

TASCAM

TEAC Production Products

M-512/M-520

Mixing Consoles



M-512

OPERATION/MAINTENANCE

5700055500



M-520



<p>CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN</p>	<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>
	<p>The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.</p>
	<p>The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.</p>

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The guarantee of performance that we provide for the M-512 and M-520 must have several restrictions. We say that the console will perform properly only if it is adjusted properly and the guarantee is that such adjustment will be possible. However, we cannot guarantee your skill in adjustment or your technical comprehension of this manual. Therefore, setup is not covered by the Warranty. If your attempts at internal adjustment are unsuccessful, we must make a service charge to correct your mistakes.

Recording is an art as well as a science. A successful recording is often judged primarily on the quality of sound as art, and we obviously cannot guarantee that. A company that makes paint and brushes for artists cannot say that the paintings made with their products will be well received critically. The art is the province of the artist. TASCAM can make no guarantee that the console in itself will assure the quality of the recordings you make.

Your skill as a technician and your abilities as an artist will be significant factors in the results you achieve.

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INTRODUCTION TO THE MANUAL, AND HOW TO USE IT

The M-512 and M-520 Mixing Consoles

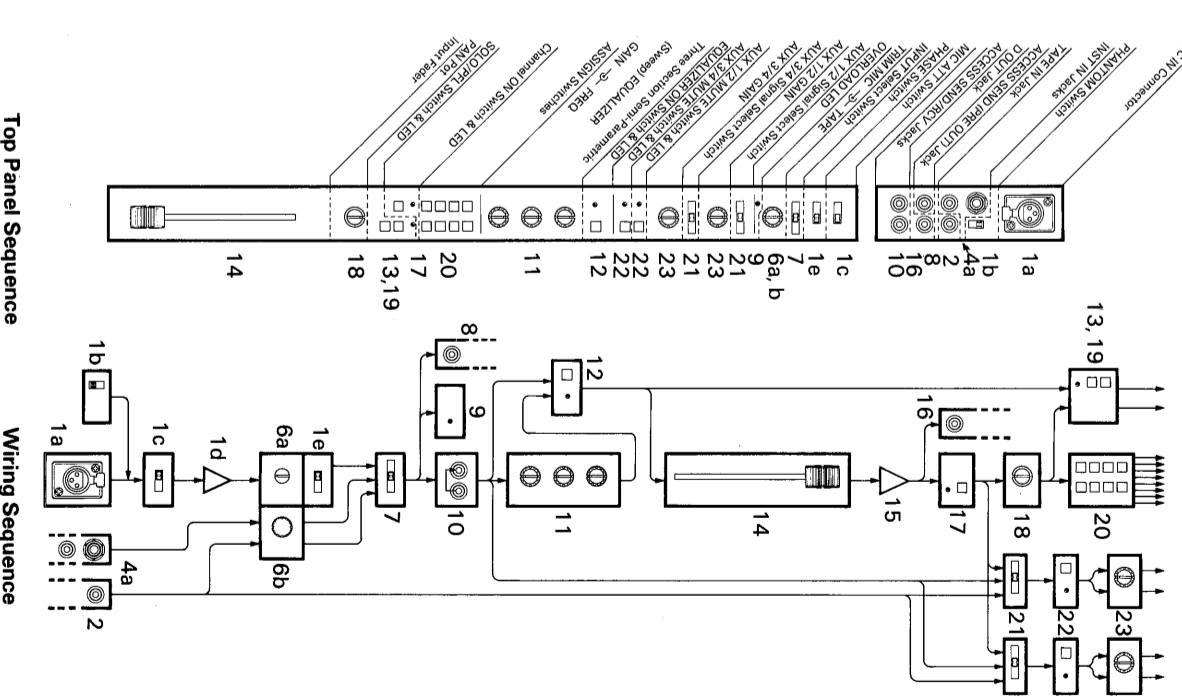
have been designed to satisfy the requirements of the modern multichannel recording process. The two consoles are similar in design and operation; their input channels and output sections are virtually identical, as are the connectors and levels. Both consoles have 8 primary mixing busses. The major difference is that the M-512 has 12 input channels and an 8 track monitor section, whereas the M-520 has 20 input channels and a 16 track monitor section. Either console may be used to record 4, 8 or 16 track tapes; the M-520, however, is required for convenient mixdown of 16 track tapes. In addition to the 8 or 16 track switchable (BUSS/TAPE) monitor sections, these consoles have four built-in auxiliary systems. These *Submix* sections, AUX 1, 2 and 3, 4, can be assigned and rerouted to do more than one task. They can be used to create 4 monaural mixes, two stereo mixes, or one stereo and two mono mixes for cueing, effects, remote broadcast feeds, and so forth. Complete and convenient multitrack operation usually can be accomplished directly from the top panel, without re-patching.

However, the process of multitrack recording is constantly changing, growing more complex as an art with each advance of technology. No matter how many inputs, outputs and special functions that we provide, no console can ever be built so large that it will be capable of coping with all of the switching and routing problems with a "one button" top panel solution. Someone will always be able to come up with that unique situation requiring *just one more submix*.

The design of the console recognizes the fact that your signal processing needs may require a unique arrangement of subsystems. In order to cope with these changing needs, patch points are provided throughout all signal pathways of the console. As our mixing console becomes more flexible, the amount of time needed to understand the available functions increases. The main signal path from "mic in" to "line out" is still fairly straightforward as the requirements have not changed much since the days of "mono," but the routing for effects sends, cue feeds, and stereo monitoring can be hard to visualize. It's often possible to overlook the significance of unfamiliar connections that are immediately ob-

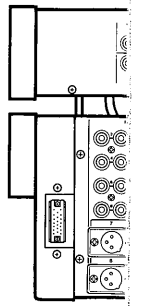
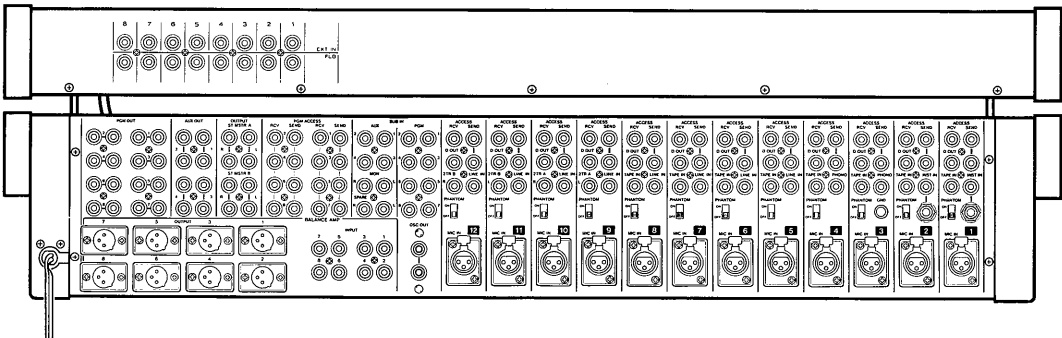
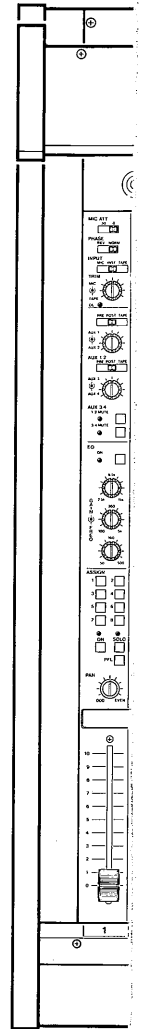
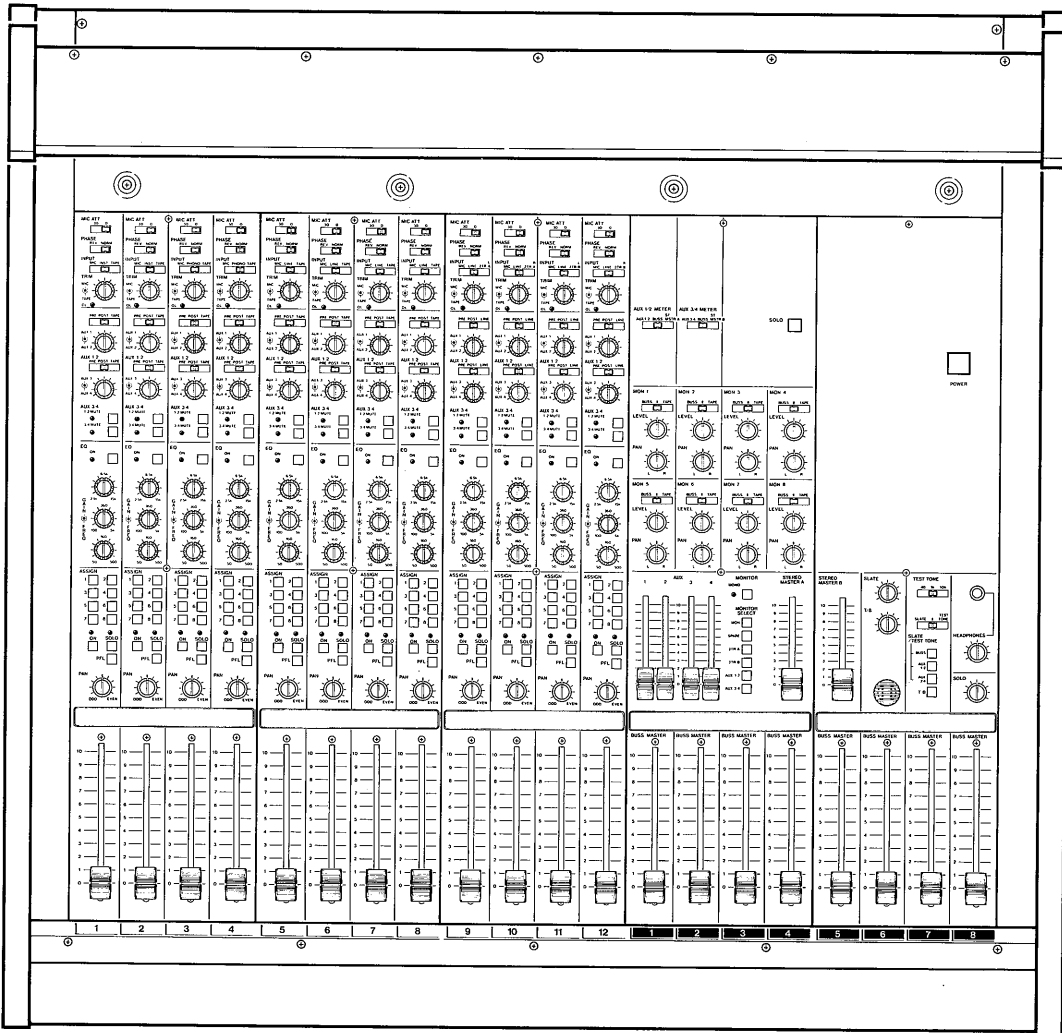
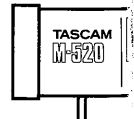
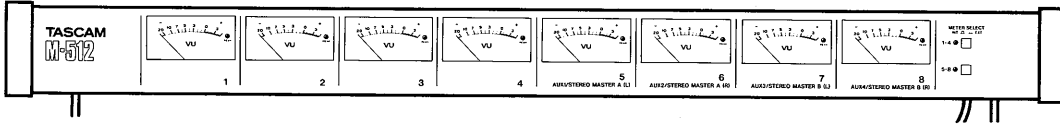
vious to the experienced recording engineer.

If you expect to find that "extra mix" quickly, you must be prepared to study the layout of the console thoroughly. In most instances, the physical arrangement of the controls on the top panel has very little to do with the sequence of electronic parts inside. The actual "wiring order" will determine what goes where and how, so this is the information you need in order to use the console successfully. As an example, if the controls on an *Input Channel* were actually placed in the sequence of the signal flow, the top panel would look like this. We'll include the patch points from the back panel in their wiring order as well as the faders and switches. Here's the comparison:



M-512

M-520



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To begin our manual, we'll start with some basic information about *Sound* and the numbering systems used to describe energy levels in and out of the systems. *Impedance*, what the term means and how to deal with the details when you must connect the console to other equipment. Many aspects of scientific terminology will be discussed in the most basic terms we can. Whenever possible, the scientific terms will be related to understandable common references. Understanding what is going on inside your equipment will help improve your sound. Think of this manual as a reference handbook. You won't need all of what is here to begin, and it is certainly not necessary to memorize it, but do try to find the time to read it thoroughly at least once. That way you will be familiar with its contents and if you need the numbers they will be here waiting.

Good luck with your sound.

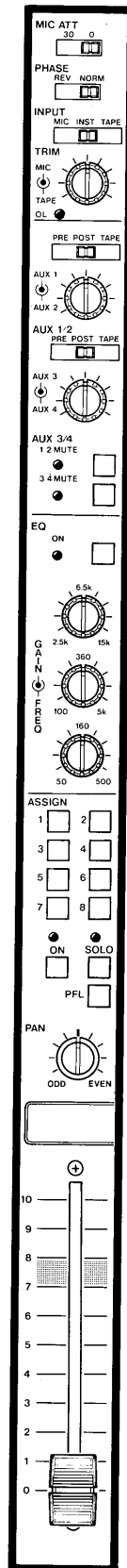
THE BLOCK DIAGRAM AND GAIN BLOCK DIAGRAM

Before you begin reading the next section of this manual, flip out the extra fold on page 67 ~ 70. On these pages we have printed the block diagrams for both the M-512 and M-520. They show the signal flow through the consoles and represent (in simple form) the actual electronic arrangement of all the jacks, controls and gain stages from *mic-in* to *line-out*.

There is very little difference in the two block diagrams; the primary differences are in the number of input channels, the way the last 4 meters function (there are 8 in the M-512 and 12 in the M-520), and the number of controls in the monitor section (8 or 16). Because the consoles, and their block diagrams, are so similar, we will use just one model's diagram to illustrate the signal paths and control functions elsewhere in this manual.

The diagrams on page 73 ~ 78 indicate the gain of a reference signal, the noise level, and the available reserve gain or headroom at any point in the signal chain. An experienced audio engineer would be able to operate the console successfully with just these diagrams and a list of input and output specifications.

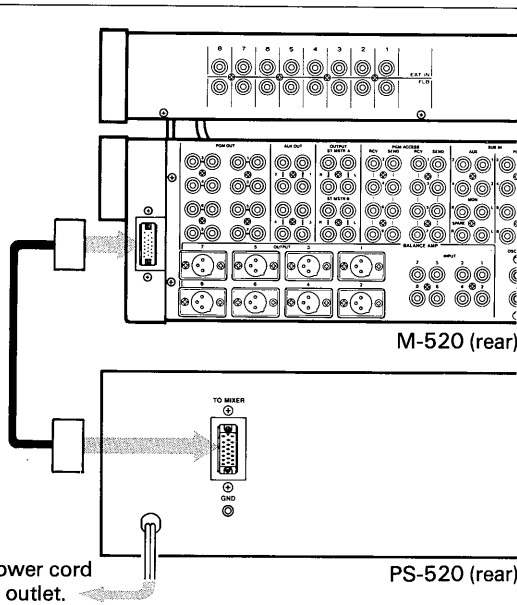
Any question about function or gain can be answered by studying the drawings. Will the accessory send signal change in level if the input fader is moved? No, the signal is shown leaving the main line before the input fader. You read these diagrams from left to right, input to output.



Precaution for M-520

The M-520's operating power is supplied from PS-520 Power Supply Unit of the M-520. Before you use the M-520, connect the M-520 console with the PS-520 as follows:

Connecting Cable (Supplied)



Make sure the POWER switch is OFF or disconnect power line cord of the PS-520 before making these connections.

Plug the power cord into an AC outlet.

