



Installation Guide MX-5 NA/NB/NBFL MFA2.0

Preface

Thank you, for purchasing the “MFA2.0” for installation in a Mazda MX5 type NA/NB/NBFL instrument cluster. The shown pictures are from a type NB. Type NA could be slightly different but the overall steps are the same.

During development, we put high effort into fitting accuracy and quality. The MFA has been tested and test fitted by several people and will be steady improved, so you will have no problems during the modification of your instrument cluster.

In spite of our great care and tests it can happen that unpredictable difficulties or problems may occur. This may occur due to many different versions of instrument panels, which cannot be considered upfront. On the other hand, a very limited space is available for our MFA2.0. So please apologize these factors.

If you have any feedback, criticism or change request, do not hesitate to get in contact with us at info@canchecked.de.

Required Tools

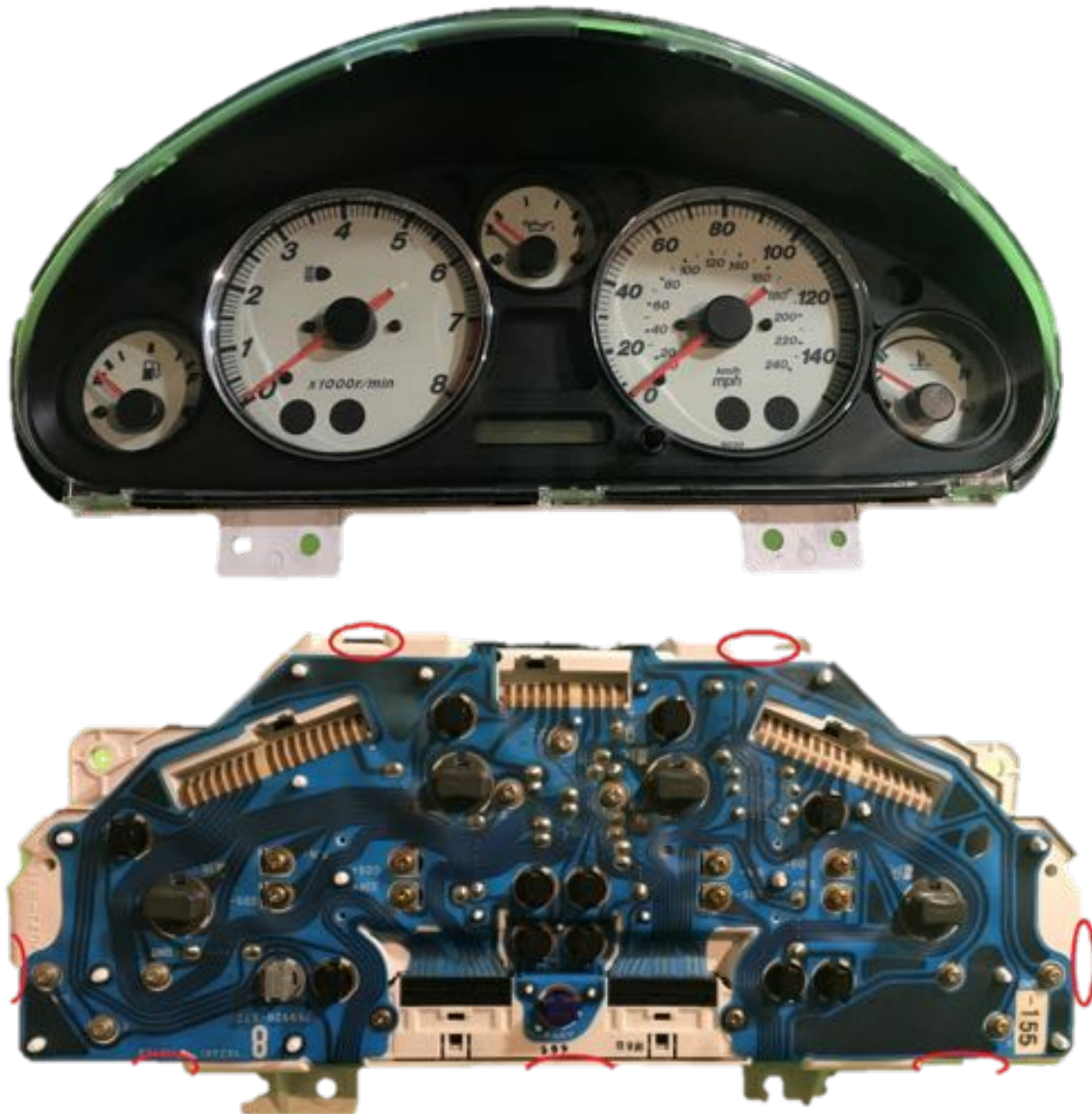
- Phillips screwdriver small
- Slotted screwdriver small
- Ø15mm drill

Advices

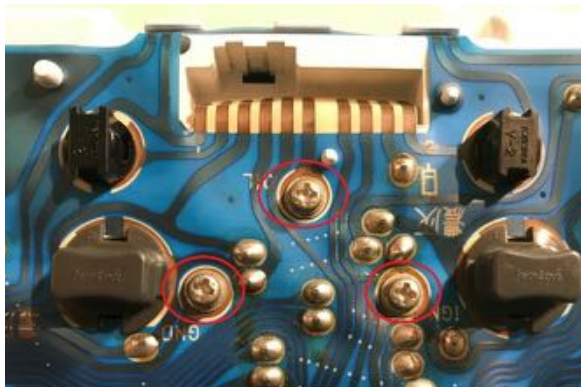
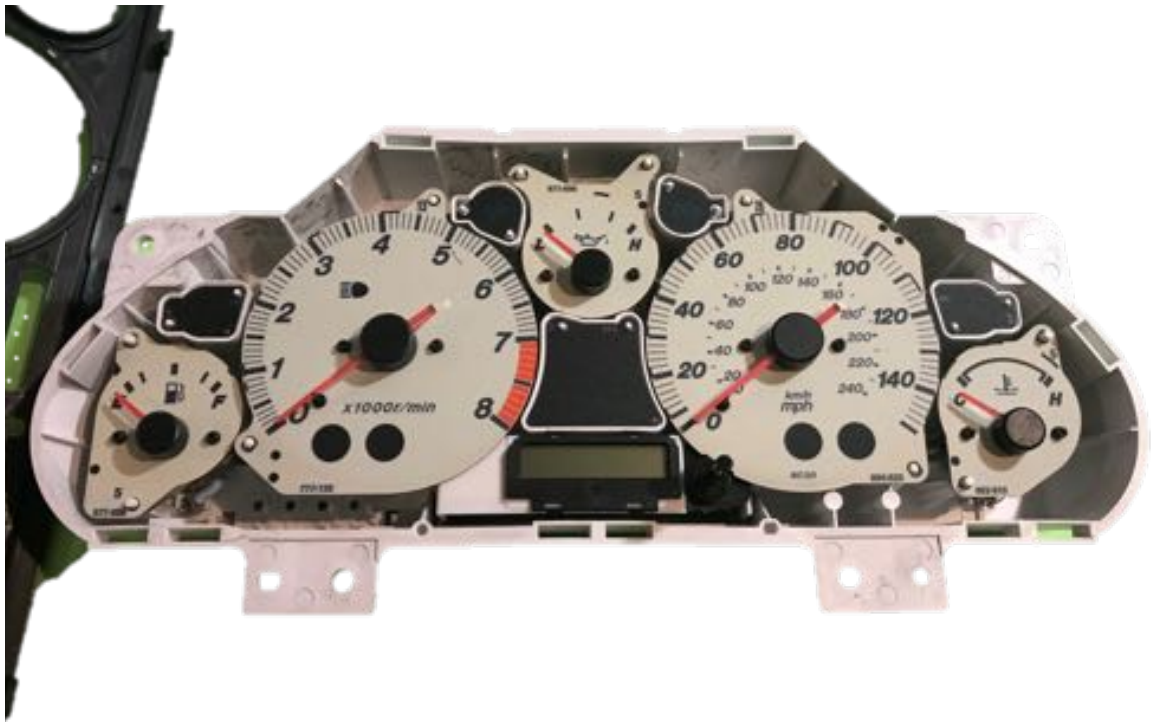
The retrofit set is a very sensitive electronical device. Please use a antistatic mat and wrist band to avoid any damage to the device itself. Avoid pressure or touching the OLED screen. This may lead to defects or faults in displaying your data.

CANchecked does not assume any liability for this modification or any damage during modification or during operation. This installation guide has been put together with the best of our knowledge and belief.

Installation Preparation



- (red) press to remove clips of the screen and frame
- remove both screen and frame from the instrument cluster



- The oil pressure gauge in the middle at the top needs to be removed
- For that purpose, remove the three Philips screws
- Remove oil pressure gauge





- You need to drill a 15mm hole into the case for the cables
- For the exact position please have a look at the pictures

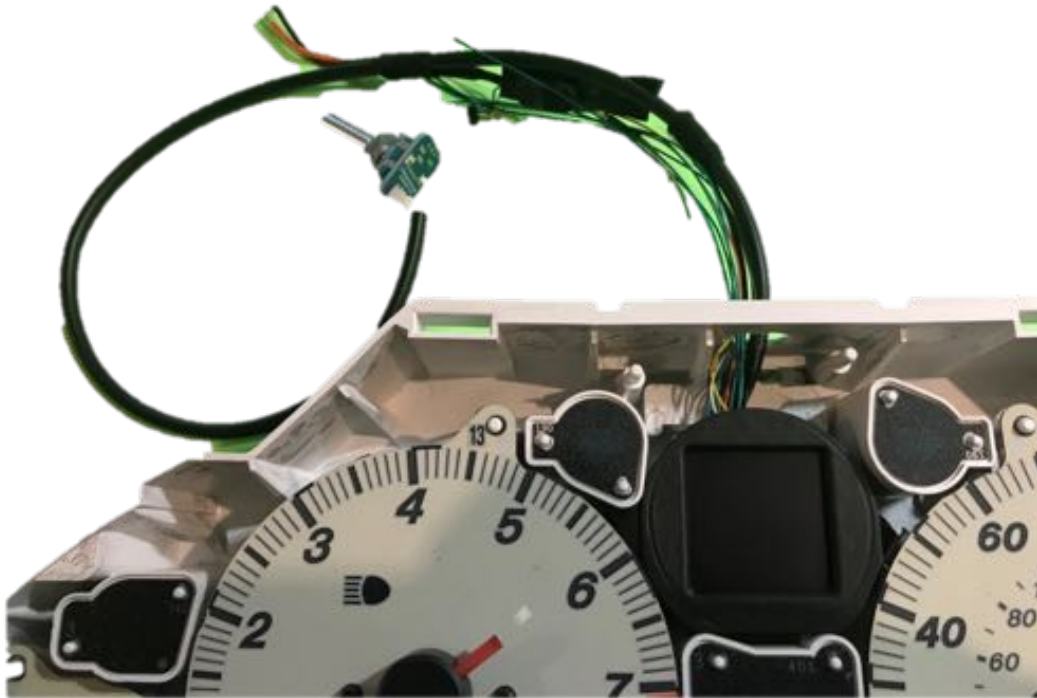


Installation MFA 2.0

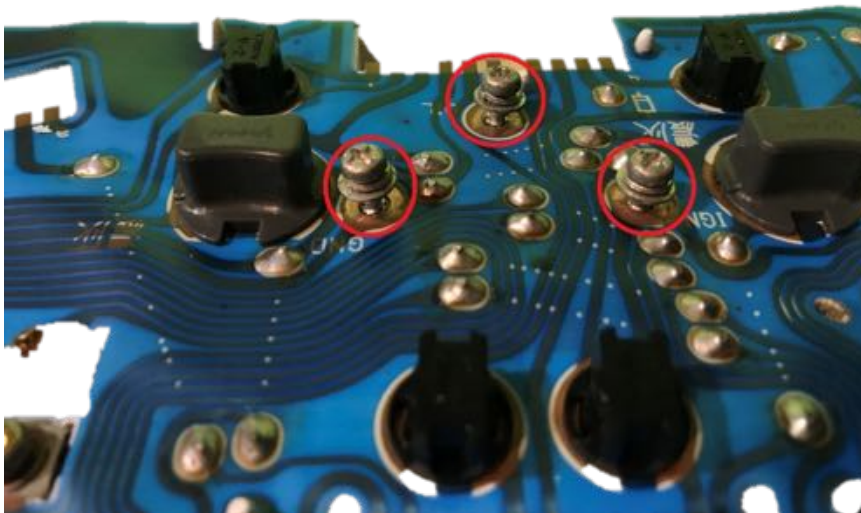
Afterwards you can position the MFA2.0 into the instrument cluster. But before pull the cables through the 15mm hole.

Position the bracket so it fits the screwing holes

It should look like this:



Use the original screws of the oil pressure gauge to bolt the display unit from the backside



The screw holes are really tight so take care of the correct placement of the display. Now is the time to have minor corrections done.

At the end you can install the frame and the glass with the original clips.

Afterwards the electrical connection can take place in the car. You cluster should like like this:



Electrical connection

Power supply:

Red cable = switched positive (12V) – use a 5A fuse (not included)

Black cable = Ground

CAN-Bus connection:

White cable = CAN High

Yellow cable = CAN Low

Green Kabel = CAN-BUS termination 120 Ohm

If the CAN-Bus termination needs to be activated within the display, please connect the green and white cable together and connect them both to the CAN High.

Most of the times there are no other devices in the CAN Bus available so the terminator needs to be set.

Analogue Inputs:

Orange cable = 5V output

black cable = ground out

4x green cable = analogue inputs 1-4

Encoder

To change settings/views within the display

Press = Select the particular menu item

Turn left/right = up/down in the menu or change the particular value

Micro-USB connection with update module

For direct connection to your PC/laptop for software updates.

Startup

You need to connect the power supply to start the display. In addition, you need to connect the display to your CAN-Bus or to your analogue inputs. Both are optional. You can also run the display with analogue inputs only.

After powering up the display, you can see the start logo and the display will change to the last selected view.

If you press the encoder, the menu will show up. Turning the knob will select the other views or lead you to the setup (“stp”), after confirm with a second press.

First of all you should go to the Setup („stp“) => „options“ => „CAN type“ and select the desired protocol: tirjekt, AIMRev6Typ2, Megasquirt2, Ecumaster, KMS, VAG. If the appropriate protocol is not included, please drop an email (info@canchecked.de). The CAN-Bus speed is set to 500kbps. Protocol and speed need to match to get the display working.

All other settings can be left default for now.

Behind the menu “sensors” are all sensors which have been implemented. Here you can change all minimum and maximum values. When exceeding these limits an alarm can be generated – either by popup or just a small yellow triangle at the top right of the screen.

“Update” is for firmware updates of the display.

„Reset“ puts all settings of the display back to default.

In the gauge on the top right you can find a tiny RED pixel. If the display receives data from the CAN-Bus it starts flickering red/green. If no messages are received it's steady red. This can be due to no CAN-Bus connection, CAN-Bus within your ECU has not been activated or CAN-Bus termination (see chapter electrical connection) is wrong.

Operation

The operation of the display is done with the encoder – see chapter startup.

Analogue Inputs

Additional four 0-5V sensors can be connected to the display. On our homepage at [Downloads](#) is a list of tested sensors. Of course all other sensors with 0-5V output can be connected as well.

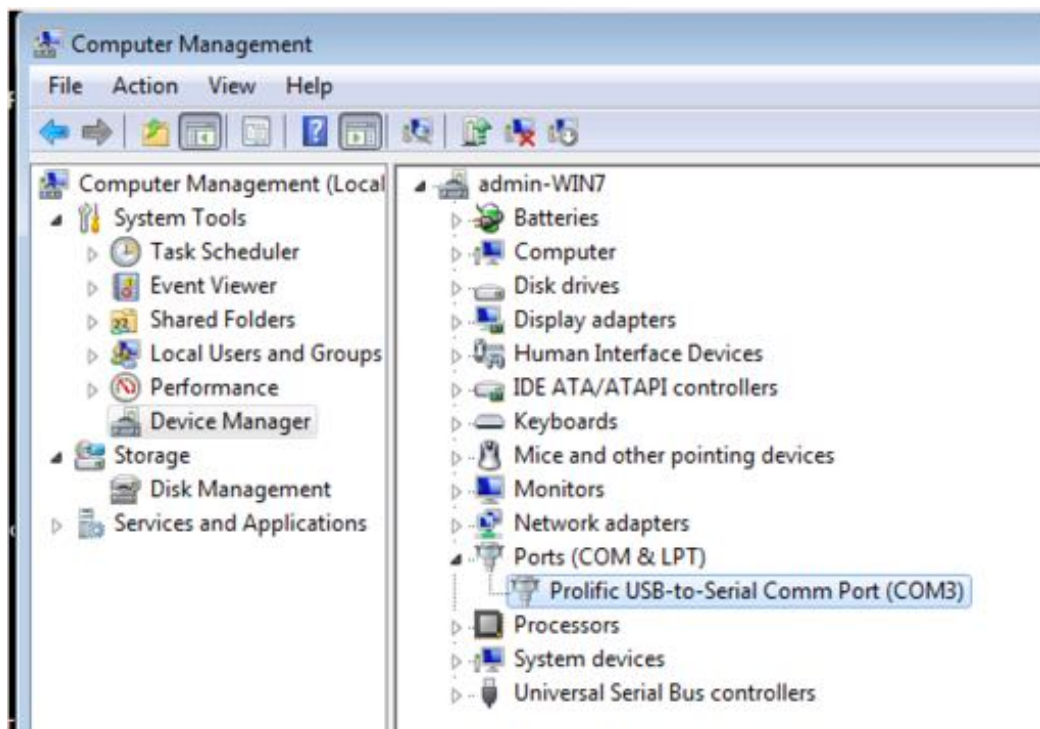
In the “sensors” section of the display the sensor can be mapped to its real values. Please use the datasheet of your sensor to get the 0V and 5V values to enter them into the display.

Updates

If new updates are available the customer receives them from CANchecked directly.

To update the display please use these steps::

- 1) Install driver: http://canchecked.de/updater/PL2303_1181.zip
Download software: http://canchecked.de/updater/CANchecked-52mm-updater_basic.zip
- 2) Disconnect display from car
- 3) Connect display to USB port of your PC/laptop
- 4) Make sure a COM port is found (see screenshot)



- 5) Start Update software, choose the COM port and leave baud rate at 115200
- 6) Use the encoder to go to menu „update“ and choose it
- 7) Click „Start Bootloader“ on your PC/laptop => the button turns green after successful connection – may be you need several retries.



- 8) „Select Hexfile“ => choose HEX Datei (received from CANchecked)
- 9) flash the display with „program flash“
- 10) „Exit Bootloader“
- 11) disconnect display and reconnect it – the new software has been loaded