

ON TARGET



TECHNICAL NEWSLETTER

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D. GOTTLIEB & CO.
165 W. Lake Street • Northlake, IL 60164
(312) 562-7400 • Telex 72-8463
A Columbia Pictures Industries Company

June 28, 1983

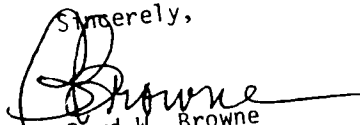
Dear Operator:

From its founding in 1927, D. Gottlieb & Co. has become a major factor in the coin-operated amusement game business. Through the years, the coin-op industry has gone through many technological changes and stages of growth, and our company has responded to meet the needs of the market.

To reflect our plans to grow in the coin-operated field as well as expand our opportunities to enter other high technology segments of the entertainment industry, we will be changing the name of our company to MYLSTAR ELECTRONICS, INC., effective July 3rd. After much consideration and research, the new name, MYLSTAR, was chosen because it evokes the image of an organization where exciting, new products are being created to meet tomorrow's entertainment needs.

Change is an exciting part of life, but one constant remains . . . our company's strong commitment to product quality and innovation. We are confident about the future of our industry, and we look forward to continuing a relationship that began with us 56 years ago.

Sincerely,


Boyd W. Browne
President

BWB:lgw

PIGGYBACK BOARD REPLACEMENT

GAMES AFFECTED: ALL PINBALL GAMES FROM SUPER ORBIT (#680) THROUGH RACK 'EM UP (#685). ALL VIDEO GAMES FROM REACTOR (GV-100) THROUGH KRULL (GV-105).

SUBJECT: PIGGYBACK BOARD REPLACEMENT FOR THE U23 LM379S AMPLIFIER USED ON THE A6 SOUND AND SOUND/SPEECH BOARDS AND THE ASSOCIATED SOUND/SPEECH POWER SUPPLY VOLTAGE REQUIREMENTS.

For replacement of the LM379S (U23) amplifier used on Gottlieb's Sound and Sound/Speech Boards, a Piggyback Board substitute been designed to replace the amplifier. The new amplifier is mounted in a piggyback configuration using a LM2002T or a TDA2002T which operate at approximately one-half of the voltage required by the LM379S.

This voltage requirement necessitates minor changes on the A3 and A7 Sound/Speech Power Supply Boards, because the 2002T cannot operate at the +30V DC level supplied by the present Sound/Speech Power Supply Boards.

The new MA-481 and MA-492 Sound/Speech Power Supply Boards supply the correct voltages to operate the piggyback amplifier. The following two charts identify the correct Sound or Sound/Speech Board and its associated piggyback configuration with the correct Sound/Speech Power Supply Board to be used.

PINBALL

GAME	A6 SOUND OR SOUND/SPEECH (INCLUDES PIGGYBACK WHERE APPLICABLE)	PIGGYBACK	AMPLIFIER VOLTAGE	A7 SOUND/SPEECH POWER SUPPLY
SUPER ORBIT GAME #680	MA-309	NOT USED	+30V DC	MA-188
ROYAL FLUSH DELUXE EARLY PRODUCTION GAME #681	MA-309	NOT USED	+30V DC	MA-188
ROYAL FLUSH DELUXE LATER PRODUCTION GAME #681A	MA-484	MA-483	+18V DC	MA-481
AMAZON HUNT EARLY PRODUCTION GAME #684	MA-309	NOT USED	+30V DC	MA-188
AMAZON HUNT LATER PRODUCTION GAME #684	MA-490	*MA-488	+12V DC	NOT APPLICABLE
RACK 'EM UP GAME #685	MA-490	*MA-488	+12V DC	NOT APPLICABLE

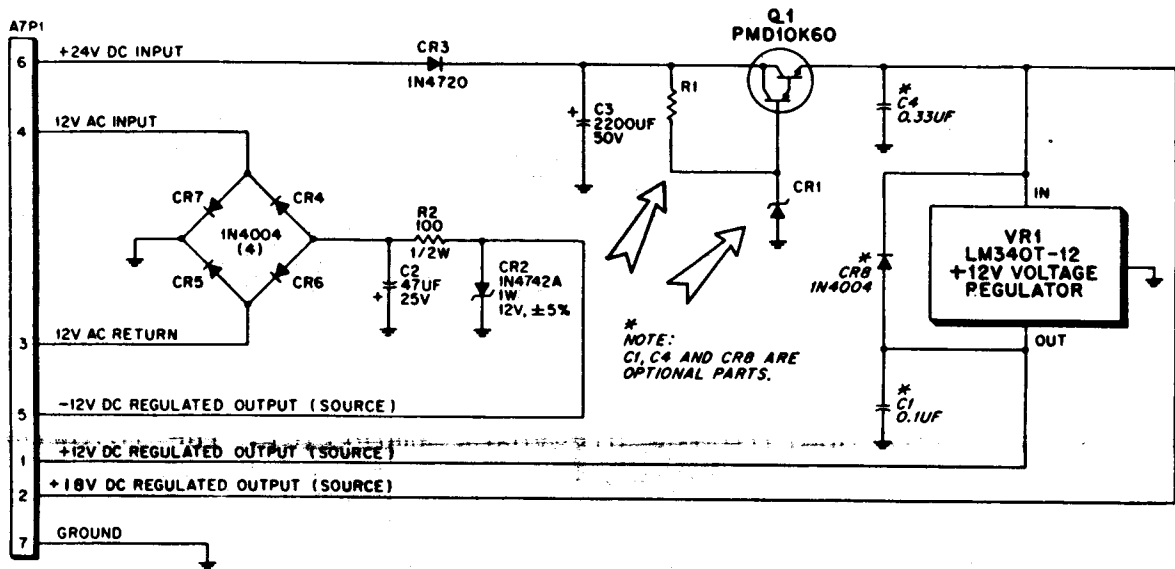
* THE PIGGYBACK BOARD UTILIZED ON THE MA-490 SOUND BOARD IS NOT FOR AMPLIFIER REPLACEMENT. IT IS USED FOR ROM EXPANSION. DO NOT REPLACE THE MA-490 SOUND BOARD WITH ANY OTHER SOUND BOARD.

VIDEO

GAME	A6 SOUND OR SOUND/SPEECH (INCLUDES PIGGYBACK WHERE APPLICABLE)	PIGGYBACK	AMPLIFIER VOLTAGE	A3 POWER SUPPLY
REACTOR GV-100	MA-216	NOT USED	+30V DC	MA-303
Q*BERT GV-103, A, B	MA-216	NOT USED	+30V DC	MA-303 MA-430
Q*BERT LATER PRODUCTION GV-103B	MA-486	MA-483	+16V DC	MA-492
Q*BERT CT GV-103CT	MA-486	MA-483	+16V DC	MA-492
MAD PLANETS GV-102	MA-484	MA-483	+16V DC	MA-492
KRULL GV-105	MA-487	MA-483	+16V DC	MA-492

A7 SOUND/SPEECH POWER SUPPLY BOARD MODIFICATION

To update an MA-188, A7 Sound/Speech Power Supply Board to the new MA-481 Board, please make the following changes to the circuit board.



Remove:

CR1 Diode, Zener 30V, 5%, 1W, 1N4751A XO-271

and replace with:

CR1 Diode, Zener 18V, 5%, 1W, 1N4746A XO-258

Remove:

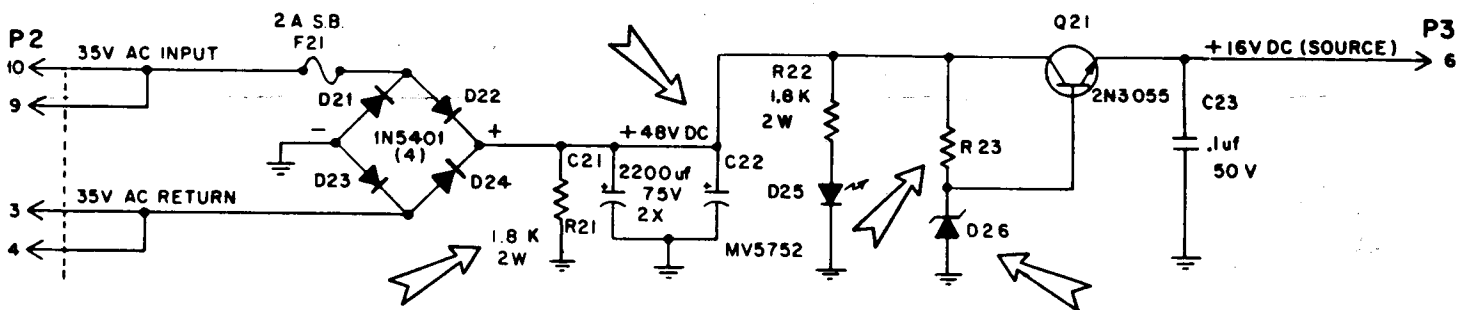
R1 Resistor, 430 ohm, 5%, 1/2W XO-54

and replace with:

R1 Resistor, 1.5K ohm, 5%, 1/2W XO-58

A3 POWER SUPPLY BOARD MODIFICATION

To update an MA-303 or a MA-430, A3 Power Supply Board to the new MA-492 Board, please make the following changes to the circuit board.



Delete the following:

C22 Capacitor, 2200UF, 75V XO-132

R21 Resistor, 1.8K ohm, 5%, 2W XO-135

Remove:

D26 Diode, Zener 30V, 5%, 5W, 1N5363B XO-273

and replace with:

D26 Diode, Zener 16V, 5%, 1W, 1N4745A XO-620

Remove:

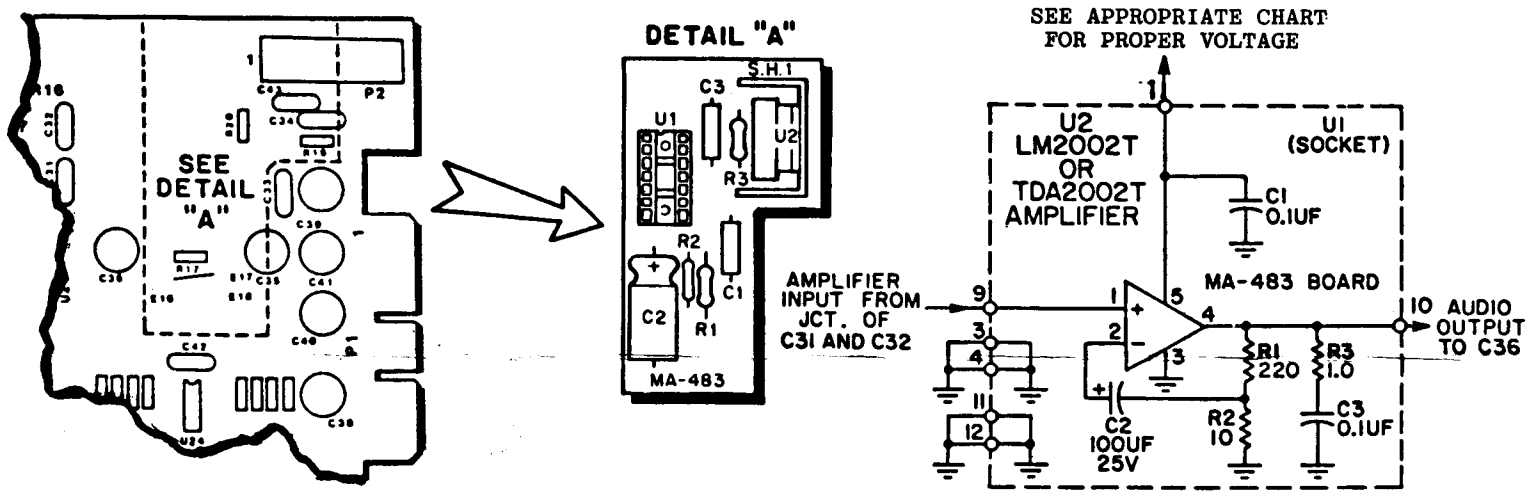
R23 Resistor, 200 ohm, 5%, 5W XO-133

and replace with:

R23 Resistor, 1K ohm, 5%, 2W XO-627

A6 SOUND OR SOUND/SPEECH BOARD MODIFICATION (PINBALL OR VIDEO)

To repair a Sound or Sound/Speech Board requiring a replacement for a defective LM379S, the new MA-483 Piggyback Board must be used. For replacement, please follow the procedure below.



Remove:

- | | | |
|-----|------------------------------|--------|
| C37 | Capacitor, 4.7UF, 35V | XO-291 |
| R18 | Resistor, 100K ohm, 5%, 1/4W | XO-45 |
| R21 | | |
| R22 | Resistor, 2K ohm, 5%, 1/4W | XO-14 |
| U23 | IC, LM379S | XO-395 |

Solder the leads of the U1 socket on the MA-483 Piggyback Board into the U23 feed through holes on the Sound or Sound/Speech Board.

43

<p>MAILING LIST: Get ON TARGET every month by sending your name and mailing address to:</p>	<p>ON TARGET MYLSTAR ELECTRONICS, INC. 165 West Lake Street Northlake, Illinois 60164</p>
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