Checklist after service of

C-X

C 5:4X, C 10:4X, C 10:8X & C 20:8X

Created by: PT

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1 Introduction

This checklist shall be used to make sure the amplifier is always checked in a proper way after service has been done. It is important to follow the steps in this check list and check all points so that the set up of parameters in the amplifier is correct adjusted. When have done all checks and adjusted the parameters the amplifier will work properly and will have the output power that it is designed for.

2 Check list C Series-X

Always clean the amplifier by blowing with compressed air through coolers and fans. Be careful when blowing where big electrolytic capacitors are placed so that the capacitor doesn't get damaged.

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1.	Turn down variac (fig. 1). Insert mains plug from variac into amp.		

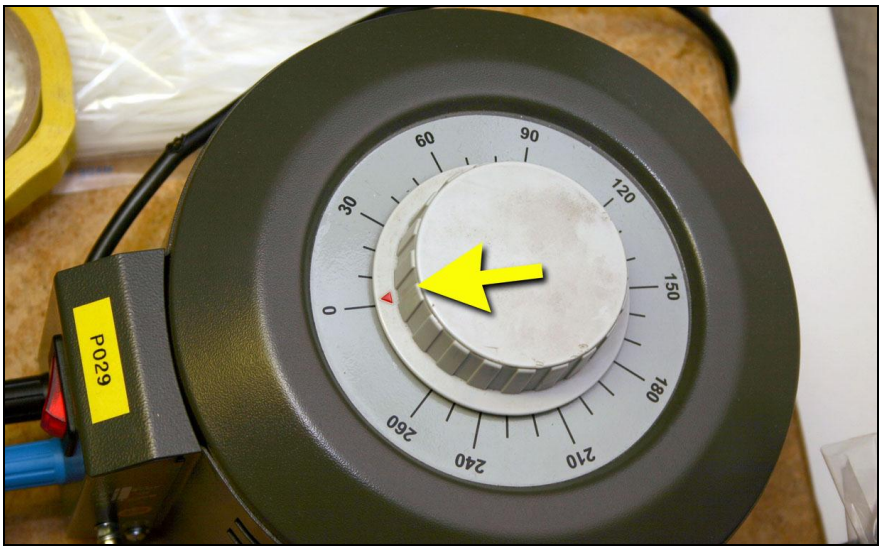

Fig. 1

2.	Mains switch **OFF** and remote switch **MANUAL** (fig. 2). Also make sure that all gain potentiometers is turned down.		

Fig. 2

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3.	Connect an oscilloscope probe (power supply oscilloscope) (fig. 3).		

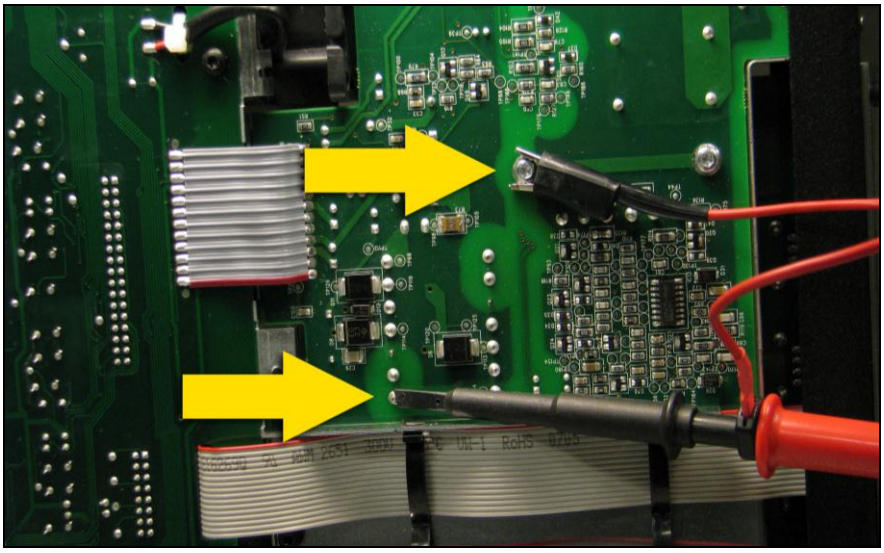

Fig. 3

4.	Slowly turn variac up to 100VAC, at the same time look at power supply oscilloscope. Line should increase simultaneously, look at power supply oscilloscope. Approximately at 100VAC power supply starts up (fig. 4). This can't be shut down, Always on when power cord is connected to AC.		

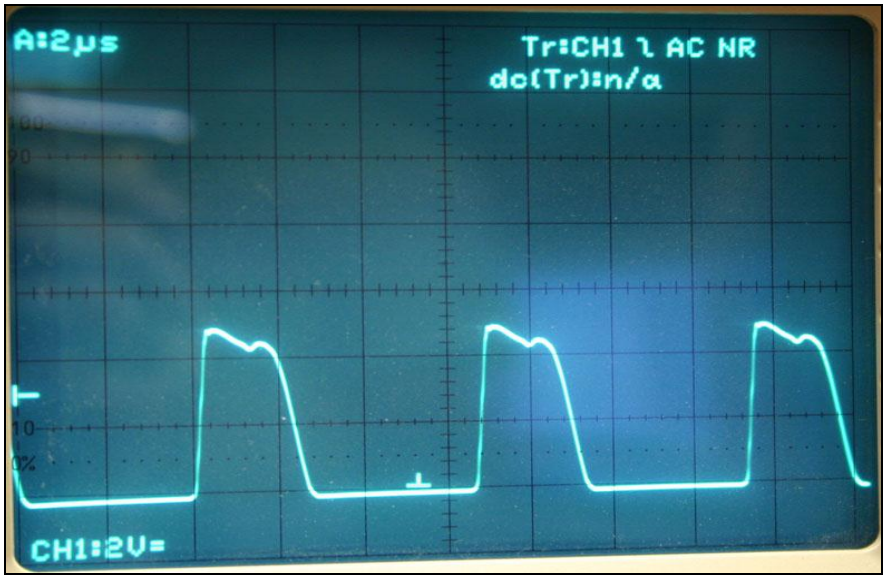

Fig. 4

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Oscilloscope settings: Voltage 2V/frame Time 2µs/frame

5.	Use voltmeter grounded into function generator and measure voltage (fig. 5).	+9,5VDC	+8,5-13V

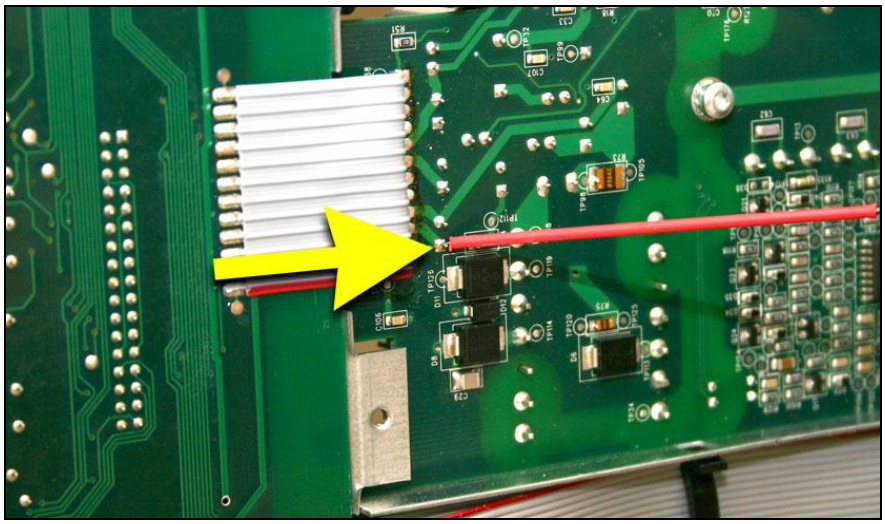

Fig. 5

6.	Use voltmeter grounded into function generator and measure voltage (fig. 6).	+12VDC	+11,5-13,5V

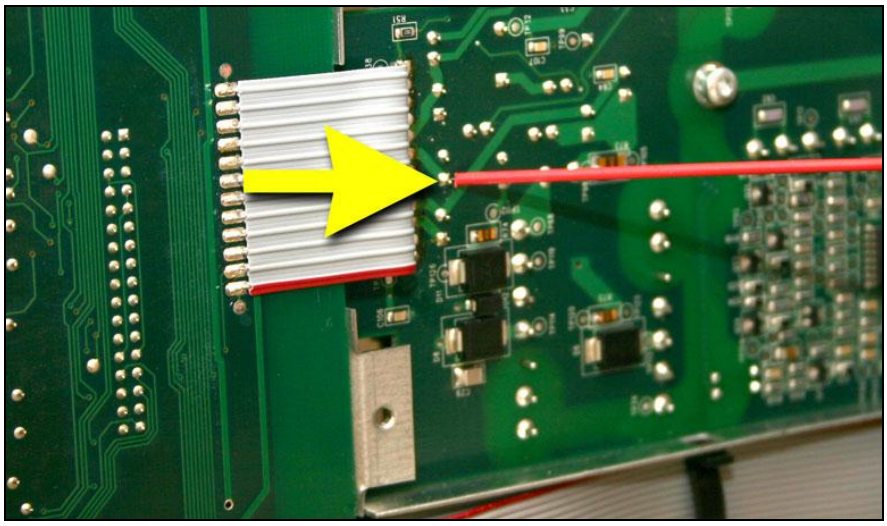

Fig. 6

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7.	Use voltmeter grounded into function generator and measure voltage (fig. 7).	-12VDC	-11,5-13,5V

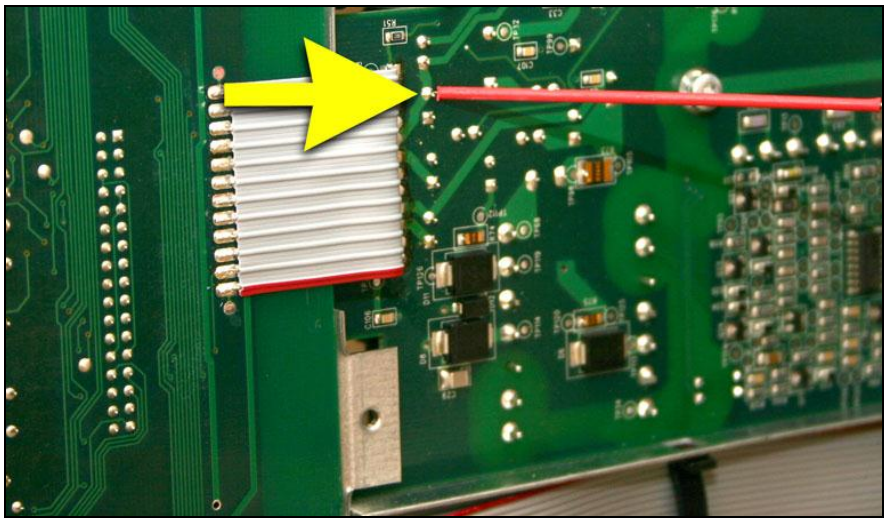

Fig. 7

8.	Use voltmeter grounded into function generator and measure voltage (fig. 8).	+53VDC	+53-68V

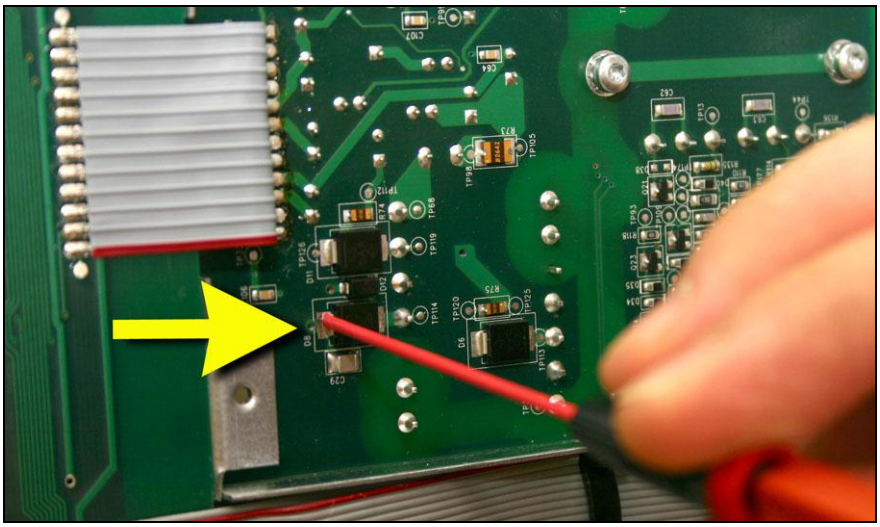

Fig. 8

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9.	Move oscilloscope probe to PFC choke (fig. 9).		

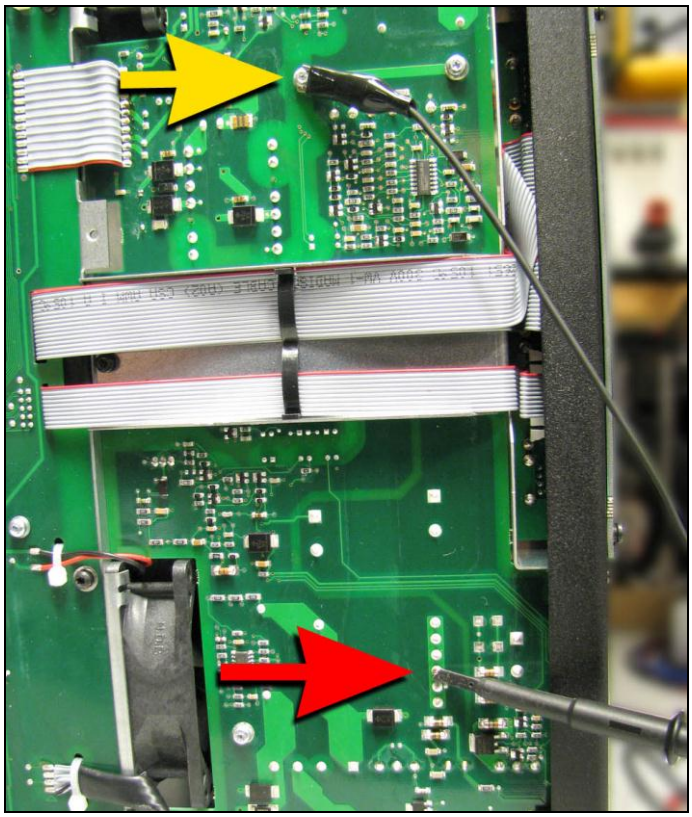

Fig. 9

10.	Check waveform on power supply oscilloscope (fig. 10).		

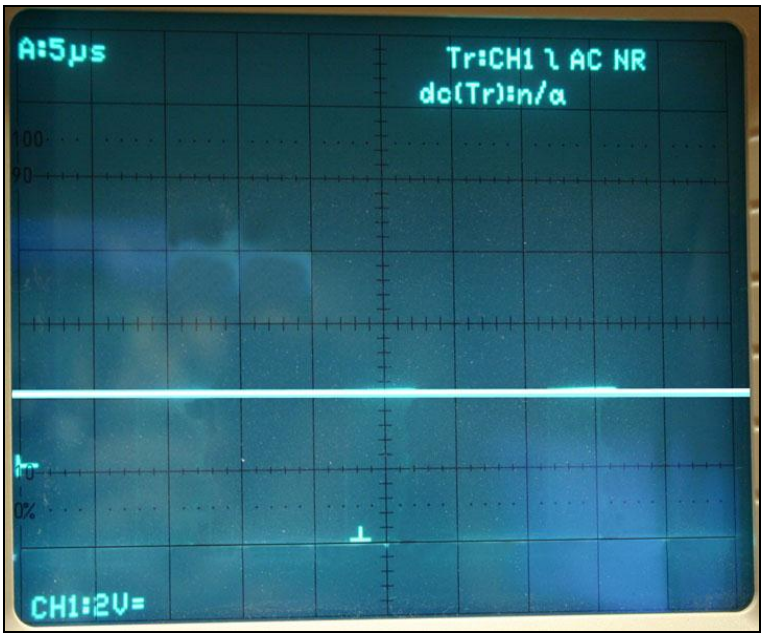

Fig. 10

Oscilloscope settings: Voltage 2V/frame Time 5µs/frame

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11.	Mains switch **ON.** Check waveform on power supply oscilloscope (fig. 11).		

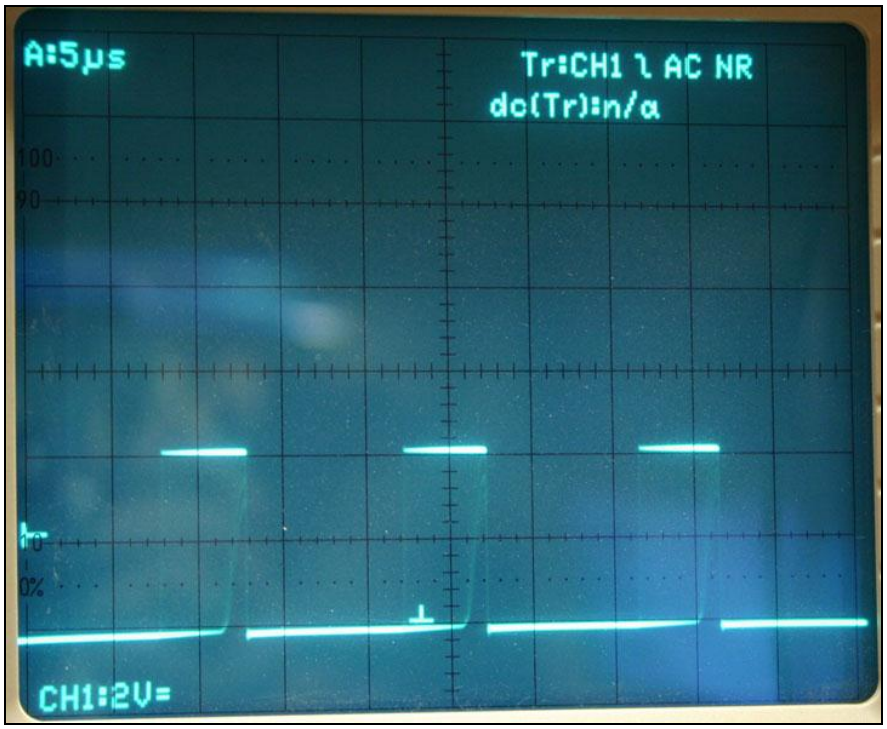

Fig. 11

Oscilloscope settings: Voltage 2V/frame Time 5µs/frame

12.	Measure PFC voltage (fig. 12). **Caution! Power supply ground.** **Voltmeter can be grounded in power supply oscilloscope.**	400V	395-410V

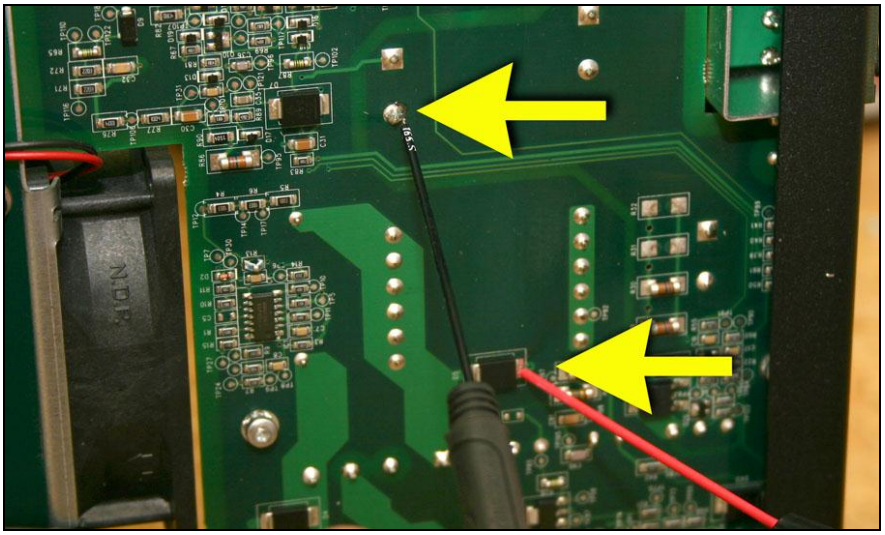

Fig. 12

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13.	Use voltmeter grounded into function generator and measure voltage (fig. 13).	+105VDC	+104-107V

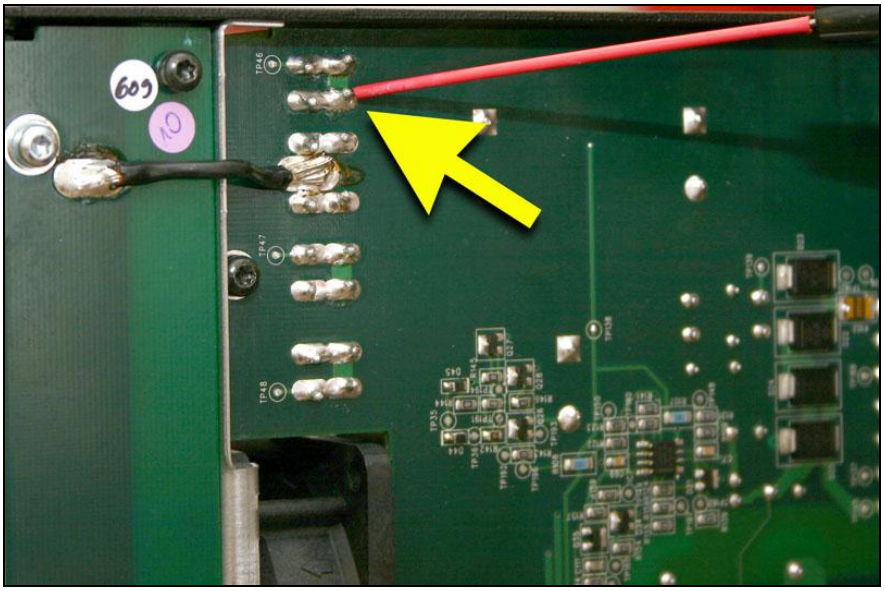

Fig. 13

14.	Use voltmeter grounded into function generator and measure voltage (fig. 14).	-105VDC	-104-107V

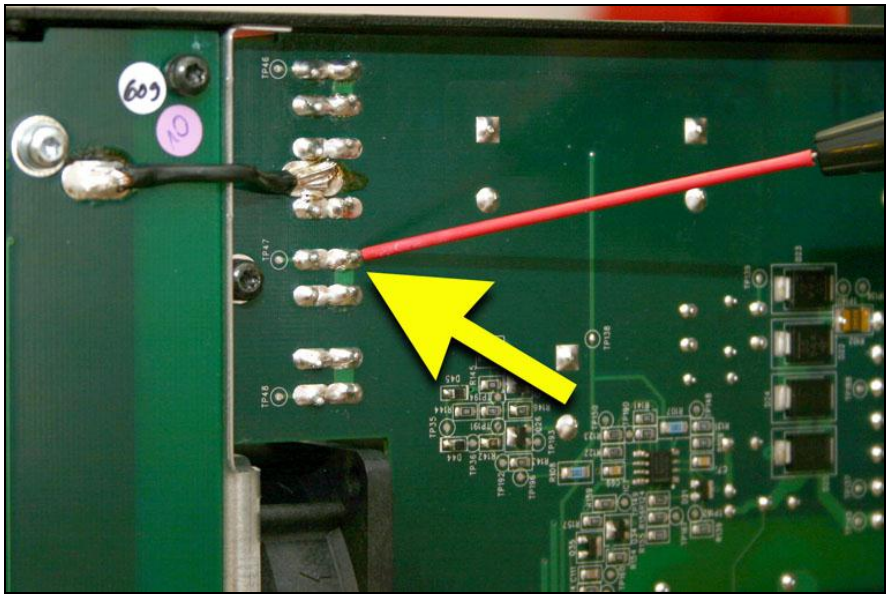

Fig. 14

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15.	Use voltmeter grounded into function generator and measure voltage (fig. 15).	-91VDC	-90-93V

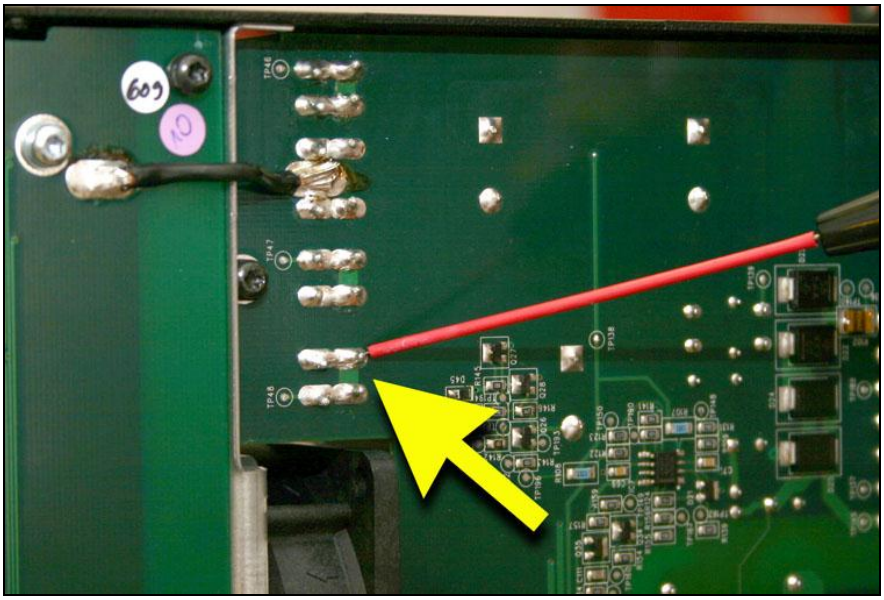

Fig. 15

16.	Check and set the 18V if necessary. It must not be higher than 18V at the highest measure and not lower than 17,95V at the lowest measure. Where to measure and set the 18V with the potentiometer is shown in the picture below (fig. 16).	+18V / -18V	18 - 17,95V

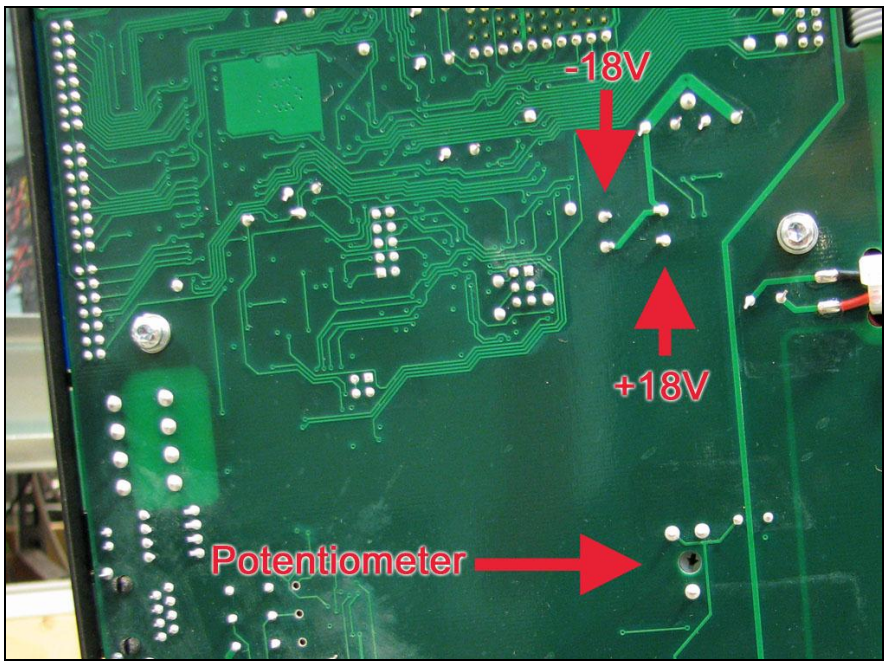

Fig. 16

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17.	Following tests are made for all Channels Increase input signal (fig. 17).		

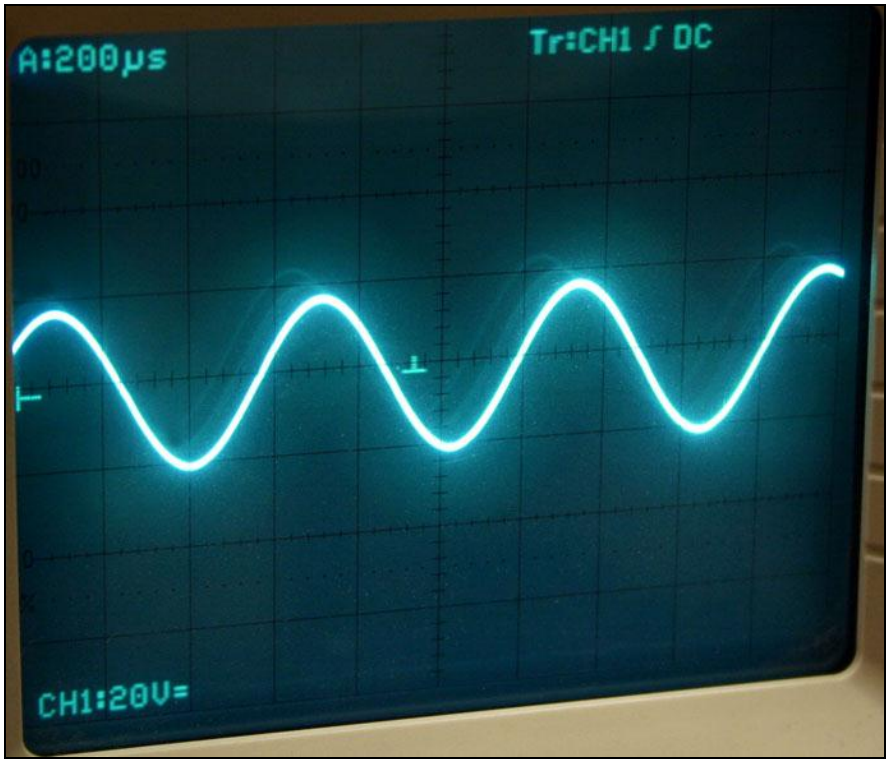

Fig. 17

Oscilloscope settings: Voltage 20V/frame Time 200µs/frame

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18.	Check output signal at clip 16Ω (fig. 18). **Attention! At 8 ohms load, CPL can appear sometimes.**		

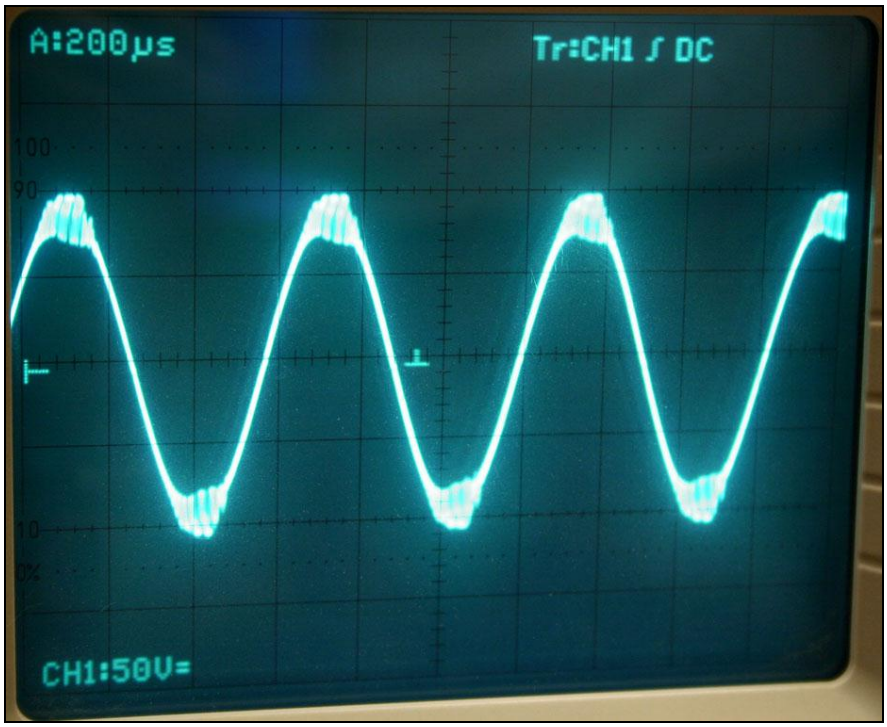

Fig. 18

Oscilloscope settings: Voltage 50V/frame Time 200µs/frame

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19.	Check temp and fan control by short temp sensor on output moduls with cable (fig. 19). Fans running at full speed and Temp led's lights up. The temp sensors are common for channel A & B, C & D, E & F and G & H. One connector shall be grounded into function generator.		

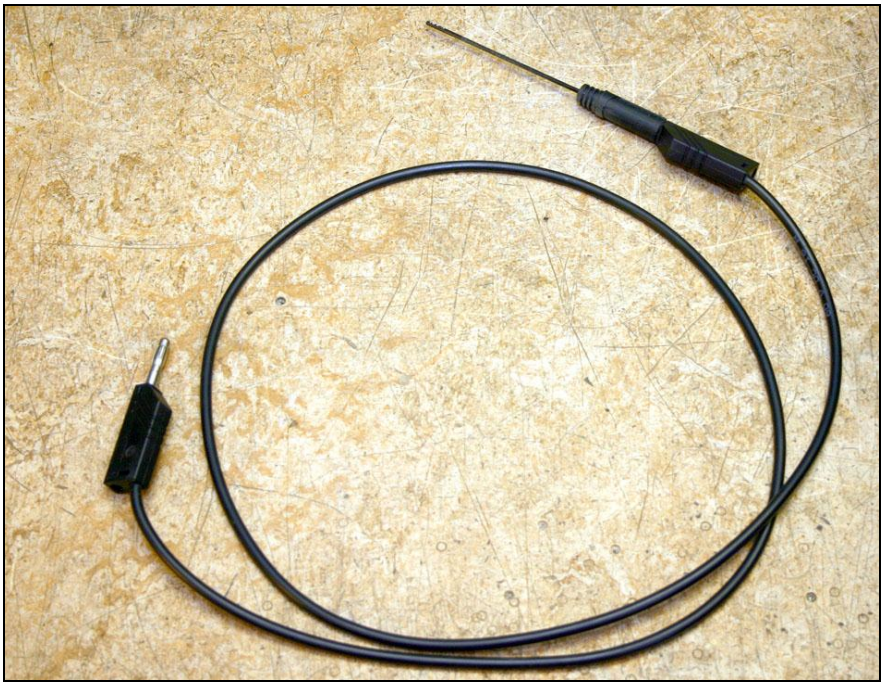

Fig. 19

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20.	Check channel A & B (fig. 20). At the same time look at the led's on front panel (fig. 21).		

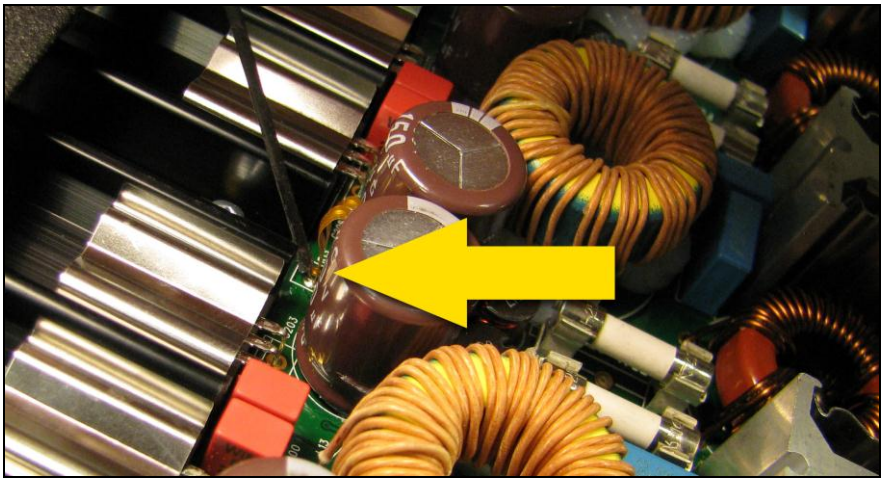

Fig. 20

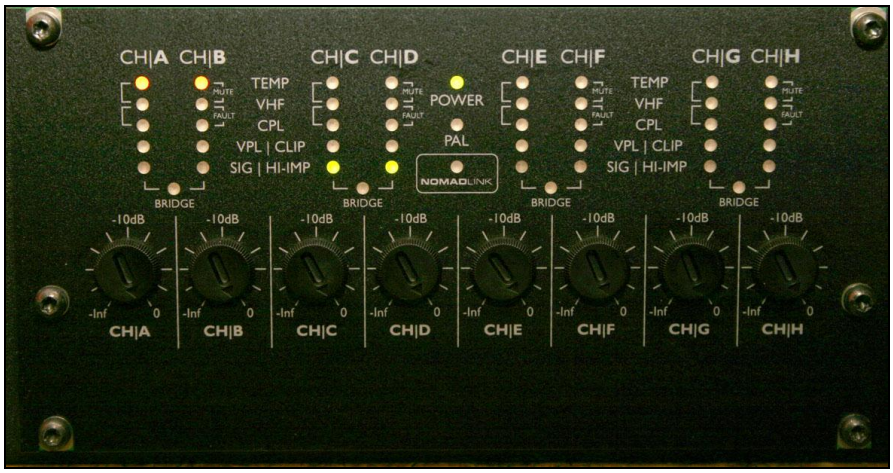

Fig. 21

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21.	Check channel C & D (fig. 22). At the same time look at the led's on front panel (fig. 23).		

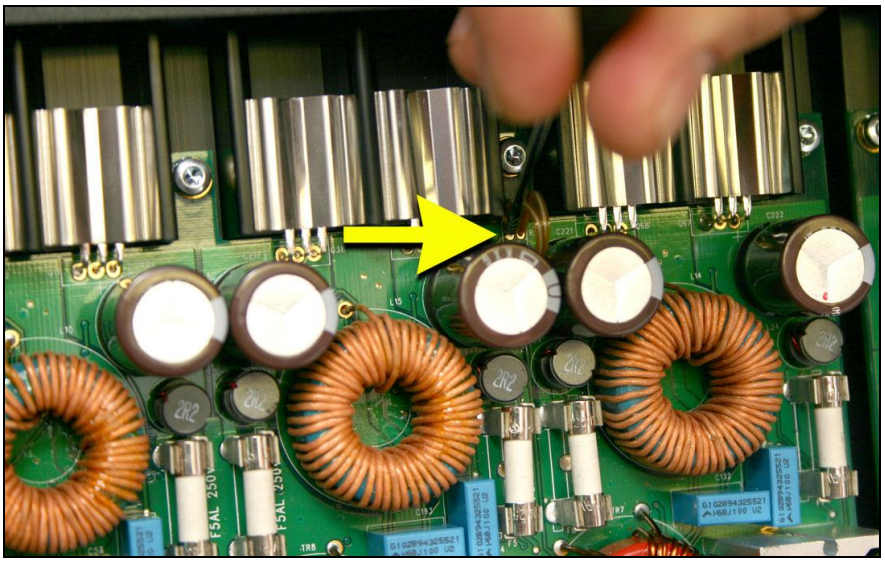

Fig. 22

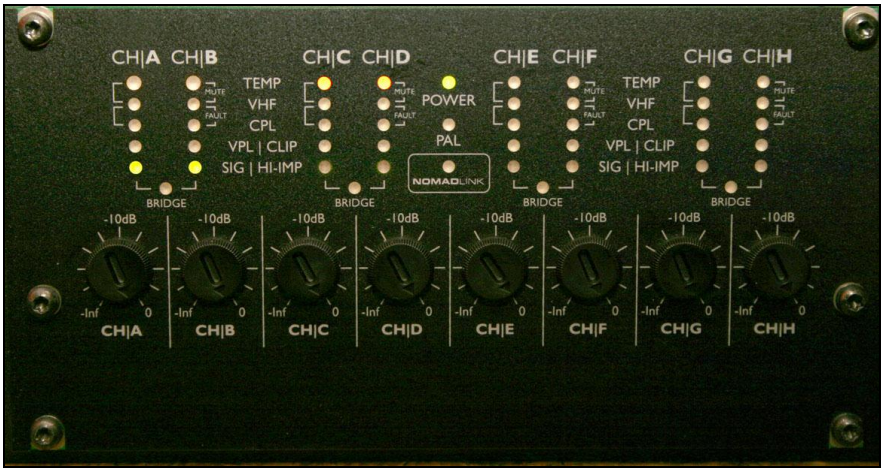

Fig. 23

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22.	Check channel E & F (fig. 24). At the same time look at the led's on front panel (fig. 25).		

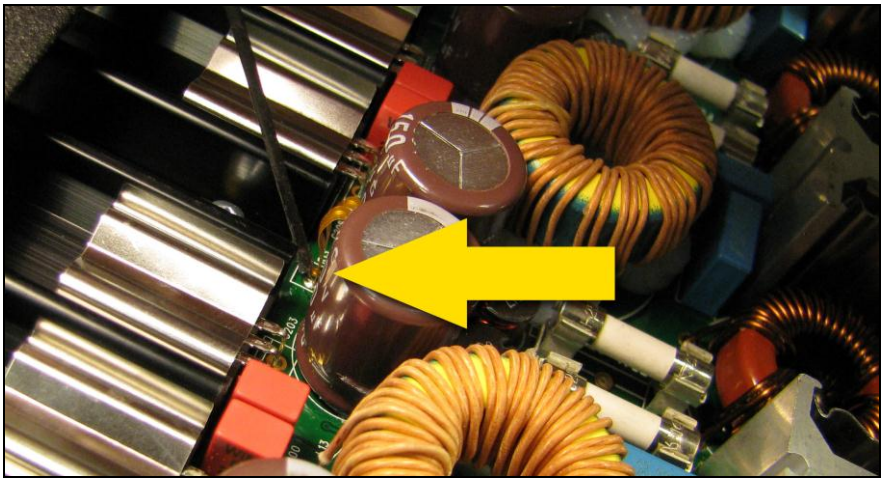

Fig. 24

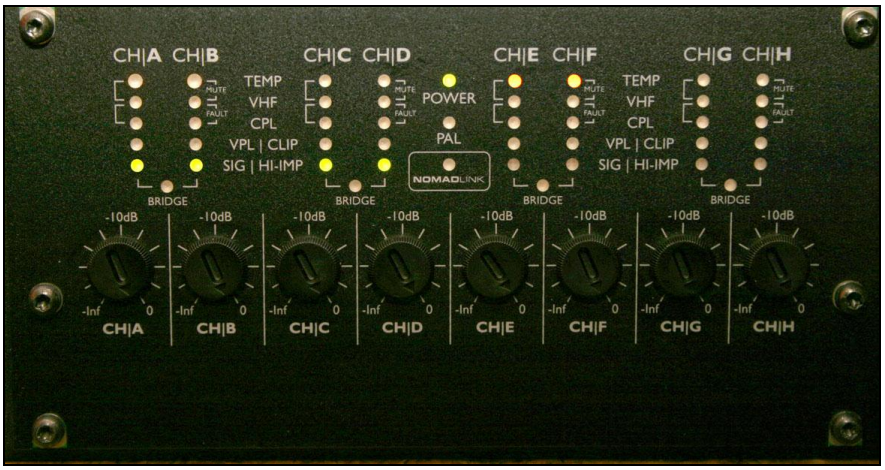

Fig. 25

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23.	Check channel G & H (fig. 26). At the same time look at the led's on front panel (fig. 27).		

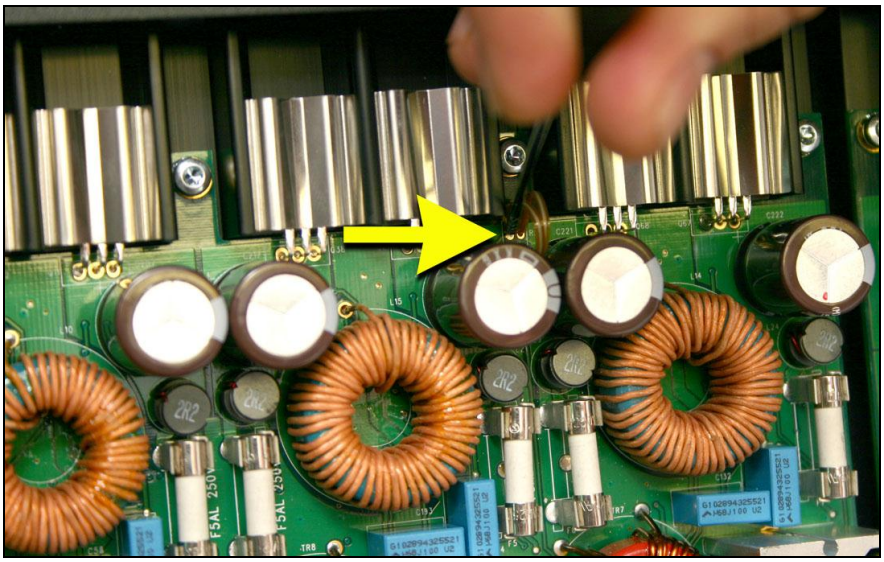

Fig. 26

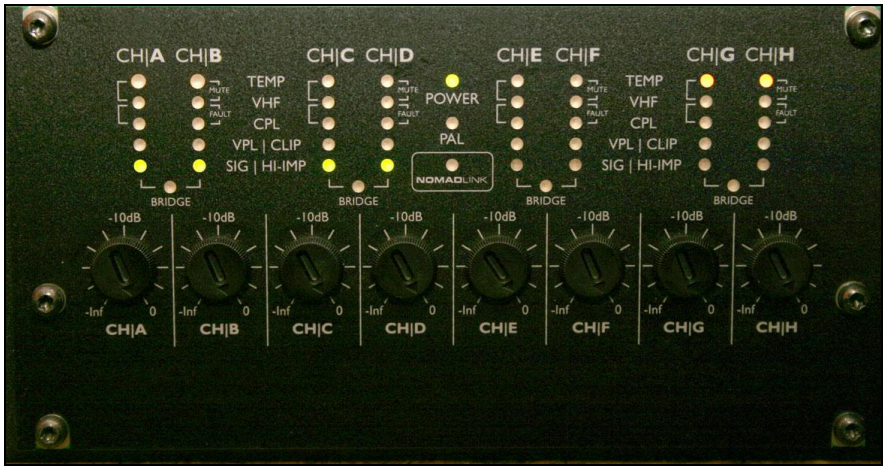

Fig. 27

24.	Check offset on all channels, <5mV. **Attention! No input signal.**		

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25.	Perform a test of the overcurrent protection by quickly short circuit (ATTENTION! Do not maintain for a long period of time) the R208 located on SP20F08x (fig. 28) **or** R1 located on P34OVPA01 if your article number is SP20F07x or older (fig. 29). Make sure the power supply turns off for about 2 seconds and then starts back up.		

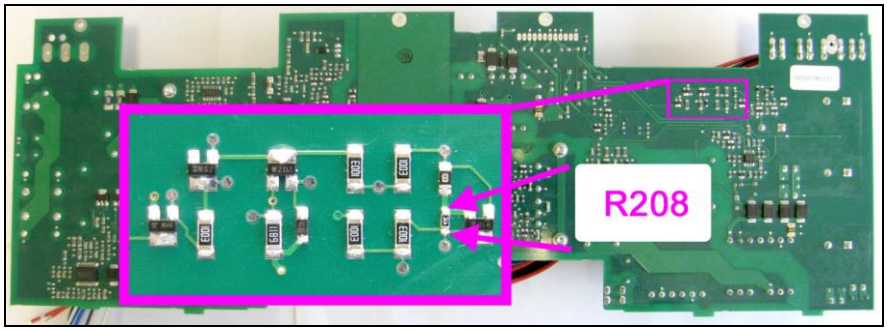

Fig. 28 – Found on SP20F08-Fxx P34401-F or newer.

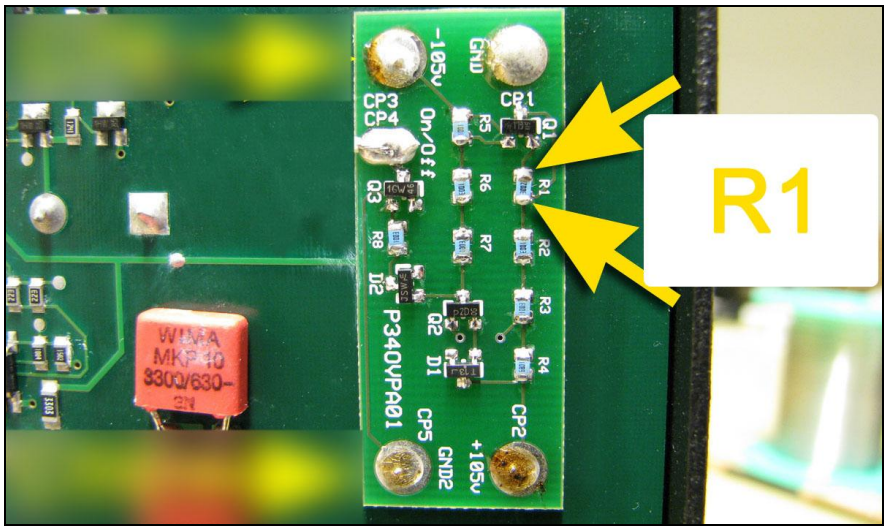

Fig. 29 – Found on (SP20F06-Fxx) P34401-H or lower

26) Check mains switch for bad contact (click noise).

27) Check gain potentiometers at front. No disturbance at output signal shall be detected when turning the potentiometer from one end point to the other end point.

28) Check dust filter, change when needed.

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