MOE
DIATRONIK

COMPLETE

CAR KEY REPAIR BOOK

First reference for real key repair work

Smart Keys • Remotes • PCB & Chip Repair • Decoding

diatronik-class.com

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The First Thing Said

Don't start blindly before repairing a car key. Three things must come first — **Listen, Ask, Watch** — and only then repair.

1 · First, Listen

Listen to the customer — what they say and what they need. Understand their explanation of the cause of the problem and analyse it from what you hear. Listening first makes the repair far more convenient.

2 · Second, Ask

Ask whether the key has ever been programmed before, and whether the current damaged key has been deleted by the system — will it need matching again after the fix? Ask if any anti-theft modules (ECM, TCM, BCM) were repaired, since replacing these requires IMMO programming. Ask if the key fell or got wet, or if the remote / induction stopped working. These clues point to the fault location on the PCB.

3 · Third, Watch

Based on what you heard and asked, inspect the key's motherboard. If there is water ingress, check the wiring; if something is broken, locate the damage — short circuit or lost components. Don't start working blindly. If the PCB has already been repaired by another technician, first restore it to its original state.

First Listen · Second Ask · Third Watch — this is the first thing every repairer must do.

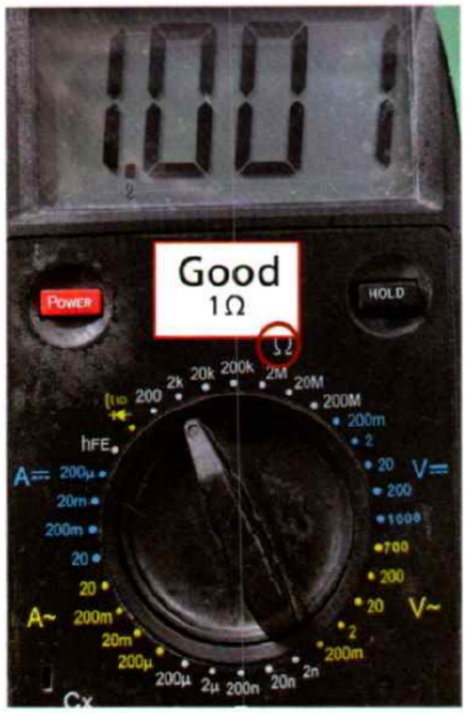
RESISTOR

A resistor divides voltage and limits current in the key circuit. Marked **R** on the PCB. Unit: ohms (Ω, KΩ, MΩ).

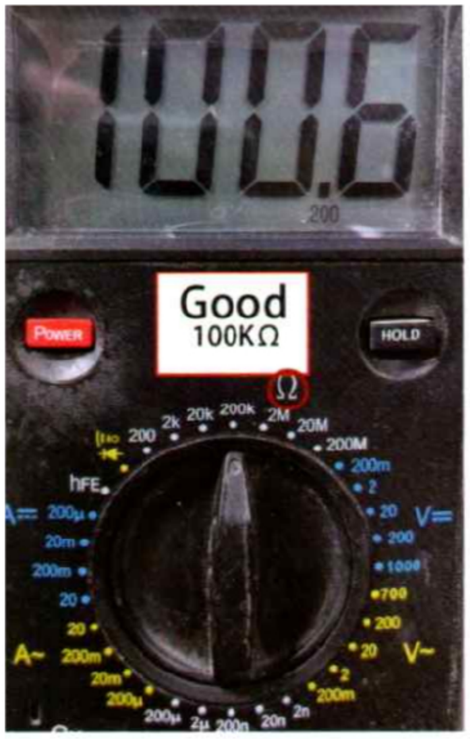
In routine maintenance, complex theory is usually not needed — as long as your thinking is clear, it is easy to repair.

How to measure a resistor

Set the multimeter to resistance mode (Ω) and measure both ends directly with the probes.



Good — 1Ω

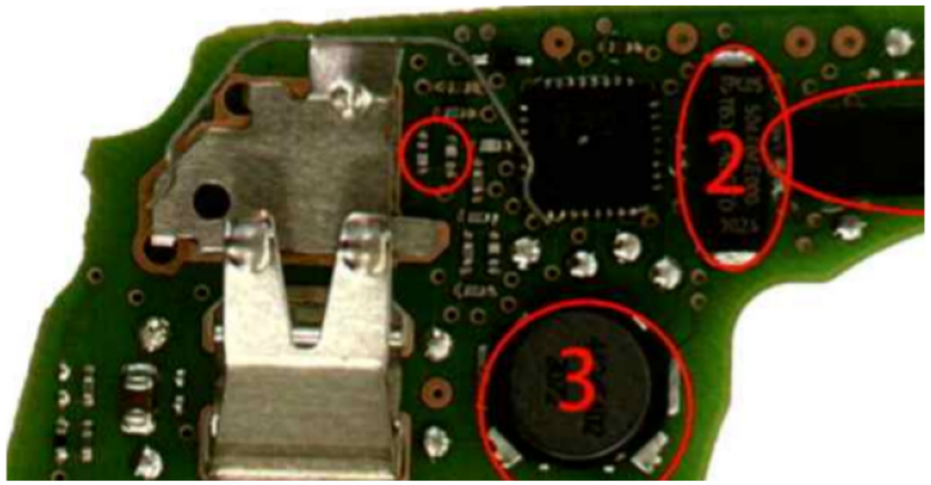


Good — 100KΩ

Bad — out of range

INDUCTANCE

Main functions in the circuit: storing energy, filtering, selecting signals, and oscillation. Marked **L** on the PCB. Unit: henry (H, mH, μH, nH).



The red circles in the image are inductors.

In routine maintenance, complex theory is usually not needed — as long as your thinking is clear, it is easy to repair.

Measurement method

Set the multimeter to **continuity / ON-OFF** mode and measure directly across the two ends of the inductor.

Not passing — bad

Passing — good

Passing — good

CAPACITOR

Tantalum / Electrolytic

Multi-layer Ceramic (MLCC)

A capacitor stores electricity. Marked **C** on the PCB. Unit: F / mF / μF / nF / pF.

In the car key its main roles are: power filtering, signal filtering, signal coupling, resonant circuits, compensation circuits, and charging / discharging circuits.

The most common capacitor fault is leakage — the part often appears oxidised black, typically caused by overheating from the hot-air gun.

Measuring capacitor leakage current

First remove the capacitor, then supply power to it directly with a power meter.

Electric current is leakage

Current present — leakage

No current is good

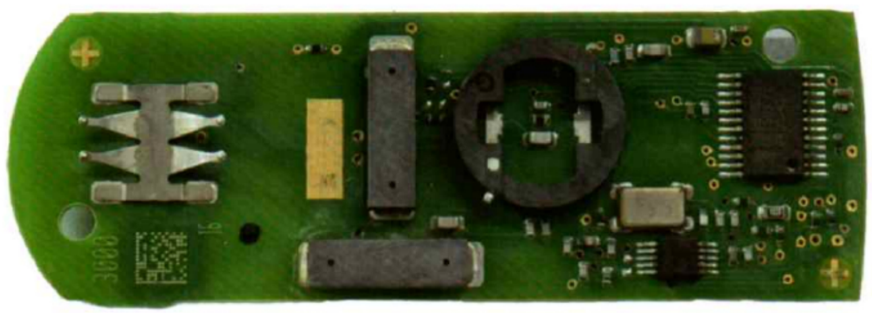
No current — good

Key failure from water ingress & severe corrosion

Conventional method

PK

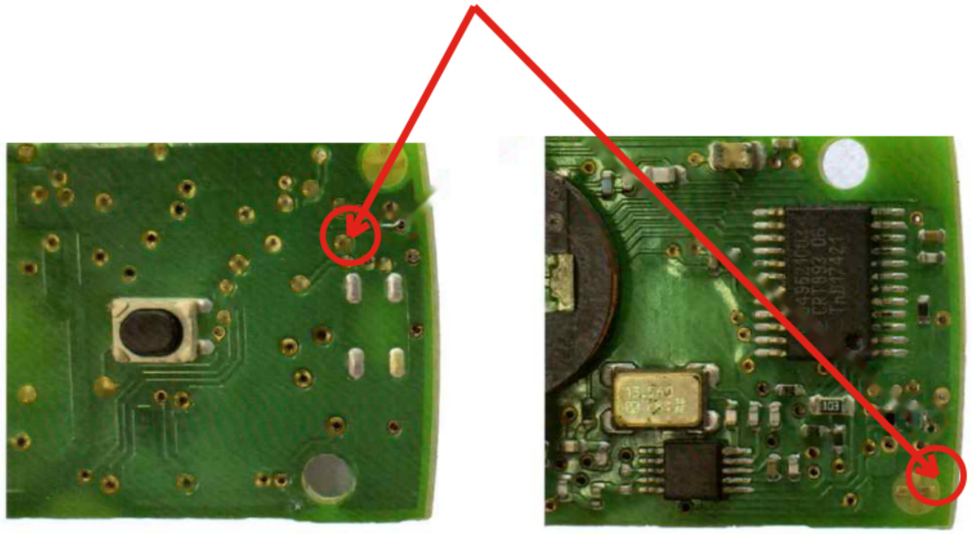
Our method



Conventional method

Looking for corrosion only through the plated through-holes makes it easy to overlook corrosion points — causing repair failures and wasted time.

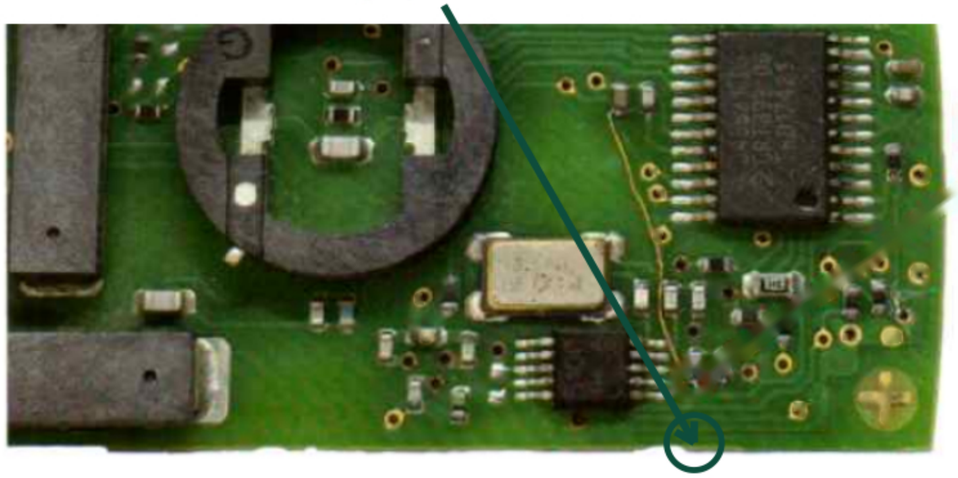
corrosion points



Our method

Find the root cause of the fault by following our repair manual, then connect only the wire that is needed — precise, clean and reliable.

single precise wire



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Bookmarks are clickable in the side panel of your PDF reader — or click a brand below.

Alfa Romeo

4A Chip
433 MHZ
Main IC： NXP-A1M15
3D Inductance： X-D0240-085R2
Crystal Oscillator： 27.6
3 Funcytion Button
Working Current： 2mA

Red line is
power supply
Blue line is Button

: Coiled Inductanc

: Finter Capacitor

: Resistance

Button： Number 14

Sianal Capacitance：

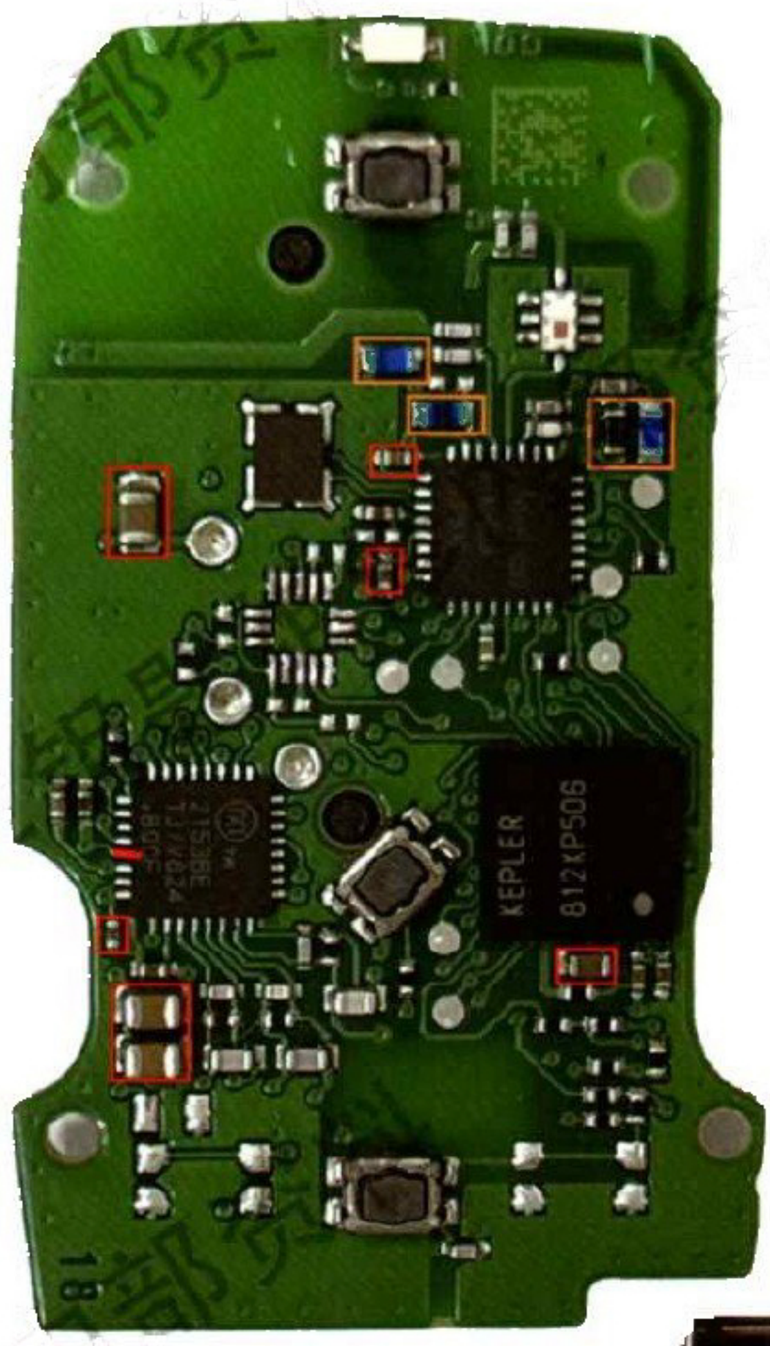
Crystal Oscillator Capacitance：

Sianal Inductanc：

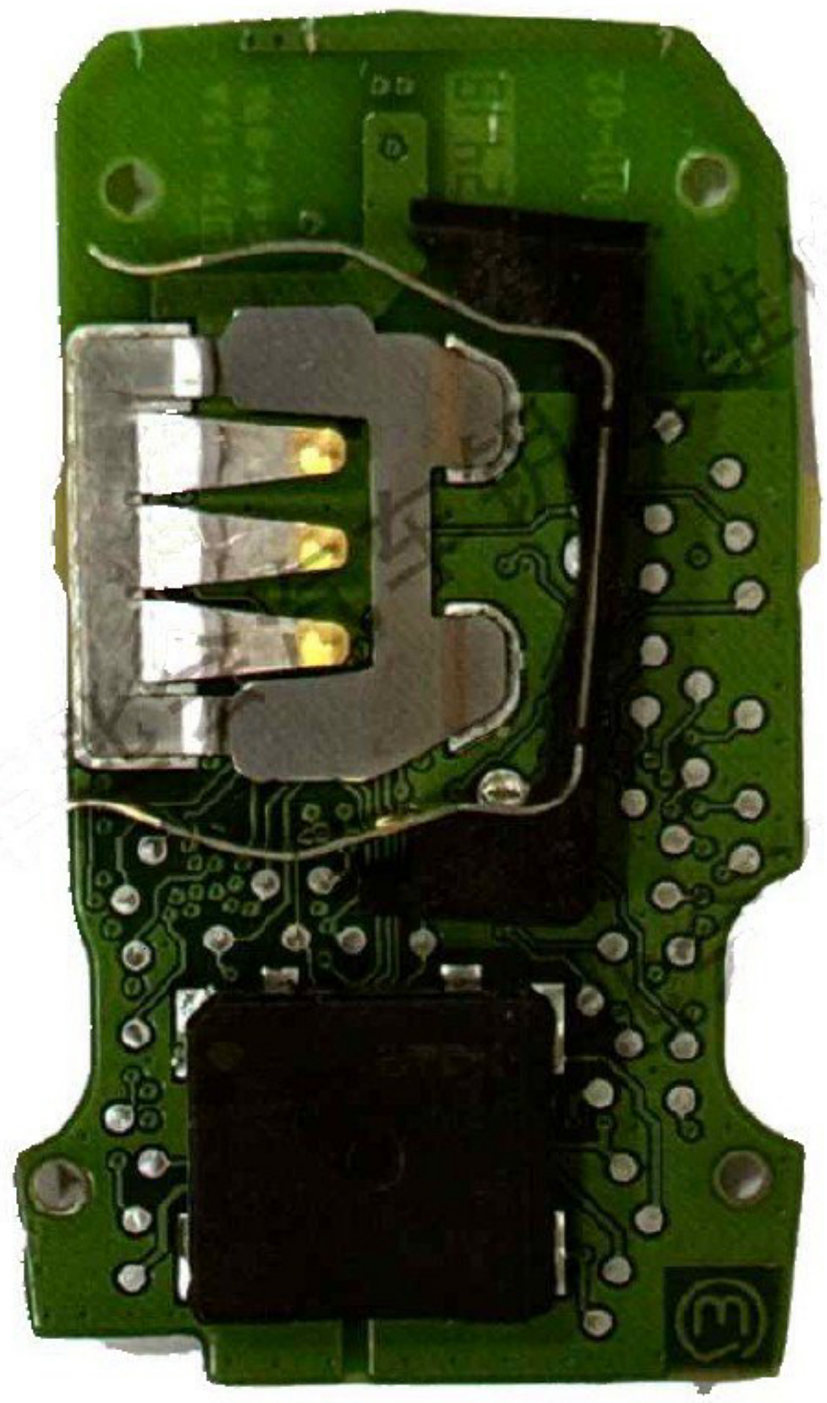
Replacing the PBC requires
transplanting the main IC

Aston Martin

Chip
433 MHZ
Main IC : KEPLER
Radio Frequency IC : ATA5833
3D Inductanc : C0277A022
Crystal Oscillator : D24209
3 Funcytion Button
Working Current: 11mA
Power Supply IC :2153BE



Red line is
power supply
Blue line is Button



: Coiled Inductanc

: Finter Capacitor

: Resistance

Button : Number 3

Sianal Capacitance :

Crystal Oscillator Capacitance:

Sianal Inductanc:

Replacing the PBC requires
transplanting the main IC
and ATA5833/2153BE

Aston Martin

Chip FBS4
433 MHZ
Main IC： BIRNE
Radio Frequency IC : ATA5830
3D Inductanc : 404051221
Crystal Oscillator： 24.740
Funcytion Button
Working Current： 15mA
Power Supply IC : MAXL
Intelligent IC : AD306

Red line is power supply

Blue line is Button

: Coiled Inductanc

: Finter Capacitor

: Resistance

Button： Number

Sianal Capacitance :

Crystal Oscillator Capacitance:

Sianal Inductanc:

Replacing the PBC requires transplanting the main IC