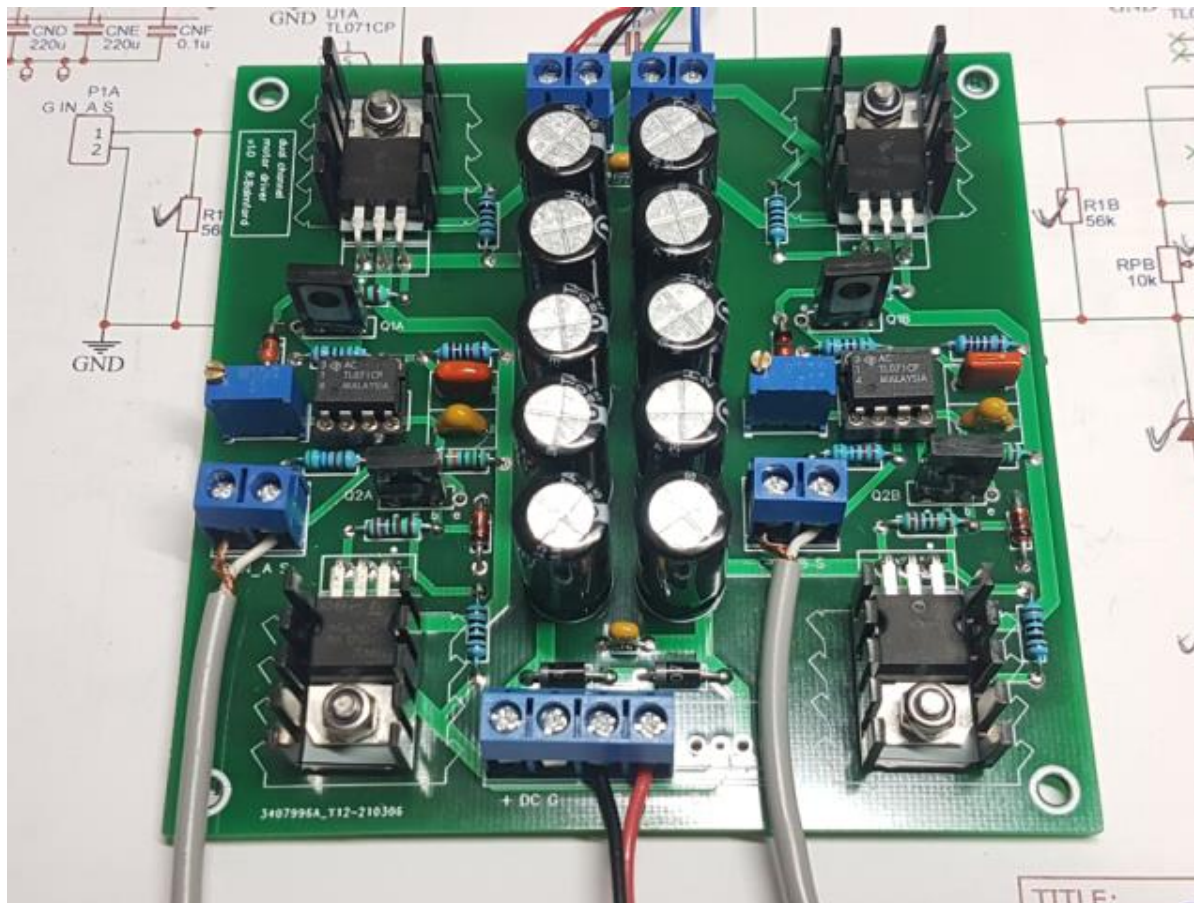
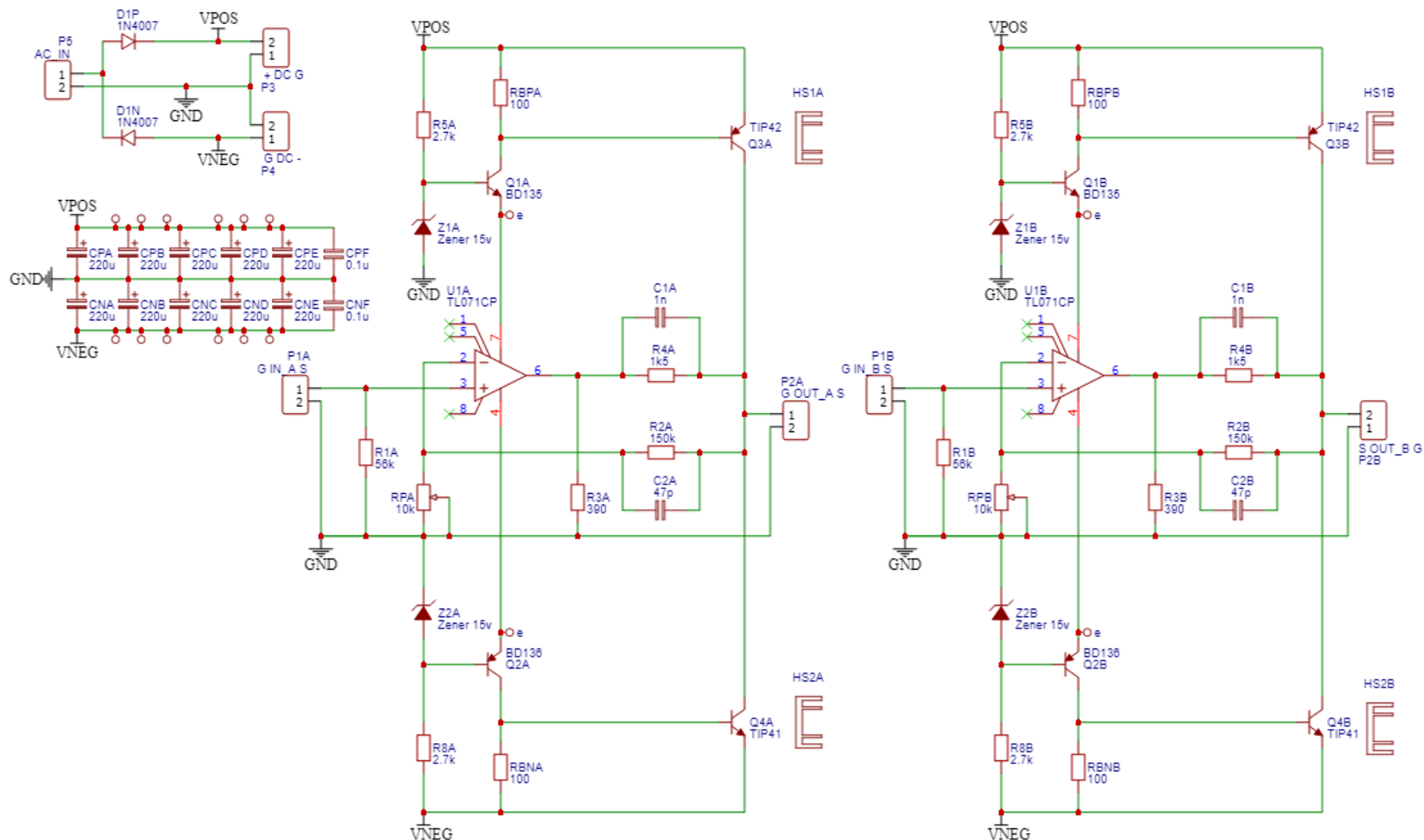


SPINAMP

2 channel amplifier for 24v AC synchronous motor





$$f_{lp1} = 1/(2 \cdot \pi \cdot 150k \cdot 47p) = 22.6kHz$$

$$f_{lp2} = 1/(2 \cdot \pi \cdot 1k5 \cdot 1n) = 106kHz$$

TITLE: spinamp		REV: 1.0
Company:		Sheet: 1/1
Date: 2021-02-22	Drawn By: R. Balmford	

BOM - spinamp

Designator	Part	Quantity
C1A,C1B	1n	2
C2A,C2B	47p	2
CNA,CNB,CNC,CND,CNE,CPA,CPB,CPC,CPD,CPE	*	*
CNF,CPF	0.1u	2
D1N,D1P	1N4007^	2 ^{\$}
HS1A,HS1B,HS2A,HS2B	TO-220 HEATSINK Aavid TV5G^	4
P1A,P1B,P2A,P2B,P3",P4",P5 ^{\$}	2-terminal connector 0.2" spacing	5-7
Q1A,Q1B	BD135^	2
Q2A,Q2B	BD136^	2
Q3A,Q3B	TIP42C^	2
Q4A,Q4B	TIP41C^	2
R1A,R1B	56k	2
R2A,R2B	150k	2
R3A,R3B	390	2
R4A,R4B	1.5k	2
R5A,R5B,R8A,R8B	2.7k	4
RBNA,RBNB,RBPA,RBPB	100	4
RPA,RPB	10k trimmer	2
U1A,U1B	TL071CP	2
Z1A,Z1B,Z2A,Z2B	15v Zener diode	4
	TO-220 insulating kit	4

* multiple footprints allow wide choice of values and number of caps, total at least 1000uF, 50v

^{\$} only if AC in used

" only if DC out/in required

^ or similar

BUILD NOTES - spinamp

Power supply is 24v AC single supply via transformer or 'wall-wart' type adapter.
Alternatively, can be supplied with +- 36-40v DC, in which case omit P5/D1x, and include P3/4.

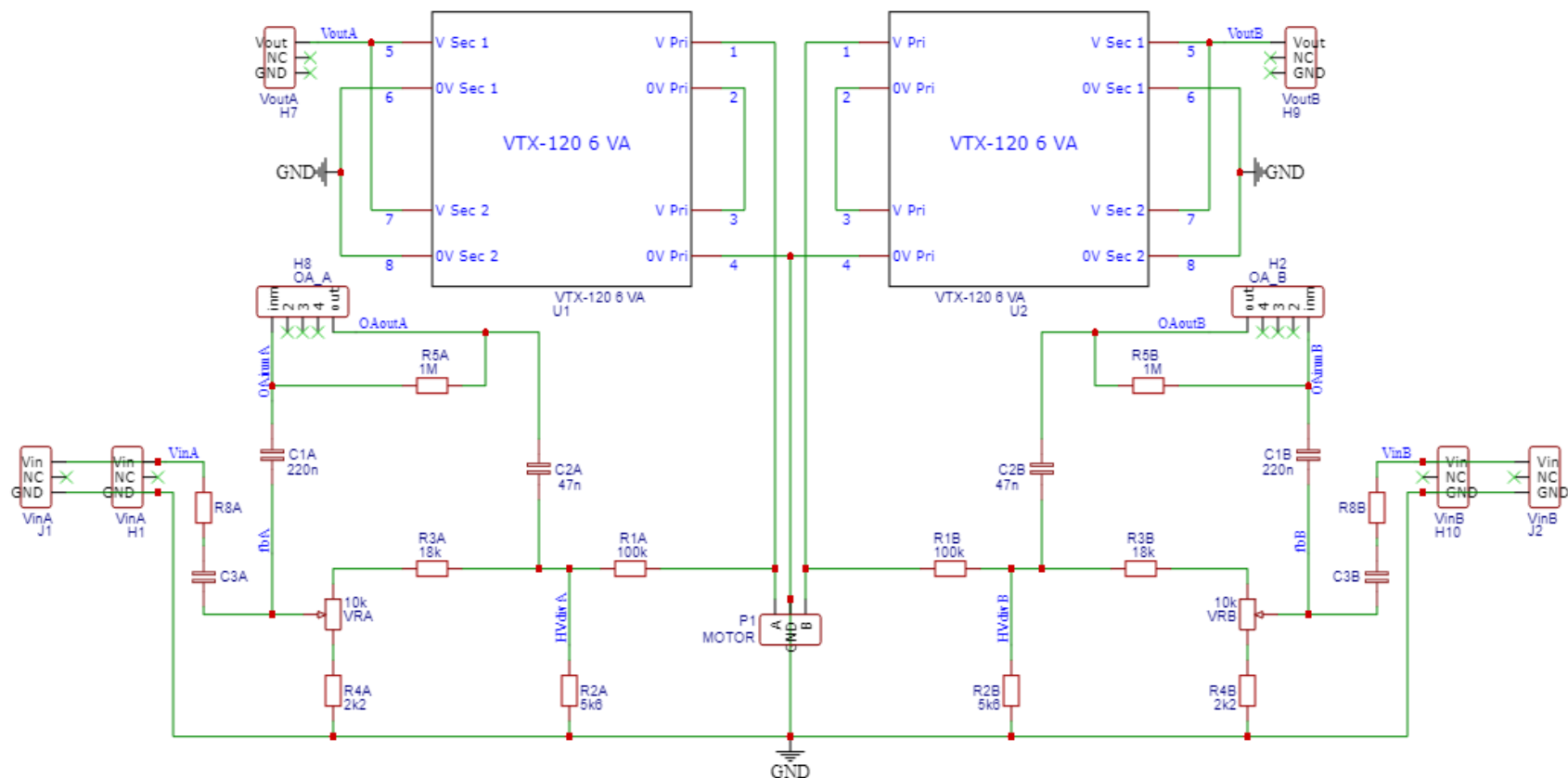
Many components are non-critical, as indicated in BOM.

TL071 should be used, to ensure stability with values shown.

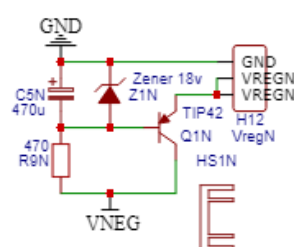
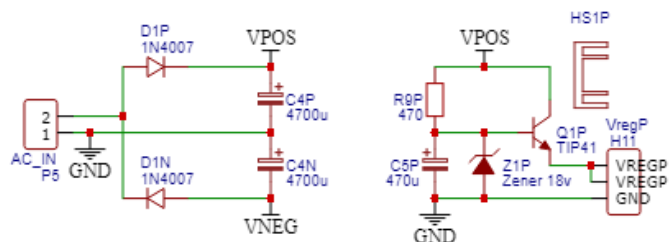
SPINAMP + SPINAMP_HV

2 channel amplifier for 110v AC synchronous motor





input amplitude 0.4 to 2.0v RMS



TITLE: spinamp_HV		REV: 1.0
Company:		Sheet: 1/1
Date: 2021-02-22	Drawn By: R. Balmford	

BOM – spinamp_HV

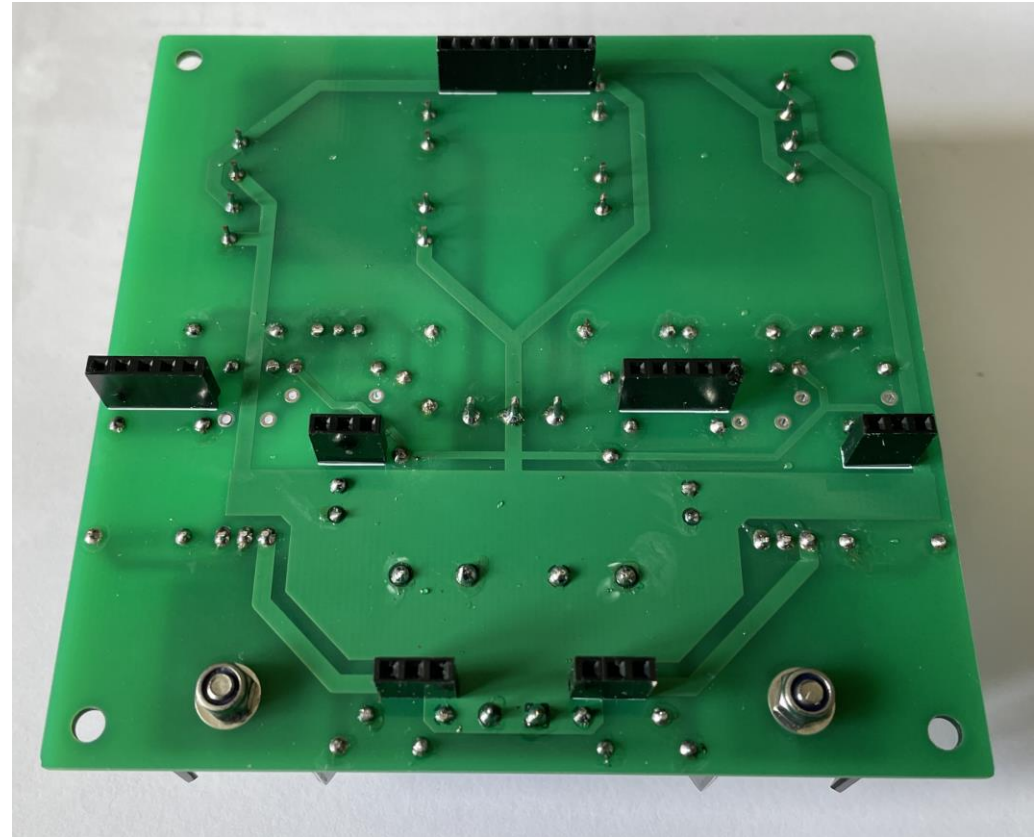
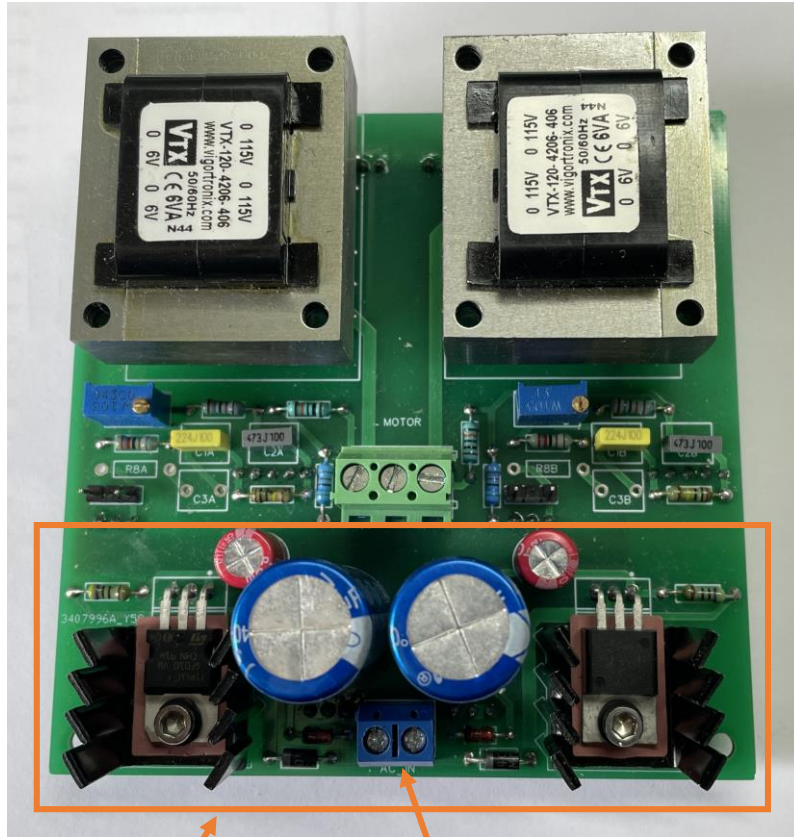
Designator	Part	Quantity
C1A,C1B	220n	2
C2A,C2B	47n	2
C3A,C3B	not fitted	
C4N,C4P	4700u 25v, 0.3" spacing, max. diameter 16mm	2*
C5N,C5P	470u 25v	2*
D1N,D1P	1N4007^	2*
H1,H7,H9,H10,H11*,H12*	3-pin female header	4/6
H2, H8	5-pin female header	2
HS1N,HS1P	TO-220 HEATSINK AAVID TV5G^	2*
J1, J2	3-pin male header (no middle pin)	2
P1	3-terminal connector 0.2" spacing	1
P5	2-terminal connector 0.2" spacing	1*
Q1N	TIP42C^	1*
Q1P	TIP41C^	1*
R1A,R1B	100k	2
R2A,R2B	5k6	2
R3A,R3B	18k	2
R4A,R4B	2k2	2
R5A,R5B	1M	2
R8A,R8B	not fitted	
R9N,R9P	470	2*
U1,U2	Vigortronix VTX-120-4206-406 PCB Transformer	2
VRA,VRB	10k trimmer	2
Z1N,Z1P	18v Zener diode	2*
	TO-220 insulating kit	2*

* supply filter, if using AC in

^ or similar

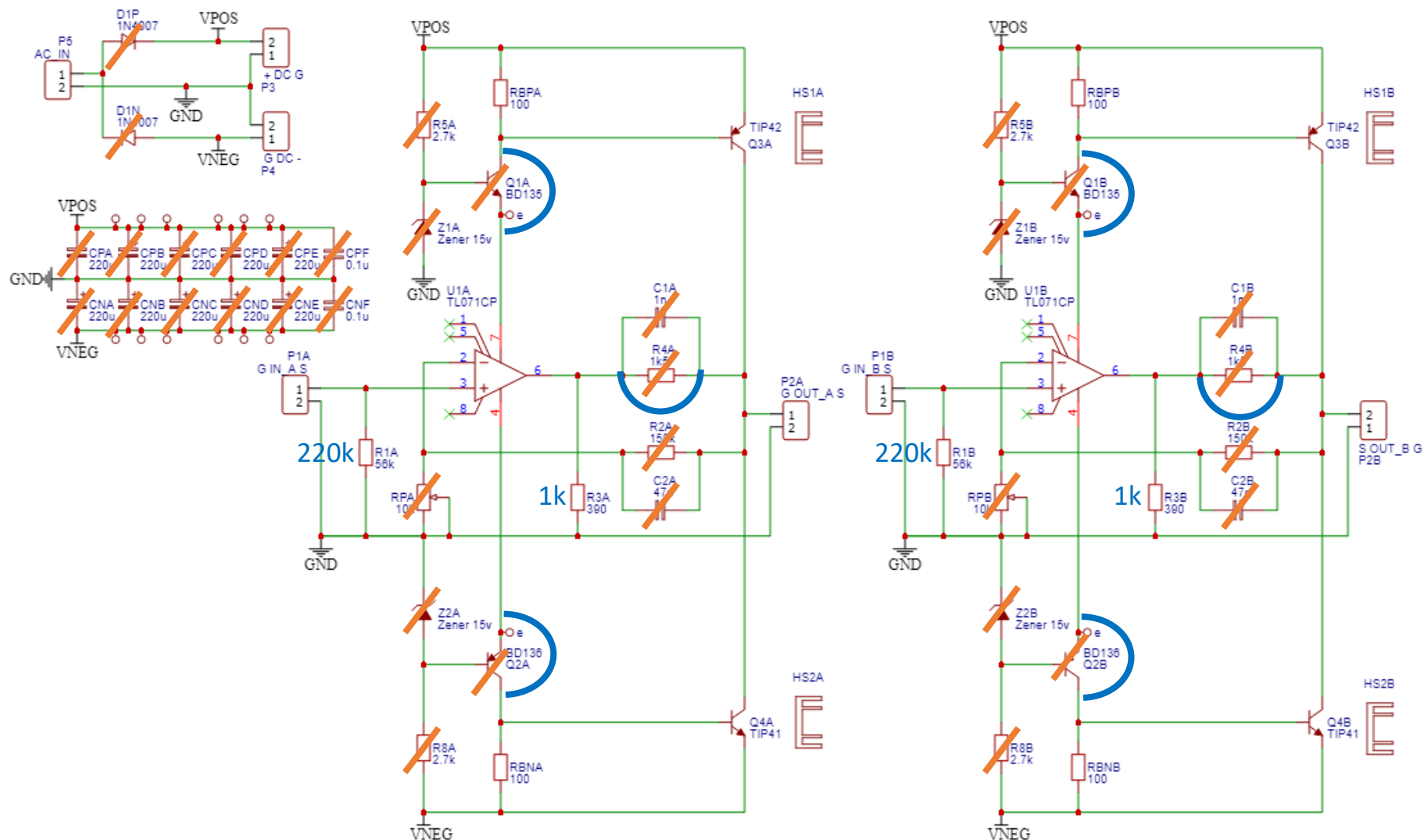
BUILD NOTES – spinamp_HV

Power supply is 12v AC single supply via transformer or 'wall-wart' type adapter, 6VA minimum.
Alternatively, can be supplied with +- 12-15v DC via spinamp board, see later.



supply filter
(if used)

12v AC in



spinamp modified for
use with spinamp_HV

TITLE: spinamp		REV: 1.0
Company:		Sheet: 1/1
Date: 2021-02-22	Drawn By: R. Balmford	

BOM – spinamp modified for use with spinamp_HV

Designator	Part	Quantity
HS1A,HS1B,HS2A,HS2B	TO-220 HEATSINK AAVID TV5G^	4
P1A,P1B,P2A,P2B,P3*,P4*	3-pin extended male header	4/6
	3-terminal connector 0.2" spacing	1"
R2A,R2B – fit header in place of resistors	5-pin extended male header	2
Q3A,Q3B	TIP42C^	2
Q4A,Q4B	TIP41C^	2
R1A,R1B	220k	2
R3A,R3B	1k	2
RBNA,RBNB,RBPA,RBPB	100	4
U1A,U1B	TL071CP	2
	TO-220 insulating kit	4
	M3 threaded standoff, 20mm	4

* if using AC in / supply filter on spinamp_HV board

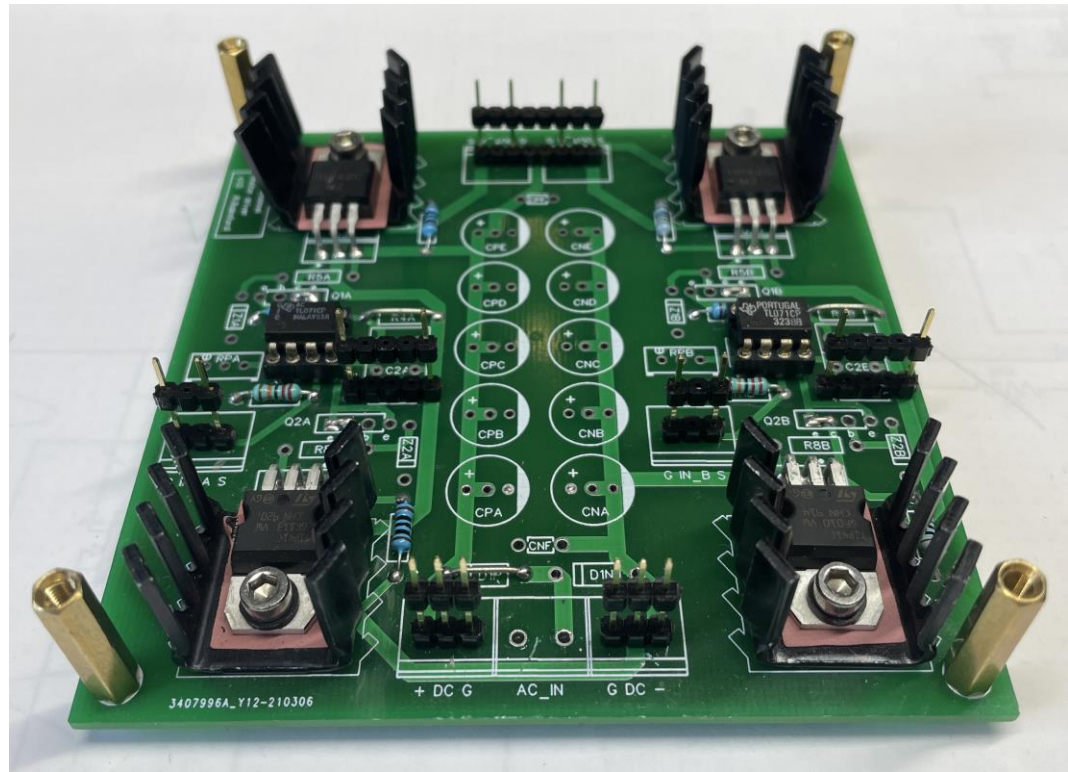
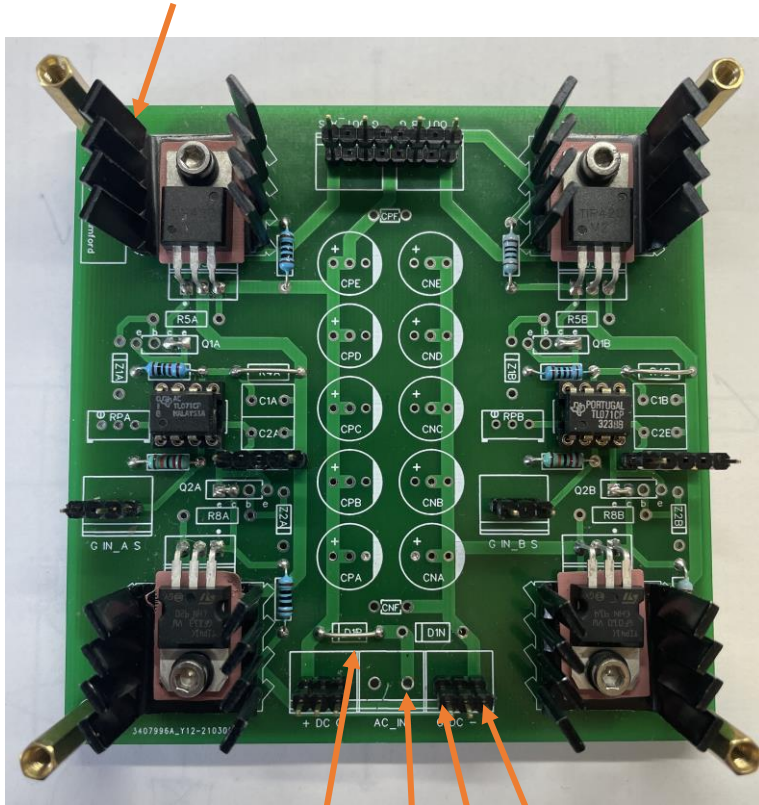
" if using external DC supply, see pictures

^ or similar

BUILD NOTES - spinamp for use with spinamp_HV

If using +/- 12-15v DC supply, omit P3 and P4 extended headers, and connect supply as shown below

bend vanes out slightly to avoid
fouling connections on underside
of spinamp_HV board



make link + GND -
for external DC supply