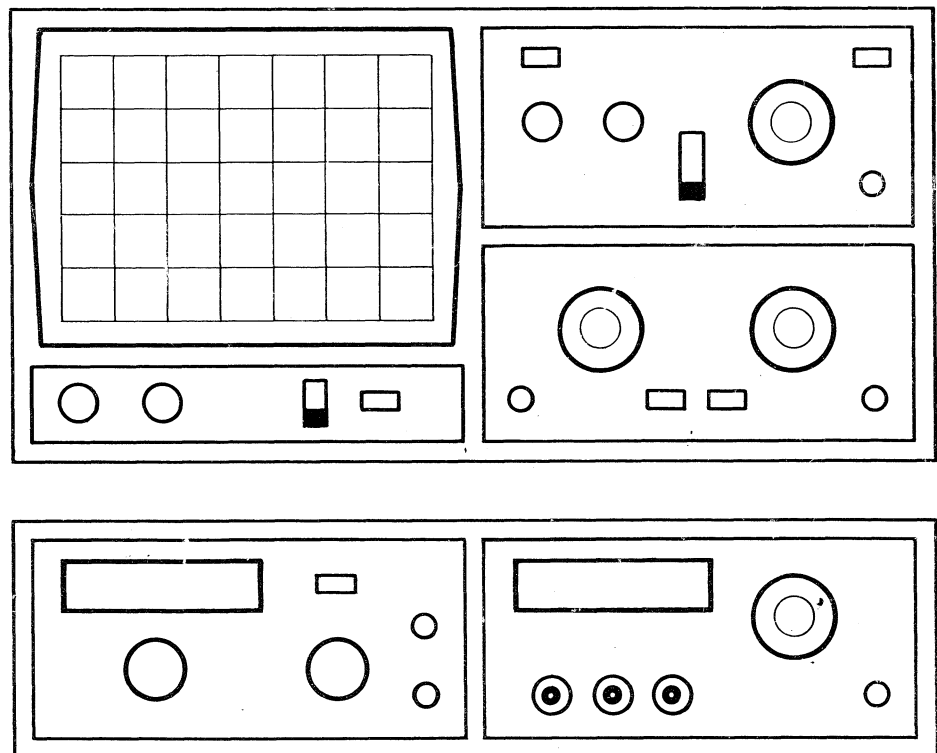


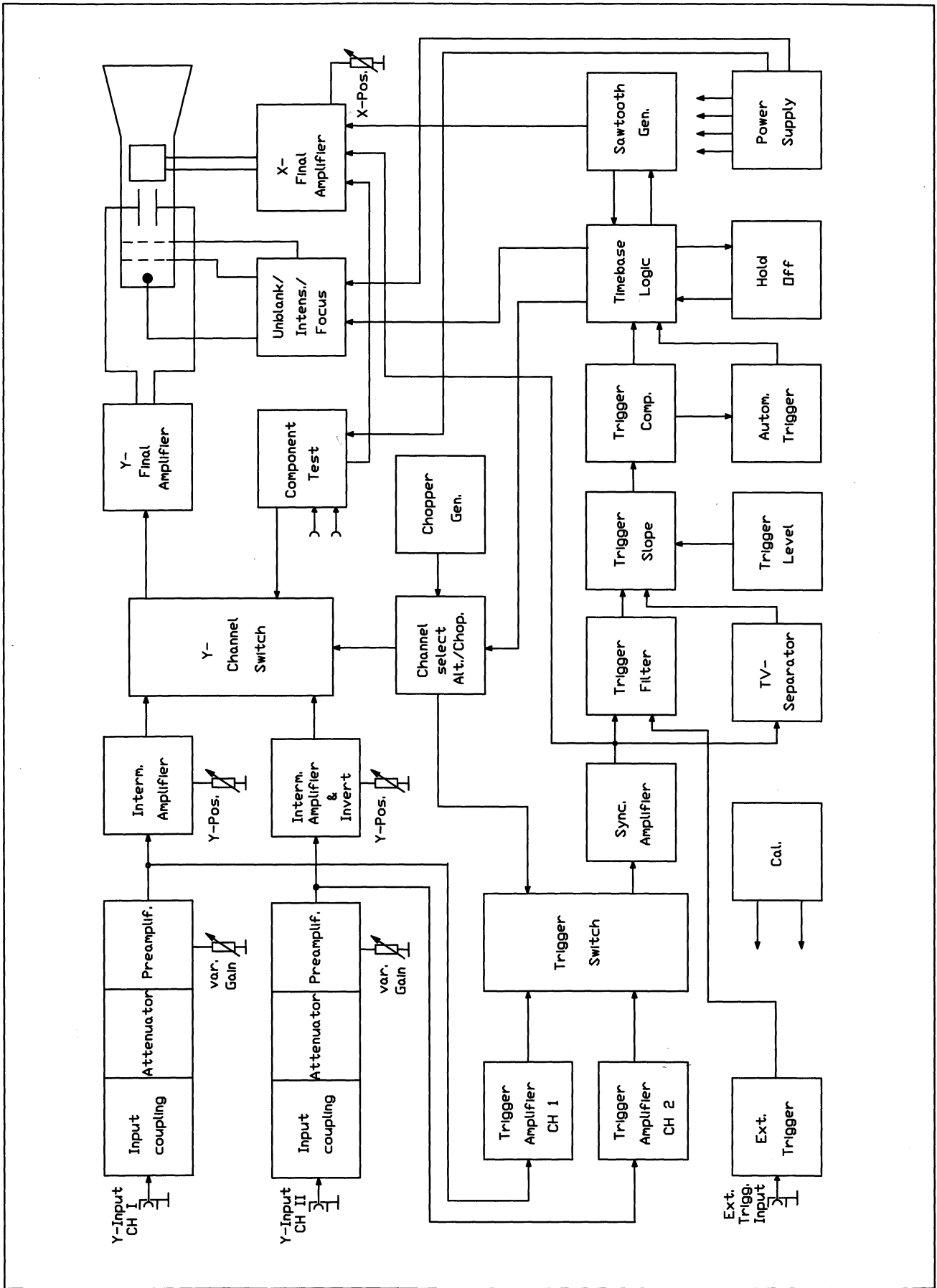
HAMEG

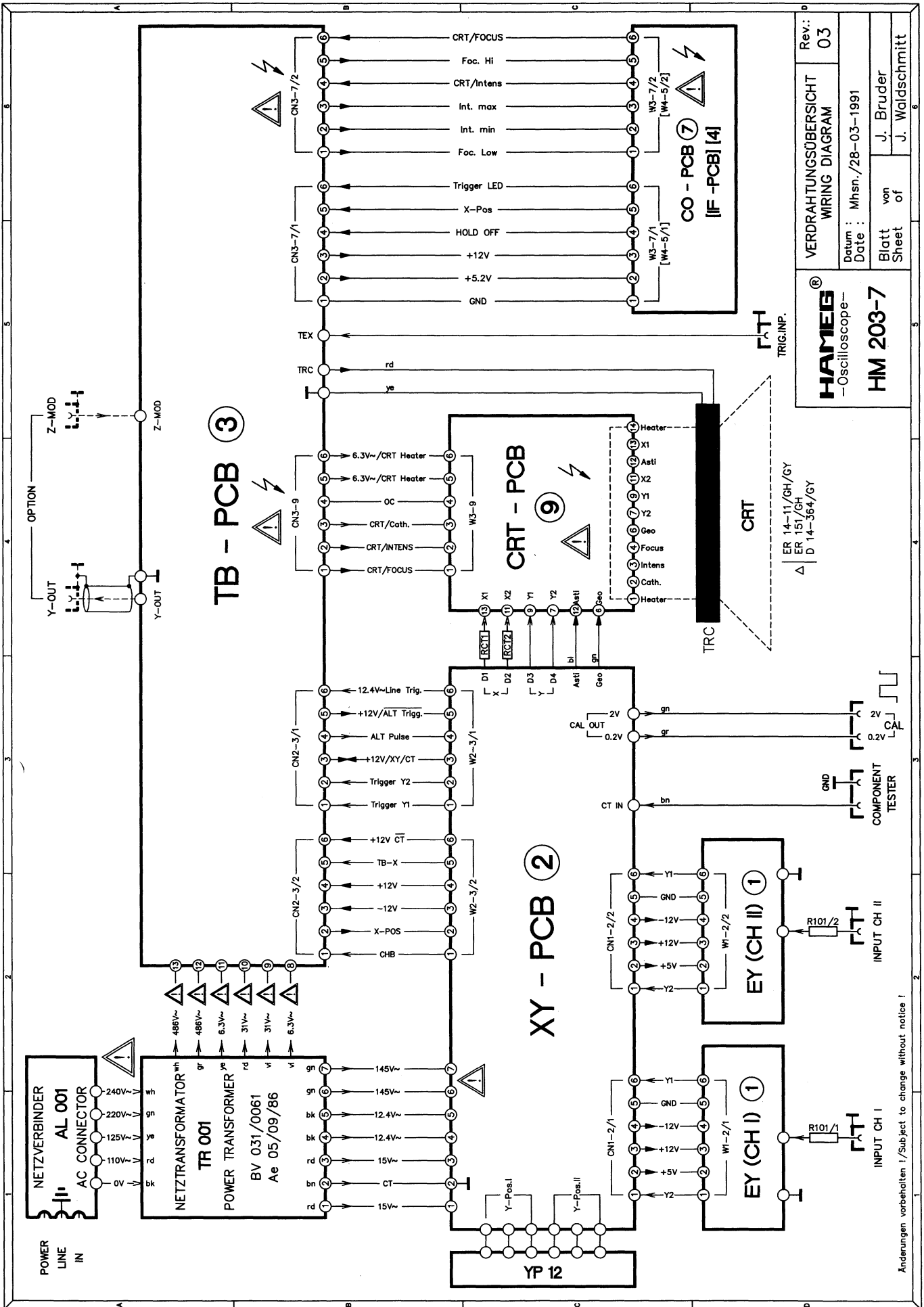
Instruments

MANUAL

Oscilloscope HM203-7







HAMEG -Oscilloscope-		HM 203-7
VERDRÄHTUNGSÜBERSICHT WIRING DIAGRAM	Rev: 03	Blatt von J. Bruder Sheet of J. Waldschmitt
Datum : Mhsn./28-03-1991 Date :		

ER 14-11/GH/GY
 ER 151/GH
 D 14-364/GY

COMPONENT TESTER
 2V
 0.2V

INPUT CH II
 R101/2

INPUT CH I
 R101/2

Die elektrischen Bauteile sind so gekennzeichnet, daß die erste Nummer mit der Baugruppen-Nummer übereinstimmt:

- 0.. Chassis
Y-Eingang, ext. Triggereingang, Y-Stecker, Netzschalter, Netztransformator usw.
- 1.. EY-Board I+II
Eingangsteiler, Y-Vorverstärker (Kanal I + II), GD-AC/DC Schalter
- 2.. X/Y-Board
Y-Zwischenverstärker, Kanalschaltungs-Flip-Flop, Dioden-Schaltlogik, Chopper-Generator, Triggerverstärker, Niederspannungsvorsorgung, Testleiste, X-Endverstärker, Y-Endverstärker, Component-Tester
- 3.. TB-Board
Triggerschaltung, Zeitbasis, Hold-off Schaltung, Helllastung, TV-Sync-Sep., Potentiometer für Strahlendrehung, Hochvolt-Stromversorgung, Testleiste
- 7.. CO-Board
Potentiometer für horizontale Strahlengänge, Power LED, Potentiometer für Hold-off, Potentiometer für Helligkeit und Fokus
- 9.. CRT-Board
CRT-Fassung

Electrical components on certain parts of the HM203-7 are marked such that the first numeral is on:

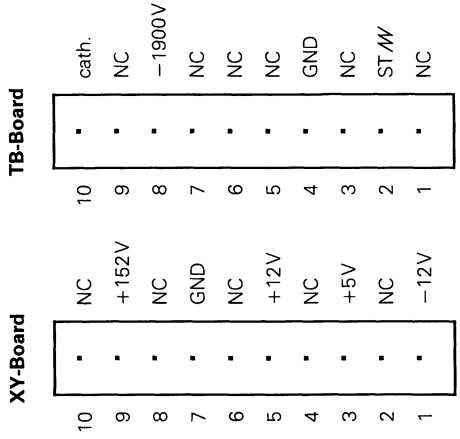
- 0.. Chassis
Y-inputs, Trig.-ext. input, Appliance inlet, Power switch, Power transformer
- 1.. EY-Board I+II
Attenuator and Preamplifier (Channel I + II), GD-AC/DC switches
- 2.. X/Y-Board
Y intermediate amplifiers, Channel selection flip-flop, Y-Gate driver stages, Chopper generator, Trig. and ext. Trigger amplifier, Trig. gate driver stages, LV-Power, Check point strip, Component tester, X-Final amplifier, Y-Final amplifier
- 3.. TB-Board
Trigger circuit, Timebase circuit, Unblanking circuit, Hold-off circuit, TV sync. separator, Trace rotation pot., High voltage power supply, check strip
- 7.. CO-Board
X-pos. pot., Power LED, Hold-off potentiometer, Intensity- and Focus potentiometer
- 9.. CRT-Board
CRT socket

Abkürzungen u. Symbole / Abbreviations and Symbols

Al...	Gerätestecker	/ Appliance inlet
C...	Kondensator	/ Capacitor
TS...	Testpunkt (Testleiste)	/ Check point (check strip)
CN...	Steckverbinder	/ Connector
D...	Brückengleichrichter	/ Bridge rectifier
D...	Diode	/ Diode
D...	Leuchtdiode	/ Light emitting diode
F...	Sicherung	/ Fuse
IC...	Integr. Schaltung	/ Integrated circuit
L...	Spule, Drossel	/ Inductor, Coil
P...	Stecker	/ Plug
SP...	Lötöse	/ Eyelet
R...	Widerstand	/ Resistor
S...	Schalter	/ Switch
T...	Transistor	/ Transistor
TR...	Transformator	/ Transformer
VC...	Trimmkondensator	/ Variable capacitor
W...	Draht	/ Wire
D...	Zenerdiode	/ Z-Diode

- △... Modellabhängig / Depends on model
- * Bauteil / Wert abhängig / Component / value depends on CRT type
- ... Bauteil bei Bedarf / Component when required
- ... Kühlkörper / Thermokopplung / Heat sink / thermal coupling
- ... Achtung - Hinweise d. Handbuchs berücksichtigen / Attention - Refer to manual
- ... Gefahr - Hochspannung / Danger - High voltage
- ... Schutzleiter - Erdschluss / Protective ground (earth) terminal

Testleisten / Check strips



Farbkennzeichnung der Anschlußdrähte / Color-Abbreviations for insulated wire

bk	= schwarz	/ black	gr	= grau	/ grey
bn	= braun	/ brown	wh	= weiß	/ white
rd	= rot	/ red	trp	= transparent	/ transparent
or	= orange	/ orange	gn/ye	= grün-gelb	/ green-yellow stripe
			ye	= gelb	/ yellow
			gn	= grün	/ green
			bl	= blau	/ blue
			vi	= violett	/ violet

Anschlußfolge der Transistoren Terminals of Transistors	BC550C BC560C BF-414 BF-506	BF 199 BF-311 BF-440 BF-959	BF422 BF-423	MPS918 MPS3640	BSX19 (TO18) 2N3866 (TO39) 2N2369A (TO18)	U440	BF-458 BF-472 BD237 BUX86 MJE340	L200C TDA200 1=Input 2=Limiting 3=GND 4=Refer. 5=Output	FST627	BFS20 Code NA BFS17(A/B) Code ES BF596 Code LH
Ansicht von unten Bottom view										
Ansicht von oben Top view										

Beispiel Kabelverbindung: P2-3/1-⑤ bzw. W2-3/1-⑤

- P = Flachkabelstecker (auf Board ..)
- W = Flachkabelverbindung: eine Seite verflötet, andere Seite Buchsenleiste
- 2-3 = Verbindung zwischen Board 2 und Board 3
- 1 = 1. Flachkabelverbindung zwischen Board 2 und 3
- ⑤ = Draht-Nummer des Flachkabels

Example, cable connection: P2-3/1-⑤ or W2-3/1-⑤ respectively

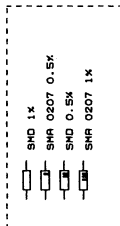
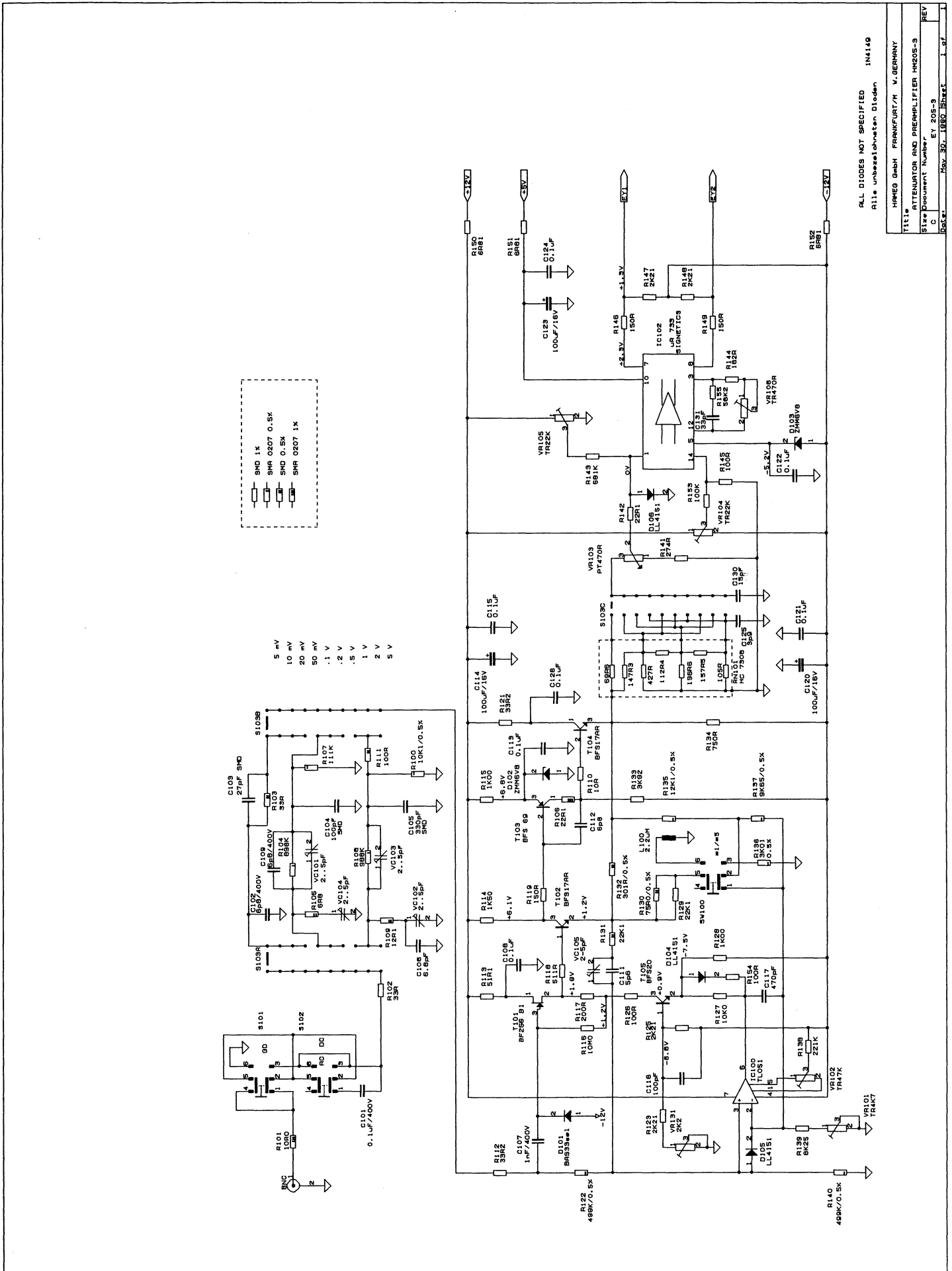
- P = Flat cable plug (soldered on board..)
- W = Flat cable wiring (direct soldered on board) with socket (movable)
- 2-3 = Connection between Board 2 and Board 3
- 1 = First flat cable connection between Board 2 and 3
- ⑤ = Serial number of the wire (in the flat cable)

Widerstand- / Resistor identification

- Widerstand / Resistor: 0.6 W, 1 (2)%, T_c = 50·10⁻⁶K, metal film
- Widerstand / Resistor: 0.25W, 0.5%, T_c = 50·10⁻⁶K, metal film
- Hochvolt Widerstand / High voltage resistor: 1.6kV-, metal film
- Hochvolt Widerstand / High voltage resistor: 3.5kV-, metal film

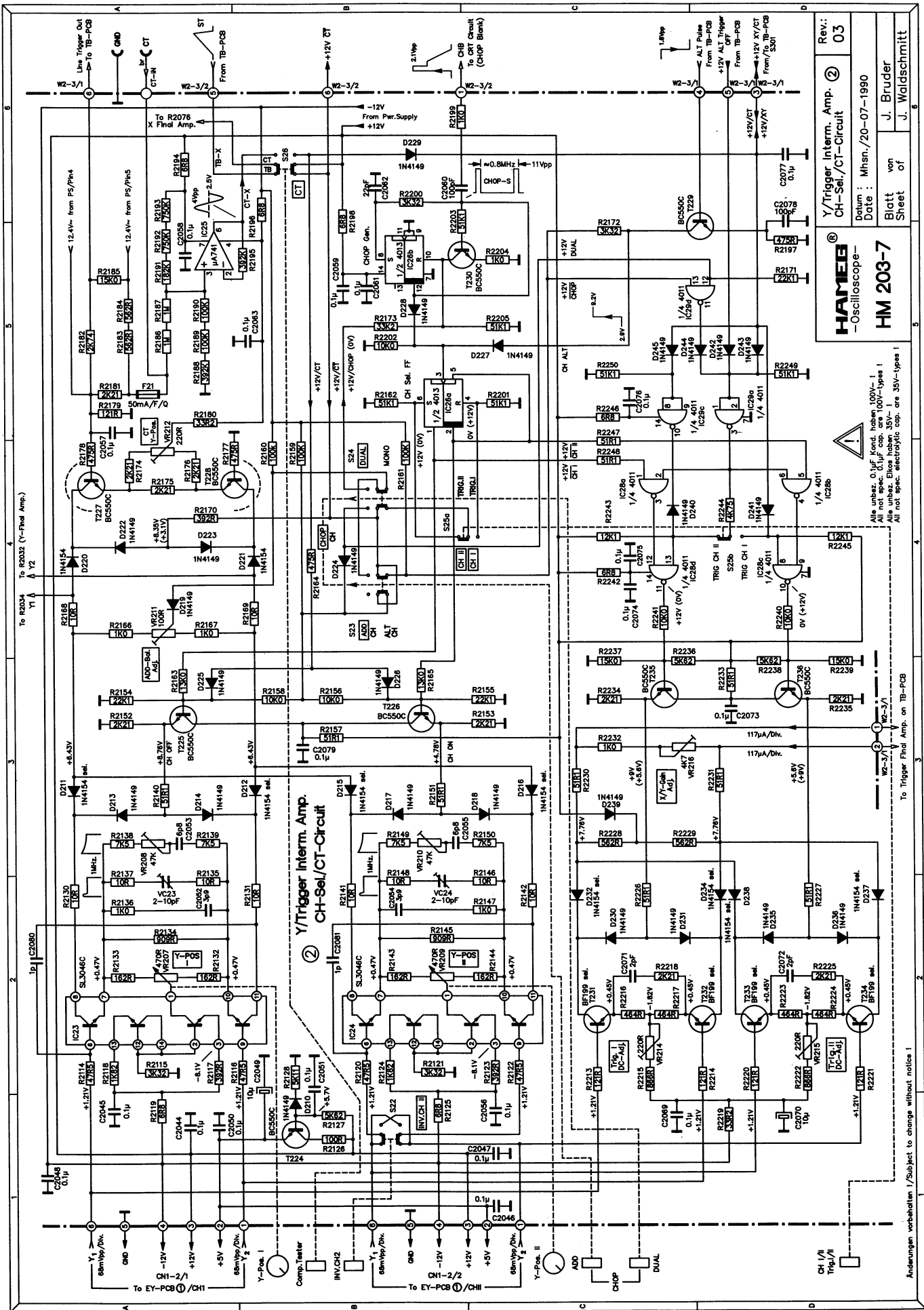
Teilerschalter, Vorverstärker Kanal I (Kanal II)
Attenuator, Preamplifier Channel I (Channel II)

HM203-7



- 5 mV
- 10 mV
- 20 mV
- 50 mV
- 1 V
- 2 V
- 5 V

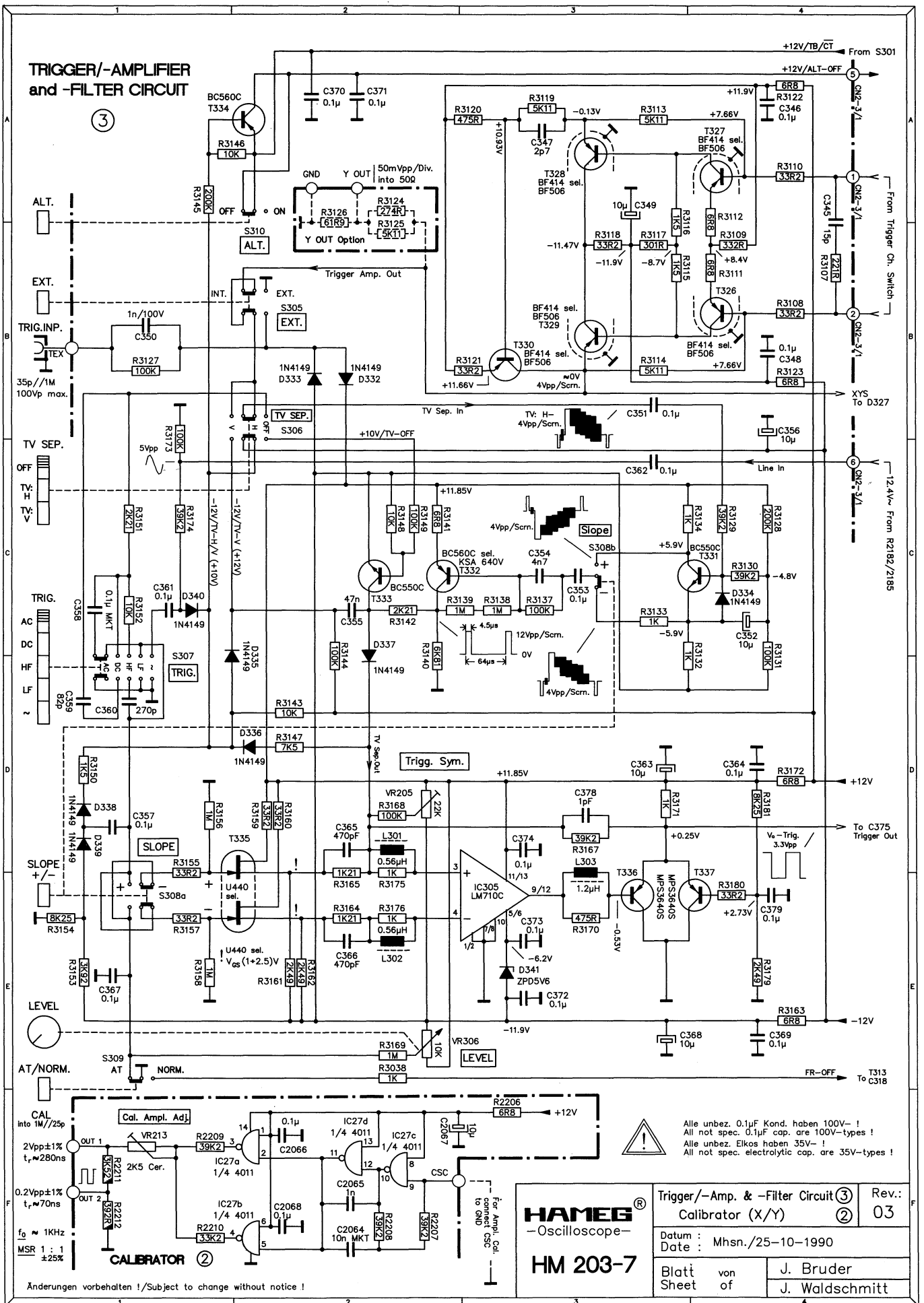
ALL DIODES NOT SPECIFIED
 Alle unbezeichneten Dioden
 INK1149
 HAMEG GmbH FRANKFURT/M V. GERMANY
 ATTENUATOR AND PREAMPLIFIER HM203-3
 EY 203-3
 Rev. 30. 1980 BHzst



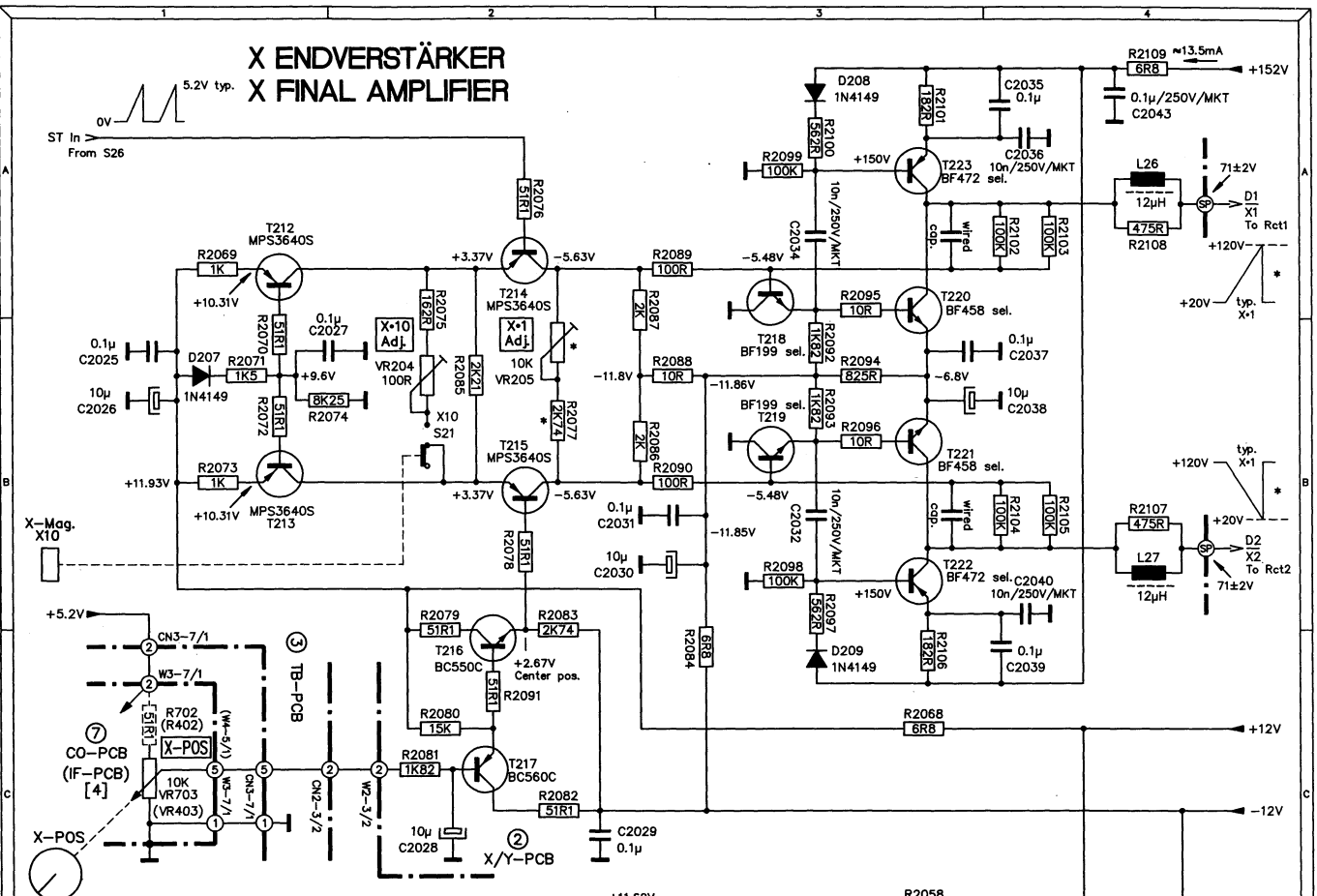
Rev.: 03
 Y/Trigger Interm. Amp. CH-Seq./CT-Circuit
 Datum: Mhsm./20-07-1990
 Blatt von J. Bruder
 Sheet of J. Waldschmitt

HAMEG
 -Oscilloscope-
HM 203-7

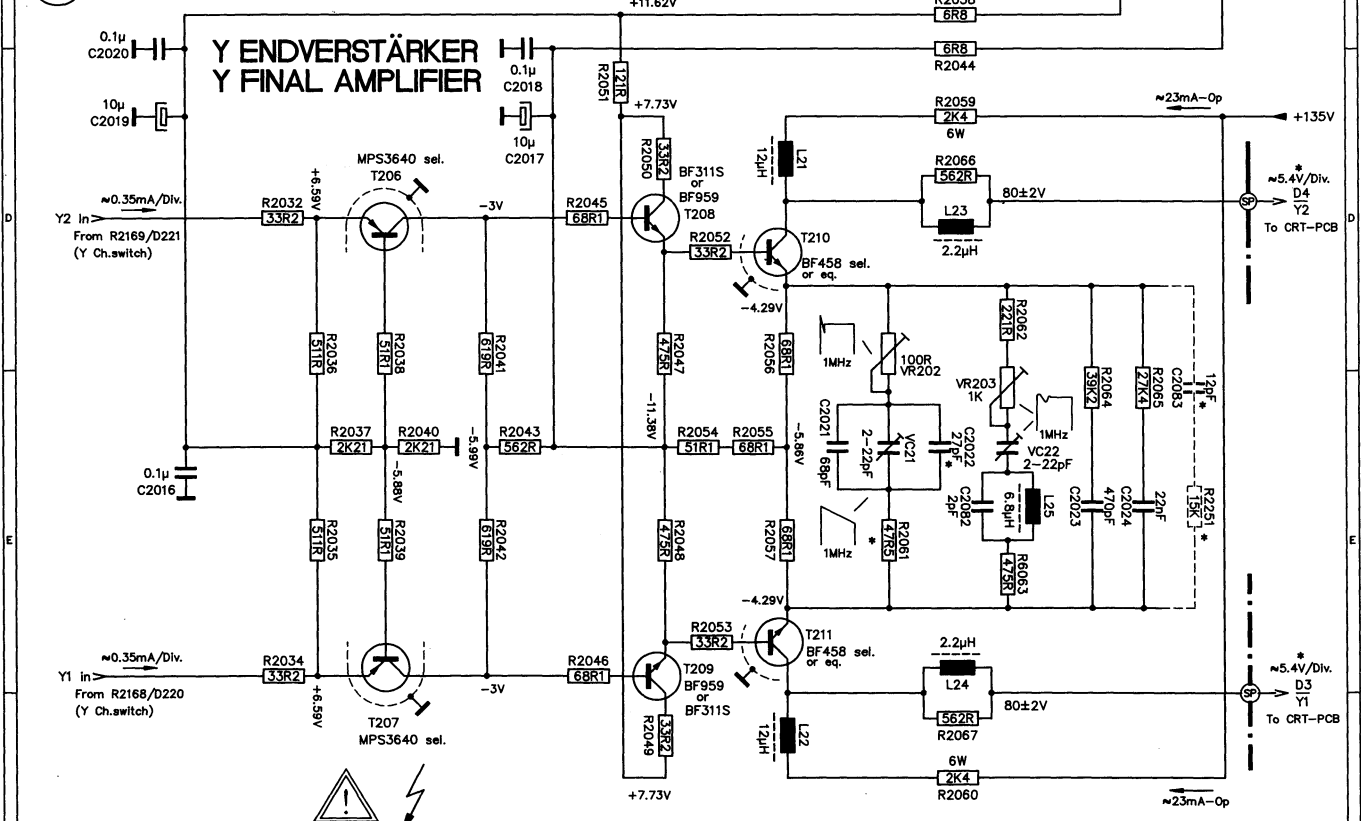
Alle Anz. 0,1µF, 100V-Typen
 Alle Anz. 0,1µF, 100V-Typen
 Alle Anz. Elkos haben 35V-
 Alle Anz. Elkos haben 35V-
 All not spec. electrolytic cap. are 35V-types!



**X ENDVERSTÄRKER
X FINAL AMPLIFIER**



**Y ENDVERSTÄRKER
Y FINAL AMPLIFIER**



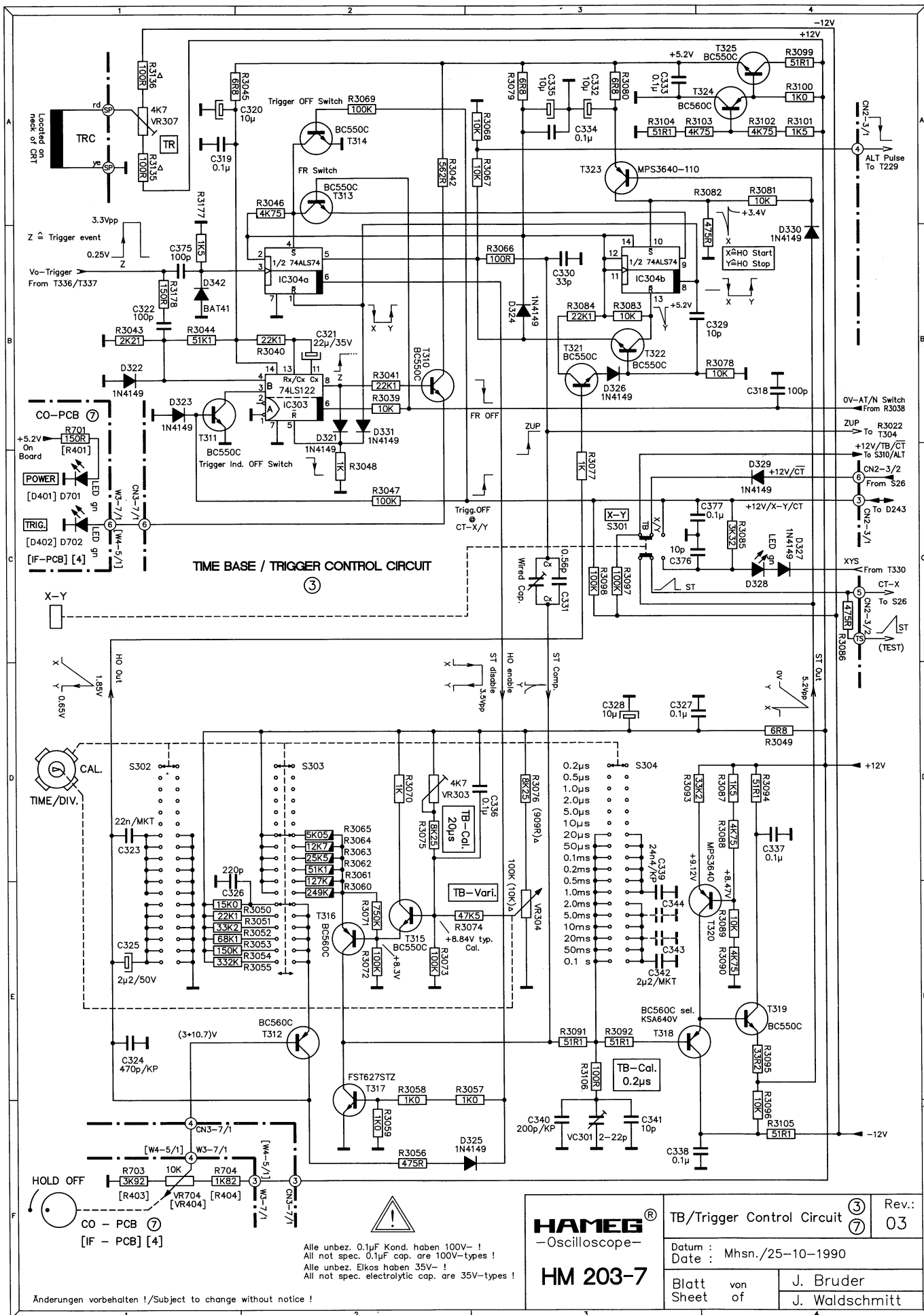
HINWEIS / WARNING !

Dieses Board führt berührunggef. Spannungen !
Dangerous potentials exist throughout this board !
Alle Spannungsangaben beziehen sich auf Punkt-Mittellage
im X/Y-Betrieb
All voltage values refer to spot center position in X/Y mode

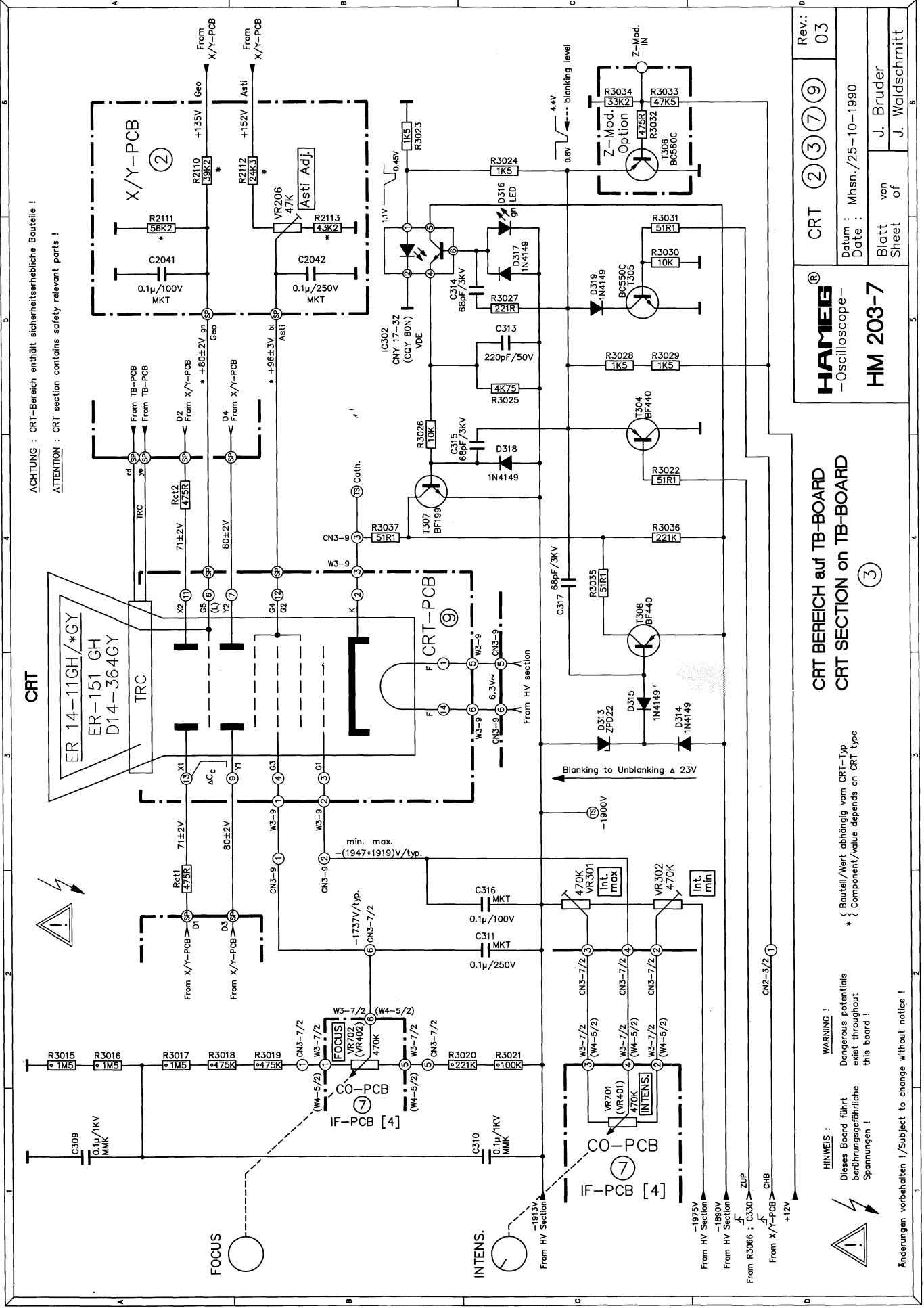
Alle unbez. 0.1µF Kond. haben 100V-!
All not spec. 0.1µF cap. are 100V-types !
Alle unbez. Elkos haben 35V-!
All not spec. electrolytic cap. are 35V-types !
* Bauteil/Wert abhängig von CRT-Typ
* Component/value depends on CRT type

Änderungen vorbehalten ! / Subject to change without notice !

<p>HAMEG -Oscilloscope-</p> <p>HM 203-7</p>	<p>X/Y-Final Amp. ② ⑦</p>	<p>Rev.: 03</p>
	<p>Datum : Mhns./20-07-1990 Date :</p>	<p>J. Bruder J. Waldschmitt</p>



ACHTUNG : CRT-Bereich enthält sicherheitsrelevante Bauteile !
ATTENTION : CRT section contains safety relevant parts !



CRT

ER 14-11GH/*GY
ER-151 GH
D14-364GY

X/Y-PCB (2)

F CRT-PCB (9)

CO-PCB (7)

IF-PCB (4)

CRT BEREICH auf TB-BOARD
CRT SECTION on TB-BOARD

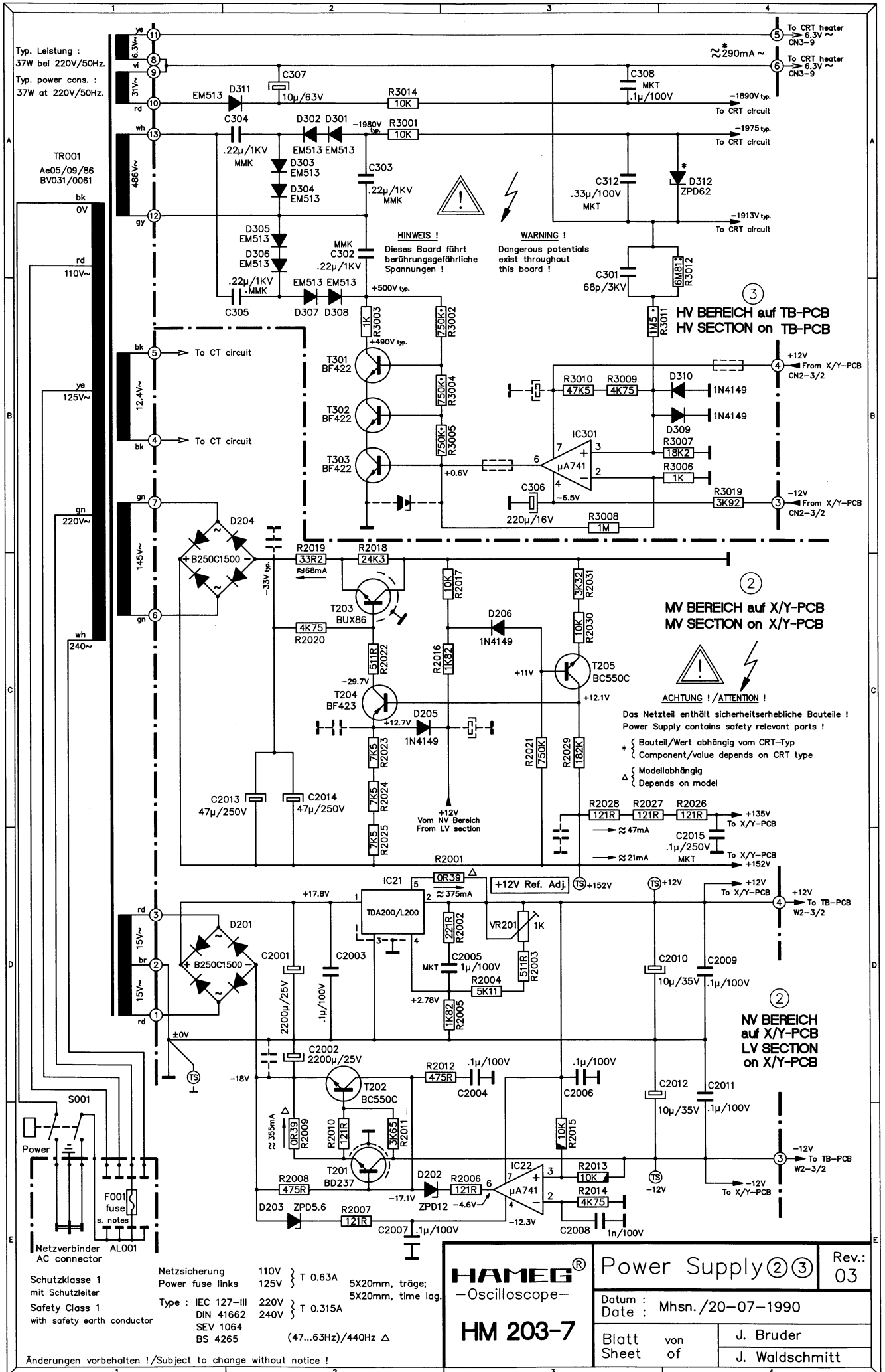
HAMEG®
-Oscilloscope-

Rev.: 03
Date: Mhns./25-10-1990
Blatt von J. Bruder
Sheet of J. Waldschmitt

HM 203-7

HINWEIS :
Dieses Board führt gefährliche Spannungen !
DANGER !
Dangerous potentials exist throughout this board !

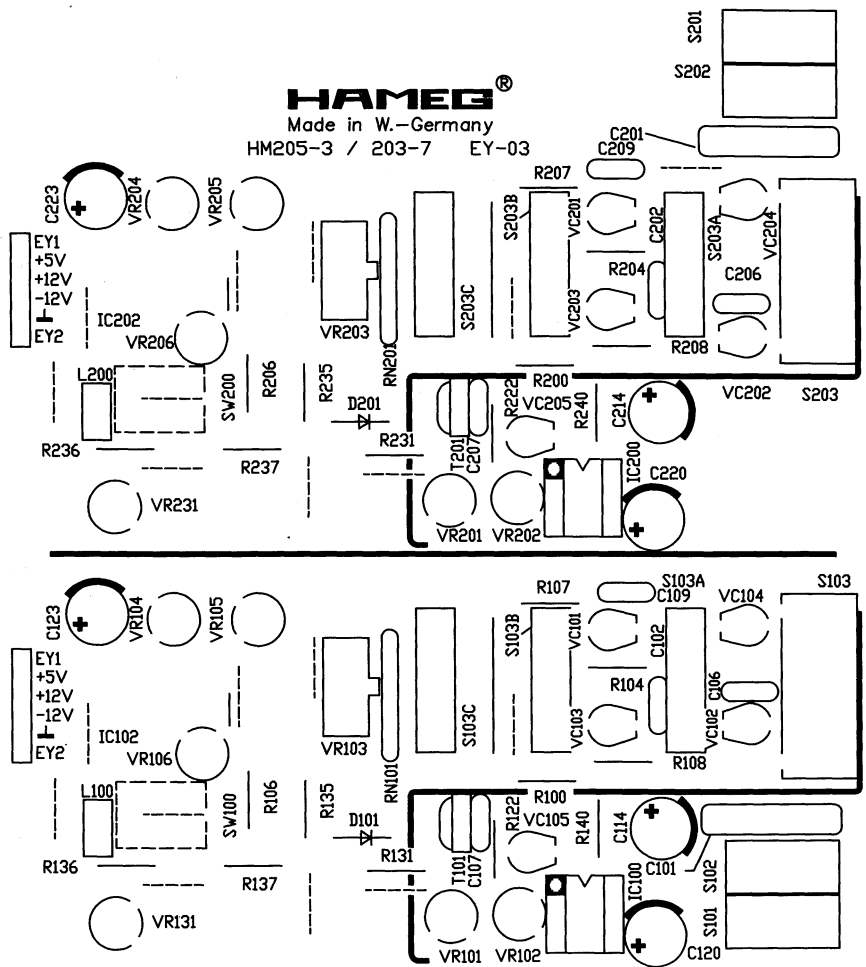
Änderungen vorbehalten ! / Subject to change without notice !



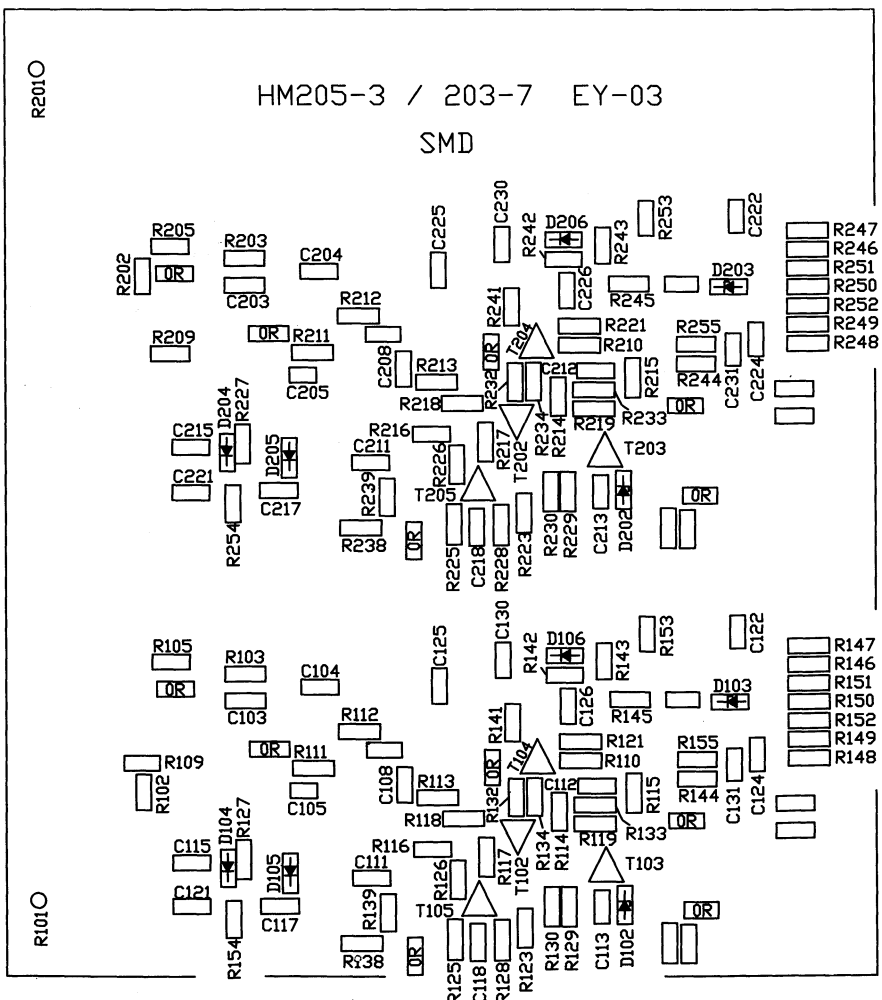
HAMEG® -Oscilloscope- HM 203-7		Power Supply ②③		Rev.: 03
		Datum : Mhns./20-07-1990 Date :		Blatt von Sheet of
		J. Bruder		J. Waldschmitt

Bestückungsplan EY-Board
Component Locations EY Board

oben
top



unten
bottom



Bestückungsplan IF-Board
Component Locations IF Board

