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S C H E M A T I C D I A G R A M

J O H A N N U S

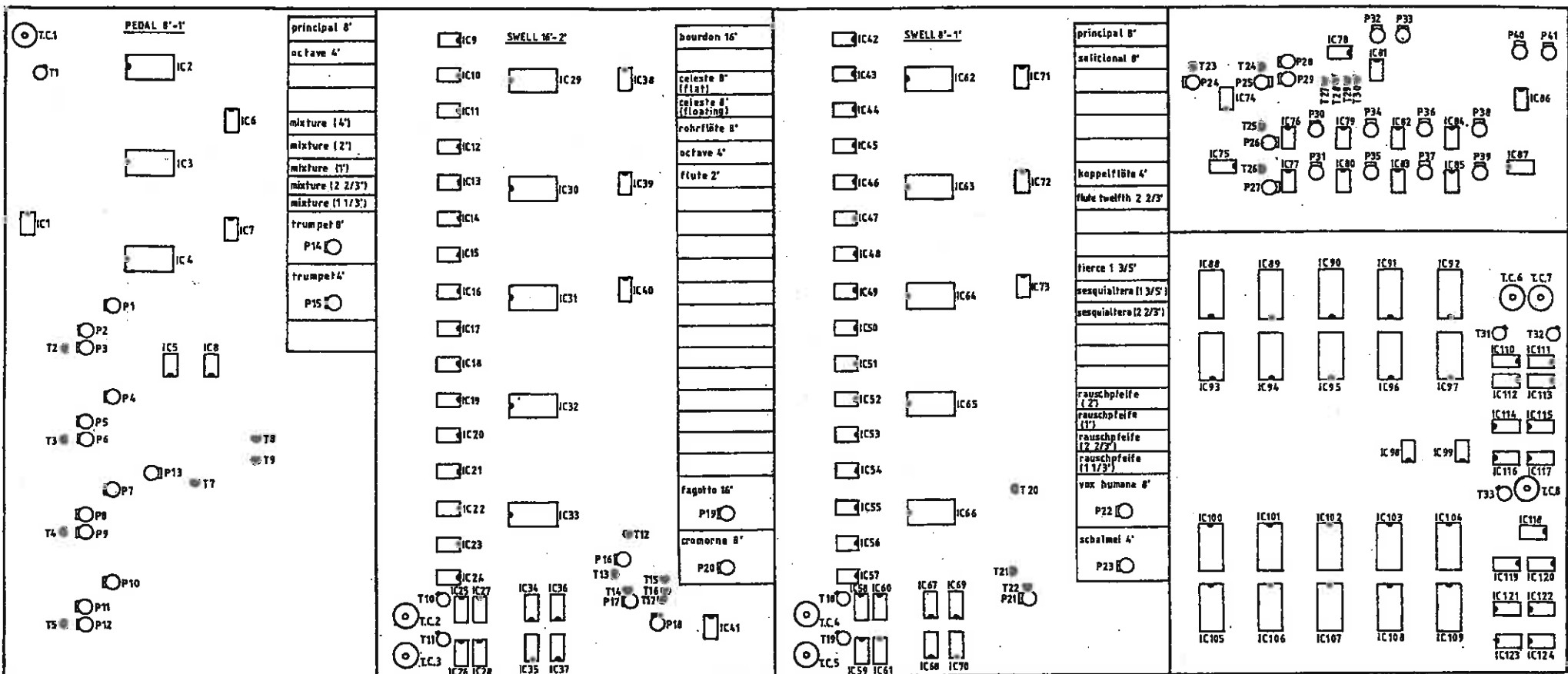
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alterations reserved

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- P1: volume treble choir amplifier
- P2: bass adjustment treble choir amplifier
- P3: treble adjustment treble choir amplifier
- P4: volume treble swell amplifier
- P5: bass adjustment treble swell amplifier
- P6: treble adjustment treble swell amplifier
- P7: volume middle swell amplifier
- P8: bass adjustment middle swell amplifier
- P9: treble adjustment middle swell amplifier
- P10: volume bass swell amplifier
- P11: bass adjustment bass swell amplifier
- P12: treble adjustment bass swell amplifier
- P13: linearity expression pedal swell
- P14: volume trumpet 8' pedal
- P15: volume trumpet 4' pedal
- P16: tremulant speed swell
- P17: hick depth swell 16'-2'
- P18: tremulant depth swell
- P19: volume fagotto 16' swell
- P20: volume cromorne 8' swell
- P21: hick depth swell 8'-1'
- P22: volume vox humana 8' swell
- P23: volume schalmei 4'

- P24: amplitude output channel A echo unit
- P25: amplitude output channel B echo unit
- P26: clockripple elimination delay line echo unit channel B
- P27: clockripple elimination delay line echo unit channel A
- P28: amplitude feed-back signal channel A to channel B
- P29: amplitude feed-back signal channel B to channel A
- P30: DC-offset IC 76
- P31: DC-offset IC 77
- P32: clockfrequency
- P33: amplitude chorus
- P34: DC-offset IC 79
- P35: DC-offset IC 80
- P36: DC-offset IC 82
- P37: DC-offset IC 83
- P38: DC-offset IC 84
- P39: DC-offset IC 85
- P40: amplitude input channel B echo unit
- P41: amplitude input channel A echo unit

- T.C. 1: tuning pedal 8'-1'
- T.C. 2: tuning 2nd & 4th octave swell 16'-2'
- T.C. 3: tuning 1st; 3rd & 5th octave swell 16'-2'
- T.C. 4: tuning 2nd; 4th & 5th octave swell 8'-1'
- T.C. 5: tuning 1st & 3rd octave 8'-1'
- T.C. 6: tuning diapason great
- T.C. 7: tuning tierce great
- T.C. 8: tuning celeste & tierce swell

- IC 1; 36; 37; 69; 70; 116; 117; 123-125; 159; 160; 192; 193; 224; 225.....4520
- IC 2-4; 29-33; 62-66; 126-128; 152-156; 185-189; 217-221; 230-234.....TMS 3617
- IC 5-8; 38-41; 71-74; 86; 98; 99; 129-131; 161-164; 194-196; 226-229; 235.....TL 074
- IC 9-24; 42-57; 132-147; 165-180; 197-212.....LM 339
- IC 25; 26; 58; 59; 110; 111; 118; 148; 149; 181; 182; 213; 214.....MO 83
- IC 27; 28; 60; 61; 112; 113; 119; 120; 150; 151; 183; 184; 215; 216.....4512
- IC 34; 35; 67; 68; 114; 115; 121; 122; 157; 158; 190; 191; 222; 223.....4046
- IC 75; 87.....NE 570
- IC 76; 77; 79; 80; 82; 83; 84; 85.....TDA 2108
- IC 78.....4093
- IC 81.....LM 324
- IC 88-97; 100-109.....TMS 3615

- T 1; 10; 11; 18; 19; 31-34; 44; 45; 52; 53; 57; 58; 127.....BC 141
- T 2-7; 12-17; 20-26; 28; 29; 35-41; 46-61; 54-56; 59-126.....BC 549
- T 8; 9; 42; 43.....BC 337
- T 27; 30.....BC 558

T6 IS DISPOSED

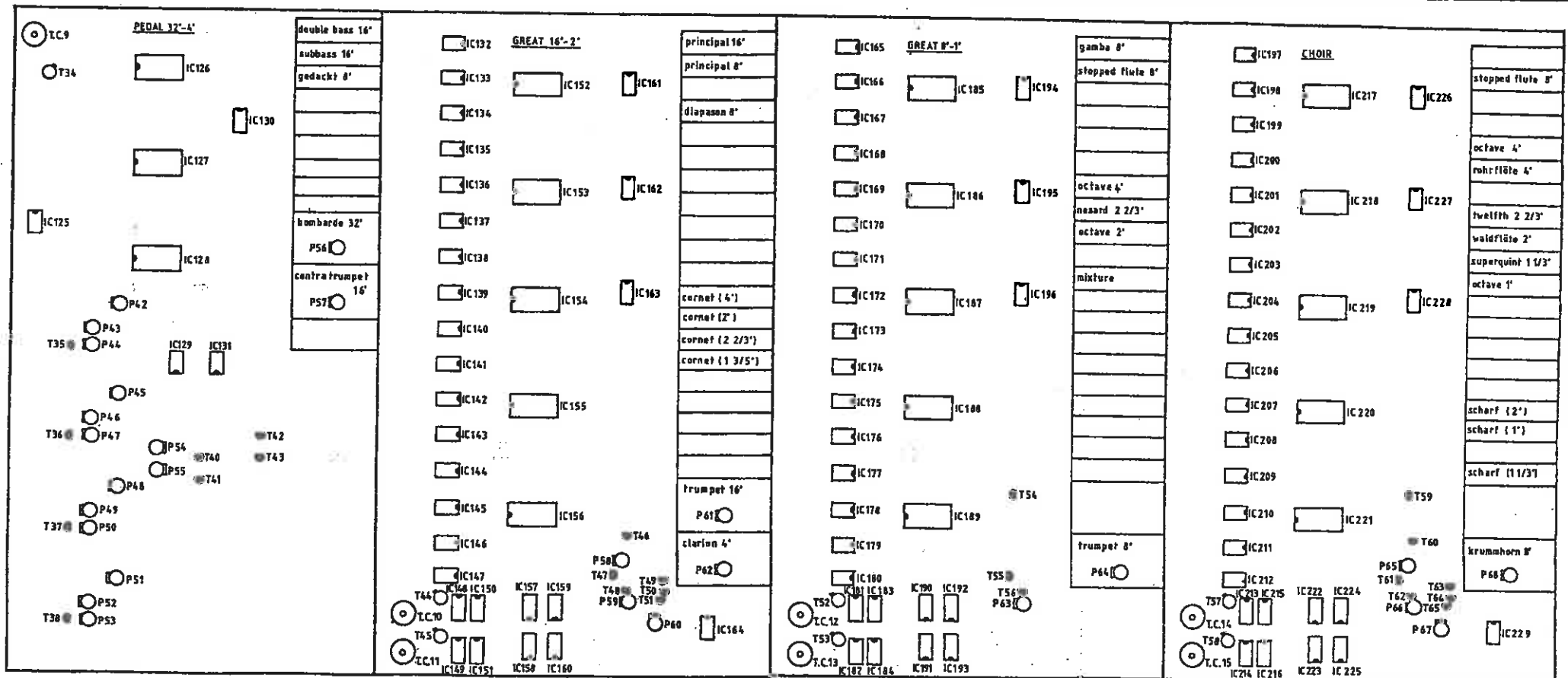
POSITION DIAGRAM (part 1)

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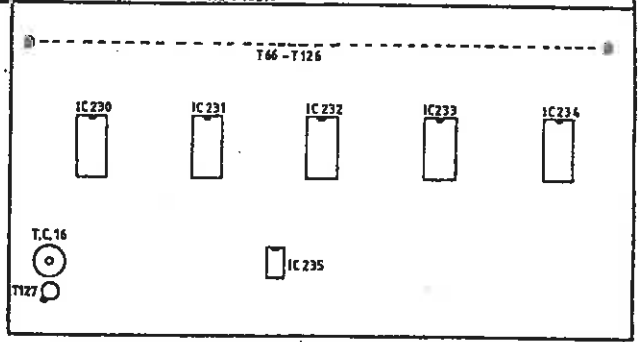
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- P42: volume bass choir amplifier
- P43: bass adjustment bass choir amplifier
- P44: treble adjustment bass choir amplifier
- P45: volume treble pedal/great amplifier
- P46: bass adjustment treble pedal/great amplifier
- P47: treble adjustment treble pedal/great amplifier
- P48: volume middle pedal/great amplifier
- P49: bass adjustment middle pedal/great amplifier
- P50: treble adjustment middle pedal/great amplifier
- P51: volume bass pedal/great amplifier
- P52: bass adjustment bass pedal/great amplifier
- P53: treble adjustment bass pedal/great amplifier
- P54: linearity expression pedal choir
- P55: linearity expression pedal great
- P56: volume bombarde 32' pedal
- P57: volume contra trumpet 16' pedal
- P58: tremulant speed great
- P59: hich depth great 16'-2'
- P60: tremulant depth great
- P61: volume trumpet 16' great
- P62: volume clarion 4' great
- P63: hick depth great 8'-1'
- P64: volume trumpet 8' great
- P65: tremulant speed choir
- P66: hick depth choir
- P67: tremulant depth choir
- P68: volume krummhorn 8' choir

- T.C. 9: tuning pedal 32"-4'
- T.C. 10: tuning 2nd & 4th octave great 16'-2'
- T.C. 11: tuning 1st; 3rd & 5th octave great 16'-2'
- T.C. 12: tuning 2nd; 4th & 5th octave great 8'-1'
- T.C. 13: tuning 1st & 3rd octave great 8'-1'
- T.C. 14: tuning 2nd; 4th & 5th octave choir 8'-1'
- T.C. 15: tuning 1st & 3rd octave choir 8'-1'
- T.C. 16: tuning mixture great



T39 IS DISPOSED

POSITION DIAGRAM (part 2)

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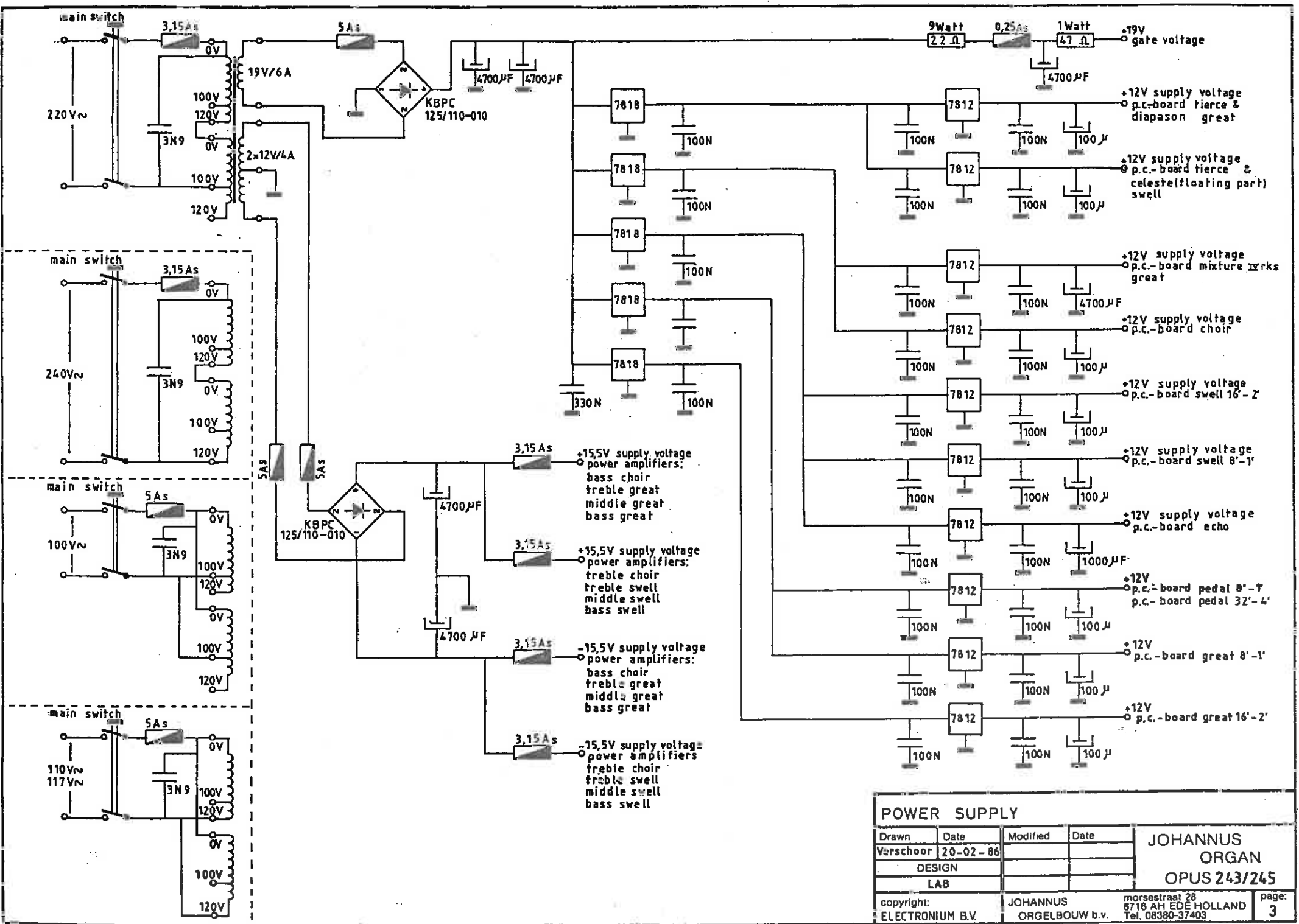
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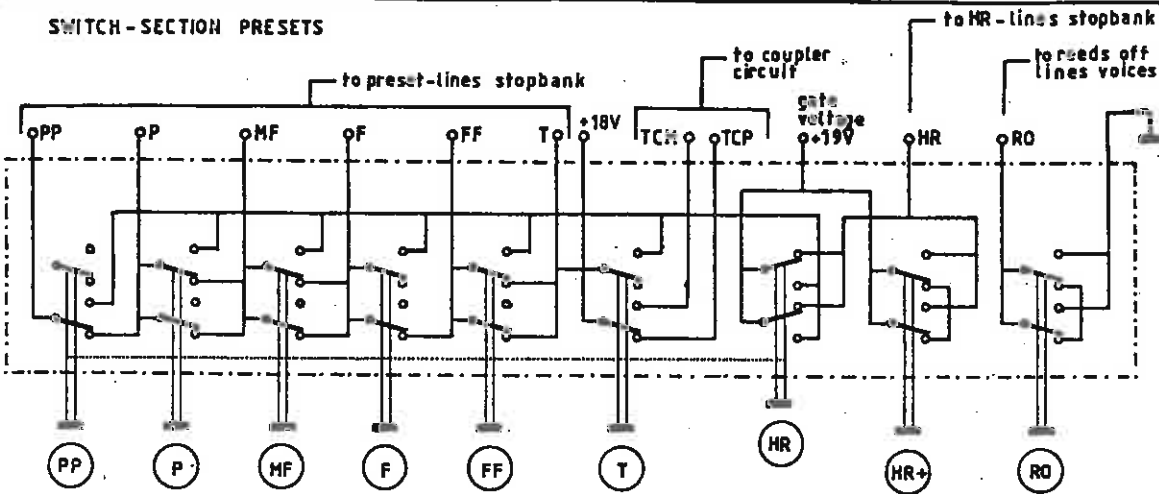
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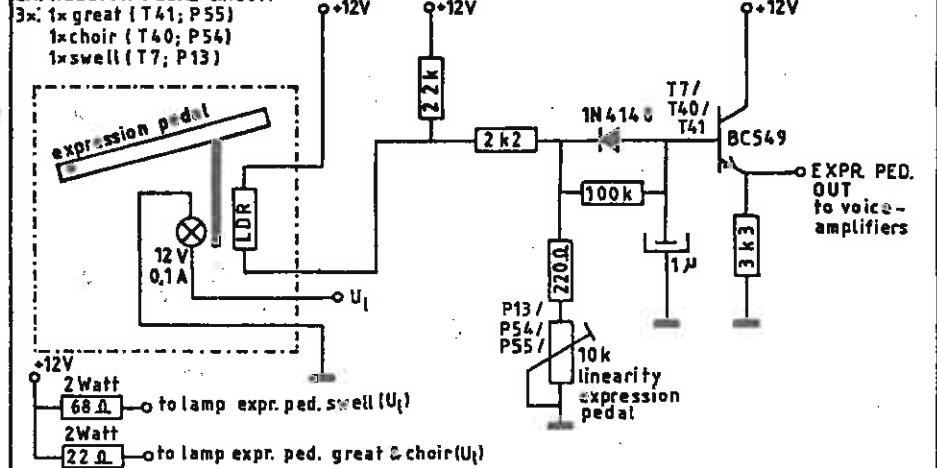


POWER SUPPLY				JOHANNUS ORGAN OPUS 243/245
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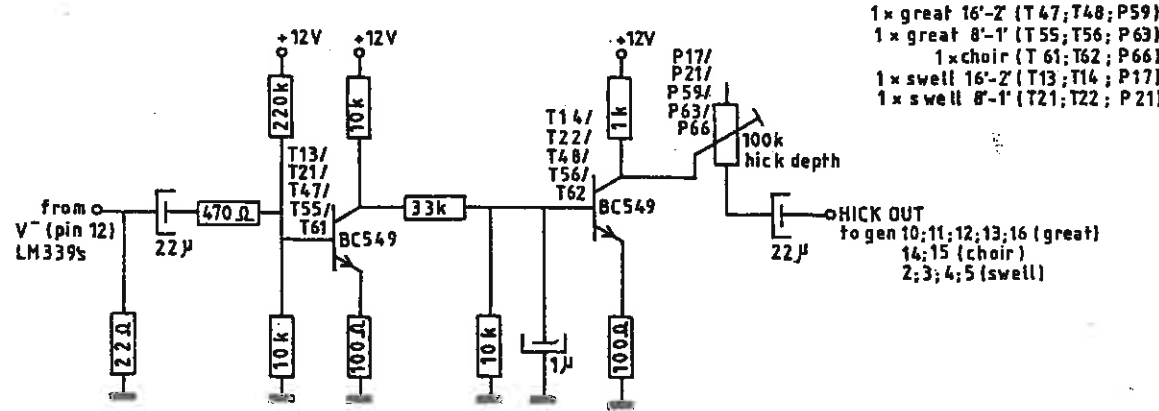
SWITCH-SECTION PRESETS



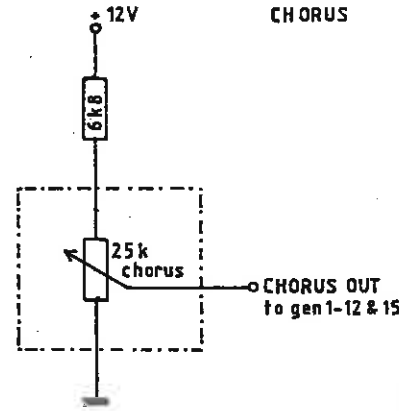
EXPRESSION PEDAL CIRCUIT



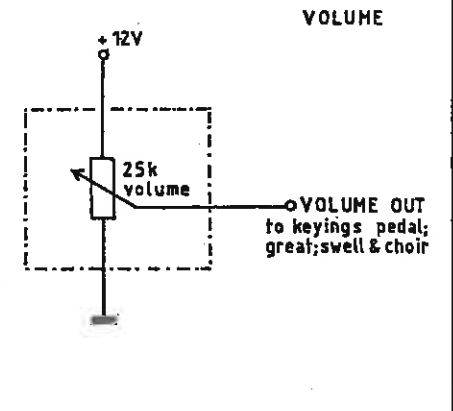
HICK CIRCUIT 5x:



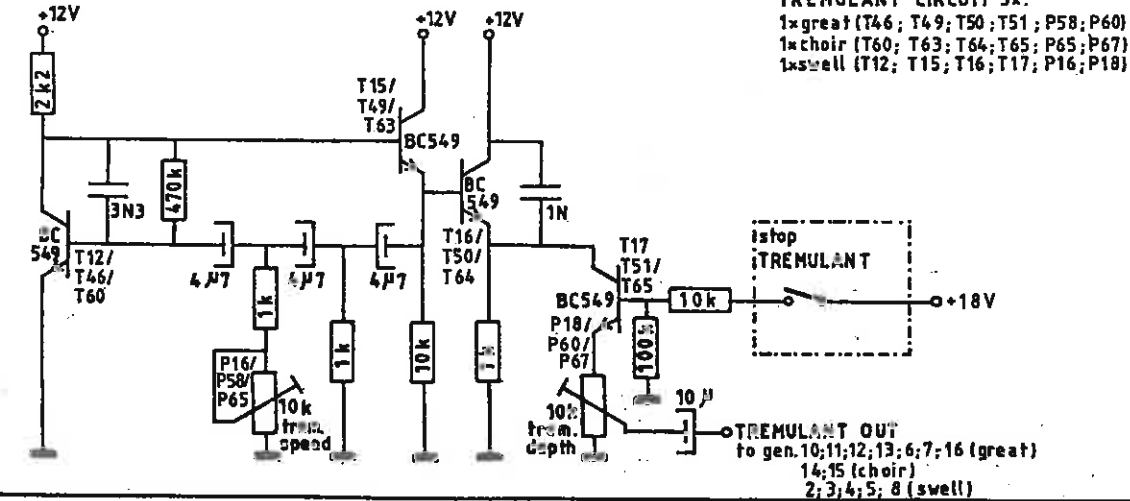
CHORUS



VOLUME



TREMULANT CIRCUIT 3x:

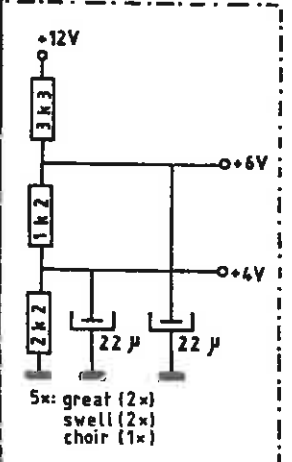
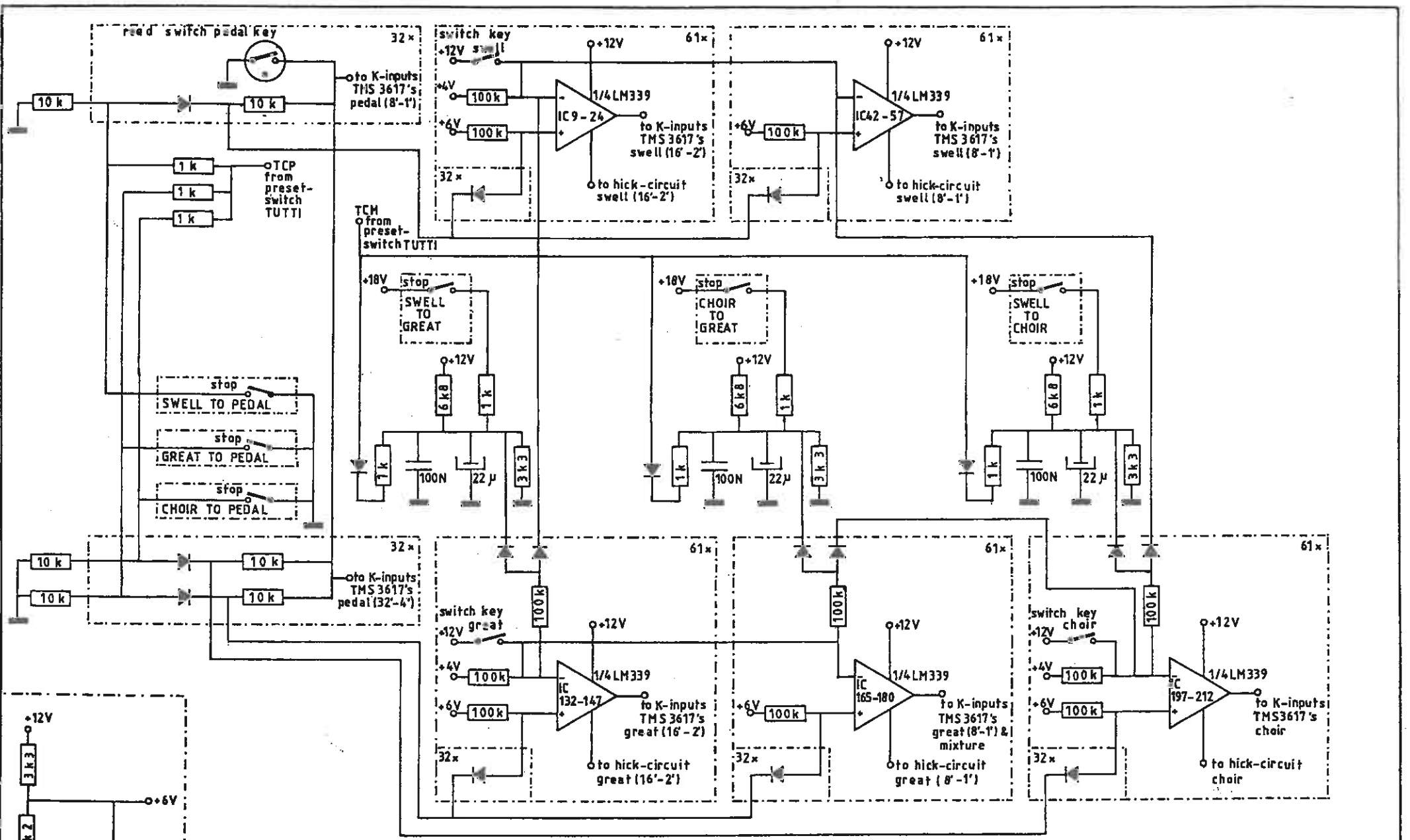


SWITCH - SECTION

PRESETS ; HICK CIRCUIT ; TREMULANT CIRCUIT ;

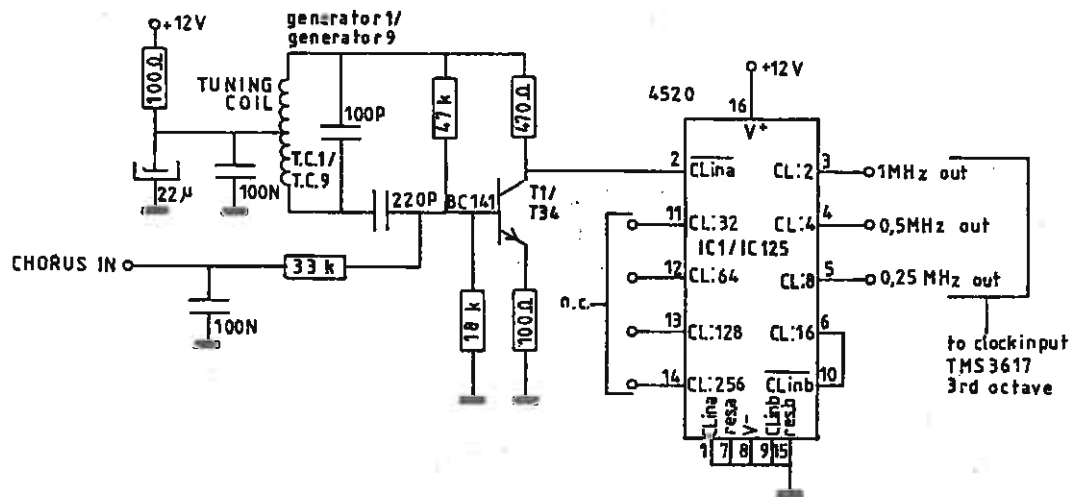
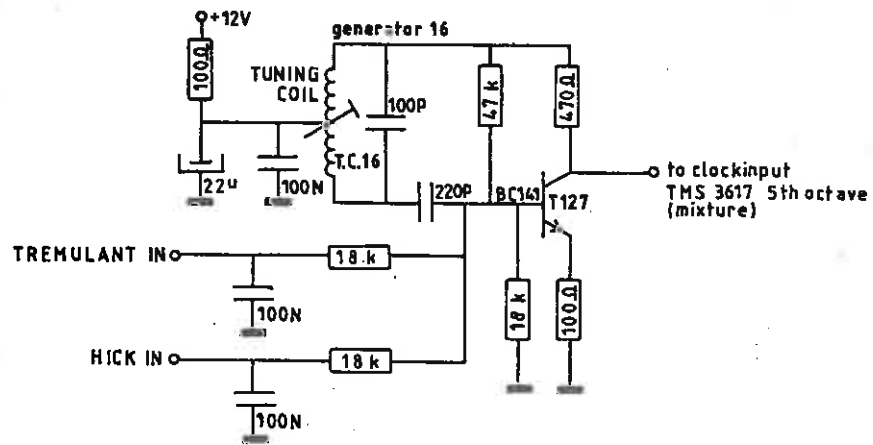
EXPRESSION PEDAL CIRCUIT ; CHORUS & VOLUME

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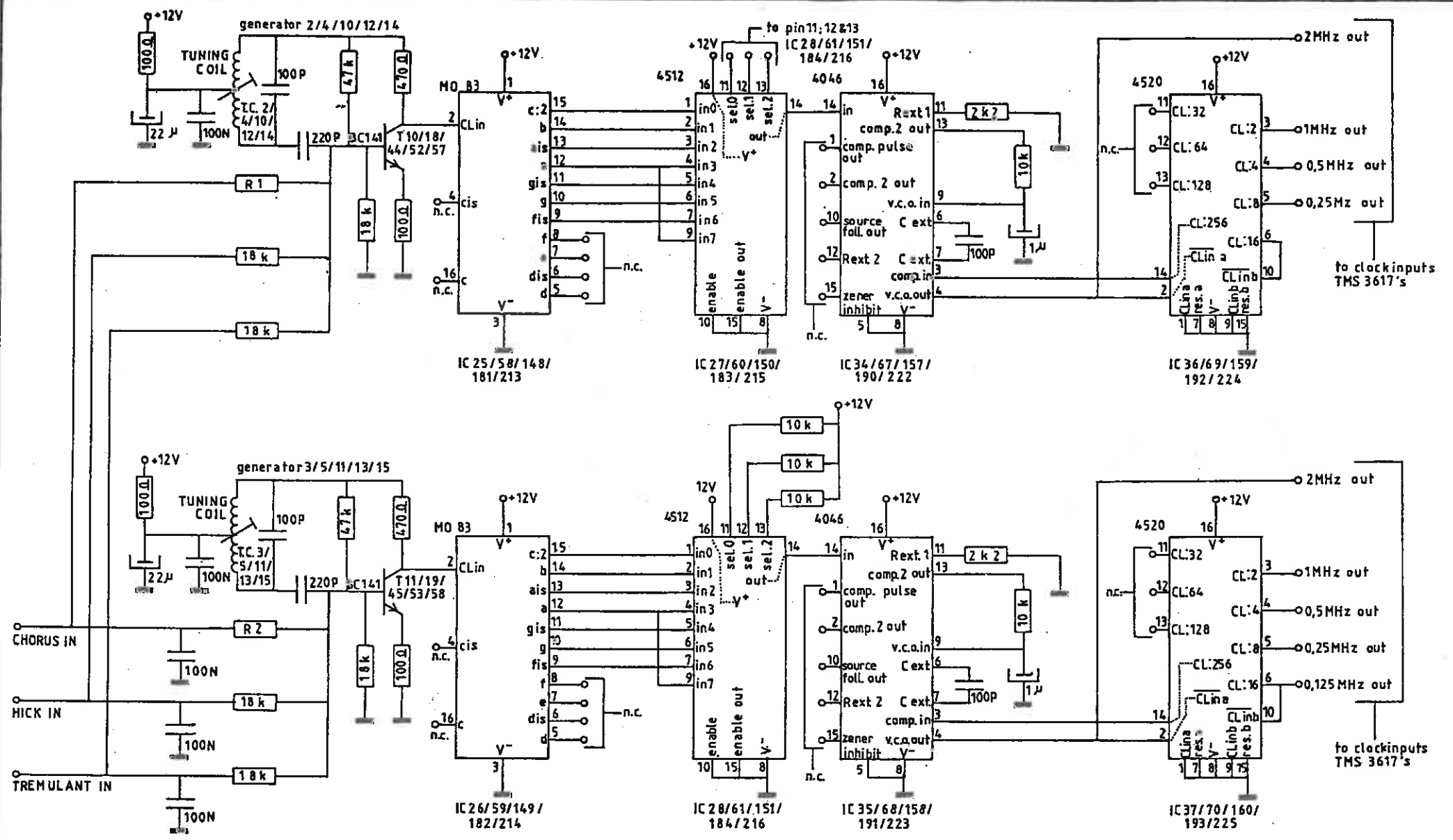
ALL DIODES: 1N 4148

COUPLER CIRCUIT				JOHANNUS ORGAN OPUS 243/245
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GENERATORS MIXTURE (upper) & PEDAL (2x lower)

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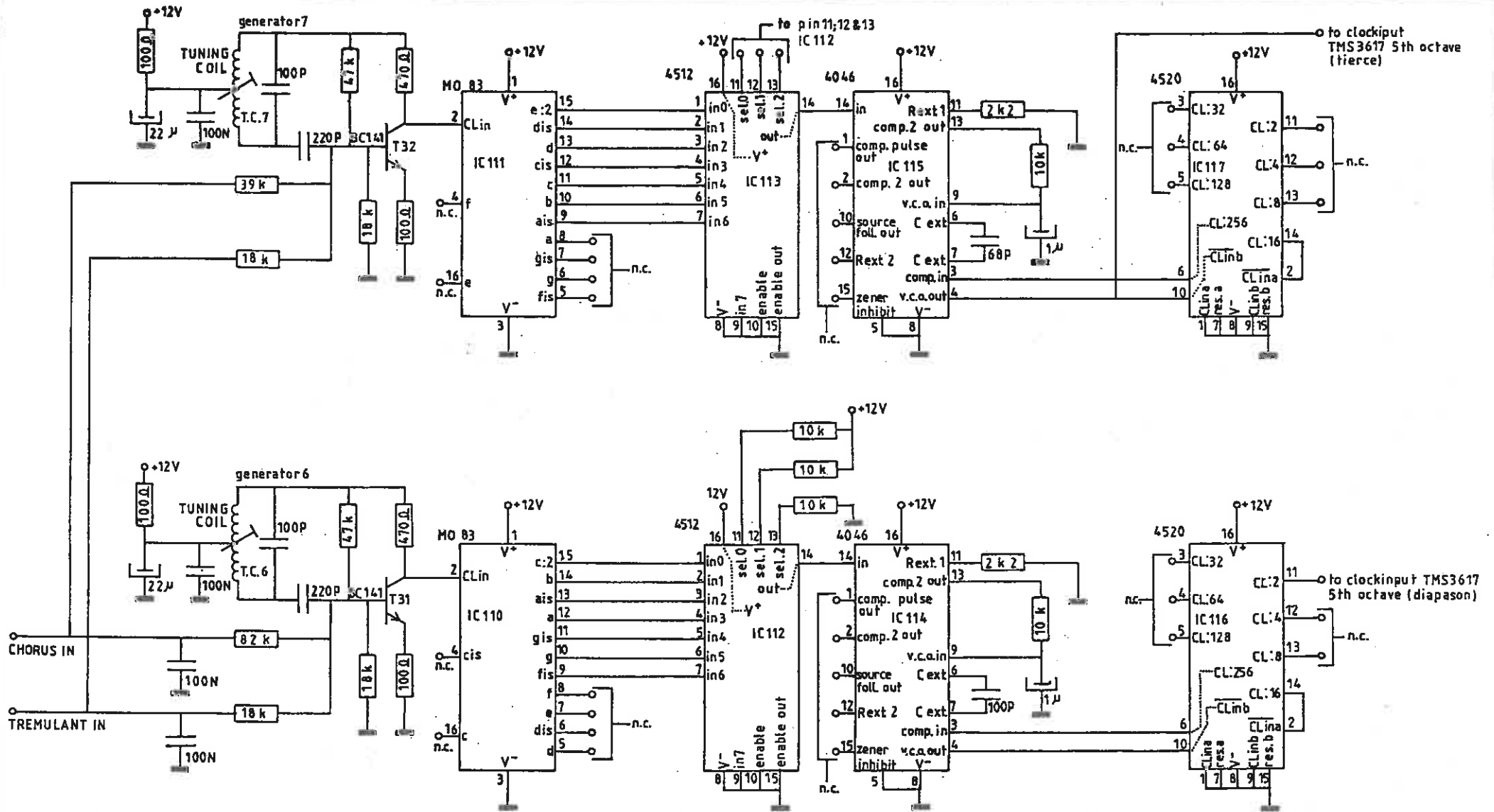


- generator 2: R 1 = 27k
 4: R 1 = 60k
 10: R 1 = 39k
 12: R 1 = 150k
 14: R 1 = —
 3: R 2 = 33k
 5: R 2 = 82k
 11: R 2 = 47k
 13: R 2 = —
 15: R 2 = 120k

GENERATORS MANUALS
 (2x GREAT; 2x SWELL & 1x CHOIR)

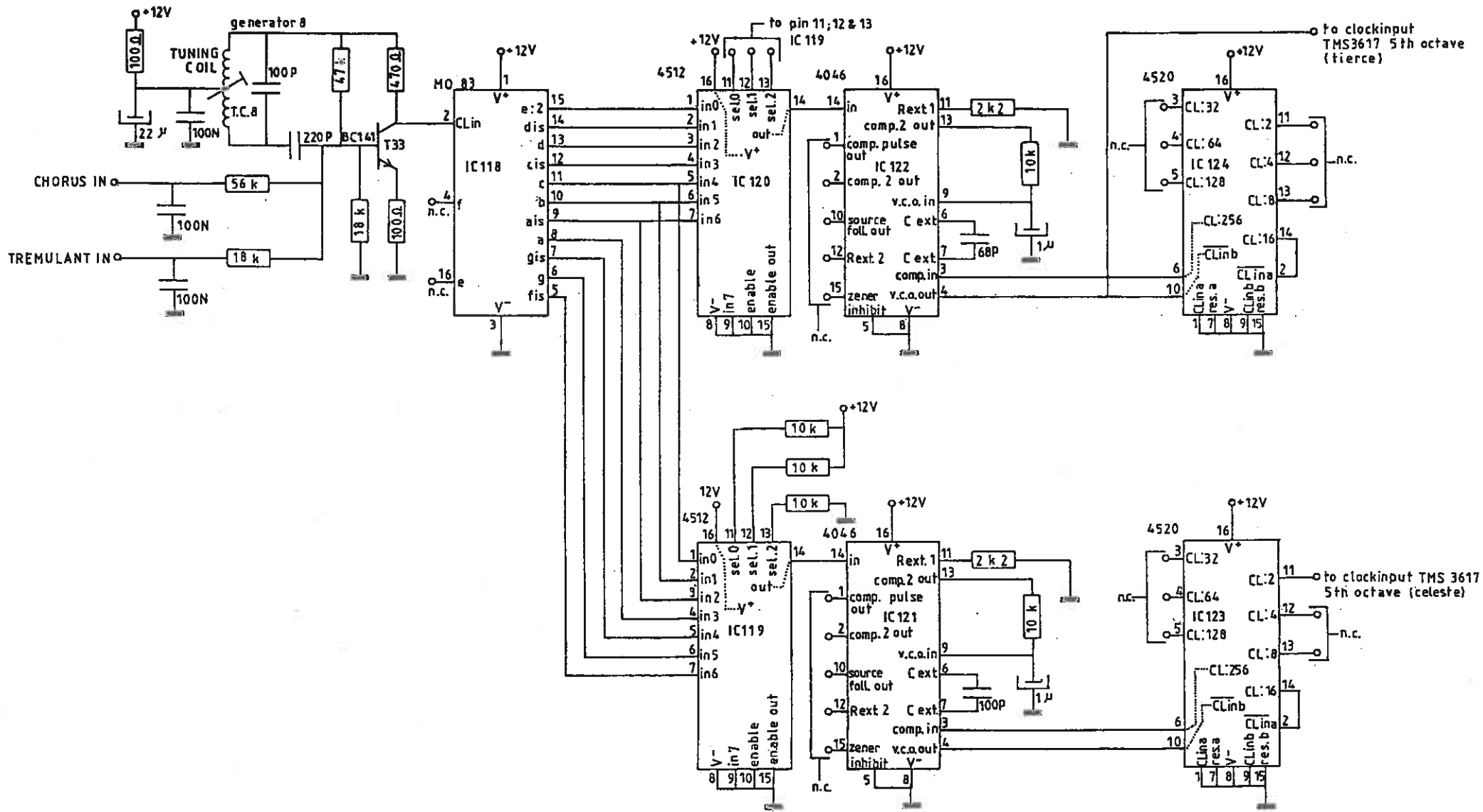
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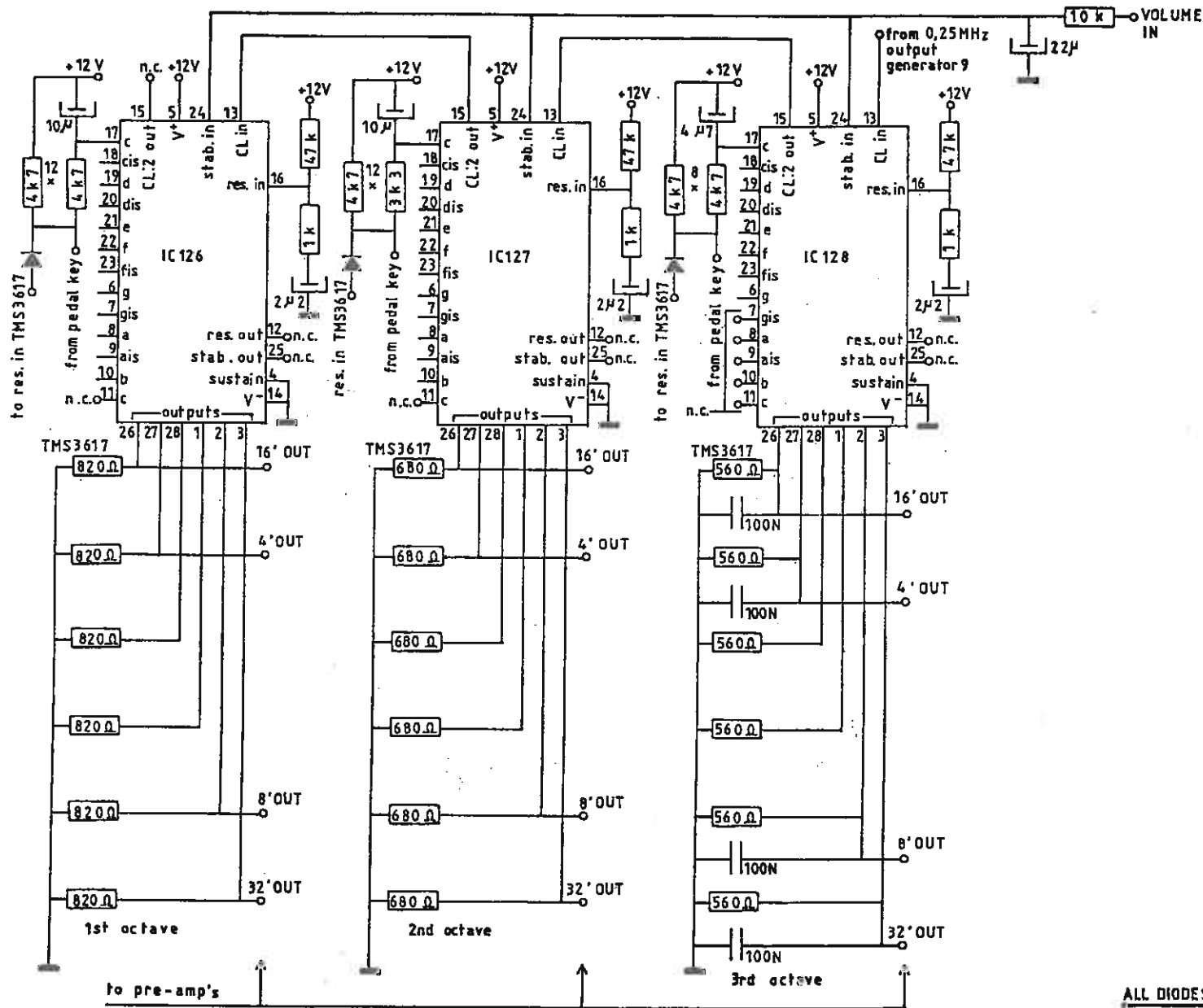
GENERATORS DIAPASON & TIERCE GREAT

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GENERATOR CELESTE (floating part) & TIERCE SWELL

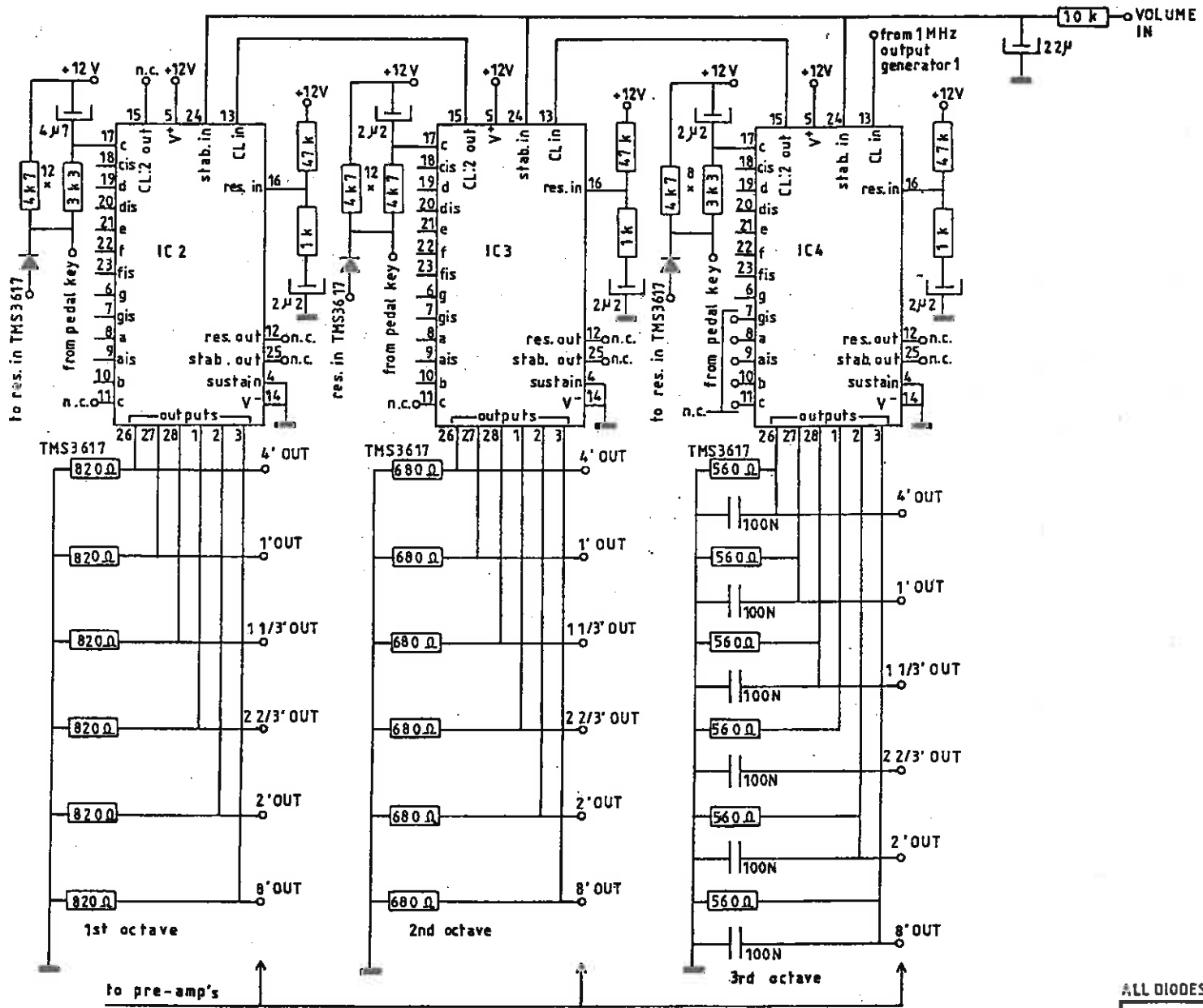
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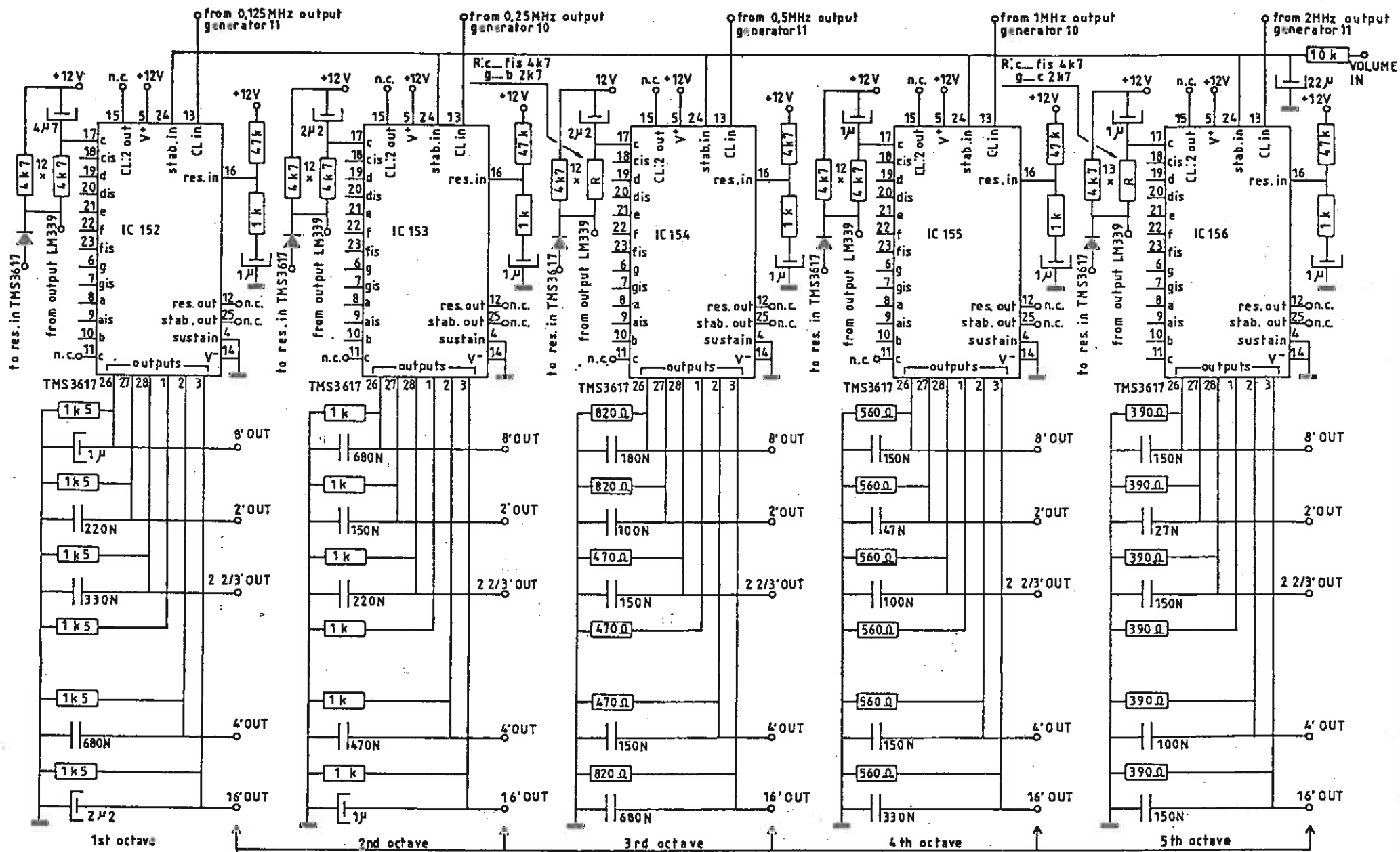
KEYING PEDAL (32'-4')

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KEYING PEDAL (8'-1')				JOHANNUS ORGAN OPUS 243/245
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Verschoor	11-03-86			
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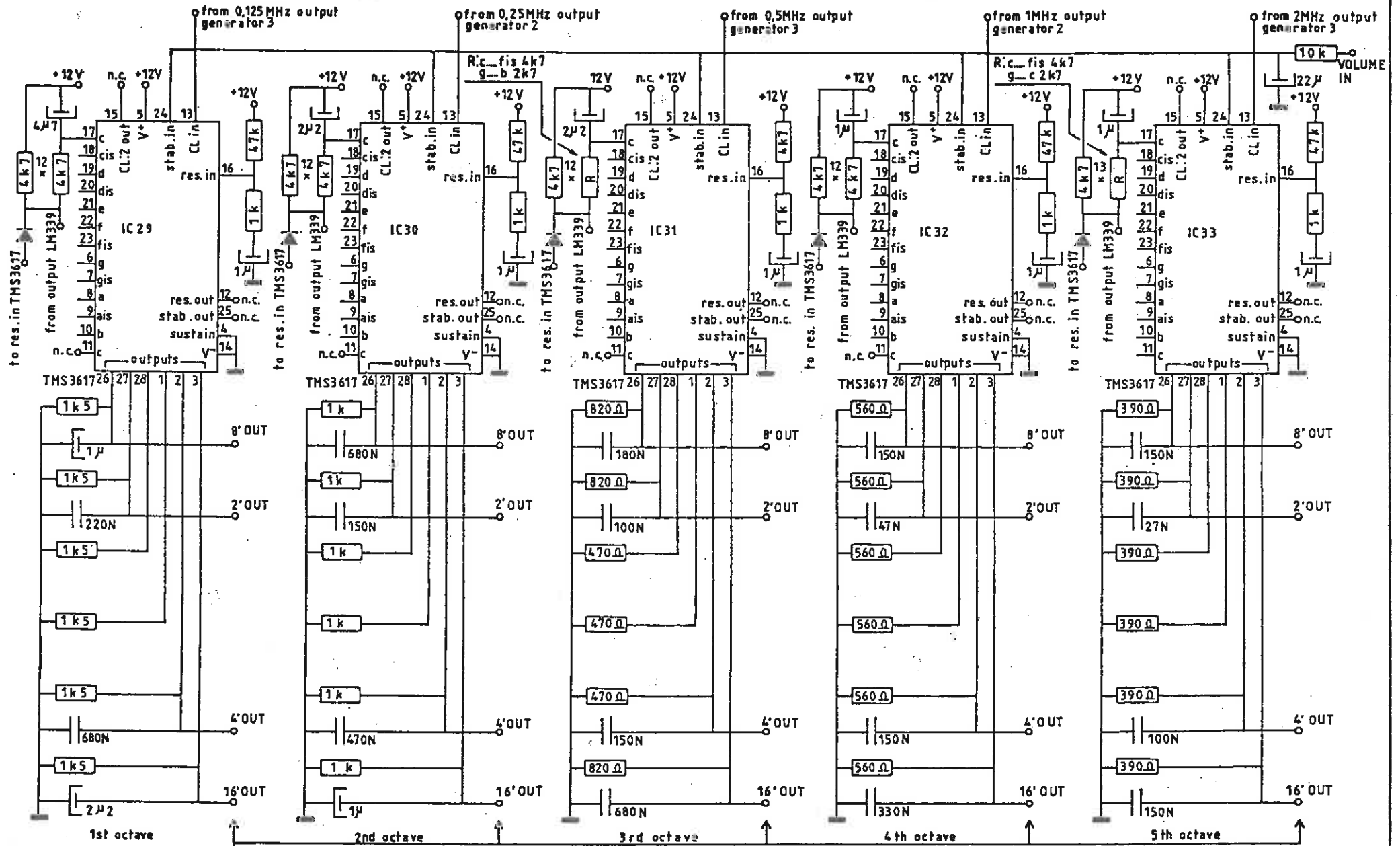


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KEYING GREAT (16'-2')

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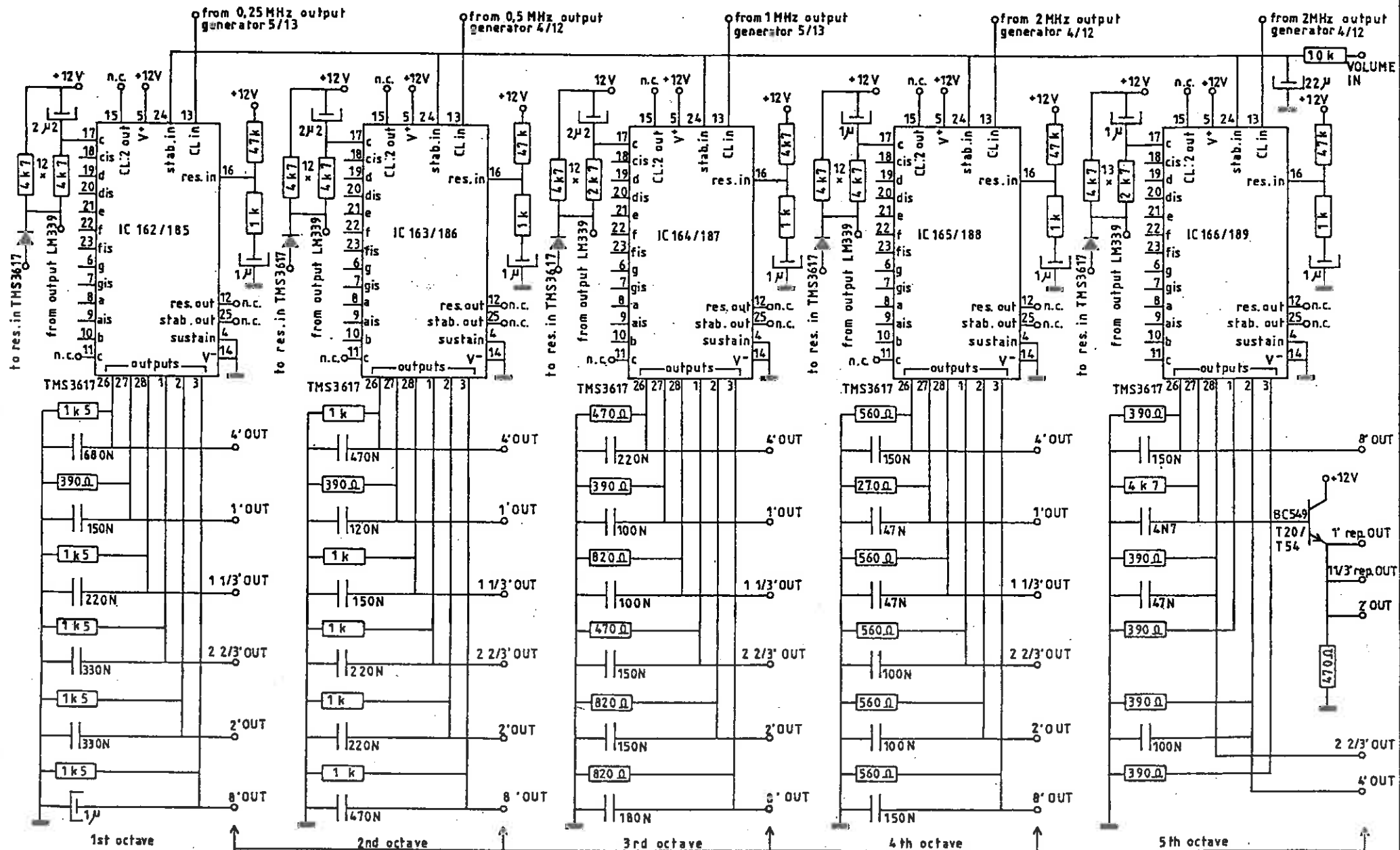


to pre-amp's

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KEYING SWELL (16'-2')

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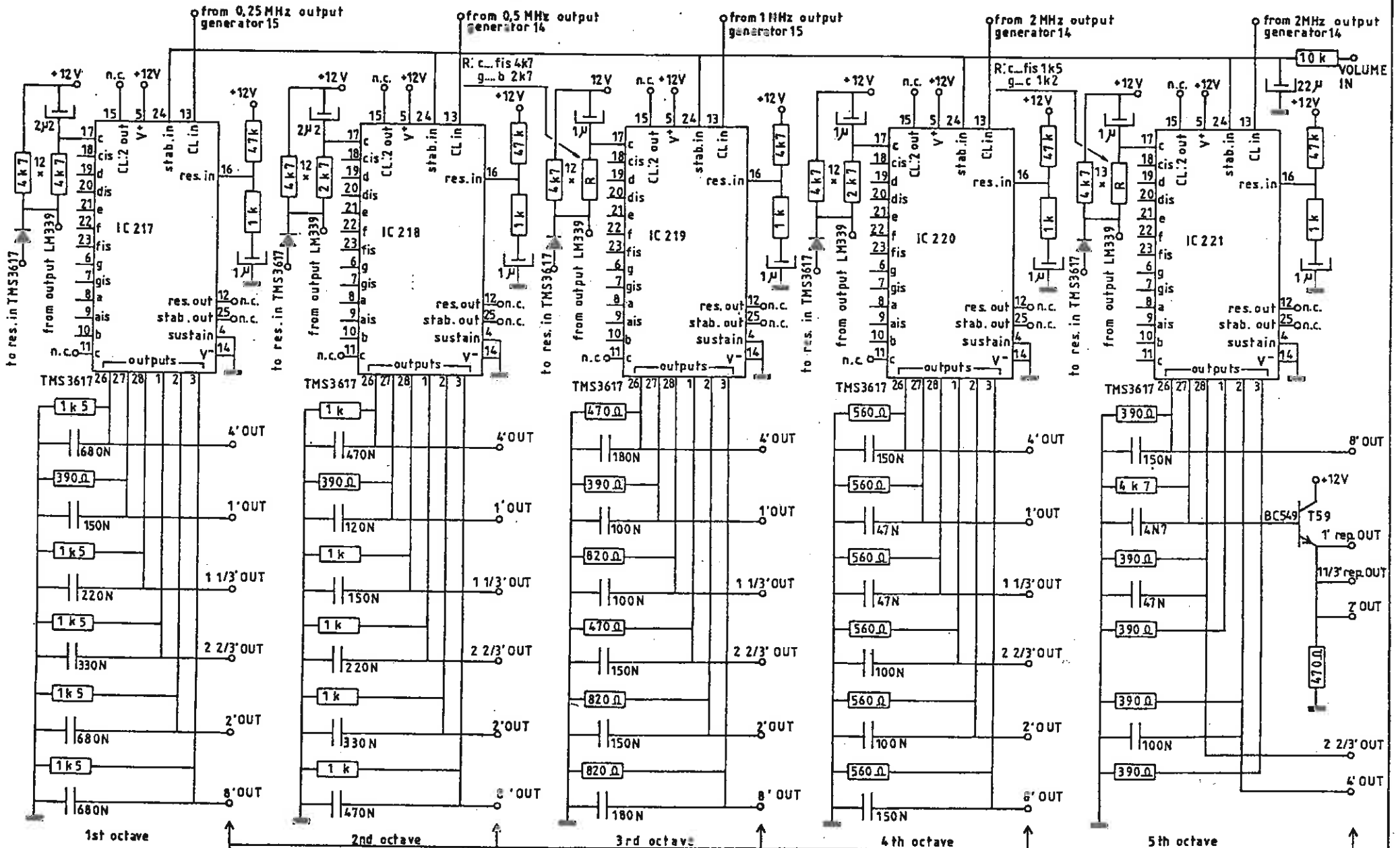


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KEYING GREAT (8'-1') & SWELL (8'-1')

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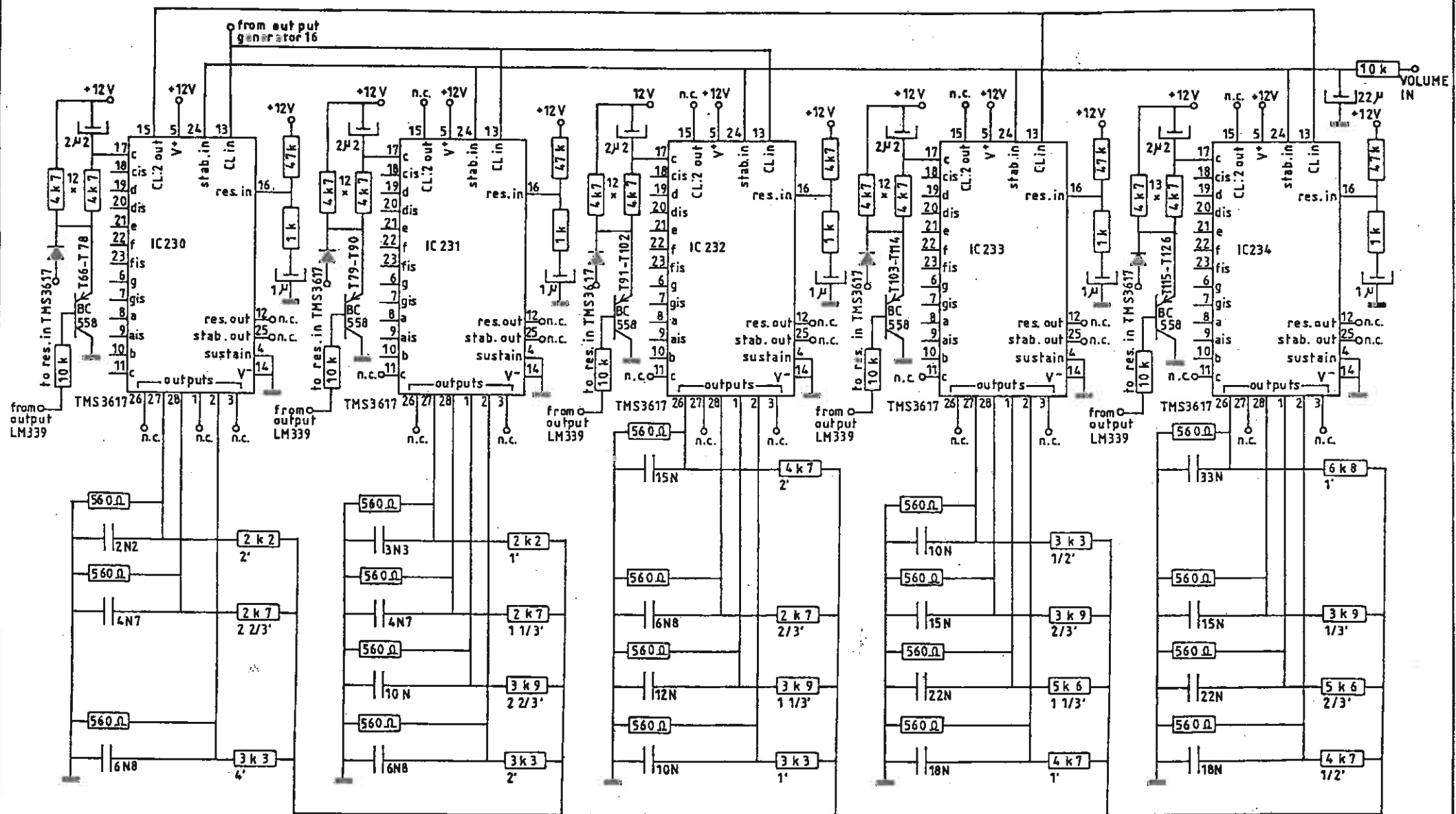
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KEYING CHOIR

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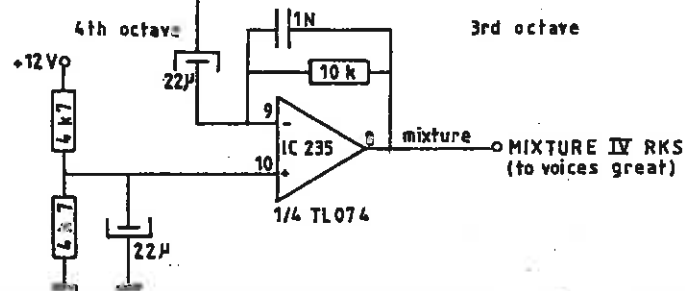
5th octave

4th octave

3rd octave

2nd octave

1st octave

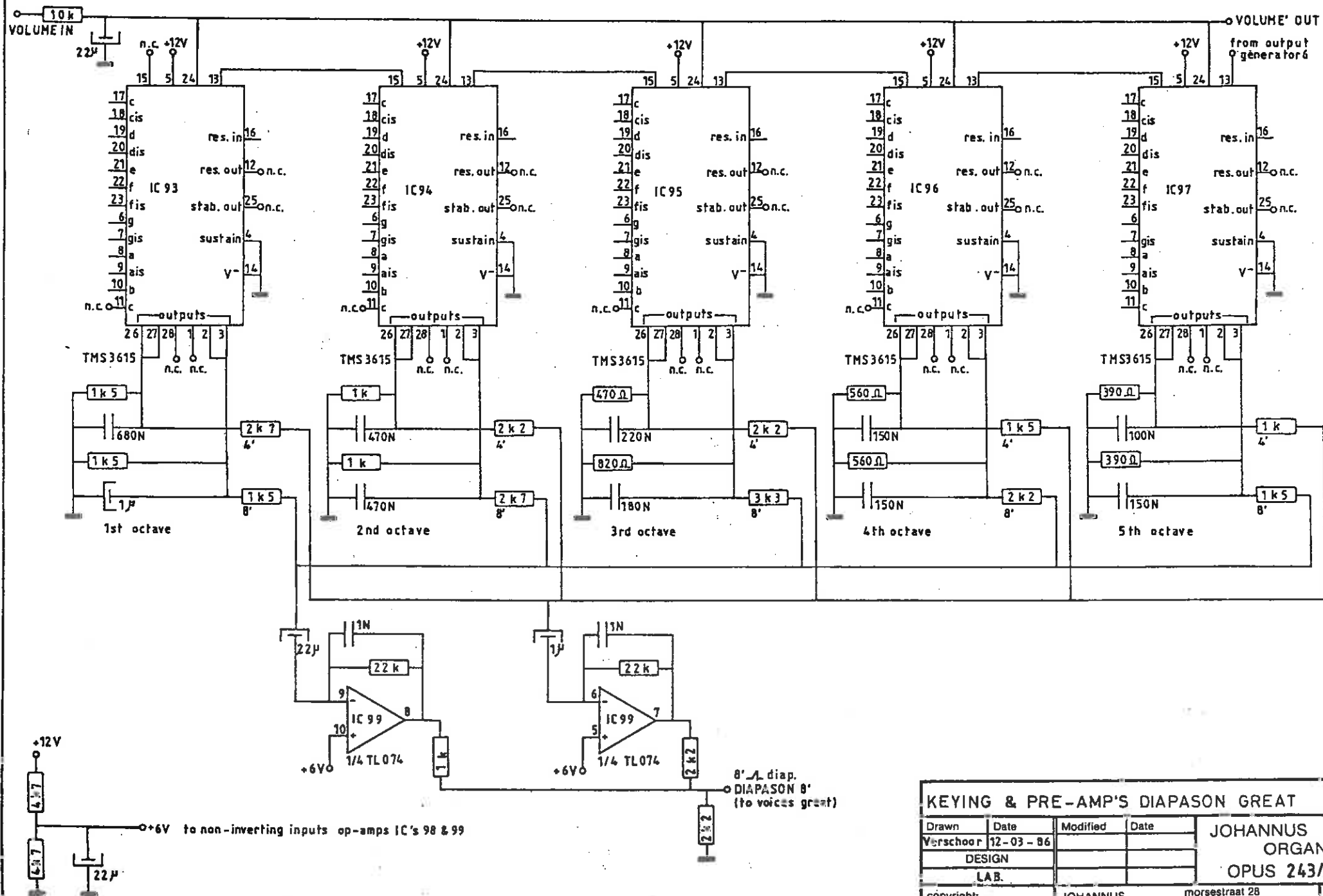


ALL DIODES: 1N4148

KEYING & PRE AMP MIXTURE GREAT

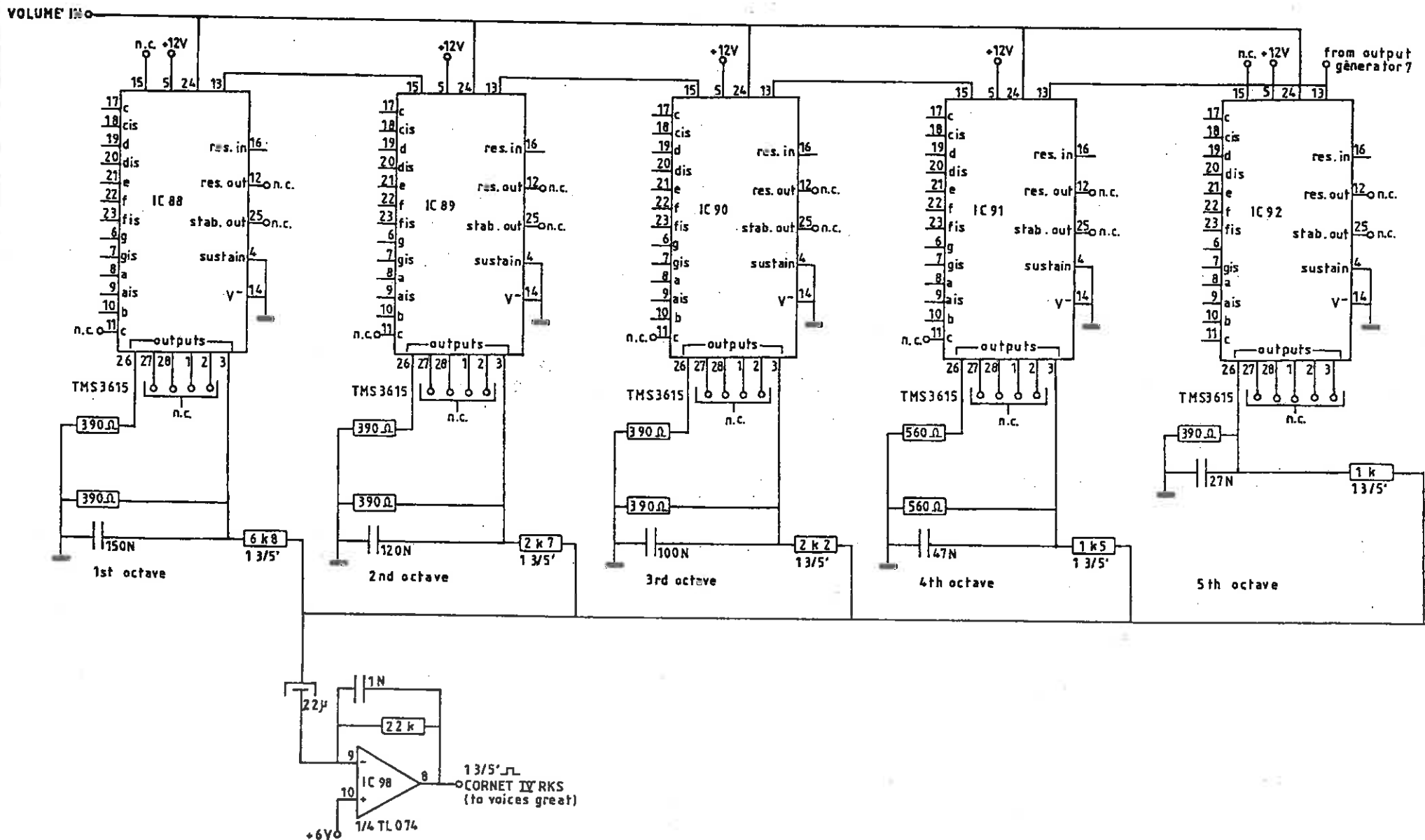
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NOTE: the K-inputs (pin 6-11 and pin 17-23) and the reset-input (pin 16) of the I.C.'s TMS 3615 are connected with the corresponding pins of the TMS3617's on the P.C.-board of great 8'



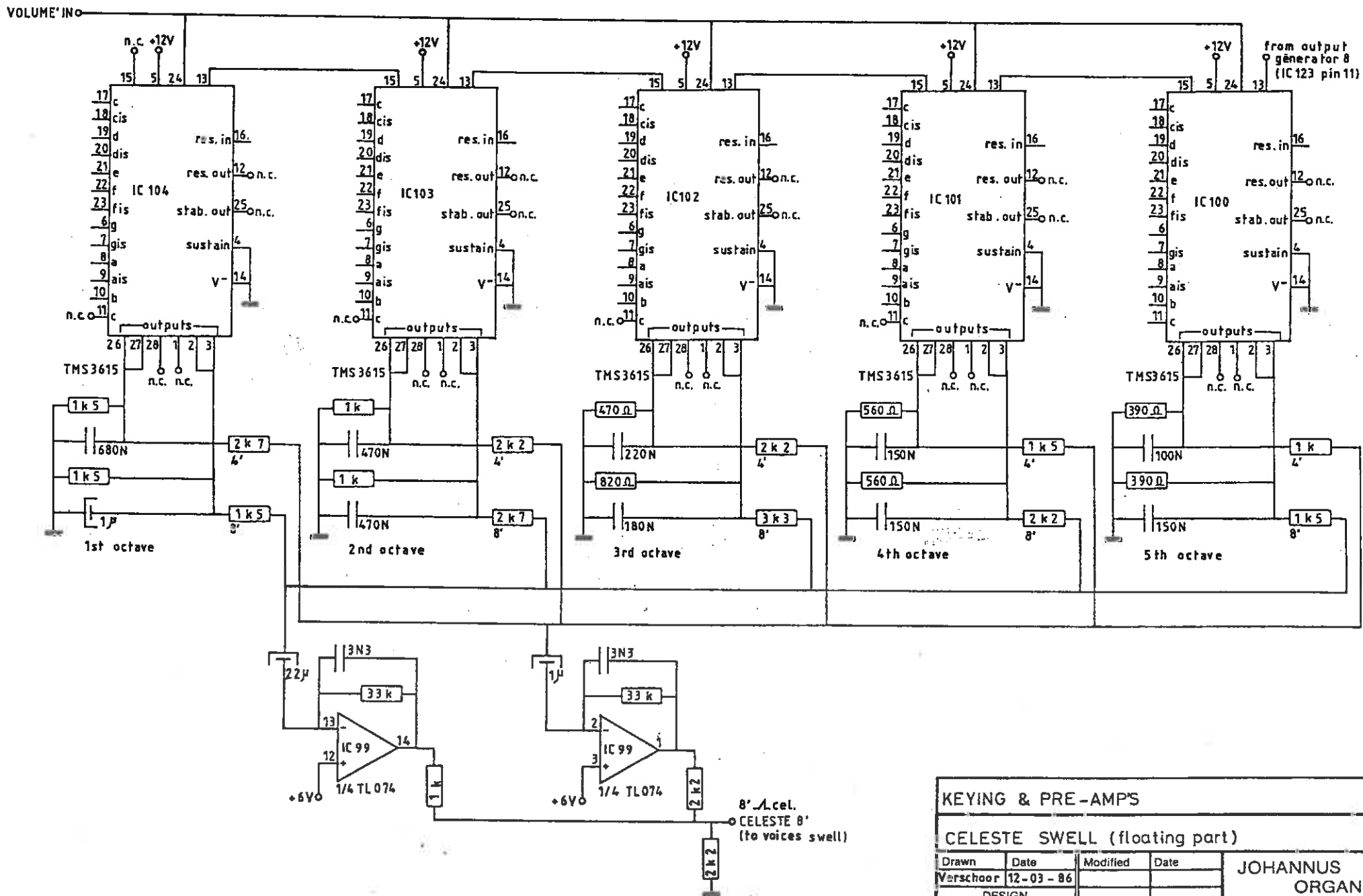
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NOTE: the K-inputs (pin 6-11 and pin 17-23) and the reset-input (pin 16) of the I.C.'s TMS 3615 are connected with the corresponding pins of the TMS3617's on the P.C.-board of great 8'



KEYING & PRE-AMP TIERCE GREAT			
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NOTE: the K-inputs (pin 6-11 and pin 17-23) and the reset-input (pin 16) of the I.C.'s TMS 3615 are connected with the corresponding pins of the TMS3617's on the P.C.-board of swell 8'

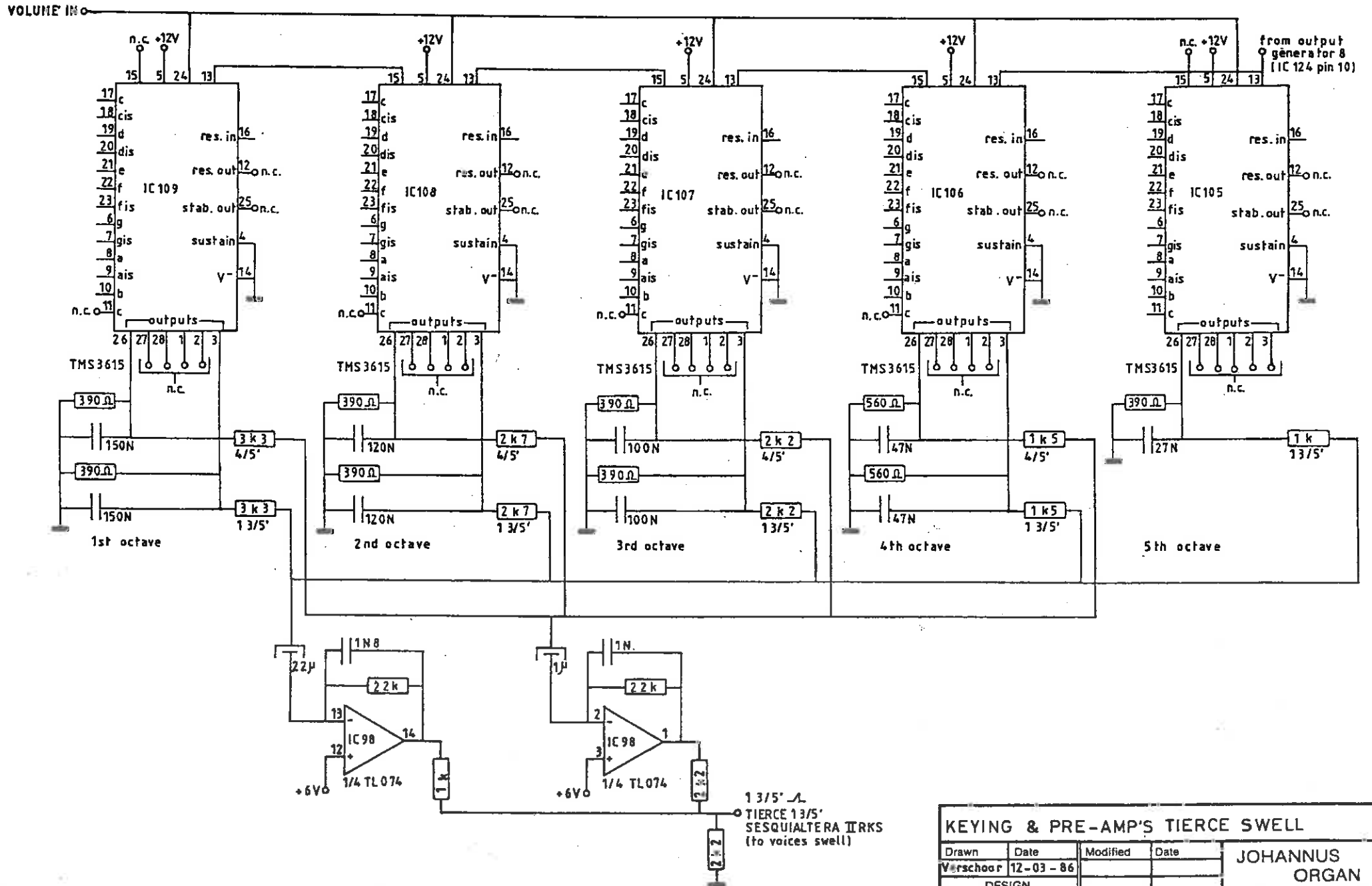


KEYING & PRE-AMPS

CELESTE SWELL (floating part)

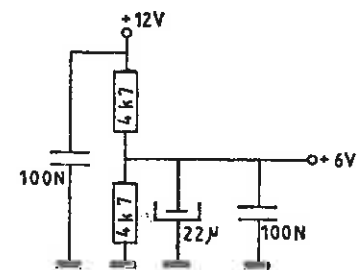
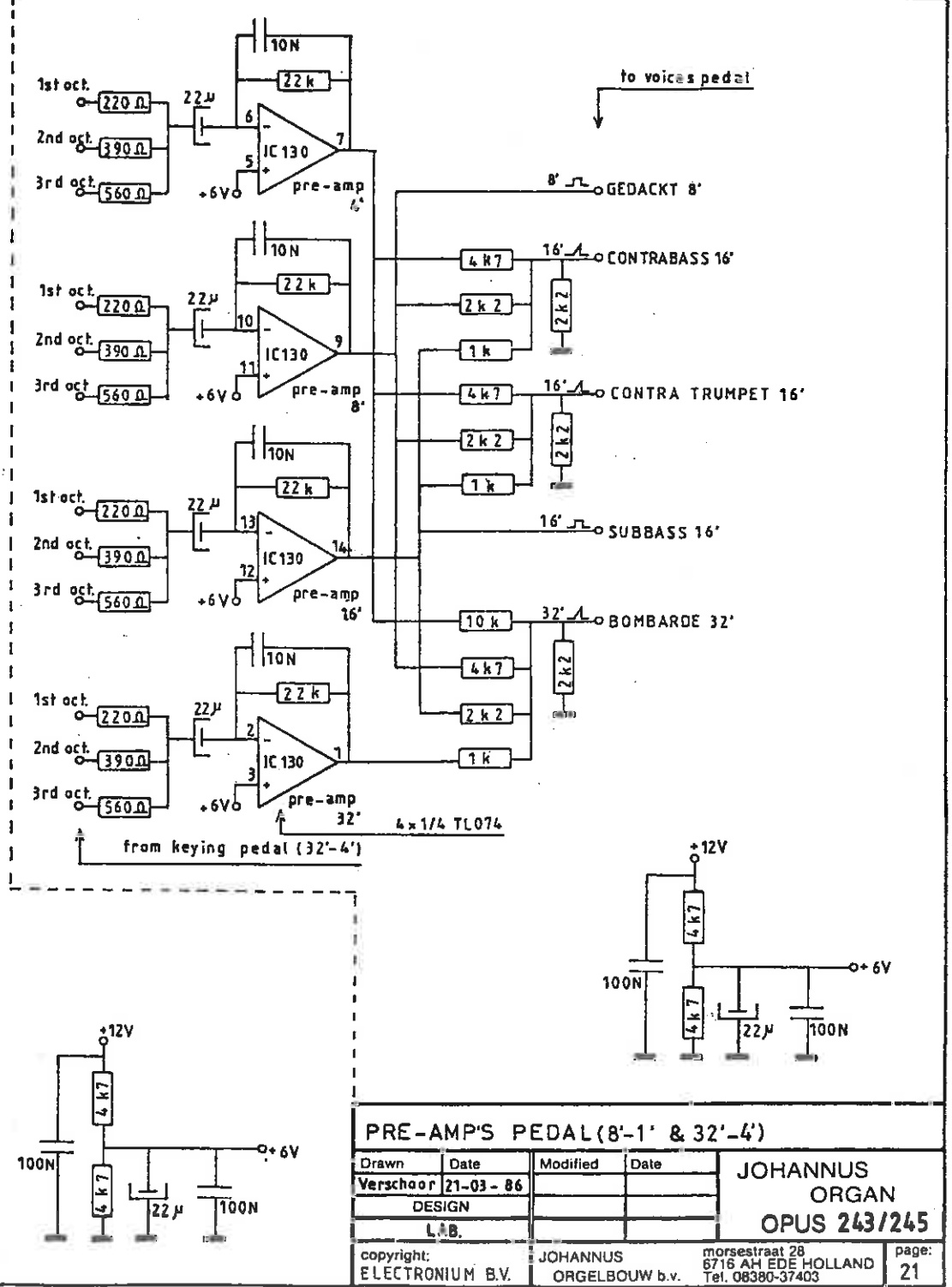
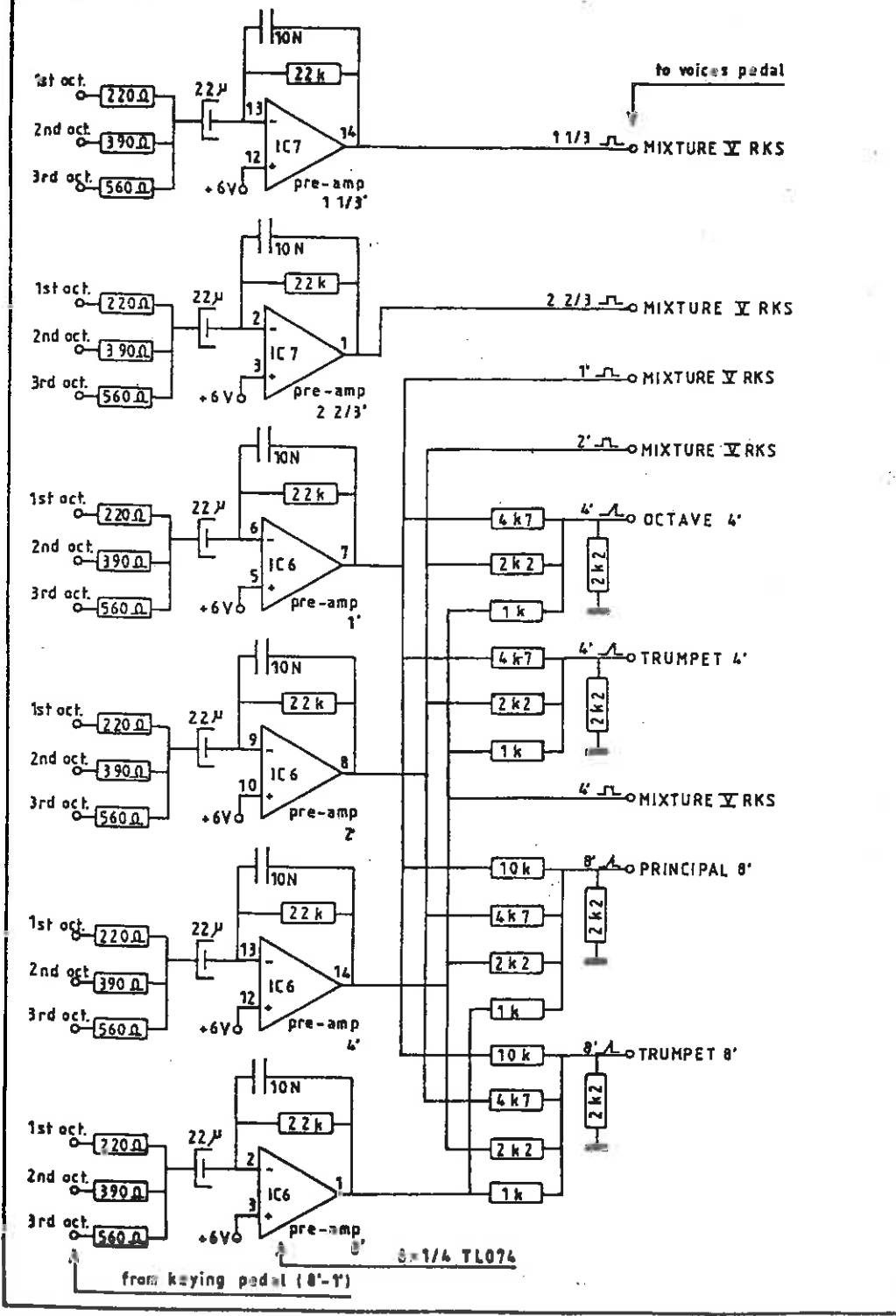
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NOTE: the K-inputs (pin 6-11 and pin 17-23) and the reset-input (pin 16) of the I.C.'s TMS 3615 are connected with the corresponding pins of the TMS3617's on the P.C.-board of swell 8'



KEYING & PRE-AMP'S TIERCE SWELL

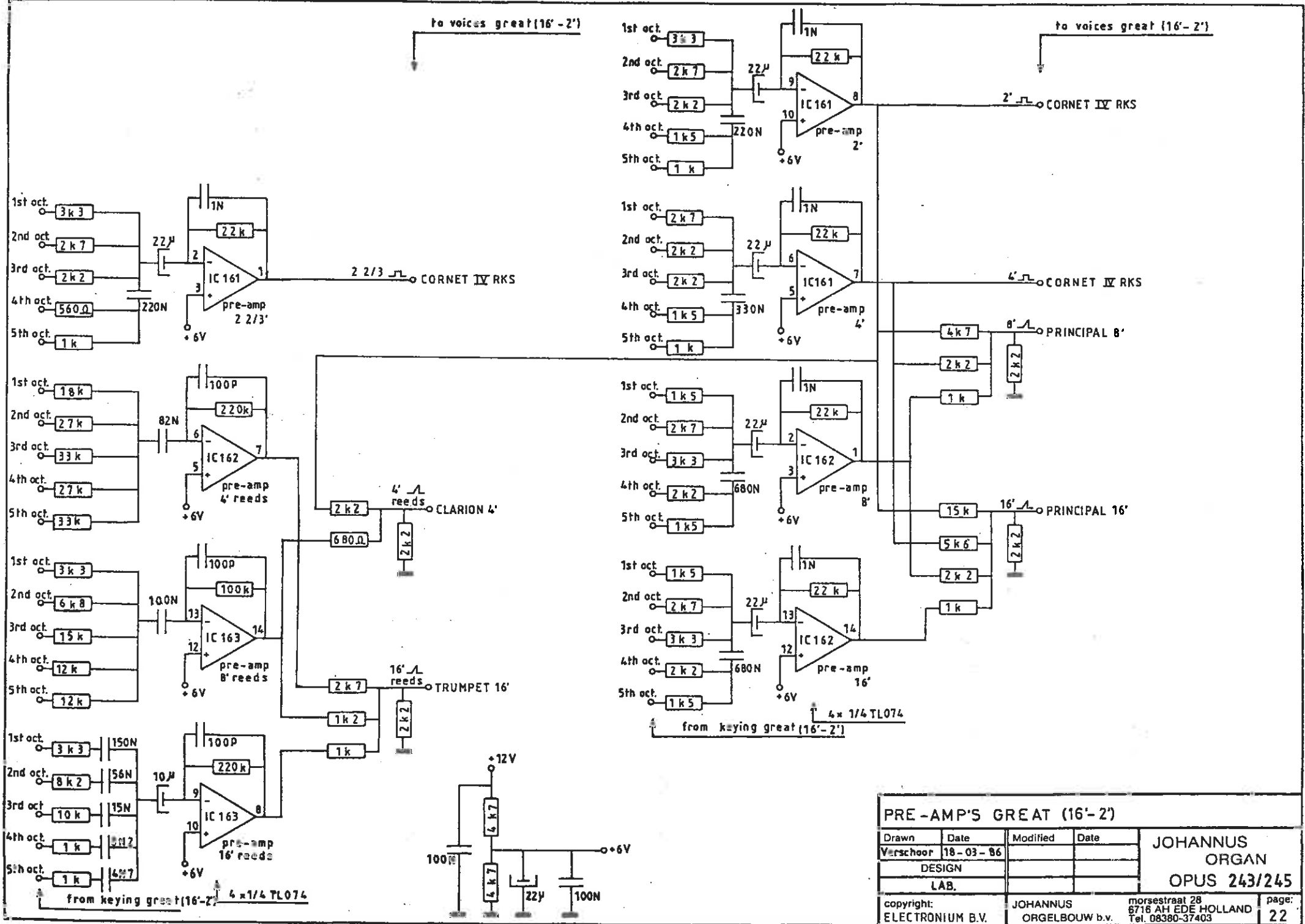
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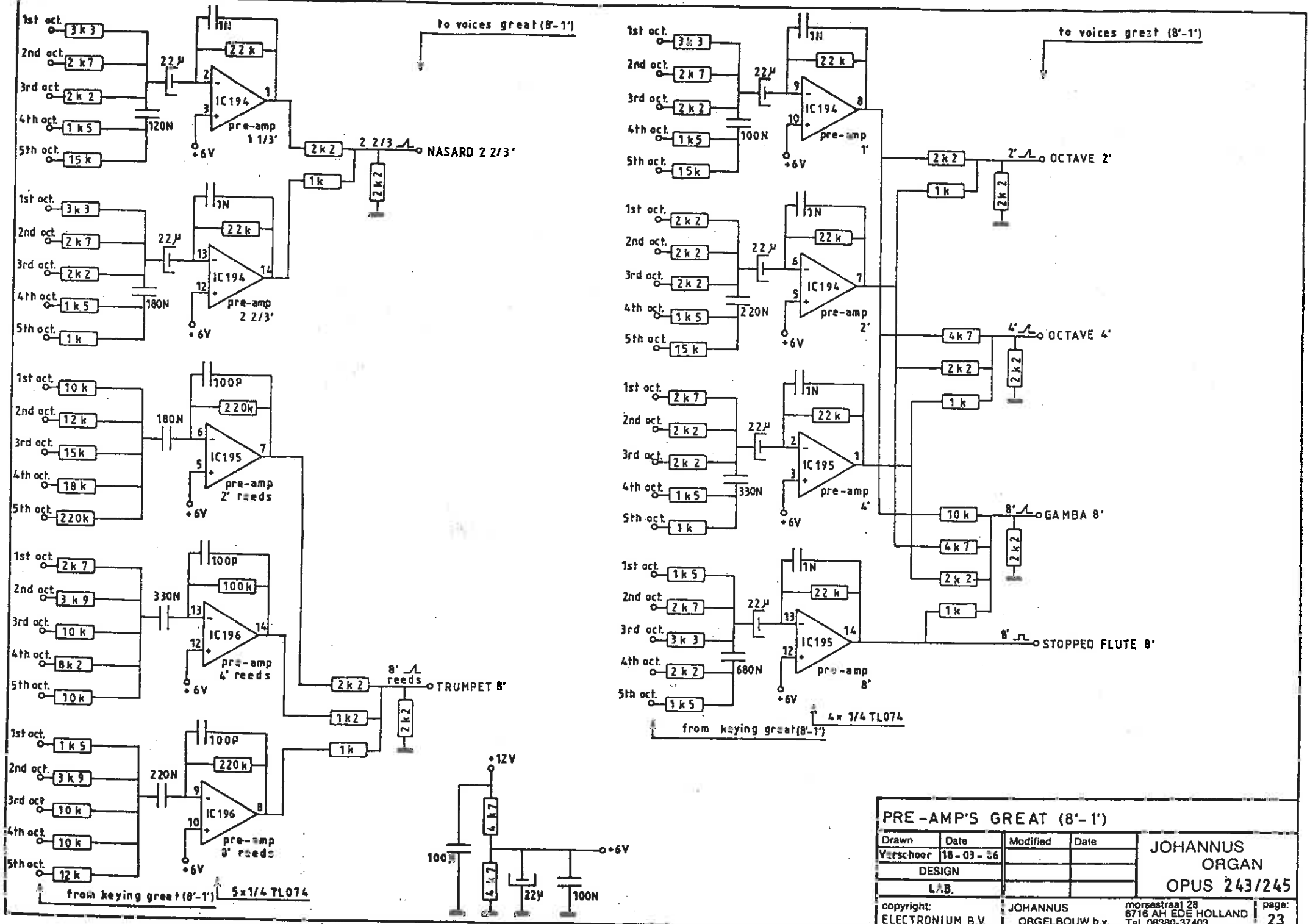
PRE-AMP'S PEDAL (8'-1' & 32'-4')

Drawn	Date	Modified	Date
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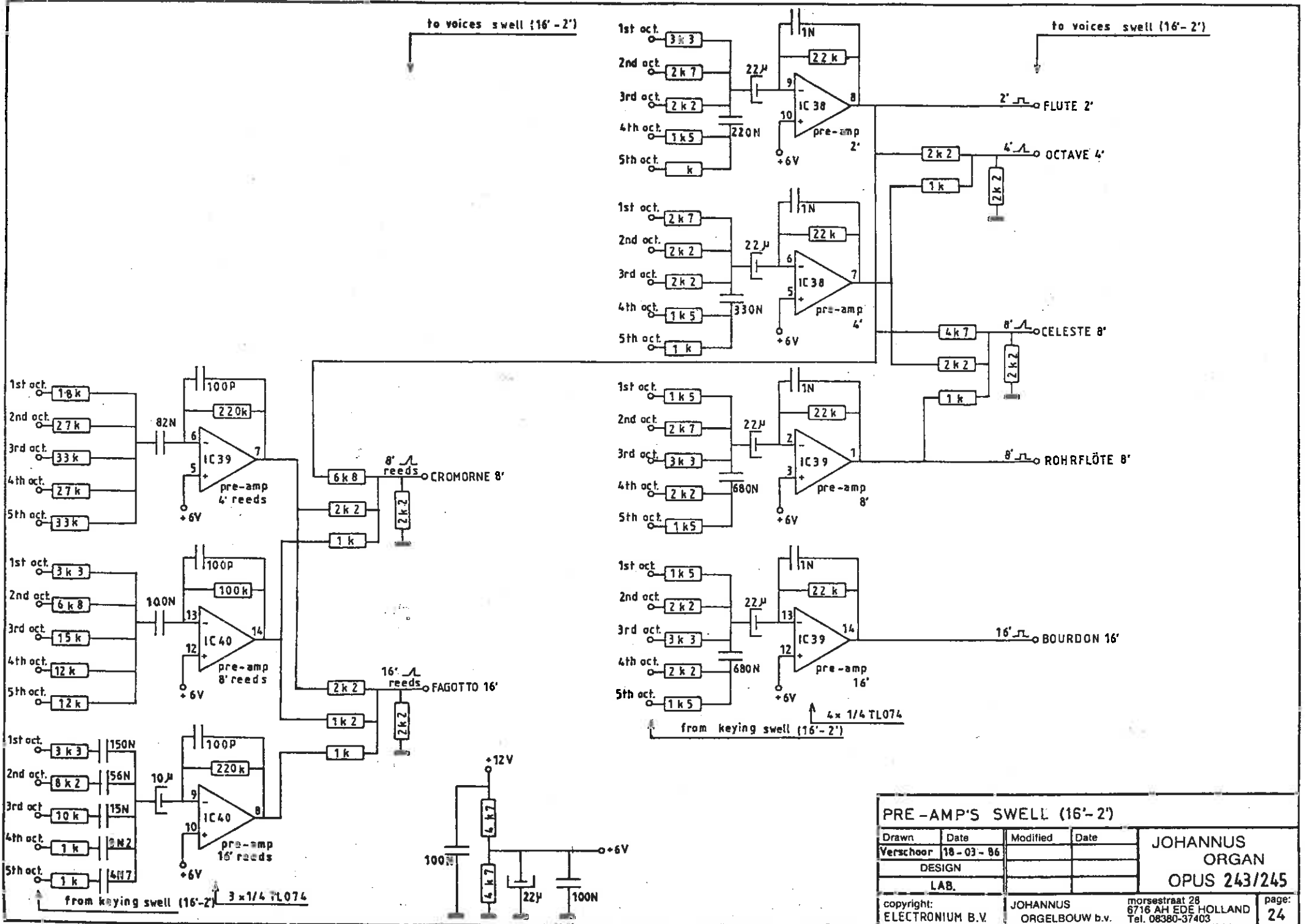
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			page: 22



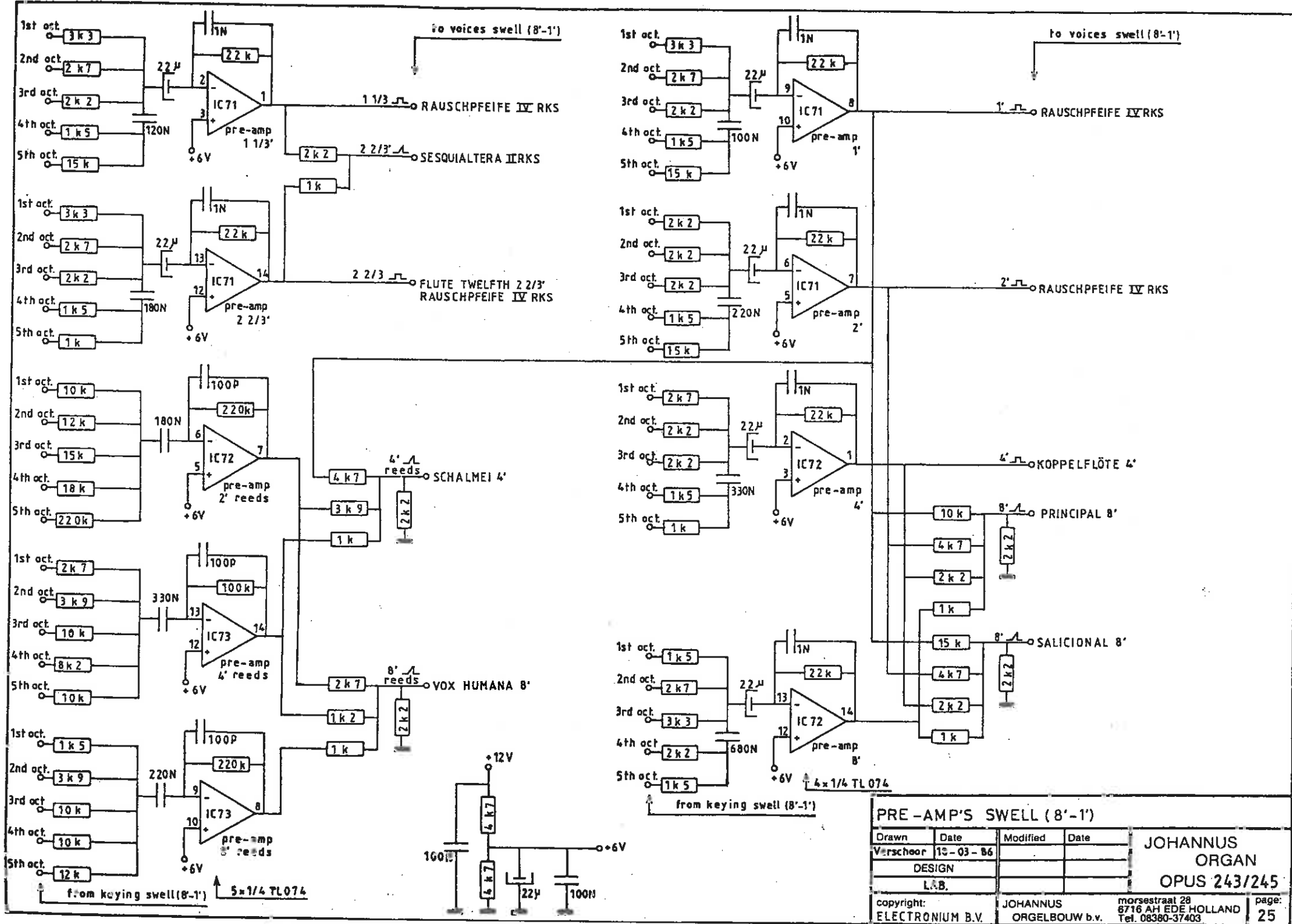
PRE-AMP'S GREAT (8'-1')

Drawn	Date	Modified	Date
Verschoor	18-03-56		
DESIGN			
L.A.B.			

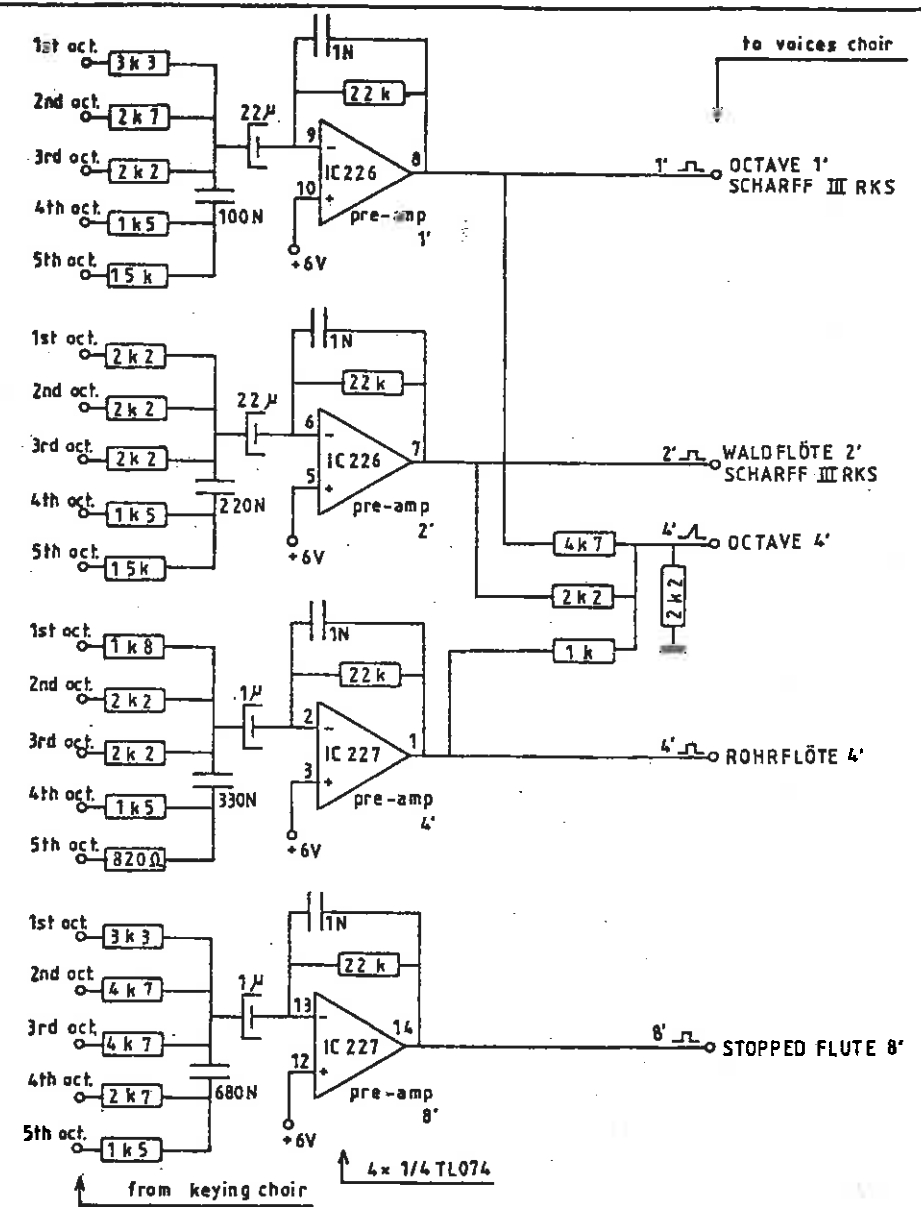
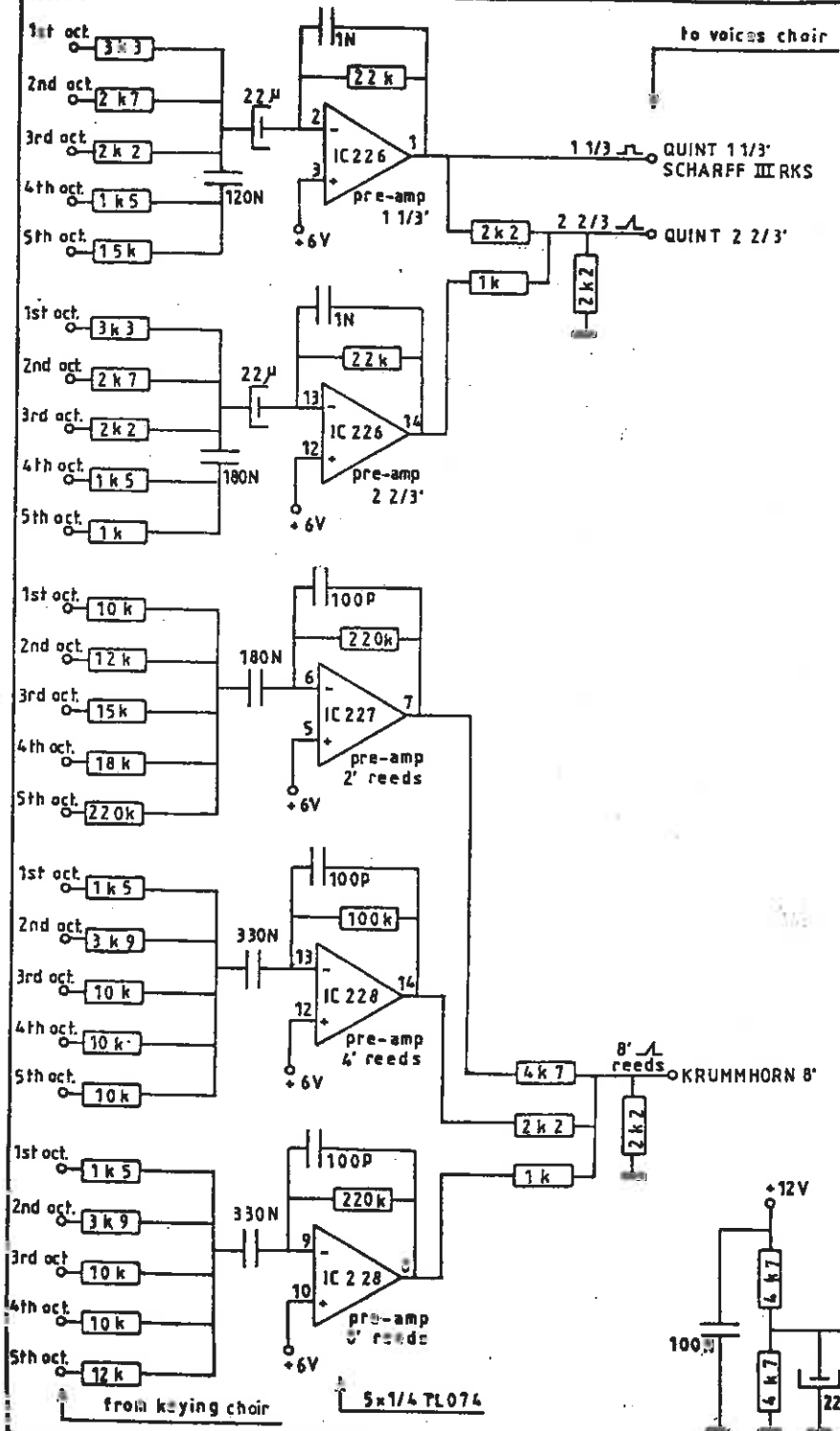
JOHANNUS
ORGAN
OPUS 243/245



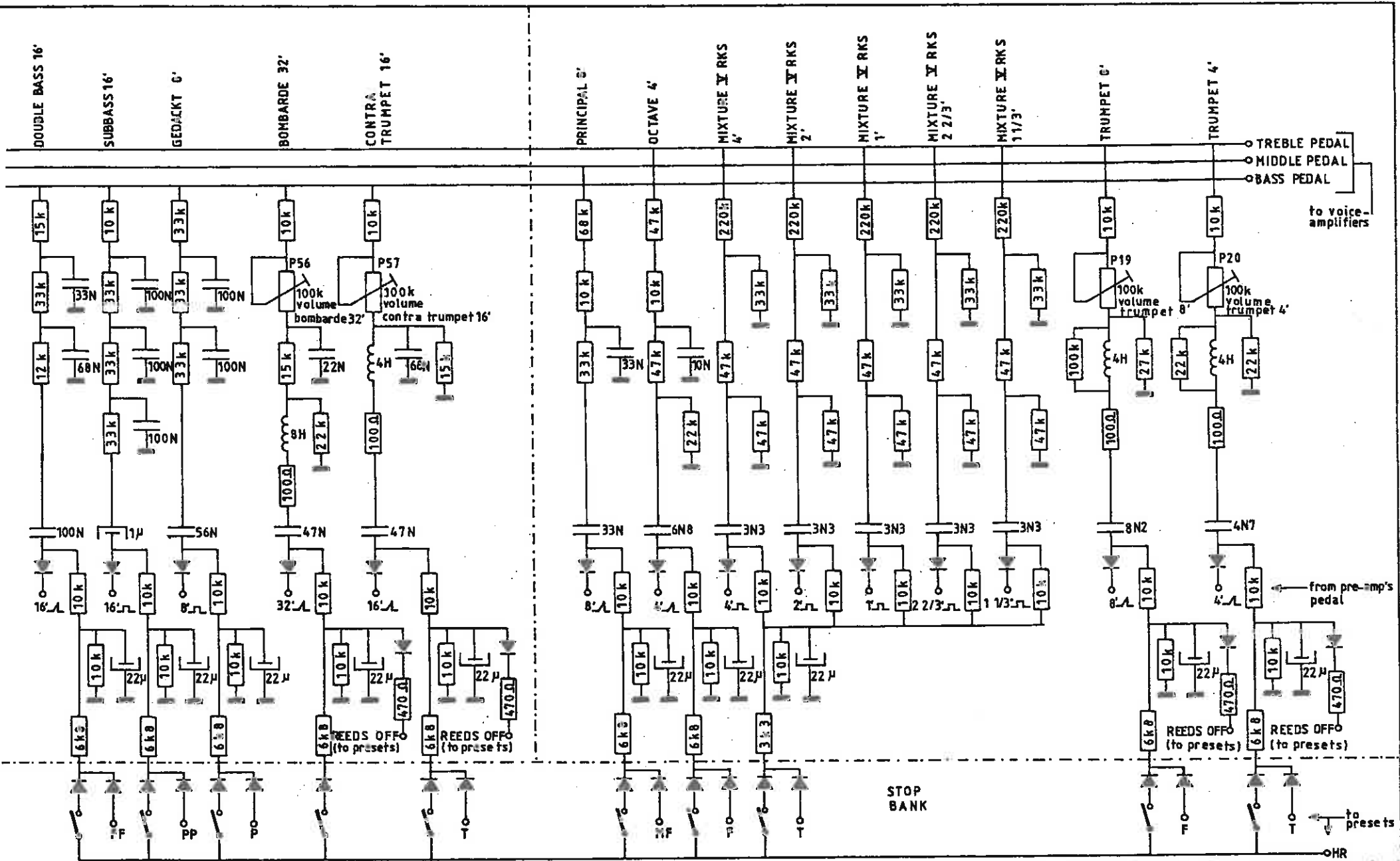
PRE-AMP'S SWELL (16'-2')				JOHANNUS ORGAN	
Drawn	Date	Modified	Date	OPUS 243/245	
Verschoor	18-03-86				
DESIGN					
LAB.					
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PRE-AMP'S SWELL (8'-1')				JOHANNUS ORGAN	
Drawn	Date	Modified	Date	JOHANNUS ORGAN OPUS 243/245	
Verschoor	10-03-86				
DESIGN					
L.A.B.					
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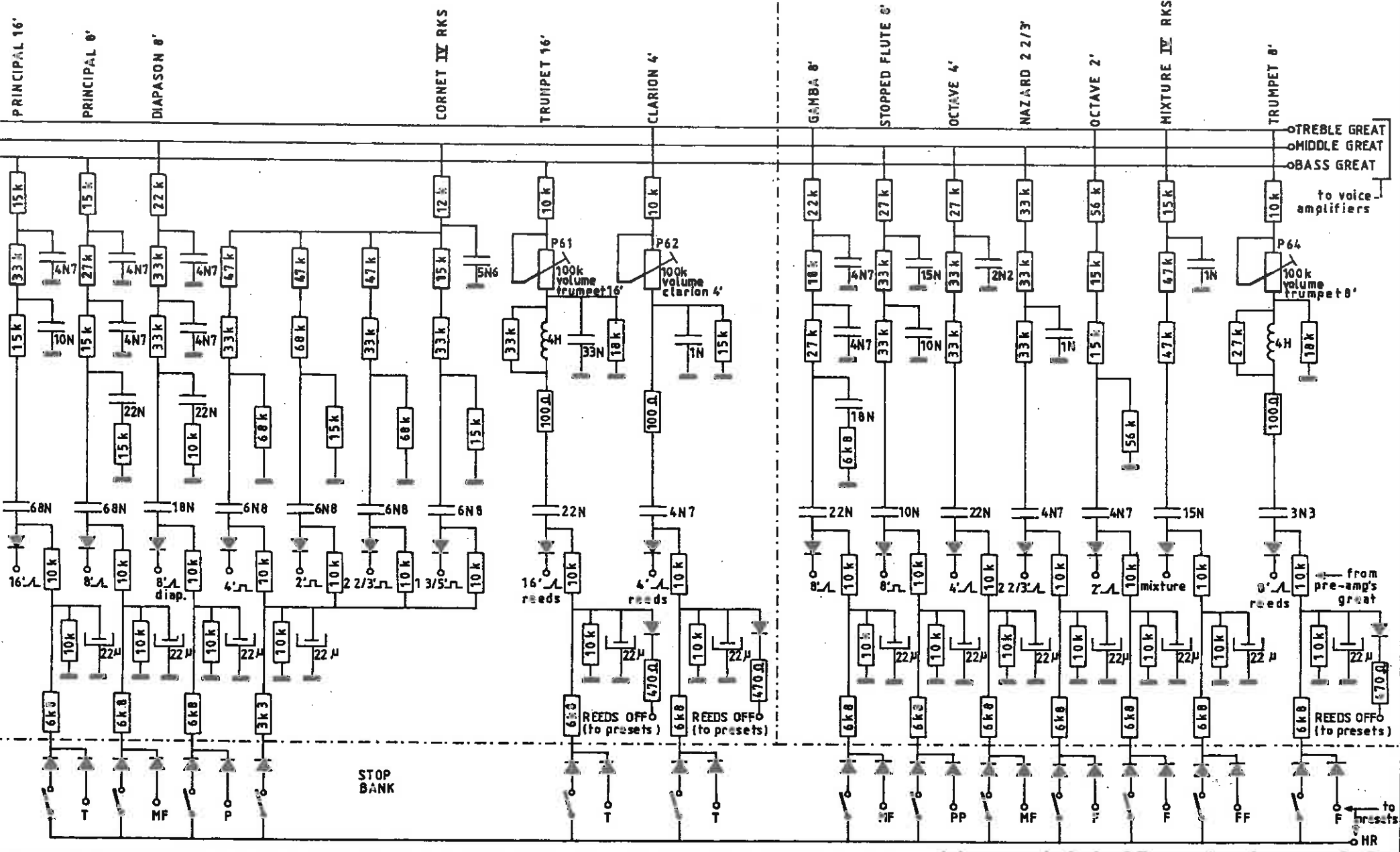
PRE-AMP'S CHOIR				JOHANNUS ORGAN	
Drawn	Date	Modified	Date	OPUS 243/245	
Verschoor	10-03-36				
DESIGN					
LAB.					
copyright:	JOHANNUS	morsestraat 28		page:	
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VOICES PEDAL

Drawn	Date	Modified	Date	JOHANNUS ORGAN OPUS 243/245
Verschoor	27-03-88			
DESIGN				
LAB.				
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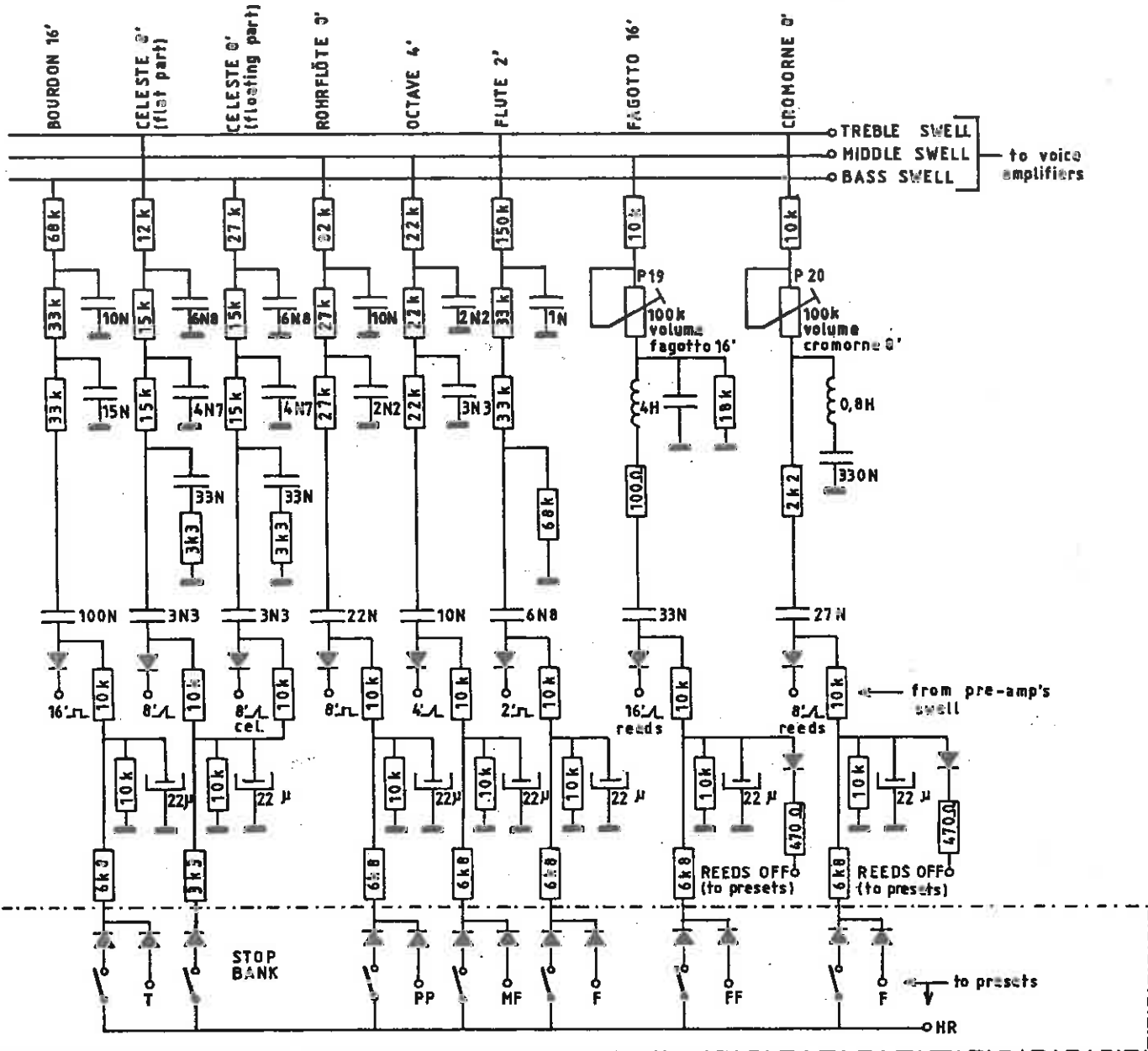


ALL DIODES: 1N4148

VOICES GREAT

Drawn	Date	Modified	Date
Verschuur	01-04-86		
DESIGN			
LAB.			
copyright:	JOHANNUS		morsestraat 28
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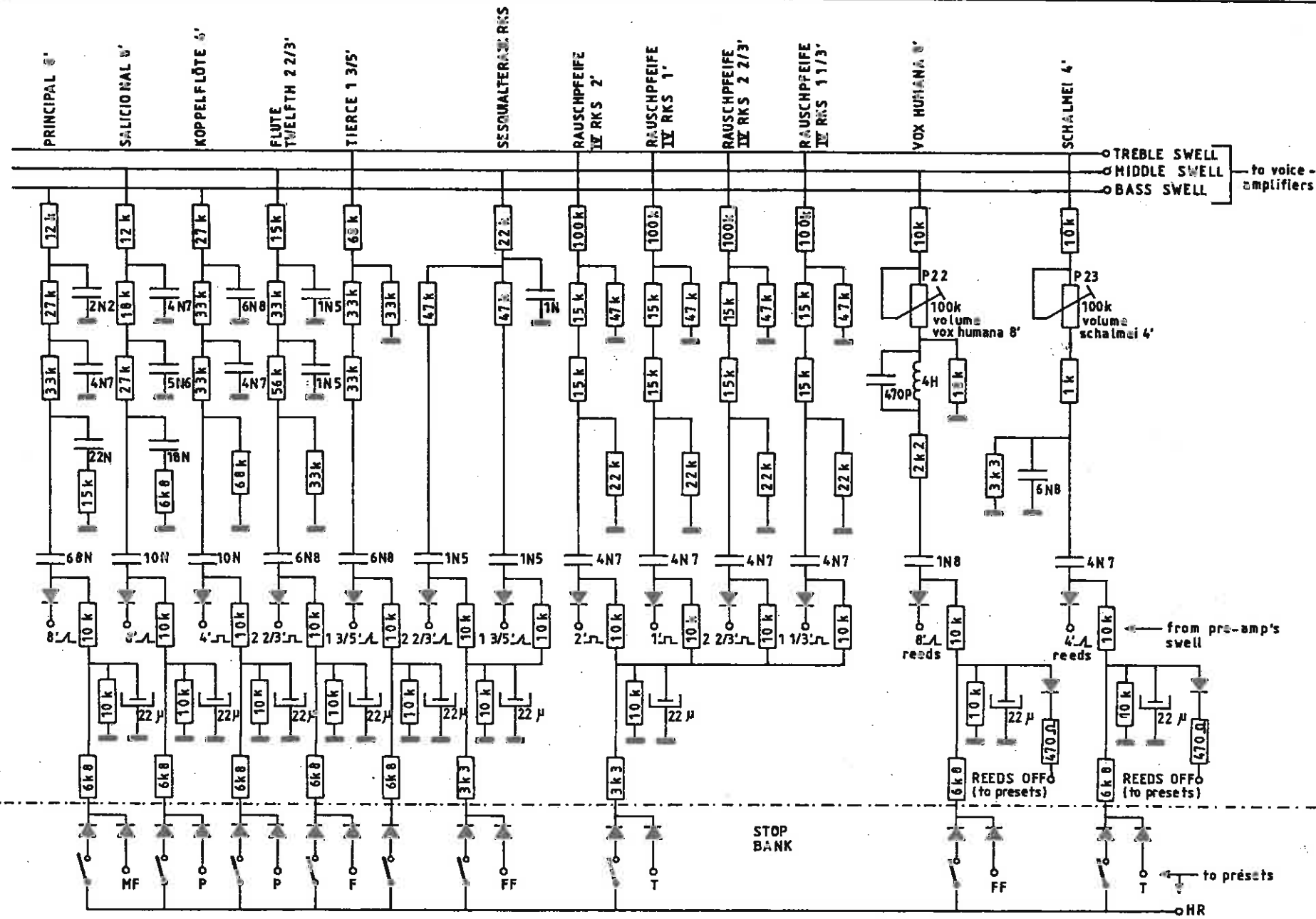
**JOHANNUS
ORGAN
OPUS 243/245**



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VOICES SWELL (part 1)

Drawn	Date	Modified	Date	JOHANNUS ORGAN OPUS 243/245
Verschoor	01-04-86			
DESIGN				
LAB.				JOHANNUS ORGELBOUW b.v. morsestraat 28 6716 AH EDE HOLLAND Tel. 08380-37403
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				page: 29

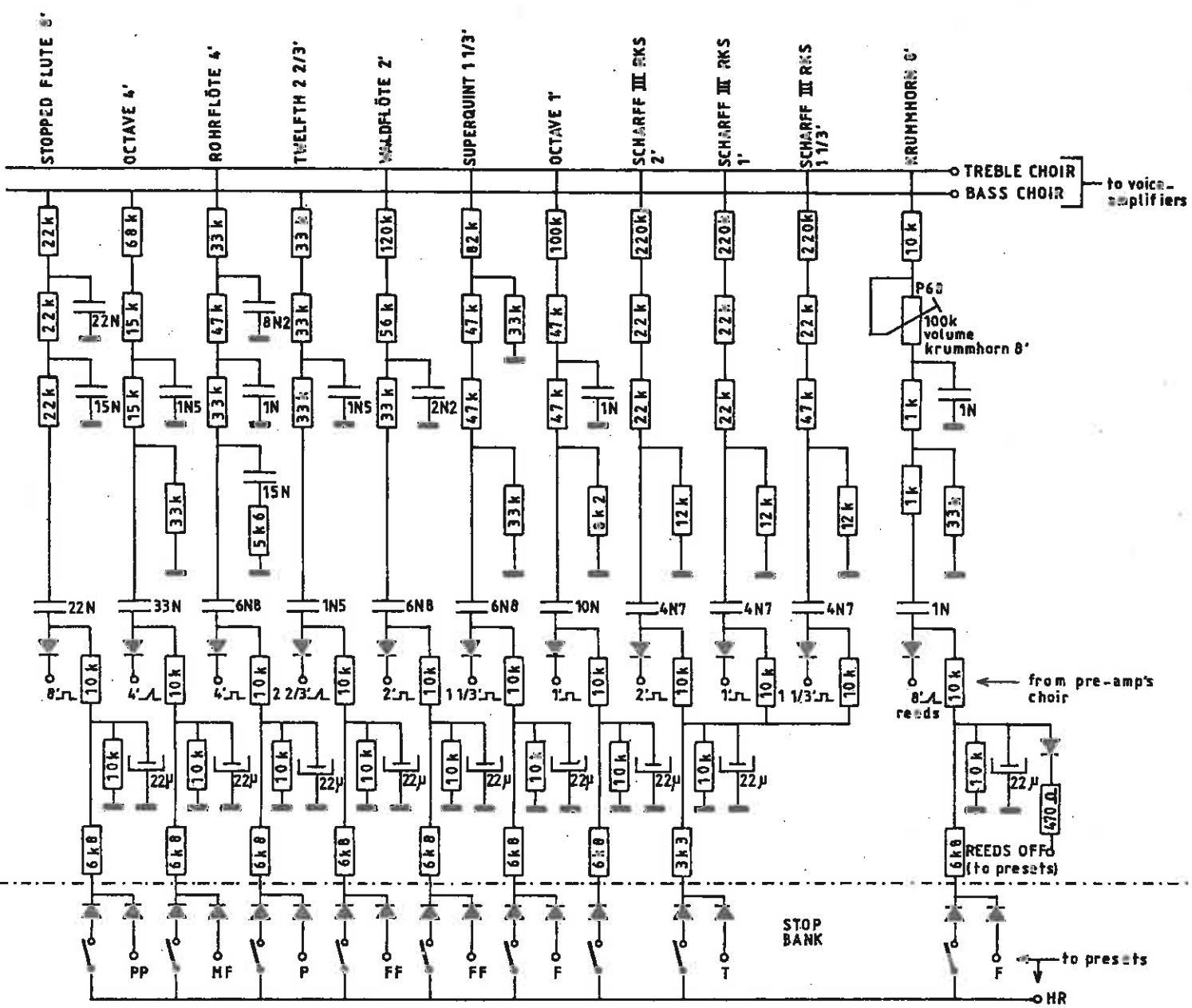


ALL DIODES: 1N4148

VOICES SWELL (part 2)

Drawn	Date	Modified	Date
Verschoor	01-04-56		
DESIGN			
LAB.			

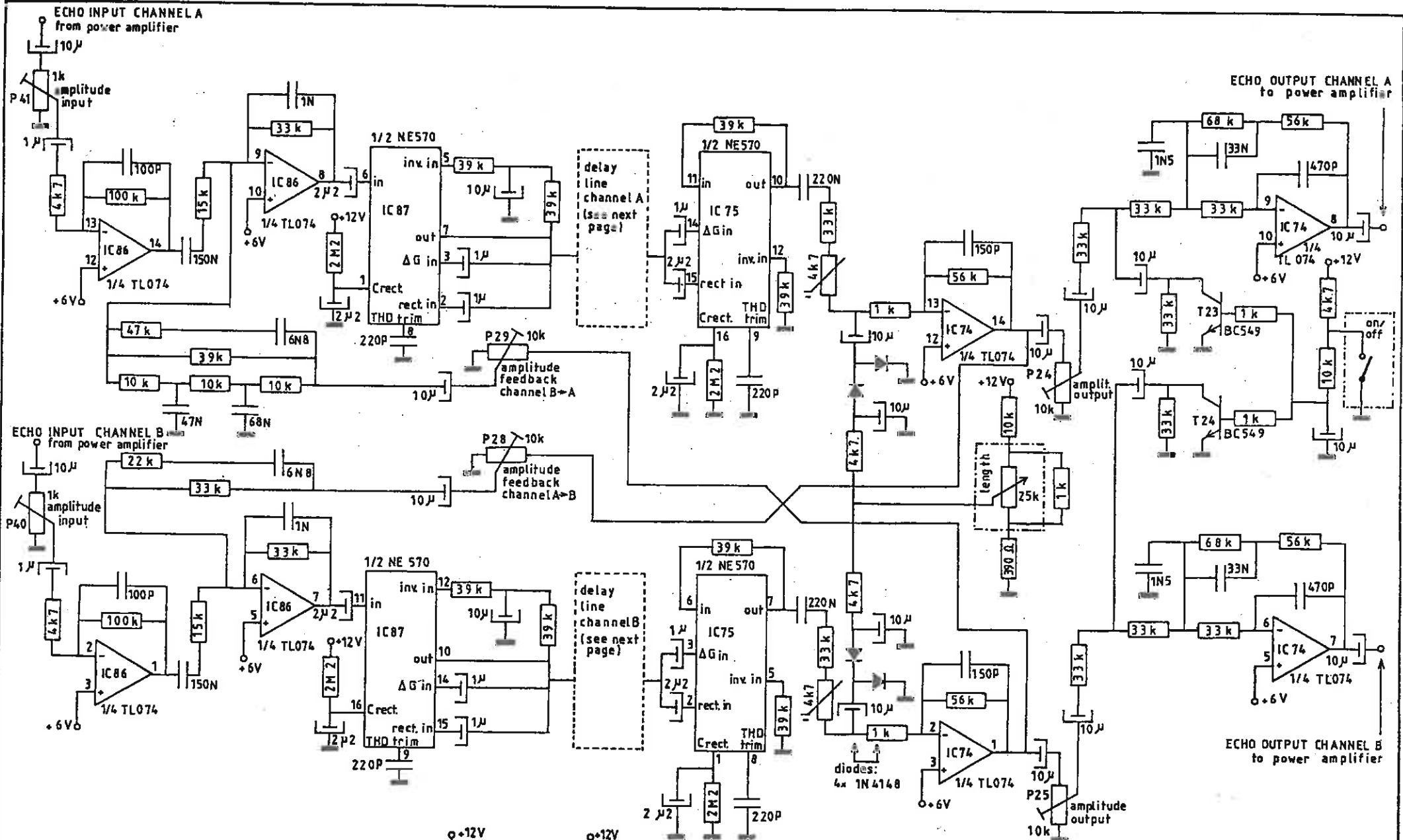
**JOHANNUS
ORGAN
OPUS 243/245**



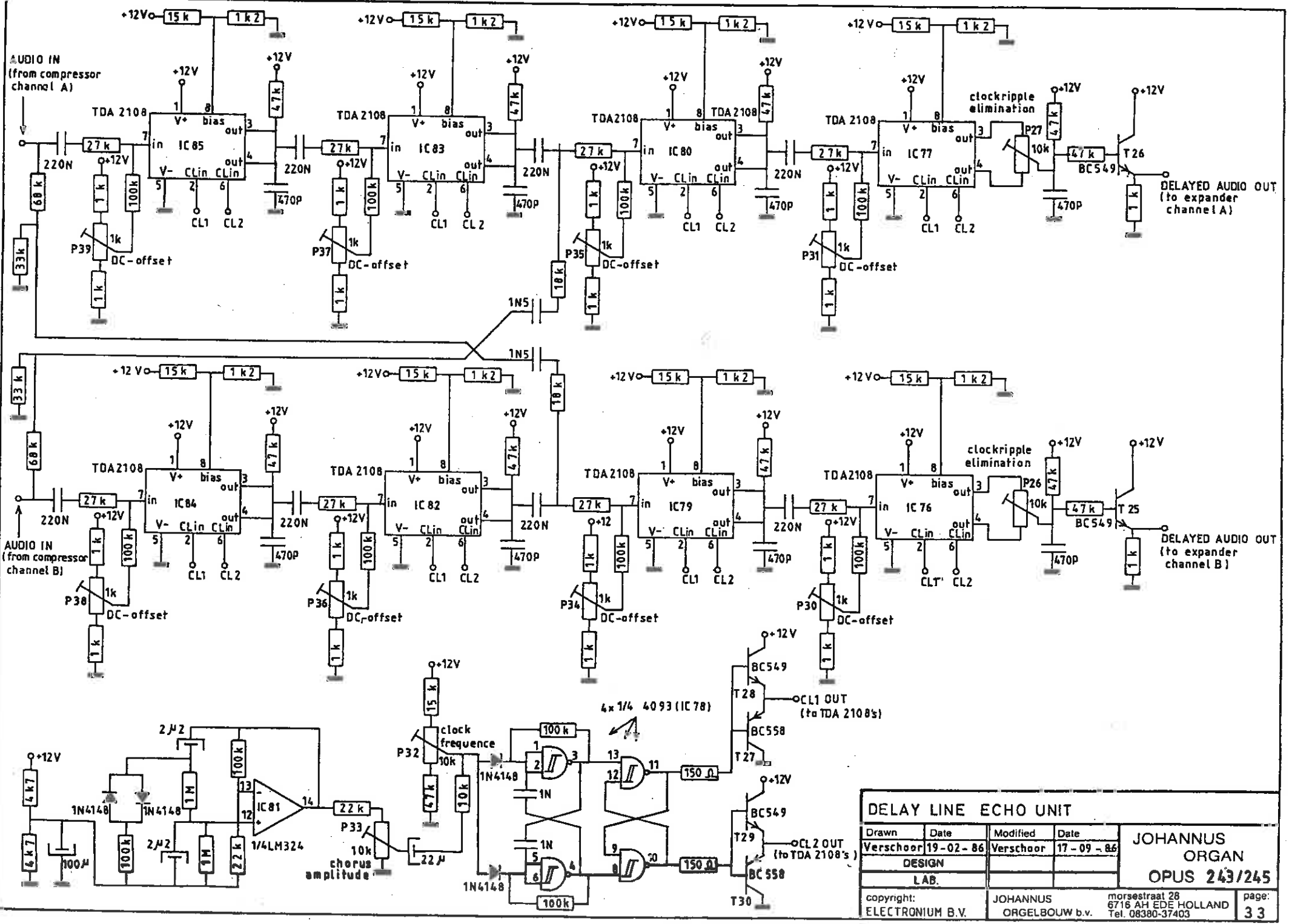
ALL DIODES: 1N4148

VOICES CHOIR			
Drawn	Date	Modified	Date
Verschoor	27-03-86		
DESIGN			
LAB.			
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			page: 31

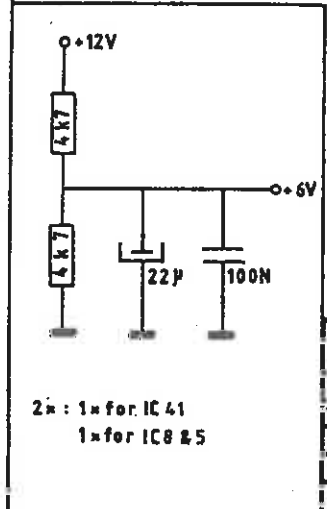
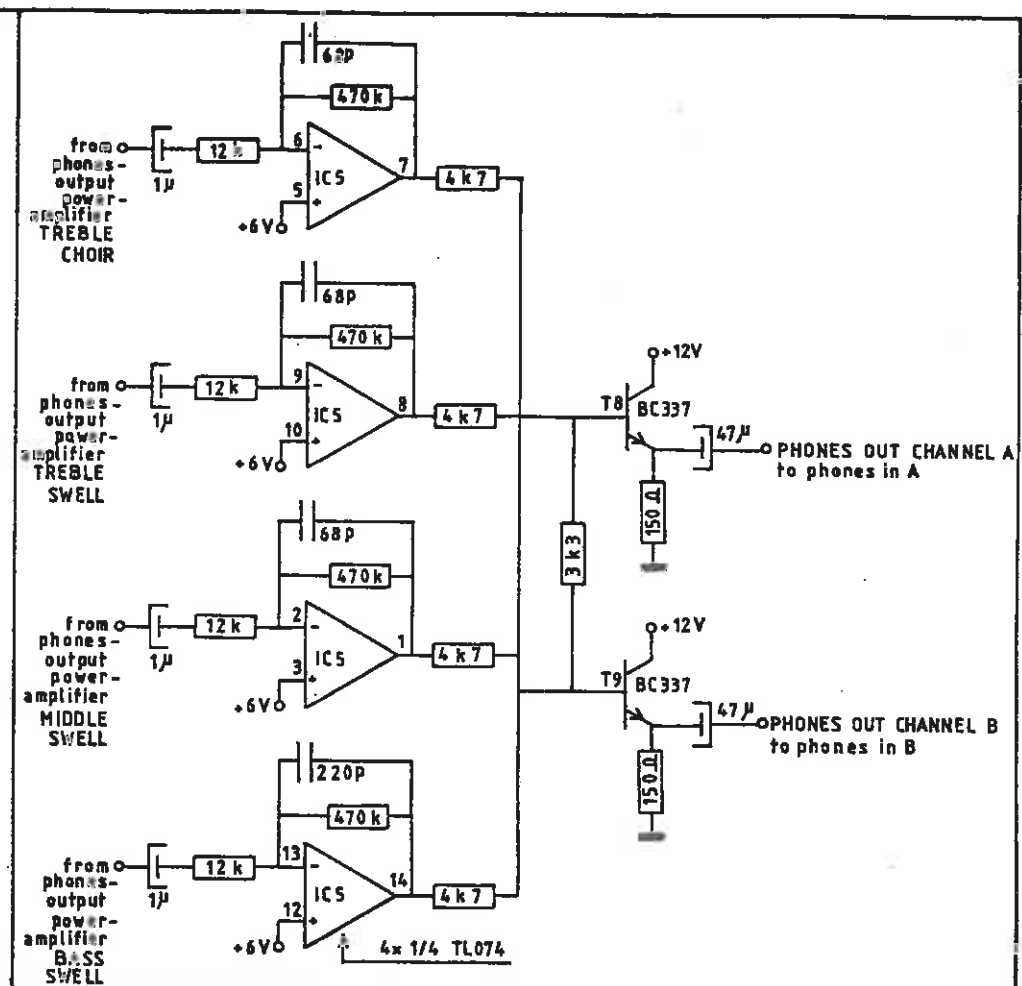
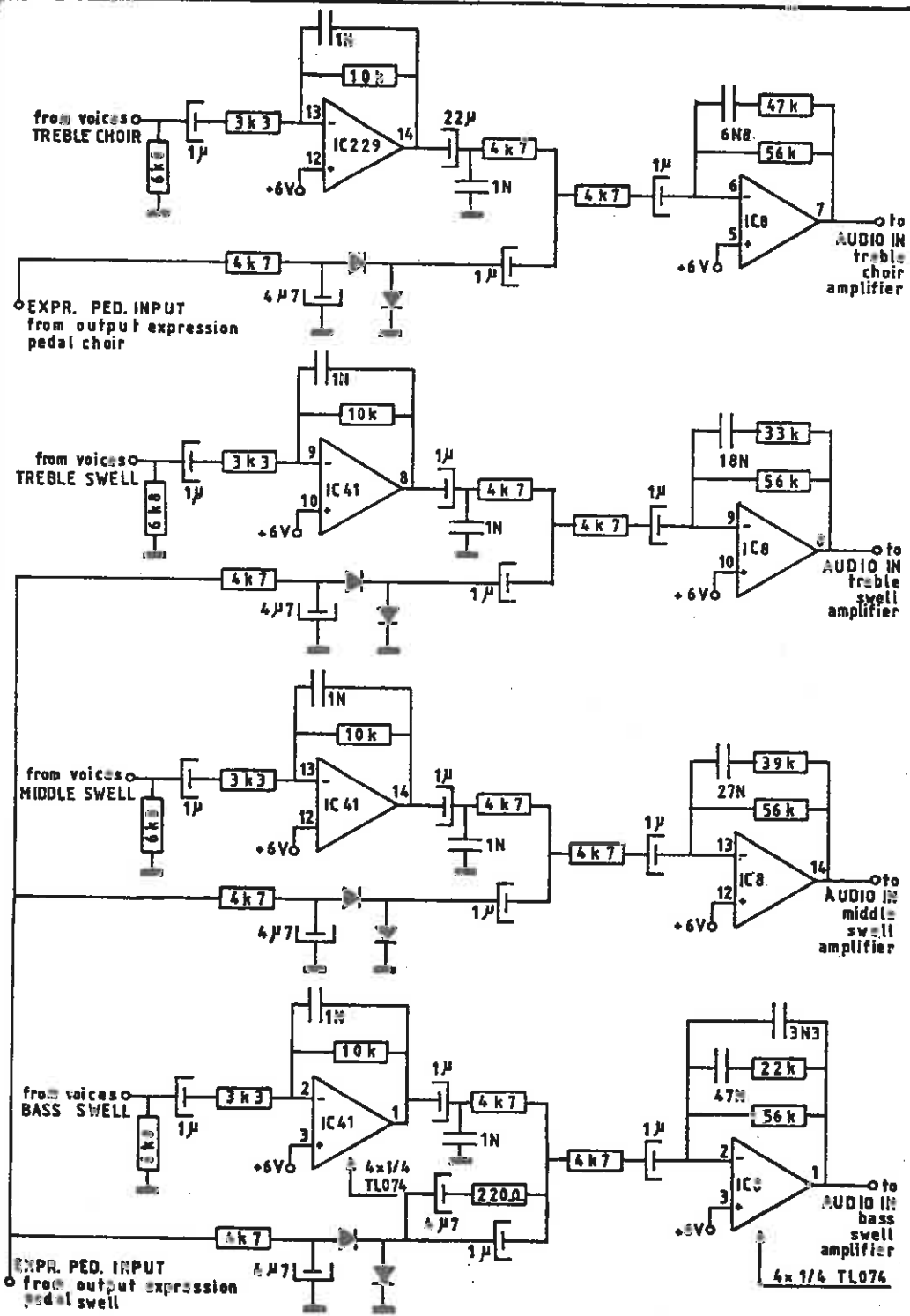
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INPUT/OUTPUT CIRCUIT ECHO UNIT			
Drawn	Date	Modified	Date
Verschuur	19 - 02 - 86		
DESIGN			
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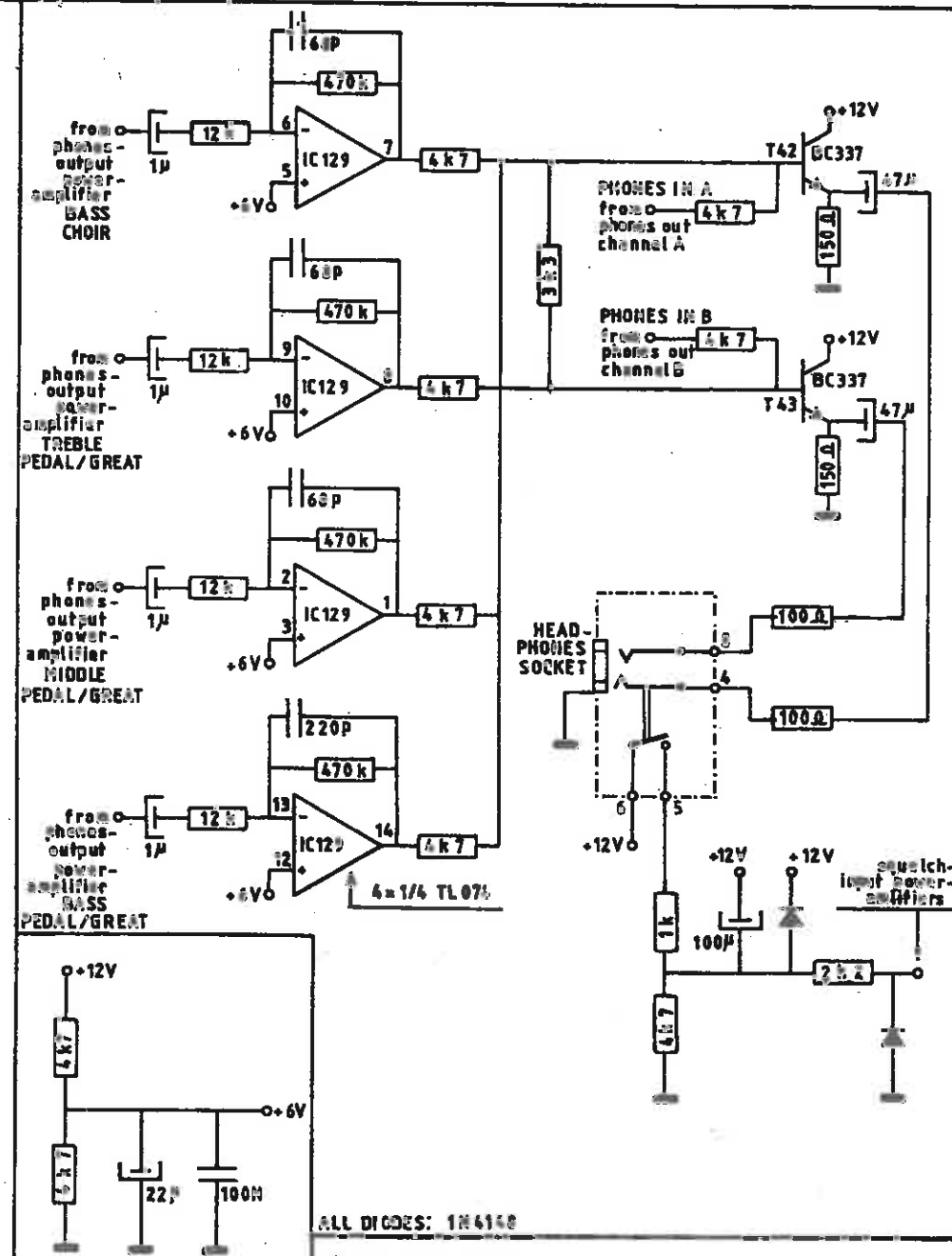
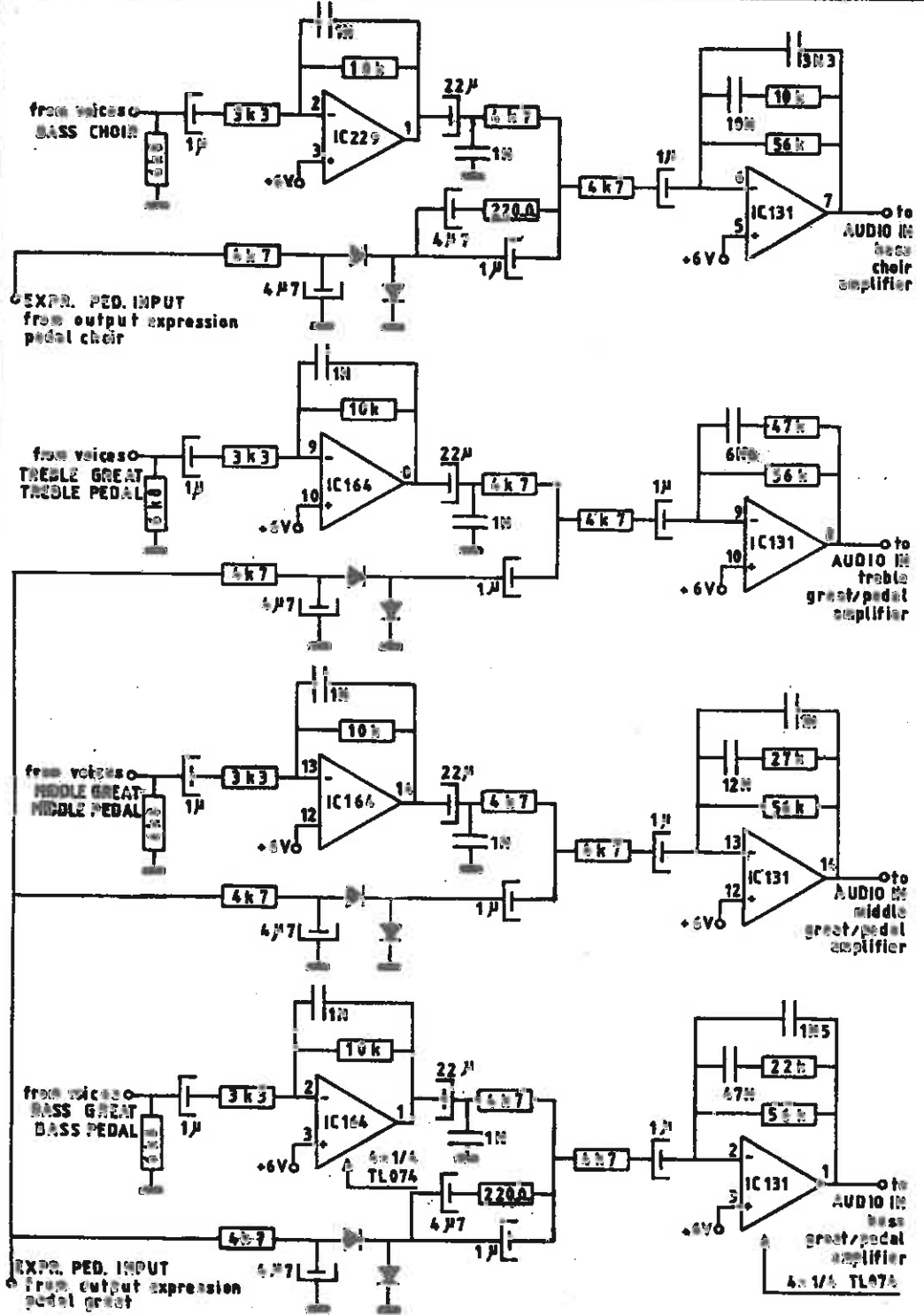
DELAY LINE ECHO UNIT				JOHANNUS ORGAN OPUS 243/245
Drawn	Date	Modified	Date	
Verschaor	19-02-86	Verschaor	17-09-86	
DESIGN				
LAB.				
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VOICE AMPLIFIERS & HEADPHONES-CIRCUIT (part 1)

Drawn	Date	Modified	Date	JOHANNUS ORGAN OPUS 243/245
Vrschoor	10-04-56			
DESIGN				
L.S.B.				



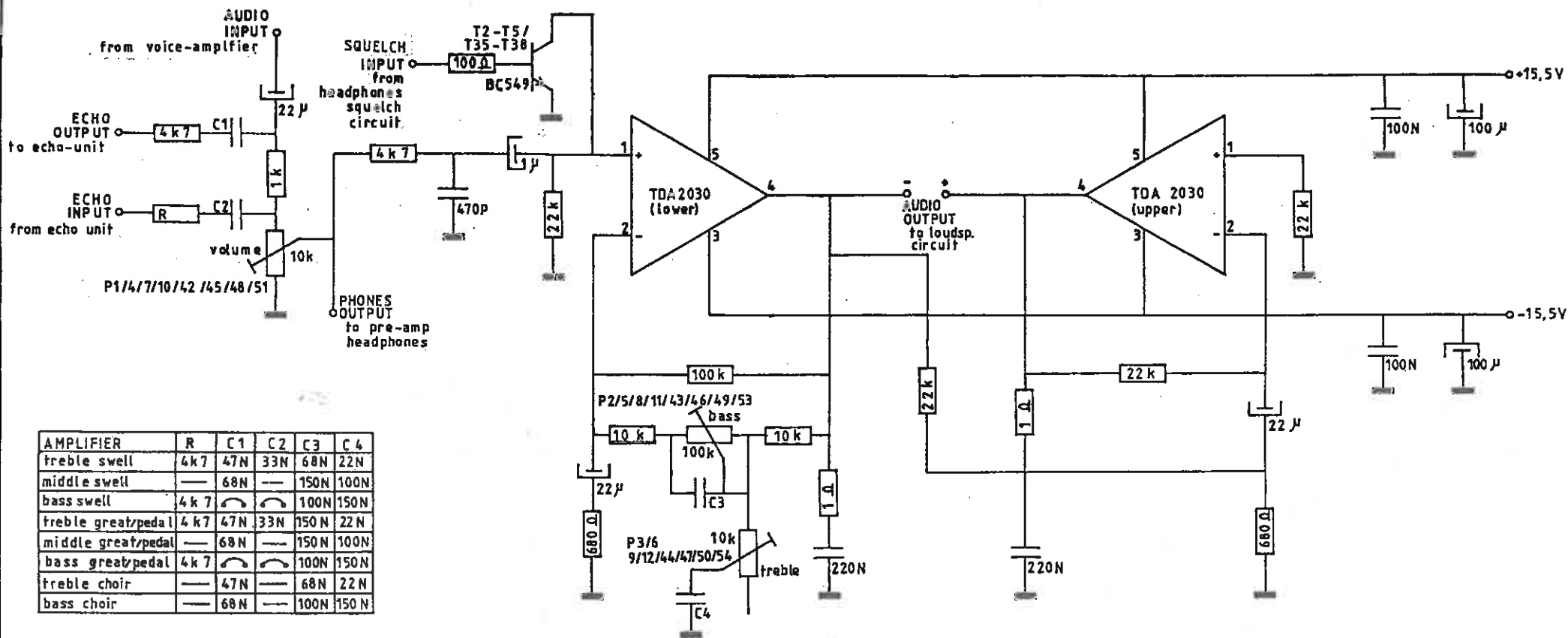
- 3x : 1x for IC 164
 1x for IC 229
 1x for IC 129 & 131

ALL DIGITS: 1N4148

VOICE AMPLIFIERS & HEADPHONES-CIRCUIT (part 2)

Drawn	Date	Modified	Date
Verschoor	11-04-16	Verschoor	04-09-05
DESIGN			
LAB.			

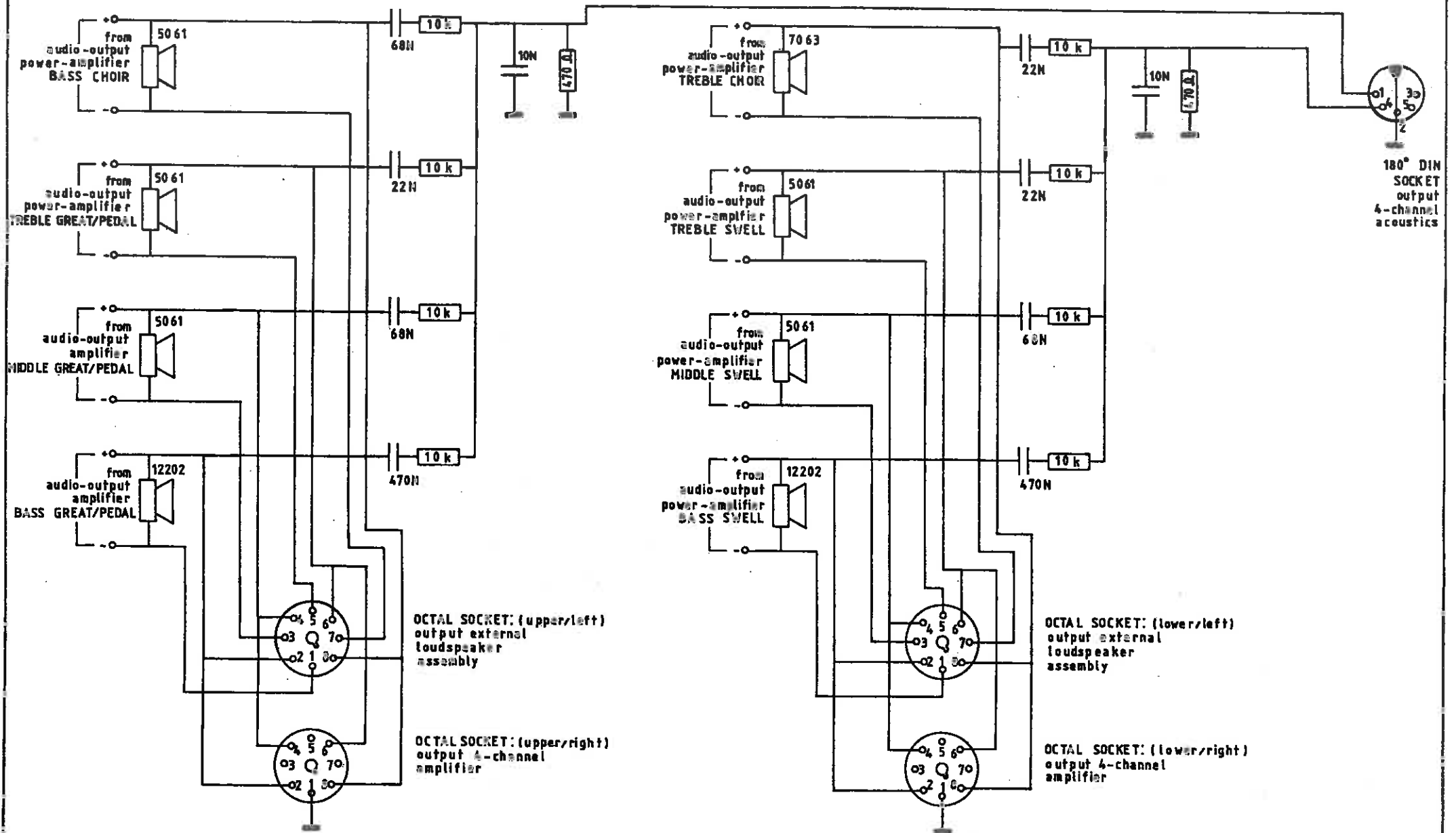
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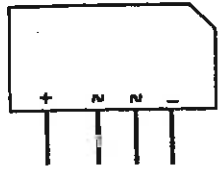
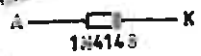
AMPLIFIER	R	C1	C2	C3	C4
treble swell	4k7	47N	33N	68N	22N
middle swell	—	68N	—	150N	100N
bass swell	4k7	⤵	⤵	100N	150N
treble great/pedal	4k7	47N	33N	150N	22N
middle great/pedal	—	68N	—	150N	100N
bass great/pedal	4k7	⤵	⤵	100N	150N
treble choir	—	47N	—	68N	22N
bass choir	—	68N	—	100N	150N

POWER - AMPLIFIER (8x)

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Verschoor	19-02-86			
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LOUDSPEAKER -CIRCUIT			
Drawn	Date	Modified	Date
Verschoor	18-04-56		
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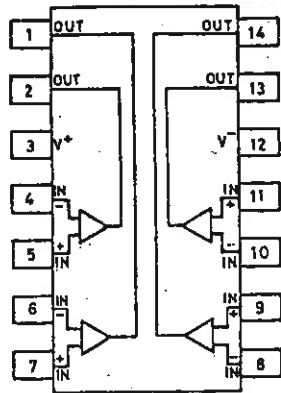
B80 C5000/3300



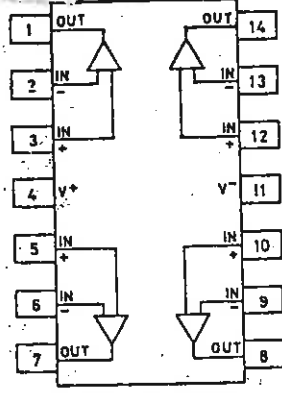
μA7812
μA7818



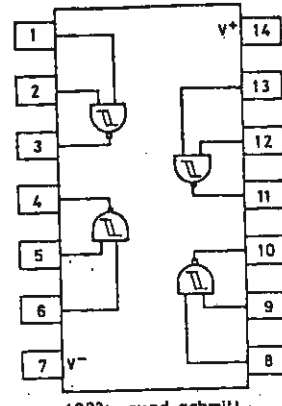
1=non-inverting input
2=inverting input
3=V-
4=output
5=V+ TDA 2030



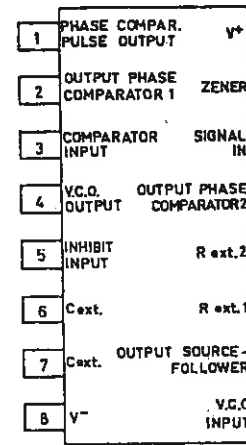
LM339: quad opamp



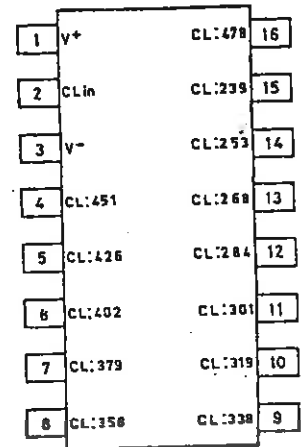
TL074: quad opamp
LM324: quad opamp



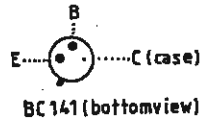
4093: quad schmitt-trigger



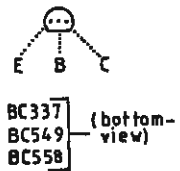
4046 phase locked loop circuit



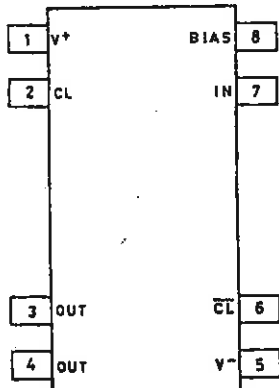
MO 83 top octave synthesizer



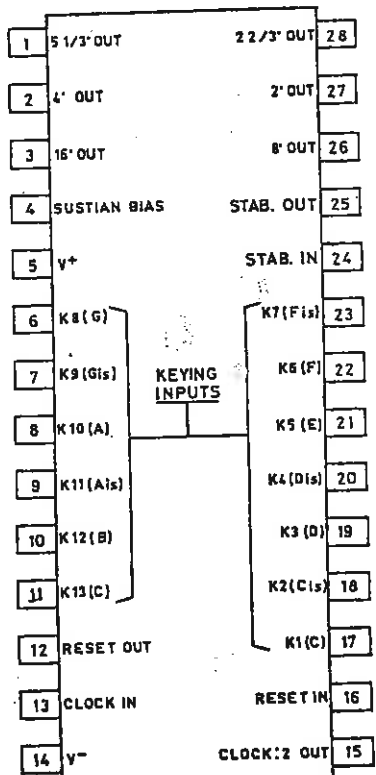
BC 141 (bottom view)



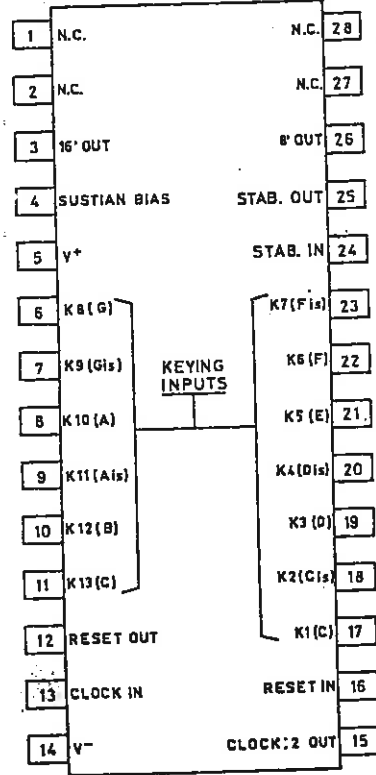
BC337
BC549
BC558 (bottom view)



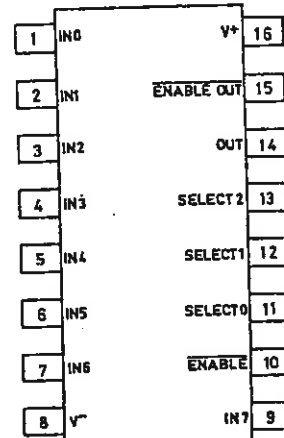
TDA 2108: delay line



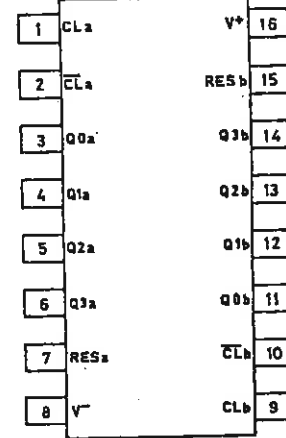
TMS 3617: top octave synthesizer with dividers and keyings



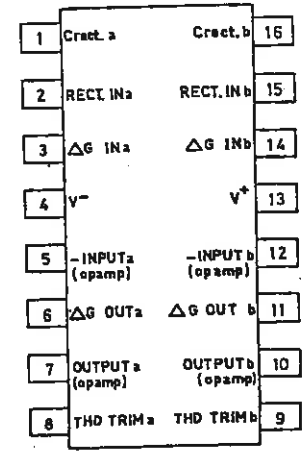
TMS 3615: top octave synthesizer with dividers and keyings



4512 8-input multiplexer with 3-stage output



4520 dual binary counter



NE 570: dual compandor

GENERAL INFORMATION SEMI-CONDUCTORS

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