A·B·R·I·T·E·S
automotive solutions

ABRITES DIAGNOSTICS FOR TOYOTA/LEXUS/SCION ONLINE



User manual
version 1.2

Important notes

The Abrites software and hardware products are developed, designed and manufactured by Abrites Ltd. During the production process we comply to all safety and quality regulations and standards, aiming at highest production quality. The Abrites hardware and software products are designed to build a coherent ecosystem, which effectively solves a wide range of vehicle-related tasks, such as:

Diagnostic scanning;
Key programming;
Module replacement,
ECU programming;
Configuration and coding.

All software and hardware products by Abrites Ltd. are copyrighted. Permission is granted to copy Abrites software files for your own back-up purposes only. Should you wish to copy this manual or parts of it, you are granted permission only in case it is used with Abrites products, has "Abrites Ltd." written on all copies, and is used for actions that comply to respective local law and regulations.

Warranty

You, as a purchaser of Abrites hardware products, are entitled of a two-year warranty. If the hardware product you have purchased has been properly connected, and used according to its respective instructions, it should function correctly. In case the product does not function as expected, you are able to claim warranty within the stated terms. Abrites Ltd. is entitled to require evidence of the defect or malfunction, upon which the decision to repair or substitute the product shall be made.

There are certain conditions, upon which the warranty cannot be applied. The warranty shall not apply to damages and defects caused by natural disaster, misuse, improper use, unusual use, negligence, failure to observe the instructions for use issued by Abrites, modifications of the device, repair works performed by unauthorized persons. For example, when the damage of the hardware has occurred due to incompatible electricity supply, mechanical or water damage, as well as fire, flood or thunder storm, the warranty does not apply.

Each warranty claim is inspected individually by our team and the decision is based upon thorough case consideration.

Read the full hardware warranty terms on our website.

Copyright information

Copyright:

All material herein is Copyrighted ©2005-2021 Abrites, Ltd.
Abrites software, hardware, and firmware are also copyrighted
Users are given permission to copy any part of this manual provided that the copy is used with Abrites products and the "Copyright © Abrites, Ltd." statement remains on all copies
"Abrites" as used in this manual synonymous with "Abrites, Ltd." And all it's affiliates
The "Abrites" logo is a registered trademark of Abrites, Ltd.

Notices:

The information contained in this document is subject to change without prior notice. Abrites shall not be held liable for technical/editorial errors, or omissions herein.
Warranties for Abrites products and services are set forth in the express written warranty statements accompanying the product. Nothing herein should be construed as constituting any additional warranty.
Abrites assumes no responsibility for any damage resulting from the use, misuse, or negligent use of the hardware or any software application.

Safety information

The Abrites products are to be used by trained and experienced users in diagnostics and reprogramming of vehicles and equipment. The user is assumed to have a good understanding of vehicle electronic systems, as well as potential hazards while working around vehicles. There are numerous safety situations that cannot be foreseen, thus we recommend that the user read and follow all safety messages in the available manual, on all equipment they use, including vehicle manuals, as well as internal shop documents and operating procedures.

Some important points:
Block all wheels of the vehicle when testing. Be cautious when working around electricity.
Do not ignore the risk of shock from vehicle and building-level voltages.
Do not smoke, or allow sparks/flame near any part of the vehicle fuel system or batteries.
Always work in an adequately ventilated area, vehicle exhaust fumes should be directed towards the exit of the shop.
Do not use this product where fuel, fuel vapours, or other combustibles could ignite.

In case any technical difficulties occur, please contact the
Abrites Support Team by email at support@abrites.com.

Table of contents

1. Introduction

2. Vehicle diagnostics with Abrites for Toyota

    2.1 Scope of the manual

    2.2 Getting Started

3. Using the Abrites Diagnostic for Toyota Online

    3.1 General Diagnostics - read/clear DTCs

    3.2 Live Values Monitoring

4. Special Functions

    3.1 Special Function “Key Learning”

    4.2 Airbag

List of revisions

Date	Chapter	Description	Revision
26.04.2022	ALL	Document created.	1.0
24.11.2022	3	Update	1.1
17.07.2023	ALL	General Update and added supported models	1.2
08.09.2023	ALL	TN014, TN015, TN016 supported models, Airbag, Diagnostic	1.3

1. Introduction

Congratulations on choosing our wonderful product!

The “Abrites Diagnostics for Toyota/Lexus/Scion Online” is an Online server based Abrites software for Toyota, Lexus and Scion vehicles.

With the help of this software you can perform key learning operations of many Toyota vehicles, produced after 2018, including vehicles equipped with Tokai Rika Smart System with BA type HT-AES keys and vehicles equipped with a Denso Smart System with BA type DST-AES keys.

For proper operation of your diagnostic software you will need a corresponding interface for connection between your PC and vehicle named “AVDI”.

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

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

ABRITES is a trade mark of Abrites Ltd

2. Vehicle diagnostics with Abrites for Toyota

2.1 Scope of the manual

This document describes the usage of Abrites Diagnostics for Toyota / Lexus / Scion Online. The document is applicable for the latest software version. In this manual we suppose that the software for your AVDI interface is already installed. Please refer the "AVDI Common User's Manual" in case it is not.

System requirements:

Minimum system requirements – Windows 7 SP1 + 2GB RAM (recommended 4GB)

2.2 Getting Started

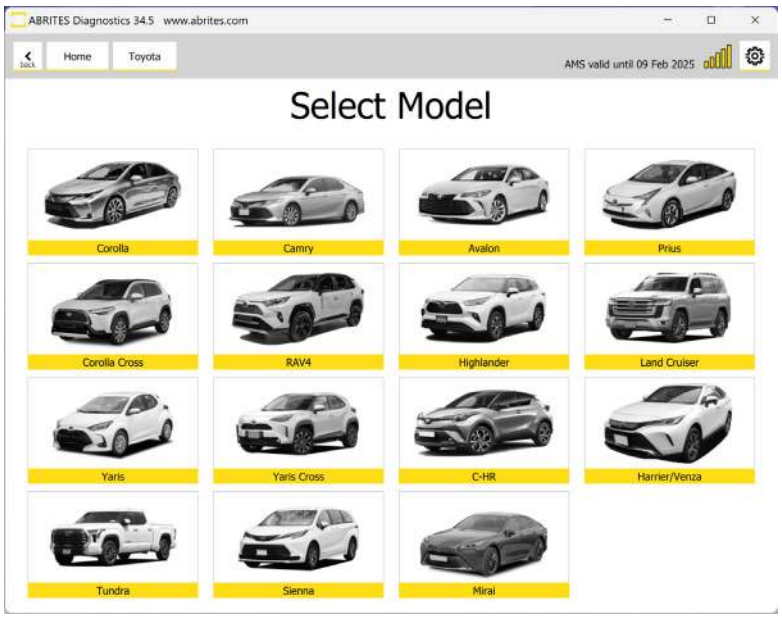
You can start Abrites Diagnostics for Toyota/Lexus/Scion Online by starting the Abrites Quick Start application and selecting Toyota. On the 2nd page of the Toyota option, you need to select the following button.

When the Abrites Diagnostics for Toyota/Lexus/Scion Online application is started the main screen of the application will appear where you can select the brand desired- Toyota or Lexus:

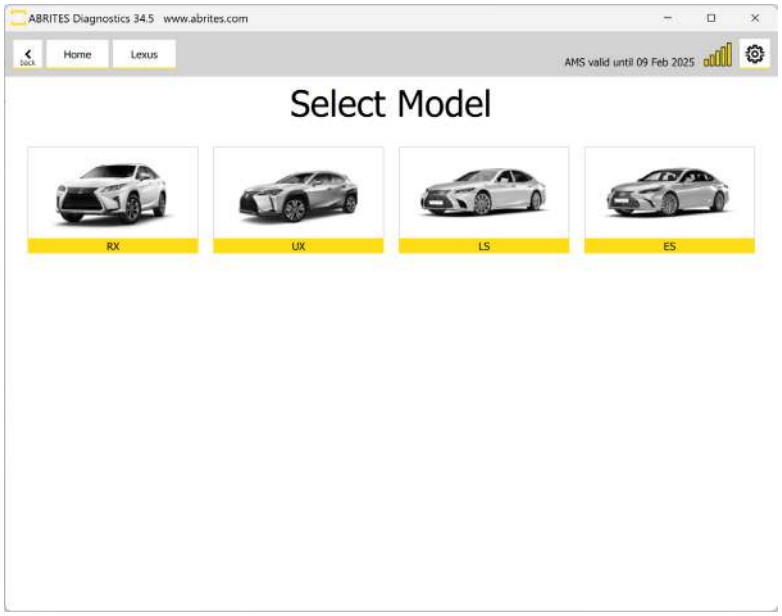




If Toyota is selected, you will have the possibility to select the model you're working on:



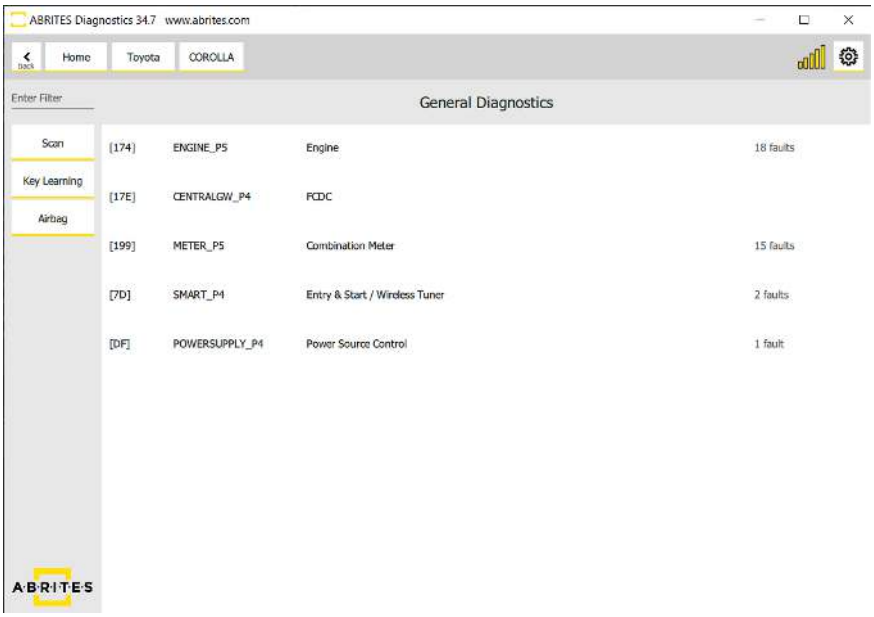
If Lexus is selected, the following models will appear for selection:



3. Using the Abrites Diagnostic for Toyota Online

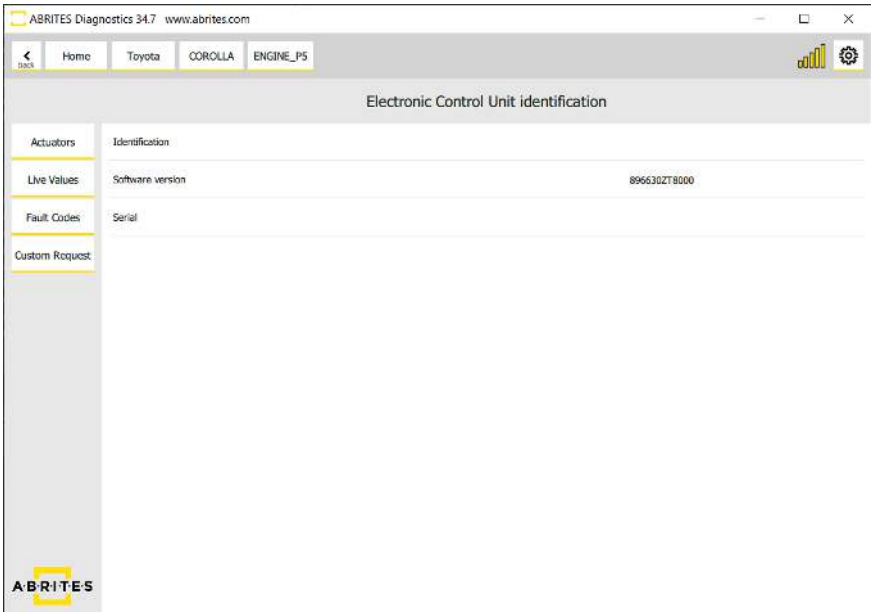
The latest software version of the Toyota Online introduces diagnostic procedures.

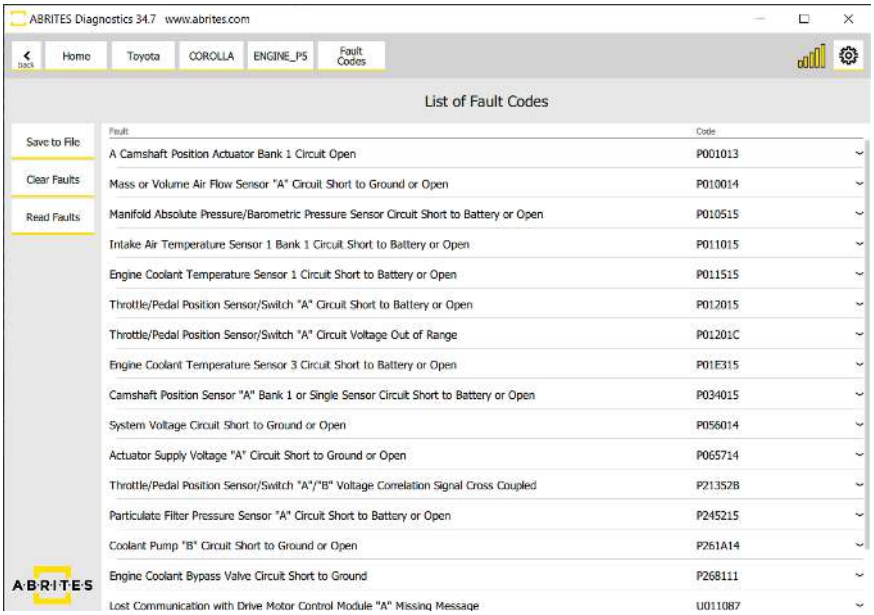
When starting the software it is recommended to have the vehicle connected to an external power source in order to be sure that the vehicle does not loose power during the time spent working on it. When the software is started the vehicle can be selected, and than the software checks is the selection is correct and makes a suggestion for the correct vehicle. Then the General Diagnostics screen will be displayed and you can select the "Scan" button to start the diagnostic scan, which will also display the list of modules.



3.1 General Diagnostics - read/clear DTCs

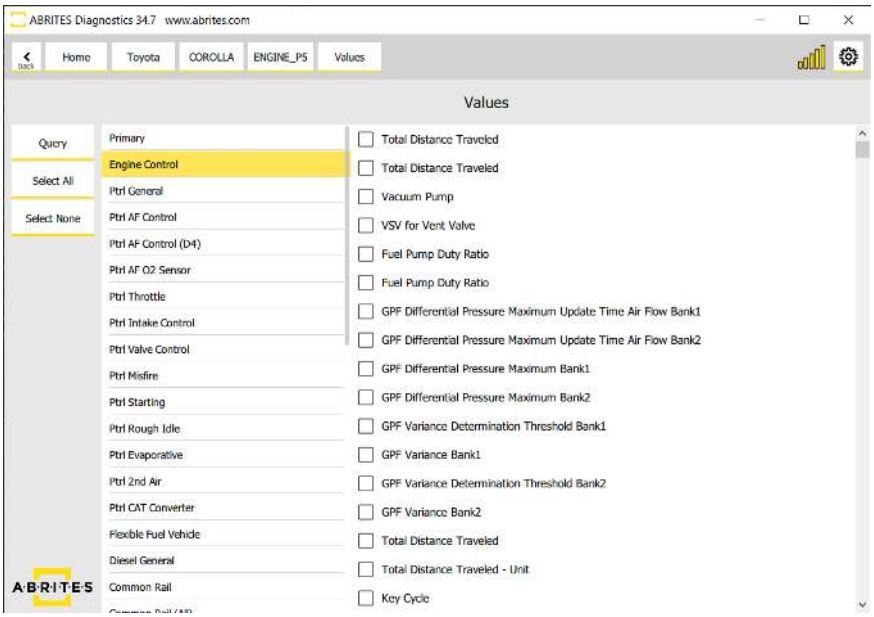
The screenshot below shows the main diagnostics screen. The software will go through all available protocols and will identify all available modules in the vehicle you are working on. You could then enter each module and you will see all available options for it - identification, live/measured values, actuator testing, clearing DTCs. In order to read and clear the DTCs of a module you have to enter it, and open the "Fault Codes" menu on the left side. You are able to get details about each DTC, save the scan report to a file, and clear the DTCs by pressing the "Clear Faults" button.

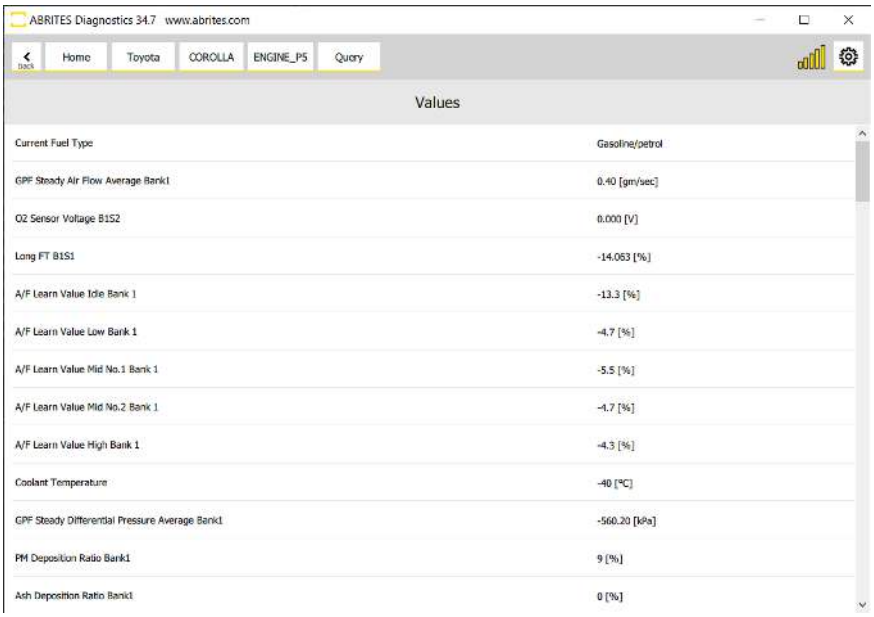




3.2 Live Values Monitoring

The software gives you the option to monitor live values for diagnostic purposes. Live values are accessed by opening the module you want to work with from the main screen, and selecting the "Live Values" button on the left side. Then you will see a list of options you can select for monitoring as in the screenshots below:

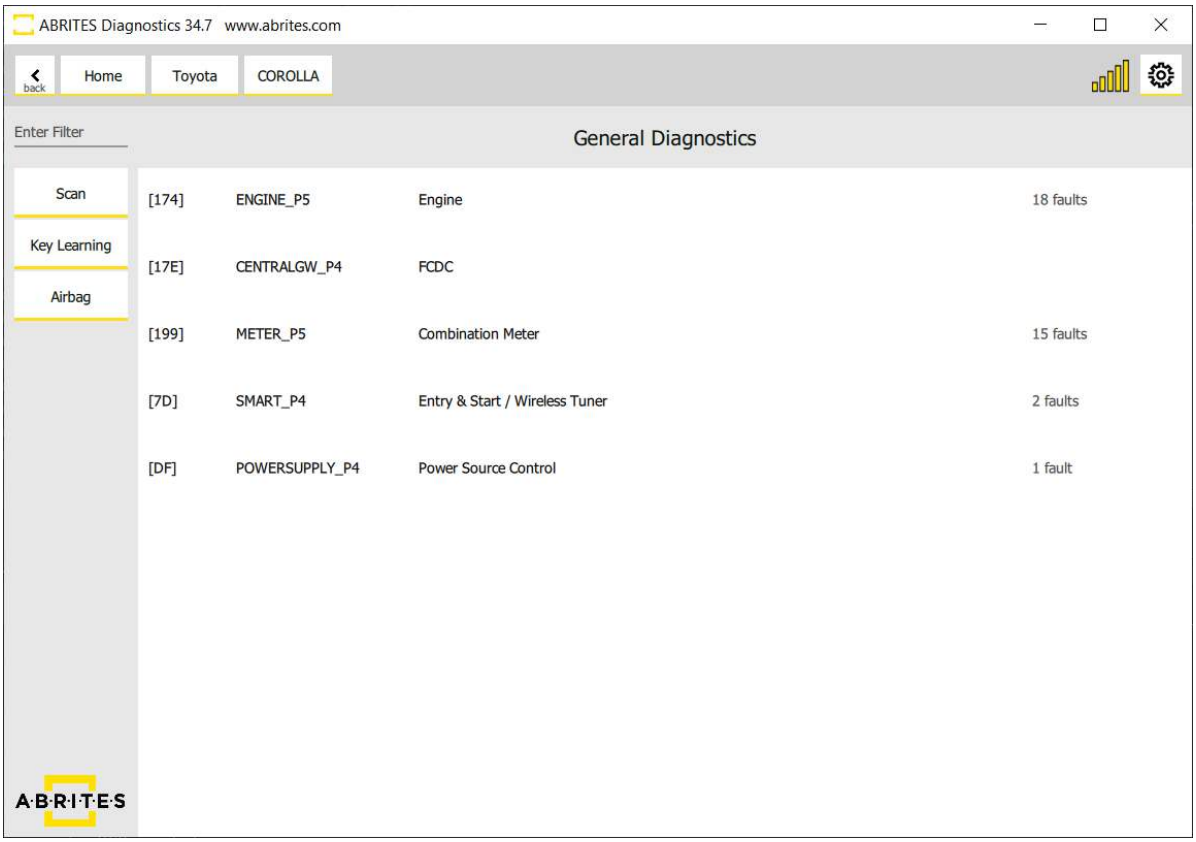




4. Special Functions

The ABRITES Diagnostics for Toyota/ Lexus/ Scion Online offers currently Key Learning for Toyota/Lexus models 2018+, and Airbag 2020+ clear crash, and read/write DFLASH

Please, note that depending on the version you have purchased some of these functions may not be available in your configuration. In this case a message will inform you that you need to acquire an additional software license.

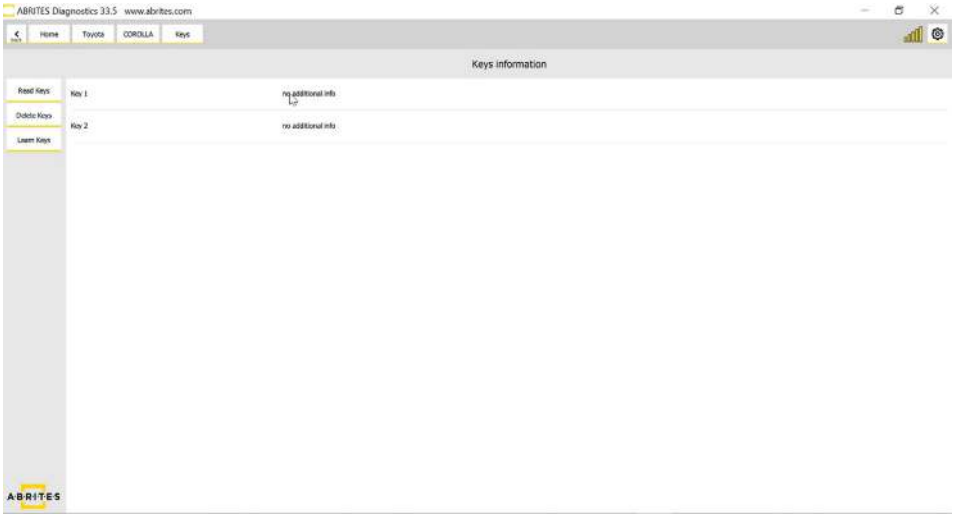


3.1 Special Function "Key Learning"

When the "Key learning" special function is selected it is very important to follow the exact directions of the application.

Required Hardware:
Depending on the type of key the vehicle is using you will need a DST AES or a HITAG AES transponder emulator:
TA64 HITAG-AES transponder emulator
TA68 DST-AES transponder emulator
CB012 - Cable set for direct can-bus connection - required for the latest Toyota and Lexus models
CB029

Once the model is selected, you have the option to learn keys under the "Key Learning" menu:



The Key Learning functionality for Toyota supports both spare key programming and when all working keys are lost. This software covers models listed below, regardless of the market on which they are offered - all versions of the models are supported (US, European, UK, Asia). Smart system reset is NOT needed, nor a connection to Toyota servers. Depending on the transponder type in the vehicle, either a DST-AES or a HITAG-AES emulator will be required

Supported models:

Toyota:

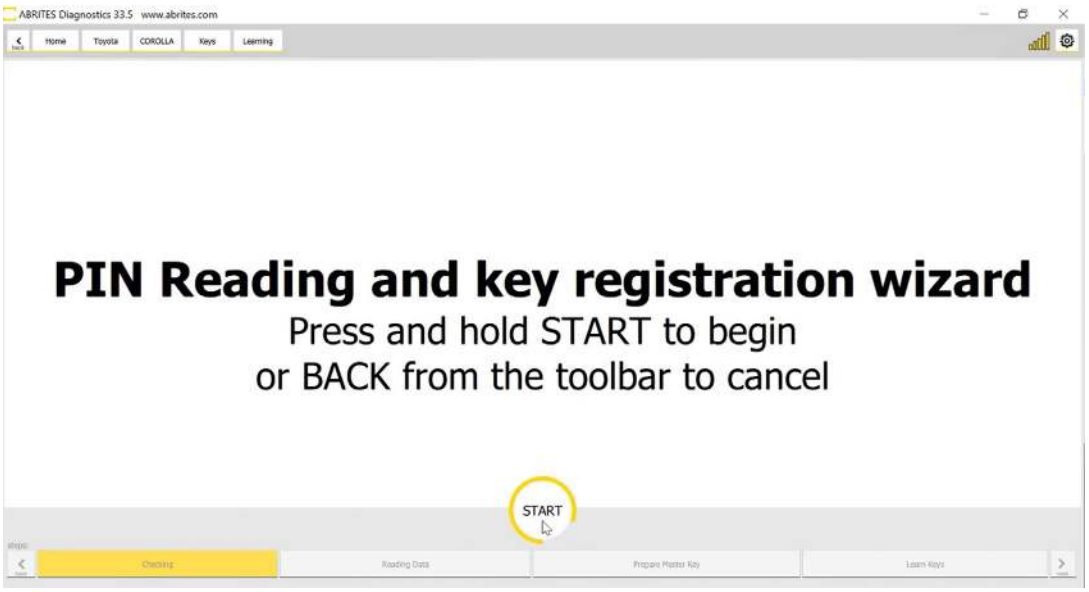
- Corolla 2018+ AA HT-AES
- Camry 2018+ A9 DST-AES
- Highlander 2018+ AA DST-AES
- Mirai 2020+ AA DST-AES
- CH-R 2018+ A9 DST-AES
- Prius 2018+ A9 DST-AES
- Avalon 2018+ AA DST-AES
- RAV4 2018+ AA DST-AES
- Yaris 2020+ (XP210) BA HT-AES
- Yaris Cross 2021+ (XP210) BA HT-AES
- Corolla Facelift 2022+ (E210) BA HT-AES
- Corolla Cross Facelift 2022+ (XG10) BA HT-AES
- Sienna 2020+ (XL40) BA DST-AES
- Harrier/Venza 2020+ (XU80) BA DST-AES
- Tundra 2021+ (XK70) BA DST-AES
- Land Cruiser 2021+ (J300) BA DST-AES
- RAV4 Facelift 2022+ (XA50) BA DST-AES
- Aygo X 2022+
- Yaris GR 2021+
- Prius WX60 2022+
- BZ4X 2022+

Lexus

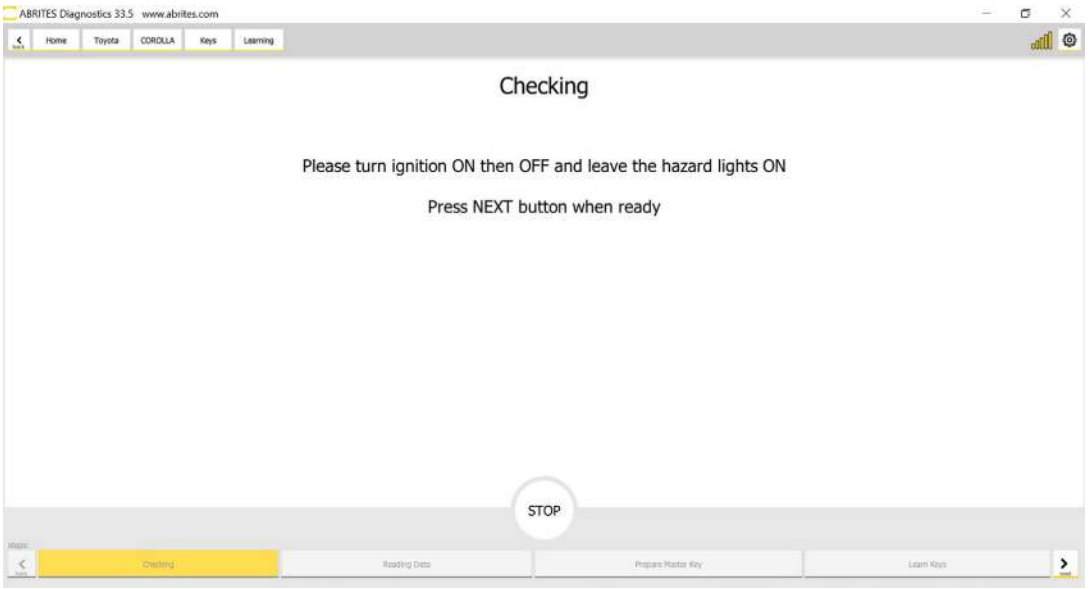
- Lexus RX DST-AES
- Lexus RXL DST-AES
- Lexus ES DST-AES
- Lexus LS DST-AES
- Lexus UX DST-AES
- Lexus RX 2022+ B9 DST-AES
- Lexus NX 2021+ B9 DST-AES
- Lexus LX 2021+

Starting the Key Learning procedure is executed via OBDII, and consists of the following easy steps. These steps are the same when using any of the available Toyota Licenses. The only difference is the key transponder type used:

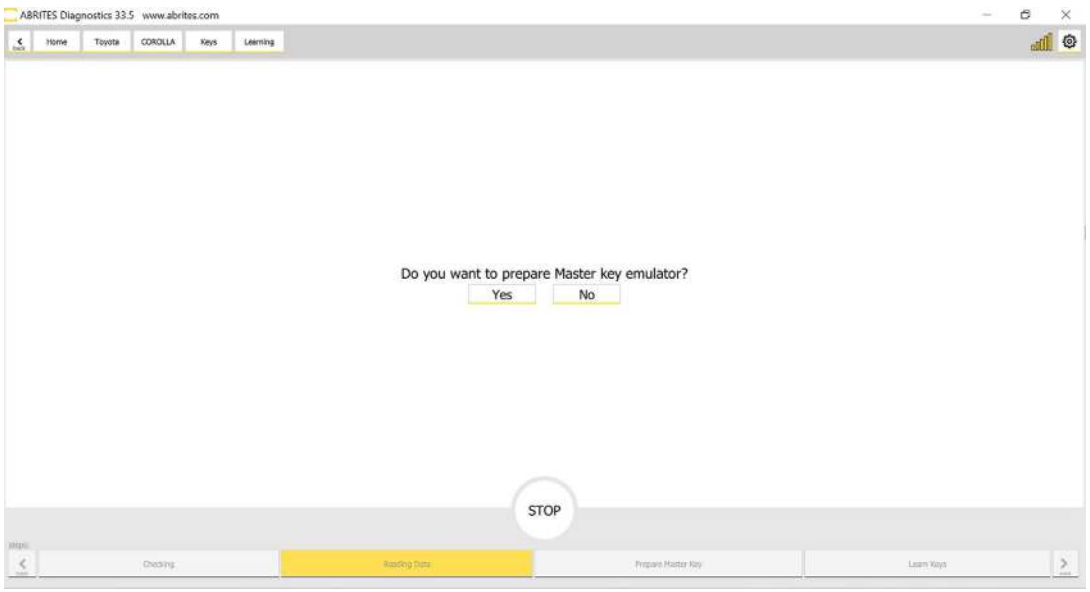
1. Press and hold the START button to begin the procedure



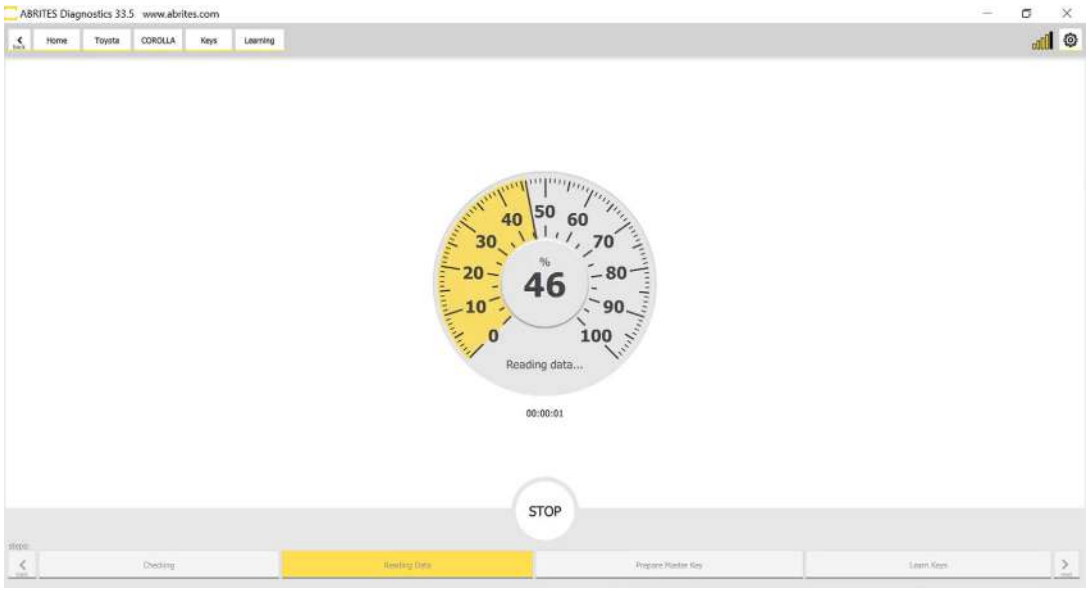
2. Switch IGN ON and then OFF while leaving hazard lights ON



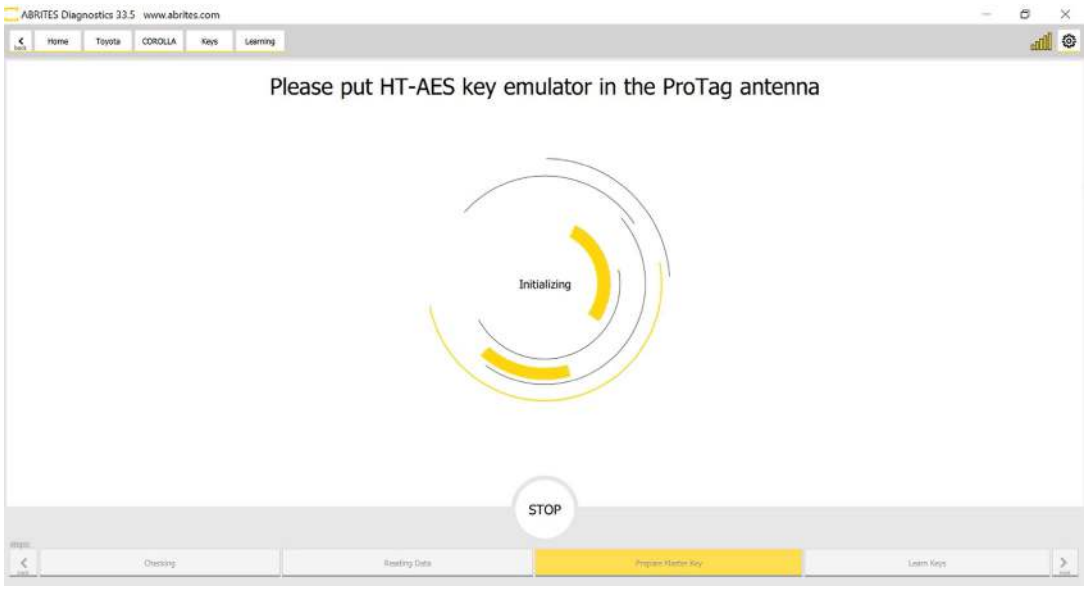
3. Confirm whether you want to prepare a Master Key emulator



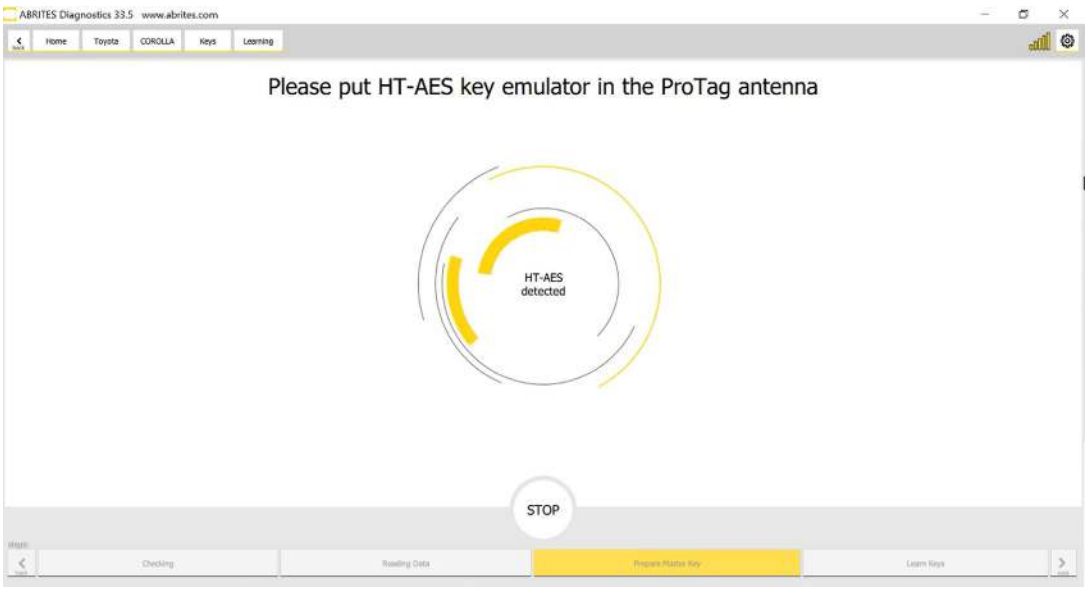
4. Reading and modifying the required data



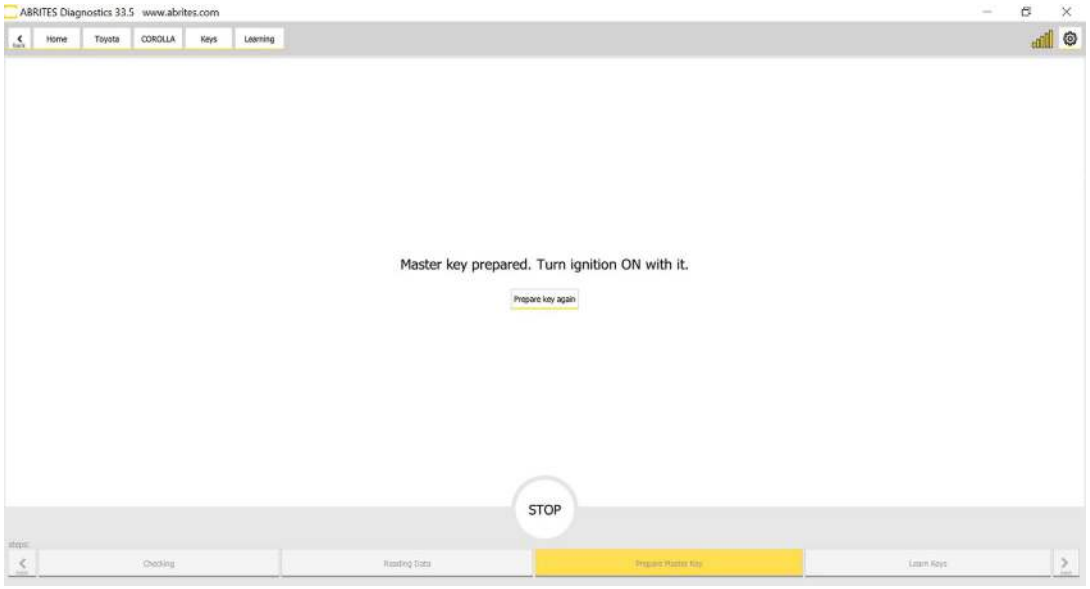
5. Insert the HT-AES (TA64) key emulator in the ProTag programmer



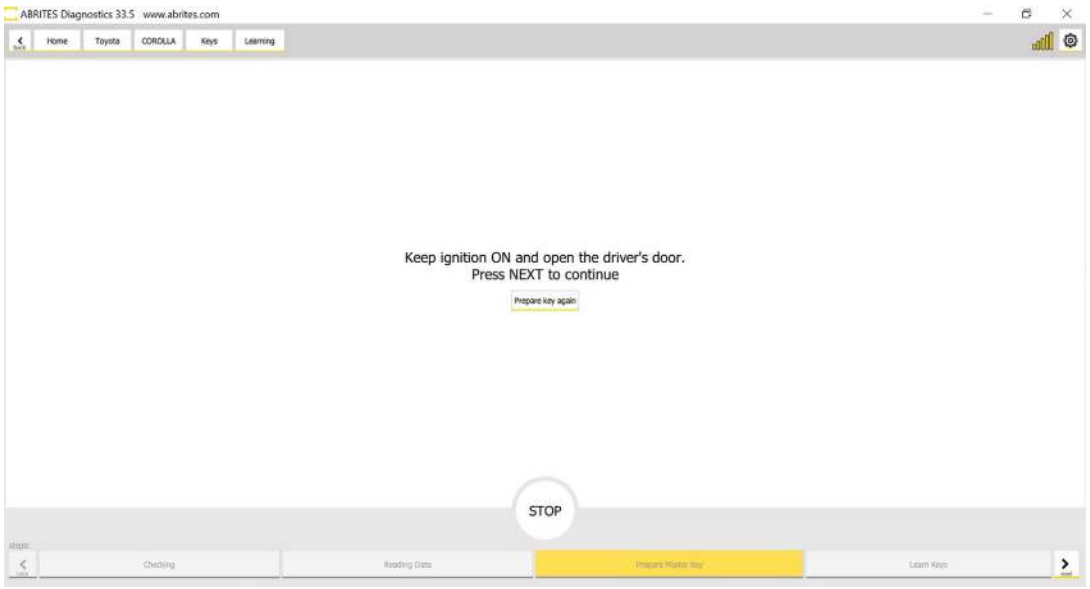
6. TA64 has been detected and is being prepared as Master Key



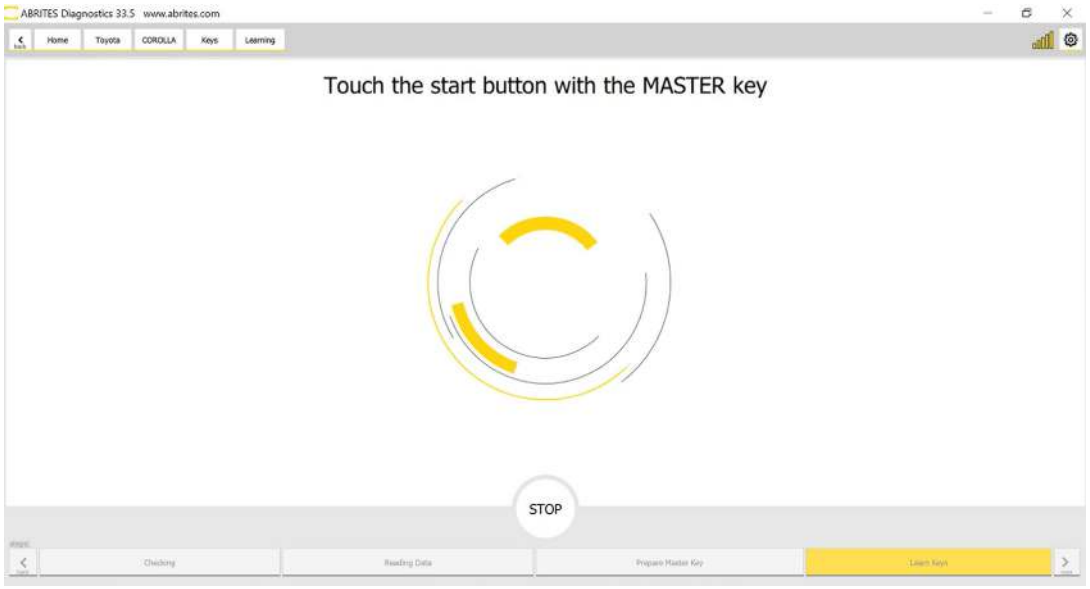
7. Use the prepared TA64 to switch IGN ON



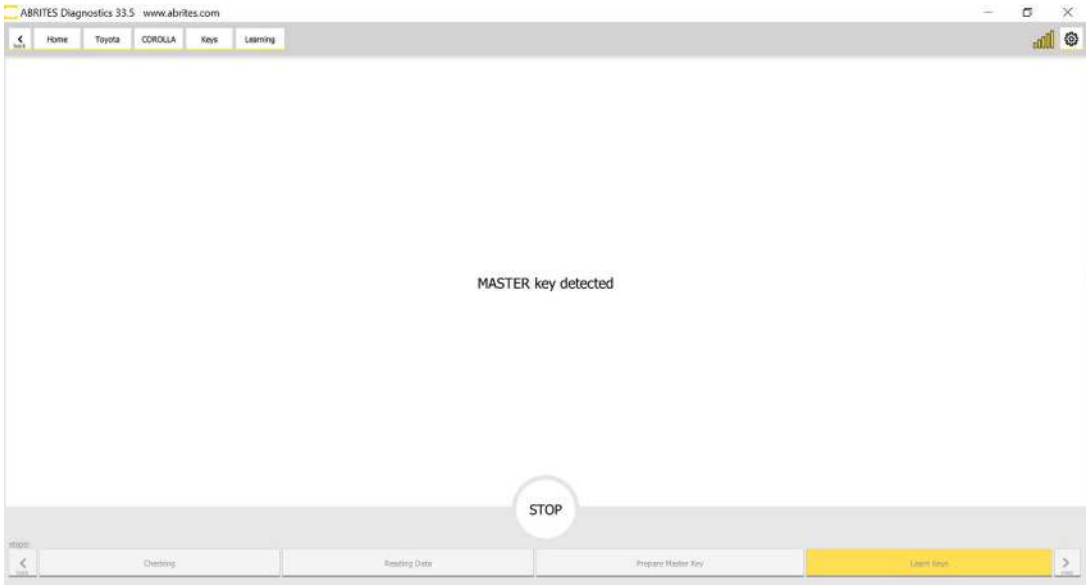
8. Leave IGN to the ON position and open the driver's door



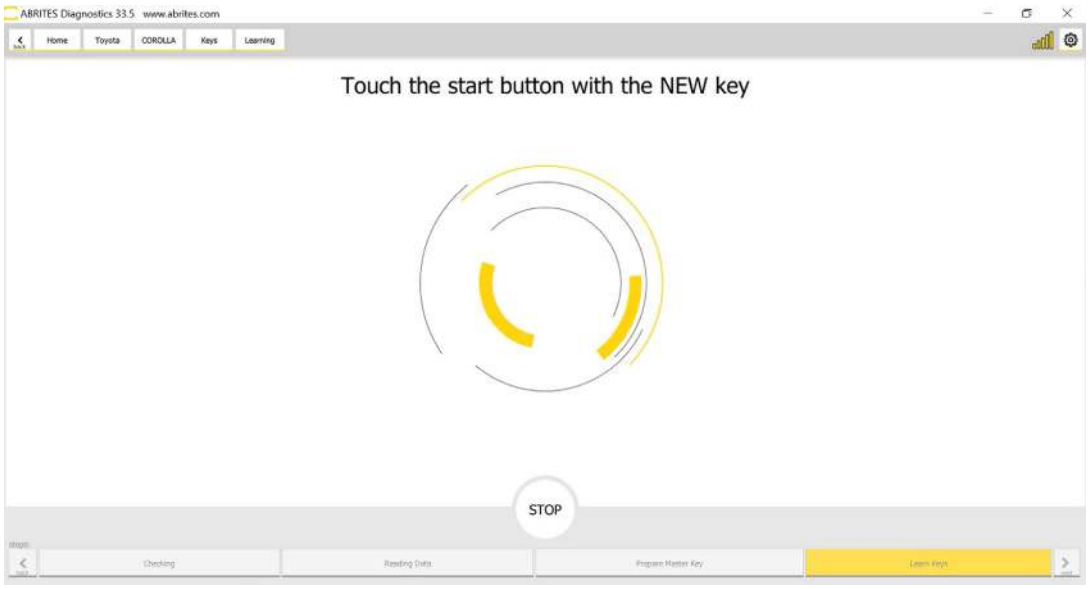
9. Touch the START button with the TA64



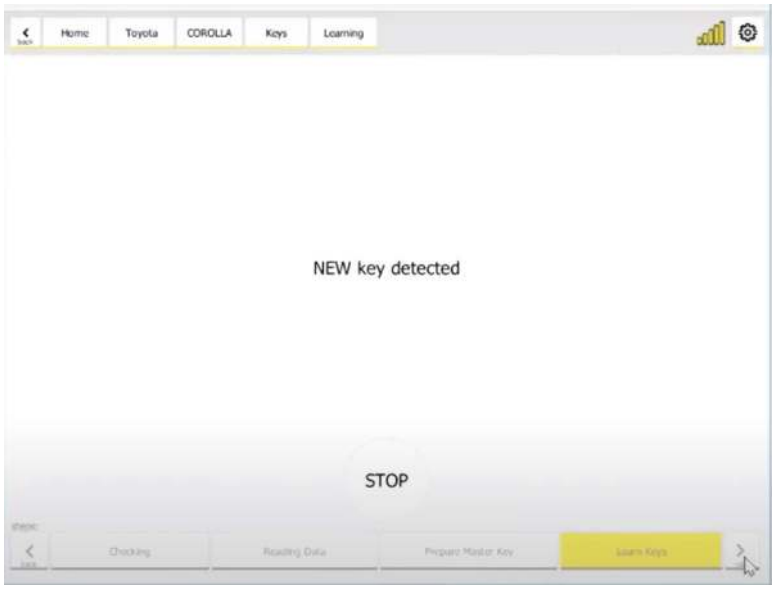
10. TA64 detected as Master Key



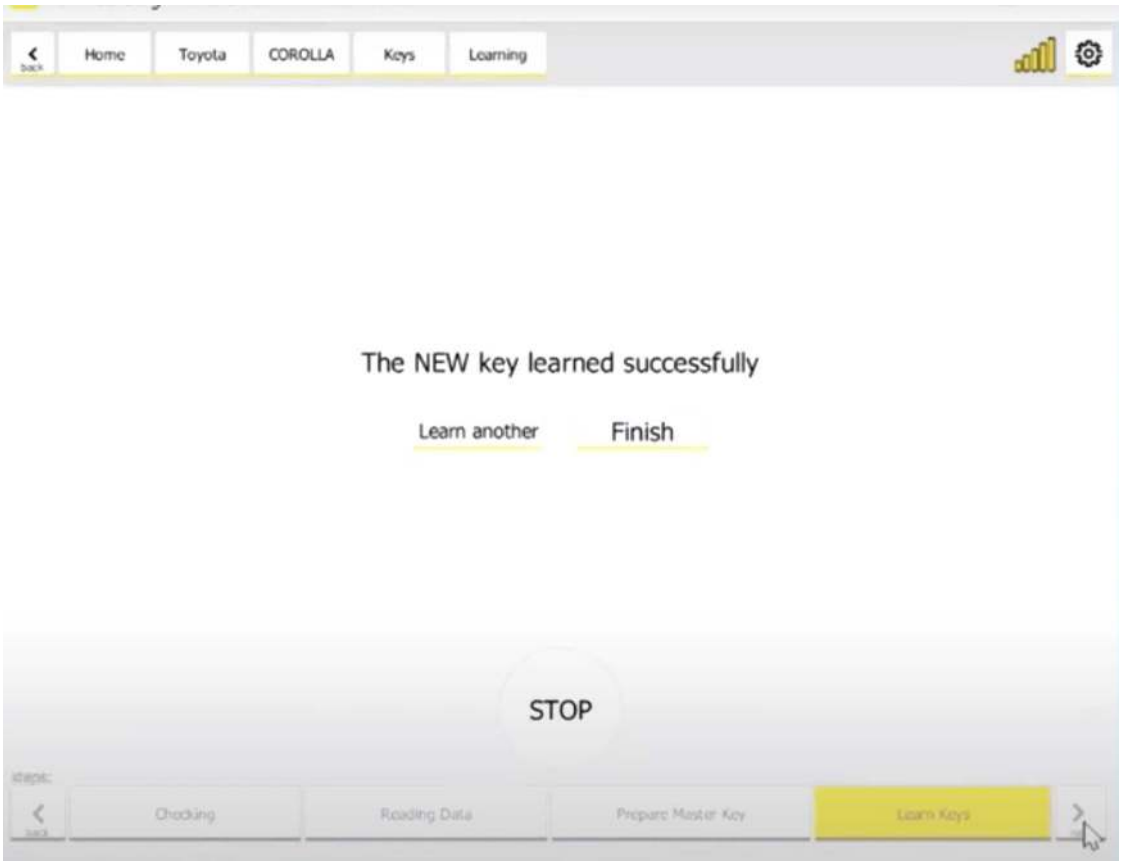
11. Use the new key to touch the START button and learn it



12. The new key is detected



13. The key is now learned and the procedure has successfully finished



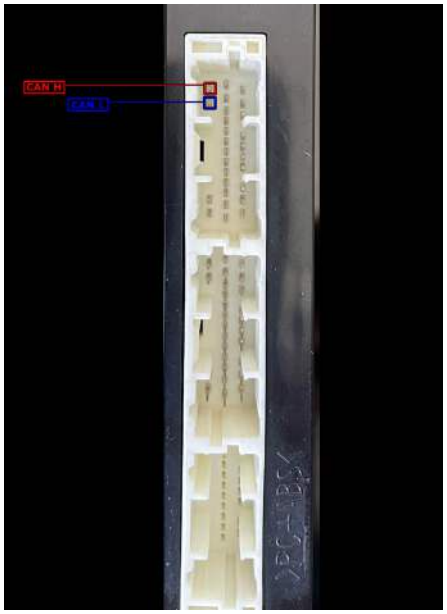
Additional Connections

The software used to require Internal CAN Connection with the use of CB012, which is not required anymore for the majority of the models. In some rare cases the software might ask for internal CAN Connection using CB012. Moldes covered by TN014, TN015, and TN016 require the CB012 connection:

- Yaris 2020+ (XP210) BA HT-AES
- Yaris Cross 2021+ (XP210) BA HT-AES
- Corolla Facelift 2022+ (E210) BA HT-AES
- Corolla Cross Facelift 2022+ (XG10) BA HT-AES
- Sienna 2020+ (XL40) BA DST-AES
- Harrier/Venza 2020+ (XU80) BA DST-AES
- Tundra 2021+ (XK70) BA DST-AES
- Land Cruiser 2021+ (J300) BA DST-AES
- RAV4 Facelift 2022+ (XA50) BA DST-AES
- Aygo X 2022+
- Yaris GR 2021+
- Prius WX60 2022+
- BZ4X 2022+
- Lexus RX 2022+ B9 DST-AES key
- Lexus NX 2021+ B9 DST-AES key
- Lexus LX 2021+

All of the Toyota/Lexus models that are covered by the TN011, TN012 and TN013 licenses share the same Smart System pin out when connecting to the internal CAN BUS where pin 1 is the CAN H and PIN 2 is CAN L.

This is what the connector looks like and what pins to connect to when working with CB012:



4.2 Airbag

The latest update of the Toyota Online software introduces the option to read/write DFlash and clear Crash Data of Airbag modules 2020+. This option is access from the main screen, on the left hand side you will see a button “Airbag”, which will open the menu and the functionality. The software is intuitive, from the buttons you are able to read the Dflash, clear the crash data, and then write the file back to the unit.

