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Before you start assembling this set, in the form of a kit or ready-built and tested, we advise you to first read this manual in its entirety.

Disclaimer

If you proceed to the rebuilding of circuits that are presented on the website and in this manual, I wish you good luck. I am not liable for any damage that occurs during the construction and use of these circuits.

Partlist

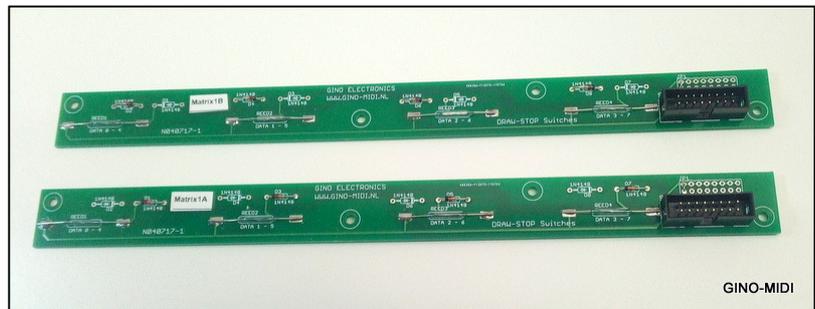
4	1N4148	Diode 100V 200mA General Purpose
4	REED	Reed-contact, diameter = 2.0 mm, lengte = 14mm
1	WSL 16G	IDC 16 Pin Male
1	PFL 16	IDC 16 Pin Female
4	PARK2,9X9,5	Parker 2,9 x 9,5 mm
4	DK 2MM	Spacer/Afstandsbus voor print 2 mm
1	N040717-2	DRAW-STOP PCB

Careful

The reed contacts used in this set are very fragile. Therefore, handle these prints with care and avoid damaging the reed contacts, which may prevent proper operation of the reed contact. The flatcable transitions between the prints are also vulnerable.

Introduction

This set is suitable for realizing the switches and wiring for draw stops in a simple manner. The reed contacts are activated by means of a magnet that is mounted on the stick of the draw stop. Because a diode matrix has already been installed on the PCBs, the wiring is very simple and has been done by means of a 16 pole flatcable which connects each PCB with a "Decoder printje 2". The distance of the pull registers can vary from 5 to 7 cm heart-to-heart.



Assembly kit

Assembly of the PCB's

This paragraph can be skipped in case you have purchased the built version.
Then read the paragraph **Placement of the PCB's and magnets.**

Just this.....

Components such as resistors, capacitors, diodes, transistors, shortcuts etc. have long connection wires. These components are bent to the right size and inserted into the PCB. Now it is wise to bend the connecting wires of these components after the insertion in the PCB along the print, preferably in line with the print track. These connecting wires are then cut off as short as possible so that only the soldering island with the abbreviated connection wire remains.

Then you are going to solder.

This method is recommended, because soldering is much easier, after all, the solder islands are more easily accessible, but not in the last place, the flux that is released with the soldering now also flows over the entire solder island including the cut-off connection wire and is hermetically sealed and any corrosion has no chance.

Matrixparts

As you probably know, a matrix consists of 8 parts. And each matrix part contains 8 positions again. In this way we obtain $8 \times 8 = 64$ positions. Each print can operate 4 pull registers. Therefore, there is a matrix part A for the first 4 positions of the matrix part and a matrix part B for the second 4 positions of the matrix part.

Before you assemble the components, first determine the number of the matrix parts using the provided stickers.

Matrixparts	Diodes to mount	Shortcut at JP1	Number Decimal	
Matrixpart 1A	D1, D3, D5, D7	1	36, 37, 38, 39	
Matrixpart 1B	D2, D4, D6, D8	1	40, 41, 42, 43	
Matrixpart 2A	D1, D3, D5, D7	2	44, 45, 46, 47	
Matrixpart 2B	D2, D4, D6, D8	2	48, 49, 50, 51	
Matrixpart 3A	D1, D3, D5, D7	3	52, 53, 54, 55	
Matrixpart 3B	D2, D4, D6, D8	3	56, 57, 58, 59	
Matrixpart 4A	D1, D3, D5, D7	4	60, 61, 62, 63	
Matrixpart 4B	D2, D4, D6, D8	4	64, 65, 66, 67	
Matrixpart 5A	D1, D3, D5, D7	5	68, 69, 70, 71	
Matrixpart 5B	D2, D4, D6, D8	5	72, 73, 74, 75	
Matrixpart 6A	D1, D3, D5, D7	6	76, 77, 78, 79	
Matrixpart 6B	D2, D4, D6, D8	6	80, 81, 82, 83	
Matrixpart 7A	D1, D3, D5, D7	7	84, 85, 86, 87	
Matrixpart 7B	D2, D4, D6, D8	7	88, 89, 90, 91	
Matrixpart 8A	D1, D3, D5, D7	8	92, 93, 94, 95	
Matrixpart 8B	D2, D4, D6, D8	8	96, 97, 98, 99	

Mounting diodes and shortcuts

First we will assemble the diodes. Pay attention to the cathode mark at the diodes.

The place of the shortcuts depends on the matrix part. Use the cut-off wires of the diodes for the shortcuts. They are perfectly suited for that. You can use a flat-nose pliers to bend the shortcuts to size.

Mounting the reeds

Reed contacts are very vulnerable. A reed contact is a hermetically sealed tube containing two narrow metal 'tongues'. These are positioned so that the ends overlap but just do not touch. If we keep a magnet in the vicinity, the tongues are mutually attracted and thus establish an electrical contact. If the magnet is removed, the contacts will return to their original position. The tube is filled with a noble gas, so that the switching of power does not affect the contacts..

The reed contacts are soldered at the designated locations. The connecting wires of the reed contacts must first be bent to size. Do this carefully and use a flat-nose pliers. Simply changing it can cause damage to the glass tube.

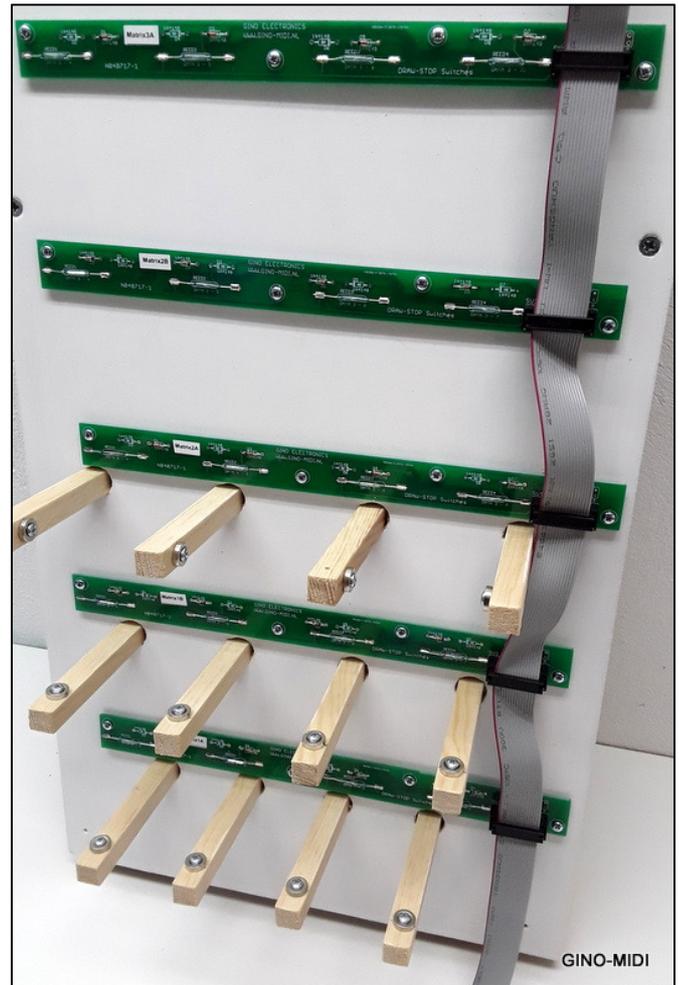
You can choose to stick the reed contacts through the holes of the solder islands and then solder them, but you can also choose to solder the reed contacts on the soldering surfaces, so that a reed contact can be better placed in front of a magnet.

The flatcable connections

Then the connection of all the PCBs remains via flatcable and with a "Decoder Printje 2".

A flatcable connector is numbered. Number 1 of the connector is indicated with a triangle on the base part of the connector. The flatcable itself has one vein that is colored. That is vein 1 which corresponds to this triangle. Place the flatcable between the part with the blades and the roof of the connector. Make sure the flatcable is placed straight into the connector at a 90 degree angle. Place it on a hard surface and then press the roof firmly with the thumb so that the blades have already found some way in the insulation. Then place the connector with the flatcable in a vise and push the roof further into the flatcable and the base.

Only finally, the third part, the strain relief, is placed on the connector. The flatcable is, as it were, turned and makes a curl.



List of pin connections connector SV1

Pinnr.	Name	Description
1	D0	Data 0
2	D1	Data 1
3	D2	Data 2
4	D3	Data 3
5	D4	Data 4
6	D5	Data 5
7	D6	Data 6
8	D7	Data 7
9	CLOCK1	Clocksignal matrix 1
10	CLOCK2	Clocksignal matrix 2
11	CLOCK3	Clocksignal matrix 3
12	CLOCK4	Clocksignal matrix 4
13	CLOCK5	Clocksignal matrix 5
14	CLOCK6	Clocksignal matrix 6
15	CLOCK7	Clocksignal matrix 7
16	CLOCK8	Clocksignal matrix 8

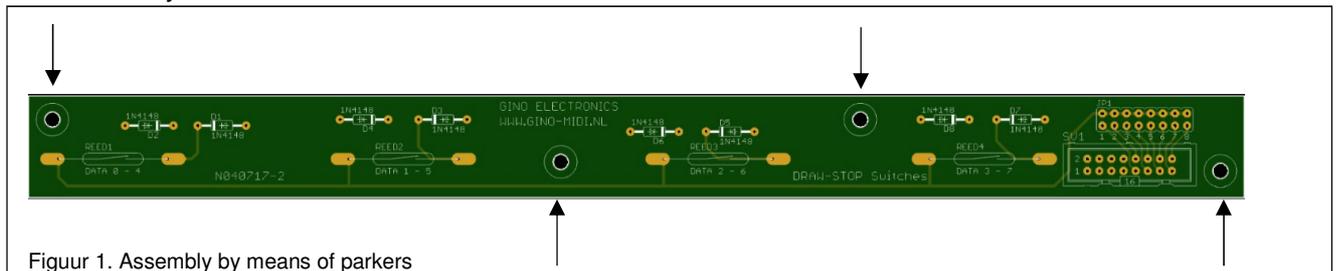
End of description of assembly kit

Placement of the PCB's and magnets

In this paragraph the placement of the PCB's and the magnets is treated. This is only a suggestion which is not normative. There are several other options available. This also depends on the shape and layout of the panel of the draw stops.

Placement of the PCB's

Mount the PCBs with the 2.9 x 9 mm self-tapping screws and the 2 mm spacers on the panel of the draw stops. Drill eventually holes in the subsurface and ensure that no burrs occur, so that the spacer and therefore also the PCB is mounted flat with the surface. The PCB is rather narrow and it is not inconceivable that the print will bend due to uneven mounting. Figure 1 shows which mounting holes of the PCB you use.



Figuur 1. Assembly by means of parkers

Mounting the magnets

The magnets have a round shape and are provided with an opening. This opening makes it possible to easily mount the magnets on the sticks of the draw stops. Mount the magnets so that they extend to the left or right of the center of the reed contact.

Do not align in the middle!

What is important is the position of the magnet in relation to the reed contact.

A reed contact consists of a glass tube with two resilient contacts, which are just open in the rest position. These contacts consist of a magnetizable material. By magnetizing the contacts in the right way, they are closed.

In order for the contacts to attract each other, there must be one 'north pole' and one 'south pole'. This is done by keeping the magnet at the level of one of the soldering points (left or right) of the reed contact. When the pull register is pulled out, the reed contact will close by the action of the magnet.

As already discussed, these PCB's are connected to each other by means of a 16 pole flatcable which then has to be connected to "Decoder Printje 2". As with every diode matrix of the GINO-MIDI system, a decoder is required per matrix. So also with the draw stops.

And last but not least

This manual can still be rewritten.

Please consult the website <http://www.shop.gino-midi.nl/download-pagina/>

Schema

