

METRIC INDUSTRIES, INC.  
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## INSTRUCTIONS FOR 101 & 104 INTERFACES

### SETUP

ALL INTERFACES ARE SHIPPED SET UP FOR AN 8 BIT COCO AND THE PRINTER SUPPLYING POWER FOR THE INTERFACE. IF YOU ARE USING A COCO THAT HAS A WHITE CABINET OR IS A COCO II OR III, YOU HAVE AN 8 BIT COCO. IF YOU HAVE A GRAY CABINET COCO YOU NEED TO CHECK TO SEE IF IT IS A 7 OR 8 BIT MACHINE. TO DETERMINE THIS, ENTER THE COMMAND PRINT PEEK (40988) . IF YOU GET THE NUMBER 87, YOUR COCO IS AN 8 BIT MACHINE. IF YOU GET THE NUMBER 81, YOU HAVE A 7 BIT MACHINE AND MUST MOVE A PROGRAMMING PLUG INSIDE THE INTERFACE. WITH THE COVER REMOVED FROM YOUR INTERFACE (see disassembly instructions) AND THE LARGE PRINTER CABLE ON THE RIGHT SIDE OF THE INTERFACE LOCATE 3 SMALL VERTICAL PINS LABELED A B C. THERE WILL BE A SMALL WHITE PROGRAMING PLUG ON PINS B AND C. PULL THE PLUG UP AND OFF THESE PINS AND PUT IT ON A & B.

THE INTERFACE REQUIRES POWER IN ORDER TO OPERATE. RADIO SHACK AND STAR PRINTERS ARE AMONG THE ONES THAT WILL POWER YOUR INTERFACE. EPSON, SEIKOSHA, AND SILVER REED ARE A FEW THAT WON'T. TO DETERMINE IF YOUR PRINTER CAN POWER YOUR INTERFACE. YOU NEED TO FIND OUT WHAT IS ON PIN 18 OF THE CENTRONICS CONNECTOR ON THE PRINTER. CHECK YOUR PRINTER MANUAL TO SEE WHAT IS ON THIS PIN. IF IT HAS 5 VOLTS AT A MINIMUM OF 25 ma, IT WILL POWER THE INTERFACE. IF YOUR MANUAL DOES NOT GIVE THIS INFORMATION YOU CAN MEASURE THE VOLTAGE USING A DIGITAL OR HIGH QUALITY ANALOG METER. TO TAKE A VOLTGE READING DISCONNECT ALL CABLES GOING TO YOUR PRINTER EXCEPT THE AC LINE CORD. TURN YOUR PRINTER ON. CAREFULLY CONNECT THE NEGATIVE LEAD TO PIN 16 AND THE POSITIVE LEAD TO PIN 18. IF YOUR READING IS BETWEE, +4.7 AND +5.2 DC VOLTS YOUR PRINTER CAN POWER THE INTERFACE. IF YOU CAN NOT POWER YOUR INTERFACE WITH YOUR PRINTER THEN YOU MUST REMOVE THE WHITE PROGRAMING PLUG ON THE TWO UNMARKED PINS LOCATED IN THE BOTTOM RIGHT CORNER OF THE INTERFACE CIRCUIT BOARD. AFTER REMOVING THE PROGRAMING PLUG YOU MAY POWER THE

INTERFACE WITH THE AC ADAPTER. THE ADAPTER PLUGS INTO THE SMALL SILVER JACK LOCATED ON THE END OF THE INTERFACE. IF YOU DID NOT PURCHASE THE INTERFACE WITH THE ADAPTER WE RECOMMEND A RADIO SHACK ADAPTER #273-1431 AND A 2.5MM TO 3.5MM CONNECTOR ADAPTER #274-328A.

IF YOU CHOOSE TO USE ANOTHER AC ADAPTER, IT MUST HAVE A DC OUPUT OF 7.5 TO 9 VOLTS AT A MINIMUM OF 25 ma. IT ALSO MUST HAVE A 3.5MM PLUG WITH THE TIP POSITIVE.

### DISASSEMBLY INSTRUCTIONS

1. NOTE THE POINTER POSITION ON THE BAUD RATE KNOB.
2. LOOSEN THE SMALL SET SCREW ON THE SIDE OF THE KNOB AND REMOVE THE KNOB.
3. ON 104 ONLY, REMOVE THE NUT AND WASHER ON THE SERIAL PARALLEL SWITCH.
4. REMOVE THE 4 PHILLIPS SCREWS AND REMOVE THE INTERFACE LID.
5. MOVE PROGRAMING PLUGS AS REQUIRED.
6. REPLACE LID AND 4 PHILLIPS SCREWS.
7. ON 104 ONLY, REPLACE WASHER AND NUT ON SERIAL PARALLEL SWITCH. DO NOT OVER TIGHTEN NUT.
8. REPLACE KNOB WITH POINTER IN POSITION NOTED IN STEP NUMBER 1.

### CONNECTION AND OPERATION

CONNECT THE SMALL CABLE WITH THE 4 PIN DIN PLUG TO THE RS-232C JACK ON THE REAR OF THE COCO. CONNECT THE LARGE CABLE WITH THE 36 PIN CENTRONICS CONNECTOR TO YOUR PRINTER. IF YOUR PRINTER HAS AN INPUT SELECT SWITCH MAKE SURE IT IS IN THE PARALLEL POSITION. IF YOU ARE USING AN AC ADAPTER PLUG IT INTO AN AC OUTLET AND IT'S CABLE INTO THE INTERFACE. SET THE INTERFACE TO 600 BAUD (ON THE 104 ONLY SET THE SERIAL PARALLEL SWITCH TO PARALLEL) AND YOU ARE READY TO GO. THE COCO NORMALLY OUTPUTS AT 600 BAUD. THIS CAN BE CHANGED BY SOFTWARE PROGRAMS OR BY USING THE PROPER "POKE".

FOR 300 BAUD ENTER	POKE 150,180
FOR 600 BAUD ENTER	POKE 150,87
FOR 1200 BAUD ENTER	POKE 150,41
FOR 2400 BAUD ENTER	POKE 150,18

FOR 4800 BAUD ENTER      POKE 150,7  
FOR 9600 BAUD ENTER      POKE 150,1

FOR MODEL 104 ONLY.

TO USE A MODEM OR OTHER SERIAL DEVICE WITH YOUR SYSTEM, CONNECT IT TO THE SERIAL PORT ON YOUR 104. THIS PORT IS LOCATED ON THE TOP EDGE OF THE INTERFACE AND LOOKS LIKE THE SERIAL PORT ON THE COCO. THEN PUT THE SERIAL PARALLEL SWITCH IN THE SERIAL POSITION. PLEASE REMEMBER THAT WHEN YOU ARE USING THE SERIAL PORT ON THE 104, THE PARALLEL PORT IS DISCONNECTED. THE BAUD RATE SWITCH ON THE 104 HAS NO EFFECT ON THE SERIAL PORT OF THE 104. REMEMBER TO SET YOUR COMPUTERS BAUD RATE TO MATCH WHATEVER IS CONNECTED TO THE 104'S SERIAL PORT. THE 104 DOES NOT REQUIRE POWER FOR THE SERIAL PORT TO BE USED.

#### HINTS AND TIPS

MANY PRINTERS HAVE SET-UP SWITCHES, REMEMBER THAT AFTER YOU CHANGE ANY OF THESE YOU MUST TURN YOUR PRINTER OFF AND BACK ON FOR THE CHANGES TO TAKE EFFECT.

IF YOU HAVE A COCO III YOU MAY HAVE PROBLEMS USING 4800 AND 9600 BAUD. IF YOU DO THEN YOU WILL HAVE TO USE 2400 OR LOWER. THE PROBLEM IS WITH THE COCO III, NOT THE INTERFACE.

THE "ROYAL LETTERMASTER PRINTER" IS NOT 100% COMPATIBLE WITH THE COCO NO MATTER WHAT INTERFACE YOU USE. THE COCO DOES NOT SEND A LINE FEED WITH A CARRIAGE RETURN. THE LETTERMASTER DOES NOT HAVE A SET-UP SWITCH TO ADD A LINE FEED WHEN THE PRINTER SEES A CARRIAGE RETURN FROM THE COMPUTER. THE RESULT IS THE PRINTER WILL PRINT OVER THE TOP OF LINES ALREADY PRINTED. IF YOU HAVE OR CAN WRITE SOFTWARE THAT CAN INSERT A LINE FEED WITH A CARRIAGE RETURN THEN YOU MAY BE ABLE TO USE IT.

NEVER CHANGE THE BAUD RATE SWITCH ON THE INTERFACE WHILE THE COMPUTER IS SENDING DATA TO THE INTERFACE.

IF YOU HAVE PROBLEMS PLEASE RE-READ THE INTERFACE AND PRINTER INSTRUCTIONS BEFORE CALLING OR WRITING TO US.

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