Mazda MX-5 NC 2006-2014

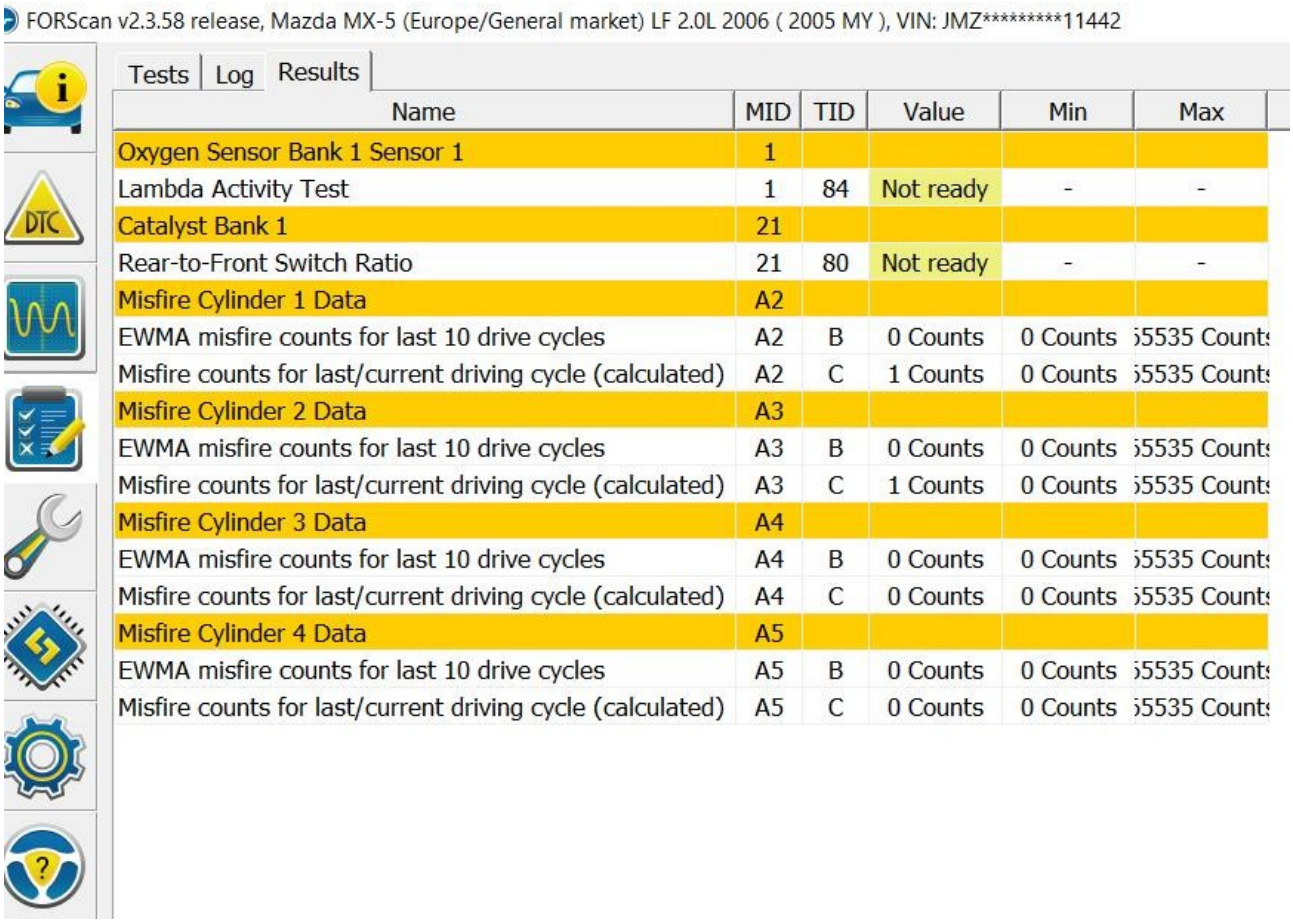
remote remap using RomDrop package

Required tools and materials:

- Mazda MX5 NC 2006-2014
- Tactrix Openport 2 device (assuming original one, not chineese clone) + mini-USB cable
- microSD card
- laptop with Windows 7/8/10

Before tuning you should check:

- air cleaner filter is clean, ideally new
- read DTCs and report to me
- thermostat is working properly. During driving engine coolant temperature should reach 85-90degC easily
- OBD II mode 6 test results



Name	MID	TID	Value	Min	Max
Oxygen Sensor Bank 1 Sensor 1	1				
Lambda Activity Test	1	84	Not ready	-	-
Catalyst Bank 1	21				
Rear-to-Front Switch Ratio	21	80	Not ready	-	-
Misfire Cylinder 1 Data	A2				
EWMA misfire counts for last 10 drive cycles	A2	B	0 Counts	0 Counts	65535 Counts
Misfire counts for last/current driving cycle (calculated)	A2	C	1 Counts	0 Counts	65535 Counts
Misfire Cylinder 2 Data	A3				
EWMA misfire counts for last 10 drive cycles	A3	B	0 Counts	0 Counts	65535 Counts
Misfire counts for last/current driving cycle (calculated)	A3	C	1 Counts	0 Counts	65535 Counts
Misfire Cylinder 3 Data	A4				
EWMA misfire counts for last 10 drive cycles	A4	B	0 Counts	0 Counts	65535 Counts
Misfire counts for last/current driving cycle (calculated)	A4	C	0 Counts	0 Counts	65535 Counts
Misfire Cylinder 4 Data	A5				
EWMA misfire counts for last 10 drive cycles	A5	B	0 Counts	0 Counts	65535 Counts
Misfire counts for last/current driving cycle (calculated)	A5	C	0 Counts	0 Counts	65535 Counts

more about how to get OBD II mode 6 data: https://alexengineering.pl/en/ → blog → mx-5 tips→ Misfire diagnostics Mazda MX-5 Mk3 NC

Tactrix driver installation (assuming original one)

- download and Tactrix Openport 2 drivers from www.tactrix.com website (→Downloads→driver J2534 DLL) and install them

RomDrop download

- download RomDrop package from
https://github.com/speepsio/romdrop
- create folder with convenient name (suggest Romdrop) and unpack files there. No need to installation

Openport driver check

- connect Tactrix Openport 2 device to laptop
- double click on RomDrop application. If you see 8 entries in menu starting from „C | clear diagnostic troube codes" Openport 2 device is recognized properly

If you see only 3 entries in menu starting from „P | patch stock ROM" Openport device is not recognized. Check drivers installation, reboot laptop etc

original ROM download from car

- connect Tactrix Openport 2 device to OBD2 port in your Miata and to laptop
- ensure you cars battery is in good condition and charged
- turn key to Ignition. Dont start engine
- run RomDrop and press R. Download process should start, it lasts around 3 minutes
- when finished downloaded file will be in RomDrop folder, size 1MB, name for instance SW-LFJ1EE.BIN. Send it to me

this procedure is 100% safe

ROM upload to car (reflash)
- connect Tactrix Openport 2 device to OBD2 port in your Miata and to laptop
- ensure you cars battery is in good condition and charged
- turn key to Ignition. Dont start engine
- run RomDrop and press F if you are doing this for first time
- drag and drop file you want to flash to car to RomDrop window
- flash process will start. It lasts about 1.5 minute
- if finished succesfully start engine

- in case of upload error (very rare) press F again and repeat process. You can also use your original ROM file you downloaded earlier

- if flashing only your car you can also use D option (Dynamic flash), starting from second upload. This will make process faster.

Note: if encountering problem with engine behaviour you can always reflash back any of known working ROM or original downloaded one.

SD Logging

- upload **logcfg.txt** file I sent you to root folder of your **microSD** card using laptop and adapter if necessary
- put **microSD** card into Tactrix device and plug it into OBD2 port of your Miata. LEDs on Tactrix openport should flash RED-BLUE for a while then give short RED blinks with long pauses. That means Tactrix is waiting for Ignition
- turn key to Ignition, dont start engine. Tactrix should blink ORANGE. That means Tactrix is waiting for data
- start engine Tactrix should blink ORANGE-BLUE that means logging data and saving to SD card
- after you switch ignition off file named **log0001.csv** should appear on microSD card

note: **logcfg.txt** file is different for stock and non-stock ROMs

note 2: to avoid confusion I recommend to keep all log files on **microSD** card, dont delete them. Files are small, usually few MB each, and even 128MB card can hold many of them

logging procedure to make good logs
- find place around your home with low traffic, no traffic lights, ideally loop, length 5-10km.
- more you drive every time more logs and valuable data will be provided. Around 10km of warm engine is minimum acceptable, 20-30 km is better. Loop is good because you can repeat it if necessary. Avoid stop and go (traffic lights),
- every time after reflash drive first calmly to allow fuel trims to set. Use different RPM, ideally in increments of 500 (means 1500-2000-2500-3000-3500-4000-4500) holding each for 5-10 seconds. RPM do not have to be in this order, but try to use all of them. Ideally each RPM range on different engine load (different gear, flat/inclined road, light emergency brake for a while).
- when trims are set, near the end of your route do at least 2 WOT runs on 2nd gear starting from low RPM like 1000-1200 till redline (fuel cut). This should be straight, flat road and without DSC intervention during this WOT run. If DSC intervention happens - it ruins WOT data - just repeat WOT run.