

VALCON

VALTAI CONTROLLER

Vehicle Specific Manual



Pursuing the Ultimate in Engine Performance and Efficiency
HKS Company Limited

E05171-T37020-00
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NOTICE

Thank you for purchasing the HKS VALCON system.
For safe usage and understanding the functions of this product, read both the operation and installation manuals before installation and use. This manual explains the installation of the VALCON unit that is not mentioned in the operation manual.

APPLICATION

| | |
|---------|---------------------------|
| MAKER | TOYOTA |
| VEHICLE | CHASER / MARK II / CRESTA |
| YEAR | 1996.9 - 2000.9 |
| MODEL | JZX100 |
| ENGINE | 1JZ-GTE (VVT-i) |

WARNING

- Do not use on engines with which the pistons and valves contact the camshafts during the camshaft's rotating range. The vehicle may become damaged.

REQUIRED OPTIONAL PARTS

Optional harness and adapter (sold separately), are required for installation. Purchase the required harness and adapter listed below.

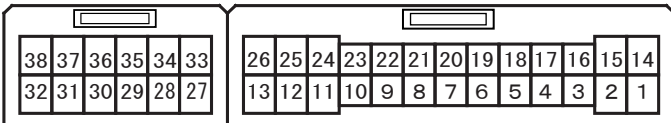
Required Optional Parts to use with the Universal Harness

| PART No. | PRODUCT | Number of use |
|-------------|-------------------------------|---------------|
| 45999-AK021 | VALCON II Universal Harness 1 | 1 |
| 45999-AK025 | VALCON II ADAPTER | 1 |

VALCON INPUT AND OUTPUT SIGNAL

1 Connectors of VALCON Unit

View from the connector insertion-side of the VALCON main unit.



26 pin connector (Wire colors of Universal Harness 1)

| No. | Description | Color | Description |
|-----|--------------|--------------|--|
| 1 | GND | Black | Control ground |
| 2 | GND | Green | Pressure sensor ground |
| ▲3 | NE- | Red/Black | Crankshaft angle signal (-) |
| ▲4 | G1 OUT | Orange/Black | Camshaft angle signal 1 output |
| ▲5 | G2 OUT | Blue/Black | Camshaft angle signal 2 output |
| ▲6 | G GND | Red/Green | Camshaft angle signal (-) |
| 7 | REV OUT | White | RPM signal output |
| 8 | OP OUT1 | Brown | Voltage output 1 for data logger |
| 9 | OP OUT2 | Orange | Voltage output 2 for data logger |
| 10 | SOL2 IN | Yellow/White | Solenoid 2 input |
| 11 | SOL2 OUT | Yellow/Black | Solenoid 2 output |
| 12 | SOL2 GND | Green/Black | Solenoid 2 ground |
| 13 | POWER GND | Black/White | Power ground |
| 14 | IG | Red | Ignition power supply |
| 15 | +5V | Yellow | 5V power supply for pressure sensor |
| ▲16 | NE+ | Gray | Crankshaft angle signal (+) |
| ▲17 | G1 IN | Orange/White | Camshaft angle signal 1 input |
| ▲18 | G2 IN | Blue/White | Camshaft angle signal 2 input |
| 19 | AFM/OP IN1 | Purple | Air flow sensor input / Option input 1 |
| 20 | BOOST/OP IN2 | Blue | Pressure sensor input / Option input 2 |
| 21 | THROTTLE | Pink | Throttle sensor input |
| 22 | WATER | Light Blue | Water temperature sensor input |
| 23 | SOL1 IN | Brown/White | Solenoid 1 input |
| 24 | SOL1 OUT | Brown/Black | Solenoid 1 output |
| 25 | SOL1 GND | Green/White | Solenoid 1 ground |
| 26 | | | Not used |

12 pin connector (Wire colors of Universal Harness 2)

| No. | Description | Color | Description |
|-----|-------------|--------------|--------------------------------|
| 27 | SOL4 GND | Green/Black | Solenoid 4 ground |
| 28 | SOL4 OUT | Yellow/Black | Solenoid 4 output |
| 29 | SOL4 IN | Yellow/White | Solenoid 4 input |
| 30 | | | Not used |
| ▲31 | G3 OUT | Orange/Black | Camshaft angle signal 3 output |
| ▲32 | G4 OUT | Blue/Black | Camshaft angle signal 4 output |
| 33 | SOL3 GND | Green/White | Solenoid 3 ground |
| 34 | SOL3 OUT | Brown/Black | Solenoid 3 output |
| 35 | SOL3 IN | Brown/White | Solenoid 3 input |
| 36 | | | Not used |
| ▲37 | G3 IN | Orange/White | Camshaft angle signal 3 input |
| ▲38 | G4 IN | Blue/White | Camshaft angle signal 4 input |

Universal Harness 1L and 2L have shield wires for pins labeled with "▲" mark. The color of all shield wires is white. They are also labeled with the name of their corresponding signals on the tip of each of these wires.

2. Universal Harness 4 pin connector



Figure of 4 pin connector of Universal Harness 1 & 2 viewed from the pin insertion side.

4 pin connector (Wire colors of Universal Harness 1)

| No. | Description | Color | Description |
|-----|-------------|--------------|----------------------------------|
| 1 | SOL1 IN | Brown/White | Solenoid 1 input |
| 2 | SOL2 IN | Yellow/White | Solenoid 2 input |
| 3 | SOL1 | Brown/Red | Solenoid 1 Power Supply / Ground |
| 4 | SOL2 | Yellow/Red | Solenoid 2 Power Supply / Ground |

4 pin connector (Wire colors of Universal Harness 2)

| No. | Description | Color | Description |
|-----|-------------|--------------|----------------------------------|
| 1 | SOL3 IN | Brown/White | Solenoid 1 input |
| 2 | SOL4 IN | Yellow/White | Solenoid 2 input |
| 3 | SOL3 | Brown/Red | Solenoid 1 Power Supply / Ground |
| 4 | SOL4 | Yellow/Red | Solenoid 2 Power Supply / Ground |

3. Universal Harness Other wires

Universal Harness 1

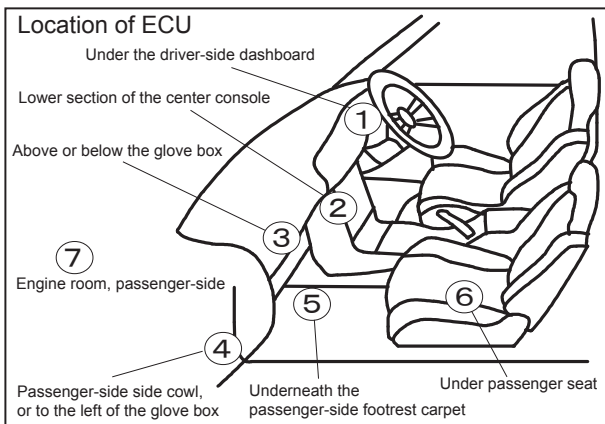
| No. | Description | Color | Description |
|-----|-------------|------------|------------------------------------|
| | SOL1-2 | Red/Yellow | Solenoid 1-2 Power Supply / Ground |

Universal Harness 2

| No. | Description | Color | Description |
|-----|-------------|------------|------------------------------------|
| | SOL3-4 | Red/Yellow | Solenoid 3-4 Power Supply / Ground |

LOCATION OF ECU

Refer to the "Location of ECU" section and confirm its location.
The ECU is located underneath the foot area of the passenger's floor carpet ⑤.



INSTALLATION

WARNING

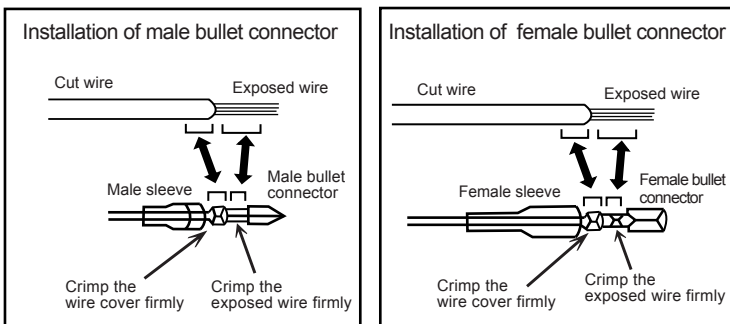
- Do not use on engines with which the pistons and valves contact the camshafts during the camshaft's rotating range. The vehicle may become damaged.
- The adapter (sold separately) will rise in temperature during operation; keep it away from flammable objects. It may cause a fire.

1. Disconnecting the Battery Terminal

- (1) Disconnect the negative terminal from the battery.

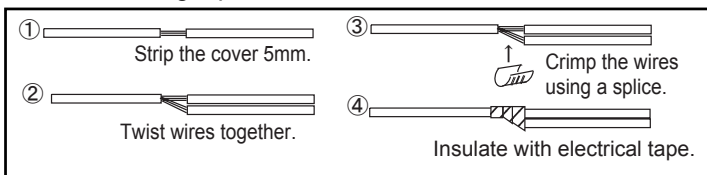
2. Wiring

2.1 Installation of bullet connector



- ① Cut the wire.
- ② Strip the wire cover.
- ③ Insert wire to the sleeve of bullet connector.
- ④ Crimp the wire with the bullet connector.
- ⑤ Crimp the wire cover with the bullet connector.
- ⑥ Insulate the crimped portion with a sleeve.

2.2 Installing Splices

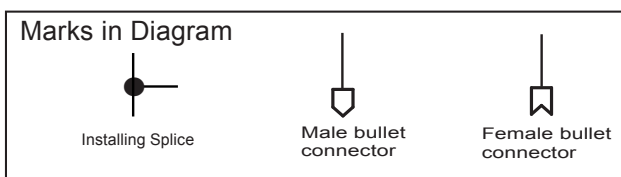


- ① Strip 5mm of the wire cover for wiring as shown below.
- ② Connect another wire to the uncovered portion, and twist the wires together.
- ③ Crimp the twisted wires together using a splice.
- ④ Insulate the spliced wires with electrical tape.

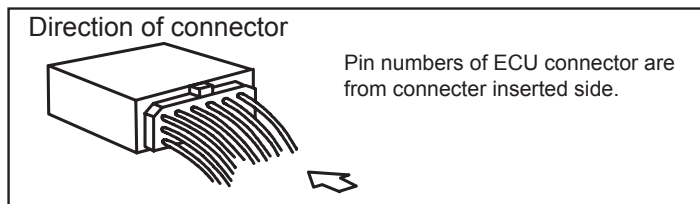
3. Wiring Diagram

3.1 Marks in Diagram

Following marks are used in wiring diagram.



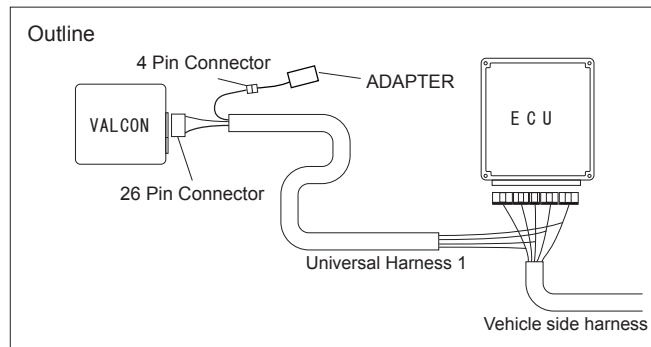
3.2 Diagram of connector



4. Wiring

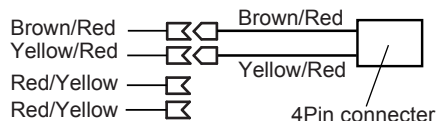
Connect the Universal Harness 1 using splices and Solder.

4.1 Wiring Outline



4.2 Wiring Method

- (1) Refer to the "Location of ECU" section and confirm its location.
- (2) Connect the Universal Harness 1 using splices and bullet connectors in accordance with the wiring diagram on page 5. The Universal Harness 1 is available separately.
 - (P2 × 8, P3 × 3, P4 × 3, P5 × 3, P6 × 3)
 - If a wire crimper/splicer is not available, clamp with needle nose pliers and solder the splice and the wire. Make sure that the wire does not come out from the splice.
- (3) Insulate the connected portions with tape to prevent short circuit.
- (4) Check to make sure the following wires of the Universal Harness's 4 pin connector are connected: Brown/Red wire to Brown/Red wire, and Yellow/Red wire to Yellow/Red wire.
 - If the connection is incorrect, connect them as shown below.



- (5) Insulate unused wires with electrical tape to prevent short circuits.
- (6) Connect the 26 pin connector of the Universal Harness 1 to the VALCON unit. (P1 × 1)
- (7) Connect the 4 pin connector of the Universal Harness 1 to the adapter.

5. Mounting the Unit

- (1) Choose a mounting position for the VALCON unit, taking into consideration the length of the harness.
- (2) Secure the harness with tie wraps. (P7)

6. Complete the Installation

- (1) Reinstall all removed factory parts.
- (2) Reconnect the negative terminal to the battery.

VALCON Universal Harness Wiring Diagram for JZX100 CHASER, MARK II, CRESTA

