

**TASCAM**

**M-300B SERIES**  
MIXING CONSOLES



## ONE CONSOLE FOR RECORDING AND SOUND REINFORCEMENT

TASCAM designed the 300B Series to meet the demands of both studio recording and live soundmixing. From the 8-channel M-308B to the 12-channel M-312B and 20-channel M-320B—these mixers perform at their peak in any situation. A sophisticated signal routing system takes care of the most complex foldback, effects mixing, subgrouping and monitoring requirements.

For all its sophistication, the 300B Series was designed to make mixing easy. Ample back-panel inputs and outputs combined with TASCAM's convenient top-panel switching matrix virtually eliminate the need for patching. The 300B Series' logical layout also lets you work quickly and efficiently.

300B Series consoles deliver clean, dynamic sound thanks to TASCAM's transformerless balanced differential input design. These input modules produce wider bandwidth and better transient response than conventional transformer-coupled designs, even when the signal level or source impedance changes. You get the same superb signal quality at any Pad or Trim setting, and the input circuit is much less sensitive to problems stemming from cable length and source impedance.

TASCAM's design approach makes the 300B Series tough enough to stand up to the hazards of the road. We build each module on its own circuit card for better isolation and easy serviceability. Then we mount it on a sturdy steel chassis for optimum strength and security. All internal components are protected from the outside world by a strong outer shell.

Rugged enough for sound reinforcement work. Clean enough for the most critical recording applications. Versatile enough to handle any assignment. 300B Series mixers offer the premium performance expected by today's audio professional.

## A SYSTEM OF SUBSYSTEMS

Each 300B Series mixer has a network of no less than five complete submix systems. These submix systems enable 300B Series owners to adapt instantly to the studio or the stage without complex patching schemes or board modification.

The Main Mix system receives signals from multiple inputs and routes them, via extensive channel module controls, to one or more Program Group faders. This makes it possible to combine several inputs on a single fader for mixing convenience. The Main Mix system feeds several different sets of outputs, providing ample options for creating a sound reinforcement house mix or a control room mix for recording projects.

Multiple and alternate mixes are never a problem on a 300B Series board. To meet these demands, TASCAM has provided two Auxilliary submix systems as well as versatile Effects and separate Monitor submix systems. The Aux systems can derive their input signals from several points within the console, which allows the operator to create cue mixes and monitor mixes independently of the main mix. The Effects system furnishes plentiful options for applying signal processing to the mix. If needed, this system can also double as an extra program buss.

The monitor submix system provides another means of creating discrete cue and monitor mixes. This system is essentially an independent 8-in/2-out submixer that is built right into each 300B Series board. On the M-312B and M-320B, the Monitor system is equipped with its own set of Aux submixes. The 300B Series' Monitor section makes an ideal submixer for today's multi-keyboard setups. Or, it can provide up to eight extra Effects Returns.



- 5 Submix Systems (Main Mix, 2 Auxilliary, Effects, Monitor) instantly organize and simplify complex recording or sound reinforcement setups without patching.
- 8, 12, or 20 channels, all with comprehensive subsystem signal routing.
- Phantom power (48V) switchable in 2-channel groups provides a convenient power source for phantom-powered condenser microphones.
- 3-Band EQ (defeatable) on each channel combines shelving and sweep-type parametric EQ to provide 12 dB and 15 dB of cut or boost at each frequency band.
- 4 Program Group/Busses, each with a master fader and your choice of balanced and unbalanced outputs. Single fader grouping for maximum mixing convenience.
- Stereo and Mono master section receives signal from Input channels, PGM busses, Tape Returns and Effect Returns.
- Sophisticated Solo system with PFL and AFL capabilities for sound-checks, or for fine-tuning a setting without interrupting the program.
- Insertion point on each channel, PGM buss, Stereo buss and Mono buss for applying external signal processing units.
- Complete Talkback system (M-312B and M-320B).
- Transformerless balanced differential input design for wide bandwidth and excellent transient responses.
- 8 Tape Return jacks accept a variety of Line-level signal.
- Trim and Pad controls on each channel provide a 74 dB sensitivity range for balanced inputs.
- Individual circuit cards are mounted on a steel subchassis for maximum strength and road-worthiness.
- Field replaceable with Penny & Giles faders and other popular brands.
- 1.5W/channel stereo headphone amp has enough power to drive a small set of speakers.



•This photo shows the M-312B rear panel.  
 •The M-320B has 20 input channels.  
 •The M-308B has 8 input channels and doesn't have dotted-line areas.

## 8, 12 OR 20 INPUT CHANNELS, ALL LOADED WITH FEATURES

The 300B series channel inputs cover all the options—microphone and line level, balanced and unbalanced, XLR and quarter-inch connectors, an insert jack for effects, and switchable phantom power for phantom-powered condenser microphones.

The first 8 input channels are further equipped with multitrack Tape returns. Used in conjunction with the provision of pair of RCA output jacks for each of four PGM buss outputs, they comprise an ideal system for interfacing with a 8-track multitrack machine. Direct Output on each channel can be used to feed one input to one track.

The Trim and Pad controls on each input channel provide a sensitivity range of 74 dB for the XLR connector, to prevent very hot balanced Mic or Line signals from overdriving the input preamplifier. The Trim pot consists of two concentric controls that allow independent settings for Mic and Line level. Thanks to these controls, there's no need to reset your trim if you're changing back and forth between Mic and Line inputs.

A 3-band equalizer on each channel provides precise tonal shaping of input signals. The high-frequency control is a shelving-type EQ allowing the 12 dB boost or cut at 10 kHz. The mid-frequency control is sweep-type and covers the frequencies between 200 Hz and 4 kHz,  $\pm 15$  dB. The low-frequency control is sweepable from 50 Hz to 1 kHz,  $\pm 15$  dB. If desired, the EQ section can be bypassed entirely with the EQ "On" button.

The channel module controls make it easy to route any input signal to any of the 300B Series' submix systems, including the four Program Group and master Stereo output, the two Aux submixes, the Effects submix and the Solo system. There are level controls for the Effects and Aux systems. The principle channel level control is a long-throw 100 mm fader which is easily field-replaceable with Penny & Giles faders and other popular brands.

## FULL SOLO AND TALKBACK FACILITIES

The 300B Series' extensive Solo system allows convenient troubleshooting and fine tuning of channel settings at any time during a live show or recording session without interrupting the program. The input Solo and the Effect Return Solo are PFL (Pre Fader Listen), so you can identify and audition any signal before bringing it into the mix. The output Solo is AFL (After Fader Listen). This arrangement makes it easy to isolate and check the level of individual busses when you're mixing, rather than trying to make critical mixing judgements while listening to the combined output of all four busses.

TASCAM has also equipped the M-312B and M-320B with a thorough, adaptable Talkback system. A Talkback Mic input is conveniently located on the top panel, and a series of select switches allows you to apply the Talk-

back signal to the Program, Stereo busses, or any of the Aux busses.

Other top-panel convenience features on the 300B's are an 8 ohm stereo headphone jack, a headphone level control and a light socket (M-312B and M-320B) for use with standard Littlite™ fixtures. The combination of thoughtful details like these and major features like the Solo system make 300B Series boards especially satisfying to work on.

## EXTENSIVE OUTPUTS AND MASTER CONTROLS

Each of the 300B Series' submix systems has its own set of master controls and output jacks. These pre-wired connectors virtually eliminate the need for patching and make it possible to install a 300B Series board in a few hours.

The Main Mix system outputs include four Program Group outs plus master Stereo and Mono Outputs. A separate fader governs the level that appears at each of these outputs. Each output offers a separate Insert jack for processing the final mix, and a choice of XLR (balanced or unbalanced) and a pair of RCA jacks. With this convenient selection of connectors, the 300B Series is ready to interface with a broad range of output devices—from P.A. systems to tape machines.

The outputs and master controls for each of the 300B Series' submix systems provide an unprecedented number of options. Master controls for the Aux submix system consist of one output and one master Level control for each of the two Aux busses. As for the Effects submix system, there are two Effects returns, each with its own Level and Pan controls. Each Effects return can be routed to the master Stereo outputs.

The master controls for the Monitor submix system make up a complete "mixer within a mixer." Each of the eight monitor inputs has its own Level and Pan controls plus switches for selecting the point from which each Monitor input will derive its signal. On the M-312B and M-320B, each of the eight Monitor sections also has its own Aux submixing capabilities.

The Monitor master controls provide a system of seven switches which lets you select the Stereo, Mono, Effects, Aux 1, or 2 busses, or either of two external stereo pairs. Here too, the choice of 1/4" and RCA output jacks is provided for complete system compatibility.

A visual display of output levels is provided by six VU meters and a system of Meter Select switches. The meters can also be used to monitor the level of various input signals (such as the Tape Return inputs). Each meter displays average signal level and also includes a Peak Indicator LED that fires at +10 VU. This allows you to estimate the "peak to average" ratio of your signal quite easily.

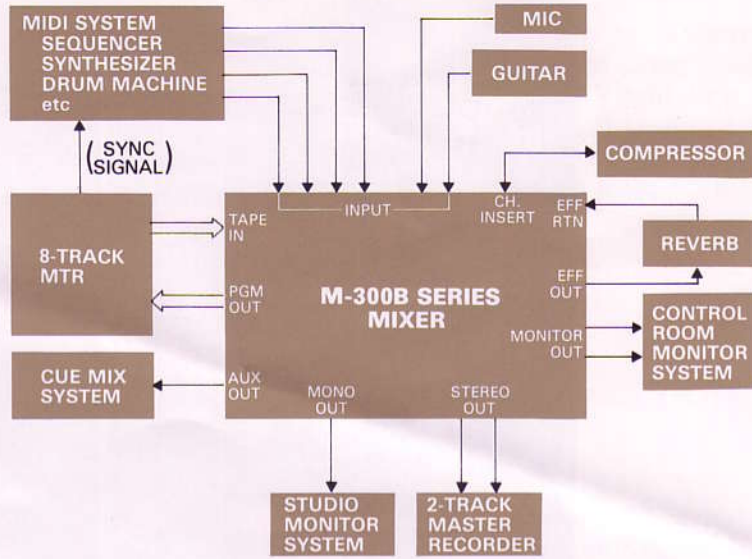


INPUT SECTION

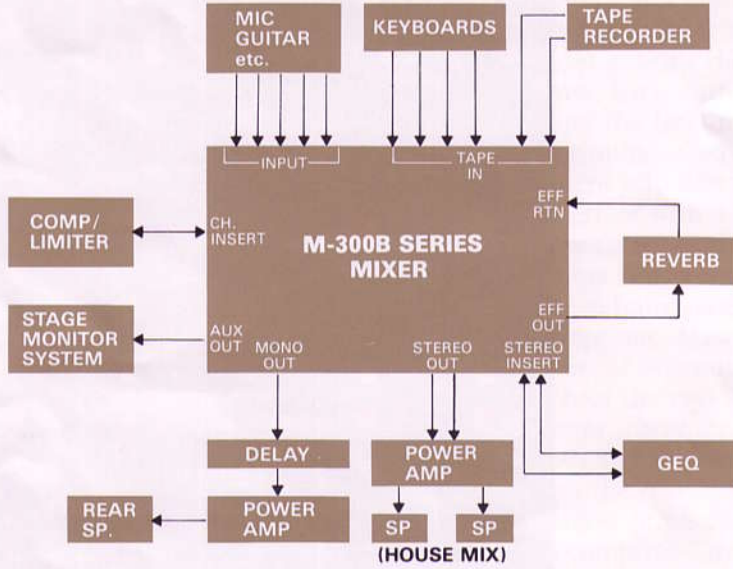
MASTER SECTION

\* The M-308B doesn't have blue-line areas.

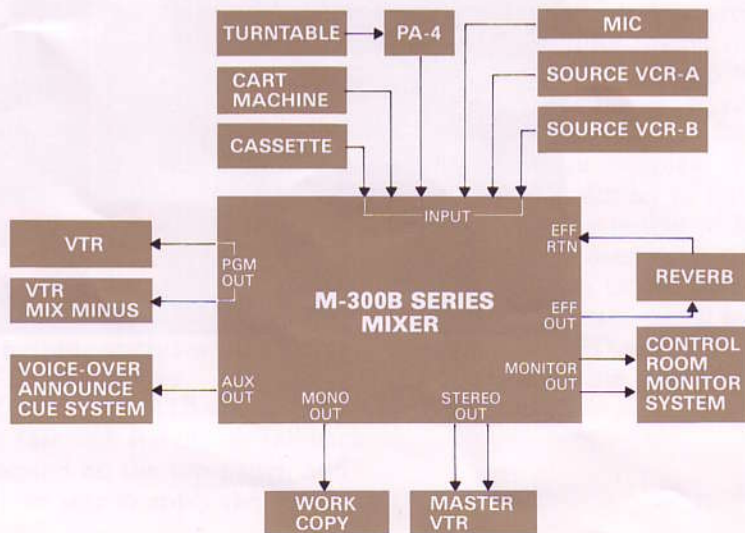
MULTITRACK RECORDING



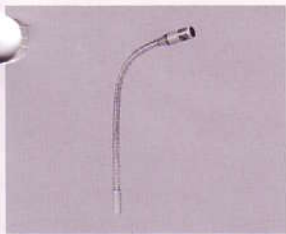
SOUND REINFORCEMENT MIXING



VIDEO POST-PRODUCTION AND AUDIO SWEETENING

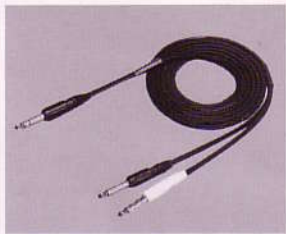


## M-300B SERIES OPTIONS



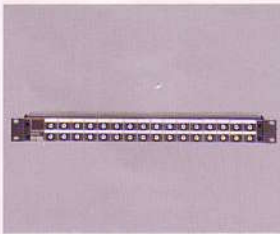
**MC-701G**

Gooseneck Microphone



**PW-2Y/4Y**

Insertion Cable  
(2m / 4m)



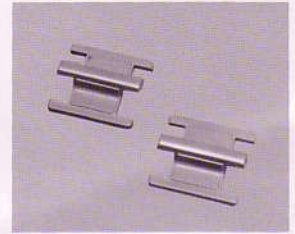
**PB-32 Series**

Patch Bays



**PA-4**

Phono Amp Unit



**TZ-23**

Fader Link Knob.

## M-300B SERIES SPECIFICATIONS

### (INPUT SECTION)

INPUT	CONNECTOR	INPUT IMPEDANCE	NOMINAL LEVEL	MAX. INPUT LEVEL
MIC IN	XLR (BAL)	2.8 kohms	-70dBV ~+4dBV	+32dBV
LINE IN	1/4"	16 kohms	-20dBV ~	-
TAPE RTN	RCA	12 kohms	-20dBV ~	-
EFFECT RTN	1/4"	6.7kdms	-20dBV~	-
PGM/ST/EFF/AUX/ SOLO SUB IN	RCA	22 kohms	-10dBV	+18dBV
EXT IN	RCA	8 kohms	-10dBV	+18dBV
CH. INSERTION (Receive)	1/4" (TRS)	5 kohms	-10dBV	+11dBV
PGM INSERTION (Receive)	1/4" (TRS)	9 kohms	-10dBV	+11dBV
STEREO INSERTION (Receive)	1/4" (TRS)	7 kohms	-10dBV	+11dBV
MONO INSERTION (Receive)	1/4" (TRS)	6 kohms	-10dBV	+11dBV
T/B MIC IN (M-320B & 312B only)	XLR	9 kohms	-60dBV ~-20dBV	+9dBV

### (OUTPUT SECTION)

OUTPUT	CONNECTOR	OUTPUT IMPEDANCE	NOMINAL LEVEL	MAX. OUTPUT LEVEL
PGM/STEREO OUT	XLR	20 ohms	+4dBm	+25dBm (BAL) +20dBm (UNBAL)
	RCA	100 ohms	-10dBV	+18dBV
MONO OUT	XLR	20 ohms	+4dBm	+25dBm (BAL) +20dBm (UNBAL)
	1/4"	20 ohms	0dBu	+20dBu
EFF/AUX OUT	1/4"	20 ohms	0dBu	+20dBu
	RCA	490 ohms	-10dBV	+10dBV
MONITOR OUT	1/4"	22 ohms	0dBu	+20dBu
SOLO OUT	RCA	100 ohms	-10dBV	+18dBV
DIRECT OUT	1/4"	100 ohms	-10dBV	+18dBV
CH/PGM/ST/MONO INSERTION (Send)	1/4" (TRS)	100 ohms	-10dBV	+18dBV
HEADPHONES	1/4" (TRS)	-	-	1.5W + 1.5W (8 ohms)

- \* Frequency Response:
  - Mic In to PGM Out; 20 Hz—30 kHz, +1, -2dB
  - Line In to Any Out; 20 Hz—30 kHz, +1, -2dB
- \* Equivalent Input Noise:
  - (150 ohms source) -132dB (IHF "A" WTD)
  - 130dB (DIN AUDIO)
- \* Signal-to-Noise Ratio:
  - (IHF "A" WTD/DIN AUDIO)
  - 20 Mic to PGM Out (M-320B); 55dB/50dB
  - 12 Mic to PGM Out (M-312B); 58dB/52dB
  - 8 Mic to PGM Out (M-308B); 62dB/60dB
  - 1 Line to PGM out; 87dB/86dB
  - 20 Line to PGM Out (M-320B); 75dB/73dB
  - 12 Line to PGM Out (M-312B); 80dB/77dB
  - 8 Line to PGM Out (M-308B); 82dB/80dB
- \* THD (20 Hz—20 kHz)
  - Mic In to PGM out; 0.025% (-10dBV input level, 30dB ATT ON)
  - Line In to any out; 0.02% (-10dBV input level)

- \* Fader Attenuation: 80dB (1 kHz)
- \* Crosstalk: Better than 70dB
- \* Equalizer: 3-band, 2-sweep
  - HIGH; 10 kHz shelving, ±12dB
  - MID; 200 Hz—4 kHz sweepable, ±15dB
  - LOW; 50 Hz—1 kHz sweepable, ±15dB

- \* Dimensions (W×H×D):
  - M-320B; 992×220×692 mm
  - M-312B; 720×220×692 mm
  - M-308B; 584×220×692 mm
- \* Weight (net):
  - M-320B; 36 kg
  - M-312B; 26 kg
  - M-308B; 21 kg

- \* Changes in specifications and features may be made without notice or obligation.
- \* 0dBV = 1V, 0dBu = 0.775V, 0dBm = 0.775V

# M-300B SERIES BLOCK DIAGRAM

(The M-308B does not include the shaded areas.)

