

ECU
REMAPPING

CARS/TRUCKS/TRACTORS
MODULES

MOTORBIKES
MODULES

POWER TEST
BENCHES



User manual

1 K27-SMR2-005

Applicability

Model:
BMW R nineT 1170cc 2021->

Kit composition



Module : F27RBSMART2



Harness: F27-SMR-005

Precautions/Disclaimers

For the correct RAPID BIKE module function (later shortened to 'RB'), the motorcycle system must be intact and fully functional. Installation must be carried out by competent personnel and the supply conditions such as "Appendix 1" at the end of this instruction manual, must be read and accepted.



WARNING

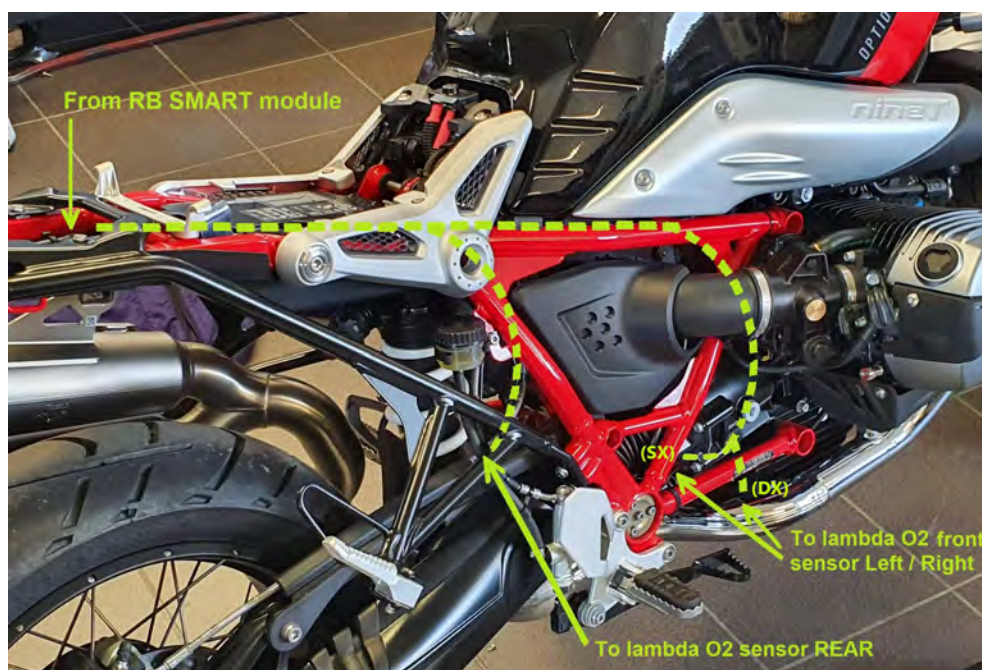
Optimum engine performance cannot be guaranteed if the SMART module is applied to motorcycles with original engine ECU (OEM) that have been remapped (after-market tuning).

1.1 Preliminary operations

1. Switch off the engine and remove the key from dash.
2. Place the motorcycle on its center stand, if this is available.
3. Remove the seat/seats.

1.2 Wiring/Harness placement

The following photo highlights the passage of the cables for the front lambda sensors:
Lambda DX for the RIGHT (CYL.2) and Lambda SX for the LEFT (CYL.1).



To be able to slide the cable connectors, you will need to loosen and slightly raise the fuel tank.

1.3 DIAGNOSTIC Section

Position: Under seat compartment.

Connector: 16-pins diagnostic, BLACK color (OBD2).



What to do:

Remove the cap and insert the SMART connector marked as "**DIAGNOSTIC**"

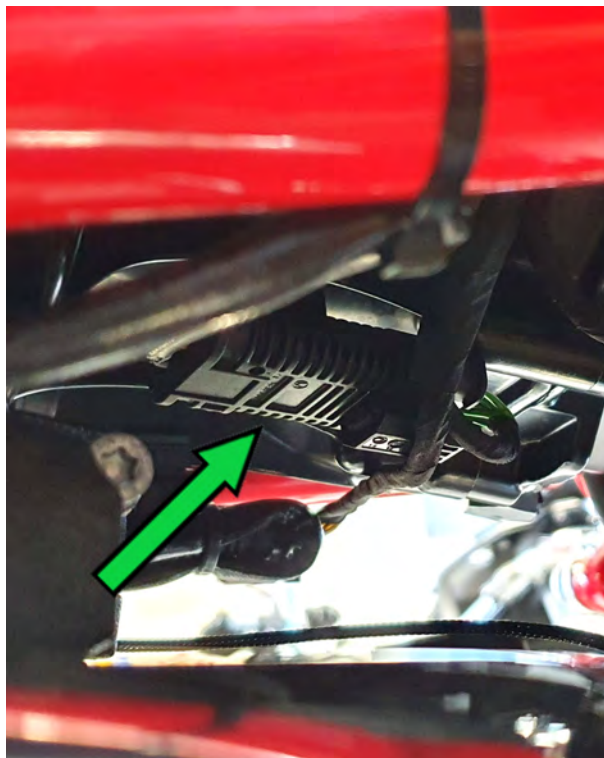


WARNING

The connectors joined in this way are not waterproof. Using insulating, waterproof and temperature-resistant tape (not supplied in the kit), proceed to tape the connectors at their junction so as to prevent the entry of water and humidity.

1.4 LEFT Cylinder Lambda (O2) sensor (LW1)

Position: Left side down, behind the side stand.
Connector: 5 pins type, BLACK color.



To detach the connectors, use a flat-bladed screwdriver to lever in the direction of the arrow in order to move the locking hook.



To unlock the connectors, extract the gray tab and press slightly downwards; then you can extract the male from the female seat.



What to do:

Disconnect the original connectors and interpose those of the Rapid Bike harness signed as LW1 .

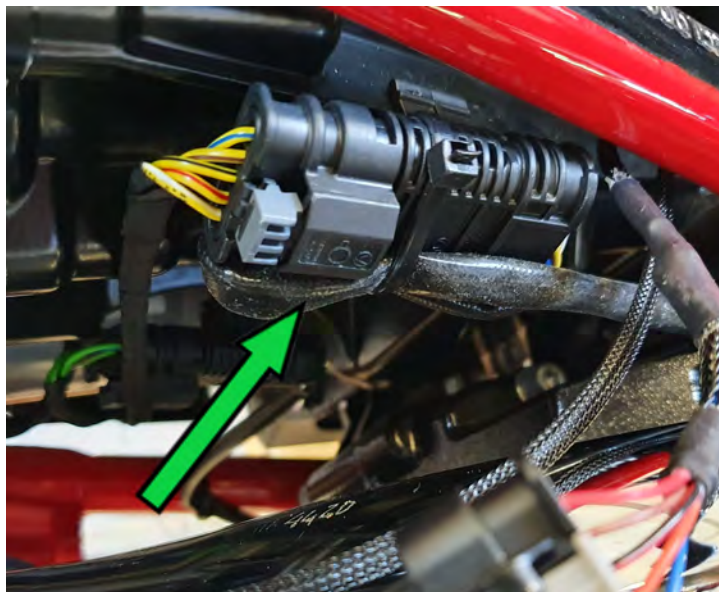
Using the supplied strip ties, fit and lock the connectors in place.



1.5 RIGHT Cylinder Lambda O2 sensor (LW2)

Position: On the right side, behind the rear brake pedal.

Connector: 5 pins type, BLACK color.



What to do:

Disconnect the original connectors and interpose those of the Rapid Bike harness signed as **LW2**.

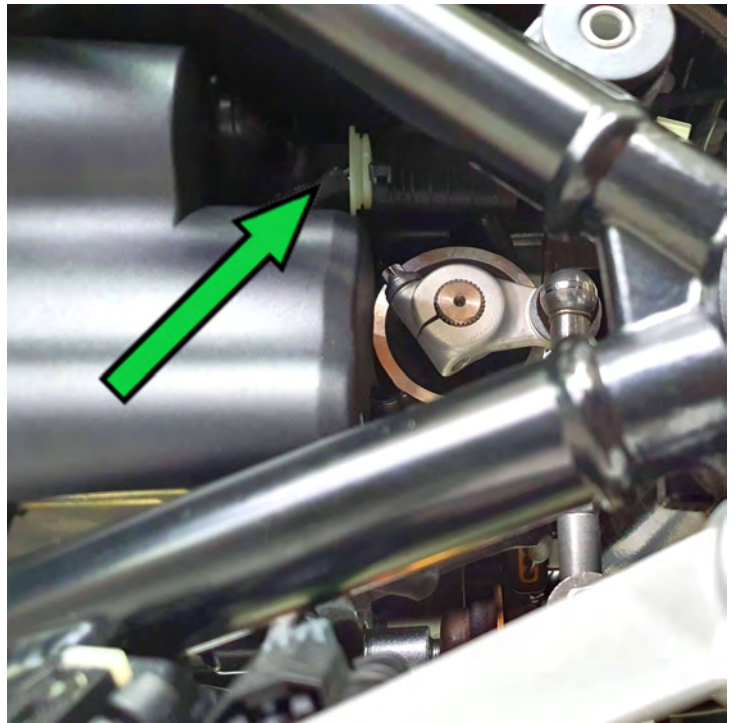
Using the supplied strip ties, fit and lock the connectors in place.



1.6 Rear/Central O2 sensor (LN1)

Position: On the left side, above the gear shaft.

Connector: 4-way type, White/Black colour.



What to do:

Disconnect the original connectors and interpose those of the Rapid Bike harness signed as LN1.



Using the supplied strip ties, fit and lock the connectors in place.

1.7 FINAL OPERATIONS

1.7.1 Place the SMART control unit under the seat.

Place the supplied Velcro in a clear place, then fix on it the SMART control unit.

1.7.2 Connect the wiring harness to the SMART unit.



1.7.3 Conclusion

Now it is possible to turn on the ignition and start the engine.

Check that the engine runs smoothly before completing the reassembly of the motorcycle.

1. With ties, fix all cables and connectors that may move, to the bike frame.
2. Reinstall all removed covers, fairings and sides.
3. Reassemble the seat/seats.

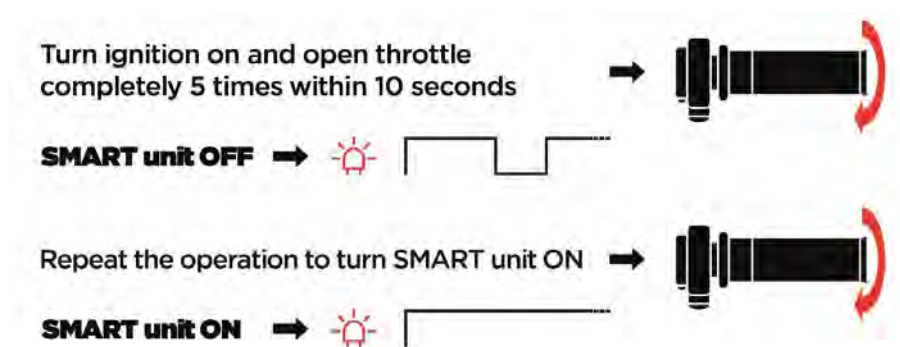
1.7.4 Functioning - ON/OFF mode

After a short warm-up phase of the probes, normally 2-3 minutes after turning on the engine, the SMART control unit starts working (ON mode) with its preloaded map.

Our programming of the RB SMART allows to enrich the stoichiometric ratio (AFR - air/fuel ratio) and optimize the self-adaptive engine operating parameters of the original ECU. The power delivery curve becomes smoother and more regular, also improving throttle response and engine responsiveness. The result is a significant increase in torque, both in the original configuration and with after-market exhaust systems and sports kits, thanks to improved engine efficiency.

Rapid Bike Smart is already programmed to work in active ON mode. But it is also possible to deactivate it (OFF Mode), restoring the carburetion and engine performance to the original.

This operation can be done with the appropriate button on the smartphone APP or the PC software or the motorcycle accelerator control (throttle).



1.8 Accessories and Extras



WARNING

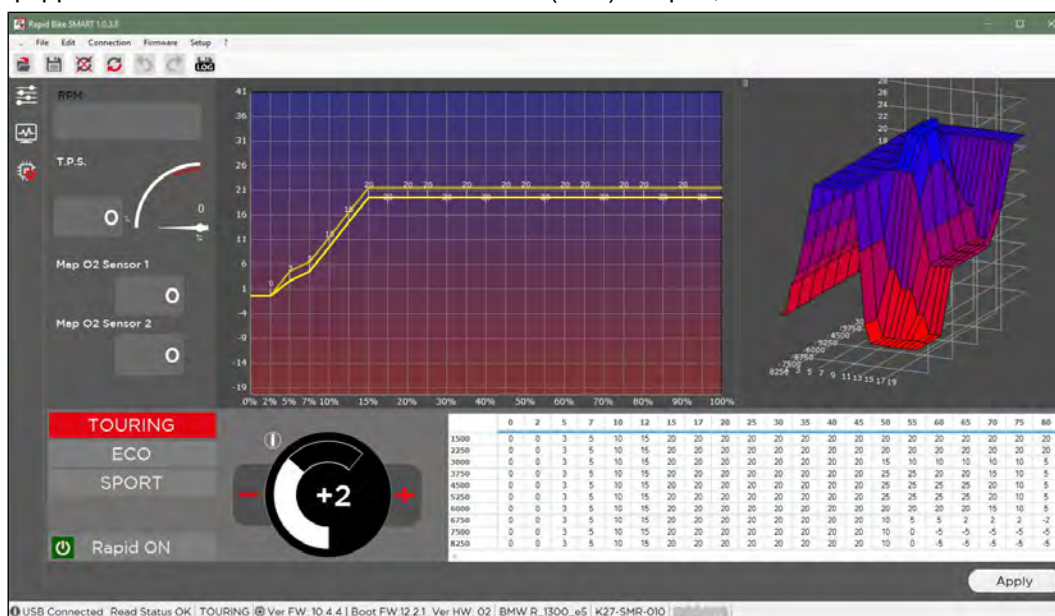
The SMART already works with the TOURING map preset and tested by Dimsport during development even with the selector (on the APP or on the PC software) set to zero "--". Any modification of this parameter is inessential and at the discretion/responsibility of the customer.

1.8.1 Management software

Called 'Rapid Bike SMART' or 'RB MASTER rev.3' software, in the free version it can be used for:

- Activate or deactivate, ON-OFF mode
- Select the driving mode (TOURING - ECO - SPORT)
- Raise or lower the preset control curve
- Verify the functioning and the corrections in real time
- Read and erase engine fault/error codes (active for some models only)

It can be downloaded for free from the RapidBike.it or Dimsport.it website and requires a Windows 10 or 11 PC/Laptop equipped with an internal or external Bluetooth (BLE) adapter, at least version 4.0 BLE.



1.8.2 Smartphones APP

The Bluetooth interface of the SMART control unit also allows the connection and management of some parameters with your smartphone; search the “**Rapid Bike**” app available in the Android® and IOS® store.



WARNING

Use of a smartphone while driving is not permitted; with the APP make changes while stationary with the engine idling; close the APP before leaving.

Appendix 1

The User declares, under his own responsibility, that RAPID device is realized to be used only for competitive purposes in race track which is not open to the public. It is understood that the infringement of the aforementioned limitation may entail a sanctions infliction.

Without prejudice towards what is set forth in previous paragraph, if vehicle performances or characteristics, as indicated in vehicle registration certificate, were to vary, it is necessary to revise such vehicle registration certificate. Therefore, the User shall bring, under his own responsibility, such operations.

RAPID device allows the User to have access to some engine parameters (for example: turbo/manifold pression, rail, speed limiter, etc.). Changing such parameters might make the vehicle non in compliance with some power and/or speed and/or emissions standards of Your Country and also might determine a superior wear and tear of mechanical and electrical components of the vehicle, to the point that manufacturer's (or seller's) warranty might be considered void.

Dimsport Srl (except as set forth hereafter) does not grant any warranty and shall never be considered liable for any disruption that may derive from using RAPID device, in particular with respect to any extra wear and/or deterioration of the engine or of any other mechanical and/or electrical part of vehicle.

The reading and understanding of RAPID device Instructions must forerun the use of RAPID device (in all its parts).

If the User is a consumer of the provisions of D.lgs 206/2005 which concern the conformity, warranty of purchased items shall apply (in accordance with such D.lgs 206/2005, a consumer is a person that buy products outside from his business). Therefore, the consumer with no extra expenses, has the right to obtain the conformity restatement of purchased item, by its replacement or reparation. For this purpose, Dimsport must be informed about item non-conformity within 2 (two) months from the discovery of such non-conformity. This warranty covers the defects that come within 2 (two) years from the delivery. The normal "wear and tear" shall never be considered non-conformity. This warranty shall never be applied if the consumer alters RAPID device and/or if the consumer directly or indirectly repairs it and/or if the non-conformity is due to improper, negligent or imprudent use of RAPID device.

If the User is a professional user, Dimsport only warrants that RAPID device is free from manufacture defects for 2 (two) years from the purchase date, provided that the professional user is able to demonstrate such date by showing proper documentation.

UNDER NO CIRCUMSTANCES SHOULD RAPID DEVICE BE USED TO BREAK THE LAW OF THE COUNTRY OF USE OF THE VEHICLE. FAILURE TO COMPLY WITH SUCH PROVISION WOULD DETERMINE THE IMMEDIATE TERMINATION OF THIS AGREEMENT.

Without prejudice to mandatory law provisions, Dimsport Srl shall be relieved from any and all contractual and / or extra-contractual liability for personal injury; for direct and / or indirect damage (both with reference to emerging damage and loss of profit); for any claim and / or cost of any kind; which has been suffered by the User or by any third parties and which may derive from the use or misuse and / or may depend and / or in any case may be attributable to RAPID device, except in the case that those events may be attributable to Dimsport for wilful misconduct or gross negligence. The foregoing limitations and exclusions shall be applied to the maximum extent permitted by legislation in force in the User's jurisdiction.



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