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Abrites Diagnostics for Subaru
User Manual

Version: 1.3

www.ABRITES.com

List of Revisions			
Date	**Chapter**	**Description**	**Revision**
01.OCT. 2015	ALL	First version of the document.	1.0
19.FEB. 2016	6	Added new diagnostic and service features	1.1
20.JAN. 2019	6	Key learning for Smart keys and ECM registration	1.2

1. Introduction

The "Abrites Diagnostics for Subaru" is a personal electronic device and online server based diagnostic software for Subaru vehicles. With the help of this software you can perform complete diagnostic operations of all vehicles produced by the brand.

For proper operation of your diagnostic software you will need a corresponding interface for connection between your PC and vehicle named "AVDI". The usage of the software requires the device it is installed on (i.e. personal computer) to be connected to the Internet.

AVDI is an interface produced by Abrites Ltd. intended to act as an interface between the PC and the electronic control units within the vehicles.

Your AVDI should be used with ABRITES software produced by Abrites Ltd.

ABRITES is a trade mark of Abrites Ltd.

2. Getting started

The Abrites diagnostics for Subaru is installed together with the software applications as a part of the installation provided to the user with the e-mails sent.

You can start the Abrites diagnostics for Subaru from the Quick start icon, installed on your desktop upon installation of the Abrites diagnostic suite. You will be able to start it by clicking on the brand logo.

3. Using the Abrites diagnostics for Subaru

Once the Abrites diagnostics for Subaru software is selected the user will see the following screen:
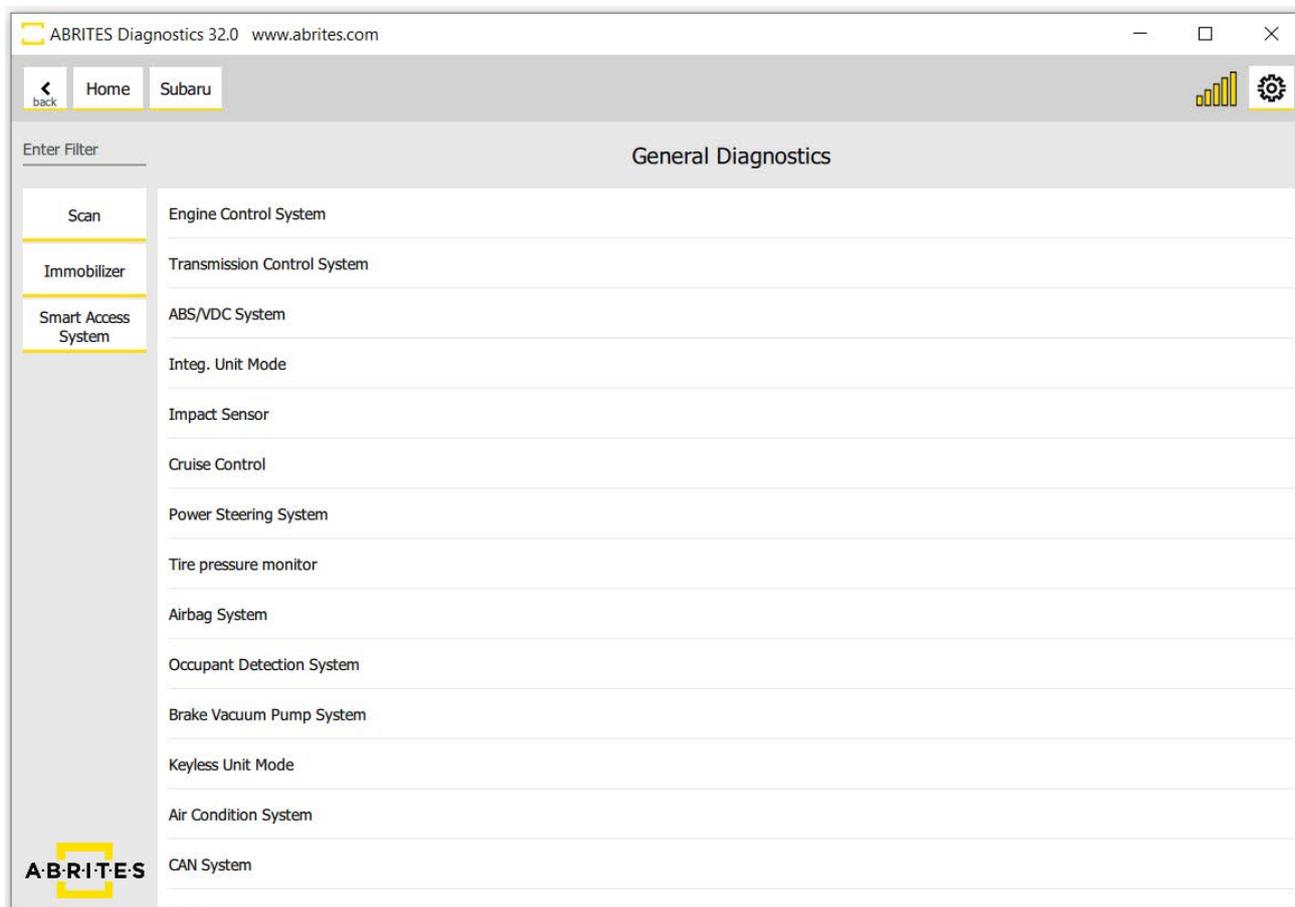
In this screen the user will be able to scan all the modules available for the vehicle that is being tested. Once the modules are tested the user will see the installed electronic modules.
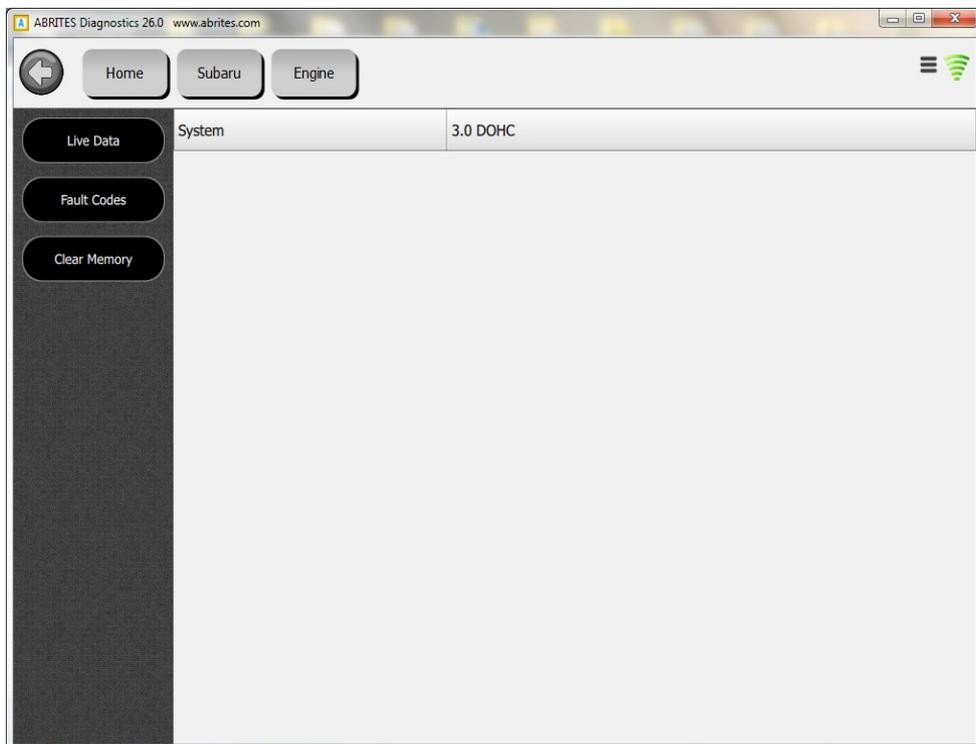
3.1 Reading and clearing diagnostic trouble codes

When clicking the scan button the software will begin scanning the vehicle.

Once the scan is complete the electronic control modules in the vehicle will be displayed.
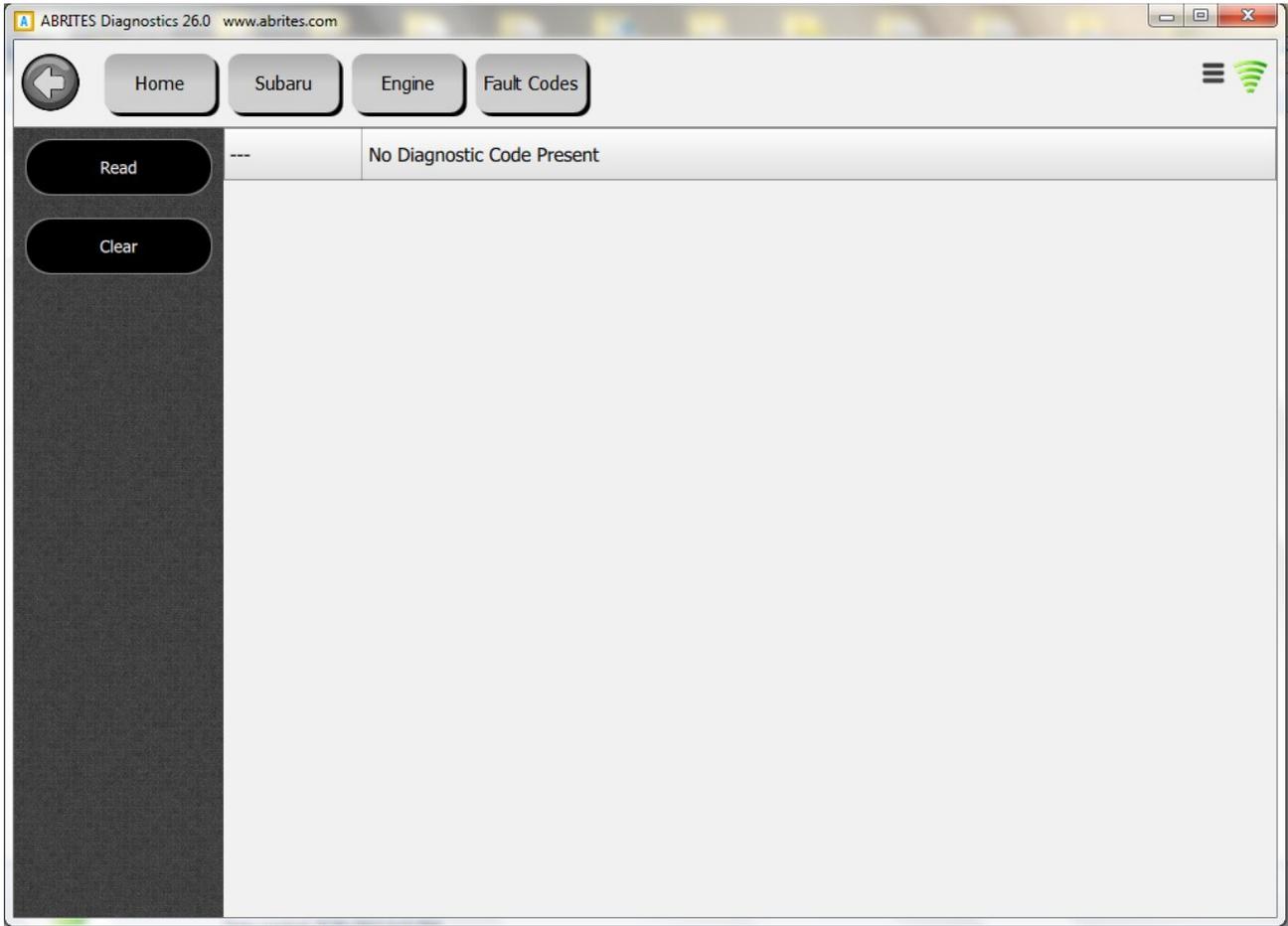
Once the scan is complete the user can enter an electronic module by clicking on it.

When Clicking the "Fault codes" button you will be able to see the present fault codes for the vehicle and the details related to them.

When clicking on "Clear memory" the fault codes will be deleted:

3.2 Live data display

Live data from all the available modules can be viewed and analyzed from all the sensors within the available modules for the vehicle.

When you select the electronic unit you want to view the live data for you can select it and press the "Live data button":

The live data values will be displayed:

ABRITES Diagnostics 32.0 www.abrites.com	— □ ✕

name	value	unit
✓ Trip Count	3642	Time
✓ Count	Common	
✓ Time Count	281300	ms
✓ Learned Ignition Timing	0.0	deg
✓ Accel. Opening Angle	12.2	%
✓ CPC Valve Duty Ratio	0	%
✓ TGV Position Sensor R	0.00	V
✓ TGV Position Sensor L	0.00	V
✓ No. of EGR steps	0	STEP
✓ ALT Duty	68	%
✓ VVT Adv. Ang. Amount R	0	deg
✓ VVT Adv. Ang. Amount L	0	deg
✓ OCV Duty R	0.0	%
✓ OCV Duty L	0.0	%
✓ OCV Current R	0	mA

Buttons on left: Select None, Show Selected

Top navigation: ‹ back | Home | Subaru | Engine Contro... | Live Data

4. Key learning

Key learning will allow the user to perform key learning for the vehicles. Please make sure that an external power source is connected and select the Key learning option.
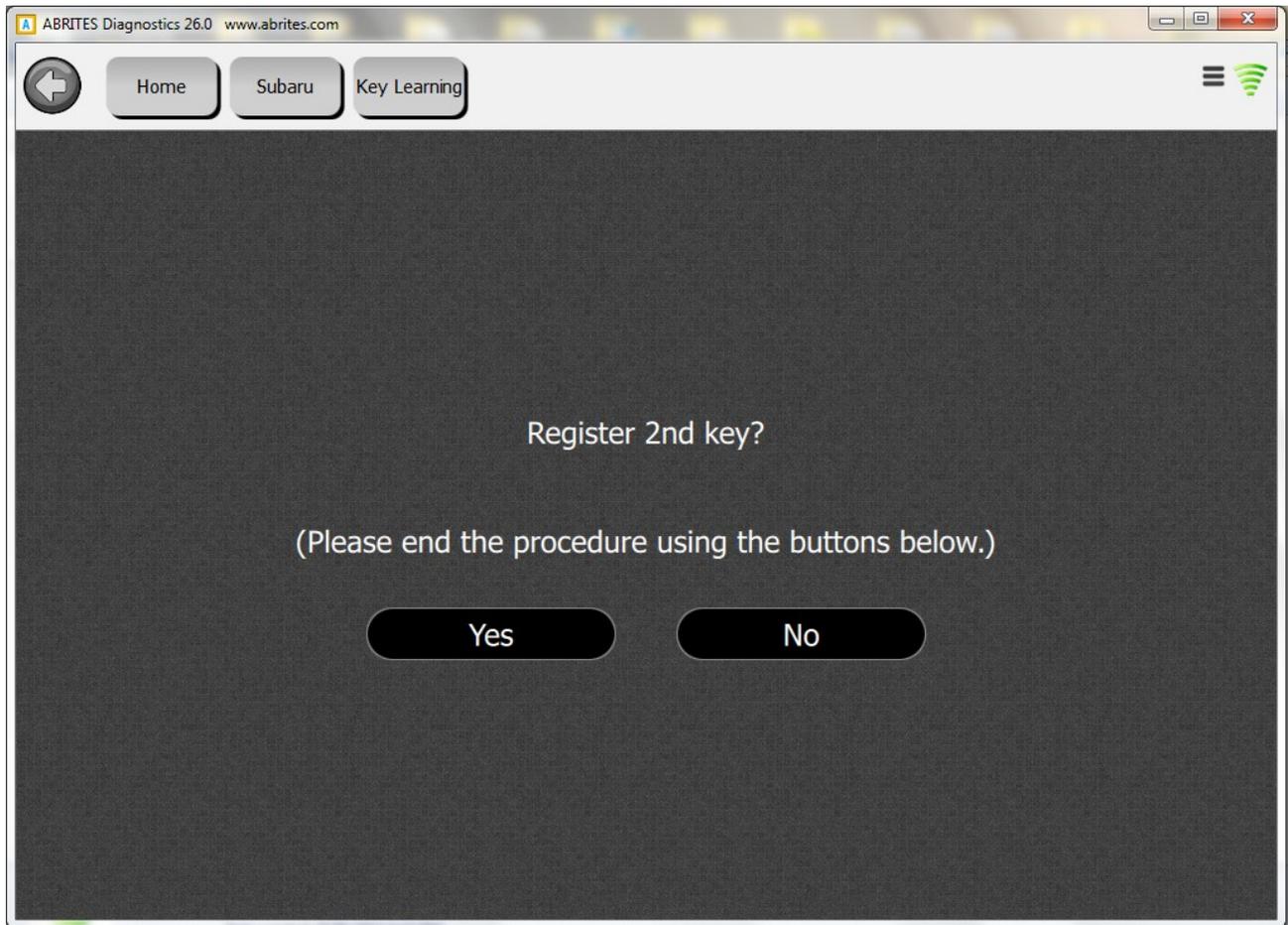
Abrites diagnostics for Subaru will ask you to insert the key and turn the ignition ON, then press OK:
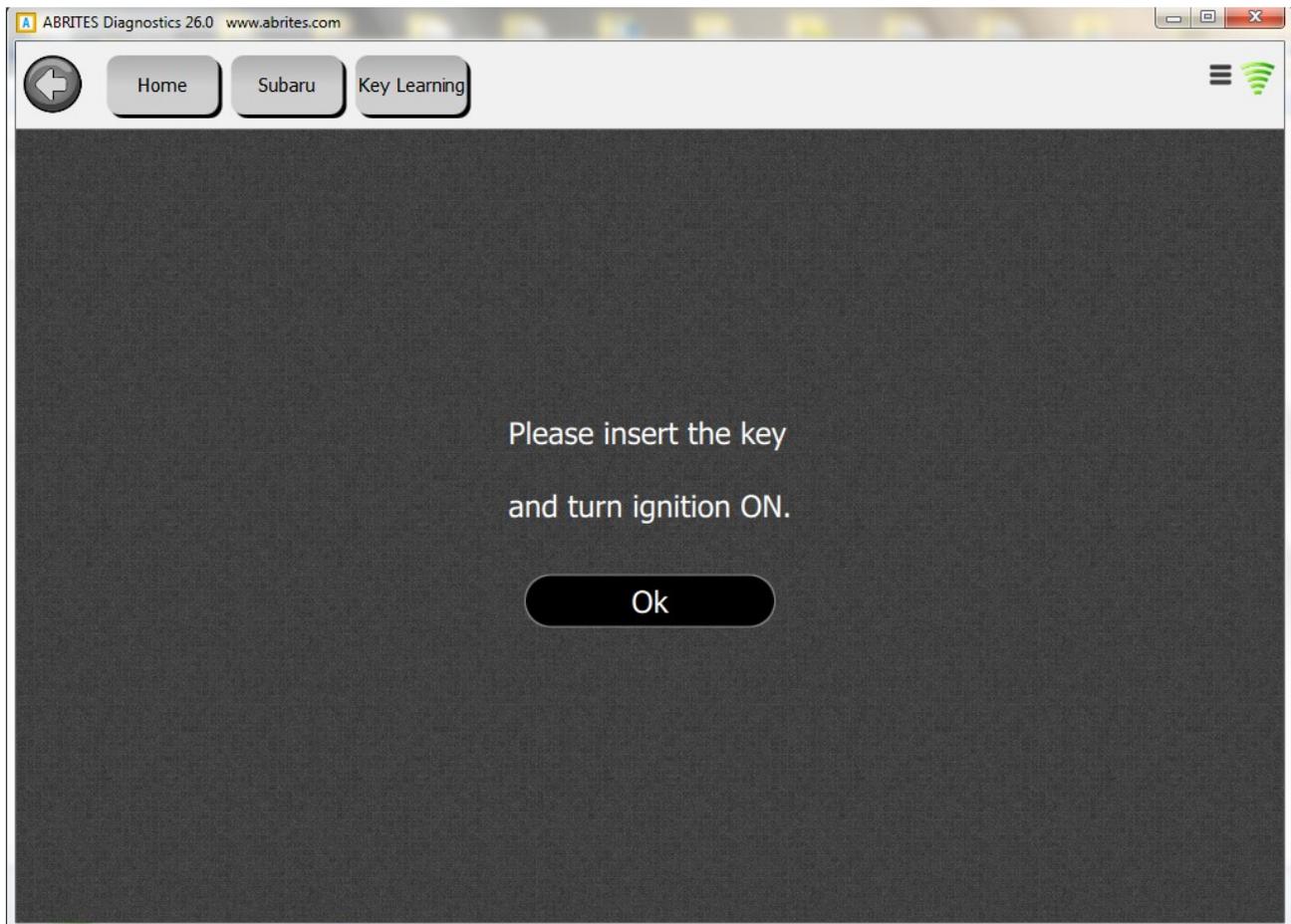
It will start communicating to the vehicle and after a while it will show the "Registering key" message:
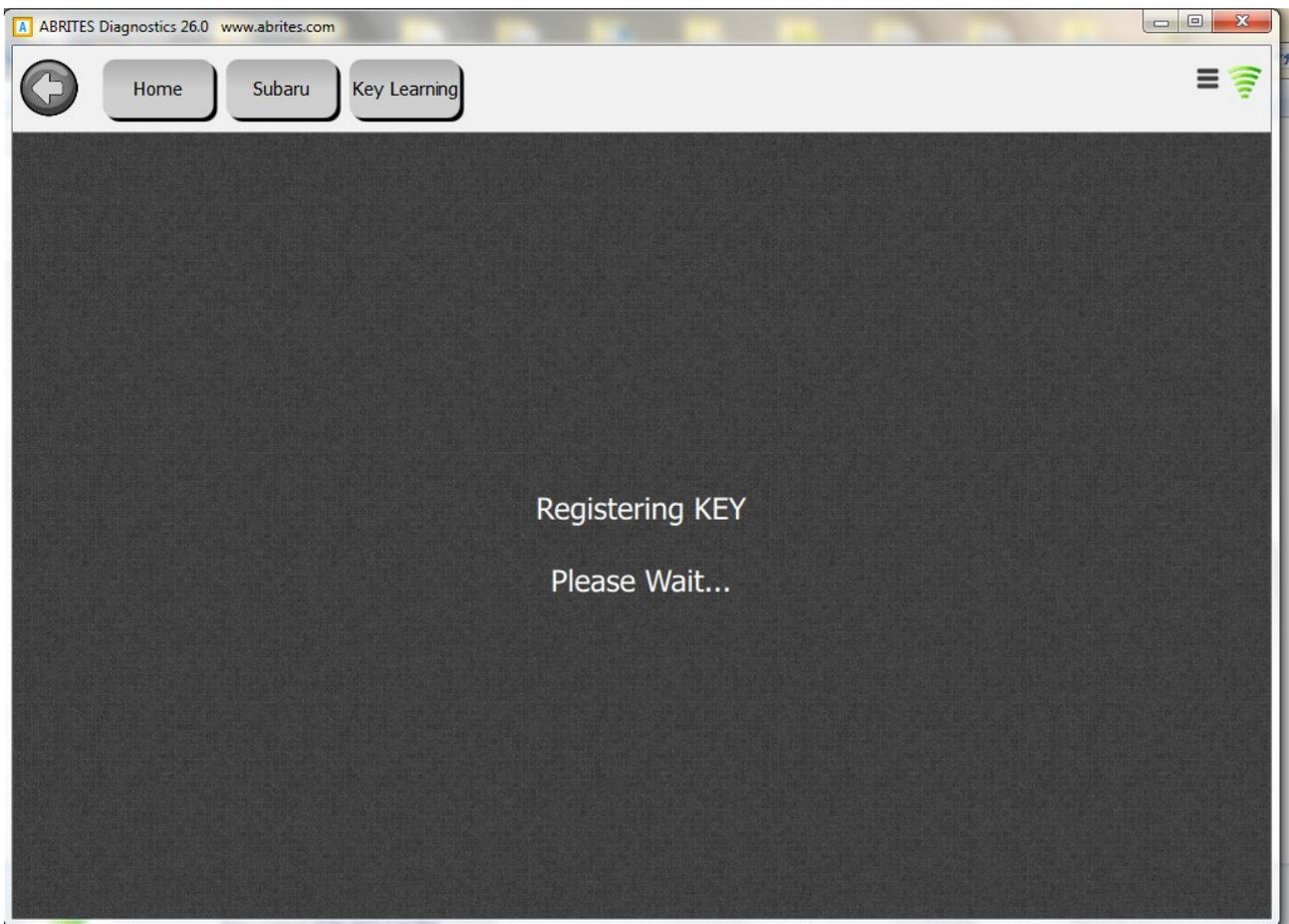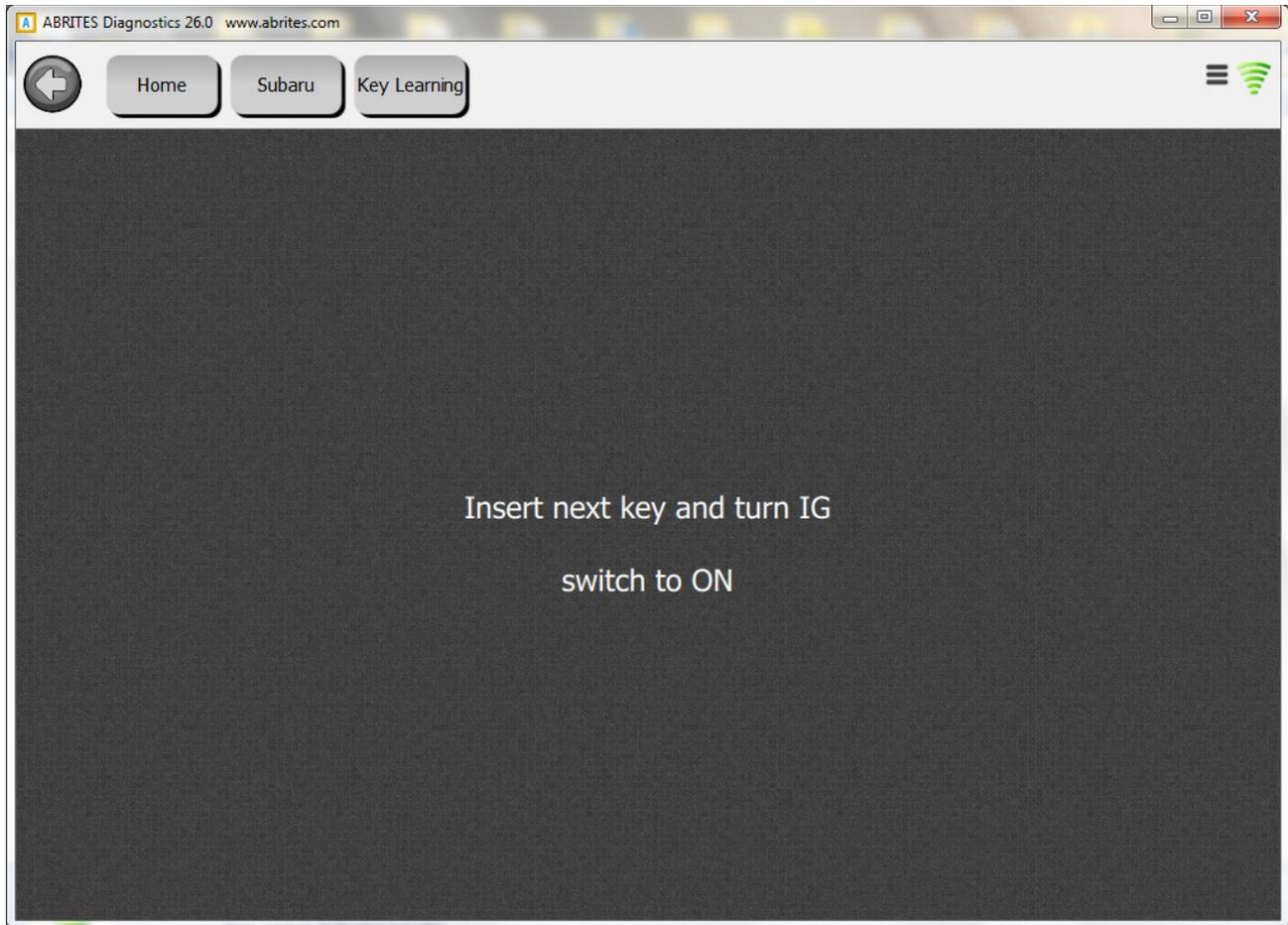
The software will then ask if you would like to register a second key:
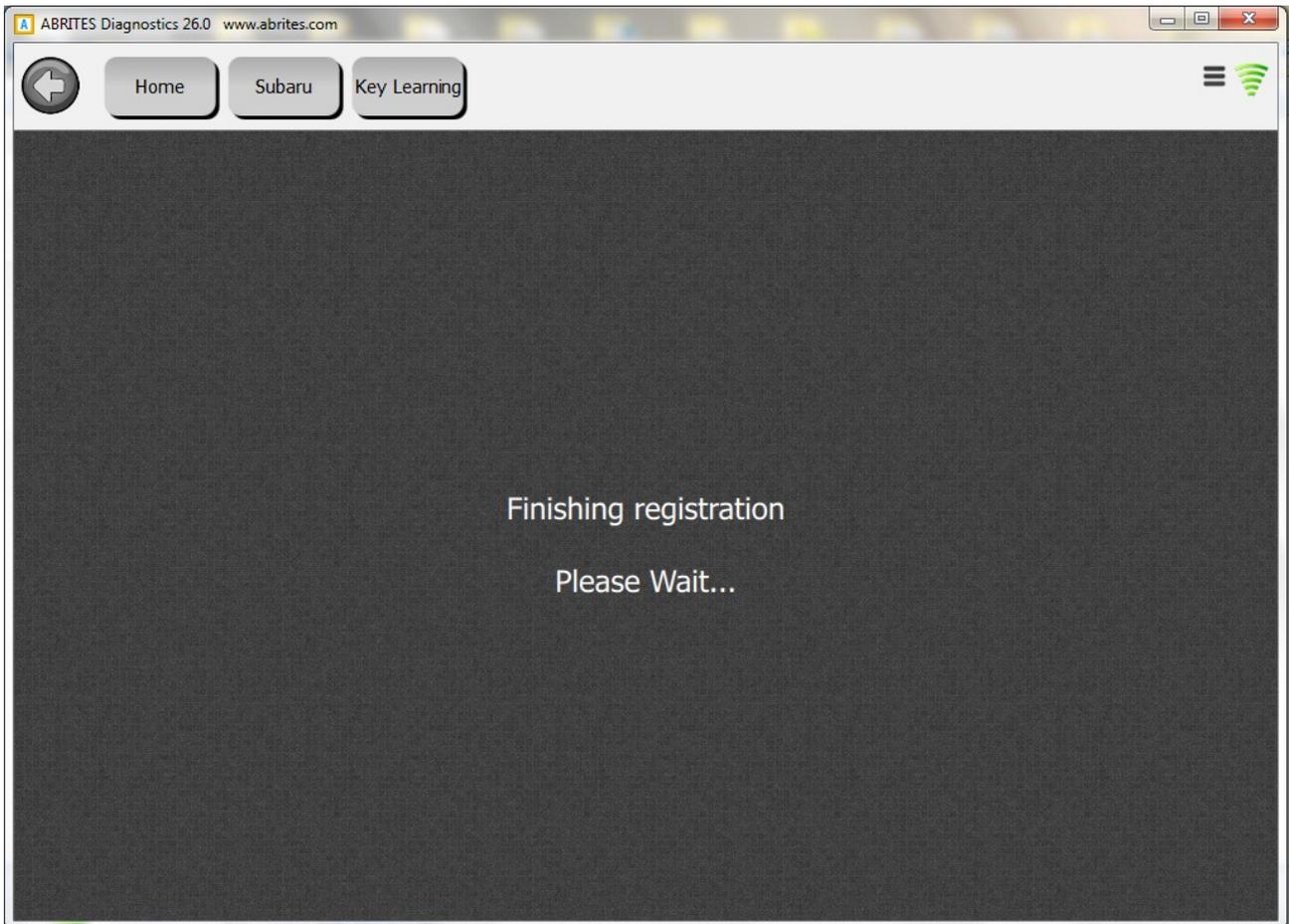

You can click yes if you will register a second key or no if will not.

If you say yes this message will appear:

Once you complete the registration you will have this message. Please allow the software to complete the registration:


Now the keys should start the vehicle.

5. Injector codes reading and registration

Reading and registering Injector codes is very important when the user is faced with the needs to replace the Subaru diesel injectors. This is done by entering the Engine control unit's menu:

Home	Subaru	Engine

Country	Japan
Manifacturer	FHI - Fugi Heavy Industries, Gunma, Japan
Vehicle Type	Passenger Vehicle
Year	2011
Line Type	Forester
Body Style	3rd gen. Legacy/Outback Wagon/Impreza Hatch
System	2.0 DIESEL
Model Identifier	
Restraint Type	
Year	2011
Plant And Transmission Type	FHI - Full-time AWD 5MT
Production Sequence	Legacy Sedan

Sidebar buttons: Live Data, Fault Codes, Clear Memory, Injectors

Once that is done the user should select "INJECTORS" and read the injector codes. Then they should be saved.

After that the user should go to the Injector or engine replacement field and type in the new codes (read from the injectors themselves).
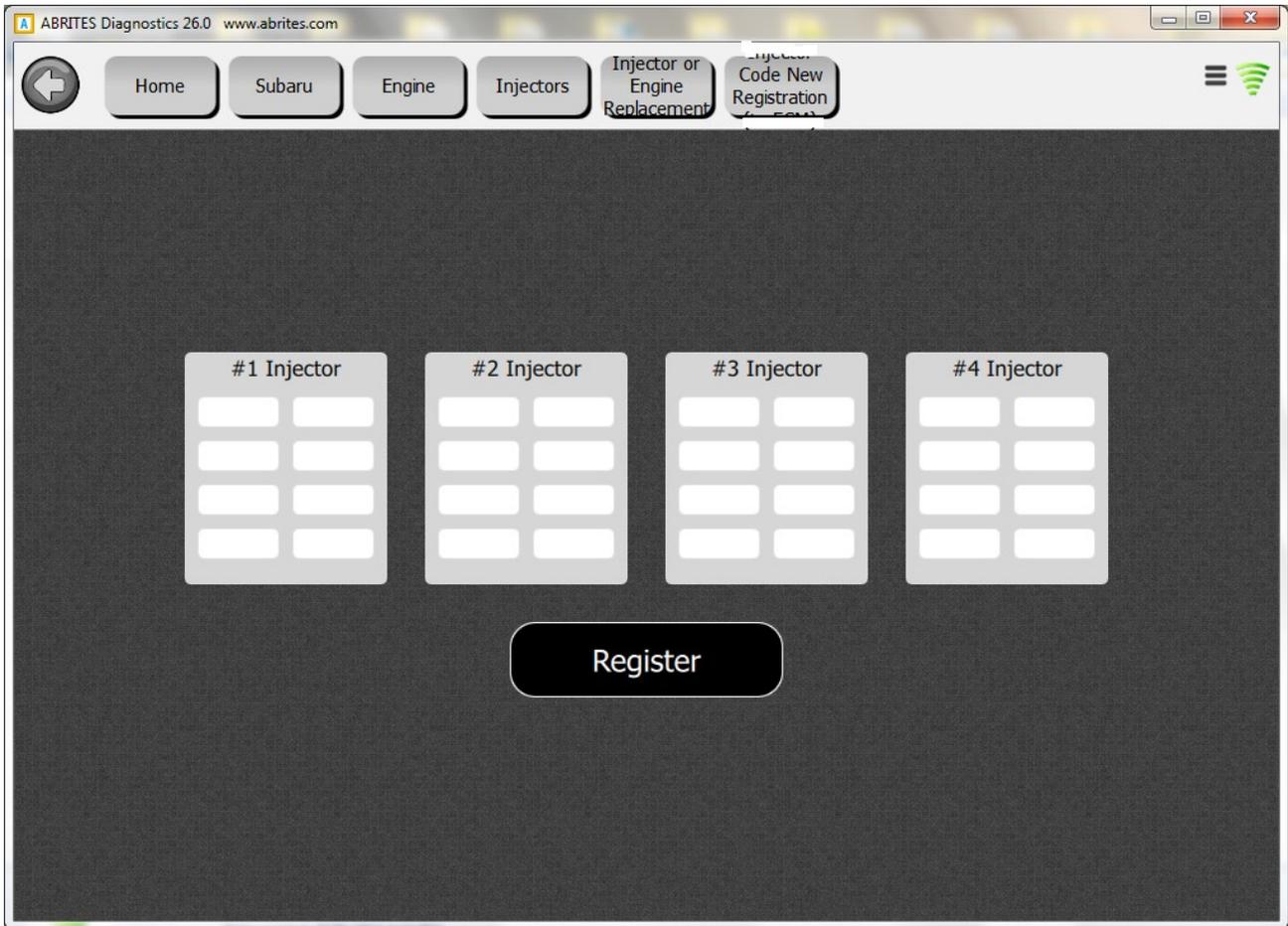
The injectors should be registered and the vehicle will start.

6. DPF Regeneration, EGR valve calibration and other service functions

The Abrites diagnostics for Subaru now supports more and more service functions useful to many customers who work at a workshop specializing in Subaru vehicles. The Abrites diagnostics for Subaru is available to perform at an OEM level with significantly better speeds.


6.1 DPF regeneration

Many diesel vehicles produced by Subaru had no access to what is reffered to as Forced regeneration after a DPF cleaning. Now this is done by OBD with a simple click. The process takes
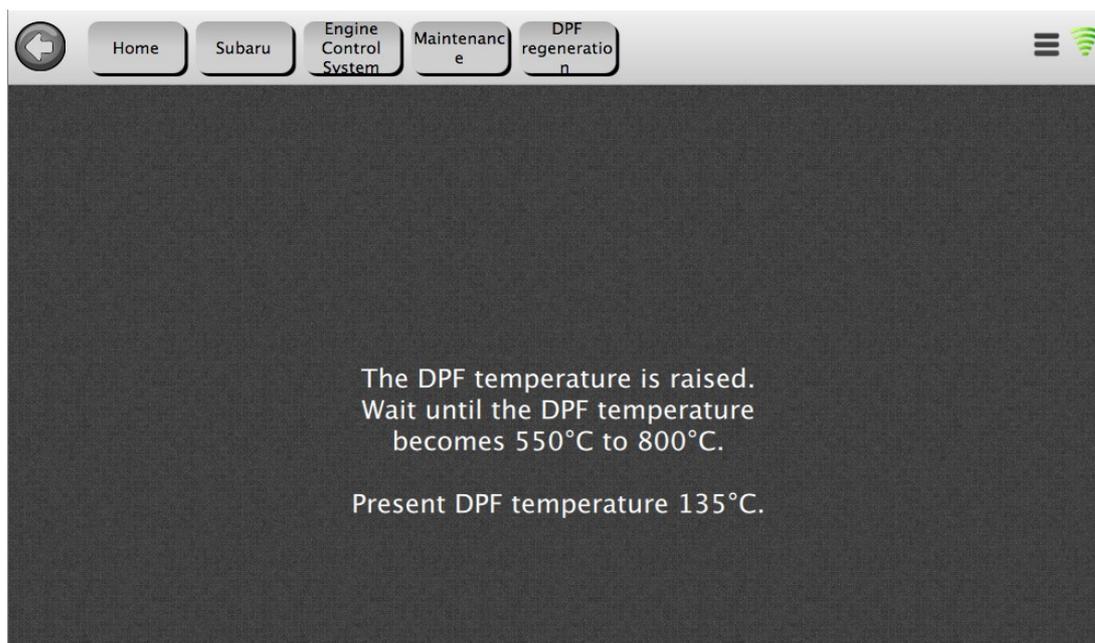
between 10 and 20 minutes, depending on the temperature of the DPF and the amount of soot residue.

7. SMART ACCESS SYSTEM

Using this function you will be able to add one key, perform all keys lost, Immobilizer and Smart system reset, replace ECM, replace Smart ECM, read the number of the access keys registered to the vehicle. This is done easy and allows you to do all of the above via OBD. No need to remove the Smart systems from the vehicles.
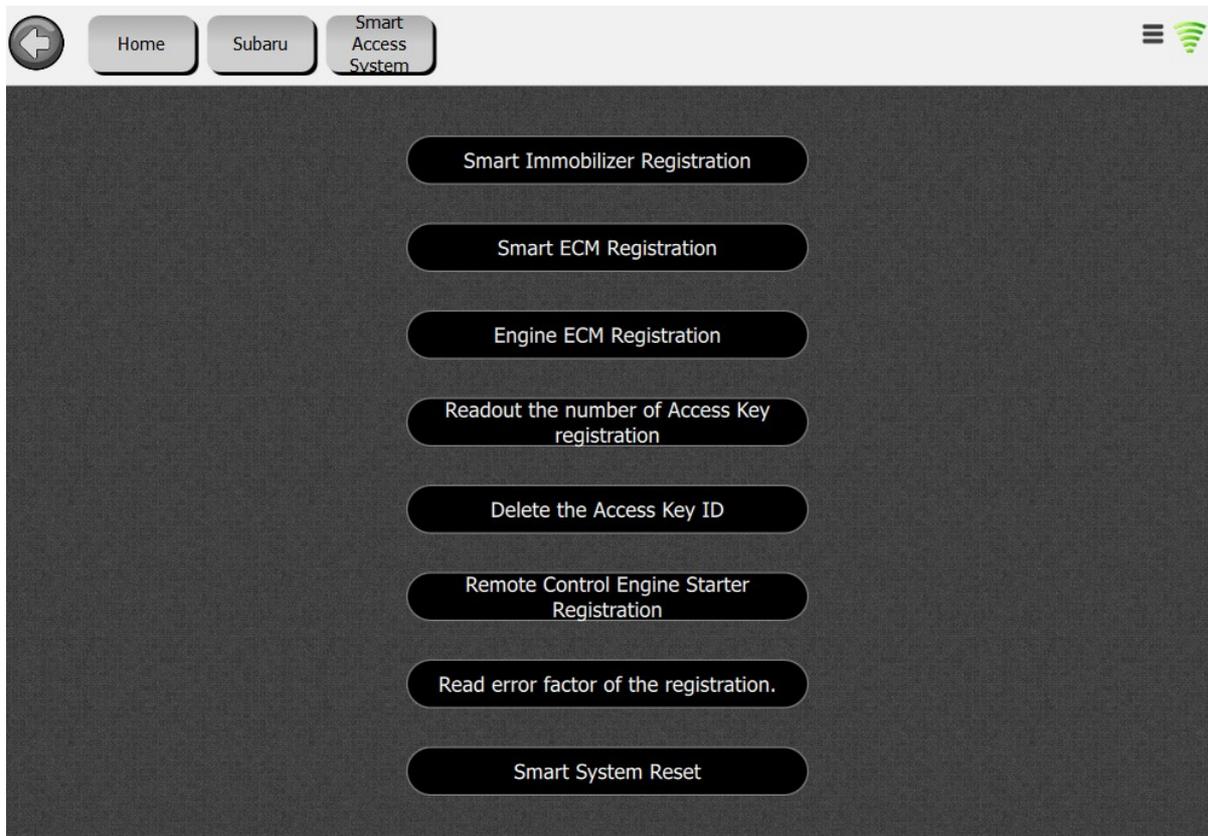
8. Key programming for H type (DST AES) mechanical, bladed keys.

Using this function you will be able to add one key, perform all keys lost, Immobilizer and Smart system reset, replace ECM, replace Smart ECM, read the number of the access keys registered to the vehicle. This is done easy and allows you to do all of the above via OBD. No need to remove the Smart systems from the vehicles.

8.1. Introduction.

In order to program a key for the models of Subaru equipped with the H type keys (H type transponder is a colloquial term often used when referring to the DST AES transponder types mostly in Japanese manufacturers such as Toyota, Daihatsu and of course Subaru) with a mechanical key blade (these cars are normally produced after 2015 and do not use a smart access system.

Supported models include Legacy/ Liberty, Outback, New Impreza, XV and others) you will need to enter the "Immobilizer" function.

For the key programming of these vehicles we have different options. The best way to understand the procedure is to keep the following in mind:

a) TA41 DST emulator can only be used on one car. It will be the transponder assigned to this vehicle and in order to program a TA41 you need to have a PROTAG programmer. After you program this transponder you will also be able to program a second and third key. TA41 also allows a key blade to be installed inside of it. This information will be useful when you read section 8.4 All keys lost.

b) ZN066 is a transponder Emulator which does not require PROTAG and emulates a master key for the H type mechanical keys. It allows you to enter key programming and add keys to the vehicle without locking the ZN066 to every car.

With that being said we can move forward with all the options from the Immobilizer menu for the H keys:
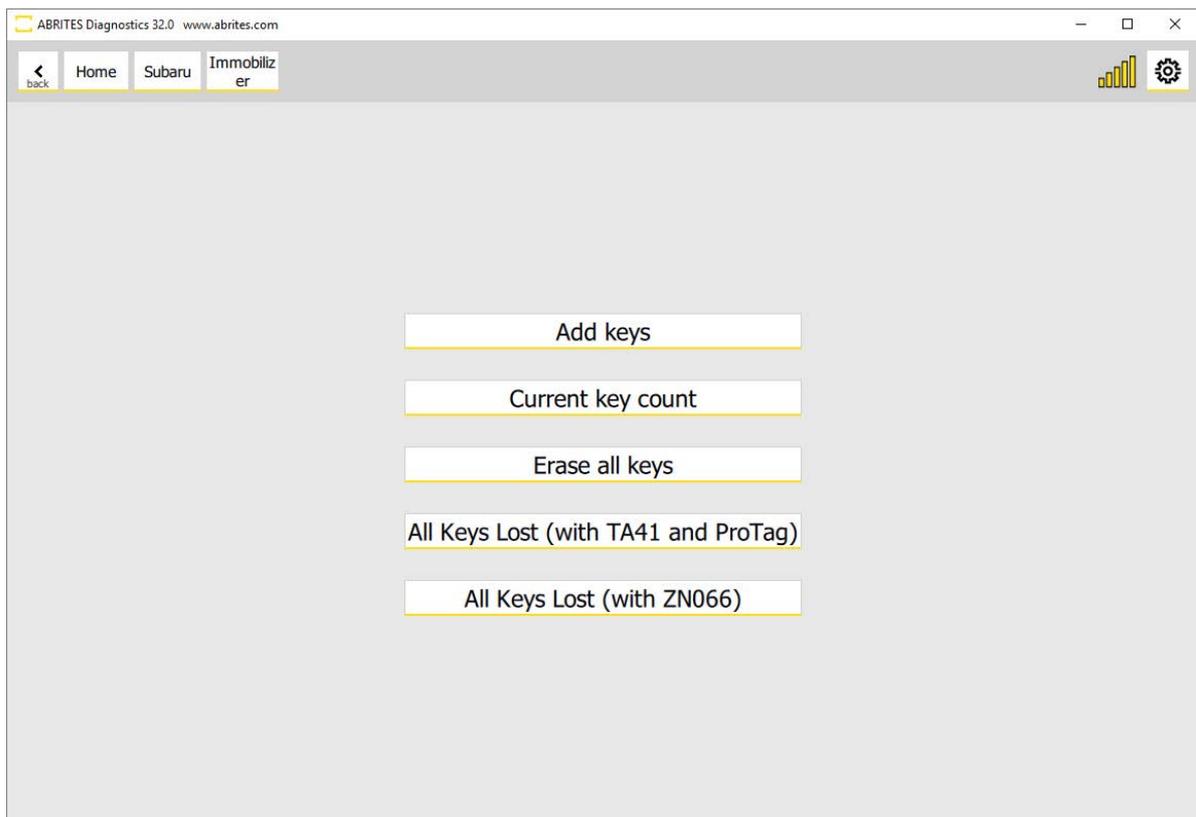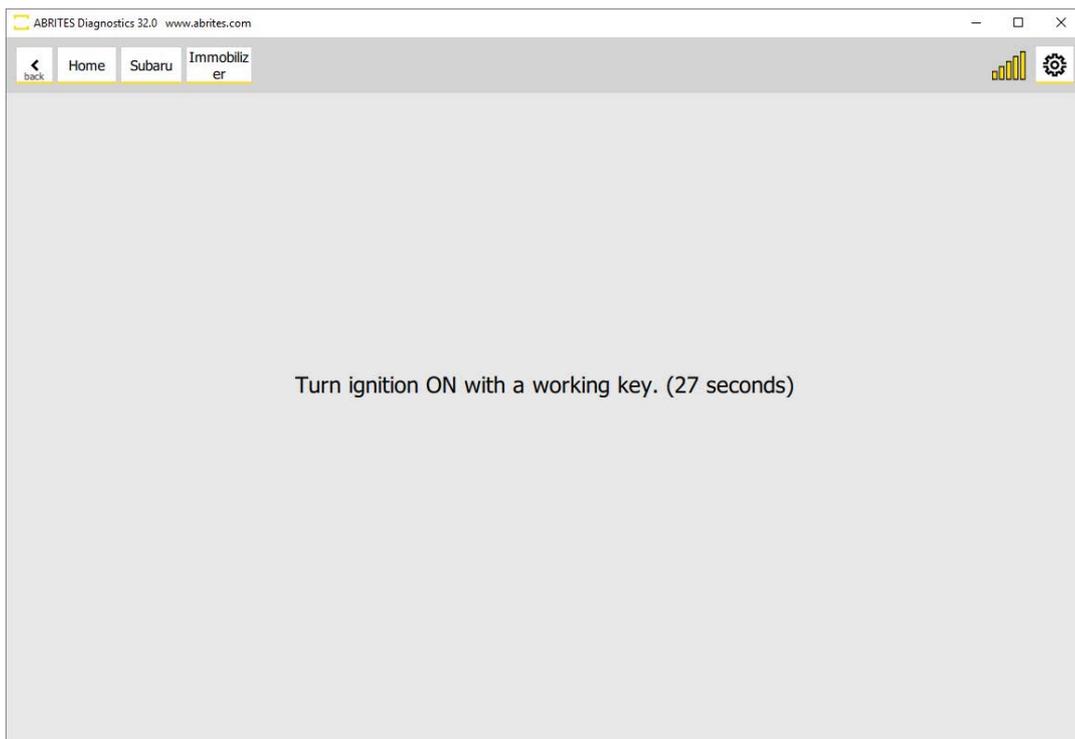
8.2. Add keys.

This function is used when you have a working key and you would like to add another one to the existing key count of the vehicle.
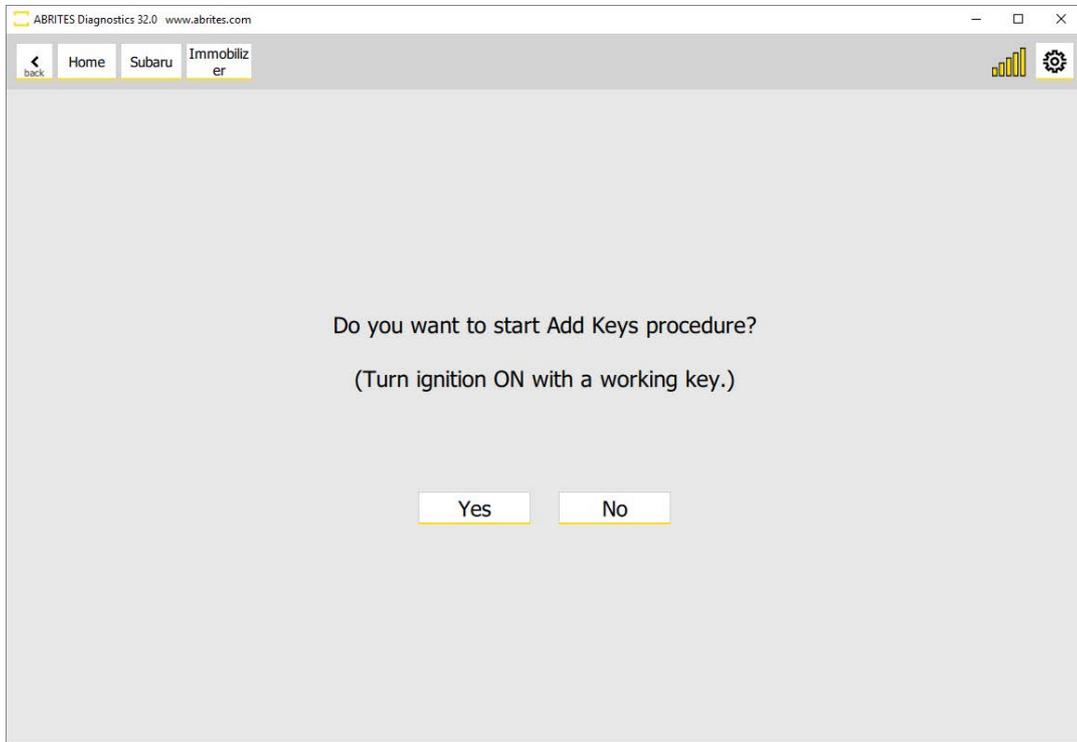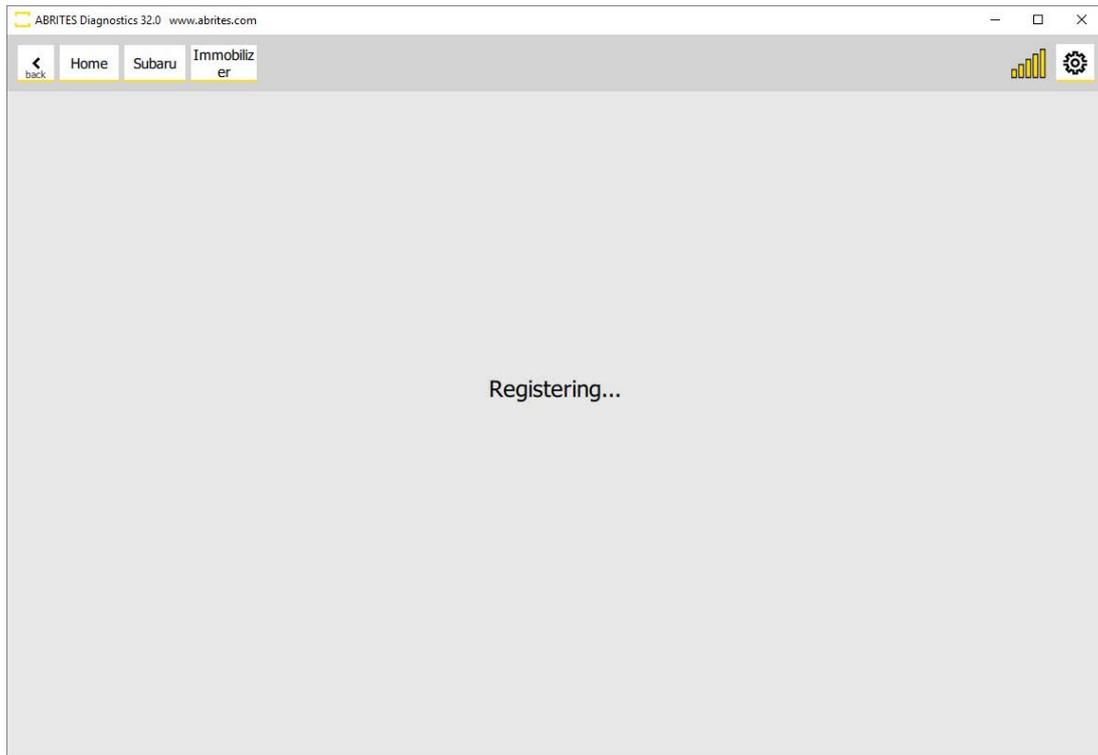

If you have a working key and you want to add another one you can start this procedure and follow along. The instructions will guide you throughout the key programming process.

The time frame you have is 30 seconds and the count down timer will notify you as you program the keys.
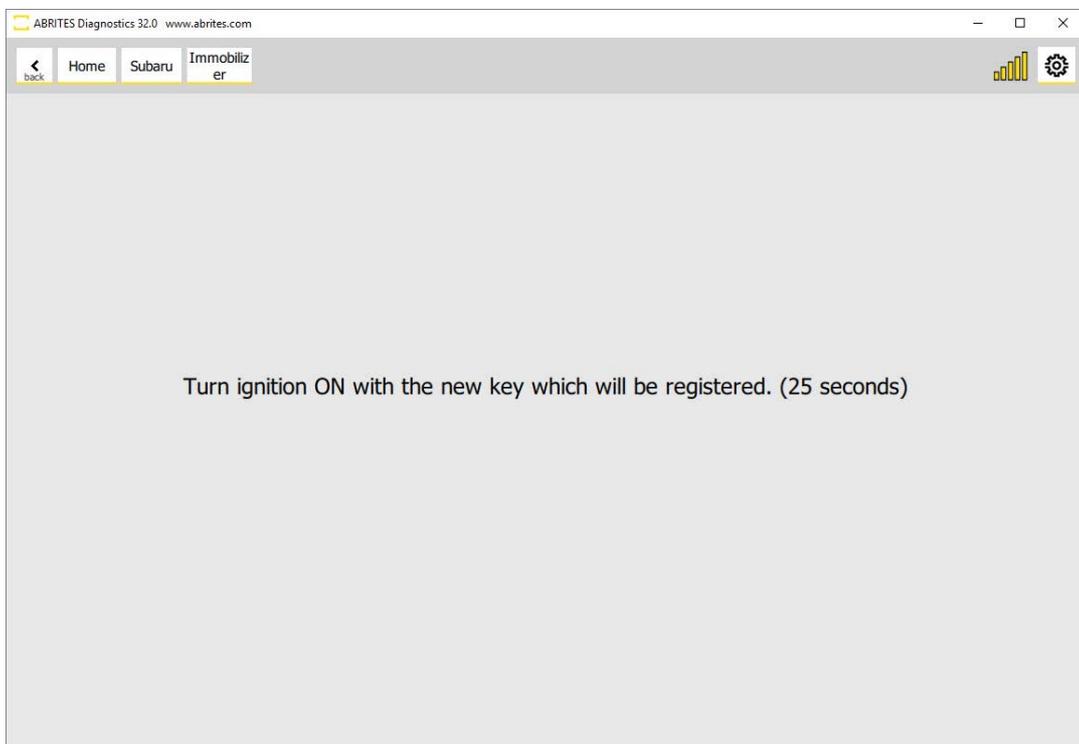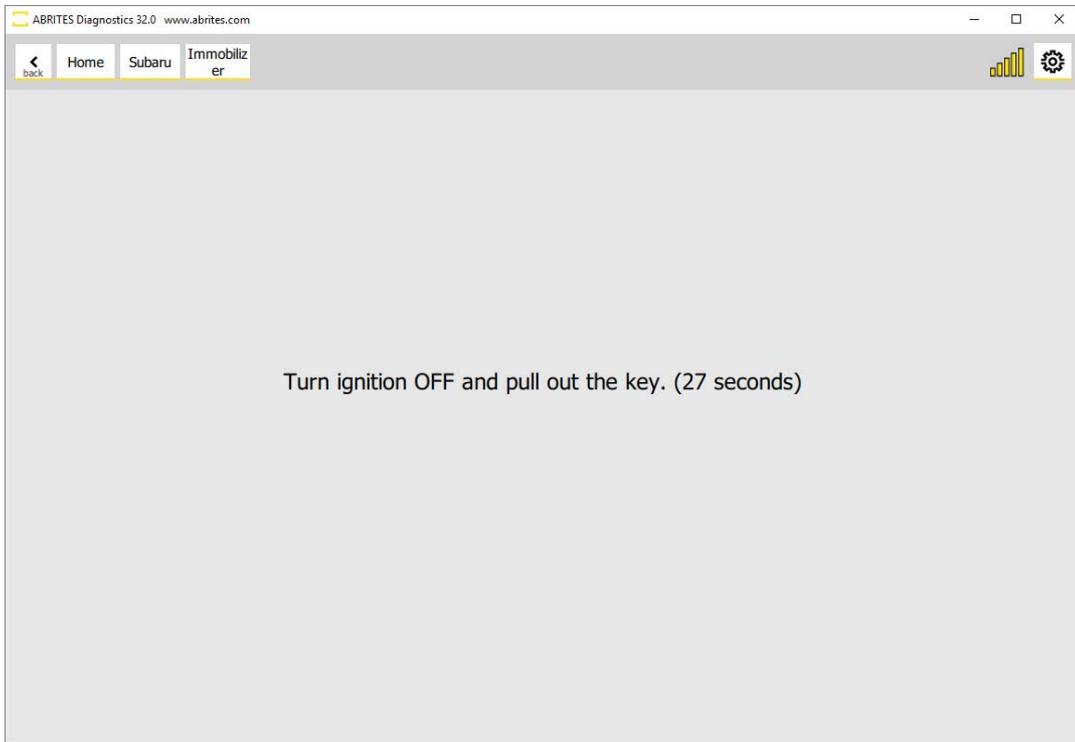
Just make sure to look at the timer and follow the instructions.

The Abrites diagnostics for Subaru will make sure to ask you if you would like to program another key after you have registered one. If you want to – click yes, if no then you can click "no" and exit the procedure.
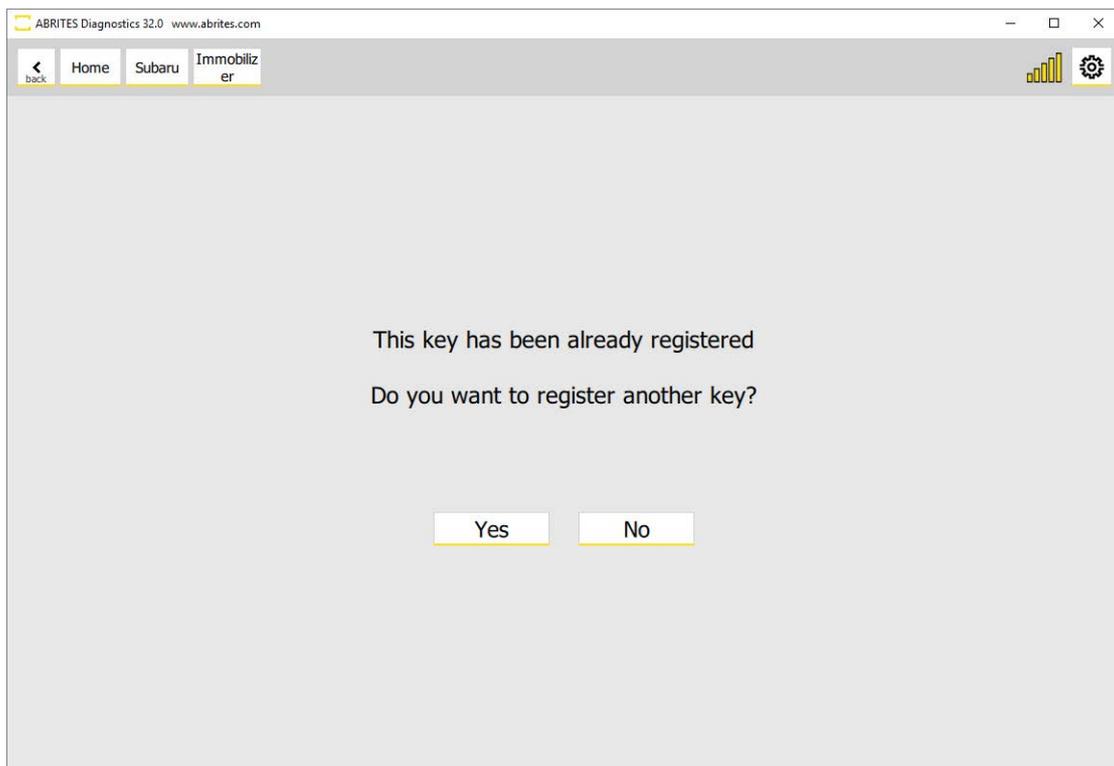
If you select "yes" you will see the current key count and can then decide if you want to program a third key and so on.
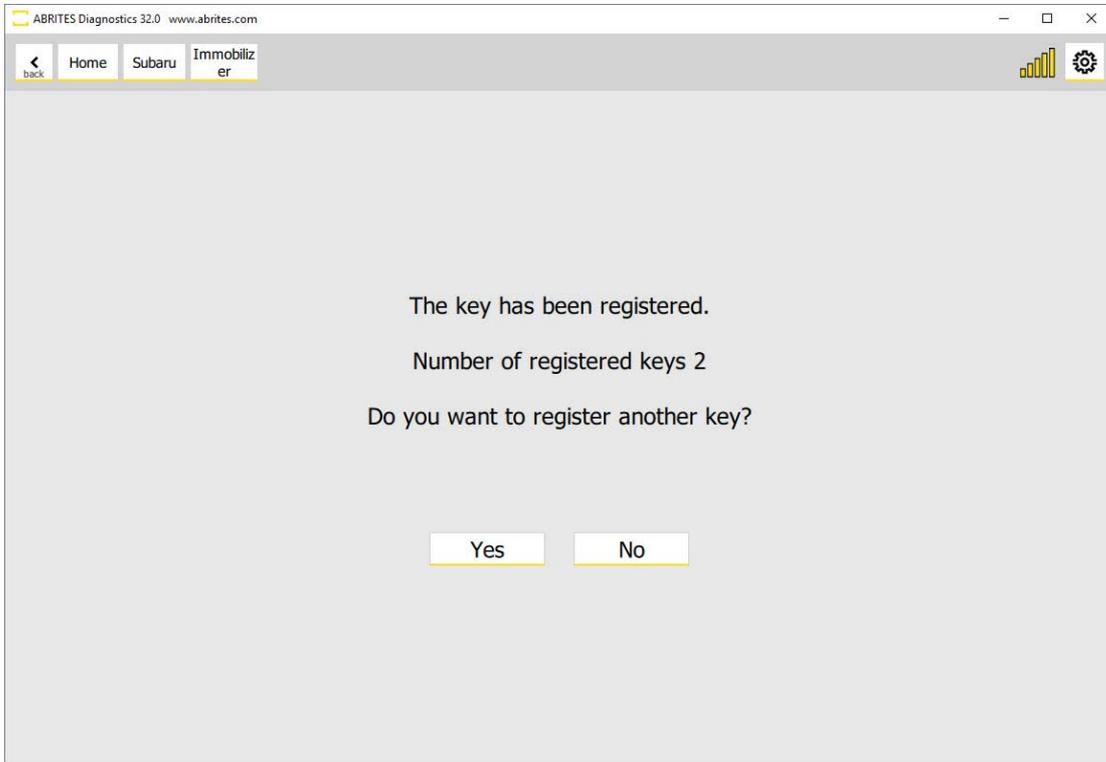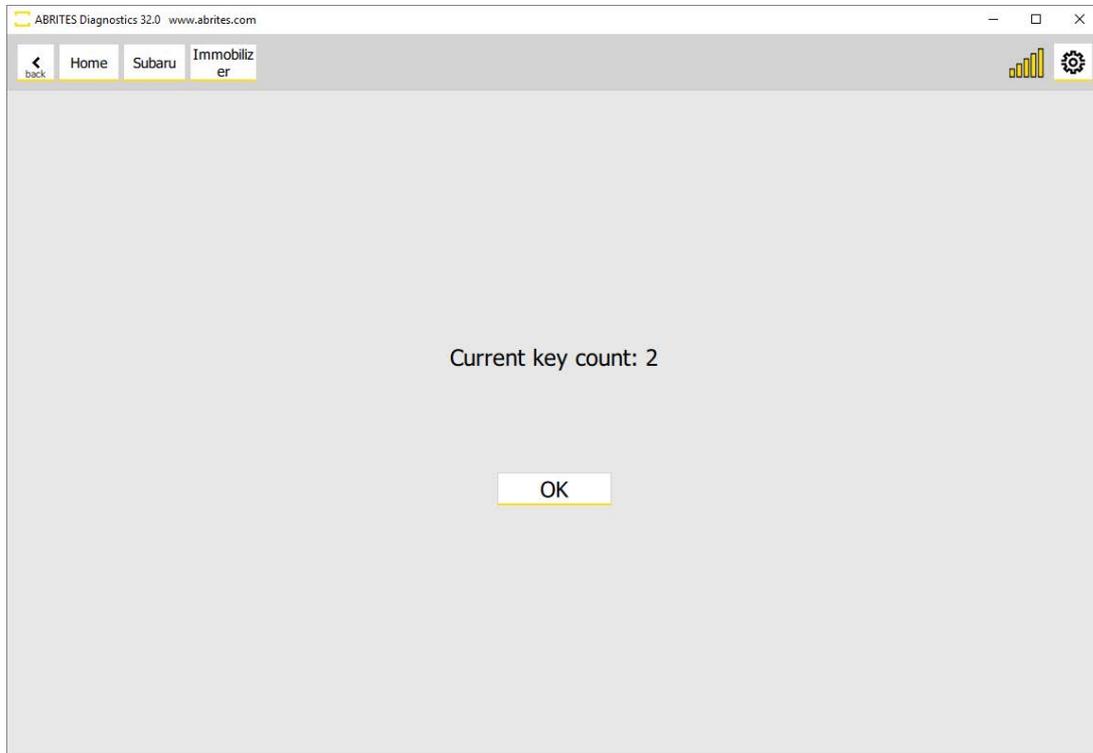

The procedure ends and you can try the new keys together with the existing key.
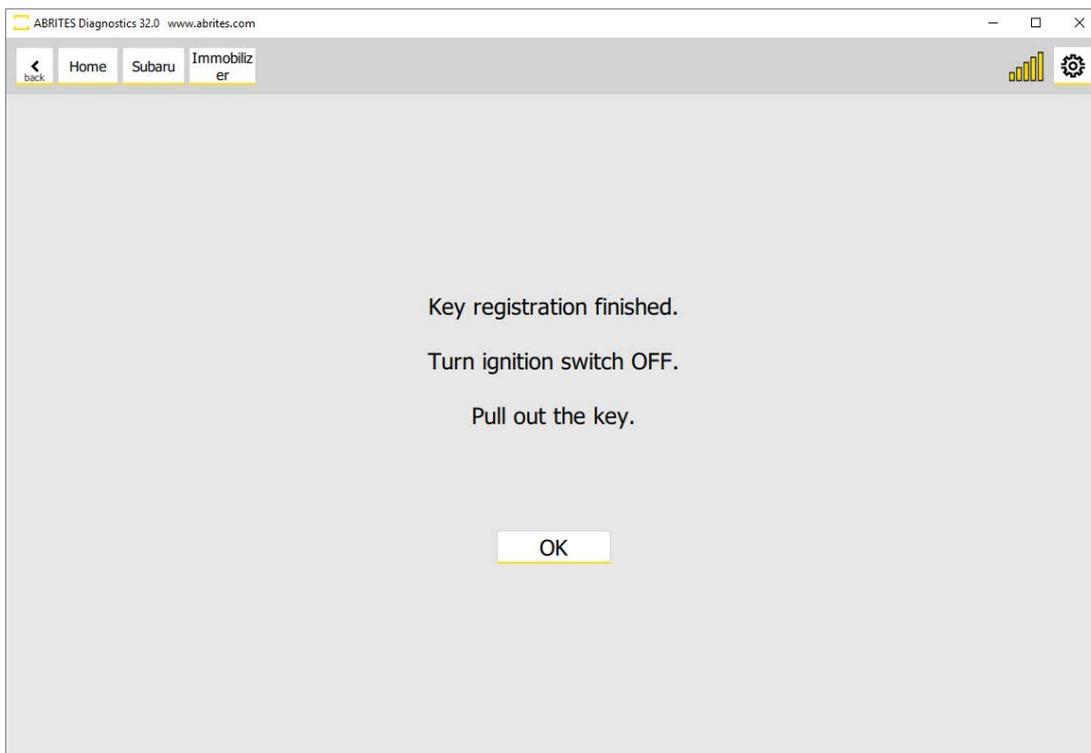
8.3. Current key count.

A very useful option which tells you how many keys are currently programmed in the vehicle you are working on. Once you select it you will see this window which will tell you the current key count.

8.4 All keys lost.

A very useful option which tells you how many keys are currently programmed in the vehicle you are working on. Once you select it you will see this window which will tell you the current key count.
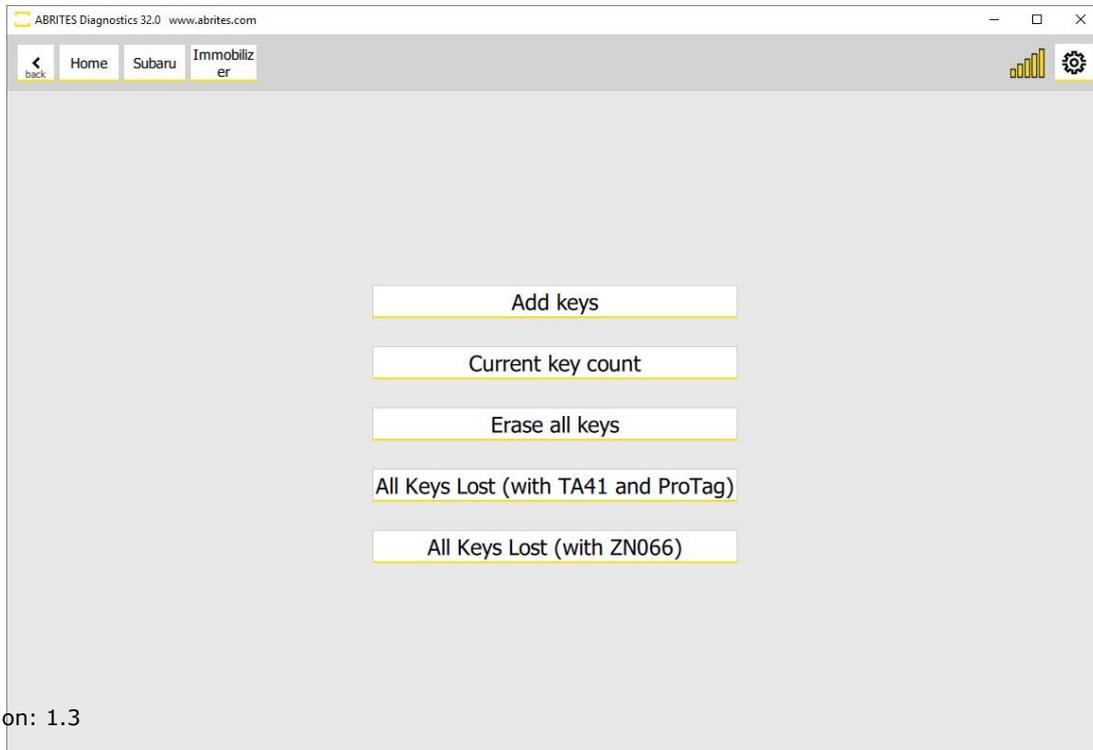
As mentioned Above there are two distinct methods to perform a "lost keys" situation in Subaru H mechanical bladed type of cars. The first method we are going to look at is the TA41 and PROTAG method.

The key programming procedure in both methods takes no more than 10 minutes.

The software requires about 4 – 6 minutes to read all the needed information from the vehicle and prepare it for programming a key.

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8.4.1 All keys lost using TA41 and PROTAG.

In this case the TA41 transponder is used to emulate a working key for the vehicle with the help of the PROTAG programmer and the Abrites diagnostics for Subaru.

The specific thing to mention here is that the TA41 remains locked to the vehicle and is very convenient for situations where access to blank Subaru keys is limited and the TA41 usually remains with the customer as a spare or emergency key. It has a key blade position and as a locksmith you can prepare a blade and install it conveniently in the TA41.

Here is what you need to do:

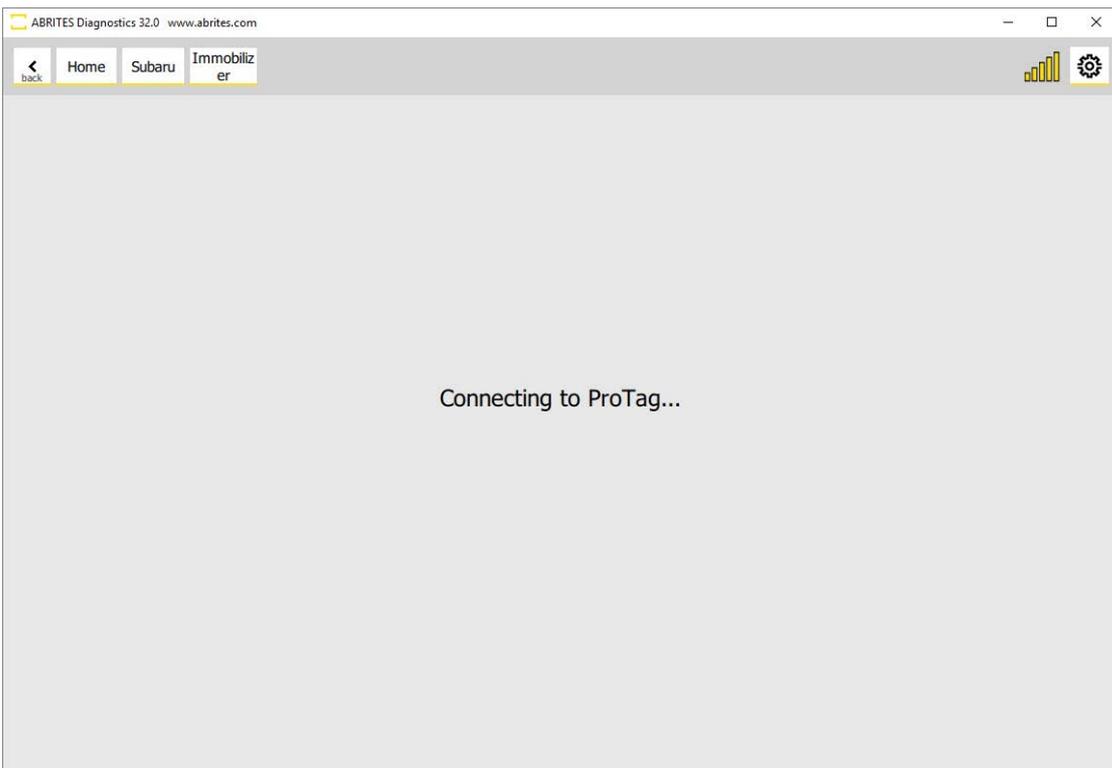1. Start by connecting your PROTAG to the PC and make sure your TA41 is nearby.
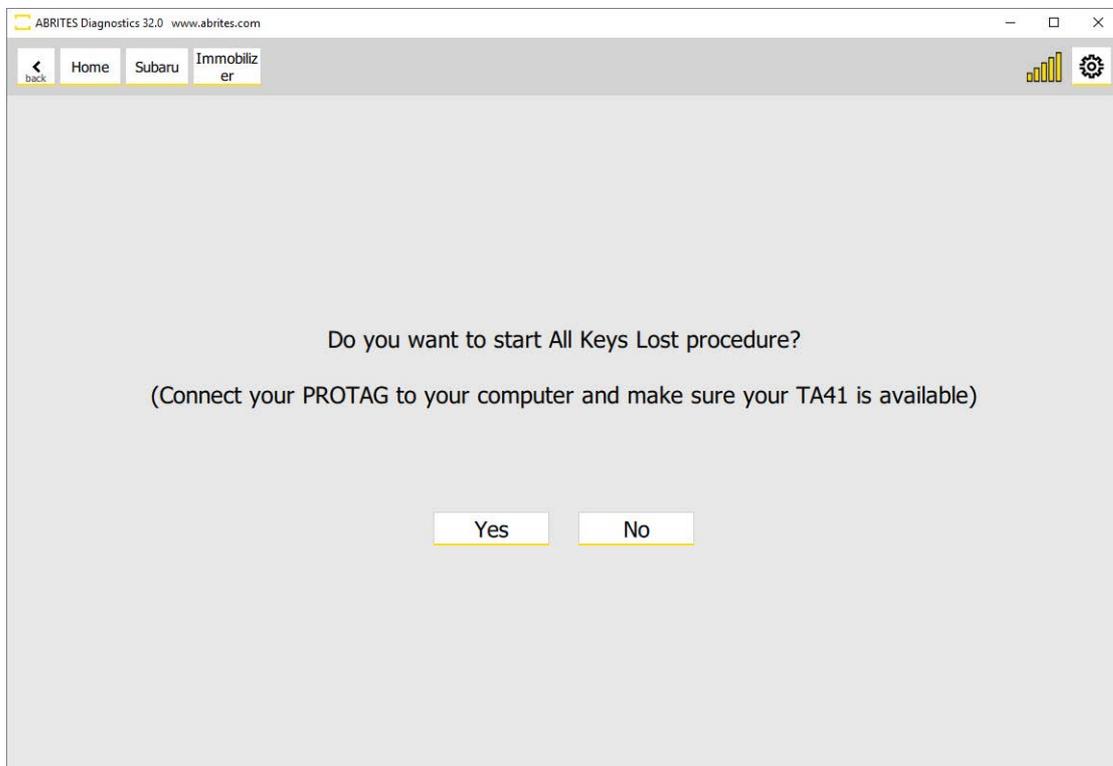
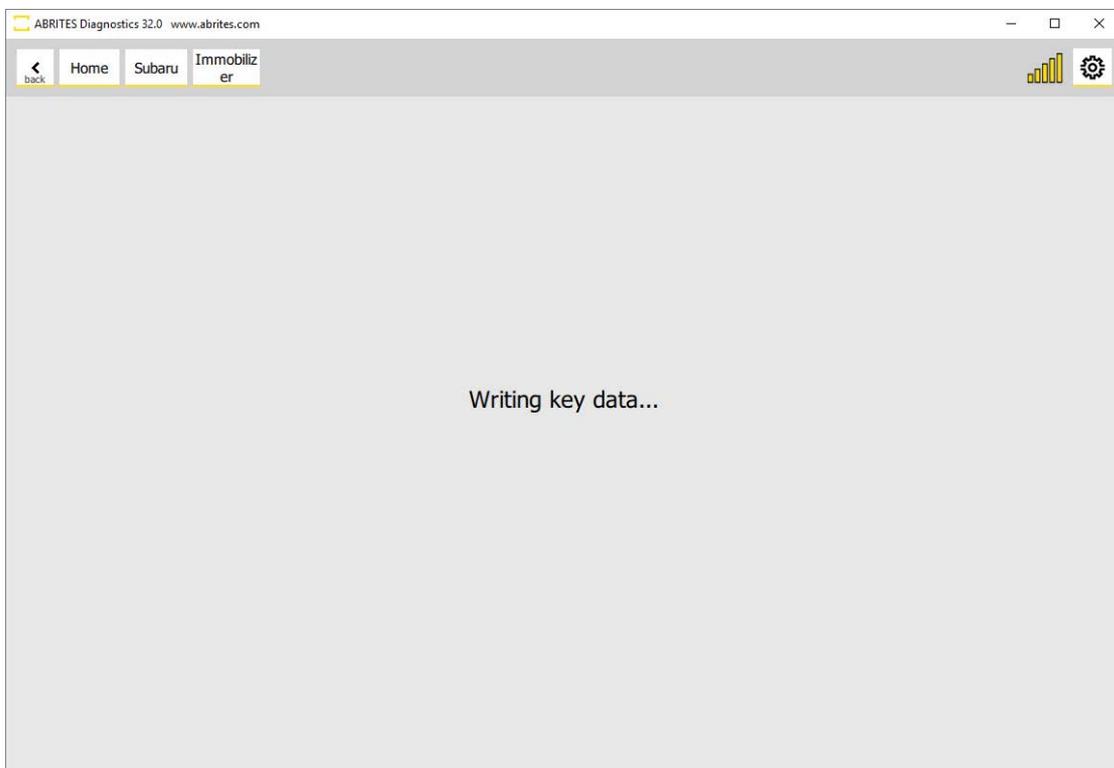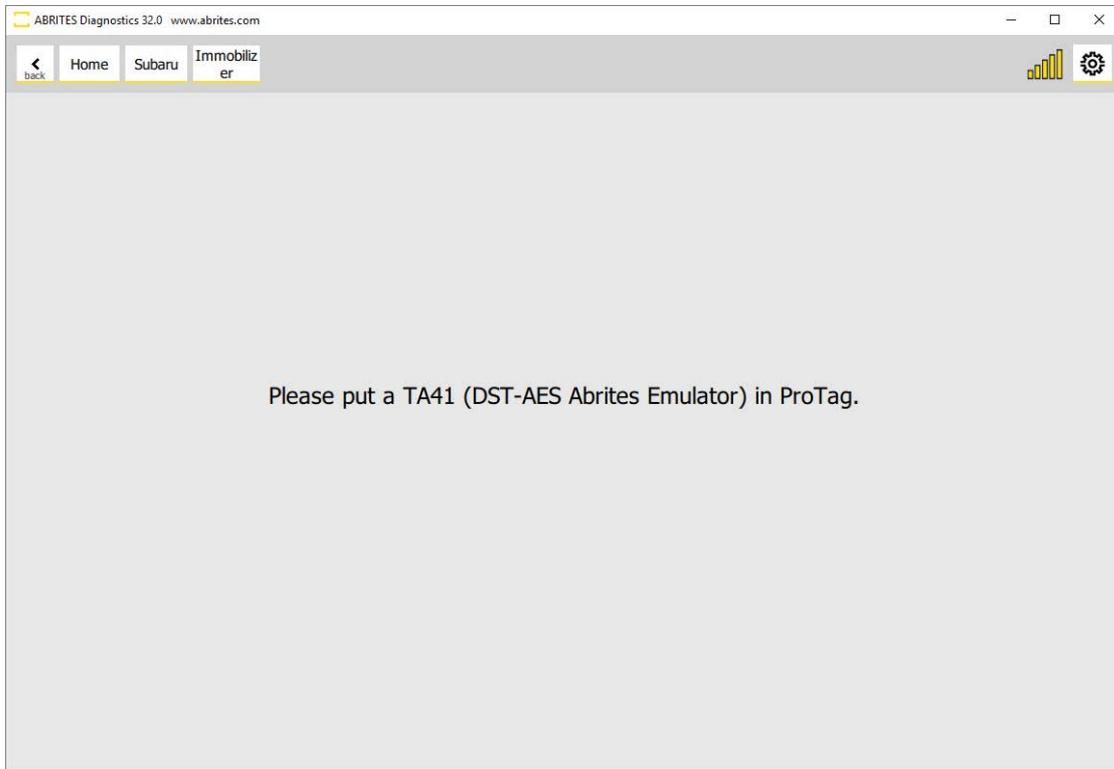Once that is done you are good to go and you can press "yes"
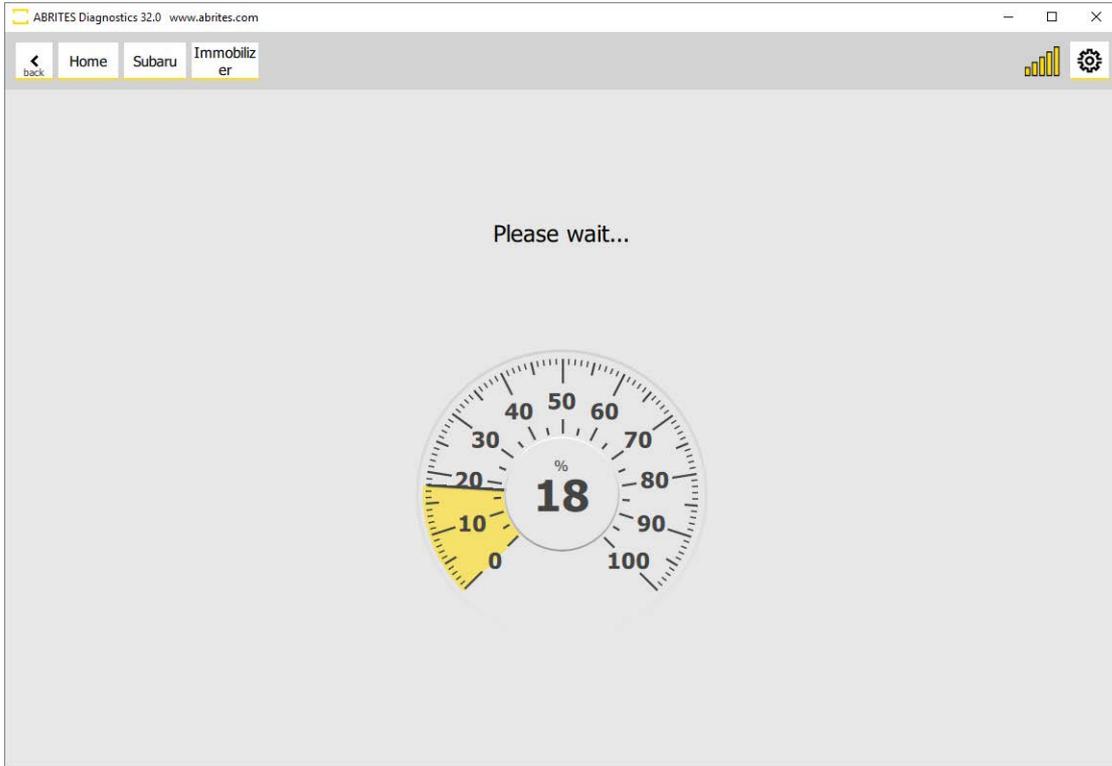
The Software will start reading the information from the vehicle and then it will prepare it for key programming.
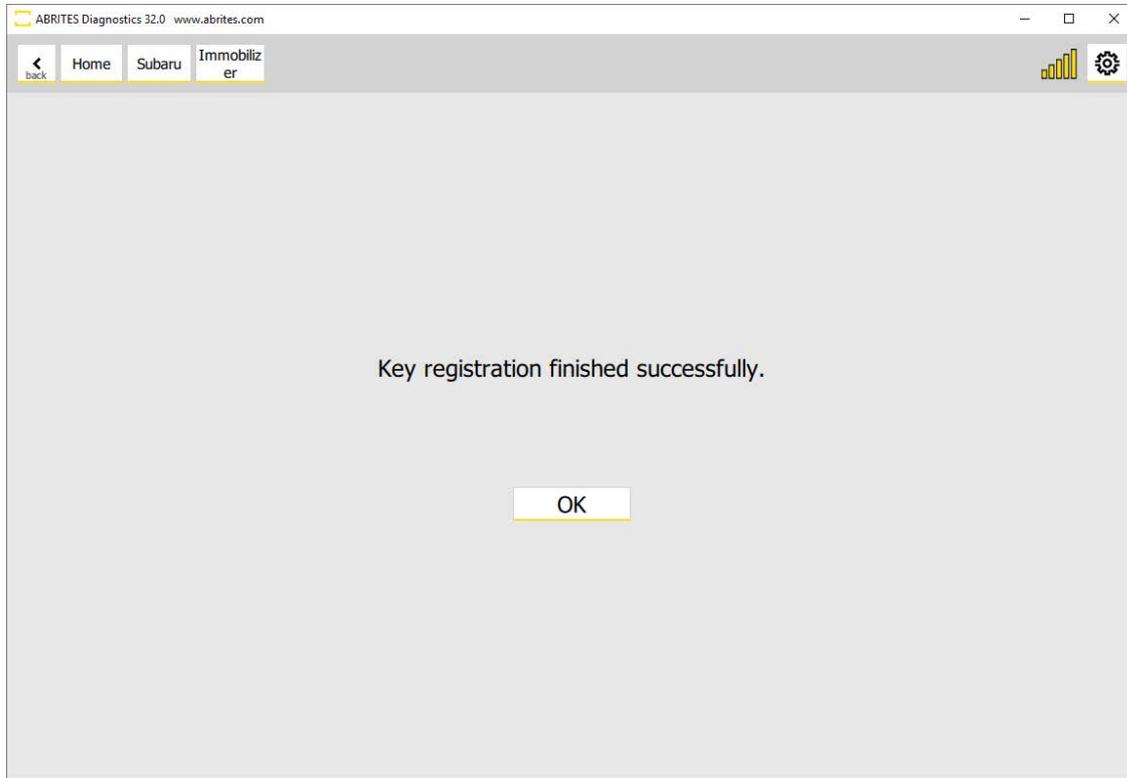
Abrites diagnostics for Subaru will check for the PROTAG programmer and will then connect to it.

The next step is the preparation of the TA41 inside the PROTAG programmer.

Then the software will prompt you to turn the ignition ON using the TA41 which has been prepared and the car will be able to start.


You can then go to the procedure for adding a key if you would like to program more keys to this vehicle.

8.4.2 All keys lost using the ZN066.

As described above the ZN066 does not require a PROTAG programmer. It connects directly to your AVDI's DB15 slot (this slot is located on the USB side of your AVDI interface, right next to the LED indicator). In order to use the ZN066 you must connect it there. ZN066 does not stay programmed to the vehicle so you need to have a BLANK Subaru key, a TA41 or any DST AES transponder which you should program to the car.
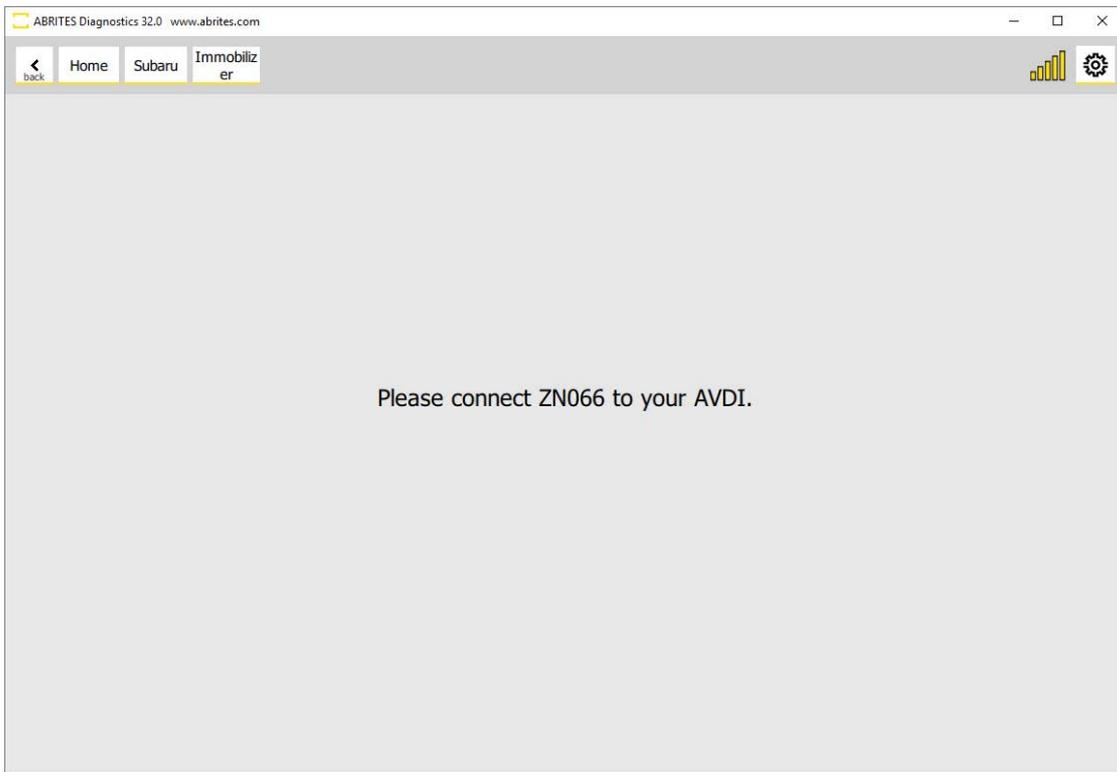Here is what you need to do:

Here you can click yes after you have connected your ZN066.
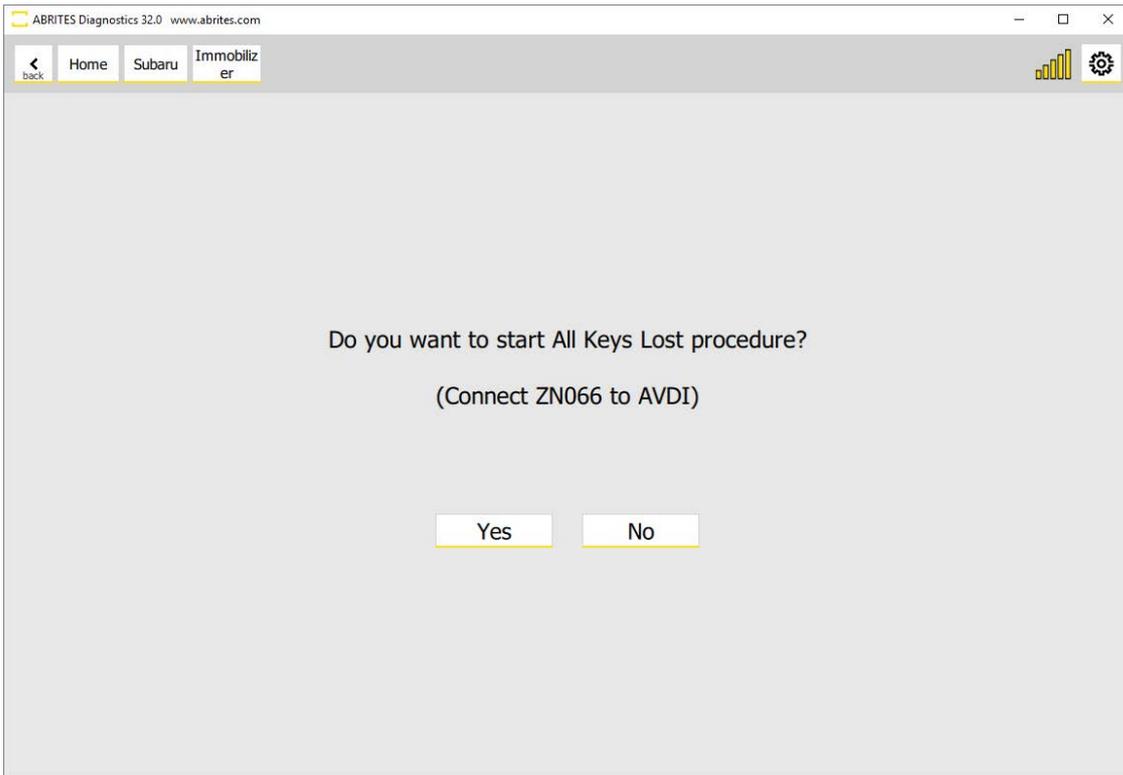
Abrites Diagnostics for Subaru will read all the needed information and prepare the car for key programming.
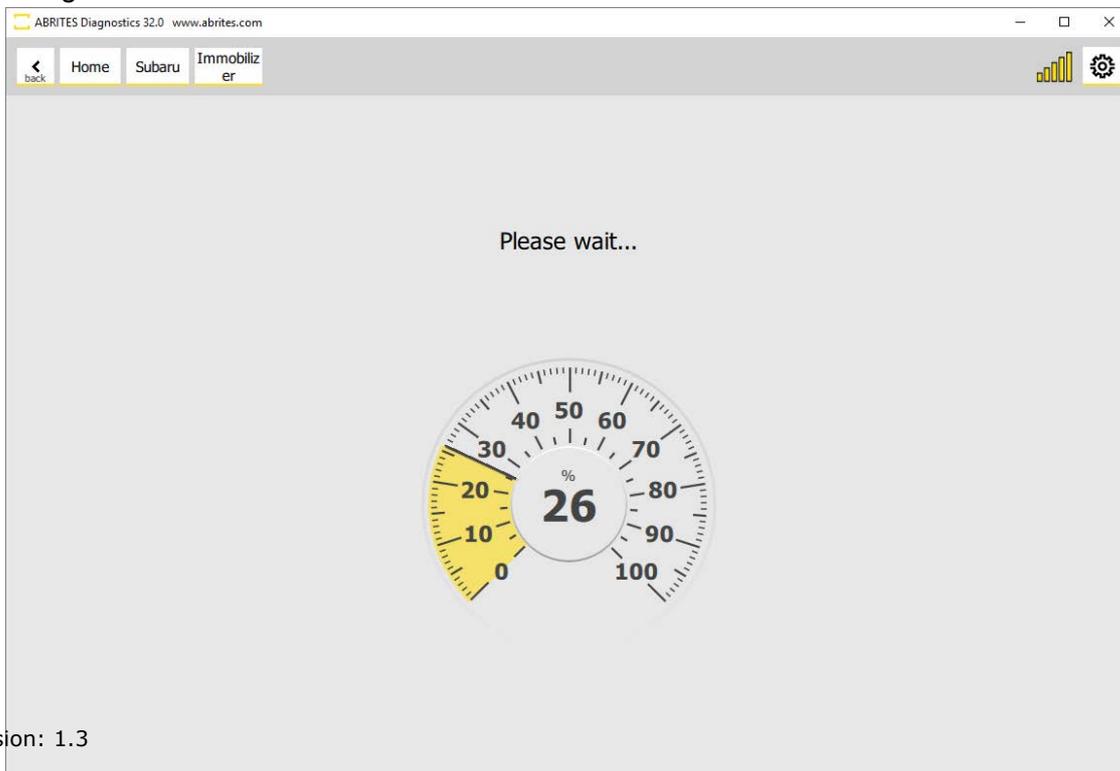
Make sure your ZN066 is connected.

The software will prompt you to turn the ignition ON using the ZN066 emulator and you will be able to program keys. After that you can continue with programming the rest of the keys you have prepared for this vehicle. ZN066 is reusable and can be used to program many vehicles.
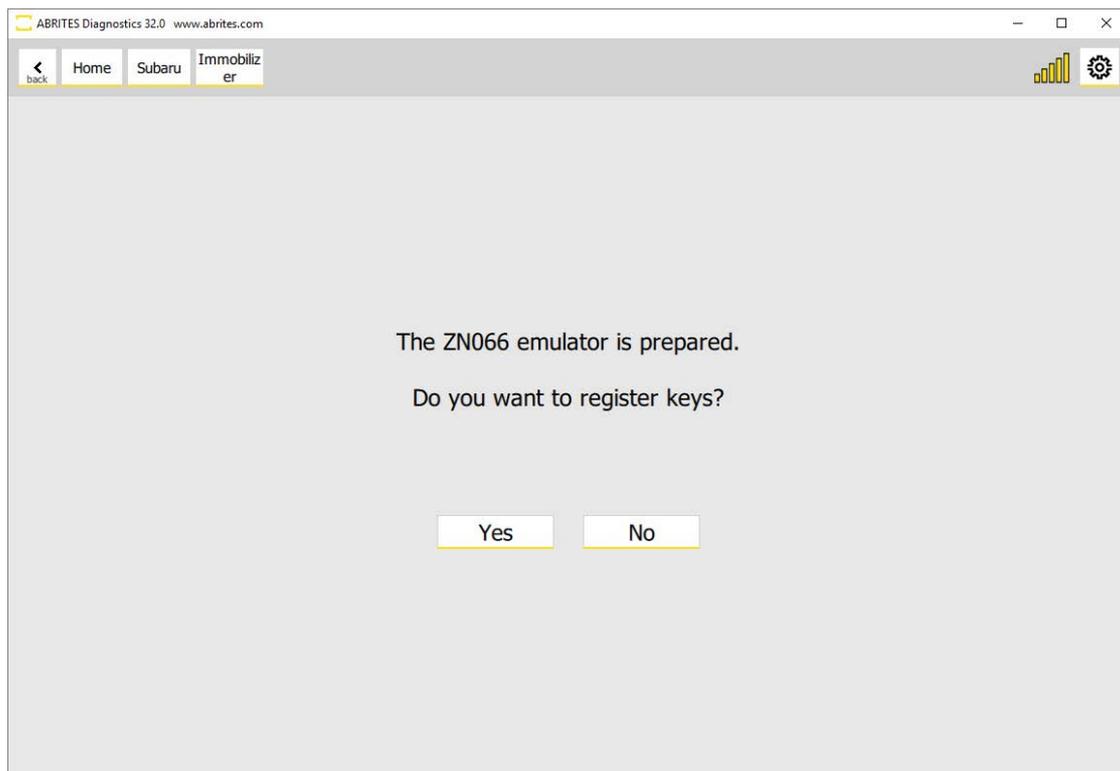
8.5. Erase all keys.

Using the "Erase all keys" option is very helpful if the customer has lost one or more of their keys but still has one working key. This function will allow you to remove all registered keys apart from the one that is currently in the ignition. This means that the rest of the keys will not function with this vehicle but you can program one or more additional keys without the need to go through the "All keys lost" procedures and provide your customer a piece of mind that even if someone finds their lost key they will not be able to use it.
Here is how the procedure goes: