

## MP12 Output Transformer options

The output transformer plays an important role in the MP12 : It balances the output signal and eventually brings some voltage gain.

Its essential characteristics are ratio, impedance, bandwidth, saturation level, common mode rejection and DC resistor.

These combined characteristics have a lot of effect on the final sound of the micpre.

JMP5 sets the ratio for dual primaries transformers. It is not needed for single primary transformers.

RL2 loads the secondary. It helps smooth out the high frequency resonances of the transformer. It is placed in parallel with the output pad network which has an impedance of 2330Ω. The proposed value of 2K7 gives a transformer loading of 1250Ω.

RZ2 and CZ2 also smooth out the high frequency bumps in the frequency response curve. They must be taken from the constructor datasheet or they can be determined by experiment.

Transformer	Ratio	JMP5	RL2	RZ2	CZ2	Assembly	SSK*
<a href="#">Cinomag CMOQ-2 S (iron), L (low Nickel) or H (high Nickel)</a>	1:1		2K7	NC**	NC	<u>1</u>	Y
<a href="#">Cinomag CMOQ-2 S (iron), L (low Nickel) or H (high Nickel)</a>	1:2		2K7	NC	NC	<u>1</u>	Y
<a href="#">Cinomag CMOB-2 S (iron), L (low Nickel) or H (high Nickel)</a>	1:1	NC	2K7	NC	NC	<u>2</u>	Y
<a href="#">Eddor WSM600/600</a>	1:1	NC	2K7	NC	NC	<u>3</u>	Y
<a href="#">Lundhal LL1517</a>	1:1		2K7	680	10n	<u>4</u>	Y
<a href="#">Lundhal LL1517</a>	1:2		2K7	680	10n	<u>4</u>	Y
<a href="#">Lundhal LL1585</a>	1:1		2K7	NC	NC	<u>4</u>	N
<a href="#">Lundhal LL1585</a>	1:2		2K7	NC	NC	<u>4</u>	N
<a href="#">Other transformers</a>			2K7	***	***	<u>5</u>	N

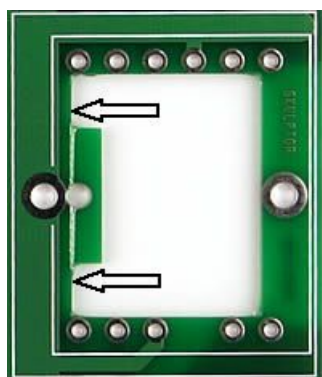
\*Available at Sound Skulptor

\*\* Not connected

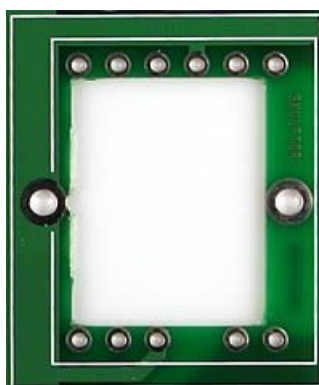
\*\*\* See constructor data-sheet

### Assembly 1 : Cinemag CMOQ-25

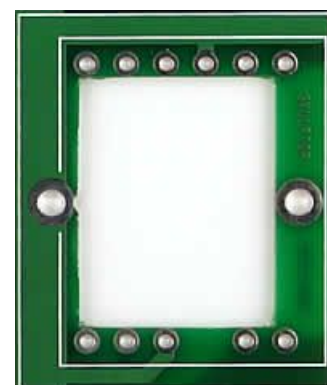
This transformer requires the PCB cut-out to be extended :



Step 1



Step 2



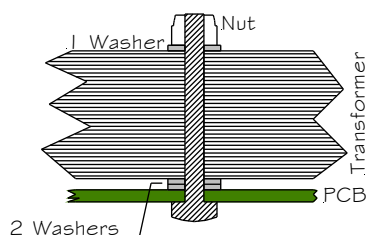
Step 3

Step 1 : With a ruler and sharp tool, strongly mark the white line identified by arrows until you get a nice little groove. Repeat on both sides of the PCB.

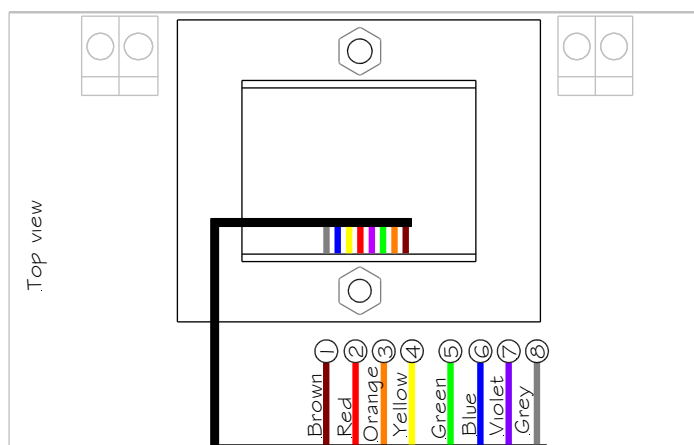
Step 2 : With flat nose pliers, snap off the PCB bits on both sides of the centre hole.

Step 3 : With a small file, smooth out the cut. Check that the transformer fits easily.

The transformer is mounted using two 25mm M3 screws inserted from the back of the board. Two metal washers are fitted on each screw to prevent the transformer touching the PCB. One more washer is used before the nut to protect the lams.



Shorten the leads to the necessary length, around 6 cm. Strip on 5mm and tin them. Insert in the pad hole and bend the tinned tip flat on the pad before soldering. Cut flush.

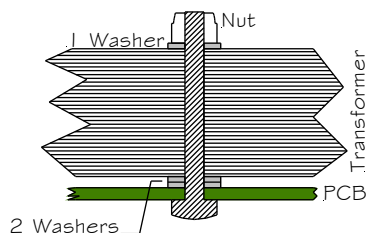


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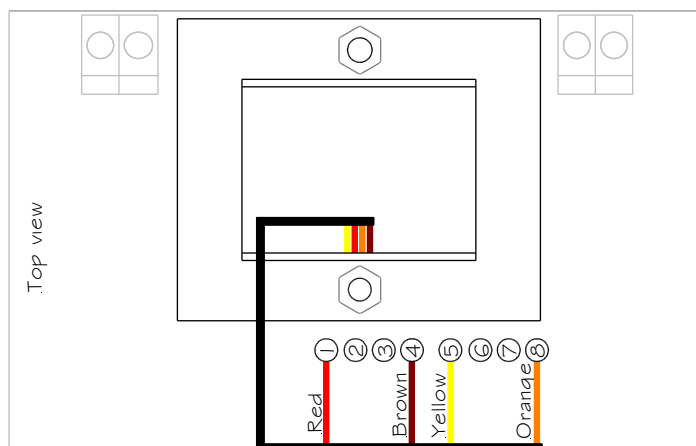
## Assembly 2 : Cinemag CMOB-2H

This transformer requires the PCB cut-out to be extended. Look at **Assembly 1**.

The transformer is mounted using two 25mm M3 screws inserted from the back of the board. Two metal washers are fitted on each screw to prevent the transformer touching the PCB. One more washer is used before the nut to protect the lams.



Shorten the leads to the necessary length, around 6 cm. Strip on 5mm and tin. Insert the tinned tip into the pad hole and bend it flat on the pad before soldering. Cut flush.



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### Assembly 3 : EDCOR WSM600/600



This transformer requires the PCB cut-out NOT to be extended.

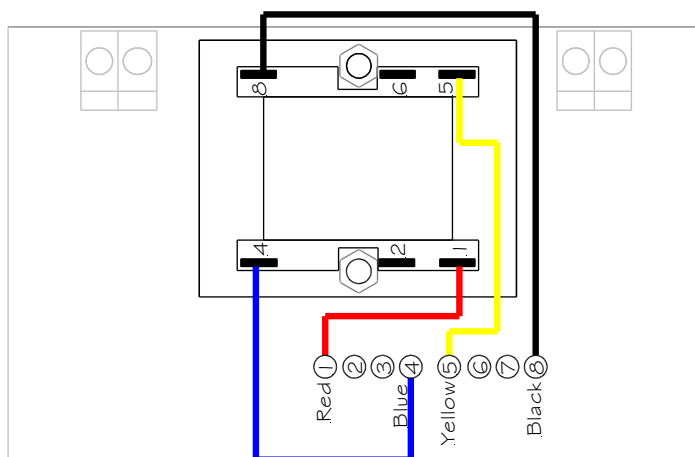
Orient the transformer with the secondary towards the outside of the PCB. The terminal numbers (1 to 4 and 5 to 8) are marked on the bobin.

The transformer is mounted using two 25mm M3 screws inserted from the back of the board. Two metal washers are fitted on each screw to prevent the transformer touching the PCB. The difficult part here is to find some room for the nut. You will probably need to scrape off some varnish that covers the bobin to carve enough space.

Shorten the terminals at the base of the oblong hole to fit the transformer height to the case.

**Warning** : Do not touch to the magnet wires that are soldered at base of the terminals.

Solder the leads to the terminals, strip on 5mm and tin. Insert the tinned tip into the pad hole and bend it flat on the pad before soldering. Cut flush.



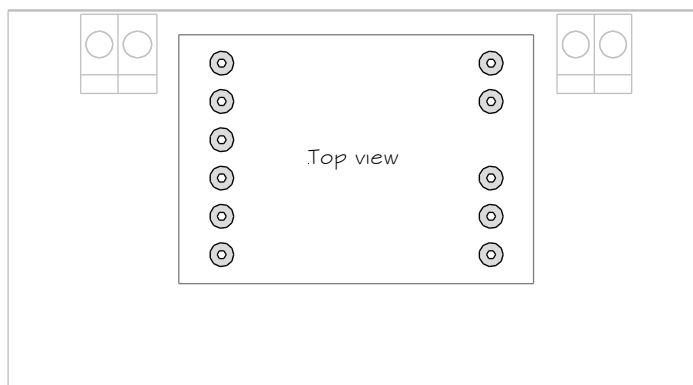
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### Assembly 4 : Lundhal

This transformer is directly soldered on the PCB.

It is necessary to leave a small gap between the transformer and the PCB surface in order to avoid any electrical contact between the metal case and pads. Fit a piece of double sided adhesive tape (supplied with the kit) on the transformer, between the pins. It is not necessary to remove the second protective layer from the tape as it is only used as a spacer.

Start by soldering 2 opposite pins, check the position, adjust if necessary then solder the other pins.



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### Assembly 5 : Other transformers

The MP12 can use many other transformers that use flying leads.

- ①
- ② **Connections :**
- ③ Primary 1 hot --> Pad 1
- ④ Primary 1 cold --> Pad 2
- ⑤ Primary 2 hot --> Pad 3
- ⑥ Primary 2 cold --> Pad 4
- ⑦ Secondary 1 hot --> Pad 5
- ⑧ Secondary 1 cold --> Pad 6
- ⑨ Secondary 2 hot --> Pad 7
- ⑩ Secondary 2 cold --> Pad 8

If the transformer has only one primary :

Primary hot --> Pad 1

Primary cold --> Pad 4

If the transformer has only one secondary :

Secondary 1 hot --> Pad 5

Secondary 2 cold --> Pad 8

#### JMP5 positions



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