| | Documment/File name | Document Type | Revision |
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| **TTT** *Racing Products* | **FAQTTT802E.doc** | **External** | **2** |
| First Revision, Sign and Date **Bln 2009-04-08** | Updated Revision, Sign and Date **Bln 2009-11-25** | Document Status and Sign **Approved Lan** | Page **1 (3)** |
| Document and Product Description | | | |
| **FAQ - Gearcut (Flatshift) using the TTT802 Gearshift Controller** | | | |

**Question 1: Does the gearcut (flatshift) system use closed loop technique?**
- Yes…. The cut is active until the barrel sensor indicates that a safe position is reached.

**Question 2: Is there any risks with using gearcut (flatshift) functions?**
- Yes…. The system relies on a proper setup and calibration. And even if a lot of attention has been put into a safe and reliable operation there is always a small risk of component failure, improper setup or calibration, that might cause excessive stress to gearbox or other parts in the vehicle. That is why we do NOT recommend the use of gearcut (flatshift) on public roads. It is totally the users responsibility using our products / systems and no claims, what so ever, can be put on TTT Racing Products.

**Question 3: Do I have to use the new VGX barrel sensor to use the gearcut (flatshift) functions?**
- No, the older type potentiometer can still be used but since the contact less VGX sensor has a better resolution and is more reliable <u>we strongly recommend</u> the user to replace the potentiometer with the VGX sensor (TTT Part number 20-615-6).

**Question 4: Can the system be used with a carburettor motor?**
- Yes…. If the distributor has a hall sensor just connect the ignition interface (TTT Part number 12-671-3) between the distributor and the ignition amplifier. If the distributor is the old point type we need more information on your specific system and are happy to try to work out a solution for you.

**Question 5: Can the system be used with an injected motor?**
- Yes…. The Gearshift Controller can directly interface an analog or digital input on most common ECU systems. The software function for gearcut in the ECU must be setup to cut when signal is active. To use the Rpm bar function on the Gearshift Controller the ECU also has to output an Rpm signal. Systems like Motec, Pectel, Vi-pec, Nira all have these possibilities. For other ECU systems which we can not interface directly we can supply different interface units to create the gearcut function.

**Question 6: Does the system support throttle blip?**
- Yes…. In firmware 1.2 the throttle blip function is implemented. If you have a unit with firmware older than 1.2 we can easily upgrade your TTT802 to the latest firmware.

**Question 7: Do I have to connect a separate fuse to the gearshift Controller?**
- Yes…. There must always be a fuse connected in series is with the power supply to the unit.

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**FAQ - Gearcut (Flatshift) using the TTT802 Gearshift Controller**

### Question 8: How is the start of a gearshift sequence detected?

- The Gearshift Controller detects the rotation of the barrel using a high resolution VGX sensor. When the programmed amount of motion is detected the gearcut is activated. When the new gear is near or in position the gearcut is deactivated. Each gear has its own sensitivity settings and the user can setup which gears that should be gear cutted shifting up, down, both up and down or not at all. In TTT802 firmware 1.2 throttle blip is implemented and can be selected in a similar way to gearcut selection.

- Some users might want a separate lever sensor to detect the start of the gear up shift sequence. Both digital proximity sensors or analog sensors like load cells, potentiometers etc. can be used. If the proximity sensor (TTT Part number 30-521-9) is fitted and the lever sensor is enabled in the Gearshift Controller setup then this sensor detects the start of the gear up sequence. If an analog sensor is used to detect the stick movement this analog sensor input has to be enabled in the Gearshift Controller setup and a limit for the trigger point has to be set. In both cases the barrel sensor still supervises the sequence and when the new gear is near or in position the gearcut is deactivated

### Question 9: How do I setup the different parameters in the Gearshift Controller?

- It is done by using a PC with RS232 communication port. You can download the TTT802 Manager PC program (for free). The program needs operating system Windows XP or later. All necessary information as well as the Windows application can be found on our website www.ttt-racing.com.

### Question 10: How do I calibrate the barrel sensor?

- The Gearshift Controller has a built in program sequence that allow for barrel sensor calibration. The procedure can be initiated within 10 seconds from power on and is very easily done. An instruction can be found in the TTT802 manual on our website www.ttt-racing.com

### Question 11: If I use the Launch Control function in the TTT802 can you supply a unit that allows for easy adjustment of the Start Rpm as well as the Ramp Time?

- Yes…. The TTT905 Quick Trim unit (TTT Part number 12-660-5) is a remote box that allows for very easy adjustment of these two settings. The unit has two potentiometers and when turning any of them the TTT802 Rpm bar temporarily turns into an indicator showing the potentiometers actual position. More info about the Quick Trim unit can be found in the TTT905 manual on our website www.ttt-racing.com

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**Question 12: Can you supply a ready to use cable harness?**

- Yes…. There is a professional cable harness for the Gearshift Controller available (TTT Part number 12-630-8). We can also manufacture cable harnesses to your specification. For customers who wants do make their own harness we can supply a kit with the 2 connectors fully assembled with 2 meter Raychem spec.44 cables (TTT Part number 12-627-2). There are also "add-on" harnesses that complements the standard harness 12-630-8 with cables and connectors for Blip and Launch Control (Quick Trim) functions.

**Question 13: Does the display intensity adjust with ambient light condition?**

- Yes…. There is a built in light sensor that automatically adjusts the display intensity up or down from a user set base intensity. For those who want we can also supply an easy to fit Sun Visor (TTT Part number 12-625-4).

**Question 14: When new software for the Gearshift Controller is released is there any update costs if I want to update my unit?**

- No…. We only charge for shipping and handling and a small fee for the job. The new software itself is supplied without any charge.

**Question 15: How can I get support?**

- If you cant find the answer to your particular question in the different documents on our website you can always email us and we will help you with highest priority. It is a good idea if you supply us with as much info as possible. Type of car, Motor, Gearbox, Ignition, ECU, TTT802 serial number and of course a good description of the "problem".