



Installation and Operation Manual



MT-1 ***Match Tool Installation Manual***

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INTRODUCTION

Thank you for your purchase of the tiny TOOLS™ MT-1, Match Tool, which we will refer to throughout the manual as the MT-1. We're confident this product will give you many years of dependable service. This manual is intended to give you all the information needed to install and operate the product.

SAFETY INFORMATION

Only qualified personnel should install Broadcast Tools® products. Incorrect or inappropriate use and/or installation could result in a hazardous condition.

WHO TO CONTACT FOR HELP

If you have any questions regarding your product or you need assistance, please contact your distributor from whom you purchased this equipment.

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BROADCAST TOOLS® BRAND PRODUCTS!***



CAUTION!

Broadcast Tools® Products, as with any electronic device, can fail without warning. Do not use this product in applications where a life threatening condition could result due to failure.



NOTE:

This manual should be read thoroughly before installation and operation.

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PRODUCT DESCRIPTION

The tiny TOOLS MT-1 is an active bi-directional stereo level-matching interface. The MT-1 interfaces IHF-compliant, consumer and semi-professional audio gear with professional studio equipment. The MT-1 is a bi-directional interface providing four separate amplifiers. The first amplifier pair converts -10dbv consumer unbalanced gear to $+4\text{dbu}$ balanced outputs and may be configured for an additional 6db of gain. The second set of amplifiers converts $+4\text{dbu}$ -balanced inputs to -10dbv consumer compatible outputs. All four outputs are adjustable from the front panel. Gold plated RCA jacks are provided for unbalanced equipment, while removable screw terminals are supplied for the balanced equipment. The MT-1 is powered by a surge protected **internal bi-polar 15vdc power supply affording superior headroom and high definition audio.** The MT-1 may be set on a desktop, mounted on a wall or up to four units mounted on the RA-1, Rack-Able mounting shelf.

INSTALLATION

Please examine your MT-1 carefully for any damage that may have been sustained during shipping. If any is noted, please notify the shipper immediately and retain the packaging for inspection by the shipper. The package contains the MT-1, $16\text{Vac}@600\text{ma}$ wall power transformer and this manual.

Installation of the MT-1 in high RF environments should be performed with care. Shielded cable is suggested for all audio connections. All shields should be tied to the “GND” Ground terminals. The station ground should be connected to the chassis ground screw.

Consumer Inputs: Connect your unbalanced stereo audio source to the “Consumer” Inputs.

Gain Settings

Computer sound cards frequently use levels that are lower than IHF standards. With this in mind, we recommend that the high gain ($+6\text{dB}$) option be installed in these situations. To perform the change, remove power from the MT-1, along with the cover. Locate the silk-screened label on the pcb and install the following jumpers for the channels desired:

- Left consumer input “HI-Gain jumper, install Jp-1
- Right consumer input “HI-Gain jumper, install Jp-2

Monaural mode

In some cases, the user may need to feed a stereo signal from a monaural source or vice-versa. In this case, installing the appropriate jumpers will achieve monaural combining. Locate the silk-screened label on the pcb and install the following jumpers for the desired channels:

- Jumper **Jp-3** “MONO” enables the “Consumer” to “PRO” section.
- Jumper **Jp-4** “MONO” enables the “PRO” to “Consumer” section.

Reinstall the MT-1 cover.

NOTE: It may also be necessary to readjust levels after these changes.

Pro-Output: Connect the “PRO-OUTPUT” of the MT-1 to the inputs of your balanced studio equipment. For unbalanced loads, use the “+” and GND terminals only. Do not connect the “-” terminal to ground. Shields should be tied to the “GND” terminals.

Pro-Input: Connect your Professional line level equipment to the balanced PRO-INPUT inputs of the MT-1.

NOTE: If the source feeding the MT-1 is unbalanced, install a jumper between Lt or Rt – terminal and GND.

Consumer-Output: Connect the “CONSUMER -OUTPUT” of the MT-1 to the inputs of your unbalanced equipment.

OPERATION

Power

Insert the power plug into the power jack on the MT-1 and the wall transformer into the proper AC outlet. Verify that the power LED is lit.

Each amplifier has a front panel trimmer used to set the desired level. Use a small screwdriver to adjust the trimmers.

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DESCRIPTION

SPECIFICATIONS

	<u>Consumer to Pro</u>	<u>Pro to Consumer</u>
Input Level	-10dBv nom (HI GAIN: -16dBv)	0dBu to +4dBu nominal
Input Impedance	100K Ω	20K Ω , balanced
Gain	+6 to +26dB	-4dB to Off
Output Level	0 to +4dBm nom, +24dBu	-10dBv nom, +10dBv max
Output Impedance	100 Ω balanced, 47 Ω unbalanced	2K Ω or higher, unbalanced
Frequency Response	DC to 22kHz, +/- 0.2dB	DC to 22kHz, +/- 0.2dB
Noise	85dB below nom output level	80dB below nom output level
THD	.006% any frequency	.006% at any frequency
IM	.007% (250/7kHz)	.007% (250/7kHz)
Connectors	Consumer Inputs – Gold Phono Jacks (RCA) PROfessional Outputs – Removable screw terminals	
Power Requirement	16 Vac, 600 ma, transformer, Supplied. (220 Vac 50-60 Hz CE Opt)	
Size	4.20" x 6.00" x 1.55", Painted steel chassis w/ 4 – 6-32 mnt Holes	
Weight	2.0 lb.	
Options	RA-1, Rack Shelf. 1 RU.	

LIMITED WARRANTY

The term “Buyer” as used in this document refers to and includes both (but only) (a) any person or entity who acquires such an item for the purpose of resale to others (i.e., a dealer or distributor of an item), and (b) the first person or entity who acquires such an item for such person’s or entity’s own use.

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APPENDIX A

Functional Diagram

