

Ref. : IA-9904
Date : May 21, 1999

Technical Description
for
Immobilizer System.
MDL: RI-14BTY

TOKAI RIKI CO., LTD.

TECHNICAL DESCRIPTION

1. Name: immobilizer

MDL: RI-14BTY

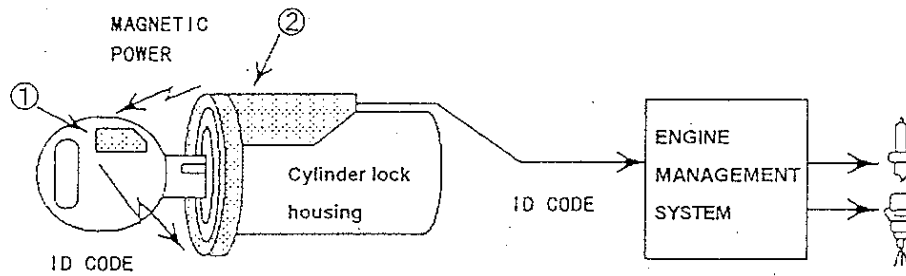
Applied Vehicle Model: TOYOTA PREVIA

This immobilizer system is to be installed on motor vehicles as OE (= original equipment) item. It is intended to prevent unauthorized use of the vehicles.

2. System Construction:

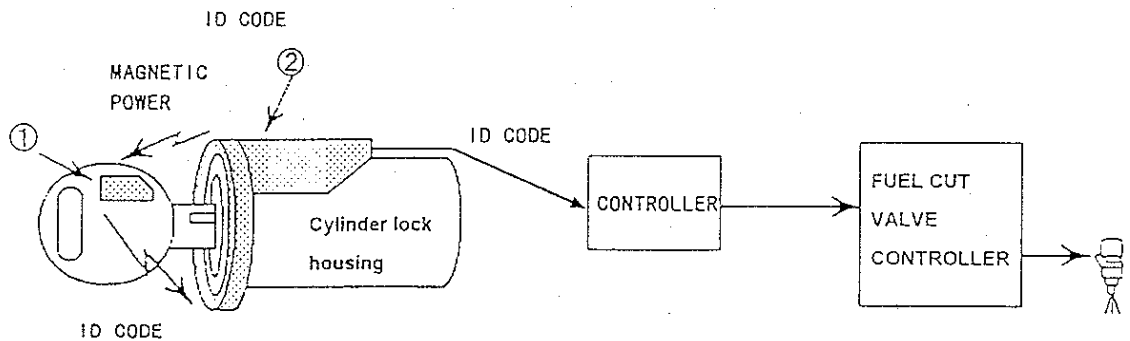
(1) When installed on petrol engine vehicles

- ① transponder ② coiled antenna with amplifier



(2) When installed on diesel engine vehicles

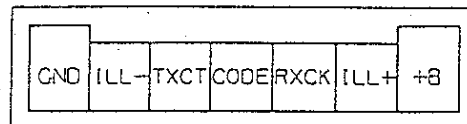
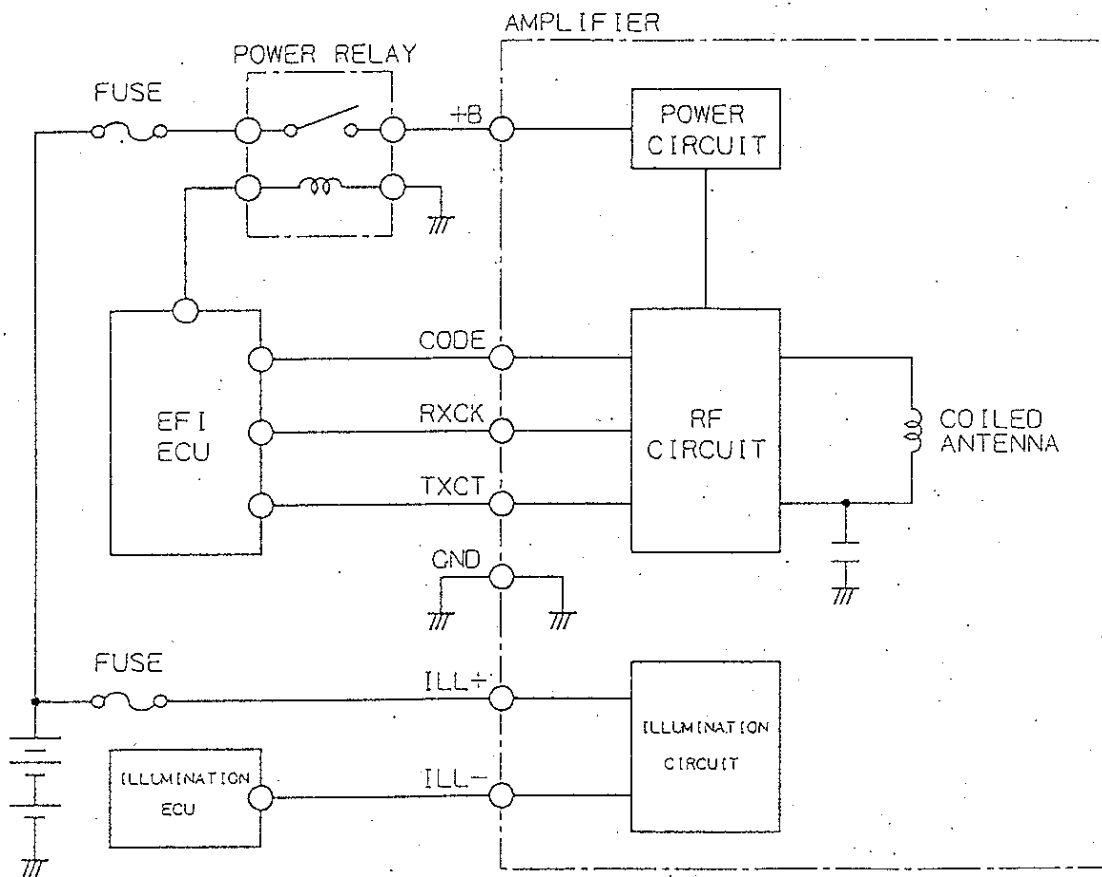
- ① transponder ② coiled antenna with amplifier



3. Specifications

Items	Specifications
rated voltage	12 V
operating voltage range	8 to 16 V
operating temperature range	-40 to 85°C -40 to 60°C (key)
frequency (transmitting)	134.2 kHz
frequency (receiving)	128.7 kHz
modulation	unmodulated carrier
antenna output (max)	60 dB μ V/m at 10 m (10 mW)

Block Diagram of Amplifier



Amplifier

for Model RI-14BTY

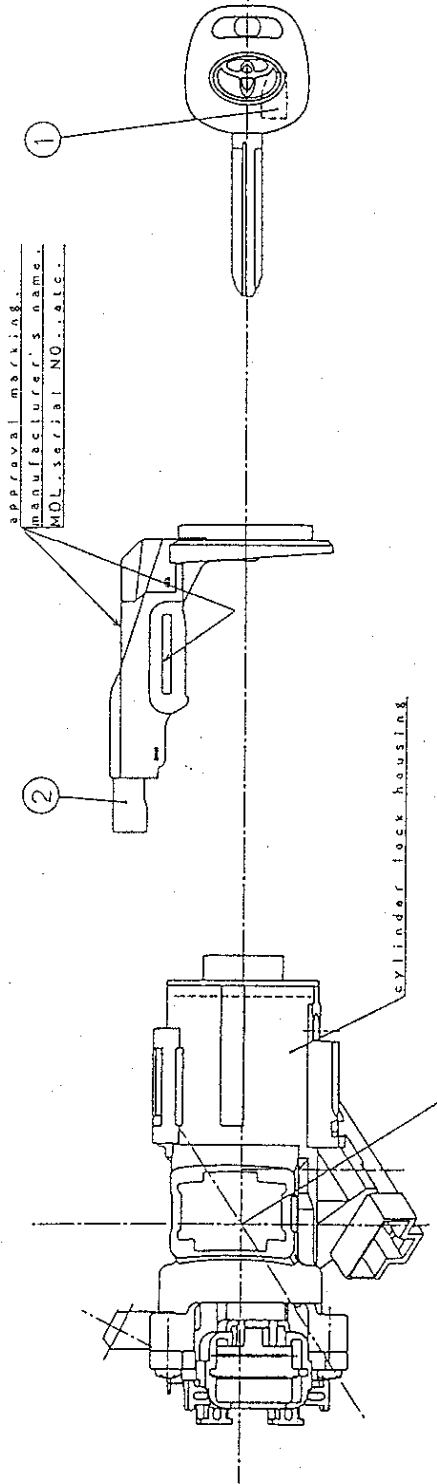
4. Operating Summary

- ① By the driver of the vehicle, the key (a transponder incorporated in the key grip has a certain ID code already registered to the engine management system) is inserted into the key cylinder.
- ② When the key is inserted into the key cylinder, the amplifier supplies high frequency electric power to coiled antenna.
- ③ Then the electromagnetic wave generated in the coiled antenna supplies the electric power by means of electromagnetic induction to the transponder incorporated in the key grip.
- ④ After receiving the electric power from the coiled antenna, the transponder transmits the ID code using the received electric power.
- ⑤ The ID code is received by the coiled antenna. Then it is amplified and shaped to 0-5 V digital signal at the amplifier.
- ⑥ The digital signal is transmitted directly to the vehicle engine management system or to the fuel cut valve controller through the controller, which judges whether the received ID code corresponds with the registered one. When correspondence is recognized, it starts the engine.

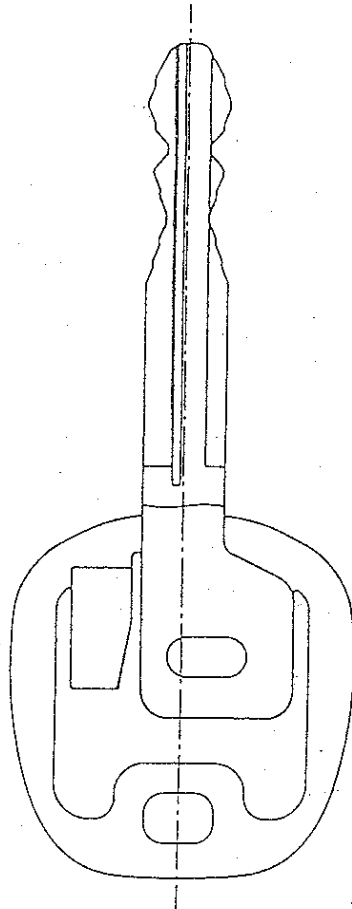
STN NO	PART NO.	PART NAME	QTY
1	271210-003	TRANSPONDER	1
2	827087-000	COILED ANTENNA W/AMPLIFIER	1

FCC ID:MOZRI-14BTY

NAME	IMMOBILIZER
MDL	RI-148TY
SCALE	FREE



* For the purpose of radio-technical test,
cylinder lock housing is a support for
fixing the coiled antenna with amplifier.
The shapes is designed for each
vehicle type.



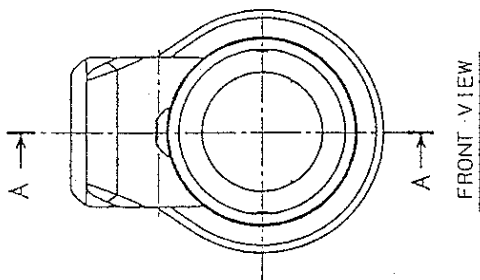
* Key plate and plastic
mold part are designed
for each vehicle type.

NAME	TRANSPONDER
PART NO	271210-003
SCALE	FREE

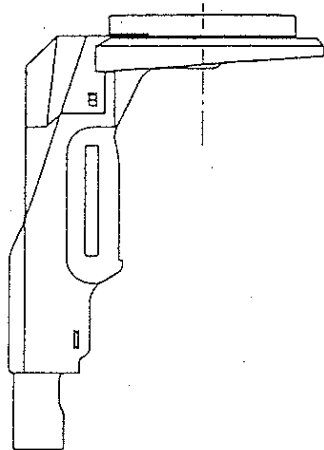
* Plastic mold part and mounting bracket of coiled antenna with amplifier are designed for each vehicle type.

SPECIFICATIONS

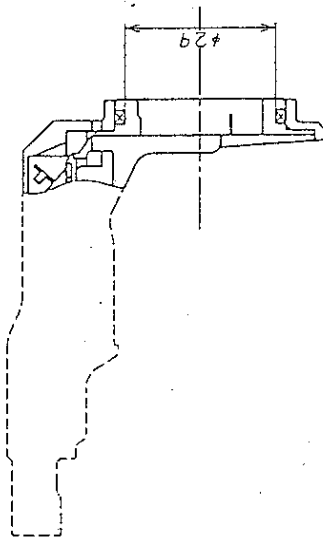
(when installed on cylinder lock housing)
Inductance: $30\mu\text{H}$ ($f=134.2\text{kHz}$)
Q: Min12 ($f=134.2\text{kHz}$)
Resistance: 0.7Ω



FRONT VIEW



SIDE VIEW



A-A

NAME	COILED ANTENNA W/ AMPLIFIER
PART NO	627887-000
SCALE	FREE