BRYSTON
OWNER'S MANUAL

Instructions For Bryston
PowerPac 60/120/300
Monaural Amplifiers

Last change on 31-oct-2003

GENERAL INSTRUCTIONS

General Information:

Thank you for choosing a Bryston product. We would welcome any comments or suggestions you may have regarding the operation of your amplifier. We consider our customer to be Bryston,s most important resource and your opinion is very much appreciated. In the unlikely event you have a problem with your amplifier and must return it for service please keep the original box and all packaging material.

The Bryston PowerPac 60/120/300 are high quality modular single channel 60/120 /300 watt power amplifier intended for use in applications where portability, quality and flexibility are of prime importance.

The PowerPac is a perfect choice for use as a modular power amplifier which can be attached directly to the rear of your loudspeaker . It can also be bolted on the wall, or in the wall, for utilization in audio/video surround systems (left/right/center/rears) where a non-conspicuous power module is required. Another application would be in multi-room audio systems where single or multiple amplifiers are needed to provide music to other rooms.

Setup Recommendations:

We recommend that you do not place the amplifier in a totally enclosed area. Allow some space at the top, sides as your Bryston amplifier relies on convection cooling and some air flow is desirable.

Make sure the power switch on the front panel of the amplifier is in the off (out) position. Plug the power cord into the front panel of the amplifier, then insert the male end into the wall outlet.

All Bryston amplifiers contain high quality, dedicated circuitry in the power supplies to reject RF, line spikes and other power-line problems.

Bryston power amplifiers do not require specialized power line conditioners. Plug the amplifier directly into its own wall socket.

Connect your loudspeakers ensuring that the positive (red) and ground (black) terminals on your amplifier are connected to the positive and ground terminals on your loudspeakers.

Note: Make sure that the front panel switch for choosing balanced or non-balanced is in the correct position.

Description:

The Bryston PowerPac 60 monaural amplifier consist of two of Bryston's custom power transistors as output devices. The power output is 60 Watts @ 8 Ohms.

The Bryston PowerPac 120 monaural amplifier consist of four of Bryston's custom power transistors as output devices. The power output is 120 Watts @ 8 Ohms.

The Bryston PowerPac 300 monaural amplifier consist of eight of Bryston's custom power transistors as output devices. The power output is 300 Watts @ 8 Ohms.

Dimensions PP60:	***(LHW) 12 X 1.8 X 7.1 Inches, 30.5 x 4.6 x 17.9 cm. Weight 5.7 Lbs/2.6Kg.***
Dimensions PP120:	***(LHW) 12 X 4.3 X 7 Inches, 30.5 x 10.9 x 17.8 cm. Weight 10.6 Lbs/4.8Kg.***
Dimensions PP300:	***(LHW) 17 X 4.5 X 8.4 Inches, 43 x 11.5 x 21 cm. Weight 23 Lbs/10.5Kg.***

BRYSTON POWERPAC 60/120/300

Input and Output Connectors:

Bryston PowerPac amplifiers come standard with two input connectors: one unbalanced RCA/phono connector and a balanced combination XLR - 1/4-inch jack with fully discrete active input circuitry.

All input connectors are gold-plated and should only be used only with high-quality, gold-plated interconnect cable as a poorly plated connector will eventually corrode through the gold flash.

Bryston offers interconnect cables with heavily gold plated, quality connectors available through any Bryston authorized dealer or directly from Bryston.

Output connectors consist of one pair of five-way binding post terminals (1 red and 1 black) that can accept either standard banana plugs, spade lugs, pins or bare wire. Since the binding posts are gold-plated, we recommend gold plated connectors also be used on the speaker cables.

All Bryston amplifiers will accept balanced or single-ended (RCA) input connectors. The balanced inputs use combination 3-pin XLR (pin-1-ground), (pin-2-+) and 1/4-inch tip-(+), ring and sleeve (ground) input connectors.

Grounding and Ground LIft Switch (except PP300 and PP120):

A ground lift switch is located on the front panel of the amplifier. It is connected between the chassis ground (including the third prong on the power cord) and the signal ground.

This switch is normally left in the connected (up) position. Occasionally a multi-amplifier installation or an unusual grounding situation with another component (CD player, video recorder, television etc.) will cause a ground loop between the signal ground and the chassis ground. This switch will reduce the resultant hum in many cases without resorting to a " cheater plug " by switching to the separated (down) position.

Note: this switch does not disconnect the chassis from the third prong on the power cord which must be left intact for safety reasons.

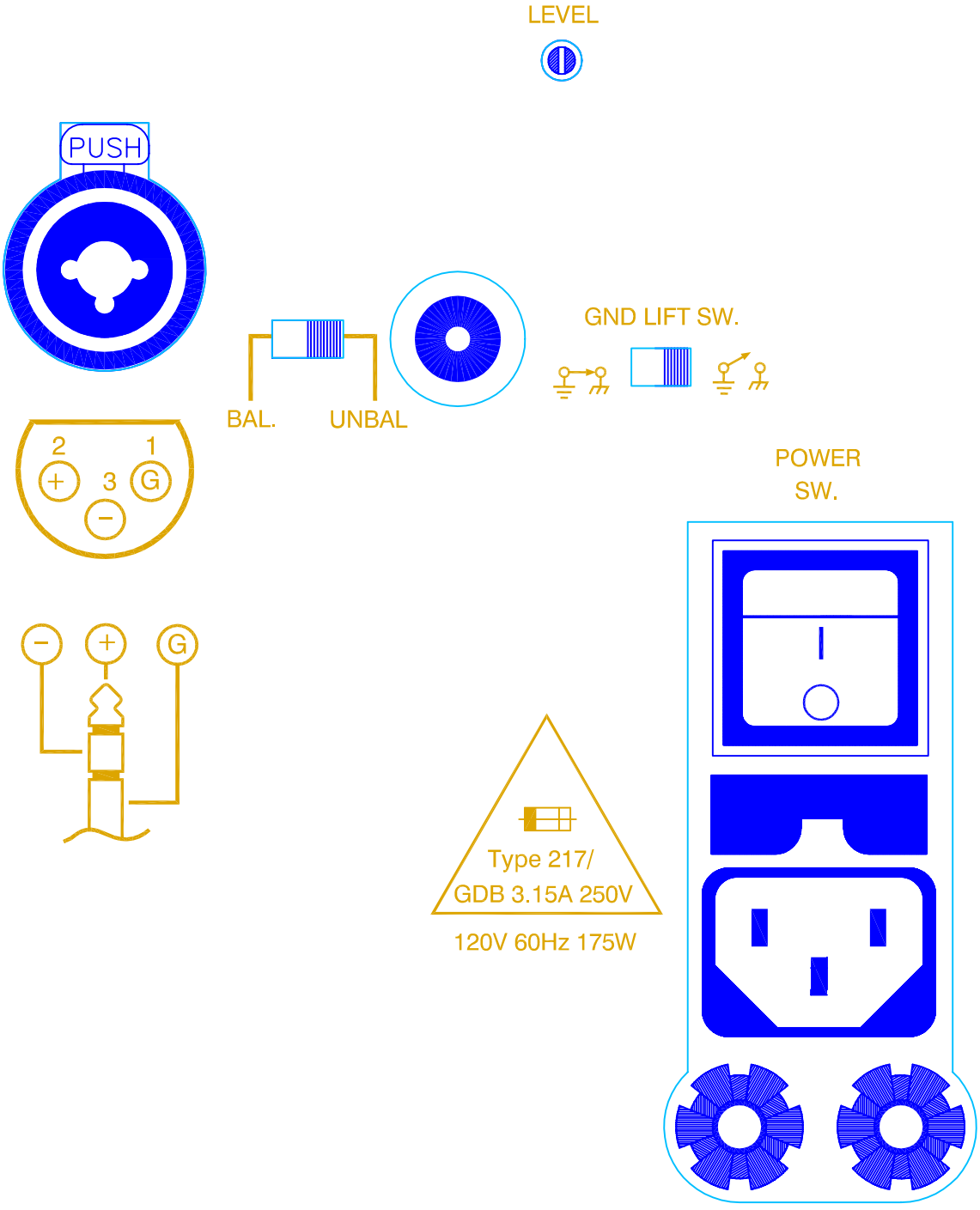
Power Clipping Indicator

Dual colour LED pilot lights indicating GREEN at normal level, flashing RED at clipping.

BRYSTON

PowerPac 60

MONAURAL AMPLIFIER



SPECIAL INSTRUCTIONS

POWERPAC 120/300

The PowerPac 120/300 remote on/off function allows the user to link the power on/off of an amplifier, or group of amplifiers, to an external preamp, or other control product. This is useful in installations, such as home theater, which usually present a convenience problem for powering up multiple amplifiers, often at distant locations from the source.

Located on the front panel of the PowerPac 120/300 (see illustration), is a two terminal 12 volts *(active range 9 -12 volts AC or DC of either polarity),* input connector and a potentiometer. The PowerPac amplifiers can then be powered-up by an external 12-volt signal connected to the terminals of the jack.

This jack will accept 1/4 -inch stripped wire ends, inserted into the square holes provided, and the adjacent screws carefully tightened to hold them in place. The internal "delay" turn-on circuit, will delay turn–on between 1 and 10 seconds, following application of the 12-Volts. In this way groups of amplifiers may be sequenced ***on*** to distribute power surges over a period of time.

The power switch must be left in the "off" position, at all times for the PP120 amplifier to operate in the remote mode.

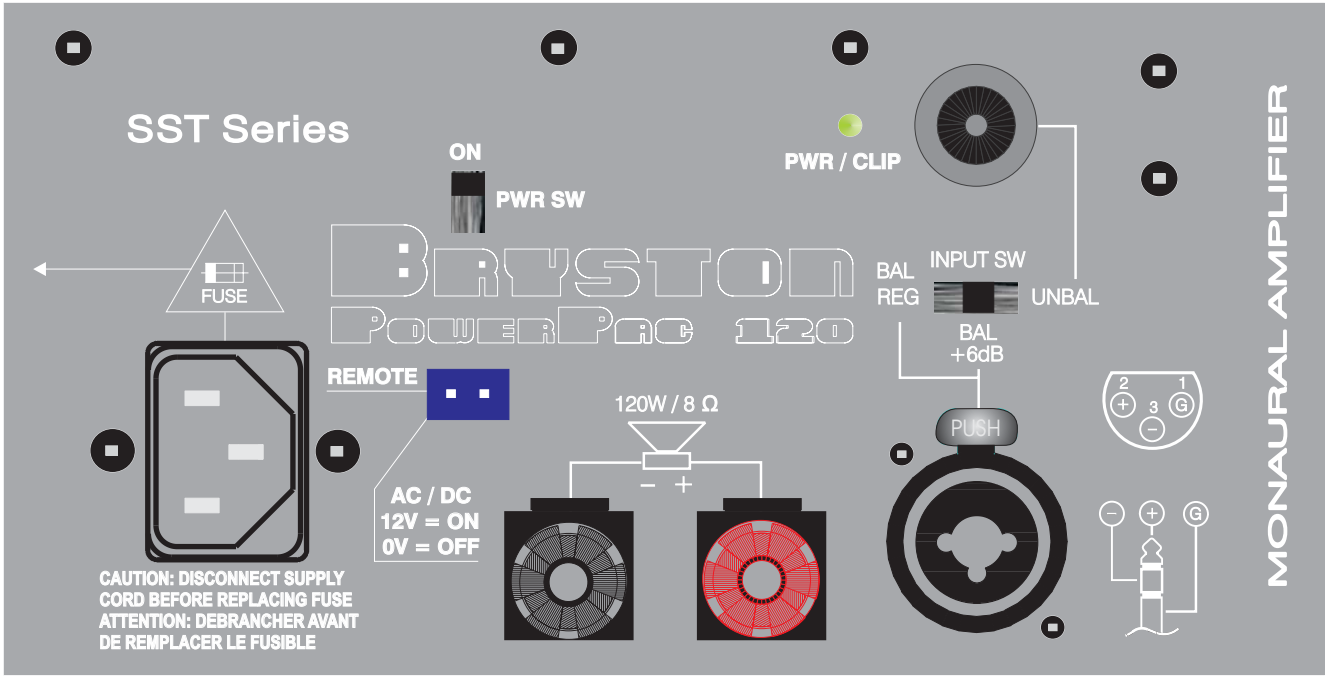
The PP300 has a 3-position switch allowing for 'Local (on)' or 'Off 'or 'REM (remote)' power selection.

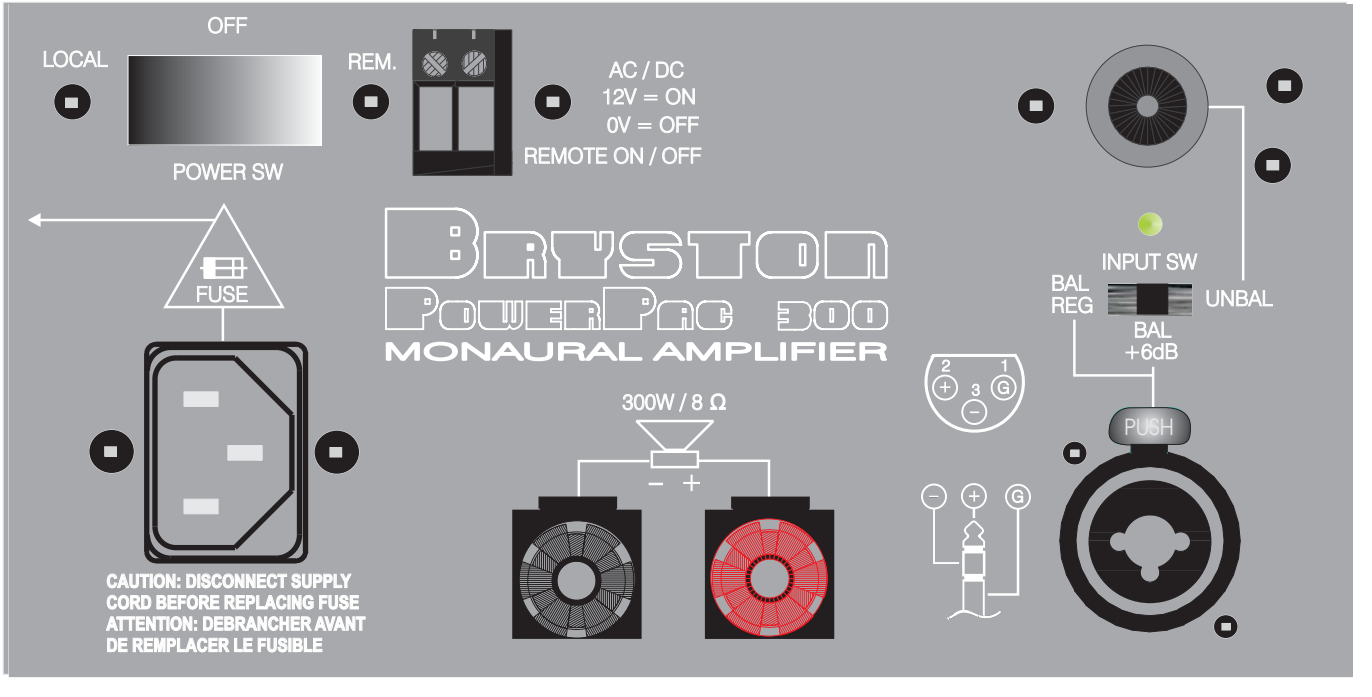
The amplifier will remain powered-up while the 12-Volt signal is present, and will turn off when the 12-Volt signal is switched off.

Input sensitivity is selectable using the 'INPUT' slide switch. In the ' BAL REG' position, 2 Volts in will give 100 Watts into 8 ohms at the output. This is the *recommended setting* when using Bryston pre-amplifiers or other pre-amplifiers having active balanced outputs. This setting also produces the lowest noise floor.

The 'BAL +6 dB " setting adds 6 dB of gain to provide an input sensitivity of 1 Volt in = 100 Watts / 8 ohms at the output for outputs that are transformer coupled, or low level sources.

The 'UNBAL ' setting selects the gold plated 'phono' type connector. The input impedance is 50K ohms.


SST Series
ON
PWR SW
PWR / CLIP
BRYSTON
POWERPAC 120
FUSE
REMOTE
AC / DC
12V = ON
0V = OFF
120W / 8 Ω
BAL
REG
INPUT SW
UNBAL
BAL
+6dB
PUSH
2
1
3
G
CAUTION: DISCONNECT SUPPLY CORD BEFORE REPLACING FUSE
ATTENTION: DEBRANCHER AVANT DE REMPLACER LE FUSIBLE
MONAURAL AMPLIFIER


OFF
LOCAL
REM.
POWER SW
AC / DC
12V = ON
0V = OFF
REMOTE ON / OFF
FUSE
BRYSTON
POWERPAC 300
MONAURAL AMPLIFIER
INPUT SW
BAL
REG
UNBAL
BAL
+6dB
PUSH
300W / 8 Ω
CAUTION: DISCONNECT SUPPLY
CORD BEFORE REPLACING FUSE
ATTENTION: DEBRANCHER AVANT
DE REMPLACER LE FUSIBLE

BRYSTON PowerPac SPECIFICATIONS

PowerPac 300	PowerPac 120	PowerPac 60
300 watts into 8 ohms	120W/8 ohms	60W/8 ohms
500 watts into 4 ohms	200W/4 ohms	100W/4 ohms

Gain

29dB (Unbalanced)	29dB (Unbalanced)	29dB (Unbalanced)
23dB or 29dB (Balanced)	23dB or 29dB (Balanced)	23dB (Reg.Balanced)
		29dB (Pro-balanced)

Distortion

IM or THD at nominal output power < 0.007% from 20Hz to 20kHz

Noise

>106dB below rated output

Power Bandwidth

<1 Hz to over 100 kHz

Input Sensitivity

Unbalanced 1.5 volts in =	Unbalanced 1 Volts in =	Unbalanced 0.75 Volts in =
250 watts into 8 ohms	100 watts at 8 ohms	60 watts at 8 Ohms

Input Impedance

50K ohms unbalanced
20K ohms balanced

Heatsinking

Over 3320 cm/square	Over 1690 cm/square	Over 600 cm/square

Features

Regulated power supplies to all voltage gain stages
Gold plated input and output connectors
Switchable balanced XLR - 1/4" w/ two different gains and RCA unbalanced inputs only for PP300 & PP120
Remote power turn-on 12V, AC/DC only for PP300 & PP120
Power Clipping Indicator for PP300, PP120 & PP60
Soft start Power supply only for PP300

Dimensions

LxHxW = 17"x4.5"x8.4"	12"x4.3"x7"	12"x1.8"x7.1"
43x11.5x21 Cm	30.5x10.9x17.8 Cm	30.5x4.6x17.9 Cm
wt: 23 lbs	11.9 lbs	5.7 lbs
wt:10.5 kg	5.4 Kg.	2.6 Kg.

BRYSTON 20 -YEAR WARRANTY

Bryston products are warranted to be free from manufacturing defects for a minimum of twenty years from the original date of manufacture. This includes parts, labour and return shipping to the first owner and all subsequent owners. Warranty coverage is automatic and commences with the original date of manufacture which is kept on file at Bryston.

In the event of a defect or malfunction, Bryston will remedy the problem by repair or replacement, as we deem necessary, to restore the product to full performance.

This warranty is considered void if the defect, malfunction or failure of the product or any component part was caused by damage (not resulting from a defect or malfunction) or abuse while in the possession of the customer, tampering by persons other than factory-authorized service personnel, or failure to comply with Bryston operating instructions.

This warranty gives you specific legal rights and you may also have other rights which may vary from province to province and country to country.

BRYSTON SERVICE USA.:
70 COVENTRY ST. SUITE #5
NEWPORT VERMONT
U.S.A. 05855

PHONE: 802-334-1201
FAX: 802-334-6658
E-MAIL: usaser@bryston.ca

BRYSTON SERVICE OUTSIDE CANADA & the USA:
CONTACT YOUR LOCAL DISTRIBUTOR
OR
CHECK OUR WEB SITE AT: www@bryston.ca
E-MAIL BRYSTON DIRECTLY: info@bryston.ca
FAX BRYSTON DIRECTLY: 705-742-0882
PHONE BRYSTON DIRECTLY: 705-742-5325

BRYSTON LTD., 677 NEAL DRIVE, P.O. BOX 2170, PETERBOROUGH, ONTARIO CANADA K9J 7Y4

ENGINEERING CHANGE ORDER #735

MODELS AFFECTED:	PP300*

SUBJECT:	COMPONENT CHANGES on AFSS-R12 (AC filter & Soft-Start board) Revised shield IN-AFSS10-R12

DETAILED DESCRIPTION of, and REASONS for, CHANGE

Diode **DZ404**, currently a **1N4733** (5V1/1W), can be replaced with **1N5231** (5V1/500mW) on the AFSS-R12 board if its leads are too large for the present holes. *Future revisions of this board will feature larger holes to accommodate the 1N4733's heavier leads*.

The **IN-AFSS-10** insulator shield, installed behind AFSS-r12 board, is replaced with the **IN-AFSS-12** and is now made from *Formex GK17* polypropylene to meet safety standards requirements.

Updated model BOM is PP300-M2

ISSUE DATE	ENGINEER(s)	PRIORITY	STARTING SERIAL No.
2004-02-17	F.N.	2	P300-000065

IS A *SAFETY STANDARDS* RE-EVALUATION REQUIRED (Y/N)? **Y**

(SEE NOTE BELOW)

DOCUMENTS :

DOCUMENT NAME	DOCUMENT DESCRIPTION	ENGR(s)	STATUS
AFSS12.DWG (Page 2)	ASSEMBLY INSTRUCTION FOR AC FILTER & SOFT START BOARD	F.N.	COMPLETE
INAFSS12.DWG (Page 3)	DRAWING FOR INSULATOR BEHIND OF THE AC FILTER & SOFT START BOARD	F.N.	COMPLETE

	ENGINEERING	PURCHASING	PRODUCTION
APPROVAL			
MANAGER'S COMMENTS			

ECO IMPACT REPORT

PURCHASING	PRODUCTION
Have ALL affected BOMs been updated? Comments:	**Describe any issues relating to the implementation of this ECO:**

MODELS: Logical character search strings using AND/OR/NOT operators with "asterisk" and "question mark" wildcards, or list ALL models explicitly.
Priority 1: Immediate and unconditional; current production halted until new parts or procedures available. All finished units retrofitted.
Priority 2: All units in production (i.e. all unfinished units) will use new parts or procedures as soon as they become available.
Priority 3: New parts or procedures will be used as soon as they become available AND as soon as existing parts are depleted or declared dead stock.
Priority 4: Alternate parts MAY be used as demand requires.
SAFETY STANDARDS EVALUATIONS: All changes must be assessed to determine their possible impact on Safety Standards approvals and the need to either resubmit specific documentation, or the entire unit, for updated certification. If it is determined that Safety Standards approvals may be affected, then *a Safety Standards Approval Report* must be attached to this ECO detailing steps taken to update necessary approvals.

ENGINEERING CHANGE ORDER #751

MODELS AFFECTED:	POWERPAC 300*

SUBJECT:	MODIFYING REMOTE BOARD AND USING A NEW STANDOFF

ISSUE DATE	ENGINEER(s)	PRIORITY	STARTING SERIAL No.
30-Apr-04	FN	1	

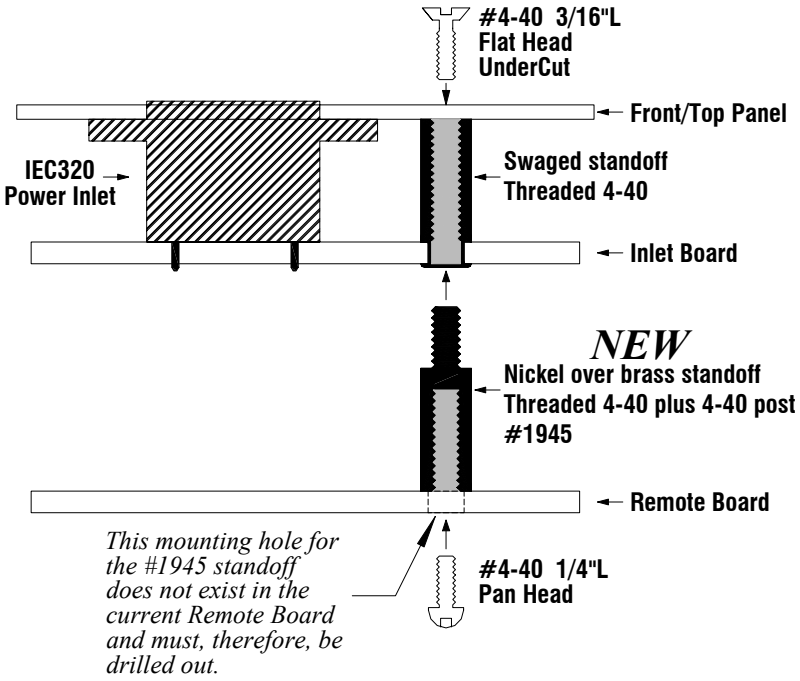
IS A *SAFETY STANDARDS* RE-EVALUATION REQUIRED (Y/N)? (See foot note) **Y**

DETAILED DESCRIPTION of, and REASONS for, CHANGE

DUE TO MECHANICAL PROBLEM IN ORDER TO HOLD REMOTE BOARD TO INLET BOARD COMPLETELY TIGHT, WE NEED TO MODIFY REMOTE BOARD BY DRILLING OUT A HOLE FOR SCREW #4 AND CUT ON THE BOTTOM TRACE TOWARD C404 CAPACITOR, THEN IN MECHANICAL ASSEMBLY INSERT A MALE STANDOFF 1945 INTO BACK OF ONE OF THE INLET BOARD STANDOFFS AND USE SCREW #4 TO TIGHT FROM BOTTOM OF REMOTE BOARD INTO FEMALE SIDE OF ABOVE STANDOFF.

DOCUMENTS :

DOCUMENT NAME	DOCUMENT DESCRIPTION	ENGR(s)	STATUS
ECO-751_1	MECHANICAL ASSEMBLY DIAGRAM FOR REMOTE AND INLET BOARDS	FN	COMPLETE
ECO-751_2	ASSEMBLY INSTRUCTION OF REMOTE BOARD	FN	COMPLETE



ENGINEERING	PURCHASING	PRODUCTION

MODELS: Logical character search strings using AND/OR/NOT operators with "asterisk" and "question mark" wildcards, or list ALL models explicitly.
Priority 1: Immediate and unconditional; current production halted until new parts or procedures available. All finished units retrofitted.
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Priority 4: Alternate parts MAY be used as demand requires.
SAFETY STANDARDS EVALUATIONS: All changes must be assessed to determine their possible impact on Safety Standards approvals and the need to either resubmit specific documentation, or the entire unit, for updated certification. If it is determined that Safety Standards approvals may be affected, then *a Safety Standards Approval Report* must be attached to this ECO detailing steps taken to update necessary approvals.

ENGINEERING CHANGE ORDER #771

MODELS AFFECTED:	PowerPac 300*

SUBJECT:	Modification at input and output of +/- 33V regulators located on daughter & Regulator board and on Output Devices board

ISSUE DATE	ENGINEER(s)	PRIORITY	STARTING SERIAL No.
2004-08-26	FN	1	PP300-000091

IS A *SAFETY STANDARDS* RE-EVALUATION REQUIRED (Y/N)? (See foot note) **n**

DETAILED DESCRIPTION of, and REASONS for, CHANGE

Due to a report of an open circuit in two re-setable fuses (RXE-010) on an *Output Devices Board* causing high DC offset and subsequent speaker damage, these parts are being removed and replaced as described below:

1- On Output devices board (CBP300-OD/1.0) remove two re-set-able fuses F2 & F3 replace them with two jumpers (R139 & R140).

2- On Daughter & Regulator board (CBP300-DR/R1) remove two pair series of capacitors C308,C307 & C608,C607 and replace them with two diodes 1N914, D604 & D304 (PART# DI1N914B000)

3- In PowerPac 300 with Option On Daughter & Regulator board (CBP250-DR/7.0) remove two capacitors C307,C607 and replace them with two diodes 1N914 (PART# DI1N914B000). Also in the same board replace two re-set-able fuses F3 & F2 with two jumpers (R605 & R305)

DOCUMENTS :

DOCUMENT NAME	DOCUMENT DESCRIPTION	ENGR(s)	STATUS
ECO-771-6.pdf (Page 7)	Daughter & Regulator board Assembly Instruction without option	FN	COMPLETE
ECO-771-5.pdf (Page 3)	Daughter & Regulator board Assembly Instruction with option	FN	COMPLETE
ECO-771-1.pdf (Page 2)	+33V & + 16 Regulator Schematic	FN	COMPLETE
ECO-771-2.pdf (Page 6)	-33V & - 16 Regulator Schematic	FN	COMPLETE
ECO-771-4.pdf (Page 4)	Assembly Instruction of Output Devices board	FN	COMPLETE
ECO-771-3.pdf (Page 5)	Output Devices Schematic	FN	COMPLETE
Brstonltd01\EngPDFs\Engineering\PowerPac 250 or 300 \P300-M1&M2	Updated Part List	FN	IN PROCESS

	ENGINEERING	PURCHASING	PRODUCTION
APPROVAL			

MODELS: Logical character search strings using AND/OR/NOT operators with "asterisk" and "question mark" wildcards, or list ALL models explicitly.
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