252
SG210	Hivac	B252	B262
SG215	Cossor	B252	
SG215	Hivac	(B252)	B262
SG215	Mazda	B252	B262
SG215VM	Mazda	(B255)	
SG220	Cossor	B262	
SG220	Hivac	B252	B262
SG410	Cossor	B442	
SG410	Mazda	B442	
SG610	Cossor	A642	
SG610	Mazda	(A642)	
SG2018	Vatea	B2042	
SG2118	Vatea	B2052T	B2046
SI4090	Zenith	E442S	E452T
SI4093	Zenith	E452T	E446
SI4095	Zenith	E445	E455
SM4	Fotos	E441	
SM94	Record	(B409)	
SM144	Record	(A415)	B424
SM300	Record	(A409)	A415

SM350	Record	(A425)	B438
SM400	Record	(B405)	
SM1004	Record	B443S	
SN4	Triotron	(E424N)	
SO1	*Amer*	(9)	
SO2	*Amer*	50	
SPT4	Ferranti	E446	
SPT4A	Ferranti	E446	
SP2(2)	Mullard	KF1(3)	
SP2	Record		
SP2	Triotron	(B205)	
SP4	Mullard	E446	
SP4	Triotron	(B405)	
SP4B	Mullard		
SP13	Mullard	CF1	
SP13B	Mullard		
SP13C	Mullard		
SP20	Mullard	B2046	
SP30	Ge. Mar. Os.		
SP210(2)	Mazda	(KF1)(3)	
SP215(2)	Mazda	KF1(3)	
SP220	Tungsram		
SP230	Tungsram	(B205)	
SP414	Tungsram	B405	
SP420	Astron	1801	
SP614	Tungsram	B605	
SP625	Tungsram	C603	
SP1320	Mazda		
SP1330	Mazda		
SP2020	Mazda		

SP2220	Mazda		
SP3020	Mazda		
SR100	Sator	1904	
SR150	Sator	1911	
SR180	Sator	1928	
SS4PAC	Mullard	E409N	
SS2018	Tungsram	B2052T	B2046
ST2118	Vatea	B2046	
ST4110	Vatea	E446	
Super Det Bivolt	Impex	(B217)	
Super Det Forvolt	Impex	(E424N)	
Super HF Forvolt	Impex	A425	B438
Super HF Hivolt	Impex	(B228)	
Super Power Forvolt	Impex	B409	
Super Valve	Cyrnos	1802	
SV220	Tungsram	(B255)	
SV4100	Vatea	E442	E452T
SV4110	Vatea	E452T	E447
SW1	Impex	505	
SX210	Vatea	B262	
SX216	Vatea	B262	
SX218	Vatea	B262	
SX406	Vatea	(B442)	
SX410	Vatea	B442	

S2	Record	B252	B262
S2/C	Ge. Mar. Os.	(B255)	
S4	Fotos	(E409N)	
S4	Sator	(B442)	
S4V	Mullard	(E442)	E452T
S4VA	Mullard		
S4VB	Mullard	E452T	E446
S4VX	Mullard	E442S	
S8	Ge. Mar. Os.	C142	
S11A	Everready	506	
S21	Ge. Mar. Os.	(B252)	B262
S22	Ge. Mar. Os.	B262	
S23	Ge. Mar. Os.	(B252)	B262
S24	Ge. Mar. Os.	(B262)	
S25	Ostar	B2052T	B2046
S30C	Everready	(E406N)	
S100	Fotos	E453	E463
S100	Ostar	B2042	
S100	Sator	B442	
S130	Cossor		
S201	Triotron	(B405)	
S207	Triotron	(B252)	
S209	Triotron	KF3	
S210	Triotron	KF4	
S210	Tungsram	B252	B262
S213	Triotron	B255	
S215	Ge. Mar. Os.	(B252)	B262
S215	Triotron	B262	
S215A	Mazda	B252	B262
S215B	Mazda	B262	

S215VM	Mazda	B255	
S217	Triotron	KF2	
S218	Triotron	KF1	
S220	Tungsram	B262	
S406	Tungsram	(B442)	
S407	Tungsram	(B442)	
S408	Triotron	(B442)	
S409	Triotron	B442	
S410	Fotos	(E409N)	
S410	Ge. Mar. Os.	B442	
S410	Tungsram	B442	
S410N	Triotron	E442S	E452T
S412	Record	E708	
S412N	Triotron	E442	E452T
S415	Fotos	(E424N)	
S415N	Fotos	(E424N)	
S415N	Triotron	E445	E455
S423	Triotron	AF3	
S424	Triotron	AF7	
S425	Fotos	(E438)	
S430N	Triotron	E452T	E446
S431N	Triotron	E455	E447
S432	Triotron	AF2	
S434N	Triotron	E447	
S435N	Triotron	E446	
S440	Fotos	E438	
S440N	Fotos	E438	
S493	Zenith	E452T	E446
S495	Zenith	E455	E447
S610	Ge. Mar. Os.	A642	

S617	Triotron	EF5	
S620	Triotron	EF6	
S625	Ge. Mar. Os.	(A642)	
S628	Triotron	EF2	
S629	Triotron	EFI	
S1010	Celsior	A409	A415
S1323	Triotron	CF3	
S1324	Triotron	CF7	
S1327	Triotron	CF2	
S1328	Triotron	CFI	
S2010N	Triotron	B2042	B2052T
S2012N	Triotron	B2045	
S2018	Tungsram	B2042	
S2018d	Tungsram	B2042	
S2030N	Triotron	B2052T	B2046
S2034N	Triotron	B2047	
S2035	Triotron	B2046	
S4150	Fotos	(E442S)	
S4150C	Fotos	(E445)	
S4250D	Fotos	(E445)	
S4150E	Fotos	(E442S)	

T

T	Adzam	A441N	
T	Ge. Mar. Os.	(4060)	
TABCl	Tungsram	ABCl	
TAB2	Tungsram	AB2	
TAC2	Tungsram	AC2	
TADl	Tungsram	ADl	
TAF3	Tungsram	AF3	
TAF7	Tungsram	AF7	
TAHl	Tungsram	AHl	
TAK2	Tungsram	AK2	
TALl	Tungsram	ALl	
TAL2	Tungsram	AL2	
TAL3	Tungsram	AL3	
TAZl	Tungsram	AZl	
TA0	Castilla	A415	B424
TAl	Castilla	A209	
TA09	Radiotechn	A409	A415
TA10	Radiotechn	(A409)	A415
TA15	Radiotechn	A415	B424
TA25	Radiotechn	A425	B438
TA31	Radiotechn	(A441N)	
TA41	Radiotechn	A441N	
TA42	Radiotechn	(B442)	
TBCl	Radiotechn	ABCl	
TBCl4	Impex	ABCl	

TBC113	Impex	CBC1
TB1	Radiotechn	AB1
TB2	Radiotechn	AB2
TB05	Radiotechn	B405
TB06	Radiotechn	(B405)
TB09	Radiotechn	B409
TB13	Impex	CB1
TB24	Impex	AB2
TB24	Radiotechn	B424
TB032	Impex	B203
TB42	Radiotechn	B442
TB43	Radiotechn	B443
TB43S	Radiotechn	B443S
TB50/1000	Record	4641
TB052	Impex	B205
TB082	Impex	
TB102	Impex	A209
TB122	Impex	
TB172	Impex	B217
TB217	Radiotechn	B217
TB240	Radiotechn	B240
TB282	Impex	B228
TB402	Impex	B240
TB422	Impex	B242
TB452	Impex	(B255)
TB4313	Impex	CL1
TB4320	Impex	CL2
TB4613	Impex	CF1
TB5013	Impex	CK1
TB5613	Impex	CF2

TB8013	Impex	CC2	
TCBC1	Tungsram	CBC1	
TCB2	Tungsram	CB2	
TCC2	Tungsram	CC2	
TCF3	Tungsram	CF3	
TCF7	Tungsram	CF7	
TCH1	Radiotechn	ACH1	
TCH1	Tungsram	CH1	
TCK1	Tungsram	CK1	
TCL1	Tungsram	CL1	
TCL2	Tungsram	CL2	
TCL3	Tungsram	CL3	
TCY1	Tungsram	CY1	
TCY2	Tungsram	CY2	
TC2	Radiotechn	AC2	
TC43	Radiotechn	C443	
TC43N(A)	Radiotechn	C443N(A)	
TC243N	Radiotechn	C243N	
TC432	Impex	C243N	
TC434	Impex	C443	E443H
TDDS	Thermion		
TDD2(1)	Mullard	KBC1	
TDD2A	Mullard		
TDD4(1)	Mullard	ABC1	
TDD6	Mullard	EBC3	
TDD13	Mullard	CBC1	
TDD13C(1)	Mullard	CBC1	
TDD25	Mullard		
TD2	Triotron	A209	
TD4	Mullard	E444S	

TD10	Radiotechn	D410	
TD20	Mullard	B2044S	
TE	Radio-Vicco	A409	A415
TE4	Impex	AB1	
TE06	Radiotechn	(E406N)	
TE06N	Radiotechn	E406N	
TE08	Radiotechn	E408N	
TE09	Radiotechn	E409N	
TE094	Impex	E409N	
TE15	Radiotechn	E415	E424N
TE24	Radiotechn	(E424N)	
TE24(N)	Radiotechn	E424N	
TE38	Radiotechn	E438	
TE41	Radiotechn	E441	
TE41N	Radiotechn	E441N	
TE42	Radiotechn	E442	E452T
TE42S	Radiotechn	E442	S-E452T
TE43H	Radiotechn	E443H	
TE43N	Radiotechn	E443N	
TE44	Radiotechn	E444	
TE44S	Radiotechn	E444S	
TE45	Radiotechn	E445	
TE46	Radiotechn	E446	
TE47	Radiotechn	E447	
TE48	Radiotechn	E448	
TE49	Radiotechn	E449	
TE51	Radiotechn	E451	
TE52	Radiotechn	E452T	
TE53	Radiotechn	E453	
TE55	Radiotechn	E455	

TE63	Radiotechn	E463	
TE99	Radiotechn	E499	
TE104	Castiilla	C405	
TE244	Impex	E424N	
TE384	Impex	E438	
TE424	Impex	E442	E452T
TE434	Impex	E443H	
TE444	Impex	E444	
TE464	Impex	E446	
TE474	Impex	E447	
TE504	Impex	AK1	
TE524	Impex	E452T	E446
TE534	Impex	E453	
TE554	Impex	E455	E447
TE564	Impex	AF2	
TE634	Impex	E463	
TE994	Impex	E499	
TF04	Radiotechn	F704	
TF2	Radiotechn	AF2	
TF3	Radiotechn	AF3	
TF7	Radiotechn	AF7	
TF10	Radiotechn	F410	
TF43	Radiotechn	(F443N)	
TF43N	Radiotechn	F443N	
TF313	Impex	CF3	
TF704	Radiotechn	F704	
TF713	Impex	CF7	
TH1	Radiotechn	AM1	
TH4	Mullard	(ACH1)	
TH4A(1)	Mullard	(ACH1)	

TH13C	Mullard		
TH21C	Mullard		
TH401	Triotron	ACH1	
TKBC1	Tungsram	KBC1	
TKB1	Tungsram	KB1	
TKC1	Tungsram	KC1	
TKF3	Tungsram	KF3	
TKF4	Tungsram	KF4	
TKK2	Tungsram	KK2	
TKL1	Tungsram	(KL4)	
TKL2	Tungsram	KL2	
TK1	Radiotechn	AK1	
TK2	Radiotechn	AK2	
TK24	Impex	AK2	
TK406	Triotron	AM1	
TK606	Triotron	EM1	
TK4110	Vatea	E463	
TK4120	Vatea	E453	
TL1	Radiotechn	AL1	
TL1	Triotron	A109	
TL2	Radiotechn	AL2	
TL3	Radiotechn	AL3	
TL4	Triotron	(A409)	A415
TL34	Impex	AL4	
TL44	Impex	AL4	
TL210	Vatea	C243N	
TL230	Vatea	C243N	
TL410	Vatea	C443N	
TL413	Impex	CL4	
TL414	Vatea	B443	C443

TL415	Vatea	B443S	
TL510	Vatea	B543	
TL1320	Vatea	CL1	
TL2018	Vatea	B2043	
TM4	Fotos	E441	
TP3	Vatea	(A409)	
TP4	Mullard		
TP22	Mazda		
TP230	Hivac		
TP443	Zenith	E443H	
TP450	Zenith	E463	
TP1340	Mazda		
TP2620	Mazda		
TP4100	Zenith	E443N	
TR1560	Adzam	1560	
TSP4	Mullard	4673	
TS1	Triotron	A109	
TS2	Rectron		
TS4	Rectron		
TS4	Triotron	(A409)	A415
TS215	Mazda		
TT4	Mullard		
TT210	Triotron	KDD1	
TU	Fotos		
Tuneon Indicator	Ge. Mar. Os.	(4662)	
TU415	Zenith	(B443)	
TU425	Zenith	(C443)	E443H
TU430	Zenith	C443	E443H
TU410	Zenith	E453	

TV4	Mullard	AM1	
TV6	Mullard	EM1	
TV60	Radiotechn	1801	
TV61	Radiotechn	1802	
TV80	Radiotechn	506	
TV81	Radiotechn	1805	
TV90	Radiotechn	1561	
TV100	Radiotechn	(1815)	
TV105	Radiotechn	(505)	
TV120	Radiotechn	1817	
TV165	Radiotechn	1562	
TV250	Mazda	(F704)	
TV425	Vatea	C443	E443H
TV4100	Vatea	E443N	
TV4110	Vatea	E443H	
TV4200	Vatea	(F443N)	
TW	Radio-Vicco	A409	A415
TW1	Impex	CY1	
TW2	Impex	CY2	
TZ1	Radiotechn	AZ1	
T3-453	Thermion	C443	E443H
T4-33	Thermion	ABC1	
T5-409	Thermion	E409N	E415
T5-412	Thermion		
T5-415	Thermion	E415	E424N
T5-428	Thermion	E424N	
T5-438	Thermion	E438	
T5-442	Thermion	E442	E452T
T5-442S	Thermion	E442S	E452T
T5-444	Thermion	**E444**	

T5-444S	Thermion	E444S	
T5-446	Thermion	E446	
T5-447	Thermion	E447	
T5-448	Thermion	E448	
T5-455	Thermion	E455	E447
T5-462	Thermion	E452T	E446
T5-475	Thermion		
T5-499	Thermion	E499	
T10	Triotron	A209	
T34	Record	D404	
T55	Adzam	C443	E443H
T60	Adzam	B443	C443
T78	Record	(E708)	
T94	Record	(E406N)	
T104	Record	(F410)	
T114	Record	F410	
T204	Triotron	KC1	
T223	Triotron	KC3	
T410	Fotos	E409N	
T416	Record	E408N	
T425	Fotos	E424N	
T435	Triotron	AC2	
T460	Triotron	AD1	
T491	Zenith	(E446)	
T495	Zenith	(E447)	
T635	Triotron	EC2	
T730	Record	F704	
T740	Record		
T1012	Record		
T1020	Celsior	A409	A415

T1025	Record		
T1304	Record	E443H	
T1335	Triotron	CC2	
T4000N	Fotos	(AK1)	
T4150	Fotos	E452T	E44ℓ
T4400	Fotos	E444	
T4400N	Fotos	E444	
T4450	Fotos	E442	E452T
T4500	Fotos	E452T	E446
T4500C	Fotos	E455	E447
T4500N	Fotos	E452T	E446
T4600	Fotos	E446	
T4600N	Fotos	E446	
T4700	Fotos	E447	
T4700N	Fotos	E447	

U

UAM	Castilla	CF1
UAMS	Castilla	CF2
UBC1	Radiotechn	CBC1
UB1	Radiotechn	CB1
UB2	Radiotechn	CB2
UC2	Radiotechn	CC2
UDD	Castilla	CB1
UDDT51	Sator	CBC1
UDD51	Sator	CB2
UDD80	Sator	
UD2	Triotron	B205
UD506	Triotron	(B405)
UEP51	Sator	CF3
UEP103	Sator	
UFC	Castilla	CL2
UFF	Castilla	CL1
UF1	Radiotechn	CF1
UF2	Radiotechn	CF2
UF3	Radiotechn	CF3
UF7	Radiotechn	CF7
UGDR	Castilla	CK1
UHP52	Sator	CF7
UHP103	Sator	
UH1	Radiotechn	CH1
UKP403	Sator	

UK1	Radiotechn	CK1	
ULP51	Sator	CL2	
ULP204	Sator	B2043	
UL1	Radiotechn	CL1	
UL2	Radiotechn	CL2	
UMD40	Sator	(AB2)	
UMO51	Sator	CK1	
Universal Bivolt	Impex	(A209)	
Universel C	Fotos	(A409)	A415
Universal Forvolt	Impex	A409	A415
UPG105	Sator		
UP4B	M.P.	B443	C443
UP4C	M.P.	C443	E443H
UP4D	M.P.	E443H	
UP4E	M.P.	F443N	
UP4V	M.P.	E463	
UP5B	M.P.	B543	
UP20	M.P.	B2043	
URL200	Castilla	C1	
UR1	Castilla	CY1	
UR1	Mullard	CY1	
UR1C(1)	Mullard	CY1	
UR2	Castilla	CY2	
UR2	Mullard	CY2	
UR3	Mullard	CY2	
UR3C(1)	Mullard	CY2	
UU2	Mazda	506	
UU3	Mazda		

UU4	Mazda		
UU30/150	Mazda	1801	
UU30/250	Mazda	1801	
UU60/250	Hivac		
UU60/250	Mazda	506	
UU120/250	Mazda	1561	
UU120/350	Hivac		
UU120/350	Mazda	1561	
UU120/500	Hivac		
UU120/500	Mazda	1561	
UU412	Vatea		
UU4020(1)	Mazda	CY2	
UVG51	Sator	CY2	
UV4100	Vatea	E409N	
UX208	Vatea	A209	B217
UX210	Vatea	A209	B217
UX211	Vatea	B217	
UX406	Vatea	A409	A415
UX412	Vatea	B409	
UX414	Vatea	B409	
UY1	Radiotechn	CY1	
UY2	Radiotechn	CY2	
UZ420	Valvo		
U1	Radiotechn	C1	
U4	Ge. Mar. Os.		
U4C	M.P.	D404	E406N
U4D	M.P.	D404	E406N
U4E	M.P.	F410	
U5	Ge. Mar. Os.		
U6	Ge. Mar. Os.		

U6CAT	Castilla	EMI	
U8	Ge. Mar. Os.		
U9	Ge. Mar. Os.	506	
U9c	Ge. Mar. Os.	506	
U10	Ferranti	(1560)	
U10	Ge. Mar. Os.	506	
U12	Ge. Mar. Os.	1561	
U14	Ge. Mar. Os.	1561	
U16	Ge. Mar. Os.	(1875)	
U30	Ge. Mar. Os.		
U30/250	Mazda	1802	
U60/500	Mazda	505	
U65/550	Mazda	1562	
U70/140	Triotron	C12	
U75/300	Mazda	505	
U107D	Valvo	A141	
U120/350	Mazda	1832	
U120/500	Mazda	1832	
U150/1100	Mazda		
U208D	Valvo	A241	
U209D	Valvo	(A241)	
U215	Zenith	(B205)	
U230	Zenith	(B205)	
U352	Megam	A409	A415
U406	Vatea	A409	A415
U408D	Valvo		
U409D	Valvo	A441N	
U412	Vatea	A409	A415
U412	Zenith	(B405)	
U415	Zenith	B409	

U418	Zenith		
U420	Zenith	B405	
U440	Zenith	B405	
U460	Zenith	(D404)	E406N
U525	Valvo	C509A	
U525	Zenith		
U580	Zenith		
U1718D	Valvo	B2041	
U4020(1)	Mazda	(CY1)	
U4100D	Valvo	(E441N)	

V

VAB1	Vatea	AB1	
VAB2	Vatea	AB2	
VAC2	Vatea	AC2	
VAF2	Vatea	AF2	
VAF3	Vatea	AF3	
VAF7	Vatea	AF7	
VAK1	Vatea	AK1	
VAK2	Vatea	AK2	
Valve 4V	Cyrnos	1802	
VAL1	Vatea	AL1	
VAL2	Vatea	AL2	
Var. Mu Screen Bivolt	Impex	(B252)	B262
VAZ1	Vatea	AZ1	
VA41	S.I.F.	1801	
VA62	S.I.F.	506	
VA122	S.I.F.	1561	
VB1	Radiotechn	EB1	
VB200.20	Celsior	1801	
VB250.50	Celsior	506	
VCB1	Vatea	CB1	
VCB2	Vatea	CB2	
VCC2	Vatea	CC2	
VCF1	Vatea	CF1	

VCF2	Vatea	CF2
VCF3	Vatea	CF3
VCF7	Vatea	CF7
VCK1	Vatea	CK1
VCL1	Vatea	CL1
VCL2	Vatea	CL2
VCY1	Vatea	CY1
VCY2	Vatea	CY2
VC1	Telefunken	VC1
VC1	Valvo	VC1
VC2	Radiotechn	EC2
VDP1	Ge. Mar. Os.	
VDS	Ge. Mar. Os.	
VDSB	Ge. Mar. Os.	
VEB1	Vatea	EB1
VEC2	Vatea	EC2
VEF1	Vatea	EF1
VEF2	Vatea	EF2
VEG51	Sator	CY1
VEK1	Vatea	EK1
VEL1	Vatea	EL1
VEZ1	Vatea	EZ1
VEZ2	Vatea	EZ2
VFZ1	Vatea	FZ1
VF1	Radiotechn	EF1
VF2	Radiotechn	EF2
VG406	Sator	1801
VG410	Sator	506
VG411	Sator	1805
VG420	Sator	1561

VG421	Sator	1815	
VG460	Eagle	1801	
VG2503	Hoges	1801	
VG2908	Hoges	1201	
VG3008	Hoges	506	
VG3512	Hoges	1561	
VG4100	Eagle	506	
VG4200	Eagle	1561	
VG5006	Hoges	1805	
VHTA(1)	Ferranti	(CK1)	
VHTS	Ferranti		
VHT2(1)	Ferranti	(KK2)	
VHT2A(1)	Ferranti	(KK2)	
VHT4(1)	Ferranti	(AK2)	
VH4	Mullard	E449	
VH20	Mullard	B2049	
VH300	Splendor	(B442)	
VKF1	Vatea	KF1	
VKF2	Vatea	KF2	
VKK2	Vatea	KK2	
VK1	Radiotechn	EK1	
VLS61	Standard		
VL1	Radiotechn	EL1	
VL1	Telefunken	VL1	
VL1	Valvo	VL1	
VMP4	Ge. Mar. Os.	E447	
VMP4G	Ge. Mar. Os.	AF2	
VMP4K	Ge. Mar. Os.	E447	
VMS4 Catkin	Ge. Mar. Os.	(E445)	E455

VMS4B	Ge. Mar. Os.	E455	E447
VM4V	Mullard	E445	E455
VM20	Mullard	B2045	B2047
VM200.10	Celsior	1802	
VM200.20	Celsior	1802	
VM200.30	Celsior	1802	
VM600.50	Celsior	506	
VPTA(1)	Ferranti	CF7	
VPTS	Ferranti		
VPT4	Ferranti	E446	
VPT4A	Ferranti	E446	
VPT4B	Ferranti	AF2	
VP2(2)	Mullard	KF2(3)	
VP2A(2)	Mullard	KF2(3)	
VP4	Mullard	E447	
VP4A	Mullard	AF2	
VP4B	Mullard		
VP13A	Mullard	CF2	
VP13C	Mullard		
VP20	Mullard	B2047	
VP21(2)	Ge. Mar. Os.	(KF2)(3)	
VP30	Ge. Mar. Os.		
VP210(2)	Mazda	(KF2)(3)	
VP215(2)	Hivac	KF2(3)	
VP215(2)	Mazda	KF2(3)	
VP1320(1)	Mazda	CF2	
VP1321	Mazda		
VR2	Castilla	505	
VR4	Castilla	506	
VSGA1	Standard	E455	E447
VSG220	Cossor	B255	

VS2	Ferranti	B255	
VS2	Ge. Mar. Os.	(B255)	
VS2	Record	B255	
VS2	Visseaux		
VS4	Ferranti	E445	
VS24	Ge. Mar. Os.	B255	
VS24K	Ge. Mar. Os.	B255	
VS210	Hivac	B255	
VS215	Hivac	(B255)	
VS215	Mazda	(B255)	
VS220	Cossor	B262	
VT2	Vatea	4662	
VT107	Tekade	A209	
VT110	Tekade	A225	B228
VT111	Tekade	(B405)	
VT112	Tekade	A409	A415
VT121	Tekade	B205	
VT122	Tekade	B217	
VT123	Tekade		
VT124	Tekade	A425	B438
VT126	Tekade		
VT128	Tekade	A409	A415
VT129	Tekade	B409	
VT132	Tekade		
VT133	Tekade		
VT134	Tekade		
VT137	Tekade		
VT139	Tekade		
VT141	Tekade	E409N	E415
VT142	Tekade		

VT143	Tekade	
VT147	Tekade	
VT216	Tekade	
VY1	Telefunken	VY1
VY1	Valvo	VY1
VZ1	Radiotechn	EZ1
V0	Fotos	1803
V1	Fotos	
V1	Visseaux	505
V2	Fotos	
V2	Visseaux	506
V3	Fotos	(1832)
V3	Ostar	B2047
V4	Cyrnos	1802
V4	Ignix	1801
V4 oxyde	Cyrnos	1802
V6	Fotos	506
V6M	Fotos	(1803)
V6N	Fotos	506
V8	Fotos	
V8	Ignix	1801
V12	Fotos	
V20	Fotos	1801
V21B	Fotos	1801
V21M	Fotos	1803
V22	Fotos	1561
V23	Fotos	
V24	Ge. Mar. Os.	
V30	Fotos	1560
V41	S.I.F.	1801

V42	Ignix	506
V43	Ignix	506
V44	Ignix	1801
V46	Ignix	506
V48	Ignix	1561
V51	S.I.F.	373
V54	Radiotechn	506
V60	Radiotechn	1801
V60	Triotron	1904
V62	S.I.F.	506
V66	Radiotechn	1803
V70	Radiotechn	
V70	Triotron	C2
V70U	Triotron	C4
V71	Radiotechn	
V72	Radiotechn	
V73	Radiotechn	
V80	Radiotechn	506
V80	Triotron	1911
V90	Radiotechn	1561
V100	Fotos	
V100	Radiotechn	1815
V100	Triotron	1927
V105	Radiotechn	
V110	Radiotechn	
V122	S.I.F.	1561
V140	Triotron	C1
V140U	Triotron	C3
V150	Triotron	1928
V150	Visseaux	1803

V155	Radiotechn		
V165	Radiotechn	1562	
V180a	Triotron	1927	
V202	Elecson	1801	
V250	Visseaux	1801	
V306	Elecson	506	
V430	Tungsram	1802	
V460	Tungsram	1803	
V475	Tungsram	373	
V480	Visseaux	1561	
V495	Tungsram	506	
V510	Elecson	80	
V515	Fotos		
V580	Visseaux	1560	
V583	Visseaux		
V780	Visseaux		
V781	Visseaux		
V914(1)	Mazda	(AB2)	
V1508	Splendor	A415	B424
V2018	Tungsram		
V2118	Tungsram		
V2350	Tungsram	1010	
V3030	Splendor	A425	B438
V3880	Radiotechn	506	
V4200	Tungsram	1832	

W

WD2	Triotron	(B228)	
WD11	*Amer*	(9)	
WD12	*Amer*	(9)	
WD30	Ge. Mar. Os.		
WD40	Ge. Mar. Os.		
WG4	Triotron	A409	
WE6	Rectron	340	
WE15	Rectron	1904	
WE22	Rectron	501	
WE33	Rectron	452	
WE34	Rectron	1011	
WE44	Rectron	329	
WE45	Rectron	1331	
WE46	Rectron	1014	
WE55	Rectron	(452)	
WE4	Triotron	B438	
WG4SC	Eagle	E442S	E452T
WG33	Loewe		
WG34	Loewe		
WG35	Loewe		
WG36	Loewe		
WG37	Loewe		
WG41	Eagle	E415	E424N
WG41	Loewe		
WG43	Eagle	E424N	

Wi33	Valvo	452	
Wi100	Valvo	1904	
Wi150	Valvo	1911	
Wi180a	Valvo	1927	
Wi180b	Valvo	1928	
Wl 453	Longlife	E453	
WN4	Triotron	E438	B438
WS1507	Splendor	E415	E424N
WZ1	Impex	FZ1	
W1	A.E.G.		
W2	A.E.G.		
W4	Sator	A425	B438
W6	Fotos	1805	
W10	Fotos	1805	
W10	Record		
W10M	Zenith	E708	
W12	Fotos	1832	
W15	Record	329	
W20	Fotos	1832	
W20	Record	452	
W30	Ge. Mar. Os.		
W31	Ge. Mar. Os.		
W60	Fotos		
W100	Sator	(B438)	
W213	Triotron	B228	
W306	Marathon	F704	
W308	Marathon	E424N	
W318	Marathon	E454	
W329	Longlife	329	
W406	Marathon	E451	

W406	Valvo	A425	B438
W408N	Longlife	E408N	
W409	Marathon	E442	E452T
W410	Valvo		
W411	Valvo	B438	
W412	Triotron	A425	
W415N	Triotron	E438	
W419	Marathon	E445	E455
W420	Triotron	B438	
W428	Longlife	E424N	
W429	Marathon	E452T	E446
W438	Longlife	E438	
W443	Longlife	B443	C443
W443H	Longlife	E443H	
W444	Longlife	E444	
W446	Longlife	E446	
W450	Zenith	D404	E406N
W452	Longlife	452	
W453	Longlife	C443	E443H
W455	Longlife	E455	E447
W462	Longlife	E452T	E446
W463	Longlife	E463	
W499	Longlife	E499	
W506	Marathon	C443	E443H
W509	Marathon	E446	
W516	Marathon	E443H	
W519	Marathon	E447	
W606	Valvo	A630	
W704	Longlife	F704	
W1501	Record		

W2418	Valvo	B2099
W4080	Valvo	E438
W4100	Valvo	(E438)
W4110	Valvo	E499

X

XD	Hivac	
XL	Hivac	
XP	Hivac	
XSG	Hivac	
XT4	Triotron	(B405)
XT505	Triotron	B405
XY	Hivac	
X21(1)	Ge. Mar. Os.	(KK2)
X30	Ge. Mar. Os.	
X31	Ge. Mar. Os.	
X41	Ge. Mar. Os.	
X42	Ge. Mar. Os.	
X2818	Valvo	B2048
X2918	Valvo	B2049
X4122	Valvo	E448
X4123	Valvo	E449

Y

YD2	Triotron		
YD4	Triotron	B409	A415
YG5	Triotron		
YG6	Triotron	A609	
YN4	Triotron	(E409N)	
Y220	Hivac	C243N	
Y2018	Tungsram		

Z

ZD(1)	Ferranti	CB2
ZD2	Triotron	B205
ZD4	Triotron	(B405)
ZD503	Triotron	B405
ZM144	Record	
ZM288	Record	
ZR100	Zenith	1802
Z1	Telefunken	4675
Z2	Telefunken	4676
Z4	Zenith	A409
Z30	Ge. Mar. Os.	
Z220	Hivac	(C243N)

0Z3	*Amer*	(7)	
0Z4	*Amer*	OZ4G(6)	
0Z4G	*Amer*	OZ4G(6)	
00	*Amer*	00A	
0,06D	Metal	(A409)	A415
01	*Amer*	01A	
01AA	*Amer*	01A	
1	*Amer*	1V	
1A4	*Amer*	1A4T	
1A7	Standard		
1B4	*Amer*	1B4P	
1B4T	*Amer*	1B4P	
1B4T/951	*Amer*	1B4P	
1D4	Standard	CY2	
1D5	Standard	CY1	
1D5G	*Amer*	1D5GT	
1E5G	*Amer*	1E5GP	
1E5GT	*Amer*	1E5GP	
1P6G	*Amer*	(9)	
1-409	Thermion	A409	A415
1-415	Thermion	A415	B424
1-425	Thermion	A425	B438
2A3H	*Amer*	2A3	
2B1	Ultron	KF1	
2B2	Ultron	KF2	
2B3	Ultron	KF3	
2B4	Ultron	KF4	
2B5	Ultron	KK2	
2B6	Ultron	KB2	
2B6	*Amer*	(9)	

2B7	Ultron	KC3	
2B8	Ultron	KDD1	
2B9	Ultron	KL2	
2B10	Ultron	KBC1	
2B11	Ultron	B228	
2B12	Ultron	B240	
2B13	Ultron	B217	
2B14	Ultron	C243N	
2B15	Ultron	KL4	
2D2(1)	Mullard	KB2	
2D4	Mullard	AB1	
2D4A(1)	Mullard	AB2	
2D13	Mullard	CB1	
2D13A(1)	Mullard	CB2	
2G4	Cossor	A441N	
2HMD	Loewe		
2L0	Record	(B405)	
2L20	Tekade	B205	
2NF	Loewe		
2NG	Loewe	1201	
2R100	Zenith	506	
2S	*Amer*	2S/4S	
2U15	Tekade	A209	
2-405	Thermion	B405	
2-406	Thermion	(B405)	
2-409	Thermion	B409	
2-424	Thermion	B424	
2-438	Thermion	B438	
2-442	Thermion	B442	
2-443	Thermion	B443	C443

3G130	Tekade	1201	
3NF7	Loewe		
3NF Bat	Loewe		
3NFK	Loewe		
3NFL	Loewe		
3NF Netz	Loewe		
3NFW	Loewe		
3-405	Thermion	C405	
3-453	Thermion	C443	E443H
4AAF	Castilla	425	B438
4AF	Castilla	A409	A415
4A1	Ultron	E452T	E446
4A2	Ultron	E442	E462T
4A3	Ultron	E415	E424N
4A4	Ultron	C443	E443H
4A5	Ultron	E443H	
4A6	Ultron	E424N	
4A07	Tekade	A415	B424
4A7	Ultron	E499	
4A08	Tekade	A415	B424
4A08n	Tekade	A415	B424
4A10	Tekade	A415	B424
4A10	Ultron	E447	
4A11	Ultron	AF2	
4A12	Ultron	AK1	
4A13	Ultron	AB1	
4A14	Ultron	E444	
4A15	Tekade	(A415)	B424
4A15	Ultron	E441	
4A16	Ultron	AK2	

4A17	Ultron	AF3	
4A8	Ultron	E463	
4A9	Ultron	E446	
4A18	Ultron	AF7	
4A19	Ultron	AH1	
4A20	Ultron	AC2	
4A21	Ultron	AB2	
4A22	Ultron	ABC1	
4A23	Ultron	AL1	
4A24	Ultron	AL2	
4A25	Ultron	AL4	
4A26	Ultron	AL4	
4A27	Ultron	AL5	
4A28	Ultron	AD1	
4A80	Tekade	E415	E424N
4A80n	Tekade	E415	E424N
4A90	Tekade	(E424N)	
4A120	Tekade	E409N	E415
4BF	Castilla	(B405)	
4BFF	Castilla	B405	
4BFF2	Castilla	B409	
4B1	Ultron	A409	A415
4B2	Ultron	A415	B424
4B3	Ultron	A425	B438
4B4	Ultron	B443	C443
4B5	Ultron	(B405)	
4B06	Tekade	A409	A415
4B6	Ultron	B442	
4B7	Ultron	A441N	
4D	Castilla	A415	B424

4DC	Castilla	B415	B424
4DC1	Castilla	B424	
4DR	Castilla	A441N	
4E1	Loewe	AL4	
4F	Castilla	E443N	
4F06	Tekade	A409	A415
4GAF	Castilla	(B442)	
4GBF	Castilla	B443	C443
4GBFS	Castilla	B443S	
4G15	Tekade	1802	
4G25	Tekade	1802	
4G30	Tekade	1801	
4G35	Tekade	1802	
4G105	Tekade	506	
4G200	Tekade	1561	
4HA130	Tekade		
4H1	Loewe	AF7	
4H2	Loewe	AF3	
4H3	Loewe	AH1	
4H07	Tekade	A409	A415
4H07n	Tekade	A409	A415
4H08	Tekade	A415	B424
4H80	Tekade	E415	E424N
4H130	Tekade	E409N	E415
4K30	Tekade		
4K32	Tekade	(C405)	
4K50	Tekade	(D404)	
4K60	Tekade	D404	
4K110	Tekade		
4K170	Tekade		

4L11	Tekade	B405	
4L12	Tekade	B405	
4L13	Tekade	B409	
4L14	Tekade	B409	
4L15	Tekade	B409	
4L29	Tekade		
4L31	Tekade		
4M1	Loewe	AK2	
4NG	Loewe	506	
4N08	Tekade	A409	
4N110	Tekade	E409N	E415
4P25	Tekade	C443	E443H
4R1	Ultron	506	
4R2	Ultron	1561	
4R3	Ultron	AZ1	
4S	*Amer*	2S/4S	
4SC	Eagle	(B442)	
4S09	Tekade	(B442)	
4S10	Tekade	(B442)	
4S80	Tekade	E452T	
4S80n	Tekade	E442S	E452T
4S120	Tekade	E442S	E452T
4U130	Tekade	(E409N)	E415
4V	Cyrnos	1802	
4V1	Loewe	ABC1	
4W03	Tekade	A425	B438
4W03n	Tekade	A425	B438
4W08	Tekade	A425	B438
4W100	Tekade	E438	
4W120	Tekade	(E438)	

4XP	Cossor	(E406N)	
4-33	Thermion		
5B1	Standard	B262	
5E225	Mazda	(C243N)	
5E415	Mazda	B443	C443
5FC	Castilla	B543	
5V4 G	*Amer*	5T4(6)	~~5V4G~~
5W4G	*Amer*	5W4(6)	5Y3G
5XX	Record	(A409)	A415
5Y3	*Amer*	5Y3G	
5Y4	*Amer*	5Y4G	
5Z4	*Amer*	5Z4	5V4G
5Z4G	*Amer*	5V4G	5Z4
5Z4MG	*Amer*	5Z4	5V4G
5-409	Thermion	E409N	E415
5-412	Thermion		
5-415	Thermion	E415	E424N
5-428	Thermion	E424N	
5-438	Thermion	E438	
5-442	Thermion	E442	E452T
5-442S	Thermion	E442S	E452T
5-444	Thermion	E444	
5-444S	Thermion	E444S	
5-446	Thermion	E446	
5-447	Thermion	E447	
5-448	Thermion	E448	
5-449	Thermion	E449	
5-453	Thermion	E453	
5-455	Thermion	E455	E447
5-462	Thermion	E452T	E446

5-463	Thermion	E463
5-475	Thermion	
5-499	Thermion	E499
6AB5	*Amer*	(9)
6AB6G	*Amer*	(9)
6AC6G	*Amer*	(9)
6A4	*Amer*	6A4/LA
6A8	*Amer*	6A8(4)
6B6	*Amer*	6Q7G(4)
6B6G	*Amer*	6Q7G(4)
6B8	*Amer*	6B8G(4)
6C5	*Amer*	6C5G(4)
6D5	*Amer*	(7)
6D5G	*Amer*	(7)
6E1	Ultron	EF5
6E2	Ultron	EF6
6E3	Ultron	EB4
6E4	Ultron	EBC3
6E5	Ultron	EL2
6E6	Ultron	EL3
6E7	*Amer*	6D7
6E7	Ultron	EL5
6E8	Ultron	EK2
6F5	*Amer*	6F5G(4)
6F6	*Amer*	6F5G(4)
6G5/6H6	*Amer*	6G5
6H5	*Amer*	6G5
6H6	*Amer*	6H6G(4)
6J5	*Amer*	6J5G(4)
6J7	*Amer*	6J7G(4)

6J8G	Amer	6J8G(6)
6K7	Amer	6K7G(4)
6K8	Amer	6K8(6)
6L6	Amer	6L6G(4)
6L7	Amer	6L7G(4)
6NG	Loewe	1562
6N5	Amer	6G5
6N6G	Amer	6N6(4)
6N7G	Amer	6N7
6P7G	Amer	6P7
6Q6	Amer	6T7G
6Q6G	Amer	6T7G
6Q6G/6T7G	Amer	6T7G
6Q7G	Amer	6Q7
6R3	Ultron	EZ3
6R4	Ultron	EZ4
6R7	Ultron	EZ2
6R7G	Amer	6R7
6S7G	Amer	6S7G
6T7G/6Q6G	Amer	6T7G
6V6G	Amer	6V6(4)
6W5G	Amer	6X5G
6X5G	Amer	6X5(4)
6Y5V	Amer	6Y5
6Z3	Amer	1V
6Z4	Amer	84
6Z4/84	Amer	84
6Z5/12Z5	Amer	6Z5
6Z6MG	Amer	(9)
6/100D	Metal	(A409) A415

7A2(1)	Standard	AL2
7A3(1)	Standard	AL4
7D3(1)	Standard	(CL2)
7D5	Standard	
7D6(1)	Standard	(CL2)
7D7(1)	Standard	(CL2)
7D8	Standard	
7R1	Ultron	1562
8A1	Standard	(E446)
8A2	Standard	(E446)
8D2(1)	Standard	CF7
8K290	Tekade	
8K300	Tekade	
8NG	Loewe	1201
9A1	Standard	(E447)
9A3	Standard	
9D2(1)	Standard	CF3
10D1(1)	Standard	CBC1
10NG	Loewe	(1802)
11A1(1)	Standard	(ABC1)
11A2(1)	Standard	(ABC1)
11D3	Standard	
12	*Amer*	12A
12NG	Loewe	1801
12Z5	*Amer*	6Z5
13	*Amer*	80
13DHA	Cossor	
13H1	Loewe	CF7
13H2	Loewe	CF3
13H3	**Loewe**	CF7

13PGA(1)	Cossor	(CK1)
13SPA(1)	Cossor	(CF7)
13VPA(1)	Cossor	(CF3)
13U1	Ultron	CF1
13U2	Ultron	CF2
13U3	Ultron	CK1
13U4	Ultron	CB1
13U5	Ultron	CL2
13U6	Ultron	CY1
13U7	Ultron	CY2
13U8	Ultron	C1
13U9	Ultron	C2
13U10	Ultron	CF3
13U11	Ultron	CF7
13U12	Ultron	CH1
13U13	Ultron	CC2
13U14	Ultron	CB2
13U15	Ultron	CBC1
13U16	Ultron	CL1
13U17	Ultron	CL4
14	*Amer*	(9)
14NG	Loewe	1805
14Z3	*Amer*	12Z3
15A2(1)	Standard	(AK2)
15D1(1)	Standard	(CK1)
16	*Amer*	81
16B	*Amer*	81
16D1	Standard	
16NG	Loewe	(1862)
17	*Amer*	(9)

20AC	Castilla	B2042	
20AD	Castilla	B2052T	
20AM	Castillla	B2046	
20AMS	Castilla	B2047	
20BF	Castilla	B2006	
20C1	Ultron	B2042	B2052T
20C2	Ultron	B2045	
20C3	Ultron	B2038	
20C4	Ultron	B2043	
20DC	Castilla	B2038	
20DP	Castilla	B2044	
20DP1	Castilla	B2044S	
20DR	Castilla	B2099	
20FC	Castilla	B2043	
22AC	*Amer*	24A	
24NG	Loewe		
25A6G	*Amer*	25A6(4)	
25A7	*Amer*	25A7G(6)	
25B5	*Amer*	(9)	
25L6G	*Amer*	25L6	
25N6	*Amer*	(9)	
25N6G	*Amer*	(9)	
25S	*Amer*	1B5	
25Z3	*Amer*	(9)	
25Z5MG	*Amer*	25Z5G(4)	
25Z6G	*Amer*	25Z6(4)	
26NG	Loewe		
27HM	*Amer*	56	
28	*Amer*	(9)	
30NG	Loewe	CY2	

33EL	Loewe	CL4	
36A	*Amer*	36	
37A	*Amer*	37	
38A	*Amer*	38	
39A	*Amer*	39/44	
40PPA(1)	Cossor	(CL2)	
40SUA(1)	Cossor	(CY1)	
41MDG	Cossor	(E441)	
41MH	Cossor	(F460)	
41MHF	Cossor	(E438)	
41MLF	Cossor	E415	E424N
41MPG(1)	Cossor	(AK2)	
41MRC	Cossor	(E438)	
41MSG	Cossor	(E462)	E452T
41MVSG	Cossor	E445	E455
41PGDD(1)	Cossor	(AK2)	
41STH(2)	Cossor	(ACH1) (3)	
43MG	*Amer*	25A6(4)	
43MP/PEN(1)	Cossor	(AL4)	
44	*Amer*	39	
44SU	Cossor	1802	
45A	*Amer*	45	
51	*Amer*	35	
51S	*Amer*	35	
52	*Amer*	(9)	
054V	Mullard		
59B	*Amer*	(7)	
64	*Amer*	36(5)	
64A	*Amer*	36(5)	
65	*Amer*	39/44(5)	

65A	*Amer*	39/44(5)	
67	*Amer*	37(5)	
67A	*Amer*	37(5)	
68	*Amer*	38(5)	
68A	*Amer*	38(5)	
70	*Amer*	(9)	
69	*Amer*	69(6)	
71	*Amer*	71A	
71B	*Amer*	71A	
80M	*Amer*	83	
81M	*Amer*	81	
82V	*Amer*	82	
84/6Z4	*Amer*	84	
88	*Amer*	83	
90	*Amer*	(9)	
91	*Amer*	(9)	
92	*Amer*	(9)	
95	*Amer*	2A5	
96	*Amer*	1V	
98	*Amer*	84	
99	*Amer*	V99	X99
100R	Tungsram	1904	
102D	Standard	4607	
103	Ignix	E415	E424N
104	Visseaux	451	
104V	Mullard	(E409N)	
105	Ignix	E424N	
105	Visseaux	452	
107	Ignix	E438	
121	Ignix	E441	E441N

140NG	Loewe		
143D	*Amer*	879	
144V	Mullard	(E415)	
150R	Tungsram	1911	
151	Ignix	E442S	E452T
152 Regul	} Fotos	1111	
152 Valvgaz	} Fotos	1110	
153	Ignix	(E445)	E455
154V	Mullard	E415	
155	Ignix	E442S	E452T
157-159	Ignix	E455	E447
164V	Mullard	(E415)	E424N
180R	Tungsram	1928	
200RI	Tungsram	C1	
200RII	Tungsram	C2	
201	Ge. Mar. Os.	C1	
202	Ge. Mar. Os.	C1	
202	Ignix		
202DDT(1)	Cossor	(CBC1)	
202MPG(1)	Cossor	(CK1)	
204	Ge. Mar. Os.	C1	
204	Ignix	E408N	
205E	Standard		
210Det	Cossor	B217	
210HF	Cossor	B228	
210HL	Cossor	A225	B228
210LF	Cossor	(A209)	
210PG(1)	Cossor	(KK2)	

210SPT(2)	Cossor	(KF1)(3)
210T	*Amer*	10
210VPT(2)	Cossor	(KF2)(3)
211	Western	
215P	Cossor	(B205)
215SG	Cossor	B252
215SG	Mazda	(B252)
215VS	Cossor	(B255)
220B(2)	Cossor	(B240)(3)
220DD(1)	Cossor	KB2
220HPT	Cossor	C243N
220P	Cossor	(B205)
220PA(1)	Cossor	(KC3)
220PT	Cossor	(C243N)
220SG	Cossor	(B262)
220VS	Cossor	(B255)
220VSG	Cossor	(B255)
230HPT	Cossor	(C243N)
230Pen	Mazda	(C243N)
230PT	Cossor	(C243N)
230XP	Cossor	(B205)
240B(2)	Cossor	B240(3)
244V	Mullard	E424N
244VX	Mullard	E424N
251	Ge. Mar. Os.	1934
252	Ignix	E443N
252 Regul	} Fotos	1111
252 Valvgaz	} Fotos	1110

257	*Amer*	(9)	
264	*Amer*	(9)	
268	*Amer*	83V	
291	*Amer*	(9)	
293	*Amer*	(9)	
295	*Amer*	(9)	
301	Ge. Mar. Os.	1941	
302	Ge. Mar. Os.	1941	
303	Ge. Mar. Os.	1941	
304	Ge. Mar. Os.	1941	
354V	Mullard		
402	*Amer*	(9)	
403	*Amer*	(9)	
406	Fotos	A410	
407A	Eagle	A409	A415
407H	Eagle	A409	A415
407W	Eagle	A425	B438
408BU	Cossor	1801	
408L	Eagle	(B405)	
410HF	Cossor	A425	B438
410LF	Cossor	A415	B424
410P	Cossor	B409	
410PT	Cossor	B443	C443
410RC	Cossor	B438	
410SC	Eagle	B442	
410SG	Cossor	(B442)	
411	Fotos	(B406)	
412BU	Cossor	506	
412SU	Cossor	(505)	
415A	Eagle	B415	B424

415L	Eagle	B409	
415LL	Eagle	B405	
415PT	Cossor	(B443)	C443
415QT	Cossor	(B443)	C443
415XP	Cossor	B405	
425Pen	Mazda	C443	
425PT	Ge. Mar. Os.	B443	C443
425XP	Cossor	(C405)	
430K	Eagle	E443N	
442BU	Cossor	1561	
460BU	Cossor	1561	
475K	Eagle	D404	
482A	*Amer*	71A	
482B	*Amer*	182B	
483	*Amer*	183	
484	*Amer*	485	
484V	Mullard	(E438)	
484VX	Mullard	E438	
486	*Amer*	(9)	
506BU	Cossor	506	
524	S.I.F.	B405	
551	Arcturus	35	
585	*Amer*	50	
586	*Amer*	50	
604	Visseaux	367	
604T	Mullard	(F460)	
610FP	Cossor	B605	
610LF	Cossor	A615	
610P	Cossor	(B605)	
610SG	Cossor	A642	

610XP	Cossor	B605	
615PT	Cossor	C643	
624BU	Cossor		
625P	Cossor		
660SU	Cossor		
660T	Cossor		
680HF	Cossor		
680P	Cossor		
680XP	Cossor		
723	S.I.F.	B409	
822	S.I.F.	D404	
825BU	Cossor	(1562)	
840	*Amer*	(9)	
864	*Amer*	(9)	
866	*Amer*	(9)	
874	*Amer*	(9)	
876	*Amer*	886	
904V	Mullard	(F460)	
907	S.I.F.	A409	A415
913	*Amer*	(9)	
915	S.I.F.	A409	A415
950	*Amer*	33(7)(8)	
951	*Amer*	1B4P	
951/1B4	*Amer*	1B4P	
985	*Amer*	(7)	
986	*Amer*	83	
994V	Mullard	E499	
1004 (Valvgaz)	Fotos	451	
1005 (Regul)	Fotos	452	

1184	Cossor	(4662)	
1200	Fotos	1002	
1201 (Regul)	Fotos	1003	
1204	Visseaux	1010	
1205	Visseaux	1011	
1221	*Amer*	6C6	
1225	*Amer*	1612(7)	
1515	S.I.F.	A409	A415
1620	S.I.F.	E415	E424N
1882	Philips	80	
2004 (Valvgaz)	Fotos	328	
2005 (Regul)	Fotos	329	
2124 (Valvgaz)	Fotos	1010	
2124N	Fotos		
2404 (Valvgaz)	Fotos	354	
2405 (Regul)	Fotos		
2430	S.I.F.	E424N	
2805	Fotos	1003	
3004 (Valvgaz)	Fotos		
3005 (Regul)	Fotos		
3006 (Valvgaz)	Fotos	1129	

3007 (Regul)	Fotos		
3124	Fotos	1110	
3124M	Fotos		
3125	Fotos	1111	
3180	Cossor	(4662)	
3215	S.I.F.	A425	B438
3815	S.I.F.	E438	
3935T	Mullard	(B252)	
4001A	Standard		
4001AB	Standard		
4002B	Standard		
4002T	Mullard	(B252)	B262
4004AB	Standard		
4005AB	Standard		
4007	Standard		
4007A	Standard		
4011B	Standard		
4019A	Standard	4630	
4020A	Standard	4631	
4021A	Standard	4617	
4022A	Standard	4609	
4028	S.I.F.	E438	
4028T	Mullard	(E455)	E447
4037A	Standard		
4039A	Standard		
4101D	Standard	4606	
4101DL	Standard	4606	
4102D	Standard	4607	
4104D	Standard	4616	

4205D	Standard		
4205E	Standard		
4211E	Standard		
4212D	Standard		
4215A	Standard		
4215AB	Standard		
4222A	Standard		
4239	Standard		
4662	Radiotechn	4662	
6001	Mullard	3962	
6003 (Regul)	Fotos	1012	
6005 (Regul)	Fotos		
6006 (Valvgaz)	Fotos	367	
6404 (Valvgaz)	Fotos	1029	
7515	S.I.F.	B443	C443
8517	S.I.F.	C443	E443H

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