

This Info Is From MilkeyWay of Japan, A Trusted Source For ABS Brain Repairs

<http://bmwk10075abs1fix.web.fc2.com/>

Things to do *before* you send your ABS brain to me for repair work.

This information is for ABS1 brain (ECU), ABS2 is at the bottom of this page.

Questions about your ABS Brain error.

Following A1 and A2 are prerequisite for successful ABS operation and to pass initial brain self test.

A1. Have you checked that your bike's battery is healthy and fully charged using a volt meter ?

It should measure over 11 volts if it is healthy with the ignition ON, headlight ON, brake light ON but the engine is not running.

A weak Battery can cause error code 6 (six) or 7(seven) so if your error is six or seven I recommend you first fully charge your battery then reset (erase) the ABS brain error memory and check if the error still exists when powered by the fully charged battery,

if the error has gone then you are lucky!

A2. Have you checked for any dirt or corrosion on the plug and socket of the 25 pin connectors on both the abs brain itself and the plug, in other words the male and female portion of both connectors? If you found any, please clean them with DeoxIT <http://store.caig.com/> contact cleaner and repeatedly insert and disconnect them 5 times give them another clean and then reconnect and try to reset the error, then see if the error has gone, if it has you are lucky!

A3. Have you confirmed that you could read an error code at pin#2 of the diagnostic plug ?

If you have not checked and recorded it, please check it either with LED or an analogue tester because if you can read an error code it means that I can almost always repair it.

How to identify an error code is written on section 2 of the [home page](#) . If you feel it is too difficult for you to read the code yourself, go to a dealer and ask them to read the code and write down what the error code they find is.

A4. Have you tried to reset the error using the process written below ?

You must satisfy two conditions to have a successful error reset.

First the ABS cancel switch of your K bike must be in working order,still connected and no corrosion .

The second is you must make a good ground connection from diagnostic pin #2 to a good frame ground or battery negative(Earth).

If your diagnostic pin #2 is corroded, you cannot make a good ground connection.

Follow the reset steps below to have a successful reset .

Test the abs cancel switch while the brain error state is present and the ignition is ON, push the abs cancel switch, If you can see the abs error lamp and bulb monitor warning lamp change state from flashing to staying ON then your abs cancel switch is good.

If you cannot see any change, then your abs cancel switch may need repair or contact cleaning. Please repeat this check to make sure your switch repair or switch clean was successful.

Some of my customers have said that they were unable to reset their error; however I suspect that a bad contact at their

abs cancel switch or imperfect pin#2 grounding were preventing them resetting it. Use DC current meter as described following Error reset step 2 to cope with the ambiguous grounding .

Error reset steps.

Please do these steps with your own risk. Following procedure can break or burn your current meter if you connect it to wrong place.

1. Ignition OFF
2. Connect diagnostic pin#2 and battery negative with a DC current meter or tester or DMM , if you have such a meter , on DC 5 to 10mA range, Positive lead to pin#2 and negative to battery negative. If you don't have DC current measurement meter then connect with a wire.
3. Keep pushing ABS cancel button on the console and turn ON ignition switch.
4. If you are using a tester or meter for step 2 above, the reading will be between 0.9 mA and 1.3 mA if the connection is good. If you are not using current meter then pray for that you made a good ground connection.
5. Keep pushing the ABS cancel button for 10 seconds or more.
6. Turn OFF ignition.
7. Remove pin#2 connection.

If your reset was successful you will get steady (no dip at all) 10 volt or more voltage at pin#2 of diagnostic plug when ignition is ON.

*If you cannot reset your brain with above method but you can if you extend the hold time while doing step 5 above for more than 10 seconds that means your brain has some defective inside. the brain needs repair.

If your answer is NO to any of above question A1 through A4 then take action to check it and continue to Repair conditions section below.

If your ABS error code is one or two or both , I recommend you to perform active modulator test from [here](#).

If you are sure you have checked all of the things like corroded connections from the sensors and at the big plug into the brain, measured the correct gap at the sensors, done your reset process correctly as above but the fault comes back sometime after the reset, then your abs brain is probably defective.

B. Repair conditions and warranty.

Legal stuff

I will do the repair of the ABS with the greatest caution, but because of structural defects, the braking force can become zero in certain failure of ABS.

Therefore, when you ask me to repair the ABS, you must agree to give legal immunity to me.

End legal stuff

I sometimes find that the unit sent to me for repair is badly rusted or corroded due to the rain entered inside of the unit and stayed for long time in the box. To confirm and avoid your non repairable unit sending, please remove the bottom four screws securing the lid and observe if there is any trace of rain or water inside of the box or rusted or corroded circuit.

If that is the case with your ABS brain, sorry but it is impossible to repair that unit (brain).

The brain for four valve K bike is more vulnerable to this situation.

Following is the sample image of corroded circuit. you don't have to withdraw the circuit board to check its condition . just observe the circuit board after you removed the bottom lid.

whitish area indicates the trace of rain/moisture damaged area.



Please let me know if you have a problem with any of the following and we can discuss it.

1. It takes normally between one week and up to a maximum of 40 days from receipt of your brain to fix it and then mail it back to you.
2. Air mail will be used to return your ABS brain.
3. Payment must be made to my PayPal account as soon as I notify you of the completion of the repair work. I will not send your brain back until you have paid in full. Sorry but **I cannot accept your repair request if you cannot pay me through PayPal account.**
4. The repair fee is Yen 18,000 that includes parts, labour, 180 days warranty and air mail return postage.
5. The repaired brain carries a 180 days limited warranty. That is, if the brain reproduces an error during that period and provided you pay the round trip postage I will repair the brain at no extra charge. So far I am pleased to say nobody has had to return one to me for warranty repair.
6. If after I have gone through 5 days of testing and I cannot reproduce the error you described I will discuss the course of action with you and determine how to proceed. To avoid this delay it is vital for you to do the checking, reset, and error code readout in step A1 thru A4 above.
7. In general most parts I use in the repair are brand-new genuine parts.

For your Information the repair process I follow is:-

1. On receipt of your ABS brain I visually examine it for signs of mechanical or water damage.
2. I make a record of your ABS brain details and put ID tags onto the exterior and onto the circuit board so that they will not be mixed up with others. I then add a record to my repair database; this record can be used in future just like a medical record.
3. I then check your ABS brain's conditions using my monitoring tools to see how bad it is and I add the initial diagnosis to the record database.
4. I then hook-up my logic analyser and conduct a full diagnosis of exactly which electronic component/s is/are faulty.

This is the process that I believe no other repairer can parallel because a typical repair shop doesn't have this equipment nor do they have the circuit diagram and code listings that I have. I have these and can do it because I have worked on R&D on embedded system very similar to the ABS brain.

5. I replace the bad component/s re-check the unit and add a record to the database.
6. I repeat step 4 and 5 until all errors are fixed.
7. I then again hook-up the monitoring tool and monitor the brain for at least 48 hours to see if another fault shows up. If any error condition occurs it will be fixed by again going step 4 thru 6 and documenting the results. This process is designed to make hidden errors appear so they can be repaired. I then check for proper error detection and function of error codes 1,2,3,4,5,6,7 and 8.
8. I then put the ABS brain on to my K100RS and check for actual ABS activation and check that no error occurs during and after the ABS activation.
9. If all of the above steps are OK I pack the brain , notify you the work is finished, make a detailed receipt for the repair charge, include it in the package and add a record to the database.
10. The brain will be mailed out to you via air as soon as I receive payment.

If you decide to have your ABS brain repaired send me an email to k100abs@gmail.com

In the email:-

Tell me your name , your country of residence, the detail of the bike you have and a brief history of the ABS error and which if any parts were replaced. In return, I will send you my postal details, address and the approximate number of days needed to repair it. it.

You can ride your K bike while the brain is out of your K for repair work. You will see the red ABS lamp will stay ON but there is no need to worry about it . It just tells you the brain is not installed. Your brake will work exactly the same as a K bike but **without** ABS capability until you replace the ABS brain back in.

Following are some tips on how to send your ABS brain to me:-

1. Using small parcel air mail will probably be the lowest cost method to send it. Please use registered mail Express Mail Service(EMS) or courier with track and trace to enable you to track the parcel.If you use some other service rather than EMS and you use a home-made address label please write "AIR MAIL" on it in red and LARGE letters to avoid your parcel going by ship,as that can take a long time to get here.
2. Do not enclose cash with the ABS brain please .
3. To save you cost use light weight material to pack round the unit so as to protect it from damage and use a

small box so that the final packed weight is as small and light as possible.

4. While filling in the Customs form, please do not write the value of package as being over 15,000 Yen or I will have to pay import duty at this end on arrival and if that happens then you will have to pay that duty.

5. It normally needs around 7 to 10 days to arrive here. Using EMS is a bit faster, plus it is traceable and insured

6. Please send me an email telling me when you send your ABS brain to me also please tell me the tracking number.

If you are from the USA , I recommend you to use USPS Priority Mail box 1096L. Please tell me if this information is not correct.**.

Thank you.

This information is for ABS2 brain.

Things to do *before* you send your ABS2 brain to me for repair work.

Updated on June.5,2016

I have checked many ABS2 ECU which was sent to me as error 7, but only one of them was really defective so I would like to change the form of repair of ABS2 ECU.

Starting today, The ABS2 ECU that can be accepted for repair is the one that indicates error 5,6 or 7 and the error can be cleared as you reset it and the error recurs a few seconds after you turn ON the ignition.
Do not try to start the engine while you are doing above ECU check.

If your ECU meets above condition, please send the ECU portion (enclosed in the cast aluminum case) only
Do not send hydro portion, I cannot repair it and sending it will just cost you a lot of money.

BMW bike models that equipped with ABS2 are late K1100RS, late K1100LT, R850R, R1100RT,GS, R, RS, S, early (R1150GS, K1200RS, R1200C) and the appearance is as the following photo.

The front aluminum box is the ECU portion and is fixed to the hydro-unit seeing on rear ..

You need a special driver called Tri-wing and the size is #5 to loose the ECU securing screws. Two more screws are on the backside of hydro-unit.

When you separate the ECU portion from the hydro-unit be sure to pull the ECU straight toward you because as you see in the photo,

there is a connector at the bottom of each side, so pull the ECU gently toward you.



A. Questions about your ABS Brain error.

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How to identify an error code is written on section 2 of the [home page](#) . If you feel it is too difficult for you to read the code yourself, go to a dealer and ask them to read the code and write down what the error code they find is.

A2. Have you tried to reset the error using the process written below ?

Please refer to the description shown on this link page: <http://www.largiader.com/abs/absfault.html>

A3. Have you checked that your bike's battery is healthy and fully charged using a volt meter ?

It should measure over 12 volts if it is healthy with the ignition ON but the engine not running.

A weak Battery can cause error code 5, 6 or 7 so if your error is five to seven I recommend you first fully charge your battery then reset (erase) the ABS brain error memory and check if the error still exists when powered by the fully charged battery,

if the error has gone then you are lucky!

A4. Have you checked for any dirt or corrosion on the plug and socket of the 25 pin connectors on both the abs brain itself and the plug, in other words the male and female portion of both connectors?

Unlike ABS1 ECU, this type of ECU supply huge current to hydro clutches **through only pin# 14 of the 25 pin connector**, please check or clean especially this 14 pin .

If you found any, please clean them with DeoxIT <http://store.caig.com/> contact cleaner and repeatedly insert and disconnect them 5 times give them another clean and then reconnect and try to reset the error, then see if the error has gone, if it has you are lucky!

If your answer is NO to any of above question then take action to check it and continue to Repair conditions section below.

If you are sure you have checked all of the things like corroded connections from the sensors and at the big plug into the brain, measured the correct gap at the sensors, done your reset process correctly as above but the fault comes back sometime after the reset, then your abs brain is probably defective.

B. Repair conditions and warranty.

Legal stuff

I will do the repair of the ABS with the greatest caution, but because of structural defects, the braking force can become zero in certain failure of ABS.

Therefore, when you ask me to repair the ABS, you must agree to give legal immunity to me.

End legal stuff

Please let me know if you have a problem with any of the following and we can discuss it.

1. It will take up to a maximum of three weeks from receipt of your brain to fix it and then mail it back to you.
2. Air mail will be used to return your ABS brain.

3. Payment must be made to my PayPal account as soon as I notify you of the completion of the repair work. I will not send your brain back until you have paid in full
4. Please inquire the repair cost along with your ABS error history by email..

5. The repaired brain carries a 180 days limited warranty. That is, if the brain reproduces an error during that period and provided you pay the round trip postage I will repair the brain at no extra charge. So far I am pleased to say nobody has had to return one to me for warranty repair.

6. If after I have gone through 5 days of testing and I cannot reproduce the error you described I will discuss the course of action with you and determine how to proceed. To avoid this delay it is vital for you to do the checking,reset, and error code readout in step A1 thru A4 above.

7. In general most parts I use in the repair are brand-new genuine parts.

8. Unlike ABS1 brain, ABS2 brain uses many custom made parts and they are not possible to obtain nowadays so there will be the case that I could find the defective but cannot repair it because of the parts availability.

C. For your Information the repair process I follow is:-

1. On receipt of your ABS brain I visually examine it for signs of mechanical or water damage.
2. I make a record of your ABS brain details and put ID tags onto the exterior and onto the circuit board so that they will not be mixed up with others. I then add a record to my repair database; this record can be used in future just like a medical record.
3. I then check your ABS brain's conditions using my monitoring tools to see how bad it is and I add the initial diagnosis to the record database.

4. I then hook-up my logic analyser and conduct a full diagnosis of exactly which electronic component/s is/are faulty. This is the process that I believe no other repairer can parallel because a typical repair shop doesn't have this equipment nor do they have the circuit diagram that I have.
I have these and can do it because I have worked on R&D on embedded system very similar to the ABS brain.

5. I replace the bad component/s re-check the unit and add a record to the database.
6. I repeat step 4 and 5 until all errors are fixed.
7. I then again hook-up the monitoring tool and monitor the brain for at least 48 hours to see if another fault shows up. If any error condition occurs it will be fixed by again going step 4 thru 6 and documenting the results. This process is designed to make hidden errors appear so they can be repaired. I then check for proper error detection and function of error codes 1,2,3,4,5,6,7 and 8.

8. If all of the above steps are OK I pack the brain, notify you the work is finished, make a detailed receipt for the repair charge, include it in the package and add a record to the database.
9. The brain will be mailed out to you via air as soon as I receive payment.

If you decided to have your ABS brain repaired send me an email to k100abs@gmail.com

In the email:-

Tell me your name, your country of residence, the detail of the bike model number (VIN) you have and a brief history of

the ABS error and describe if any parts were replaced. In return, I will send you my postal details, address etc.

You can ride your bike while the brain is out of your bike for repair work. Your brake will work exactly the same as a bike but **without** ABS capability until you replace the ABS brain back in.

1. Please use courier with track and trace to enable you to track the parcel.
2. Do not enclose cash with the ABS brain please .
3. To save your cost use light weight material to pack round the unit so as to protect it from damage and use a small box so that the final packed weight is as small and light as possible.
4. While filling in the Customs form, please do not write the value of package as being over 10,000 Yen or 100 USD or 100 Euro or I will have to pay import duty at this end on arrival and if that happens then you will have to pay that duty.
5. It normally needs around 7 to 10 days to arrive here..
6. Please send me an email telling me when you send your ABS brain to me also please tell me the tracking number.

Thank you.