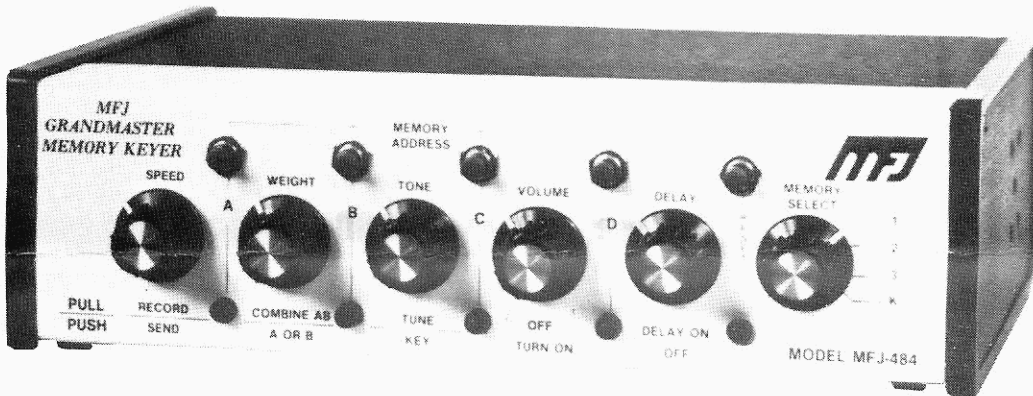




MFJ GRANDMASTER MEMORY KEYS

MODEL MFJ-484



OWNER'S MANUAL

CAUTION: Read All Instructions Before Operating Equipment.

MFJ ENTERPRISES, INC.

P. O. BOX 494, MISSISSIPPI STATE, MS. 39762, USA

MFJ-484 GRANDMASTER MEMORY KEYER

The MFJ-484 is a highly sophisticated memory keyer using 15 state-of-the-art Integrated Circuits and 4 Random Access Memories which are standards of the industry. It provides the best in performance and the ultimate in flexibility. To insure full benefit of this memory keyer, please read the instructions before operating.

CONTROL FUNCTIONS

1. SPEED CONTROL is variable from 8 to 50 wpm. Pull this control out to record.
2. WEIGHT CONTROL when turned fully counter clockwise, dot-dash-space ratio is a perfect 1:3:1. Turn clockwise to increase dot and dash lengths. Pull this control out to combine A and B memory addresses.
3. TONE CONTROL for the desired side tone pitch. Pull this control out to TUNE (keys your transmitter continuously).
4. VOLUME CONTROL to adjust the loudness of the internal speaker. Turn this control fully counter clockwise to turn off the memory keyer. All messages stored in memory are erased when this control is turned off. Keep power on to maintain memory.
5. DELAY CONTROL. Pull this control out to turn on the time DELAY. This will cause the memory keyer to automatically repeat your message. The time delay between repeating your message is variable from 0 to 2 minutes. Automatic repeating will continue indefinitely until the reset button is pressed, the keyer paddle is tapped, or the time delay control is pushed in. When this control is turned fully counter clockwise, there is no time delay. It will instantly repeat your message. To increase the time delay before your message restarts, turn the DELAY CONTROL clockwise.
6. MEMORY SELECT. Positions 1, 2, 3, are each divided into MEMORY ADDRESS A, B, C, and D. Each MEMORY ADDRESS can record up to 25 characters. Record messages into MEMORY ADDRESS A, B, C, and D for each MEMORY SELECT position 1, 2, 3. You can record up to twelve 25 character messages. Pull out the WEIGHT CONTROL to combine A and B on memory select 1, 2, or 3. MEMORY SELECT position K combines A, B, C, and D automatically for recording very long messages. Pressing A, B, C, and D gives 100, 75, 50, or 25 character respectively. When using MEMORY SELECT K the memory will always begin at A in the repeat mode.
7. MEMORY ADDRESS. Four push buttons A, B, C, and D are used to directly address the memory. Press a MEMORY ADDRESS button to start a message or to record a message.
8. RESET is used to stop memory from operating. When a recorded message is being sent, memory can be stopped by pressing the reset button or by tapping the keyer paddle. Memory operation can be interrupted by pressing another MEMORY ADDRESS without pressing the RESET button first.
9. LED INDICATORS. A, B, C, and D light to show which memory address is in operation. The fifth LED (time delay) will light during the time delay period.
10. MEMORY SAVER. An internal 9 volt battery (not included, alkaline type recommended) switches in automatically when a 110 volt AC power failure occurs. This allows all messages to be retained. A battery clip and holder are provided for installation of a 9 volt alkaline battery. If the side tone is not used, the MEMORY SAVER has an operation time of approximately three hours. If longer storage time is needed an external battery (12-15 VDC) may be connected to the battery jack on the memory keyer. MEMORY SAVER is also turned off when the VOLUME CONTROL is turned off.

INSTALLATION

1. To install the memory save battery, remove the two screws near the rear top. Slide the cover toward the back and remove. Connect a 9 volt battery to the battery snap then insert the battery into the battery holder. A 9 volt alkaline battery should be used. When the memory save battery is not used cover the battery snap with the plastic tubing supplied to prevent shorting.
2. The MFJ-484 comes with a 110 volt AC ADAPTER. First plug the ADAPTER into the sub miniature jack on the rear panel and then plug the ADAPTER in the 110 VAC wall socket. It is not necessary to unplug the AC ADAPTER when the memory keyer is not in use.
3. During portable use when 110 VAC is not available, plug external batteries into the 12-15 VDC sub miniature jack on the rear panel. External batteries and the AC ADAPTER can be plugged in at the same time. The external batteries never come into use unless power from the ADAPTER is lost. The tip of the sub miniature plug is positive and the sleeve is ground, for external batteries.
4. A squeeze or single lever key can be used. Squeeze key allows IAMBIC operation. Use a standard quarter inch stereo phone plug and a two conductor shielded cable or two separately shielded cables. Tie the shields together and use it for ground. The dot wire should connect to the ring of the plug, the dash wire to the tip and the shield to the ground.
5. A new reliable solid state keying circuit allows keying of all grid blocks, cathode, and solid state transmitters. For grid block keying use the "Grid Block" keying output. For cathode keyed and solid state transmitters, use the "Direct" keying output. Try both outputs if you are uncertain as to which output to use. The keyer outputs are self protected. The "Grid Block" output keys a maximum negative voltage of 300 volts to ground at 10 ma. The "Direct" output keys a maximum positive voltage of 300 volts to ground at a maximum current of 100 ma. Use a shielded cable to connect between the memory keyer and the transmitter key input.

OPERATION PROCEDURE

I. KEYSER OPERATION

1. Apply power to the memory keyer. Use the AC adapter provided.
2. Plug in key paddle to the KEY jack. A dual paddle squeeze key or a single lever key can be used.
3. Push TONE, WEIGHT, SPEED, and DELAY controls in.
4. Turn VOLUME control clockwise to turn on memory keyer.
5. Start sending with paddle and adjust volume, tone, weight, and speed. NOTE: The weight control may cause a steady tone at high speed; should this occur the weight or the speed must be reduced by turning the knob counter clockwise.
6. The dot and dash memories ease sending by allowing keying the dot before the completion of the dash or vice versa. This feature can be checked by setting to the lowest speed and tap first the dash lever then the dot lever before the completion of the dash. The keyer will provide both the dash and the dot. The dash memory can be checked by first tapping the dot then the dash. The dot insertion features allows you to tap the dot side to insert a dot while holding the dash side in. The dash insert feature allows you to tap the dash side to insert a dash while holding the dot side in. When using squeeze key and with both paddles squeezed together the iambic operation feature allows sending of alternate dots and dashes. The first contact determines whether a dot or dash occurs first.

II. MEMORY OPERATION

A. RECORDING

1. Turn the MEMORY SELECT to position 1, 2, 3, or K. Position K will record up to a 100 character continuous message.
2. Pull SPEED control out and adjust speed. Press a MEMORY ADDRESS button (A, B, C, or D) and start sending immediately. (NOTE: RECORDING will not start until a MEMORY ADDRESS button is pressed while in the recording mode.) Memory LED will light up when memory is in operation. Each LED corresponds to the MEMORY button directly above it. Message including spaces is being recorded as long as the LED is lit in the recording mode. When LED goes out, this indicates the memory is full. If LED goes out before you have finished sending, the message is too long. Combine memory addresses A and B by putting the WEIGHT control out to double the memory space. When recording, the internal clock runs continuously to allow spaces of any length to be entered into the memory; thus, there is a random delay between zero and length of one dot. This requires you to synchronize your sending with the keyer to some extent. At low speed (10-15 wpm) dots may even be missed occasionally. This can be avoided by not releasing the dot lever until a dot starts.
3. Occasionally, an unwanted dot may appear in the beginning of a recorded message; this is due to improper erasing. To insure a complete erase of previously recorded message in the memory when recording it is best to press the address button two or three times before sending. Note that the MEMORY ADDRESS, when pressed, resets the memory to the beginning of that address either during recording or playing a mode; therefore, the reset button need not be pressed when programming. A recorded message can also be corrected by first playing the correct part of the message and just before the mistake turn to record mode to complete recording the message. NOTE: The memory keyer will key the transmitter in the recording mode. It must be disconnected from the transmitter during recording. The transmitter may also be disabled by switching the transmit/receive switch to the receive mode.

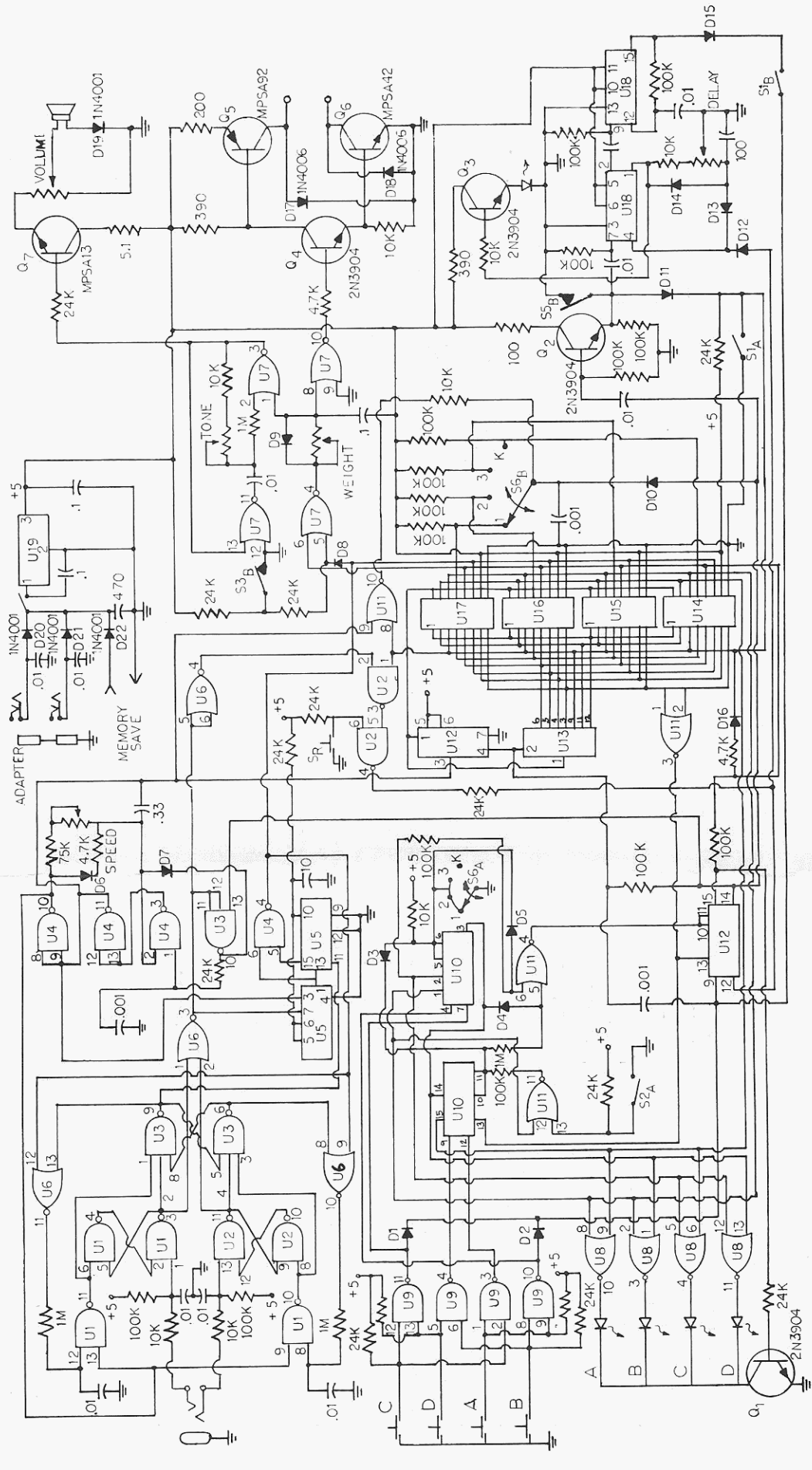
B. PLAY BACK

1. Push the SPEED control in. This puts the memory keyer in the play mode. Press the desired MEMORY ADDRESS button. The LED indicates which memory is in operation. MEMORY ADDRESS resets message to the beginning once it is pressed.
2. To interrupt a playing message or to make an insertion, simply send at the point where changes are to be made. The message can be continued by pressing another MEMORY ADDRESS button which contains the remainder of the message.
3. To repeat, pull the DELAY control out. Turn control clockwise to increase time delay between repeated message. DELAY LED lights to indicate the period when time delay is on. When DELAY control is turned fully counter clockwise there is no delay between the repeat message; however, any spaces at the end of the message will be repeated. NOTE: If time delay is interrupted, during the delay cycle, the LED will stay on until time delay is over. This does not effect other modes of operation.

OPERATION NOTES

1. Shielded cables must be used between the memory keyer jack and paddle and between the keyer output and the transmitter to prevent an RF interference.
2. Cover the battery snap if memory saver battery is not in use. Use the plastic tubing provided.
3. Use only the MFJ AC ADAPTOR supplied. Do not use more than 15 volts for the external battery. The tip of the sub miniature jack is positive and the sleeve is ground.

NOTE: ALL RESISTANCES IN OHMS. ALL DIODES ARE IN 4148's UNLESS NOTED. ALL PUSH-PULL SWITCHES PUSHED IN.



MFJ-484 SCHEMATIC DIAGRAM