PROFESSIONAL POWER AMPLIFIERS

MX AND VX SERIES

TECHNICAL SPECIFICATIONS

	VX150	VX200	VX300	VX450	VX600	VX900	VX1200
Output per channel at clip 1KHz both channels driven	80 Watt into 4 Ohm 60 Watt into 8 Ohm	100 Watt into 4 Ohm 65 Watt into 8 Ohm	155 Watt into 4 Ohm 100 Watt into 8 Ohm	240 Watt into 4 Ohm 150 Watt into 8 Ohm	325 Watt into 4 Ohm 200 Watt into 8 Ohm	475 Watt into 4 Ohm 285 Watt into 8 Ohm	630 Watt into 4 Ohm 375 Watt into 8 Ohm
Bridged mono balanced output 8 Ohm load	35V Line Output 170 Watts	41V Line Output 205 Watts	50V Line Output 315 Watts	60V Line Output 500 Watts	70V Line Output 650 Watts	86V Line Output 965 Watts	100V Line Output 1300 Watts
THD at rated power output in the band 20Hz—20 KHz	<0·03%	<0·03%	<0·03%	<0·03%	<0·03%	<0·03%	<0·08%
Intermodulation distortion	Less than 0·03% using frequencies of 50 Hz and 7 KHz in 4:1 ratio. Applies to all models at rated power output						
Input sensitivity	0dBm (775mV) input for full output power into a 4 ohm load. Applies to all models.						
Input options	Electronic balance, transformer balance or non-balanced inputs selectable from 3 position switches on rear panel. Applies to all models.						
Damping factor	Greater than 300 at 100 Hz ref. 8 Ohms load. Applies to all models.						
Hum and noise	Greater than 100 dB DOWN ref FULL OUTPUT. 20Hz—20KHz. (Unbalanced mode selected). Applies to all models.						
Output slew rate	60V/uS	60V/uS	60V/uS	60V/uS	60V/uS	60V/uS	60V/uS
Input connectors	1 x 3 pin XLR and 1 stereo jack each channel. Applies to all models.						
Output connectors	1 pair binding posts per channel	1 pair binding posts +1 XLR per channel	1 pair binding posts +1 XLR per channel	1 pair binding posts +1 XLR per channel	1 pair binding posts +1 XLR per channel	3 pairs binding posts per channel	3 pairs binding posts per channel
Protection	Electronic protection against short circuit, open circuit and load mismatch conditions. Thermal protection against heatsink over temperature (inadequate ventlilation). Applies to all models.						
Load protection	n/a	n/a	crowbar protection operates in the event of a DC fault condition at the amplifier output.				
Cooling	Convection	Convection	Convection	Two speed fan	Two speed fan	Two speed fan	Two speed fan
Rack height	1U	2U	2U	2U	2U	3U	3U
Mains supply	100, 120, 220, 240V 50-60 Hz internally set by voltage links. Applies to all models.						
Power requirement	225VA	300VA	450VA	680VA	900VA	1350VA	1800VA
W x H x D x Kg	483 x 45 x 305 mm 6·3 Kg 19 x 1·75 x 12"	483 x 89 x 305 mm 9·6 Kg 19 x 3·5 x 12"	483 x 89 x 381 mm 11·5 Kg 19 x 3·5 x 13"	483 x 89 x 381 mm 16 Kg 19 x 3·5 x 15"	483 x 89 x 381 mm 16·3 Kg 19 x 3·5 x 15"	483 x 133 x 381 mm 22·6 Kg 19 x 5·25 x 15"	483 x 133 x 381 mm 24·8 Kg 19 x 5·25 x 15"

	MX170	MX250	MX500	MX900	MX1200	V800	M900
Output per channel at clip 1KHz both channels driven	80 Watt into 4 Ohm 60 Watt into 8 Ohm	125 Watt into 4 Ohm 80 Watt into 8 Ohm	250 Watt into 4 Ohm 180 Watt into 8 Ohm	450 Watt into 4 Ohm 300 Watt into 8 Ohm	600 Watt into 4 Ohm 380 Watt into 8 Ohm	410 Watt into 4 Ohm 250 Watt into 8 Ohm	410 Watt into 4 Ohm 250 Watt into 8 Ohm
Bridged mono balanced output 8 Ohm load	35V Line Output 170 Watts	45V Line Output 250 Watts	65V Line Output 500 Watts	86V Line Output 900 Watts	100V Line Output 1200 Watts	80V Line Output 860 Watts	80V Line Output 860 Watts
THD at rated power output in the band 20Hz—20 KHz	<0·03%	<0·03%	<0·03%	<0·03%	<0·08%	<0·03%	<0·03%
Intermodulation distortion	Less than 0·03% using frequencies of 50 Hz and 7 KHz in 4:1 ratio. Applies to all models.						
Input sensitivity	0dBm (775mV) input for full output power into a 4 ohm load. Applies to all models.						
Input options	Electronic balanced / unbalanced		Electronic balanced / unbalanced / optional internally fitted transformer.				
Damping factor	Greater than 300 at 100 Hz ref. 8 Ohms load. Applies to all models.						
Hum and noise	Greater than 100 dB DOWN ref FULL OUTPUT. 20Hz—20KHz. Applies to all models.						
Output slew rate	60V/uS	60V/uS	45V/uS	45V/uS	45V/uS	45V/uS	45V/uS
Input connectors	3 pin XLR and 1 stereo jack each channel.		2 x 3 pin XLR and 1 stereo jack each channel.			1xXLR and stereo jack	1xXLR per channel
Output connectors	1 pair binding posts per channel	1 pair binding posts +1 XLR per channel	1 pair binding posts + one speakon connector per channel			1 pair binding posts and 2xXLR per channel	1xXLR per channel
Protection	Electronic protection against short circuit, open circuit and load mismatch conditions. Thermal protection against heatsink over temperature (inadequate ventlilation). Applies to all models.						
Load protection	n/a	n/a	Output relays disconnect speakers in the event of excessive subsonic, DC and provide surge free turn on.				
Cooling	Convection	Convection	Variable speed fan			Two speed fan	Two speed fan
Rack height	1U	2U	2U	2U	2U	4U	4U
Mains supply	100, 120, 220, 240V 50-60 Hz internally set by voltage links. Applies to all models.						
Power requirement	250VA	350VA	650VA	1300VA	1700VA	1350VA	1350 VA
W x H x D x Kg	483 x 45 x 305 mm 6·3 Kg 19 x 1·75 x 12"	483 x 89 x 305 mm 9·6 Kg 19 x 3·5 x 12"	483 x 89 x 450 mm 12·5 Kg 19 x 3·5 x 17·7"	483 x 89 x 450 mm 16·5 Kg 19 x 3·5 x 17·7"	483 x 89 x 450 mm 18 Kg 19 x 3·5 x 17·7"	483 x 178 x 300 mm 21·9 Kg 19 x 7 x 11·75"	483 x 178 x 300 mm 21·9 Kg 19 x 7 x 11·75"

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INTRODUCTION

WHEN ONLY THE BEST WILL DO

HH ARE RECOGNISED AS THE LEADERS IN THE FIELD OF HIGH QUALITY PROFESSIONAL POWER AMPLIFICATION, CONTINUALLY SETTING NEW WORLD STANDARDS OF EXCELLENCE. THE FIRST RANGE OF MOS-FET POWER AMPLIFIERS WERE LAUNCHED BY HH IN 1978 SETTING THE HIGHLY ACCLAIMED DEFINITIVE STANDARD FOR THE 80'S THAT RAPIDLY BECAME ACCEPTED AS THE RECOGNISED LEADER IN THIS FIELD OF TECHNOLOGY. HH AMPLIFIERS ARE SUPERIOR BY DELIBERATE DESIGN AND OFFER MANY ADVANTAGES DETAILED IN THIS BROCHURE.

PRIDE OF PLACE

YOUR CHOICE OF AN HH POWER AMPLIFIER WILL ENSURE YOU ARE JOINING AN ELITE BAND OF PROFESSIONAL USERS WHO FEEL SAFE IN THE HANDS OF HH.
ST. PAULS CATHEDRAL, BUCKINGHAM PALACE, NATIONAL CONGRESS HALL PRAGUE, AND MOST OF THE WORLDS RADIO STATIONS, INCLUDING THE BBC, ARE POWERED BY HH.
THEY KNOW THAT HH PERSONIFIES LONG LIFE AND OPTIMUM PERFORMANCE.

HIGH TECH FACILITIES

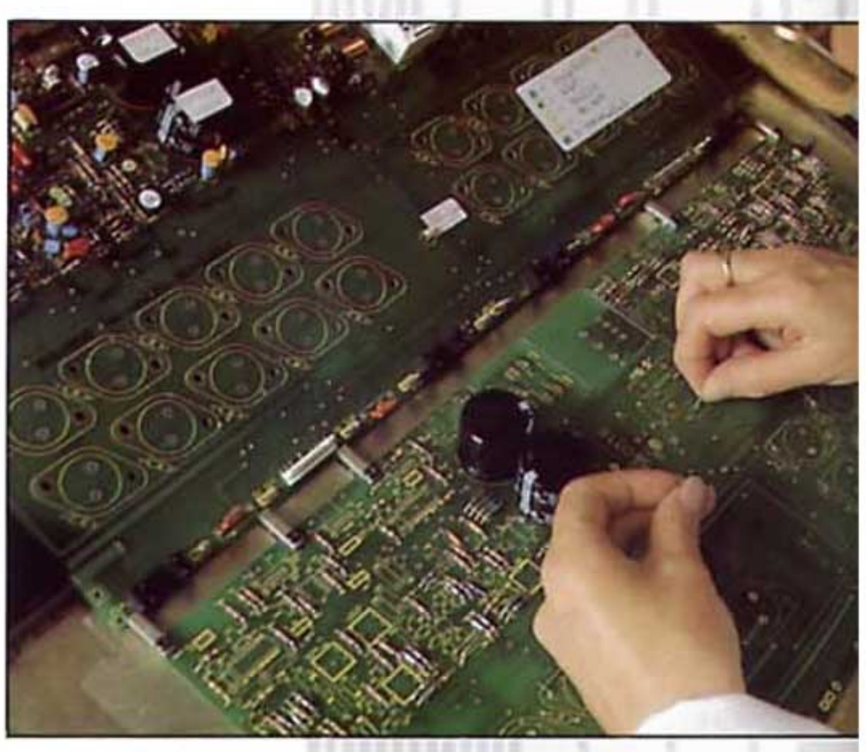
HH, BEING A MEMBER OF THE BLT GROUP ENJOYS THE POOLED RESOURCES OF A HI-TECH FULLY COMPUTERISED MANUFACTURING PLANT. AS A RESULT THE END USERS PERCEPTION OF HH POWER AMPLIFIERS AS THE DEFINITIVE STANDARD IN ALL PROFESSIONAL AUDIO APPLICATIONS IS TOTALLY JUSTIFIABLE. EVERY HH COMPONENT PART STARTS ITS USEFUL LIFE ON A COMPUTER VDU SCREEN AND COMPLETES ITS JOURNEY ON A COMPUTERISED TEST BED WHERE TOUGH AND RUGGED HH TEST PROCEDURES ENSURE AN END PRODUCT OF OUTSTANDING OUALITY.

SPECIALISED PRODUCTION TECHNIQUES

UNIQUE TO HH ARE EXCLUSIVE TRANSFORMER AND CAD/CAM METAL FABRICATION FACILITIES.
TRANSFORMERS ARE A CRITICAL COMPONENT OF ANY POWER AMPLIFIER AND DIRECT CONTROL OF MANUFACTURING AND MATERIAL SELECTION IS AN ADVANTAGE THAT SETS HH APART FROM OTHERS.

YOUR CHOICE

TODAY WE ARE PROUD TO OFFER YOU A NEW SELECTION OF STEREO POWER AMPLIFIERS.
ALL 14 MODELS ILLUSTRATED WITHIN THIS BROCHURE ARE BENIFICIARIES OF THE VAST HANDS ON EXPERIENCE GAINED BY HH ENGINEERS THAT WILL CATAPULT HH INTO THE 21ST CENTURY.

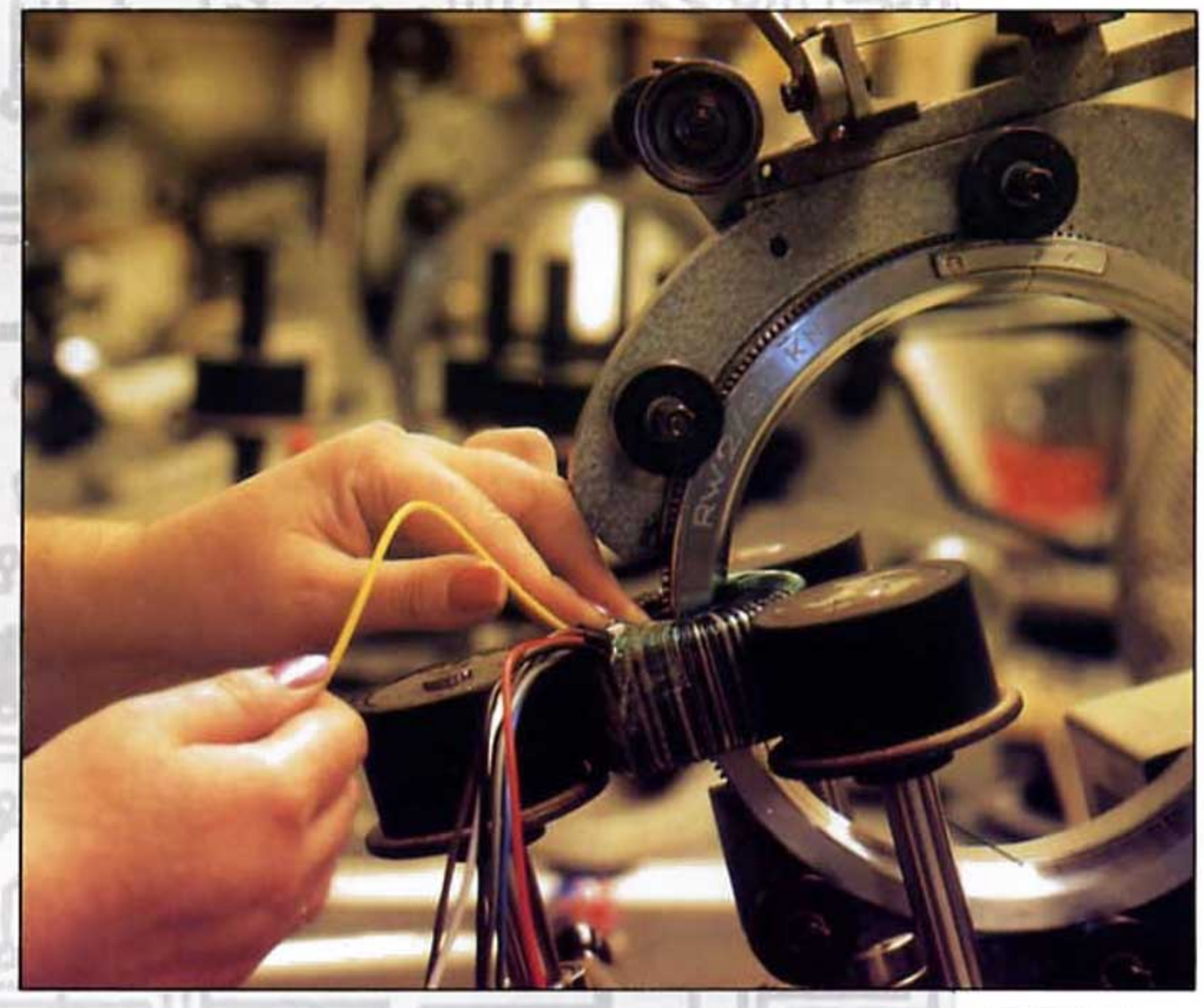


PCB PRODUCTION

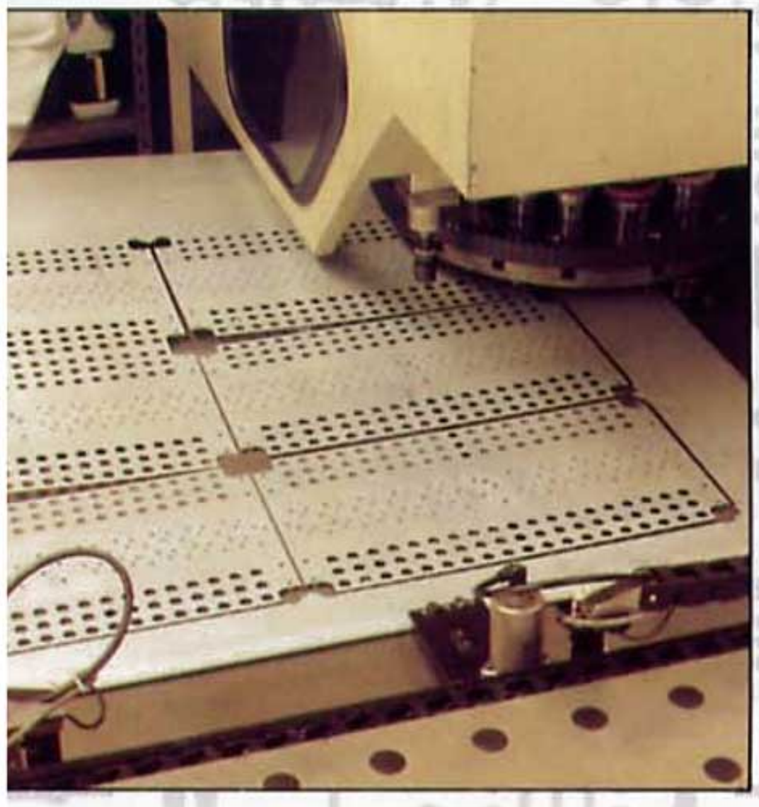
LABORATORY FATIGUE TESTING

PRECISION METAL PIERCING

HH DESIGN
ENGINEER AT CAD
SYSTEM



TORROIDAL
TRANSFORMER
PRODUCTION



VX series

SUPERIOR

THE VX RANGE OF STEREO POWER AMPLIFIERS HAS BEEN DESIGNED TO EMBRACE THE COMPLETE SPECTRUM OF PROFESSIONAL AUDIO APPLICATIONS AND TO OPERATE CONTINUOUSLY UNDER THE TOUGHEST ENVIRONMENTAL CONDITIONS.
ULTRA LOW DISTORTION MOS-FET TECHNOLOGY PROVIDES AN ABSOLUTELY NEUTRAL SOUND QUALITY AND ELIMINATES ALL FORMS OF DISTORTION FROM AN AUDIBLE POINT OF VIEW. THE WIDE BANDWIDTH, FAST SLEW RATES AND RELATIVELY LOW AMOUNTS OF NEGATIVE FEEDBACK GUARANTEE EFFORTLESS TRANSIENT PERFORMANCE AND EXCEPTIONAL STABILITY.

DEPENDABLE

BECAUSE OF INHERENT THERMAL STABILITY, PROTECTION CIRCUITS ARE GREATLY SIMPLIFIED. THIS ALLOWS CLEAN PERFORMANCE EVEN INTO HIGHLY REACTIVE LOADS. HH VX AMPLIFIERS WILL DELIVER HIGH FREQUENCY, HIGH POWER SIGNALS WITHOUT DIFFICULTY AND STAY COOL EVEN UNDER THE TOUGHEST CONDITIONS, 24 HOURS DAILY AND 365 DAYS A YEAR WITHOUT COMPLAINT.

VCA REMOTE CONTROL

WHEN REMOTE CONTROL VIA THE MIXING DESK IS NECESSARY, A VCA KIT (VOLTAGE CONTROLLED ATTENUATION) IS AVAILABLE AS AN OPTIONAL EXTRA. THE VCA KIT COMES COMPLETE WITH USER FITTING INSTRUCTIONS OR ALTERNATIVELY CAN BE FACTORY FITTED ON REQUEST WITH YOUR ORIGINAL PURCHASE. APPLICATIONS INCLUDE,REMOTE MUTING SYSTEMS AND COMPUTERISED LEVEL CONTROL.

MASSIVE POWER SUPPLY

ALL MAINS TRANSFORMERS USED IN VX SERIES AMPLIFIERS ARE DESIGNED TO HEAVY DUTY INDUSTRIAL STANDARDS WHERE CONTINUOUS HIGH POWER PERFORMANCE IS THE MAIN CRITERIA.
TORROIDAL TRANSFORMERS ENSURE EFFICIENT STABLE, CONTINUOUS ENERGY FOR INCREASED TRANSIENT PERFORMANCE.

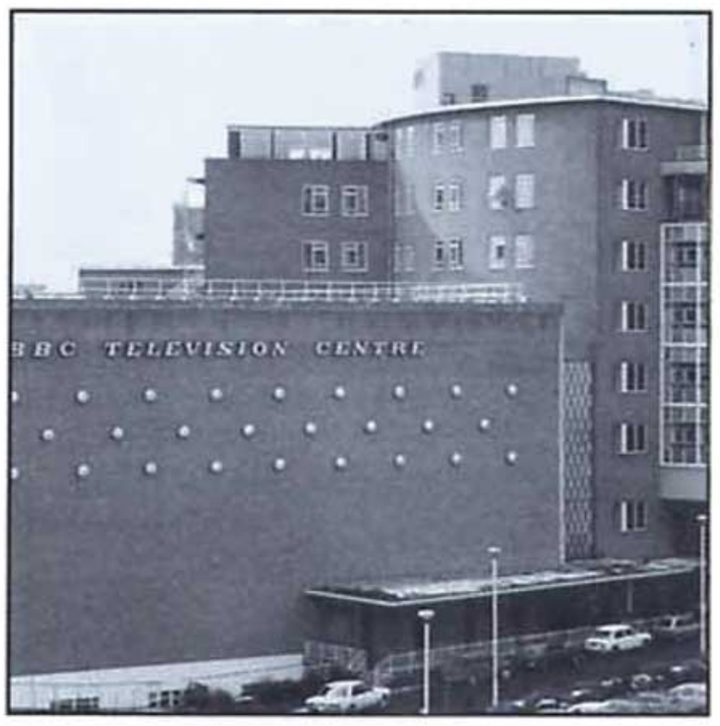
PROTECTION CIRCUITS

EXTENSIVE CIRCUITS MONITOR THE VX AMPLIFIER STATUS AND SAFEGUARD AGAINST: RF, MISMATCH, SHORT AND OPEN CIRCUIT
THERMAL PROTECTION IS BY AUTOMATIC OVER TEMPERATURE TRIP AND AUTOMATIC RESET.

MATCHING TRANSFORMERS

EXTERNALLY MOUNTED PLUG IN OCTAL INPUT MATCHING TRANSFORMERS ARE AVAILABLE AS AN OPTIONAL EXTRA AND MAY BE FACTORY FITTED ON REQUEST.

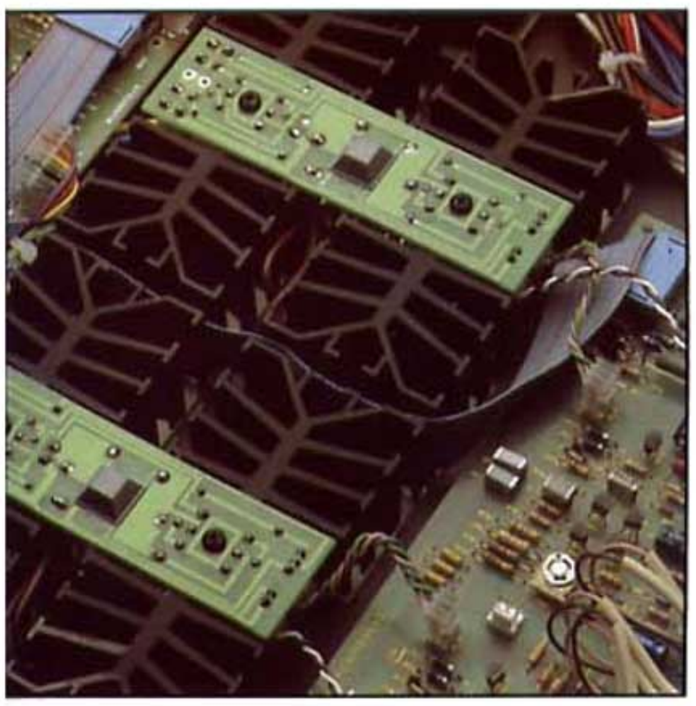
HH



BBC STUDIOS, HOME OF MANY HH AMPLIFIERS

STATUS INDICATORS:
PEAK DRIVE LEVELS
BRIDGE/MONO MODE
THERMAL OVERLOAD

PRECISION INPUT DETENTED ATTENUATORS FOR ACCURATE (±½ dB) REPEATABLE SETTINGS.



VX 150 HEAT SINK ARRANGEMENT

SUBSTANTIAL HEAT SINKING FOR CONVECTION COOLED AMPLIFIERS

PLUG IN MATCHING TRANSFORMERS AND INPUT MODE SWITCHING FACILITIES

HEAVY DUTY ILLUMINATED POWER SWITCH.

MODELS:VX150/VX200/VX300

TYPICAL VX REAR PANEL

THE LEGENDARY V800

M900(INSTALLATION VERSION OF V800 WITH LOCKABLE ATTENUATORS)

MX series

POWER EXCELLENCE

FIVE MX AMPLIFIERS HAVE BEEN DESIGNED TO COMPLIMENT THE WORLD RENOWNED HH VX SERIES. EACH AMPLIFIER IS BUILT TO THE EXACTING AND RUGGED SPECIFICATIONS THAT HAVE KEPT HH TOP OF THE PROFESSIONALS SHOPPING LIST FOR ALMOST 25 YEARS.
HH ELECTRONIC RESEARCH TEAM HAVE WORKED CLOSELY WITH SOME OF THE WORLD'S TOP INSTALLATION AND HIRE COMPANIES WHERE THE END RESULT HAS CULMINATED IN FIVE EXCELLENT, HIGH SPEC, COMPACT AND WEIGHT CONSCIOUS MODELS.
AS YOU WOULD EXPECT FROM HH, EACH AMPLIFIER EMBRACES MULTIPLE SAFETY FEATURES AND WHERE APPROPRIATE IS COOLED BY A SILENT RUNNING, LONGLIFE, VARIABLE SPEED FAN.
THE OUTPUT STAGE IS BUILT AROUND POWER MOSFET DEVICES WHERE TRADITIONAL CHARACTERISTICS OF VERY LOW DISTORTION, SUPER FAST SLEW RATES AND HIGH DAMPING FACTORS ALL CONTRIBUTE TO AN INCOMPARABLE SOUND.
UP TO 1200 WATTS OF POWER IS HOUSED IN A 2U BOX WITH A TOTAL WEIGHT OF ONLY 35 POUNDS (14KG.).

SWITCHABLE LIMITING

SWITCHABLE ACTIVE CLIP LIMITING IS BUILT INTO MX AMPLIFIERS*,ENSURING CLEAN UNDISTORTED SOUND AT HIGH OUTPUT LEVELS AND PROTECTION AGAINST MID AND HF DRIVER DAMAGE.

BUILT IN VCA

MX AMPLIFIERS ARE ALL SET UP AND READY TO GO WHEN REMOTE CONTROL VIA THE MIXING DESK IS NECESSARY, VCA (VOLTAGE CONTROLLED ATTENUATION) CIRCUITRY IS EMBODIED WITHIN THE AMPLIFIER AND IS NOT AN EXTRA (EXCEPT MODELS MX 170 AND MX250 WERE THIS IS AN OPTIONAL KIT) APPLICATIONS INCLUDE REMOTE MUTING SYSTEMS AND COMPUTERISED LEVEL CONTROL.

MULTIPLE PROTECTION CIRCUITS

FULL SPEAKER PROTECTION IS ENSURED IN MX AMPLIFIERS BY USING OUTPUT RELAYS* CONTROLLED BY AN AUTOMATIC MANAGEMENT SYSTEM.
RF, MISMATCH, SHORT AND OPEN CIRCUIT ARE STANDARD SAFETY FEATURES ON ALL AMPLIFIERS.
THERMAL PROTECTION IS BY AUTOMATIC OVER TEMPERATURE TRIP AND AUTO RESET.

AMPLIFIER LINKING

FOR MULTI RACK USE XLR LINK CONNECTORS ARE AVAILABLE ON EACH CHANNEL*

MATCHING TRANSFORMERS

INTERNALLY MOUNTED INPUT MATCHING TRANSFORMERS* ARE AVAILABLE AS AN OPTIONAL EXTRA OR MAY BE FACTORY FITTED ON REQUEST

* EXCEPT MODELS MX170 AND MX250

SPEAKER OUTPUT CONNECTORS

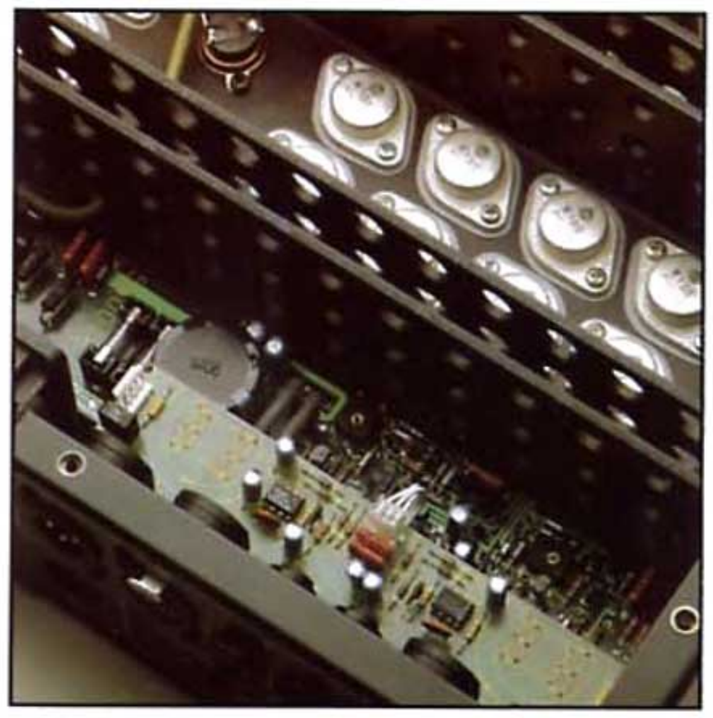
DC CONTROLLED VARIABLE SPEED FAN

DISCRETE SAFETY CIRCUITRY

AMPLIFIER SAFETY MANAGEMENT SYSTEM WARNING INDICATORS.

:HANNEL INPUT SOCKETS,LIMITER SWITCH
ND VCA OUTPUT.

EXCLUSIVE IN-HOUSE PRODUCED HEAVY DUTY
TORROIDAL TRANSFORMER.



HI TECH CIRCUITRY WITHIN MX AMPLIFIERS.

FACIA AND REAR PANELS

MX170

MX250

MX170

MX250

FACIA MX500,900 & 1200

REAR MX500,900,1200