



6112 FX-Loop

6112 FX-Loop

Serial tube FX-Loop

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Introduction

The Tube-Town FX-Loop 6112 is an active effect loop designed as retrofit kit for tube amplifiers for guitar or bass guitar.

The module works with the typically high supply voltage in a tube amplifier (DANGER TO LIFE) and is powered by the power supply of the amplifier.

The module is neutral and universally designed, as good as possible, so it can be installed and operated in a variety of amplifiers. On the following pages a few examples are outlined how and where in the circuit an integration can be realized. Due to the large number of amplifiers, it is not possible to provide guides or installation instructions for all models.

Hints

Manufacturers and distributors are not liable or responsible for the consequences of inappropriate use, installation errors or operation errors of this product due to disregard of the manual. The installation should only be completed by qualified personnel.

The contents of this manual are subject to change without notice.

Warning

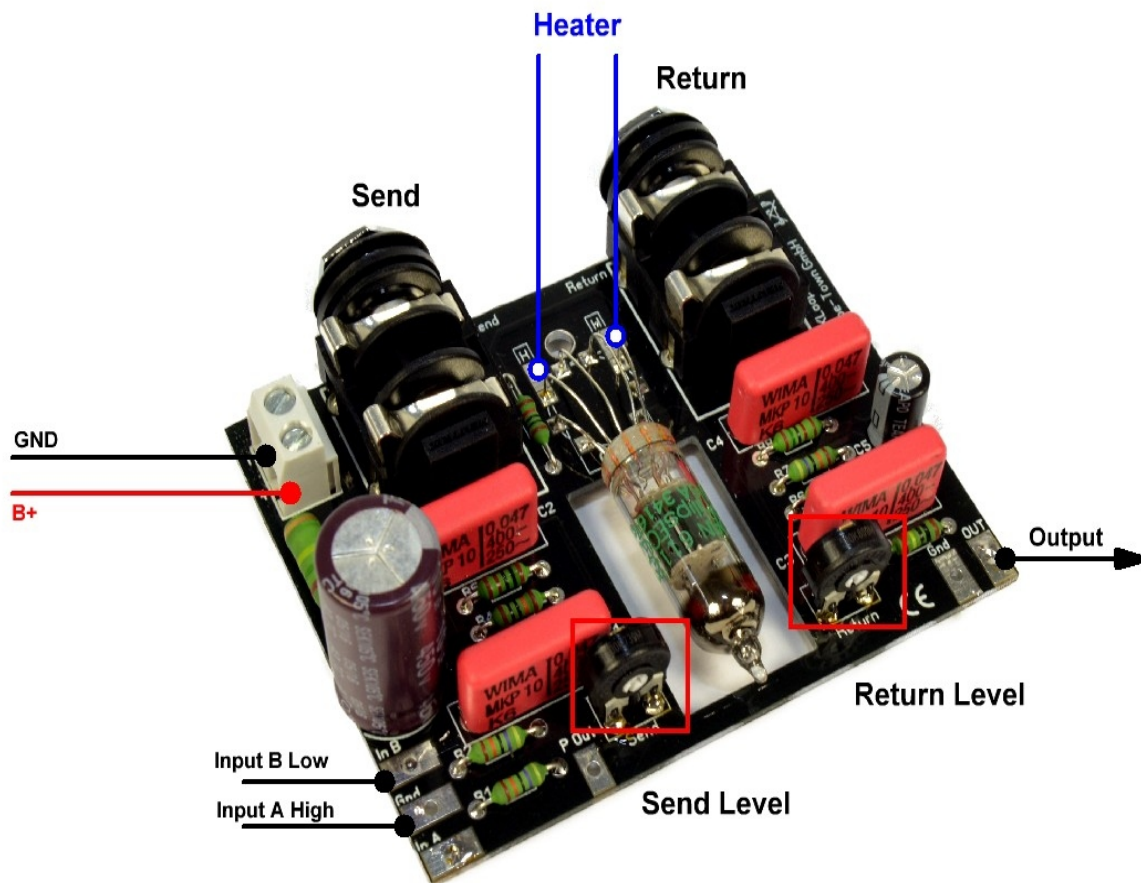
This module works with voltages which are potentially fatal. This kit is NOT a beginner's project!

A successful build requires you can read (and understand) a schematic diagram, you know how to use various measuring devices, and you have some experience working with voltages higher than 60V.

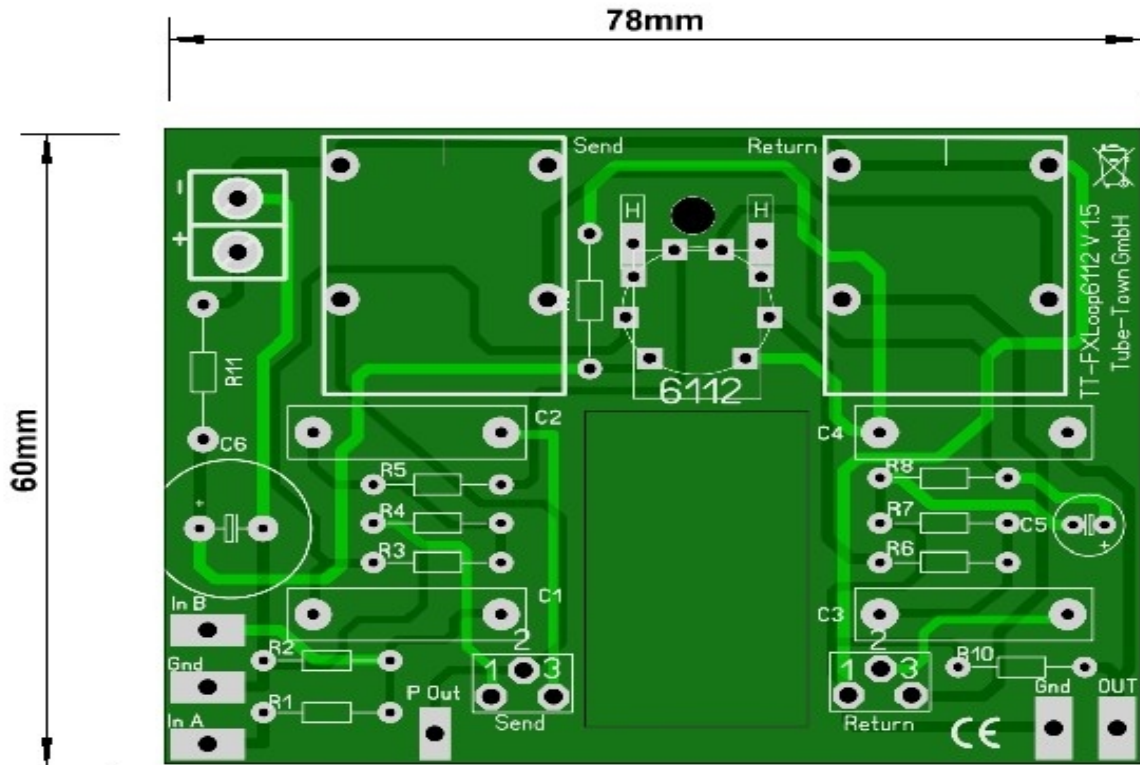
Specification

InB input signal level:	1 - 15 Vpp
InB maximum input:	20 Vpp
InA input signal level:	20 - 60 Vpp
InA maximum input:	65 Vpp
Supply voltage:	250 - 350 VDC

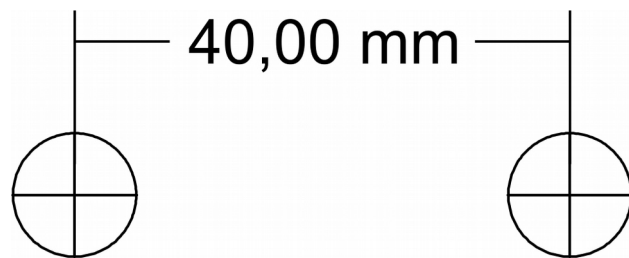
Layout and Connections



PCB Size



Mounting



List of Components

Component	Value
C1, C2, C3, C4	47nF / 400V
C5	22 μ F / 63V
C6	10 μ F / 450V
R1, R2, R7	470 kOhm
R3, R10	1 MOhm
R4, R9	100 kOhm
R5	1 kOhm
R6	10 kOhm
R8	1,5 kOhm
R11*	47 kOhm / 2W
	100 kOhm / 2W
	150 kOhm / 2W
	220 kOhm / 2W
P1 (Send)	100 kOhm
P2 (Return)	500 kOhm
V1	6112

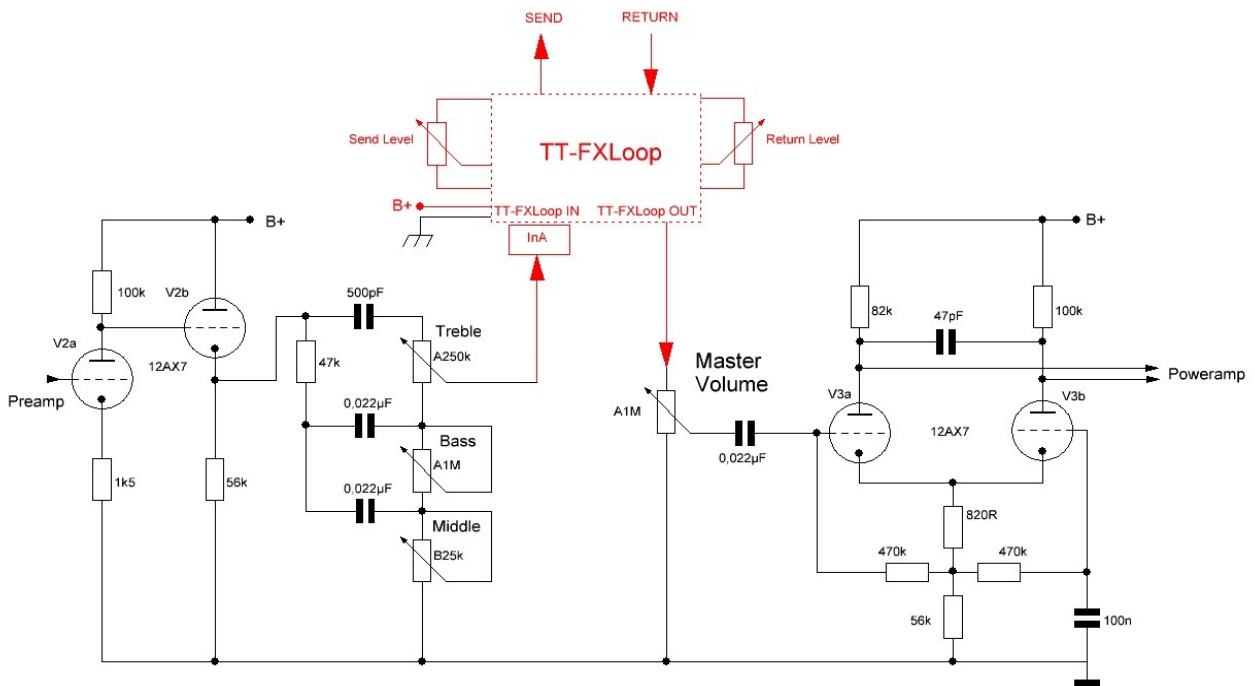
* R11 is depending on the supply voltage U_s , three different values are in the kit included.
Please choose the resistor value corresponding to your supply voltage.

R11	
$U_s < 200$ VDC	47 kOhm / 2W
$U_s \sim 250$ VDC	100 kOhm / 2W
$U_s \sim 300$ VDC	150 kOhm / 2W
$U_s \sim 350$ VDC	220 kOhm / 2W

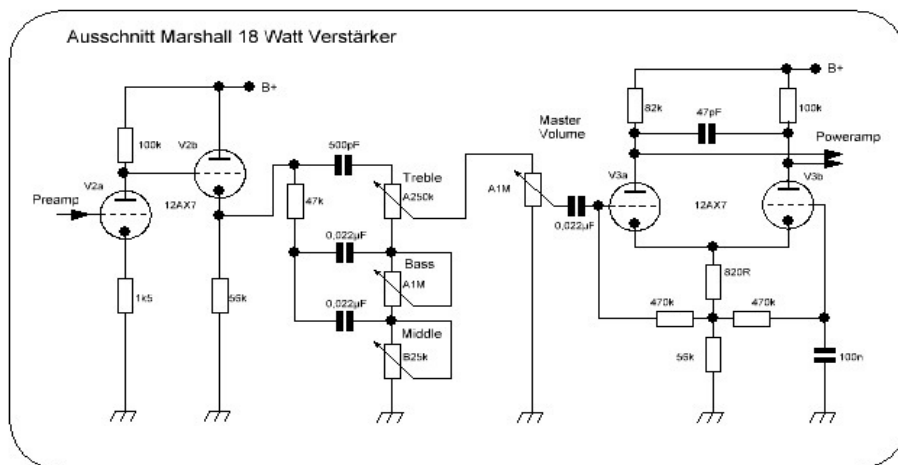
Insert Example TT- 18 Watt

Installation Example: FX-Loop between tonestack and master volume in an 18 Watt style amplifier. Other configurations are possible as long as the maximum signal level is not exceeded.

Use Input InA for Signal levels from 20 - 40 Vpp or Input InB for signal levels from 1 - 15 Vpp.

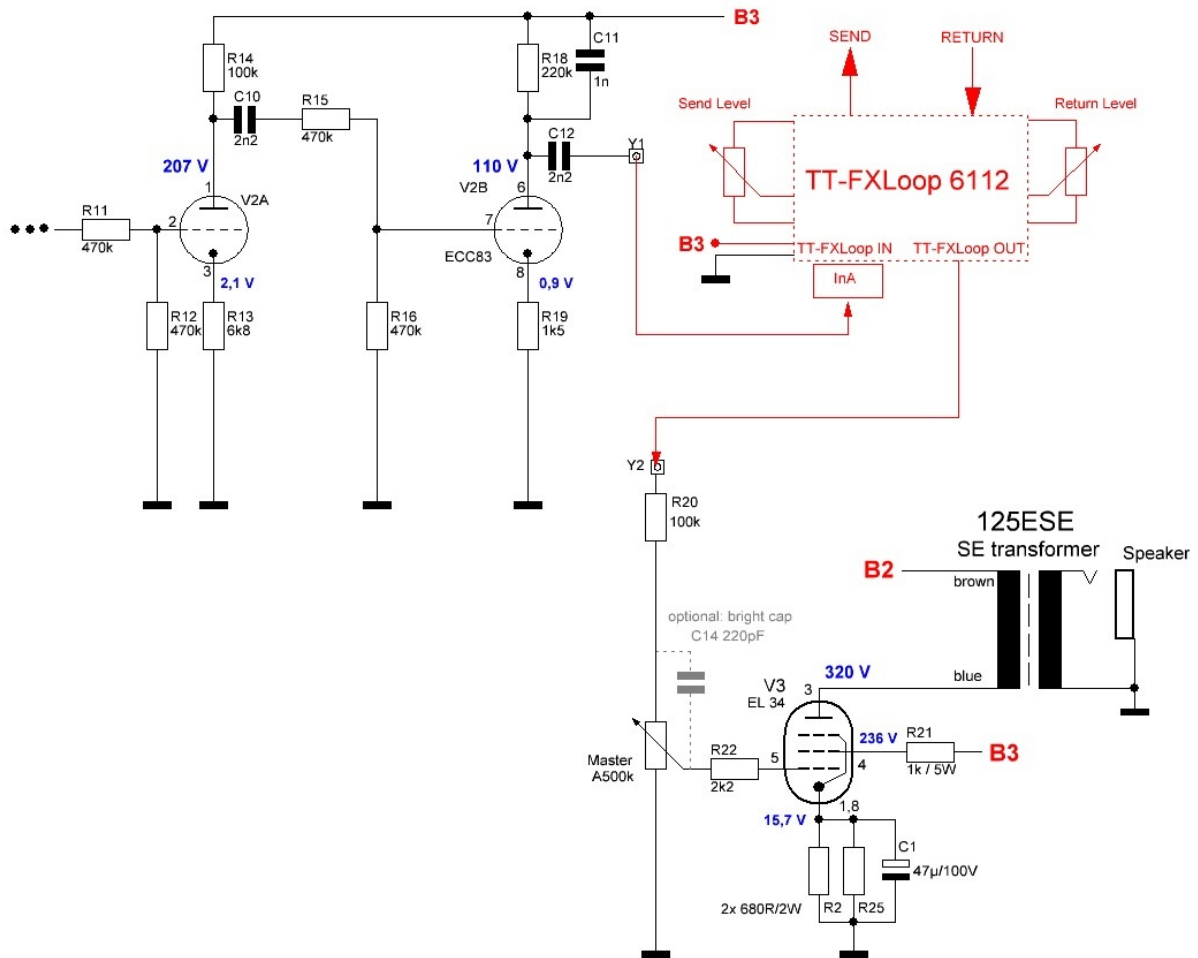


Schematic without loop as reference:



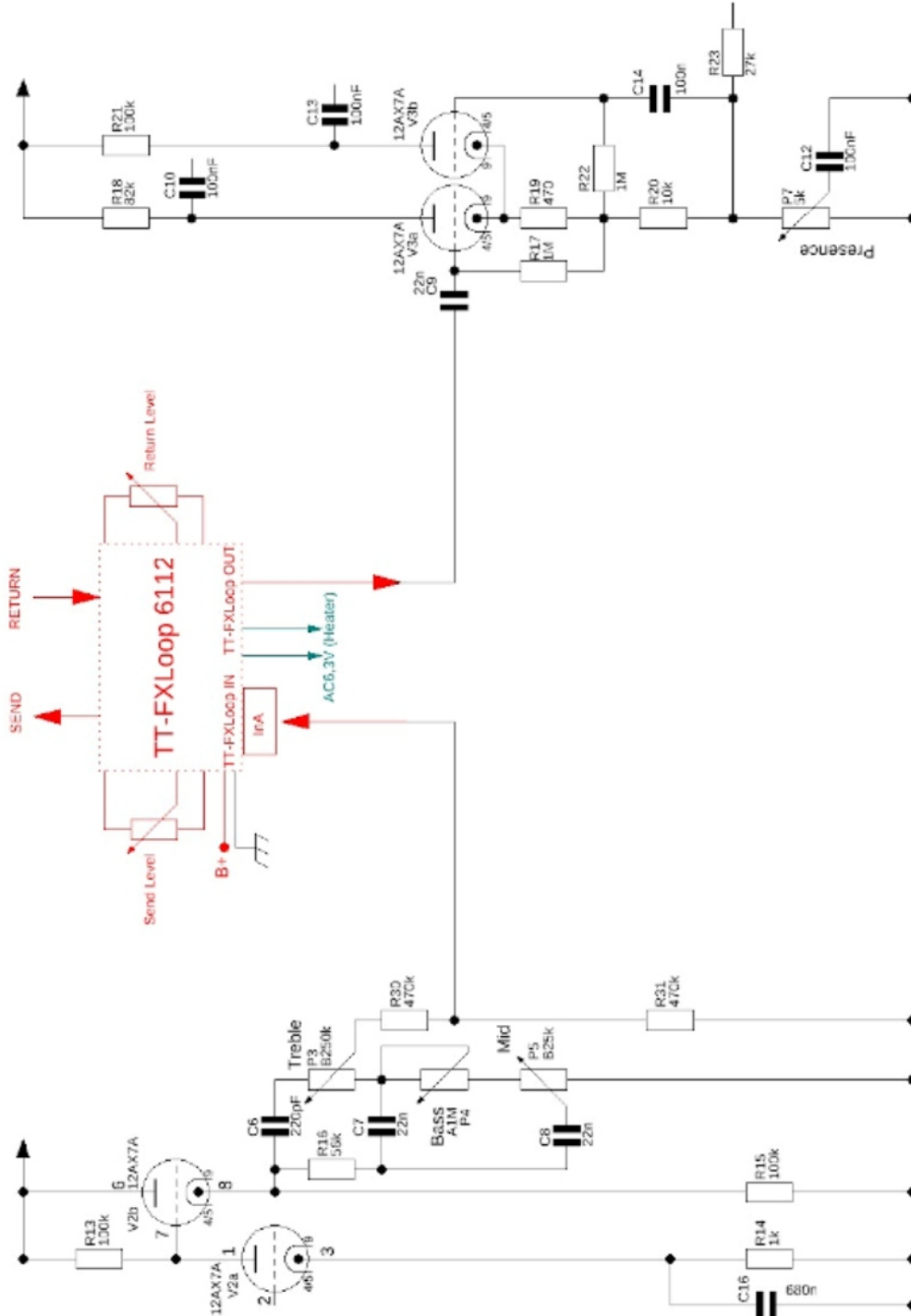
Insert Example TT JimHP

You can see the implementation of the loop in the JimHP amplifier below. We recommend the installation just before the master volume. The used input of the loop is InA for high signal levels, it gets implemented between the points Y1 and Y2 on the JimHP pcb.



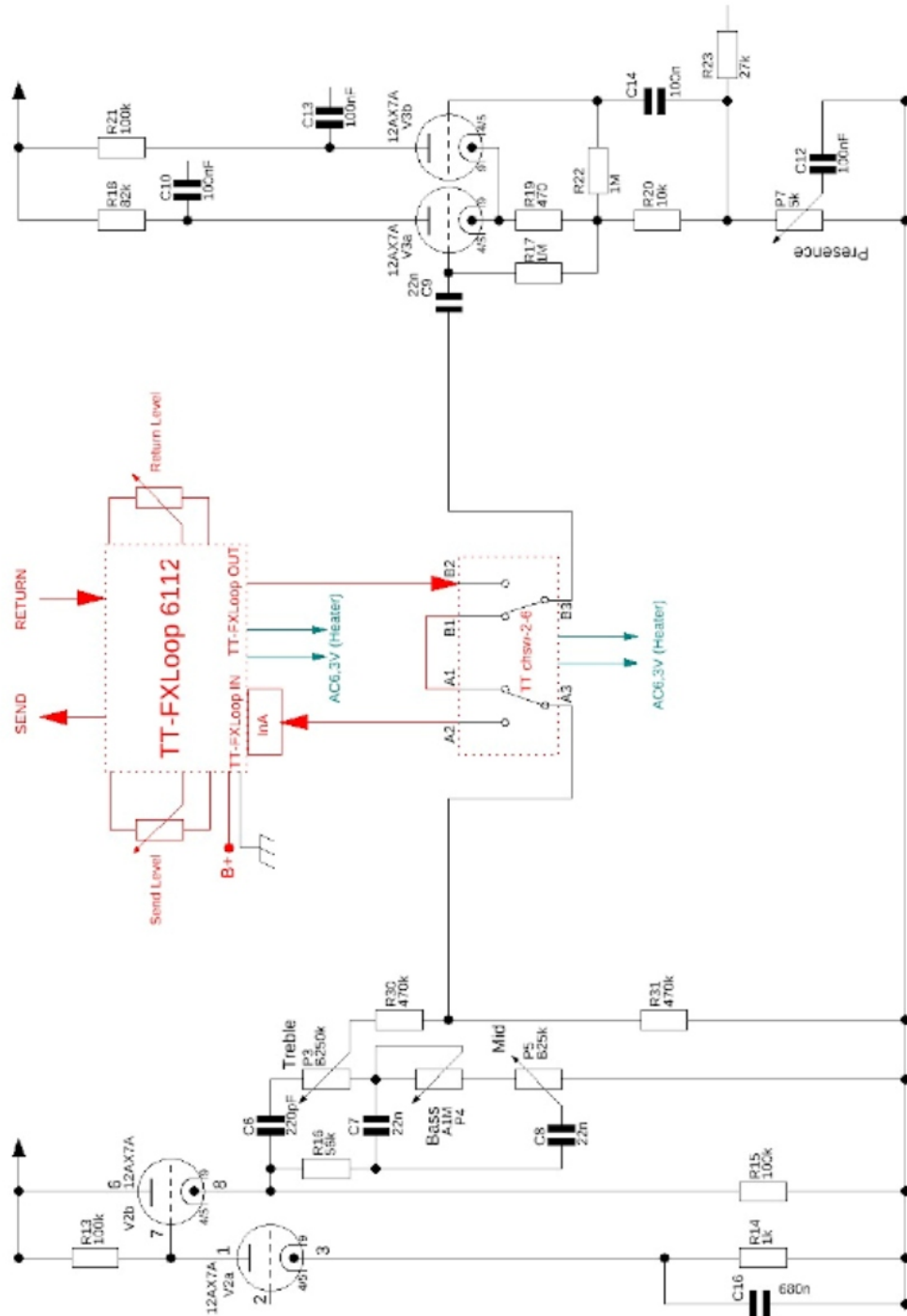
Insert Example TT PX-45 without bypass

Integration of the FX-Loop 6112 in the amp PX45 without bypass switching



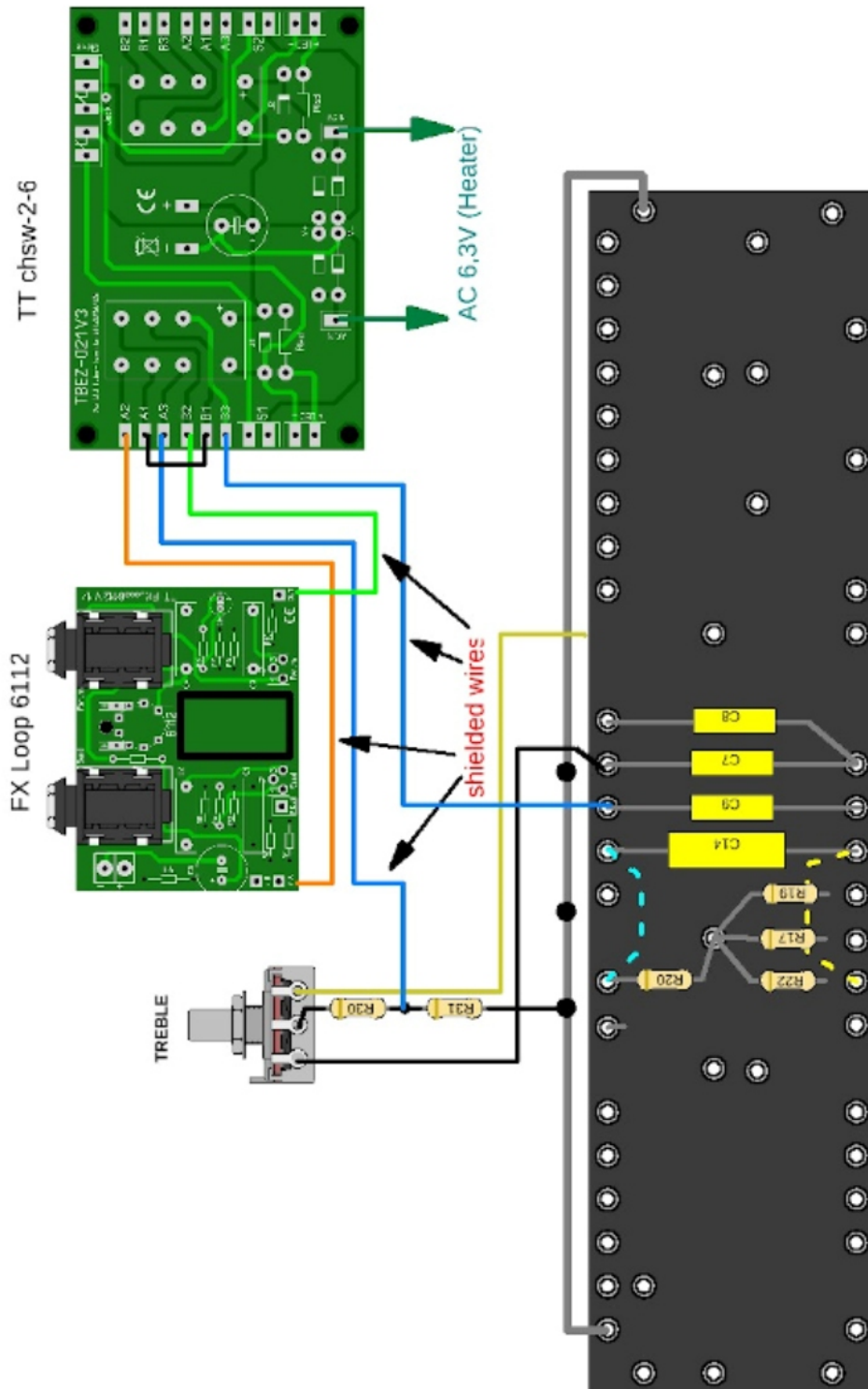
Insert Example TT PX-45 with bypass

Integration of the FX-Loop 6112 in the amp PX45 with relays switching for true bypass



Insert Example TT PX-45 with bypass - Layout

Integration of the FX-Loop 6112 in the amp PX45 with relays switching for true bypass

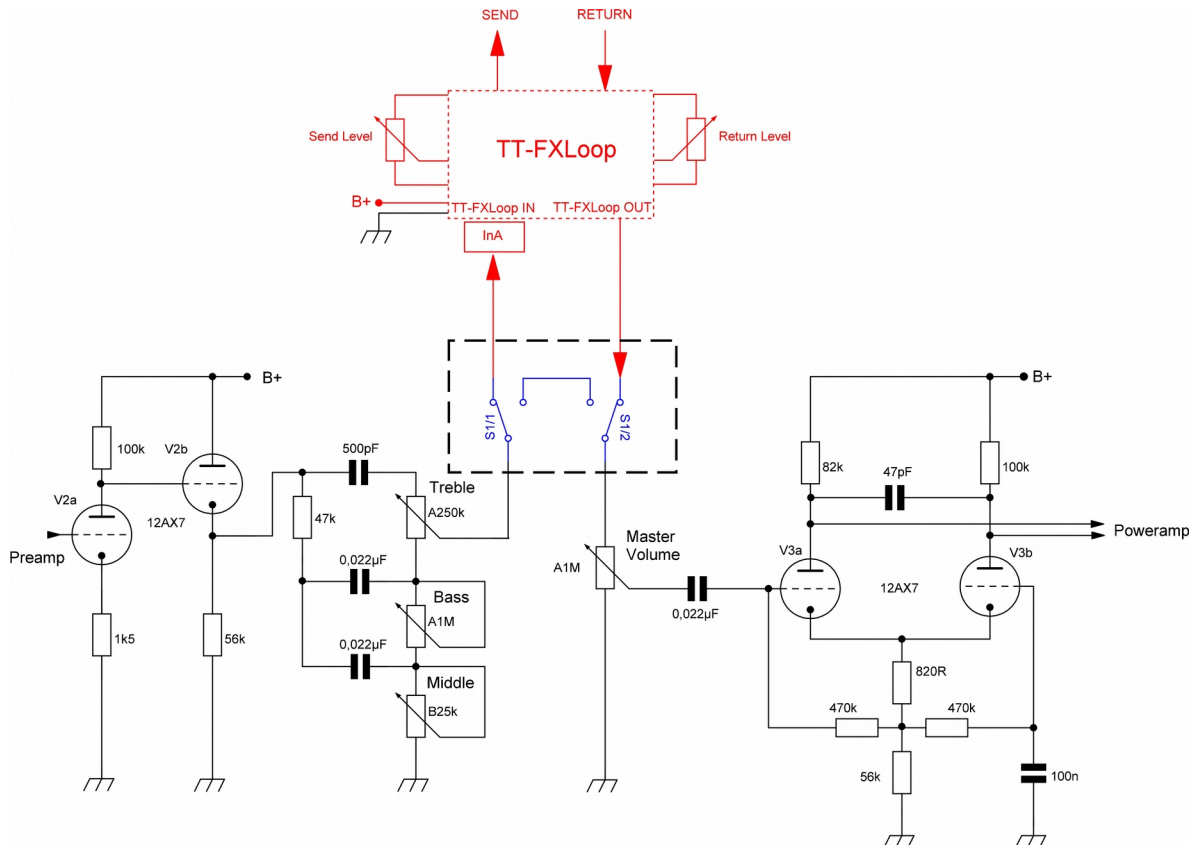


General hints for installation

- Depending on the circuit the loop is integrated in it may be necessary to adjust the input voltage divider (R1/R2). We would try values in the range of 22kOhm - 100kOhm for R2 and test if the loop distorts.
- The tube needs a heater voltage of 6,3 V and a heater current of 300 mA. Make sure the used power transformer can deliver the extra current.
- Do not exceed the maximum supply voltage of 350 VDC, higher voltages may lead to damages of the loop and / or the amplifier used in.
- The heater wiring should be twisted and kept as short as possible.

True Bypass

With an optional switch it is possible to install a true bypass for the effect loop and take it out of the signal chain when not in use. This can also be realized with a relay, for example with the relay switching kit with the article number kit-chsw2-6.

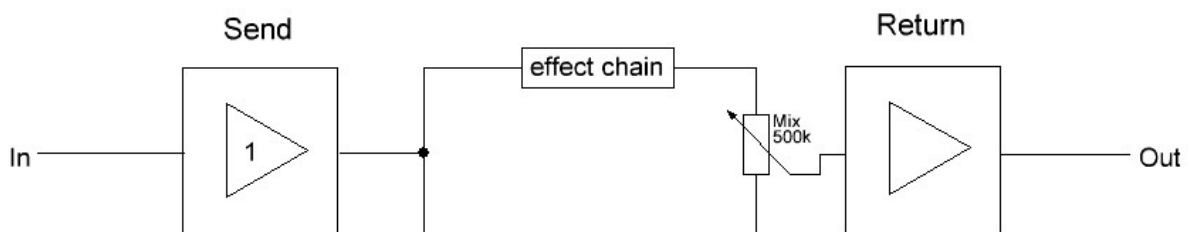
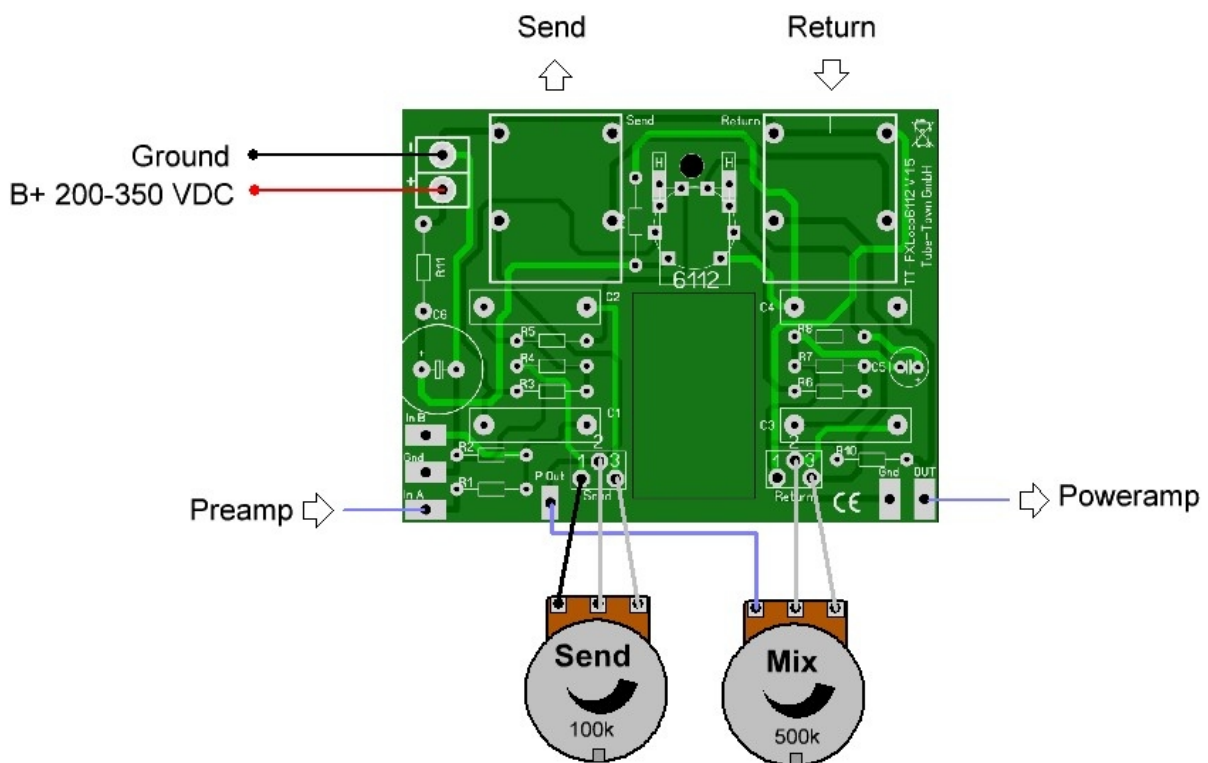


Loop in parallel mode

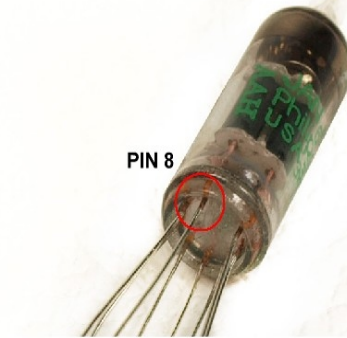
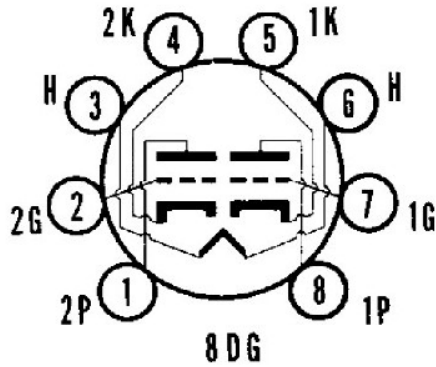
Through simple rewiring the loop can also be used in parallel mode, where a portion of the dry signal gets mixed with the effect signal.

Please note:

Some effect units change the phase of the signal. This can lead to phase cancellations if the effect signal is out of phase whit the dry signal.



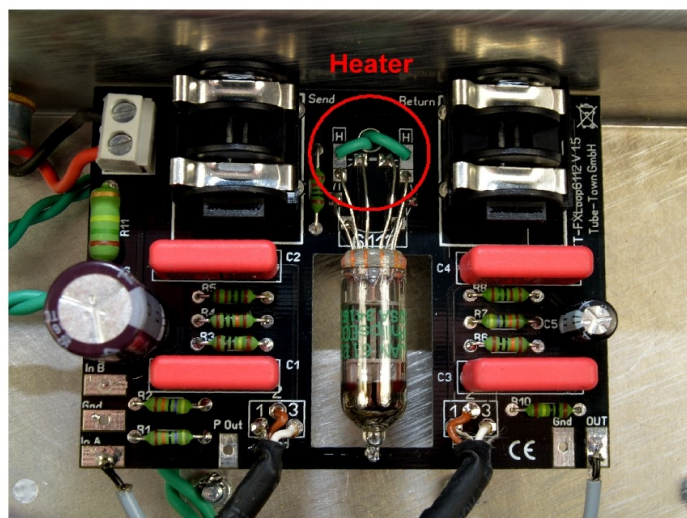
PIN-Layout 6112



PINs	
1+8	plate
2+7	grid
3+6	heater
4+5	Cathode

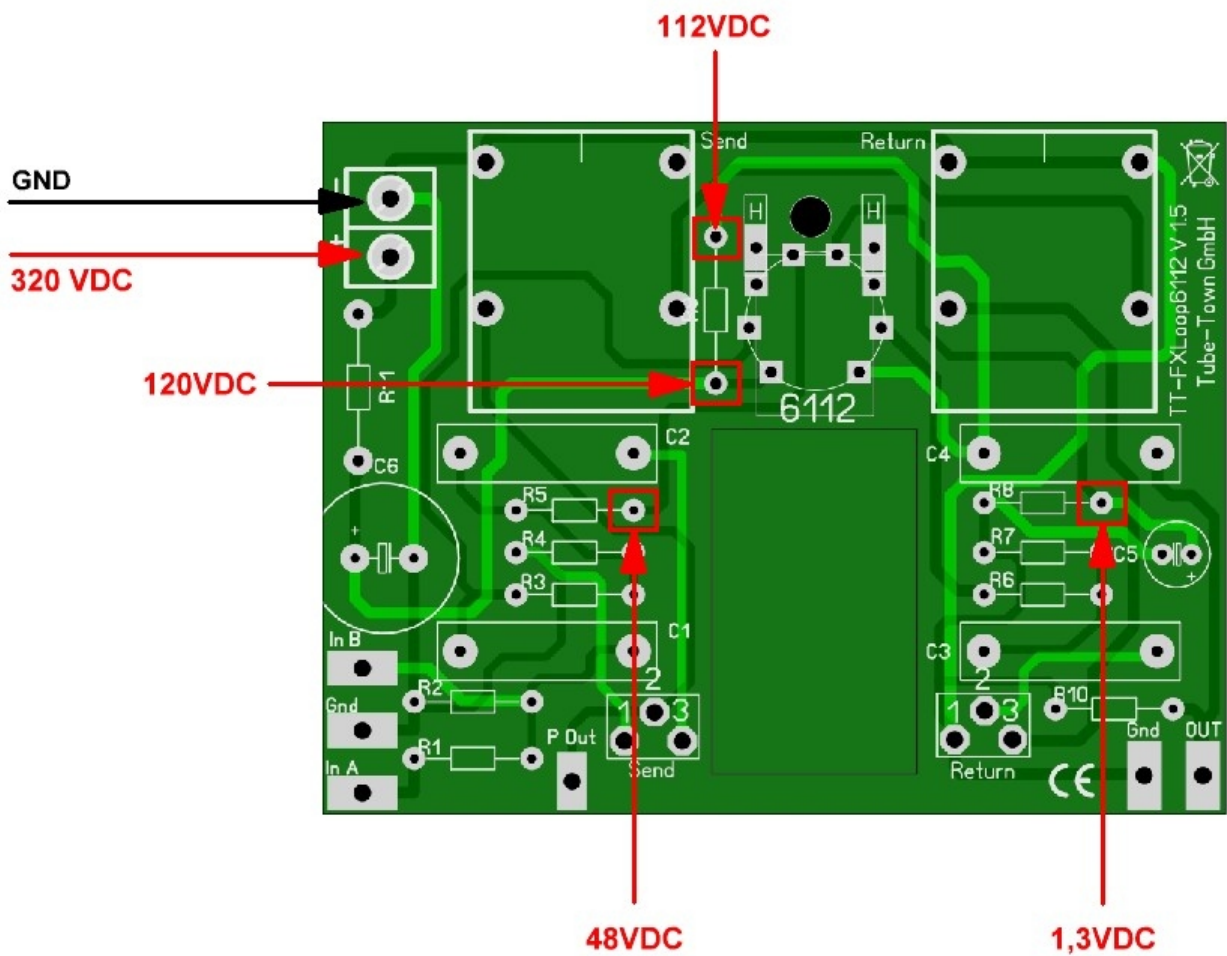
6112 Ratings:

- Maximum plate voltage 165 VDC
- Maximum plate forward voltage 330 VDC
- Heater voltage 6,3 V
- Heater current 300 mA



Test Points

Example measurements with a supply voltage of 320 VDC applied.



Tube-Town FX-Loop Modul 6112

Document history

28.11.2019 update insert example PX45 / DK

27.03.2019 creation documentation / DK

