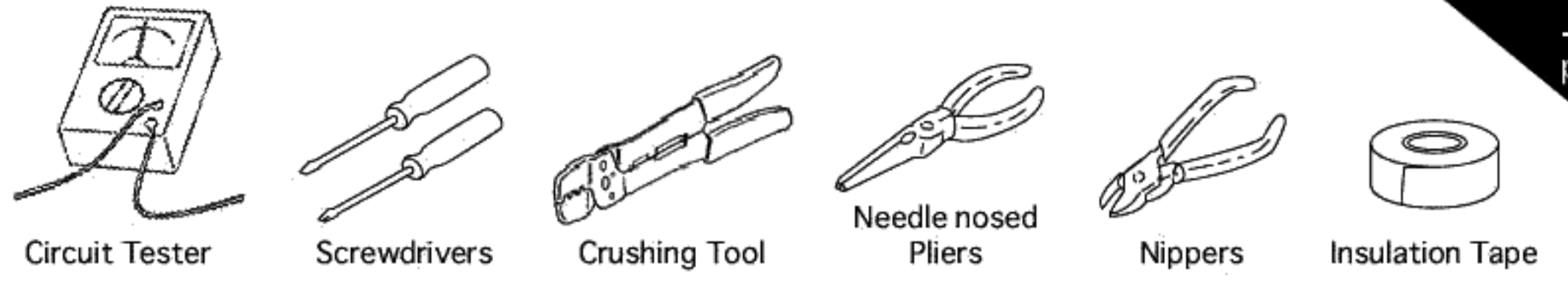


User's Guide

Caution

1. Using this unit for long periods of time will shorten the life of the washer tank motor, therefore we recommend using only for short periods when necessary. Also, PIVOT Corporation in no way accepts any responsibility for any trouble or malfunctioning of the washer tank motor or of your car due to using this machine.

2. Due to the make of car it may, in some cases, be impossible to use the Engine Revolution Auto-Spray Function and/or the Low Water Level Auto-Stop Function.



Other tools may be needed to take off the water tank, etc...

Part Names and Functions

<FRONT>

MODE Switch Use to change settings

SET Switch Use to set each setting change

Monitor Lamp Lamp appears lit when spraying

Alarm Alarm sounds at the same time

START Switch Use to start and stop spraying

DISPLAY

Normal Indicates the timer setting or the mode setting
Ex) 45 sec **0.45** Ex) All **ALL** Ex) Auto **Aut**

For Each Mode
Blinking display indicates mode (Please see method of operation below)

How to Return to Normal Return to Normal by pressing the **MODE** switch.
(The number of times to press **MODE** differs depending on mode setting)

Low Water Level
If Low Water Level Auto-Stop function is on, the display will blink when water level is low.

How to Return to Normal After adding water to the tank, press the **START** switch for more than two seconds, the unit will do a trial spray, and after confirming the supply of water, the display will return to Normal

Error
Blinks when an error has been made in setting or functioning

How to Return to Normal Return to Normal by pressing the **START** switch once.

Caution: Please check all connections. (See "Troubleshooting")

- Poor connection with motor pump
- Mistake in positioning of Slide Switch

<REAR>

Detection Switch

To all proper connections

Caution
Only move this switch if trouble occurs when setting the engine revolution level (See Operation Method)

- If set at other than Aut.
- If working properly in Aut.

Don't move switch

Slide Switch

Change according to type of controller in your model of car

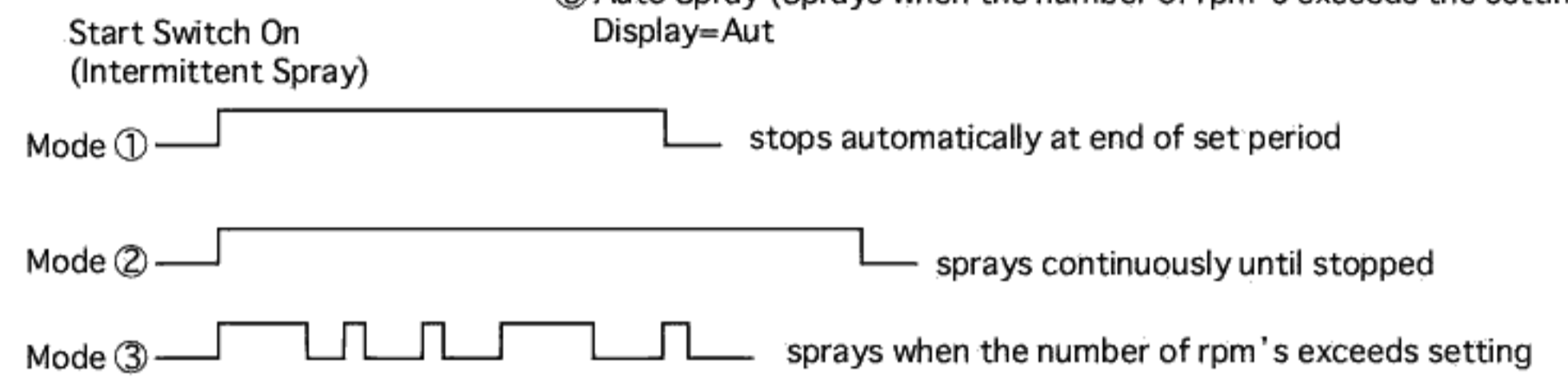
Caution
Properly change only after reading "How to Connect the Wires"

If the Slide Switch is wrong and you press the start switch, the display will indicate Err, so please confirm the position of the switch.

About Spraying Time

The spray can be set to the following conditions

- ① Timer Set Period (Upon starting, it stops automatically after set time period) Display= 0.05-3.00
- ② Continuous Spray (Upon starting, it sprays continuously until stopped) Display=ALL
- ③ Auto Spray (Sprays when the number of rpm's exceeds the setting) Display=Aut



Operation Method

Mode Descriptions and Setting Directions

NOTE: ○ indicates Switch.

① Normal Display

Indicates period of timer setting

MODE Press Once

①-1 Set Timer Mode

Set the period of time of spraying from when you press **START** until it automatically stops.

The period of time blinks

MODE Press Once

Other than Aut Displayed | Aut Displayed

② Set Spray ON Period Mode

Sets up period of spraying time until stopping.

Blinking | Lit

MODE Press Once

③ Set Spray OFF Period Mode

Sets up period of resting time between sprays

Lit | Blinking

MODE Press Once

④ Set Low Water Level Auto-Stop Mode

Set Auto-Stop function to stop spraying when water level in tank is low.

OFF (OFF) or ON (ON) indicated by blinking light

MODE Press Once

⑤ Water Tank Sampling Mode

Checks and stores characteristics of water tank in order to activate Auto Stop function when tank is empty.

ini (Initialize) indicated by blinking light

This operation is necessary to use the Low Water Level Auto-Stop function.

Be sure to do this sampling after: installing the unit for the first time, changing the battery, or changing the tank or motor pump.

Do a re-sampling if the unit automatically stops despite having enough water in the tank.

MODE Press Once

⑥ Return to Normal Display

Automatic | Sampling completed

START Press Once

※By pressing once the unit will take a sampling by spraying six times at a fixed interval.

Sampling Caution
Make sure there is enough water in the tank to spray six times without going empty.
(If the tank goes empty during sampling, the sampling will be incorrect and may cause a malfunction during use.)

SET Press Once

※Changes with every pushing

0.05 → 0.15 → 0.30 → 0.45 → 1.00 → 1.30

Aut ← ALL ← 3.00 ← 2.00

0.05~3.00= The period of timer setting (units in minutes, seconds)
ALL= Continuous intermittent spray
Aut= Operates according to engine rpm's

MODE Press Once

For other than Aut | For Aut

SET Press Once

※Changes with every pushing

1 → 2 → 3 → 4 → 5 (Unit in seconds)

Choose the number of seconds

MODE Press Once

SET Press Once

※Changes with every pushing

1 → 2 → 3 → 5 → 7 → 9 (Unit in seconds)

Choose the number of seconds

MODE Press Once

ON ← OFF

Activate Auto-Stop function | Inactivate Auto-Stop function

Choose one

Caution

The order of changes when pressing the **MODE** switch in the Set Timer Mode is different depending if you have selected Aut or other than Aut

Other than Aut	Aut
① Normal Display	① Normal Display
①-1 Set timer period	①-1 Set timer period
② Spray ON period	①-2 Set engine rpm level
③ Spray OFF period	② Spray ON period
④ Low Water Auto-Stop	③ Spray OFF period
⑤ Water Tank Sampling	④ Low Water Auto-Stop
⑥ Normal Display	⑤ Water Tank Sampling
	⑥ Normal Display

①-2 Set Engine rpm Level Mode

Enables you to set the level of rpm's at which you desire the spraying to begin. (Setting Range: about 3,000-8000 rpm's)

"rpm" indicated by blinking light

How to Set

- ① Raise engine rpm's to the level at which you want the unit to start operating.
- ② While maintaining that level, press the **SET** switch
- ③ Setting completed (The display returns to "Aut")

Confirming the rpm level setting

Try raising the rpm level a few times to that which you set and check whether the Monitor Lamp lights up or not

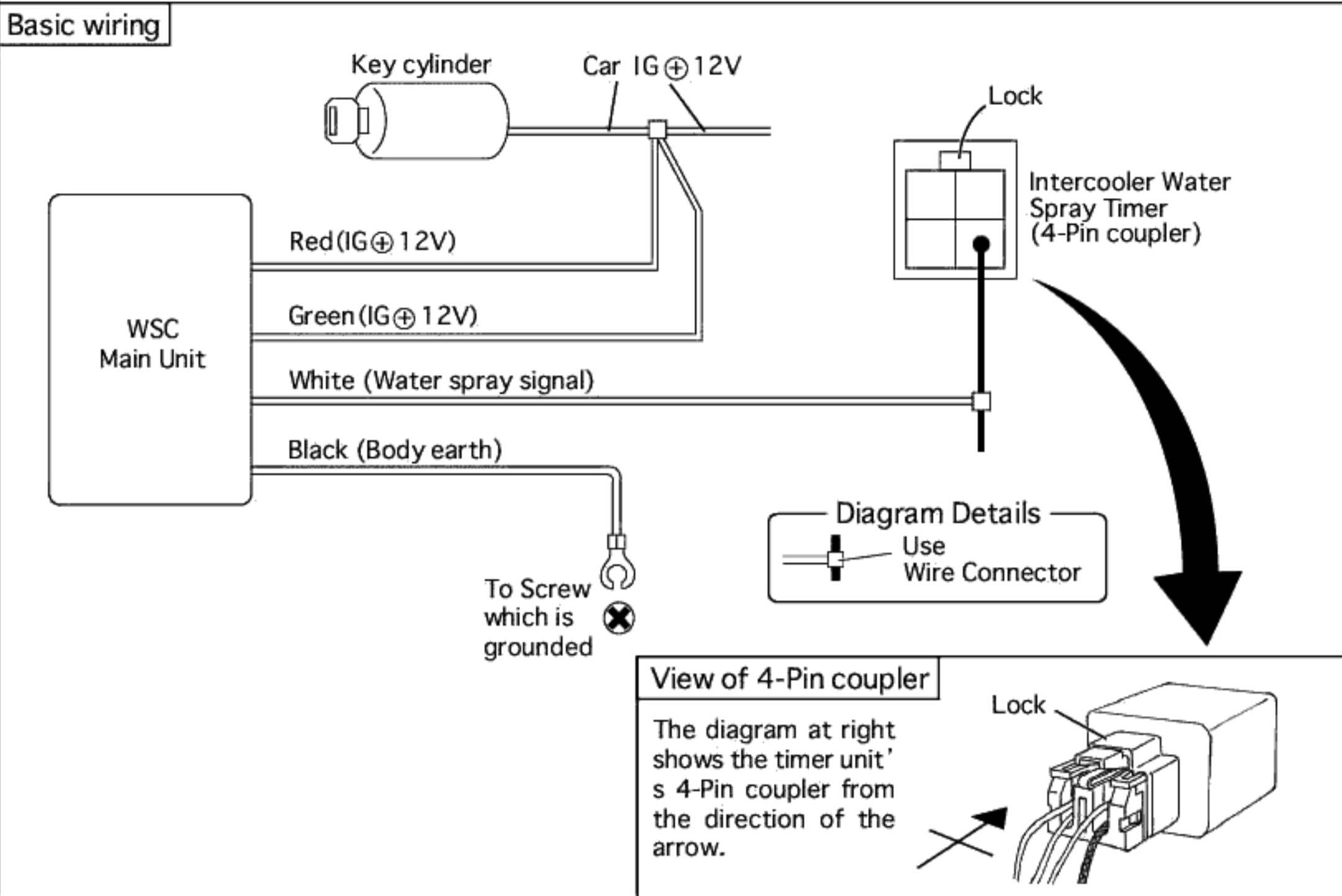
Lights up ■ OK
Doesn't light up ■ Needs to be reset

In some cars the air conditioner or fan may cause variances of between 200-400rpm to occur. This is not a malfunction.

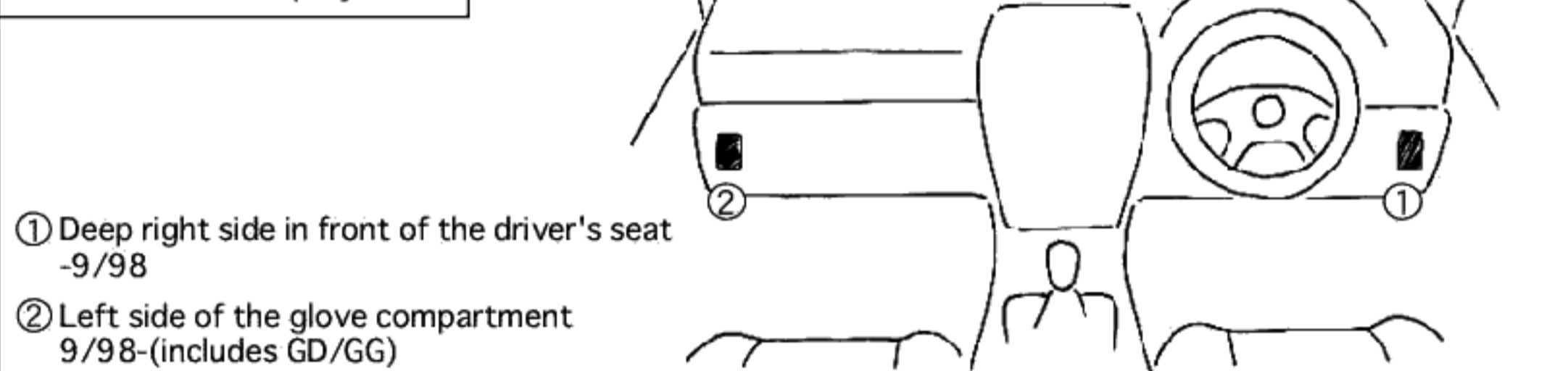
Problems with Setting the Engine rpm Level

Problem	Possible Solution
Monitor Lamp does not light up.	Check Detection Switch; if turned to the right, turn all the way to the left.
After Turning on the AC the Monitor Lamp lights up near idling and spraying occurs.	Try turning the Detection Switch from all the way left to the right little by little until the spraying stops.
Due to the air conditioner or fan, the rpm level is slightly off	This is not a malfunction and is a condition that occurs only rarely in some cars.
About the adjustment of SUBARU cars	After installing this unit in SUBARU cars; when setting the engine rpm level make sure to adjust the Detection Switch at the rear of the unit to the position as in the diagram to the right (between 10 and 11 o'clock). If you don't make this adjustment and set the rpm level, the unit may start operating at a level different from that which you set.

SUBARU Impreza Installation and Connecting the Wires



Installation Positions for Intercooler Water Spray Timer



Be sure to adjust the Slide Switch. When installing in an Impreza, **MAKE SURE** to adjust the **SLIDE SWITCH** at the rear of the unit **to the RIGHT**

→ To the RIGHT

Adjust the Detection Switch as in the diagram at right. Between 10-11 o'clock

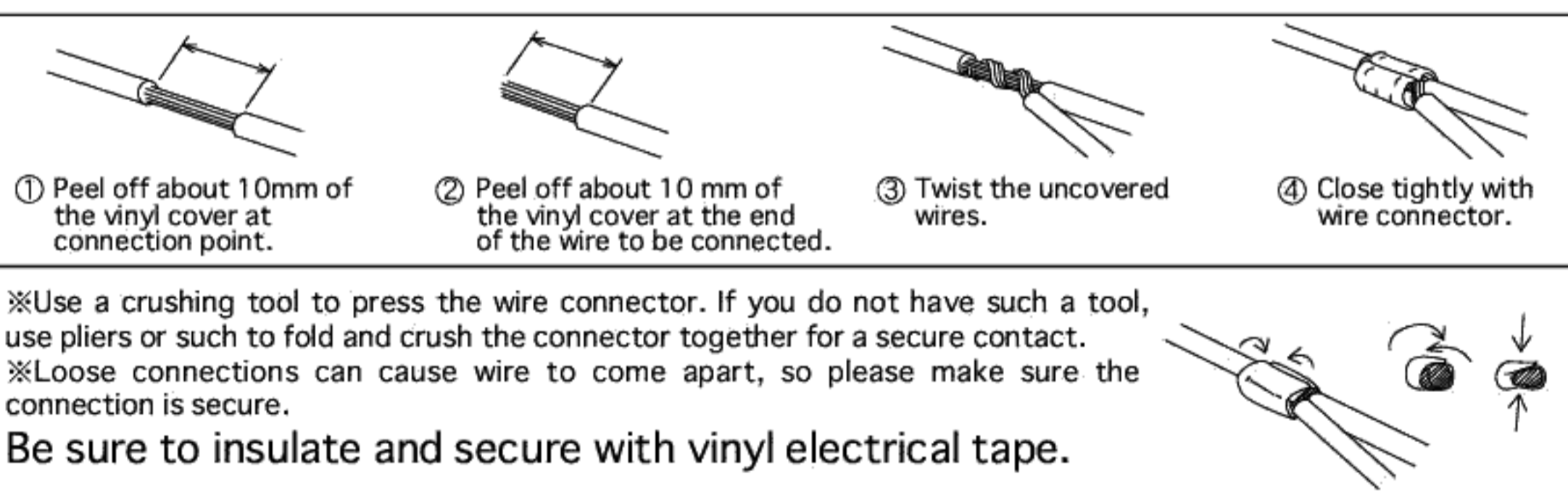
When installing in an Impreza, **MAKE SURE** to adjust the **DETECTION SWITCH** to the 10-11 O' CLOCK POSITION (See diagram at right)

Checking the Wiring and Connections

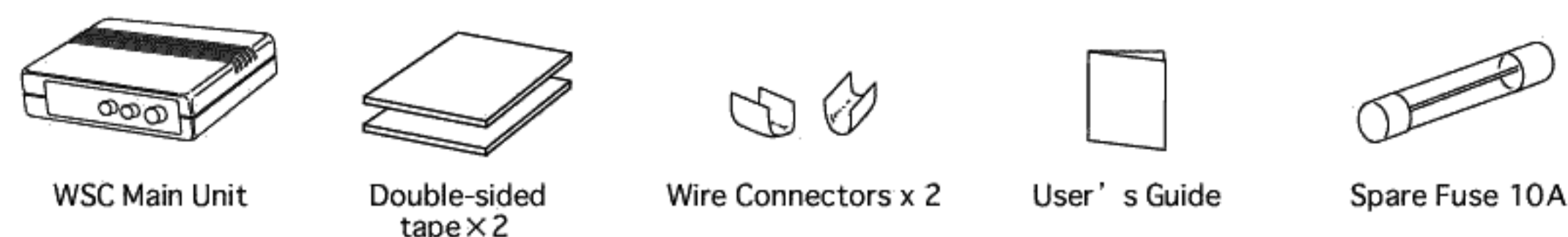
WSC Cord Color	Signal Name	Signal Type	Circuit Tester Measurement		Measurement (Display)	Method of Connection	
			Range	+			-
Red	IG +12V	⊕12V with the key switch ON	DCV	Wiring at the back of key switch	Mouth of cigarette lighter socket	Key switch OFF = 0V Key Switch ON = ⊕12V	Use Wire Connector and connect firmly
White	Water Spray Signal	Specified wiring of timer unit (See Diagram Below)	DCV	Specified wiring	Mouth of cigarette lighter socket	Water Spray Switch OFF = 0V ON = ⊕12V	Use Wire Connector and connect firmly
Green	(IG+12V)	⊕12V with the key switch ON	DCV	The same as the red cord	(Same position as red cord is possible)	(Same position as red cord is possible)	Use Wire Connector and connect firmly
Black	(Body earth)	(Screw which is grounded)	Ω	Mouth of cigarette lighter socket	Screw to which you want to fasten	Conductivity Present (about 0Ω)	Connect together firmly

How to use the Wire Connectors

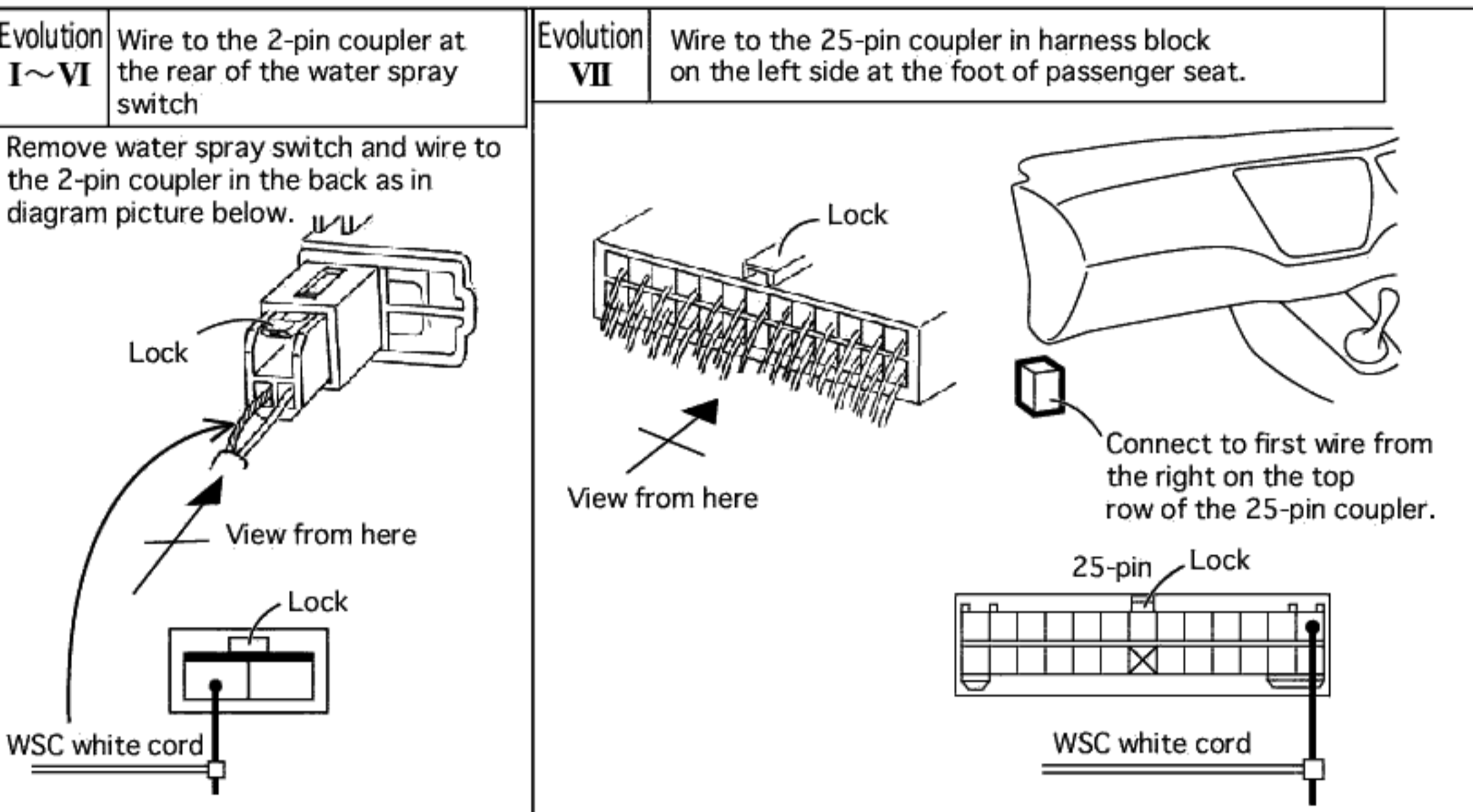
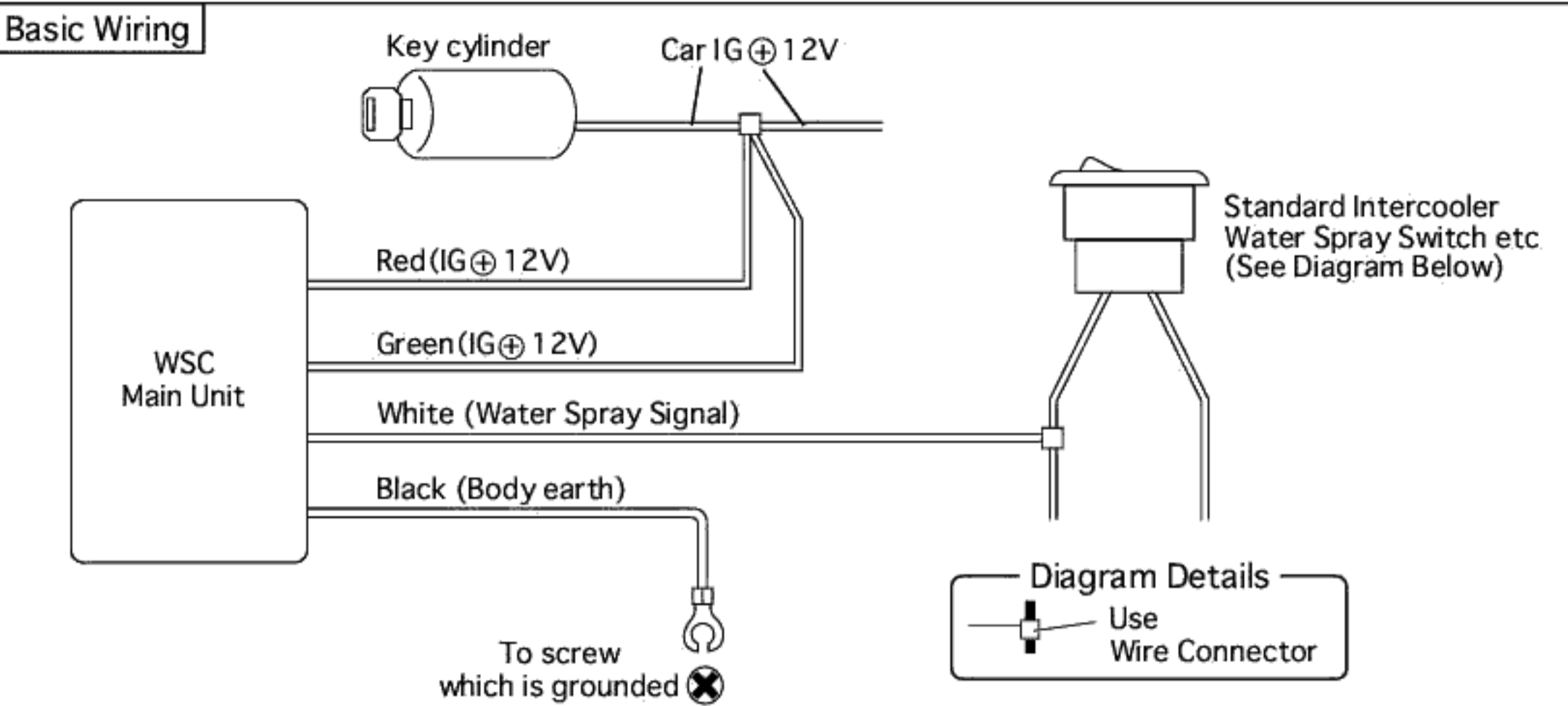
※ If soldering is possible, please do so.



Contents of Set



MITSUBISHI Lancer Evolution Installation and Connecting the Wires



Be sure to adjust the Slide Switch. When installing in a Lancer Evolution I~VII, **MAKE SURE** to adjust the **SLIDE SWITCH** at the rear of the unit **to the RIGHT**

→ To the RIGHT

Adjust the Detection Switch all the way to the left. When installing in a Lancer Evolution I~VII, **MAKE SURE** to adjust the **DETECTION SWITCH** all the way to the **FAR LEFT** (See diagram at right)

Checking the Wiring and Connections

WSC Cord Color	Signal Name	Signal Type	Circuit Tester Measurement		Measurement (Display)	Method of Connection	
			Range	+			-
Red	IG +12V	⊕12V with the key switch ON	DCV	Wiring at the back of key switch	Mouth of cigarette lighter socket	Key switch OFF = 0V Key Switch ON = ⊕12V	Use Wire Connector and connect firmly
White	Water Spray Signal	Specified wiring of timer unit (See Diagram Below)	DCV	Specified wiring	Mouth of cigarette lighter socket	Water Spray Switch OFF = 0V ON = ⊕12V	Use Wire Connector and connect firmly
Green	(IG+12V)	⊕12V with the key switch ON	DCV	The same as the red cord	(Same position as red cord is possible)	(Same position as red cord is possible)	Use Wire Connector and connect firmly
Black	(Body earth)	(Screw which is grounded)	Ω	Mouth of cigarette lighter socket	Screw to which you want to fasten	Conductivity Present (about 0Ω)	Connect together firmly

Troubleshooting *Please check the following before seeking repair

Condition	Possible Causes	Possible Solutions
No Display (No Illumination)	•Improper or poor connection of White Wire •Improper or poor connection of Black Wire	Check the wire connections and conditions.
Err appears.	•Improper or poor connection of White Wire •Improper or poor connection of Green Wire •The fuse to Green Wire is blown. •The Slide Switch position is incorrect	•Check the wire connections and conditions. •Check the wire connections and conditions. •Check fuse and if need be change (10A) •Adjust Switch according to the connection method.
L _ _ J appears.	•Water level in tank is low.	•Add water. After adding, by pushing START for two seconds or more the unit will confirm water level and the display will return to normal.
There is no water in tank but no such indication in display.	•The unit is not initialized. •The Low Water Level Auto-Stop Function is OFF •In some cases such troubles are caused by certain characteristics and conditions	•Initialize Unit •Turn the function ON. •Initialize the unit again.
Display indicates low water level, but tank has enough water.	•The unit sprays water easily (more than one nozzle added).	•Initialize the unit again.

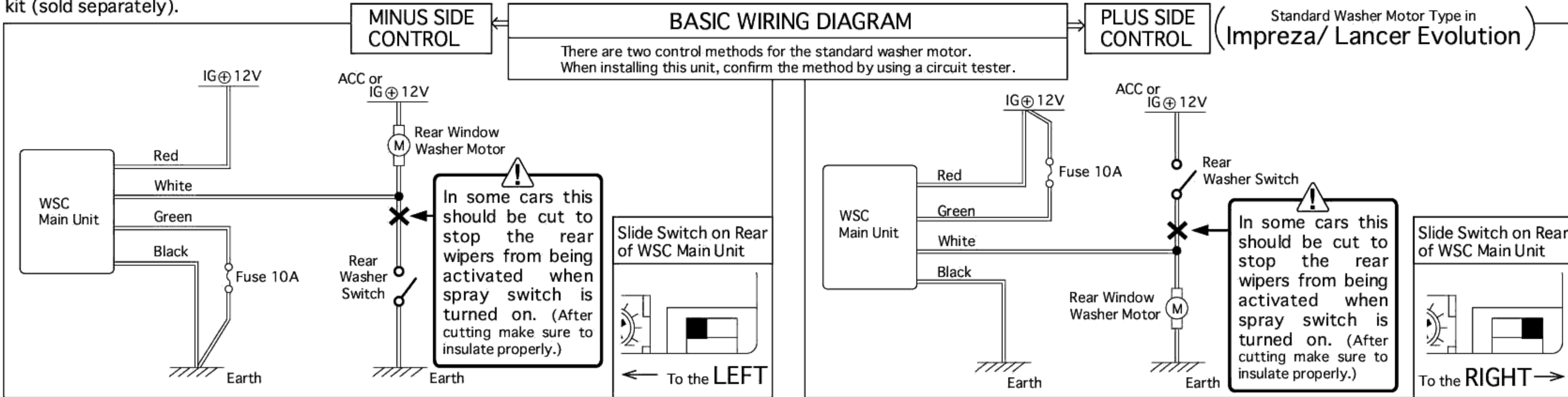
Upon turning ON the standard water spray switch the display indicates tank is empty. ↓

In some cases, when the Low water level auto-stop function is ON, and the standard spray switch is turned ON, the water level will appear empty. This is not a malfunction.

If you wish to use the standard spray switch, make sure to turn OFF the Auto-stop Function.

This Multi-purpose method is for installation in a car not equipped with a standard water spray system. It allows you to upgrade your car's performance by making use of your car's rear window washer tank, the WSC Unit and the nozzle kit (sold separately).

- Caution when Installing**
1. While installing be sure to disconnect the ⊖ terminal of the battery (except when checking the connections) to prevent any short circuits.
 2. Make sure all connections are done properly and securely to prevent any malfunctions due to poor or improper connections.
 3. Make sure all wire connections are properly and securely insulated to prevent any troubles due to short circuits.
 4. Make sure to lay wires and cords cautiously to prevent any troubles or malfunctions due to short circuits or broken wires.



Warning

If any wiring mistakes or improper switch adjustments have been made and you press the start switch, the fuse will be blown in order to protect the circuit. → If the fuse is blown, after having checked the wiring connection points and the slide switch adjustment, replace it with the spare fuse (10A).

1 Checking the rear motor pump

● Finding the rear motor pump

A When two washer tanks (front and rear) are attached.
 <Check> Operate the rear washer and connect to the pump which is working.

B When one washer tank is attached. (motor pump for front and rear is attached to one tank)
 <Confirmation> Disconnect one of the the wiring couplers from the motor and operate the rear washer.
 ⇒ If the rear washer works = The connected motor is for the rear.
 ⇒ If the rear washer does not work = The disconnected motor is for the rear.

2 Checking the wiring of the rear motor pump.

NOTE: If it is impossible to contact the metal part in the coupler due to waterproofing or other casing, peel the covering back to come in contact with the wire itself. (Be sure to insulate afterwards.)

<How to check>

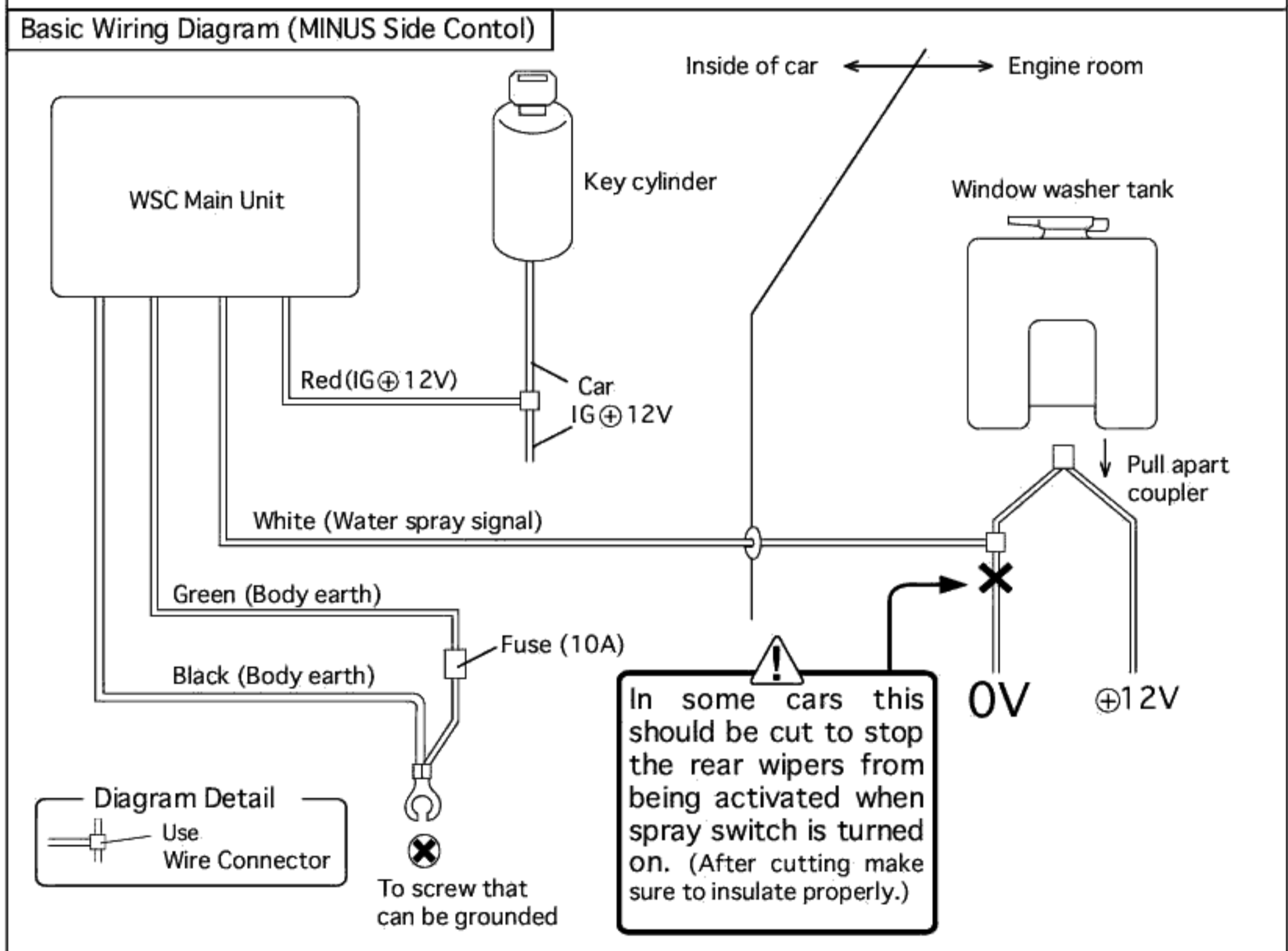
- ① Prepare circuit tester and set to DC-V range.
- ② Turn the key switch ON.
- ③ Contact the ⊖ side of the tester to the body earth.
- ④ Contact the ⊕ side of the tester to the metal part of each terminal of the 2-pin coupler and check the voltage of each terminal.

Caution when Taking Measurements

If ⊕12V current is passing = **(MINUS Side Control)**

2 Checking White Cord Connection Point

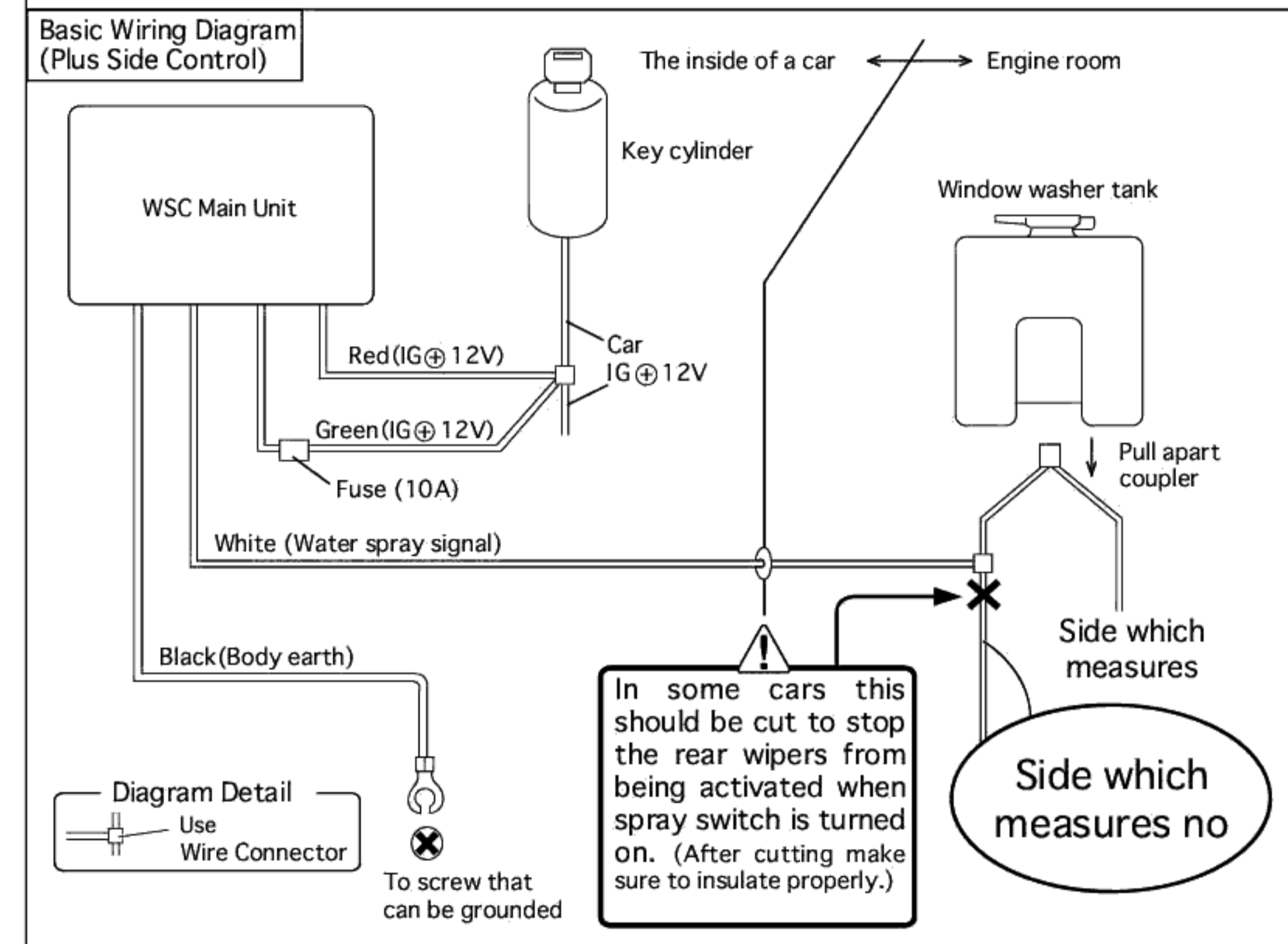
- ① Turn the key switch ON.
- ② Pull apart the 2-pin coupler and measure the voltage of both terminal points of coupler (Circuit tester- DC-V range) **Connect the white cord of the WSC to the side that did not register 12V and became 0V.**



If 0V current is passing = **(PLUS Side Control)**

2 Checking White Cord Connection Point

Pull apart the 2-pin coupler and measure the earth conductivity of both terminals of the coupler. (Tester=Ω range) **Connect the white cord of the WSC to the side that does not register any earth conductivity.**



Adjusting the Slide Switch

If it is MINUS Side Control (green cord connected to body earth), **Make Sure** to adjust the **Slide Switch** at the rear of to unit **to the LEFT**

Adjusting the Slide Switch

If it is PLUS Side Control (green cord connected to IG +12V), **Make Sure** to adjust the **Slide Switch** at the rear of the unit **to the RIGHT**

Checking the Wiring and Connections

WSC Cord Color	Signal Name	Signal Type	Tester Measurement		Measurement (Display)	Method of Connection
			Range	⊕		
Red	IG ⊕ 12V	⊕12V with the Key switch ON	DC-V	Wiring at rear of key switch	Mouth of cigarette lighter socket	Key switch OFF = 0V Key switch ON = ⊕12V Use Wire Connector and connect firmly
White	Water Spray Signal	SEE 2 ABOVE. Checking White Cord Connection Point				Use Wire Connector and connect firmly
Green	(Body earth)	(To screw that can be grounded)	Ω	Same as black cord	Same as black cord	Fasten together firmly
Black	(Body earth)	(To screw that can be grounded)	Ω	Same as black cord	About 0 Ω (Conductivity present)	Fasten together firmly

Checking the Wiring and Connections

WSC Cord Color	Signal Name	Signal Type	Tester Measurement		Measurement (Display)	Method of Connection
			Range	⊕		
Red	IG ⊕ 12V	⊕12V with the Key switch ON	DC-V	Wiring at rear of key switch	Mouth of cigarette lighter socket	Key switch OFF = 0V Key switch ON = ⊕12V Use Wire Connector and connect firmly
White	Water Spray Signal	SEE 2 ABOVE. Checking White Cord Connection Point				Use Wire Connector and connect firmly
Green	(Body earth)	⊕12V with the Key switch ON	DC-V	Same as red cord	Same as red cord	Use Wire Connector and connect firmly
Black	(Body earth)	(To screw that can be grounded)	Ω	Mouth of cigarette lighter socket	Screw to which you want to fasten	About 0 Ω (Conductivity present) Fasten together firmly