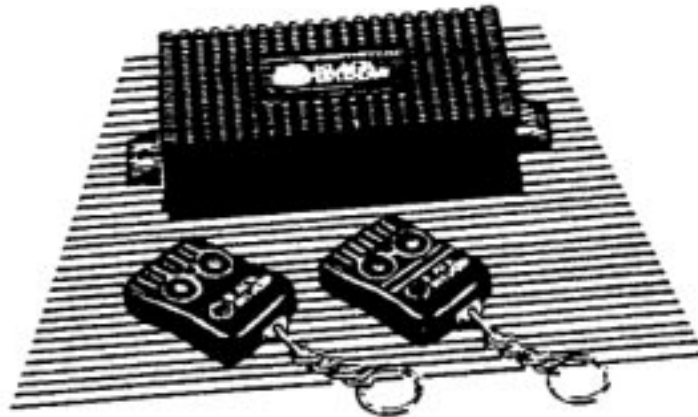


RAS-100/101 **REMOTE AUTO START**



INSTALLATION MANUAL

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

BEFORE INSTALLING THE RAS-100 OR RAS-101 REMOTE AUTO START

Please read the following notes to help you to properly install this remote starter the first time.

- DO read through this installation manual.
- DO NOT install the REMOTE AUTO START in the engine compartment.
- DO NOT connect the wiring harness to the remote starter module before all power connections are made.
- DO NOT operate the Remote Auto Start in poorly ventilated areas.
- DO NOT place components of the Remote Auto Start in areas of the vehicle where there is excessive heat or possibility of water damage.
- DO NOT use current sensing feature when connecting the Remote Auto Starter to vehicles with alarm systems (RAS-101 only) — Use Switch sensing only.

ITEMS SUPPLIED WITH THE RAS-100 & 101 REMOTE AUTO START

RAS-102 Receiver Module

RS-1 On/Off Rocker Switch

BWS-382 Two 2-Button, 2 Channel
Remote Control Transmitters
(RAS-100 only)

BWS-12010 Harness Set, Fuse & Fuse Holder

PS-1 Pin Switch

OPTIONS

VAC-10 Vacuum System Hook-Up required in some cars.

PRECAUTIONS

- The RAS-100/101 is designed for vehicles equipped with automatic transmissions and fuel injected engines only.
- The control switch should always be left in the OFF position when the vehicle is parked inside garage or being serviced.
- The accessories should be preset before the system is turned on.
- If hood is opened while Remote Auto Start is in operation -- prior to key being placed in the ON position -- engine will turn itself off.
- If brake pedal is depressed while Remote Auto Start is in operation -- prior to the key being placed in the ON position -- engine will turn itself off.

INSTALLATION INSTRUCTIONS

1. RAS RECEIVER INSTALLATION

Place module in area under dash allowing easy access for wiring and harness placement.

2. MOUNTING THE HOOD PIN SWITCH

Install the pin switch in the engine compartment so that it is in contact with the hood when closed. **Note:** must be mounted on metal surface to assure a good, solid ground.

3. MOUNTING ON/OFF SWITCH

Mount on/off switch under the dash board for easy access.

4. DOOR LOCK/UNLOCK CAPABILITY (2nd CHANNEL ON RAS-100 ONLY)

From the 12-Pin Harness route the GREEN wire to the negative output (-) for locking and the Yellow wire to the negative (-) output for unlocking. (For positive or reverse polarity, see page 5)

5. ALARM SECOND CHANNEL OUTPUT (RAS-101 ONLY)

Connect the GREEN/BLACK wire to the negative (-) of the 2nd channel of the ALARM system

6. IGNITION CONNECTION

Connect the YELLOW wire to 12V ignition wire. Find ignition wire which does not drop 12V when key is turned to Start position.

7. 12 VOLT POWER

Connect RED wire from 4-pin connector to the rocker ON/OFF switch.

8. STARTER

Connect the PURPLE wire from 4-pin connector to the 12V starter wire. This wire has 12V when key is in the START position only.

9. ACCESSORIES & HEATER

At the ignition switch, connect the ORANGE wire from the 4-pin connector to the heater or accessories wires.

10. PARKING LIGHTS

Locate the wire which switches on the parking lights. Connect BLUE wire from 12-pin harness to 12V side of the lights.

11. GROUND

Connect the BLACK wire to a good ground point on a metal part of the chassis.

12. BRAKE

Find terminal of brake switch which is 12V when pedal is depressed and not 12V when released. Connect the ORANGE wire from the 12-Pin Harness to this 12V terminal.

13. HOOD PIN SWITCH

Connect the GRAY wire to the hood pin switch.

14. VACUUM SWITCH (Optional)

Connect the BLUE/WHITE wire to one side of the vacuum switch terminal and the remaining terminal of the vacuum switch to ground.

15. SENSORS OUTPUT (RAS-101 ONLY)

Connect the PINK wire to the negative (-) trigger of the vehicle's alarm sensors.

16. ALARM INPUT (RAS-101 ONLY)

Connect the BROWN wire from the 12-Pin Harness to the negative (-) trigger input from the alarm.

17. GROUND OUTPUT

The WHITE (-) wire which is 500 mA is used to connect optional accessories.

18. TACHOMETER

The RED/BLACK wire is connected to the negative (-) side of the coil.

19. FINISH THE INSTALLATION

Securely fasten all wires in place making sure they are protected from heat or sharp pieces of the vehicle. When all is secure, test the Remote Auto Start. If it does not start, consult the troubleshooting guide in the manual.

TERMINAL NUMBERING AND WIRE COLOR CODES

12-PIN HARNESS

#	COLOR	FUNCTION	NOTES
1)	Blue	Parking Lights	Connect Blue Wire of control module to 12V positive, side of parking lights.
2)	Black	Ground	Connect wire to a good ground point on the chassis.
3)	Yellow	Door Lock (-) <i>(RAS-100 only)</i>	Negative output for door <i>unlock</i> .
4)	Green	Door Lock (-) <i>(RAS-100 only)</i>	Negative output for door <i>lock</i> .
5)	Green/ Black	2nd Channel (-) <i>(RAS-101 only)</i>	Connect to negative (-) ground output of 2nd channel from <i>alarm</i> system.
6)	Orange	Brake (+)	Connect Orange wire to terminal of brake switch which is 12V when brake pedal is depressed and <i>NOT</i> 12V when pedal is released.
7)	Gray	Hood Switch (-)	Connect Gray wire to the Hood Switch.
8)	Blue/ White	Vacuum Switch (-)	Connect Blue/White wire to one side of vacuum switch terminal. Connect remaining terminal of vacuum switch to ground.
9)	Pink	Sensors (-) Output <i>(RAS-101 only)</i>	Connect Pink wire to negative trigger output of <i>alarm's</i> sensors.
10)	Brown	Alarms Input (-) <i>(RAS-101 only)</i>	Connect Brown wire to negative trigger input from <i>alarm</i> .
11)	White	Ground Output	Connect White wire to optional accessories.
12)	Red/ Black	Tachometer	Connect Red/Black to the negative side of coil.

4-PIN CONNECTOR:

13)	Red	12VDC (+)	Red wire provides 12 Volt power to the RAS Control Module. The Rocker on/off switch controls the power.
14)	Purple	Starter (+)	Supplies power to activate RAS starter. Connect Purple wire to <i>START</i> position only (not <i>ON</i> , <i>OFF</i> or <i>ACCESSORIES</i> position).
15)	Orange	Heater (+) Accessories	Connect heavier gauge Orange wire from 4-Pin Connector to heater or accessories. Connection must be made at ignition switch. Note: In some cases, the heater fan works only when key is in <i>ON</i> position rather than <i>ACCESSORIES</i> position.
16)	Yellow	Ignition (+)	Connect Yellow wire to 12V wire when key is turned to <i>IGNITION</i> and <i>START</i> position (but is not 12V in <i>ACCESSORIES</i> or <i>OFF</i> position). Note: See special instructions for installing <i>optional</i> vacuum kit required in some vehicles.

RECEIVER MODULE:

17)	Blue Loop	Vacuum	When installing Vacuum System, Blue loop is to be cut. Otherwise leave as is.
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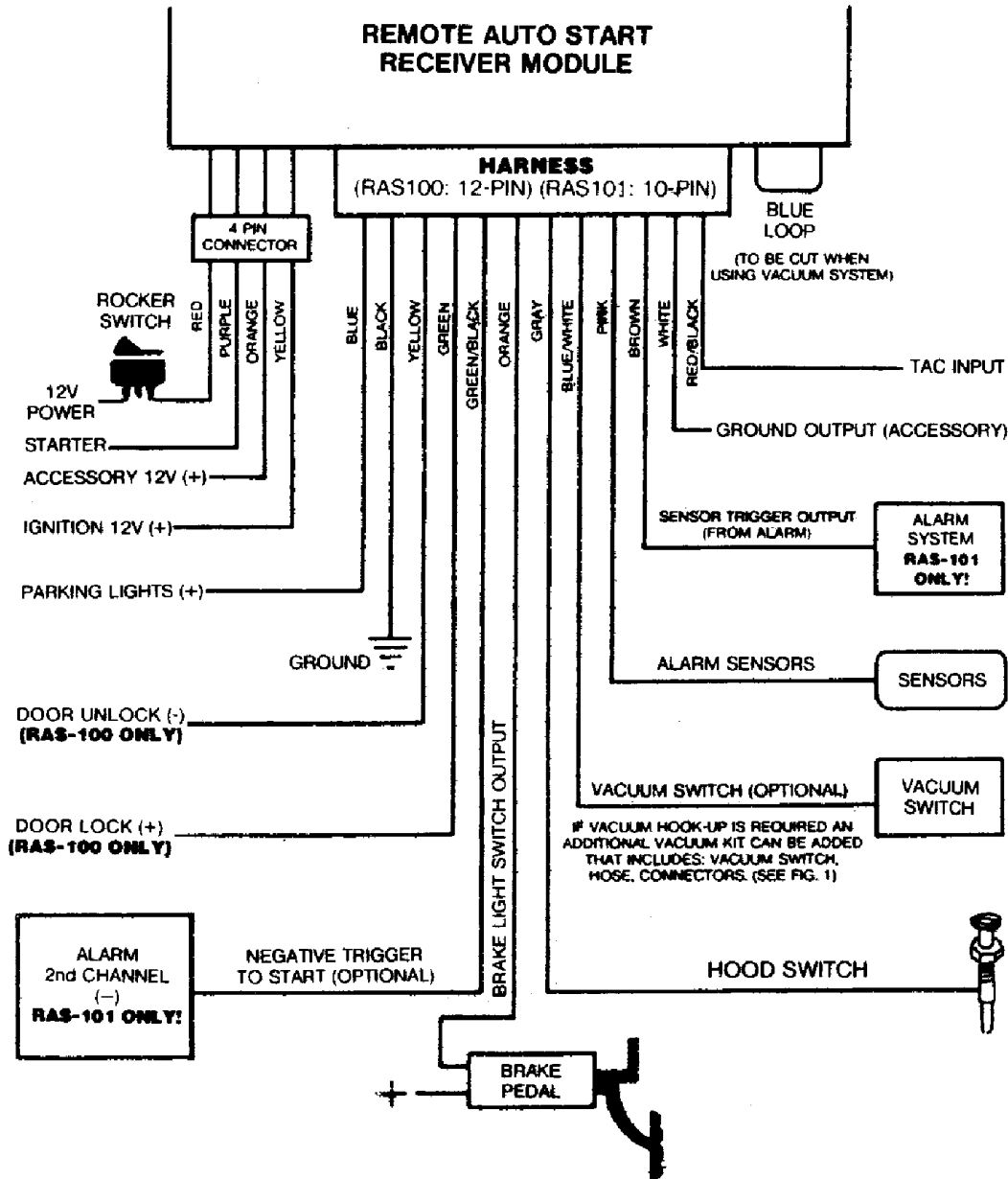
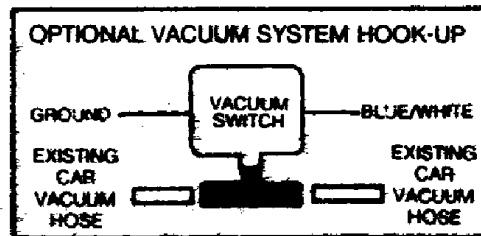


FIG. 1

**FOR AUTOMATIC TRANSMISSION ONLY
DO NOT INSTALL ON STANDARD TRANSMISSION.**

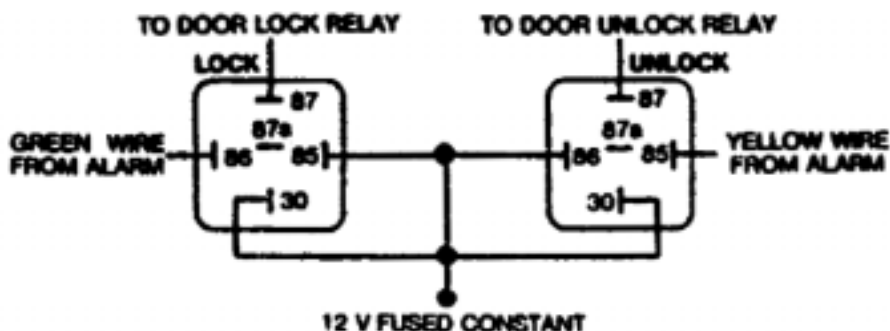


**POWER DOOR LOCK
INSTRUCTIONS (RAS-100 ONLY)**

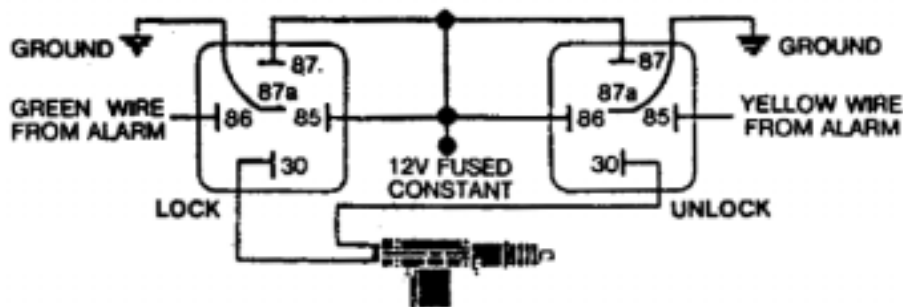
The RAS-100 comes equipped to handle ground door lock installations. The green and yellow wires come ready to install to ground trigger door lock systems.

The following instructions require two SPDT Relays, not included in the RAS-100. These Relays must be ordered separately.

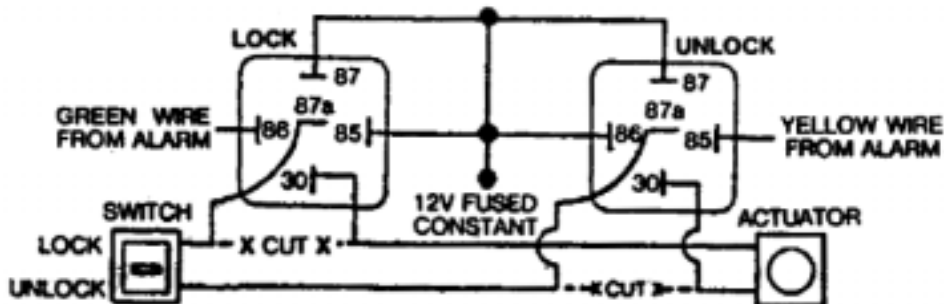
POSITIVE TRIGGER DOOR LOCK CIRCUIT:



REVERSE POLARITY (DIRECTLY TO ADD ON ACTUATORS):



REVERSE POLARITY USING FACTORY SYSTEMS:



TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	SUGGESTED CORRECTION
Parking lights do not flash.	1) No 12V on RED wire to RAS Module. 2) No 12V on RED wire from battery.	1) Power switch is off. 2) Check fuse.
Receiver not getting signal from transmitter.	1) Check coding on transmitter and receiver to make sure they match.	1) Trigger unit manually by touching GREEN/BLACK wire to ground. If RAS starts, check coding of TX and receiver to make sure they are matched.
Parking lights turn on but engine does not start.	1) Hood is open. 2) Hood pin switch wire is accidentally grounded. 3) Poor connection on tach.	1) Close hood. 2) Connect pin switch properly. 3) Check connection.
Engine cranks but does not start.	1) Poor connection on ignition wire. 2) YELLOW Ignition wire must be connected to 2 ignition wires.	1) Check connection of YELLOW ignition wire. 2) Add jumper from YELLOW ignition wire to 2nd ignition wire of vehicle.
Starter does not disengage.	1) Poor connection on tachometer.	1) Try another tach conductor.
Engine stays on when key is in off position.	1) RAS has been activated.	1) Depress brake pedal.
Accessories do not work.	1) Poor connection of ORANGE wire.	1) Check ORANGE wire connection. May require jumper to 2nd accessory wire.

**FOR VEHICLES USING OPTIONAL VACUUM SYSTEM ACCESSORY VAC-10
SEE TROUBLESHOOTING GUIDE ENCLOSED WITH ACCESSORY KIT.**



LIFETIME LIMITED 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 a \$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.



DLC/U.S.A.

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