PROTECH®

I/06

MODELS 2004 & 2008
DUGAN AUTOMATIC MIXERS
INSTALLATION & OPERATION MANUAL

- Automatic Mixing with Dugan Speech System.
- 4/8 Mic/Line Inputs With Selectable Gain Structures.
- Phantom Power Capability On Each Input
- Clip Indicator For All Inputs
- Assignable Group Mute Per Input
- 12 Segment LED Metering of Output Level
- Remote Gain Control Capability On Master Output.
- Linkable for More Inputs
- U.S. Patents 3,992,584, & 4,864,627

The Protech Audio Models 2004.2008 Automatic Microphone Mixers are designed to be the best operating, most transparent auto-mixers, for rental and portable applications as well as small venues. Both the 2004 and 2008 feature patented adaptive proportional gain sharing control circuitry designed by Dan Dugan, the inventor of automatic mixing. This operating system results in the best, most transparent automatic mixing to be found anywhere. Unlike gated mixers, or quasi-Dugan mixers, the 2004 and 2008 operate on an elegantly simple principle; each individual input channel is attenuated by an amount, in dB, equal to the difference, in dB, between that channel's level and the sum of all channel levels. The levels are varied on a continuous basis, with no on-off actions, or abrupt gain changes.

The 2008 features 8 switchable microphone/line level inputs. The model 2004 features 4 similar inputs. Two units may be linked together to create up to 16 inputs. Both units feature a unique works-in-a-drawer construction. Access to all switches and push-on jumpers used to configure various features, is achieved by loosening the two thumbscrews located on each side of the front panel, and sliding the entire electronics out of the chassis. This easy access allows complete reconfiguration in just minutes.

In addition to the input mode (mic/line) switch located at each input, the gain of each input is configurable, via a push-on jumper, to allow superior signal-to-noise operation. Moving the jumper over one pin changes the input gain from 30dB to 50dB.

A bi-color LED is used to indicate signal presence and clip threshold. Unlike other units, the clip indicator on the Model 2008 indicates clipping of the summing buss, not just an input, since it is possible to clip a summing bus, without clipping an input.

Internal 15 volt phantom power is selected, on a channel-by-channel basis, via a push-on jumper. When the input mode slide switch is placed in the line position, phantompower will automatically be disconnected, preventing damage to line level devices.

The Models 2004 and 2008 also feature assignable group mute function. Each input may be assigned to the mute buss via an eight position DIP switch. Turning on a given switch will assign that channel to the group mute. Grounding the group mute control pin will mute the assigned channels.

The output level of the automixers may be controlled via the front panel output potentiometer, or, assigned to a remote potentiometer, via an on-board slide switch.

Both units have been designed with the operator in mind. Control features allow the operator to attend to other functions, without the need to continuously "ride gain".

For additional information on the model 2004 and 2008, or the Models 2000 Boardroom Automixer, and 2000-C Courtroom Automixer, contact: Applications Assistance

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INSTALLATION

The Model (2004 or 2008) has been shipped from the factory with all inputs set for microphone level operation, and the internal 15 volt phantom power enabled on each input.
If line level operation is required on some inputs, the following steps are required.
Mount the Model (2004/2008) in a suitable rack.

UNPLUGGING THE ELECTRONICS

Loosen the two thumbscrews, located on each side of the front panel (see page 3) half-way.
Unplug the electronic section from the chassis.
Set the appropriate input mode switches (see page 3) to line level. Doing so will automatically disconnect the phantom power.
Set the appropriate group mute switch position(s) to "ON" (see page 3).
Slide the electronics section back into the chassis.
Place forefingers on the top of the front panel, and thumbs on bottom of front panel. Apply slight pressure with thumbs to raise rear of electronics section, until it seats properly into chassis connectors. Push electronics section in until front panel is flush with mounting ears.
Tighten thumbscrews.
Wire inputs and outputs using two-conductor shielded cable.

REMOTE LEVEL CONTROL

Follow the instructions for unplugging the electronics.
Set the slide switch labeled "REM VOL", to the "ON" position.
Plug the electronics section back into the chassis.
Wire the 3 "REMOTE CONTROL" connections as shown on page 3.
Raising or lowering the remote pot, will now control the output level.

GROUND LIFT SWITCH

Normally set to the "GND ON" position.

PHANTOM POWER

One push-on red jumper for each input. See page 3 for locations. Set input mode switch to "LINE" position automatically disconnects phantom power from that input.

GROUP MUTE

The 4/8 position DIP (see page 3) switch assigns individual inputs to the group mute bus. Grounding the group mute screw, on the rear barrier strip, activates the group mute. All screw connections labeled "SH", are ground.
Linked chassis's will operate on the master chassis group mute screw terminal.

LINKING

Two pieces of the Model (2004/2008) may be linked together, to provide up to 16 inputs, to a common output.
There is a Master/Slave switch on the electronic section PC assembly (see page 3). Follow the instructions for unplugging the electronics.
Set the Master/Slave slide switch, on the unit to be designated "Slave", to the slave position.
Plug the electronics section back into the chassis.
Wire the 6 "LINK" connections as shown on page 3.
Raising or lowering the output pot, on the unit designated "Master", will now control all 16 inputs channels.

ALIGNMENT

Set the output pot to 3:00 position.

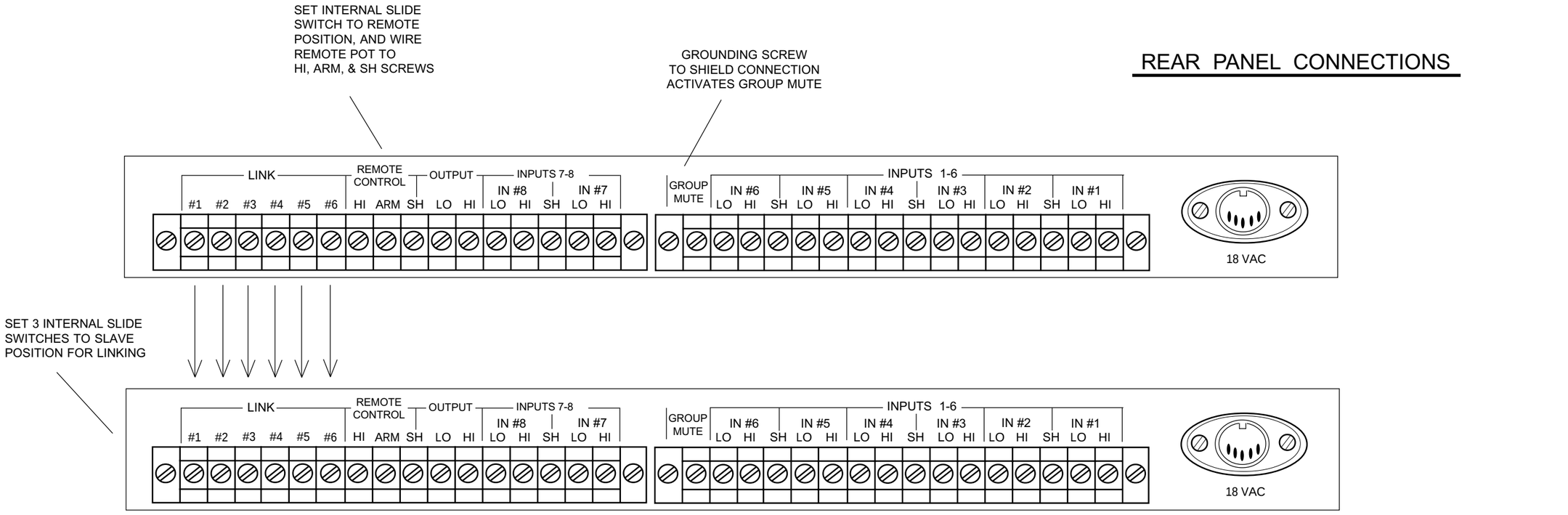
While someone speaks into each microphone, adjust the corresponding input pot until the desired output level is achieved. Repeat for each input.

If high output level microphones (Condenser Mics) are to be used, it may be desirous to lower the input preamplifier stage to 30dB of gain. See page 3 for location of push-on jumpers for each input channel.

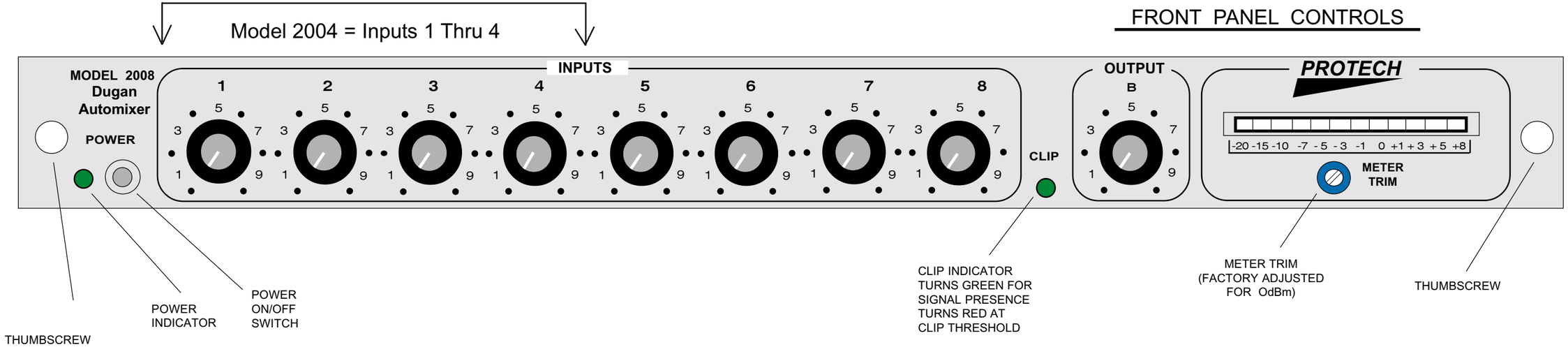
The Signal Presence/Clip indicator turns green when the input summing bus reaches -15dB, and turns red when the bus reaches +15dB.

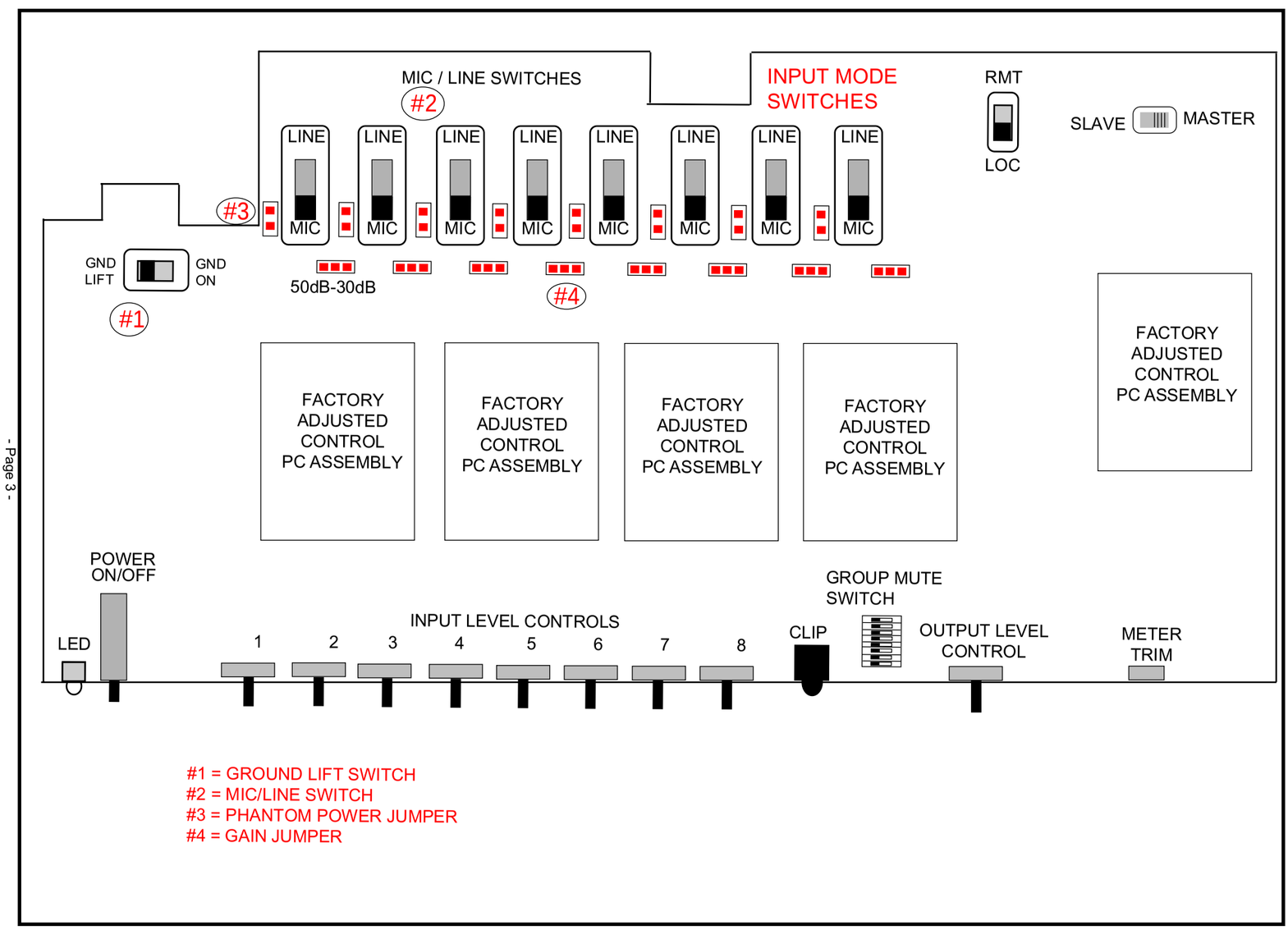
The alignment is now completed. The Model (2004/2008) will ride gain on each input, in similar fashion to an experienced sound system operator, but much faster.

REAR PANEL CONNECTIONS



FRONT PANEL CONTROLS





#1 = GROUND LIFT SWITCH
#2 = MIC/LINE SWITCH
#3 = PHANTOM POWER JUMPER
#4 = GAIN JUMPER