

BMW Motorrad HP Race calibration tool

Product description

- Software tool for keen track riders, optimum add-on for the HP Race Power Kit.
- Tool for customising the parameters of engine management and DTC (injection, ignition, traction control, shift response HP shift assistant, speed limit for pit lane, deleting adaptation values).
- Professional tweaking of engine performance and traction for extra-special handling characteristics.
- For use on racing circuits only (not homologated for use on public roads).



Details

The HP Race Calibration Kit can be used to customise the following parameters of the engine management system and DTC (see the user guide for details):

- Fuel injection quantity and ignition timing:
 - Allowing for track-specific ambient conditions such as relative humidity.
 - Custom adaptations to allow for modified powertrain components such as exhaust system, air intake ducting and camshafts.
 - Custom adjustment of response in accordance with rider preferences and track profile (engine power and power development).
- Traction control:
 - Adjustment of tyre parameters such as circumference, shape and slip to customise the response of the DTC system (control timing/rate).
 - Mode-dependent definition of an angle of heel below which traction control is deactivated to permit wheelies.
 - Total of 9 characteristic maps for adjustment.
 - Custom settings possible for each individual riding mode (Rain, Sport, Race and Slick).
- Shift response of the HP shift assistant (OE/OA):
 - Adjustment of intervention speed (torque build-up after gearshift).
- Speed limiter for the pit lane:
 - Maximum engine rpm for 1st gear with starter button pressed.
- Delete adaptation values:
 - Restore adaptive parameters of the engine management system to the default settings.
 - Adaptation values are settings that the engine management system "learns" automatically to allow for certain motorcycle components such as the throttle-valve assembly and the exhaust system. If the components in question are changed the adaptation values have to be deleted so that the ECU of the engine management system can learn the new values for the modified or new components.

Attention

The motorcycle's on-board electronic systems are influenced to a very significant extent with the HP Race Calibration Kit. Changing parameters to settings other than standard can lead to critical riding situations for which BMW Motorrad cannot provide safeguards.



Note

Changing parameters of the engine management system (injection and ignition timing) on a motorcycle with the standard control unit has different results in the 4 riding modes RAIN, SPORT, RACE and SLICK, whereas in the case of a control unit with the racing data set (HP Race Power Kit) the effect is the same in all 4 modes. This is on account of the different point of departure: With the racing data set engine management is the same for all 4 modes (full engine power is always available). With the standard data set engine power depends on the mode selected.



Note

The full scope of adaptation and modification for traction control is available only with the HP Race Power Kit. When used in combination with a standard control unit, the functionality differs from that available with the HP Race Power Kit as follows:

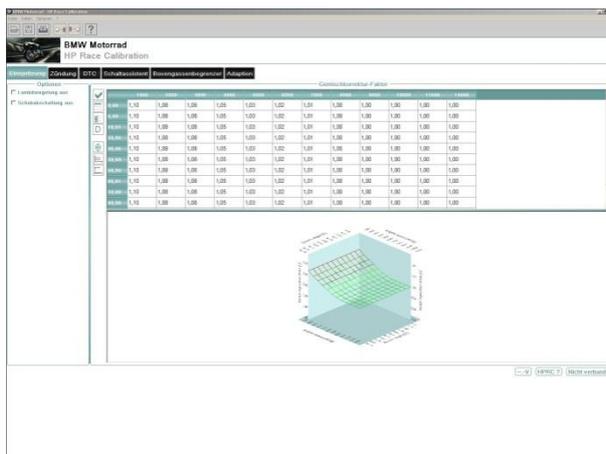
- The adaptation functions of the standard control unit for correction of tyre radius can act contrary to the modifications made in the HP Race Calibration Kit.
- With the standard control unit, deactivation of traction control by angle of heel (LeanAngleDTCon) is possibly only in the SLICK mode, subject to restriction.

On account of these constraints that apply when the HP Race Calibration Kit is used with the standard control unit, in individual cases unforeseen drawbacks can be encountered with traction control and therefore with the stability of the motorcycle.

Further details

- Scope of supply:
 - Software CD, including installation instructions. Program software in 5 languages (German, English, French, Spanish and Italian).
 - Data cable with USB adapter and ten-pin plug.
 - User guide in 8 languages (German, English, French, Spanish, Italian, Dutch, Portuguese and Japanese).
- Before it can be used for the first time the software has to be installed on a computer as described in the installation instructions. The computer used for this purpose must satisfy certain conditions, including the following minimum system requirements (see installation instructions for details):
 - MS Windows XP, MS Windows Vista, MS Windows 7.
 - RAM: min. 1 GB
 - 100 MB free capacity on hard disc.
 - USB 2.0 interface.
- Moreover, the vehicle's control unit as to be enabled by means of an enabling code:
 - If it is not enabled in this way the ECU of the engine management system will not accept the changes to the parameters.
 - Enabling only by authorised BMW Motorrad dealers.
 - Enabling code orderable under BMW part number; online transmission to dealership.
 - Before the ECU is enabled the customer's attention must be drawn explicitly to the restricted warranty and to the fact that usage of the motorcycle is restricted to closed racing circuits.
 - The owner of the motorcycle must sign the form confirming enablement of the ECU.
 - Note: Enablement of the function can be undone by recoding the control unit.
- Procedure for changes and transferring data:
 - Warnings requiring acknowledgement by the user appear each time the program is started (see attachment 2 of the product information brochure). These warnings draw attention to several points, including the fact that changing parameters can lead to critical riding situations for which BMW Motorrad cannot provide safeguards.
 - The parameters that can be changed with the HP Race Calibration Kit are grouped by the subjects injection, ignition timing, DTC, shift assistant and pit-lane speed limiter. Each subject is represented by a tab showing the corresponding parameters.

- Changing parameters is a matter of switching certain functions on or off by means of checkboxes and entering values (characteristic values, characteristic maps and characteristic curves).
- Checkboxes: For example 'Lambda control OFF', 'Overrun cut-off OFF', 'Knock control OFF'.
- Characteristic values: For example, 'Tyre radius front/rear'.
- Characteristic maps (values table with 2 axes): For example 'Mixture correction factor' (for adapting injection time as a function of engine rpm and throttle-valve angle), 'Ignition correction offset' (for adapting ignition timing as a function of engine rpm and throttle-valve angle).
- Characteristic curves (values table with 1 axis): For example GripLevel.
- See the instructions for use for detailed descriptions of the adaptable parameters.
- Parameters that the customer has changed can be reset to the defaults in the menu (menu bar, "Data").
- The settings in the data records can be worked on without actually connecting to the motorcycle.
- The connection has to be established with a data cable in order for data to be transferred between the computer and the motorcycle.
- The data record is always transmitted in its entirety (a data record consists of a fixed number of editable parameters). The data are active as soon as they have been transferred to the control unit and remain active until overwritten.
- It is also possible to export data from the motorcycle to the computer.
- A data record can be saved in a file or loaded from a file. This makes it possible to administrate a library of data records and exchange records with other users.



Sales information

- The HP Race Calibration Kit offers the opportunity of achieving an optimum balance between rider, tyres and racing circuit by enabling custom parameterisation in the ECU of the engine management system.
- BMW Motorrad recommends combining the HP Race Calibration Kit with the HP Race Power Kit to achieve the best results. The ECU of an engine management system with the racing data set of the HP Race Power Kit has the optimised parameter settings for race-track riding, for example in all 4 riding modes full engine power is available. Moreover, optimisation of traction control is reproducibly ensured to the full extent only with the HP Race Power Kit. Adaptation of the parameter settings with the software tool builds on the racing data set optimised for closed racing circuits.
- Warranty: Enablement of the HP Race Calibration Kit in the control unit renders the motorcycle a high-performance product with a correspondingly short life expectancy on account of its use in motorcycle racing. With regard to its condition, the motorcycle is no longer compliant with the durability requirements of a machine homologated for use on public roads. Consequently, the warranty is restricted to freedom of defects in the material and the as-delivered condition of the brand-new motorcycle or component.