

## ABS Brake System Bleed Procedure

This is a description of brake bleeding for Sprint and Tiger models equipped with Nissin [ABS](#) brake systems. Initially the system is bled in the usual way but additional steps are required to flush old fluid (or air) from the ABS portion of the system. That is done by opening and closing the solenoids in the ABS modulator.

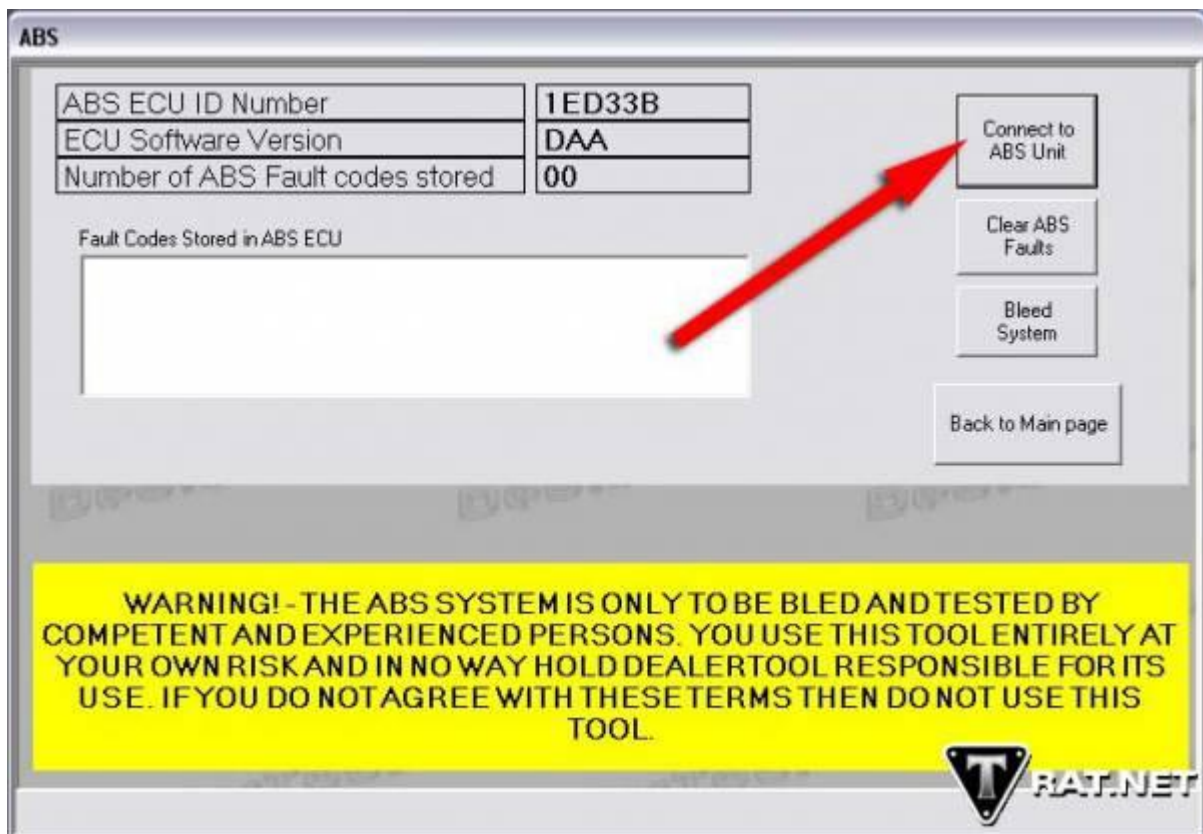
The ABS system has its own ECU linked to the bike's main ECU. To access the ABS ECU owners must either take their bike to a dealer, who will use the factory diagnostic tool, or we can do it ourselves using aftermarket software called [DealerTool](#). Communication is established via the OBD-II connector the same way as other diagnostic and maintenance operations (ABS uses Pin 1 of the J1962 data link connector).

[DealerTool](#) software can be used for maintenance and diagnostics. For owners of ABS equipped bikes who do their own maintenance it is worth the price for that feature alone. Current cost is UK £60 + shipping. That works out around US \$120 including worldwide shipping.

### Bleeding

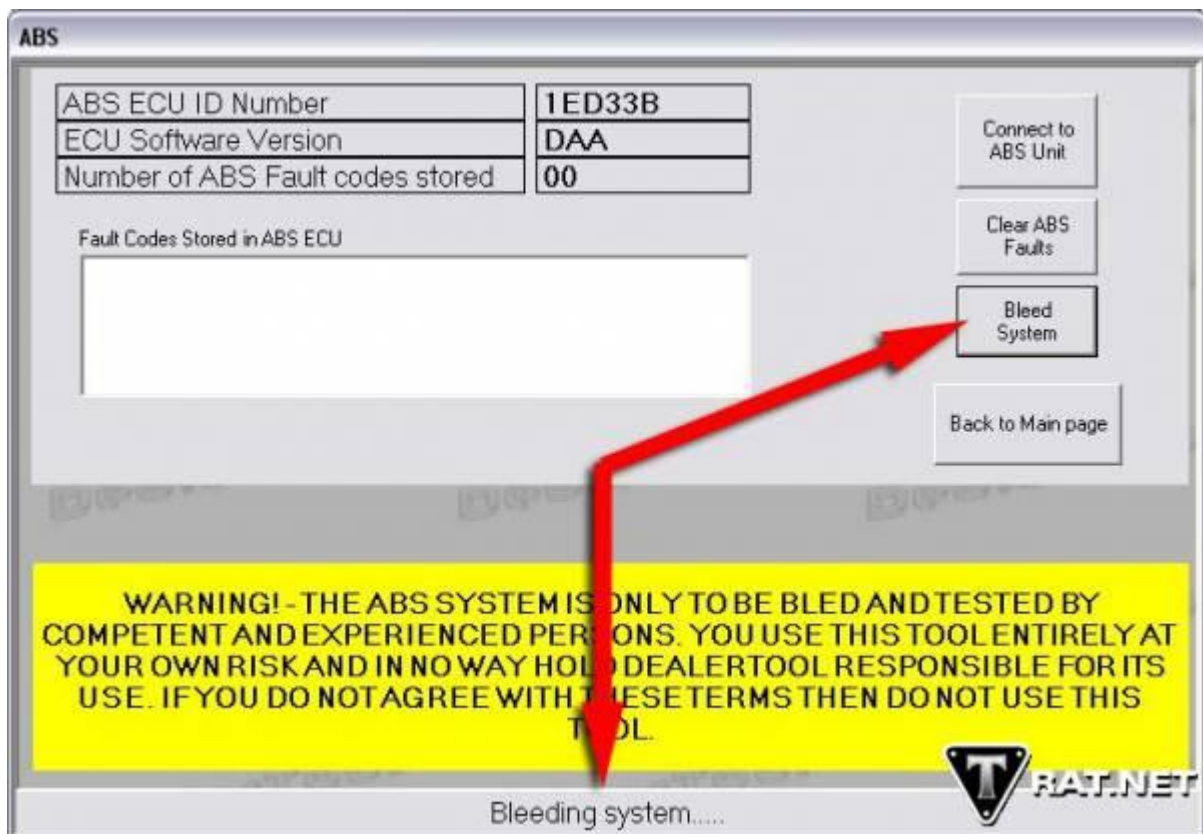
1 - The first stage is to bleed the brakes in the normal way until the old fluid (or air) is flushed out. On completion there should be pressure at the lever and brake operation should feel normal.

2 - Next we need to bleed the ABS portion of the system. That is done by opening and closing the solenoids in the ABS modulator. Connect the DealerTool cable to the diagnostic connector and establish communications with the ECU. From the menu bar select "**ABS**" then "**Connect to ABS Unit**".

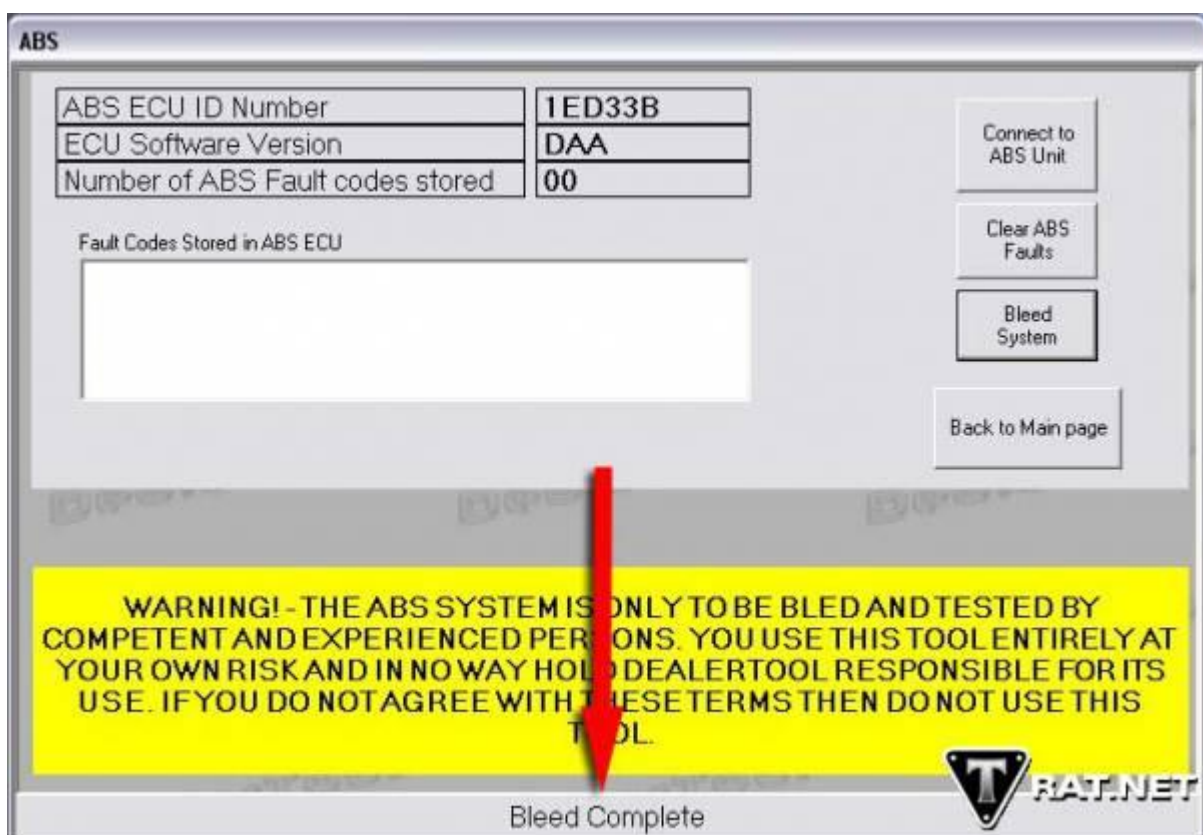


Above: in this screenshot there are no fault codes. Obviously any fault should be investigated and corrected before the stored codes are cleared.

3 - Apply pressure at the brake lever to pressurize the system then click "**Bleed System**" and release the bleed nipple. You may need some assistance to do all these things at once but I found there was enough delay after clicking "**Bleed System**" to allow me to open the bleed nipple before the solenoids were activated.



4 - When DealerTool displays a **"Bleed Complete"** message close the bleed nipple and release the brake lever. Activating the solenoids allows new fluid to circulate through the modulator. This operation should be repeated several times to ensure old fluid is thoroughly flushed. If the brake system has been stripped then repeat this step until no more bubbles emerge.



5 - Since we flushed out the old fluid from the ABS system it is now mixed with the clean fluid introduced during the first stage of the bleed process. To remove all traces of old fluid we need to go back and repeat the original bleed sequence. DealerTool can be disconnected and the brakes re-bled in the normal way.

6 - Repeat the whole procedure for the rear brake. The front and rear systems are independent but the process is the same for each.

#### Notes

Use only DOT4 brake fluid as recommended in the factory manual. Do not use DOT5 brake fluid. The higher number does not signify higher [performance](#). Silicone fluids are not suited to high-performance applications and are generally not recommended for ABS systems. [Read more](#).

With some ABS systems no special steps are required for bleeding as long as no air is allowed to enter the ABS modulator. With other systems there is a "dead" section within the ABS modulator that can only be flushed by opening the solenoids. I'm not familiar with the internal ports and valves of the Nissin ABS modulator fitted to Sprints and Tigers with the ABS option. However, the Triumph factory manual describes this procedure for routine bleeding so, to be safe, we have to assume the ABS system cannot be thoroughly bled without this procedure.

As long as no air enters the system ABS brakes can be bled in the usual manner with no ill effects in the short term. However, if old fluid remains in the system it will accumulate increasing moisture and deteriorate. In that case using the correct procedure to thoroughly flush out the old fluid will ensure maximum performance from the ABS system.



*Above: on a Sprint the Nissin ABS ECU and Modulator Unit is located behind the engine next to the rear shock. Access is not required for brake bleeding.*

#### DealerTool

This useful piece of software has been around for a while although many owners of ABS equipped bikes are not aware of it. I bought mine about 2 years ago. The ABS module was added to [DealerTool](#) at end of 2009 and offered as a free upgrade to existing owners.

[DealerTool](#) can be used for maintenance and diagnostics. It will display sensor values, read and clear error codes, perform tests and balance TBs. [DealerTool](#) is the only tool for those who want to thoroughly bleed their ABS brakes without a trip to a dealer and so it remains an essential part of my toolkit. Current cost is UK £60 + shipping for software, cable and access key for one bike.