INSTALLATION MANUAL

BW-2500

PREMIER PLUS

Please read this Manual carefully before attempting to install this system.

BEFORE INSTALLING THE BW-2500 PREMIER PLUS

- DO read through this installation manual.
- DO NOT install the alarm brain in an engine compartment.
- The alarm may arm itself when power is first connected. This is a normal condition.

ITEMS SUPPLIED WITH THE BW-2500

BWS-2502 Receiver and Control Module
BWS-385 2-Button, 3-channel, Code Learning Transmitters (2)
MTS-20W Programmable, Multi-tone, 120 dB Siren
BWS-296 Dual Zone Electronic Shock Sensor
BWS-260 Valet Switch
BWS-180 LED Status Indicator
BWS-12025 Wiring Harness, Fuseholder, and Fuse
SPDT Relay
BRS-003 Relay Socket

OPTIONAL ACCESSORIES

Radar Field Sensor	**MAS-2**
Window Rollup	**WRM-2**
Power Door Lock	**PDL-50**
Backup Battery	**BWS-500**
Remote Starting	**RAS-101**
Leather Transmitter Case	**BWS-390**
Trunk Release	**TR-100**

SPECIFICATIONS

Operating voltage	+12 VDC Neg. Ground
Code Learning	3 Codes Max.
Current consumption	5 mA (max) disarmed.
Siren output drive	3 Amperes
Automatic reset	60 seconds.
Door Lock/Unlock Output	(-) 500 mA.
Channel 2 Output Drive	(-) 500 mA.
Channel 3 Output Drive	(-) 500 mA, variable.
Remote control transmit freq.	310 mHz.
Passive arming delay	30 Seconds approx.
Auxiliary output drive	250 mA maximum.
Flashing output drive	10 Amp maximum.
Trigger inputs	1) Neg. pnswtch. 1) Pos. pnswtch. 1) Neg. sensor or aux. pnswtch.
Dome light output	500 mA ground.

INSTALLATION INSTRUCTIONS

IMPORTANT: Make all wiring connections to the vehicle before connecting the main 14-pin and auxiliary 2-pin connector harnesses to the receiver and control module.

1. Before mounting the BWS-2502 Receiver and Control Module, you must set the PROGRAMMING DIP-SWITCHES for the kind of operation the customer wants.

These are the switch settings available; Standard (Default) settings are in **"BOLD"** type:

Switch #1 Door Lock and Unlock Pulse Time: **ON = 3/4 seconds**. OFF = 3 seconds.

Switch #2 Door Lock and Unlock with ignition: **ON = YES**. OFF = NO.

Switch #3 Door Locking with Passive Arming: **ON = YES**. OFF = NO.

Switch #4 Passive or Active Arming: **ON = Passive Arming**. OFF = Active Arming.

2. Mount the Receiver and Control Module in a secure area, away from vehicle computers and heating/air conditioning ducts. The location should be convenient for your installation, but well hidden from thieves. Try to mount the unit as far away from metal objects as possible. This will increase the range of its Remote Control Transmitter.

3. Route the wires of the harnesses to areas in which the different accessories will be mounted . You may need to extend some wires. **DO NOT plug the two wiring harnesses into the Receiver and Control Module until all connections have been completed.**

When running the harness wires through the vehicle, be careful to run them where they CANNOT be DAMAGED or SHORTED to GROUND or other WIRING. Keep them away from ALL MOVING PARTS of the vehicle or where HIGH HEAT can damage their insulation. Always protect the harness wires where they pass through holes in metal panels by using RUBBER GROMMETS.

4. Mount the MTS-20W Siren under the vehicle's hood. Mount it away from heat sources such as radiators, exhaust manifolds, and turbochargers. Mount it in an area where it will not be in the way for mechanics, and so that it cannot be easily reached from below the vehicle. Mount it so that its opening points down to prevent it from collecting water, snow, or ice. Connect its BLACK wire to a good clean GROUND point, and its RED wire to the ORANGE wire of the main harness.

Siren has 6 tones. You can program from one to six tones by removing rubber grommet on back of unit and removing or adding jumper contacts.

5. Mount the BWS-296 Shock Sensor Somewhere *inside* the vehicle such as under the dash, strapped to the steering column, or under a seat.. ***Do Not Mount The Sensor Under The Hood!***

Connect its BLACK wire to a good, clean GROUND point, its RED wire to a source of CONSTANT +12vdc, and its BLUE wire to the BLUE wire of the main harness, the GRAY wire to the GRAY wire , the WHITE wire to the VIOLET wire all from the main harness.

6. Mount the BWS-180 LED Status Indicator in an easily seen location such as the center of the dash or the inside top edge of the driver's or passenger's door. Connect its RED wire to a source of CONSTANT +12vdc, and its BLACK wire to the RED/BLACK wire of the main harness.

7. Install the BWS-260 Valet/Override Switch in a hidden location that is easily reached by the driver. Remember that the code learning and valet/override sequence require using this switch in conjunction with the ignition switch, so it should be hidden, but convenient to use when needed.

8. Mount the BRS-003 Relay Socket and SPDT Relay in a location where it is hidden from potential thieves. Find the vehicle's STARTER wire and cut it in half. Connect the colored wires of the Relay Socket as follows:

BLACK = To STARTER wires on Starter side.
YELLOW = To STARTER wires on Switch side.
GRAY = GRAY wire of the main harness.

9. Mount and connect any optional function modules included in the installation, following the mounting and wiring directions supplied with them.

10. Complete the general wiring of the main harness by connecting...

A. The RED wire to a source of CONSTANT +12vdc. IMPORTANT: Remove the 15 amp fuse from the harness before connection.
B. The BLACK wire to a good chassis GROUND point.
C. The WHITE wire for POSITIVE pinswitches.
or... The BLUE/WHITE wire for NEGATIVE pinswitches.
(NOTE: If your installation requires BOTH inputs, they can both be used on the same installation)
D. The GREEN wire to a source of TRUE IGNITION.
E. The WHITE/YELLOW Dome Light Wire to the vehicle's Dome Light Circuit. See the Dome Light Circuit Diagram on Page 5. YOU MUST USE A RELAY FOR THIS CONNECTION.
F. The WHITE/ORANGE wire to the vehicle's PARKING LIGHT circuit. See the Parking Light Circuit Diagram on Page 5.

ON VEHICLE'S WITH ELECTRIC DOOR LOCKS:

G. The GREEN/BLACK wire to the vehicle's door LOCK circuit, using the correct circuit from the Power Door Lock Wiring Diagrams on Page 5.
H. The YELLOW wire to the vehicle's door UNLOCK circuit, using the correct circuit from the Power Door Lock Wiring Diagrams on Page 5.

11. If the Second or Third Channel functions are to be used, connect...

A. The BROWN wire to control the Second Channel device. Suggested uses are for Electric Trunk Release or Remote Engine Starter. This output will deliver a 1 second NEGATIVE pulse output of 250mA when ever button 2 is pressed continuously for 3 seconds. See the sample Trunk Release Diagram on Page 5. YOU MUST USE A RELAY FOR THIS CONNECTION.
B. The WHITE/RED wire to control the third channel device. Suggested uses are for window roll-Up/Down or External Light control. Negative output when BOTH Buttons are pressed simultaneously. The ouput will continue for as long as the buttons are held down. YOU MUST USE A RELAY FOR THIS CONNECTION.

CAUTION: Before continuing to the next step, make sure all wiring connections have been properly made.

12. Adjust the Electronic Shock Sensor to the desired sensitivity before continuing with the alarm checkout.

A. Turn the adjustment screw until the unit's LED reacts to your slapping various parts of the vehicle's body.
B. Turn CLOCKWISE for more sensitivity, COUNTER-CLOCKWISE for less.
C. DO NOT overadjust the sensor or false alarms may result.

13. Connect the Main 14 Pin Wiring Harness (and 2 Pin Wiring Harness) to the BW-2502 Receiver and Control Module.

14. To Power-up and enter Transmitter Code Learning, please follow these instructions:

A. Install the 15 amp fuse in the RED wire of the main wiring harness. The unit will power-up in an armed state, the siren may or may not sound.
B. Before proceeding, you must have the main unit learn the transmitters code. To do this follow this procedure:
1. Turn the ignition switch ON/OFF 3 times. leave ignition ON the 3rd time. The SIREN will chirp once and the Door Locks (if connected) will LOCK.
2. Within 5 SECONDS, press and HOLD the Valet Switch for 5 seconds, the SIREN will Chirp 3 Times and the LED will turn SOLID. The System is now in Code Learning Mode.
3. Press Button #1 of either transmitter for Car #1 operation, the system will respond with either 1 or 2 Siren Chirps. The system has now learned the transmitters code. For a two car operation, follow the steps B1 and B2 for the second vehicle using button #2 of transmitter.
4. Turn OFF the ignition switch. The system is now ready to be tested.

C. Arm the system and test all input triggers and output devices, escpecially the Starter Interrupt Relay. You should not be able to start the engine while the alarm is armed or sounding.
D. Once all testing is complete, secure all loose wiring and/or components and reassemble the vehicle.

CONNECTOR PIN NUMBERS AND WIRE COLOR CODES

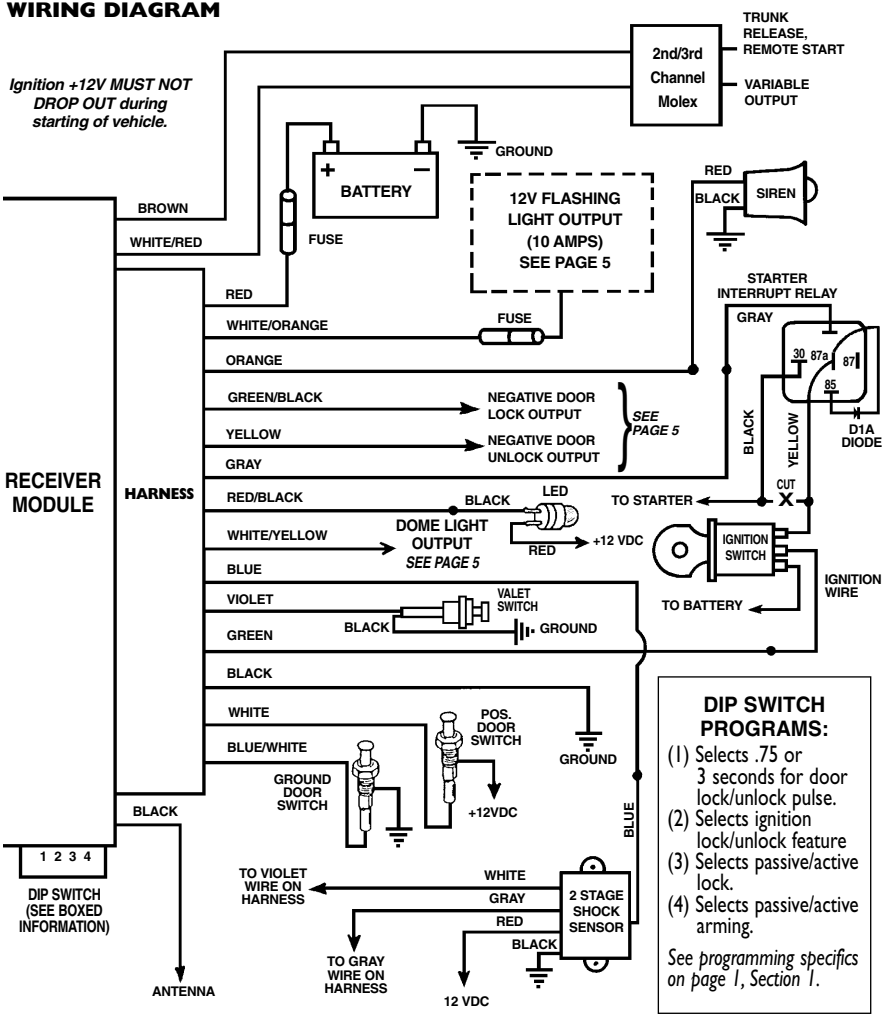
14-PIN HARNESS

#	COLOR	FUNCTION	NOTES
1)	Red	+12 VDC	Main Power. Connect this wire to the POSITIVE terminal of the vehicle's battery, with the supplied fuse installed at the **BATTERY END of this wire.**
2)	Wht/Org	Parking Light (+)	See the wiring diagram for the proper connection of this wire. For negative output see Page 5.
3)	Orange	Siren (+)	Connect this wire to the RED wire of the Siren. Output is +12 volts when the alarm is triggered.
4)	Grn/Blk	Door Lock (–)	Negative output pulse to door LOCK circuit. See door lock wiring diagrams on Page 5 for connections.
5)	Yellow	Door Unlock (–)	Negative output pulse to door UNLOCK circuit. See door lock wiring diagrams on Page 5 for connections.
6)	Gray	Starter Interrupt (–)	Negative output to the Starter Interrupt relay. See Wiring diagram for connections.
7)	Red/Blk	LED (–)	Connect to the BLACK wire of the BWS-180 LED.
8)	Wht/Yel	Dome Light (–)	Negative output to interior light circuits whenever alarm is disarmed. See wiring diagram on Page 5 for connections.
9)	Blue	(–) Trip	Negative trip input for connection to an external shock or motion sensor.
10)	Violet	Valet (–)	Connect to the VALET switch. This switch is needed for entering the Code Learning Sequence and Valet/Override functions.
11)	Green	Ignition	Connect to a source of TRUE IGNITION, a wire that is hot in both the RUN and START positions.
12)	Black	Ground	Connect this wire to a clean, solid GROUND. **Do Not** confuse this wire with the short, black **antenna** wire. **Do Not Ground The Antenna Wire!**
13)	White	Positive Door (+)	Connect this wire to door pinswitches that are POSITIVE when the door is open.
14)	Blu/Wht	Negative Door (–)	Connect this wire to door pinswitches that are NEGATIVE when the door is open.

2-PIN CONNECTOR (Auxiliary Functions):

#	COLOR	FUNCTION	NOTES
1)	Brown	Channel 2	Negative output when Button #2 of the transmitter is pressed for 3 seconds. See the diagram on Page 5.
2)	Wht/Red	Channel 3	Negative output when BOTH Buttons are pressed simultaneously. The output will continue for as long as the buttons are held down. (Hint: When engaging this output it is best to press button #2 first, hold it, then press button #1. This will avoid accidentally arming or disarming the system)

TROUBLESHOOTING WIRING DIAGRAM



DIP SWITCH PROGRAMS:

(1) Selects .75 or 3 seconds for door lock/unlock pulse.
(2) Selects ignition lock/unlock feature
(3) Selects passive/active lock.
(4) Selects passive/active arming.

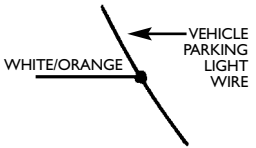
See programming specifics on page 1, Section 1.

POWER DOOR LOCK INSTRUCTIONS:

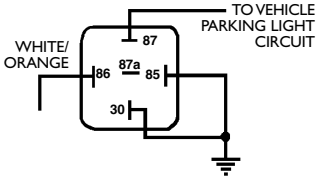
The BW-2500 comes equipped to handle ground door lock installations. The Yellow and Green wires from the Receiver Module are ready to tap into grounding door lock systems.

The following instructions require two SPDT Relays, not included in the BW-2500. These Relays must be ordered separately.

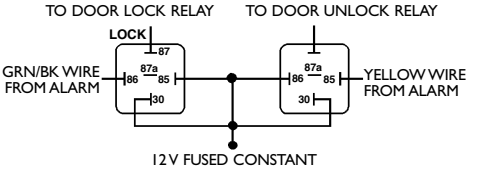
FOR POSITIVE PARKING LIGHTS



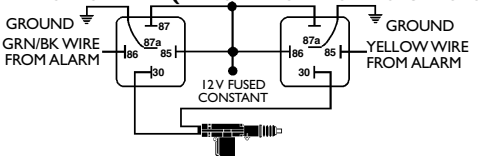
FOR NEGATIVE PARKING LIGHTS (MOST JAPANESE VEHICLES)



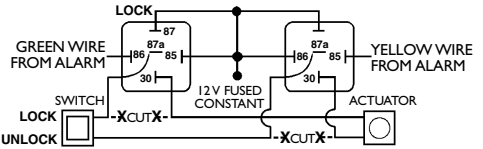
POSITIVE TRIGGER DOOR LOCK CIRCUIT:



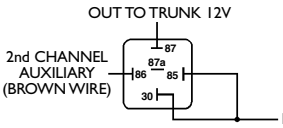
REVERSE POLARITY (DIRECTLY TO AD-ON ACTUATORS):



REVERSE POLARITY USING FACTORY SYSTEMS:

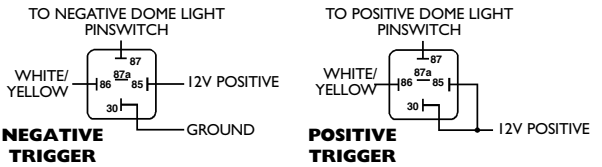


TRUNK RELEASE CIRCUIT DIAGRAM:



If the power trunk release requires a positive pulse to operate, use this circuit.

DOME LIGHT CIRCUIT DIAGRAM:



TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	SUGGESTED CORRECTION
Unit is triggered any time it is armed.	BLUE wire is shorted to ground or the BWS-296 or optional sensor is not correctly adjusted.	Disconnect the wire to see if the symptom stops. If so, check the wire for shorts or readjust sensor fittings.
Alarm will not rearm or will not passively arm.	WHITE wire is connected to positive voltage, BLU/WHT wire is connected to ground, GREEN wire is connected to permanent positive voltage, or pinswitch is bad.	Check WHITE and BLU/WHT wires with doors closed and open, and GREEN wire with ignition switch off and on, for correct voltage changes. Repair and/or rewire as needed.
Alarm will arm from transmitter but will not passively arm.	Dipswitch #4 is off. VIOLET wire is shorted to ground.	Set dipswitch #4 to ON. Check VIOLET wire for shorts.
Remote Control does not arm or disarm alarm.	Defective Remote Control. Bad battery. Antenna wire is grounded.	Replace Remote Control or its battery. Un-ground antenna.
Valet does not work.	Wire from Valet switch to ground is not connected to a good ground or wire from switch to unit is open. Bad switch.	Test for switched ground at alarm unit. Repair or replace as needed.
Interior lights flash when the alarm is armed, disarmed. and tripped.	WHT/ORG Parking Light output has been switched with WHT/YEL Dome Light output.	Switch connections on these two wires.
Flashing output does not work.	Bad connection on WHT/ORG wire or the drive polarity is wrong for the circuit being driven.	Check WHT/ORG wire. Connect a SPDT Relay to this wire and apply the opposite polarity to the circuit being driven.
Door locks do not lock/unlock correctly, or action is reversed.	Defective GRN/BLK or YELLOW wiring. GRN/BLK and YELLOW wires reversed, or wrong door lock wiring used.	Check GRN/BLK and YELLOW wires. Check vehicle's door lock system for method of operation. Reverse wiring to door relays.

LIMITED LIFETIME WARRANTY

The Black Widow Division of DLC, Inc. warrants to the original purchaser that the vehicle alarm system purchased will be free from defects in workmanship.

If it is determined that a defect exists, at our option, we will repair defective parts or replace the system. If product is defective within one (1) year from date of purchase, item will be repaired or replaced at no cost to original purchaser. If product is defective after one (1) year from date of purchase, ship defective unit prepaid to Black Widow Division, DLC, Inc. along with $20.00 U.S. ($30.00 Canadian) cashier's check or money order to cover cost of handling.

Proof of purchase by the original owner must accompany warranty request before service is rendered.

This warranty covers normal use. It does not cover damage from alteration, misuse, abuse, accident, improper installation or maintenance. Warranty does not cover transmitter batteries or cases. This warranty gives you specific legal rights and you may have rights which vary from state to state. If you have any questions, contact your authorized Black Widow dealer.

BLACK WIDOW
VEHICLE SECURITY SYSTEMS

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