User instructions for Kenton MIDI retrofit for
YAMAHA CS-70M

These instructions are only for CS-70M MIDI retrofit kits produced after 1ˢᵗ January 2010
Firmware CS705100 or later

N.B. Different instructions apply to earlier Kenton CS-70M MIDI retrofit kits.

USING THE MIDI INTERFACE

When you turn on the synthesiser for the first time, you will be in omni-off mode channel 1 for receive - See the following pages for other factory default settings. When you select a receive channel, this will be stored in memory and will be remembered for when you subsequently turn on the synth - all parameters listed on the next page are stored.

If you want to put the machine back to the factory default settings at any time, switch the synth on whilst holding the red push button pressed - hold for a couple of seconds then release.

RED PUSH BUTTON

Two modes are available by pushing the red push button during normal playing mode. Before you press the red button however, make sure that no keys are pressed on the remote MIDI keyboard otherwise the results may be unpredictable. The key presses can be entered only from the remote MIDI keyboard.

1) SET-UP MODE
For setting MIDI channels and assignments. Give the red push button a short press (half a second) - then release. Follow this with a key press or sequence of key presses as detailed on page 2. After making a MIDI channel assignment, you will be automatically returned to playing mode but after making other assignments you will need to press the ENTER key (Top C) to return to playing mode; this is to enable you to make the multiple key presses required when re-assigning Sources to Destinations. (N.B. all set-ups are stored in non volatile memory).

2) TRANSPOSE MODE
Press and hold the red push button for about four seconds - then release. Middle C will sound on the CS-70M and continue to sound until you press a key on the remote keyboard. The key that you press on the remote keyboard will be the new middle C for MIDI IN. You can set any value up to two octaves up or down - settings outside this range will be ignored (where middle C = no transposition) . Note that transpose mode cannot be entered from set-up mode. The transpose setting will be stored in non volatile memory).

Function of keys during set-up mode:

C	Receive channel	1 (default)	[Bottom C - MIDI note #36]
Db	" "	2	
D	" "	3	
Eb	" "	4	
E	" "	5	
F	" "	6	
Gb	" "	7	
G	" "	8	
Ab	" "	9	
A	" "	10	
Bb	" "	11	
B	" "	12	
C	" "	13	
Db	" "	14	
D	" "	15	
Eb	" "	16	
E	Receive notes	*OFF*	
F	Not Used		
Gb	" "		
G	" "		
Ab	" "		
A	" "		
Bb	" "		
B	" "		
C	" "		[Middle C - MIDI note #60]
Db	" "		
D	" "		
Eb	" "		
E	" "		
F	" "		
Gb	" "		
G	" "		
Ab	" "		
A	" "		
Bb	" "		
B	" "		
C	" "		
Db	" "		
D	" "		
Eb	program change receive	*ON* (default)	
E	" "	*OFF*	
F	Not Used		
Gb	" "		
G	" "		
Ab	" "		
A	Controller Source Select	Pitch-Bend Wheel	
Bb	Controller Source Select	Mod Wheel (cc#1)	
B	Controller Source Select	Aftertouch	
C	Controller Source Select	Velocity	
Db	Controller Source Select	Controller X (assignable – default cc#16)	
D	Controller Source Select	Controller Y (assignable – default cc#17)	
Eb	Controller Source Select	MIDI Volume (cc#7)	
E	Destination **ON**	Pitch-Bend	
F	Destination **ON**	Modulation	
Gb	Destination **ON**	VCF (Filter)	
G	Destination **ON**	not available	
Ab	Destination **ON**	VCA (Volume)	
A	Destination **ON**	CS-70M aftertouchc	
Bb	Destinations *OFF*	all destinations OFF for the currently selected controller source	
B	Reset all Sources to their default Destinations (see next page for defaults)		
C	**ENTER** key	Press & release to store & return to play mode [Top C - MIDI note #96]	

ASSIGNING MIDI CONTROL SOURCES TO DESTINATIONS

SOURCE	*DEFAULT DESTINATION*
Pitch-bend wheel	Pitch-bend
Modulation wheel (cc#1)	Modulation
Aftertouch	CS-70M aftertouch
Velocity	not assigned
Controller X (def cc#16)	VCF / Filter cutoff
Controller Y (def cc#17)	not assigned
MIDI Volume (cc#7)	VCA / Volume

1) To assign sources to destinations,
   a) press the red push button to enter set-up mode
   b) select a source by using one of the keys A to Eb (see table on previous page)
   c) [optionally if the source is Controller X or Y, you can assign a controller to it now – see below]
   d) select destinations OFF to de-select previous assignments for this source
   e) select destinations ON to make new assignments for this source
   f) either hit Top C to enter/exit, or select a new source and make assignments for that [go back to b]

2) Controllers X & Y can be assigned to any continuous controller (cc). By default controller X is assigned to cc#16, and controller Y is assigned to cc#17. To re-assign either of them, first press the red push button twice to enter SET-UP mode. Next press the Db or D key (see table on previous page) to select the X or Y controller source, then send a MIDI message of the required continuous controller. Then either press top C to enter / exit, or use some of the destination keys to assign what this controller will control. For example to set controller Y to respond to cc#4, give the red button a short press, press D, send a cc#4 message to the CS-70M from another synth or MIDI controller, then press top C to enter /exit. [or select another function]

3) Sources can have multiple destinations, so for example controller X could be assigned to control both filter and volume at the same time, should you want it to.

4) Where pitch-bend wheel is the source, only the bend wheel UP will affect destinations other than pitch-bend. Also where pitch-bend is the destination, sources other than pitch-bend wheel will only bend the pitch UP.

5) Receive channel setting will return you directly to playing mode, all other keys will let you stay in SET-UP mode until you press the ENTER key (Top C).

6) The ENTER key (Top C) also performs a "reset all controllers" function – OFF in most cases, but ON for volume, and centre for pitch bender.

7) If you want to put the MIDI back to the default settings at any time, switch the CS-70M on whilst holding the red push button pressed – hold for a couple of seconds then release.

8) During set-up mode, the retrofit will receive on ALL MIDI channels.

9) List of continuous controllers (cc) recognised – (numbers in decimal)

01 modulation wheel	07 main volume
64 sustain pedal	65 portamento on/off
121 reset all controllers	123 all notes off
124 omni mode off (always poly)	125 omni mode on (always poly)
126 (mono mode) = all notes off	127 (poly mode) = all notes off
nnn Controller X (user defined where nnn = any controller) (default = cc#16)	
nnn Controller Y (user defined where nnn = any controller) (default = cc#17)	

10) List of other commands recognised – (numbers in hexadecimal)

8nH notes off	9nH notes on & velocity
BnH continuous controller (see above)	CnH program change
DnH channel pressure (aftertouch)	EnH pitch-bend change
FEH active sensing	

11) Note that you cannot route velocity to CS-70M aftertouch as the CS-70M resets aftertouch for every new note.

OTHER INFORMATION

1) At power up, the default for portamento is on. This is so that the CS-70M will behave normally if MIDI is not used. Once a MIDI portamento message has been received, portamento will be under MIDI control, which will have to be ON for the front panel portamento slider control to be active.

GENERAL INFORMATION ABOUT MIDI CONNECTIONS

Any MIDI IN should be connected to a MIDI OUT or a MIDI THRU similarly any MIDI OUT should be connected only to a MIDI IN and any MIDI THRU should also only be connected to a MIDI IN.

MIDI OUT (if fitted) is the signal from the synthesiser (or drum machine etc.) that is to be sent to another instrument. MIDI IN is a received signal that contains MIDI information from another synth, and MIDI THRU is an exact copy of information arriving at the MIDI IN socket. This allows several instruments to be connected together.

If you want to wire your own MIDI cables the following information may be useful.
1) Although a 5 pin connector is used, only two connections plus an
earth connection are required.
2) If you look at the din plug from the wiring side you will see that the pins are numbered. From left to right (or clockwise) these are 1 - 4 - 2 - 5 - 3.
3) The pins numbered 1 & 3 are not used.
4) The screen (earth) is connected to pin 2 (centre pin)
5) Pin 4 of one plug should be connected to pin 4 of the other
6) Pin 5 of one plug should be connected to pin 5 of the other
7) You should now have a working MIDI lead
8) It is preferable to label one end of the cable MIDI IN & the other end MIDI OUT, to avoid confusion.

WARRANTY

All Kenton MIDI Kits come with a 12 month (from purchase date) back to base warranty, (i.e. customer must arrange and pay for carriage to and from Kenton Electronics). Note that kits should be fitted as soon as possible after purchase, as the retrofit kits are in a continuous state of development.

KENTON

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