

sunn  **MAGNA**®

PROFESSIONAL AUDIO PRODUCTS

A HARTZELL CORPORATION COMPANY
AMBURN INDUSTRIAL PARK, TUALATIN, OREGON 97062

MODEL 2300 and 2400

OPERATIONS MANUAL

CONGRATULATIONS ON YOUR SELECTION OF THE SUNN MAGNA SERIES 2000 MODULAR MIXER. SUNN MAGNA PROFESSIONAL AUDIO PRODUCTS, A DIVISION OF SUNN MUSICAL EQUIPMENT COMPANY, HAS COMBINED YEARS OF EXPERIENCE IN RECORDING AND SOUND REINFORCEMENT WITH CIRCUIT CONCEPTS DEVELOPED FOR STUDIO RECORDING CONSOLES, TO BRING YOU THE SERIES 2000 - A PORTABLE, PROFESSIONAL, SELF-CONTAINED MODULAR MIXING SYSTEM.

PROFESSIONAL FEATURES WHICH HAVE BEEN SELECTED BECAUSE THEY PROVIDE THE SOLUTION TO PROBLEMS WHICH ARE ENCOUNTERED UNIVERSALLY ARE THE KEYS TO THIS NO-NONSENSE MIXING SYSTEM. LEFT OUT ARE THE GADGETS, GIMMICKS, AND IMAGINED FEATURES WHICH OTHER MANUFACTURERS USE TO JUSTIFY UNUSUALLY HIGH PRICES BUT WHICH ONLY SERVE TO MAKE GOOD SOUND MANAGEMENT MORE CONFUSING THAN IS NECESSARY.

DISTORTION AND NOISE IN A MIXER ARE TWO INTERRELATED PROBLEMS BOTH CAUSED BY A MISMATCH BETWEEN THE INPUT CIRCUITRY OF THE MIXER AND THE INPUT SIGNAL. SUNN'S EXCLUSIVE "AUTO-MATCH" FEATURE ALLOWS YOU TO EASILY "TUNE" YOUR MIXER'S INPUT CIRCUITRY TO MATCH THE INPUT SIGNAL PERFECTLY. THIS PERFECT MATCHING PROVIDES YOU WITH THE QUIETEST, MOST EFFICIENT, DISTORTION-FREE MIXING SYSTEM POSSIBLE.

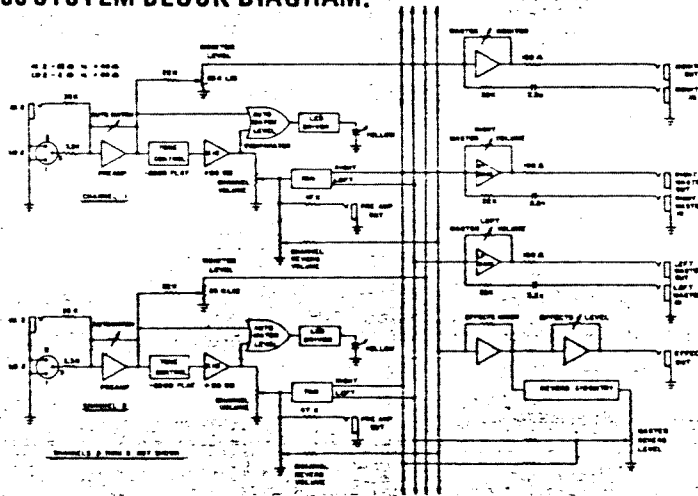
MAINTAINING THE PROPER PHASE RELATIONSHIPS BETWEEN ALL OF THE DIFFERENT INPUT SIGNALS WHICH ARE MIXED IN YOUR MIXER IS OF THE UTMOST IMPORTANCE. IMPROPER PHASING OR PHASE RELATIONSHIPS CAUSE THE RESULTANT OUTPUT OF YOUR ENTIRE SOUND SYSTEM TO BECOME HARSH, BLARING, AND OUTRIGHT ANNOYING TO LISTEN TO. ALL OF THE SUNN MAGNA SERIES 2000 MIXERS ARE EQUIPPED WITH "PHASE SYNC" TONE CONTROL NETWORKS ON EACH OF THE INDIVIDUAL INPUT CHANNELS TO ASSURE PROPER PHASE RELATIONSHIPS THROUGHOUT AS YOU TURN UP THE TREBLE CONTROL. NOTICE THE INCREASED CLARITY AND SIBILANCY.

IF ALL THIS SEEMS TOO GOOD TO BE TRUE - RELAX, IT ISN'T. OUR GOAL OF AN INEXPENSIVE, HIGH PERFORMANCE, MODULAR MIXING SYSTEM WAS ACHIEVED BY COMBINING A UNIQUE MECHANICAL CONCEPT WITH STRAIGHT FORWARD CIRCUIT DESIGN WHICH TOGETHER REDUCED THE AMOUNT OF HAND WIRING AND THE NUMBER OF ELECTRONIC PARTS REQUIRED THEREBY REDUCING THE TOTAL COST. THIS IS PASSED ALONG TO YOU AS GREATER RELIABILITY, BETTER PERFORMANCE, OVERALL HIGHER QUALITY AND A LOWER PRICE TAG THAN ANY OTHER MIXER IN ITS CLASS.

TYPICAL OPERATIONAL SPECIFICATIONS:

CHANNEL INPUT IMPEDANCE:	PHONE JACK - 100 OHMS XLR CONNECTOR - 20,000 OHMS	CHANNEL OUTPUT:	LEVEL - 5 V.R.M.S. IMPEDANCE - 16,000 OHMS
MAX. CHANNEL INPUT LEVEL (AUTO-MATCH AT MAX):	PHONE JACK - 10 V.R.M.S. XLR CONNECTOR - 5 V.R.M.S.	CHANNEL OUTPUT:	LEVEL - 5 V.R.M.S. IMPEDANCE - 16,000 OHMS
MAX. CHANNEL INPUT LEVEL (AUTO-MATCH AT MIN):	PHONE JACK - 7.5 V.R.M.S. XLR CONNECTOR - 1.5 V.R.M.S.	AUTO-MATCH THRESHOLD:	PHONE JACK - 10 V.R.M.S. XLR CONNECTOR - 5 V.R.M.S.
PRE-AMP OUTPUT:	LEVEL - 8.5 V.R.M.S. IMPEDANCE - 5,000 OHMS	AUTO-MATCH HEADROOM:	8 dB FROM CLIP
MAIN OUTPUT:	LEVEL - 9 V.R.M.S. IMPEDANCE - 150 OHMS	A.C. POWER REQUIRED:	120 VOLTS A.C. 6 WATTS
MAIN INPUT:	LEVEL - 6.5 V.R.M.S. IMPEDANCE - 22,000 OHMS	DIMENSIONS:	19" W X 14" H X 3.5" D (8 STANDARD RACK SPACES)
MAX. SYSTEM GAIN:	PHONE JACK - 58 dB XLR CONNECTOR - 78 dB	SHIPPING WEIGHT:	18 LBS.
		WARRANTY:	1 YEAR LIMITED

2480 SYSTEM BLOCK DIAGRAM:



sunn MAGNA LIMITED WARRANTY:

SUNN MUSICAL EQUIPMENT COMPANY WARRANTS THIS NEW PRODUCT TO BE FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF PURCHASE TO THE ORIGINAL PURCHASER ACCORDING TO THE FOLLOWING CONDITIONS.

THE PURCHASER IS RESPONSIBLE FOR COMPLETING AND MAILING TO SUNN WITHIN 15 DAYS OF PURCHASE THE WARRANTY APPLICATION ENCLOSED WITH EACH SUNN MAGNA PRODUCT. UPON THE RECEIPT OF THE WARRANTY APPLICATION SUNN WILL ISSUE A WARRANTY VALIDATION STICKER THAT MUST BE AFFIXED TO THE PRODUCT AS INSTRUCTED. IN THE EVENT YOU DO NOT RECEIVE YOUR SUNN MAGNA WARRANTY VALIDATION STICKER WITHIN 60 DAYS FROM MAILING, YOU SHOULD NOTIFY THE FACTORY IN WRITING IMMEDIATELY. PRODUCTS THAT HAVE NOT BEEN REGISTERED WITHIN 15 DAYS FROM DATE OF PURCHASE ARE NOT COVERED BY THIS WARRANTY. THE PURCHASER HAS THE SOLE RESPONSIBILITY FOR COMPLETING AND MAILING THE WARRANTY APPLICATION CARD.

THE PURCHASE MUST BE MADE FROM AN AUTHORIZED SUNN MAGNA DEALER.

TUBES AND METERS CARRY A 90 DAY WARRANTY FROM DATE OF PURCHASE.

SPEAKER CABINET COMPONENTS SUCH AS LOUDSPEAKERS AND DRIVERS THAT HAVE BEEN SUBJECTED TO ABUSE AND OVERLOAD CONDITIONS CAUSING FAILURE WILL NOT BE COVERED BY THIS WARRANTY. THE DETERMINATION OF LOUDSPEAKER AND DRIVER ABUSE WILL BE MADE BY SUNN.

A SUNN MAGNA PRODUCT THAT HAS NOT BEEN REGISTERED OR ANY PRODUCT THAT HAS BEEN SUBJECT TO ACCIDENT, ALTERATION, RENTAL, MISUSE, IMPROPER INSTALLATION, REMOVAL OR DEFACEING OF THE SERIAL NUMBER, OR VALIDATION STICKER IS NOT COVERED UNDER THIS WARRANTY.

THE NORMAL WEAR AND TEAR OF APPEARANCE ITEMS SUCH AS HANDLES, CORNERS, CASTERS, AND KNOBS ARE NOT COVERED UNDER THIS WARRANTY.

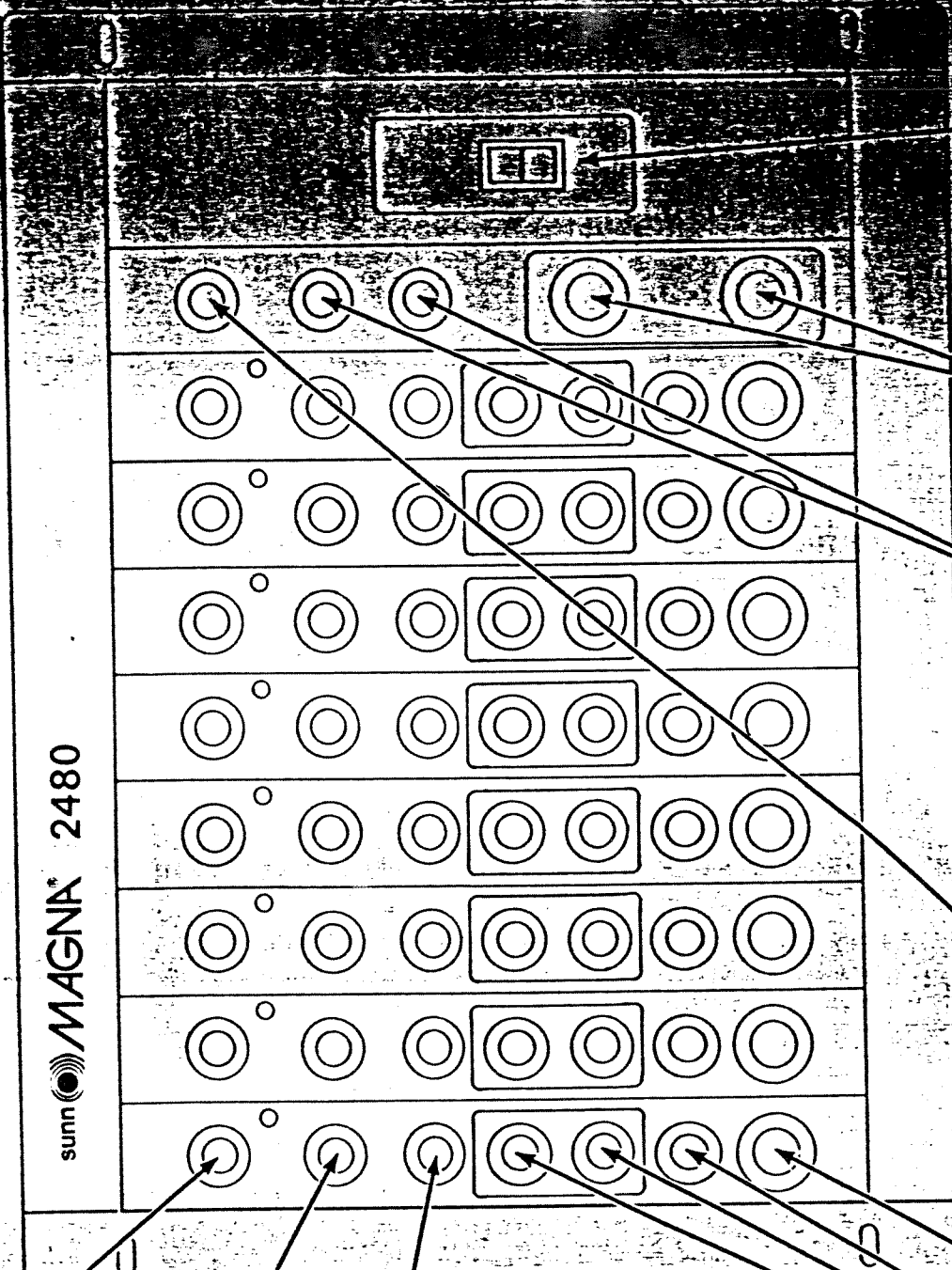
IF YOUR SUNN MAGNA PRODUCT REQUIRES SERVICE DURING THE WARRANTY PERIOD, SUNN WILL REPAIR OR REPLACE, AT ITS OPTION, DEFECTIVE MATERIALS PROVIDED YOU HAVE IDENTIFIED YOURSELF AS THE OWNER OF THE VALIDATED PRODUCT TO ANY SUNN MAGNA AUTHORIZED SERVICE CENTER OR CONTACT SUNN FOR SERVICE ASSISTANCE. TRANSPORTATION CHARGES TO AND FROM AN AUTHORIZED SERVICE CENTER OR FACTORY FOR SUNN MAGNA PRODUCTS AND COMPONENTS TO EFFECT REPAIRS SHALL BE THE RESPONSIBILITY OF THE OWNER. IN THE EVENT A PRODUCT IS TO BE RETURNED TO SUNN FOR REPAIRS, A WRITTEN RETURN AUTHORIZATION FROM SUNN MUST BE OBTAINED PRIOR TO SHIPPING.

SUNN IS NOT LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT OR FAILURE OF THIS INSTRUMENT OTHER THAN THE REPAIR OF THE SUNN MAGNA PRODUCT SUBJECT TO THE TERMS OF THIS WARRANTY. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER AGREEMENTS AND WARRANTIES, EXPRESSED OR IMPLIED, EXCEPT AS MAY BE OTHERWISE REQUIRED BY LAW.

THANK YOU FOR CHOOSING SUNN MAGNA TO PERFORM WITH YOU!

sunn **MAGNA** MODEL **2300** AND **2400** **CONTROLS**

sunn **MAGNA** 2480



AUTO-MATCH + INDICATOR
 THIS CONTROL ALLOWS YOU TO TUNE YOUR MIXER'S INPUT CIRCUITRY TO MATCH THE INPUT SIGNAL TO GET THE MAXIMUM EFFICIENCY WITH THE LEAST AMOUNT OF BACKGROUND NOISE AND DISTORTION. SEE THE FEATURE OPERATION SECTION FOR SPECIFIC INSTRUCTIONS ON HOW TO ADJUST THIS CONTROL.

MONITOR
 THIS CONTROL PROVIDES A SEPARATE MIX FOR EACH STAGE MONITORING SYSTEM. IT IS FULLY INDEPENDENT OF THE CHANNELS LEVEL CONTROL AND TONE CONTROLS.

REVERB-EFFECTS
 THIS CONTROL PROVIDES INDIVIDUAL CHANNEL AMOUNT VARIATION OF THE BUILT-IN REVERB SYSTEM AND/OR THE EXTERNALLY PATCHED EFFECT. SEE THE FEATURE OPERATION SECTION FOR INSTRUCTIONS ON PATCHING.

PHASE-SYNCTONE CONTROLS
 VIRTUALLY ALL TONE CONTROL CIRCUITS CURRENTLY IN USE EXHIBIT SOME TYPE OF PHASE CANCELLATION. THIS PHASE CANCELLING CAUSES THE RESULTANT OUTPUT TO BE HARSH, BLARING AND PARTICULARLY SUSCEPTIBLE TO FEEDBACK. OUR ALL NEW PHASE-SYNCTONE CONTROLS ELIMINATE THIS PROBLEM AS YOU TURN UP THE TREBLE CONTROL. NOTICE THE INCREASED CLARITY AND SIBILANCY. OUR PHASE-SYNCTONE CONTROLS BOOST THE UPPER AND LOWER HARMONICS WHILE MAINTAINING THE PROPER MUSICAL BALANCE AND ELIMINATING THE PHASE DISTORTION.
TREBLE
BASS

LEVEL
 THIS CONTROL MATCHES THE CHANNEL OUTPUT WITH THE STEREO IMAGE ANYWHERE BETWEEN EXTREME LEFT AND EXTREME RIGHT.

LEVEL
 INDIVIDUAL CHANNEL VOLUME CONTROL.

MASTER MONITOR
 CONTROLS THE OVERALL OUTPUT LEVEL OF THE MONITOR SYSTEM. THIS CONTROL IS INDEPENDENT OF THE MASTER MAIN SYSTEM VOLUME CONTROL.

MASTER REVERB-EFFECTS
 CONTROLS THE OVERALL AMOUNT OF INTERNAL REVERB AND EXTERNALLY PATCHED EFFECT BLENDED WITH THE MAIN SIGNAL.

MASTER MAIN
 CONTROLS THE OVERALL OUTPUT LEVEL OF THE MAIN SYSTEM. (THE 2400 HAS INDEPENDENT CONTROLS FOR LEFT MASTER AND RIGHT MASTER.)

POWER