ⓢ SPAL® WARRANTY STATEMENT

SPAL s.r.l. WARRANTS THIS PRODUCT TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SALE TO THE ORIGINAL PURCHASER AND NOT MORE THAN 24 MONTHS FROM THE DATE OF MANUFACTURE.

SPAL WILL REPAIR, FREE OF CHARGE, THIS PRODUCT IF IN THE JUDGEMENT OF SPAL HAS PROVEN TO BE DEFECTIVE WITHIN THE WARRANTY PERIOD, WHEN SAID PRODUCT IS RETURNED AT CUSTOMER EXPENSE TO THE:

IOWA EXPORT-IMPORT TRADING COMPANY, 512 TUTTLE STREET - DES MOINES - IOWA 50309-4618.

THIS WARRANTY DOES NOT COVER ANY EXPENSES INCURRED IN THE REMOVAL AND REINSTALLATION OF THIS PRODUCT.

THIS WARRANTY DOES NOT APPLY TO ANY PRODUCT DAMAGED BY IMPROPER INSTALLATION, ACCIDENT, MISUSE, ABUSE, IMPROPER LINE VOLTAGE, FIRE, FLOOD, LIGHTNING OR OTHER ACTS OF GOD, OR IF THE PRODUCT WAS ALTERED OR REPAIRED BY ANYONE OTHER THAN SPAL.

THIS WARRANTY IS IN LIEU OF OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, AND NO PERSON IS AUTHORIZED TO ASSUME FOR SPAL ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THE PRODUCT.

IMPORTANT-KEEP YOUR SALES SLIP WITH THIS WARRANTY STATEMENT.

## INFORMATION TO USER (Section 15.21)

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

SPECIAL ACCESSORIES (Section 15.27)

The user is also cautioned that any peripheral device installed with this equipment such as a modem or printer, must be connected with a high-quality shielded cable to ensure compliance with FCC limits.

ⓢ SPAL®

Via per Carpi, 26/B - 42015 CORREGGIO (R.E.) Italy Tel.+39 / 0522-631030 - Fax.+39 / 0522-693611
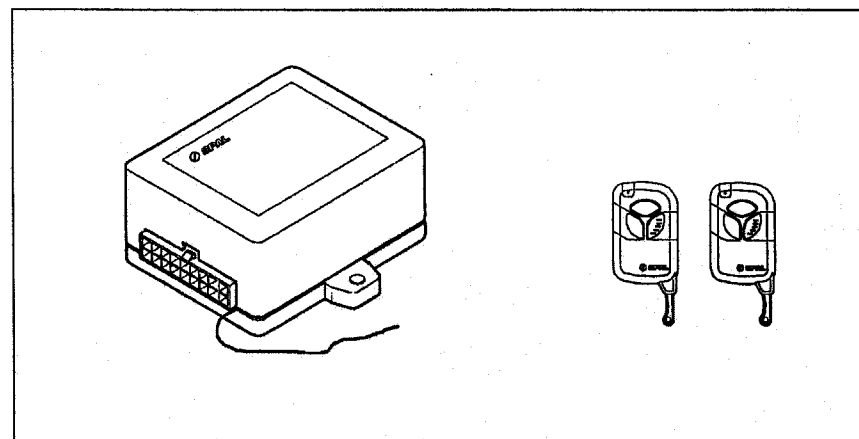
To be given to the User !

cod.6012.1046 (U.S.A.) - 10/98

ⓢ SPAL®

U.S.A.

KIT AS 80 *U.S.A. (Code 3450.0043)*
REMOTE CONTROLLED ALARM UNIT

(Frequency 433.92 Mhz with Random Encrypted Code)

Installation and Operating Instructions..pg.2

TROUBLESHOOTING

PROBLEM	Possible Cause	SOLUTION
The alarm system is armed correctly by the remote control, but the parking lights do not flash.	The 15 A fuse is interrupted or blown (on the RED wire of harness).	*Before replacing the fuse, find the cause of the short-circuit.* - Be sure the RED wire of harness is correctly connected to the Positive battery pole.
The alarm system is armed correctly by the remote control but when a door is re-opened manually, the system does not emit any alert signal.	The control unit is in VALET mode *(check and see if the LED starts to flash when the key is turned off).*	- To reset the system, leave the VALET mode : <u>press buttons P1+P2 within 5 sec. after the ignition key has been turned on.</u>
	The GREY wire *(or Grey/Black wire) is not connected to the hood/trunk and doors pinswitches* *(check and see if all the other doors have been closed properly).*	- Check if the GREY wire *(or Grey/Black wire)* is connected correctly to all the correspondent pinswitches, including the diodes shown in the diagrams. - Check the position and height of the pinswitch under the motor hood.
The Current sensor does not work properly.	The positive wire for electronic circuit supply has not been connected properly. *(Ex.: to the positive battery pole directly).*	- Be sure that the PURPLE wire of harness, has been connected correctly to a constant +12 volts, already protected by a fuse *(Ex.: internal dome light).*
"False" alarms occur without any specific cause.	Current sensor *programmed ON* in a car where some devices could operate even if the key is turned off *(Ex.: electronic control units, air conditioners, etc...).*	- Check the value of current draw of the car circuits when the key is turned off and, if necessary, disengage the Sensor. *(to let the function be operative see the PROGRAMMING USER mode, page 15).*
	Ultrasound and/or Hyperfrequency Module sensitivity regulated too high.	- Lower sensitivity *(by operating on the trimmer)*, and check the position of the ultrasound capsules.

ⓢ SPAL®

KIT AS 80 U.S.A.   **REMOTE CONTROLLED ALARM UNIT**
(Frequency 433.92 Mhz with Random Encrypted Code)

OWNER'S MANUAL   *Operating istructions*

Remote control functions :
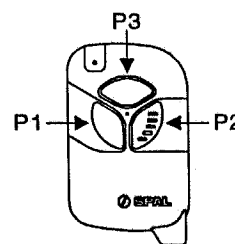
	P1 = Disarm unit , **OFF** (TO UNLOCK THE CAR) ⟹	
	P2 = Arm unit, **ON** (TO LOCK THE CAR) ⟹	
	P1+P2 = PANIC ALARM ⟹	+
	P3 = Auxiliary Output **AUX 1**	
+ P1+P2	= VALET mode ⟹	+ (1 x) (1 x)

EMERGENCY SYSTEM DISARM

<u>This function allows the alarm system to be COMPLETELY disabled if the remote control is NO LONGER in your possession.</u>

The system can be disabled using the PASSWORD but to enter, follow this procedure:

NOTE: "1 - 1 - 1 - 1" is the standard programmed password; new personalized password: ⬚⬚⬚⬚

-Turn the Ignition key ON and OFF 3 times *(within 5 sec.);* 🔑 + 🔑 + 🔑 ⟹ 💡

! When turning the ignition key OFF the 3rd time the LED starts to flash !

- **Turn the ignition key ON after the LED has flashed for a number of times that corresponds to the first figure of the Password** *(Ex.: "1" when using the standard Password: the first flash).* 💡 ⟹ 🔑

- **Turn the ignition key OFF, the LED will flash again: turn the ignition key ON when the LED has flashed a number of times that corresponds to the second figure of the Password** *(Ex.: "1" again when using the standard Password: is the first flash).* 💡 ⟹ 🔑

- **Follow the same procedure for the other TWO figures of the Password.**

In case of an error, the LED will be constantly on after a few seconds.

To confirm that the PASSWORD has been correctly received, the LED will switch off and at the same time the parking lights flash once, 1 chirp and 1 door unlock pulse is given.

■ AUTO REARM *(this function is to prevent the user from accidentally disarming the alarm system !)*

If the remote control is accidentally pressed (with car locked and alarm intentionally turned on or passive autoarming activated), after **90 sec.** the unit will automatically **re-arm the alarm system, but without locking the doors and without activating the module control.**
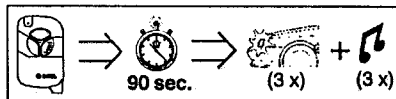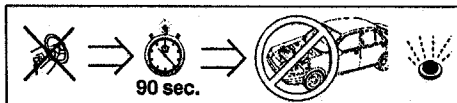

If a door is opened, the ignition key is turned on or an AUX output is activated during the count of 90 sec., this function will be cancelled.

☐ **PASSIVE ACTIVATION OF ENGINE CUT** *(# 9)* (Starter kill)
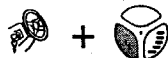
AUTOMATIC ACTIVATION

The Engine Cut will be automatically activated (when the car doors are unlocked and alarm system is disarmed) **90 sec.** after the ignition key is turned off.

The LED will give short flashes to indicate that the Engine Cut has been activated.

DEACTIVATION

- **Insert the key and switch the ignition on ;**
- **Press** the remote control **P1** button.

The Engine Cut unit can also be disabled using the remote control, by arming (P2) and disarming (P1) the system.

☐10☐ **PROGRAMMING A NEW REMOTE CONTROL** (Autolearning)

NOTE : *To enable this function, the relative "Spal VALET Button" supplied, Code 6006.0032 must be used (OPERATION TO BE CARRIED OUT BY THE INSTALLATION TECHNICIAN ONLY) !*

This procedure is used to learn new remote controls in the control unit memory, for example when a damaged or lost transmitter is replaced.
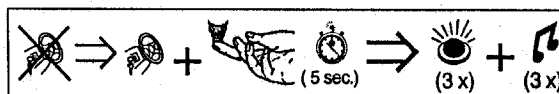
The control unit allows memorization of 4 remote controls max.

To enter the Autolearning, proceed as follows :

- Enter the VALET status
  *(press buttons **P1+P2** within 5 sec. after the ignition key has been turned on)* !
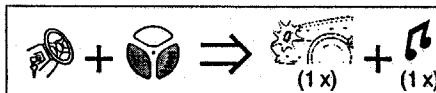
- **Turn off then turn on the ignition key and press the VALET Button** (for 5 sec.) immediately; the LED will flash 3 times and 3 chirp will sound to confirm.

- **Release the VALET Button** and press the button **P1** on each remote control to be loaded; the LED will flash 3 times and 3 chirps will sound to confirm.
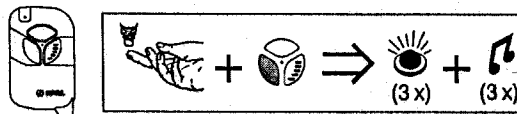
All the codes of the remote controls originally learned will not be cancelled until the first remote control has been learned (or the lost or damaged remote control will not be unusable) .

-*Turn the ignition key off to leave the programming procedure! (Remember to get out of the VALET status)*

NOTE: Whenever the ignition key is turned off during normal use of the car, the LED will flash for a number of times equal to the number of codes learned in the unit memory (this allows the user to check the number of remote controls enabled). *This feature is disabled when the VALET status is entered !*

INSTALLATION and OPERATING INSTRUCTIONS

- KIT AS 80 U.S.A. *(Code 3450.0043)*

REMOTE CONTROLLED ALARM UNIT
(with Random Encrypted Code)

WARNING

Read these instructions and technical specifications carefully.

It is advisable to carry out all assembly operations only AFTER having disconnected the battery of the vehicle.

Verify this operation in the "Caution section" of the Service Manual of all the new cars !

- **Installation on all types of car with 12 V battery with negative at ground.**

- **To be installed inside the passenger compartment .**

IMPORTANT

THIS EQUIPMENT MUST BE INSTALLED BY A PROFESSIONAL INSTALLER

Any attempt to modify the system with operations not included in the present manual should be avoided or it will void the warranty.

TECHNICAL SPECIFICATIONS

Power supply...12 V (10 V min ÷ 16 V max)

Control unit current draw Max (@ 12V)...11 mA

Operating temperature..-40°C ÷ +85°C

Initial neutral period..40 sec.

Alarm period..30 sec.

Alarm reset time..5 sec.

Remote control range...120 ft

Parking light relay capacity..7 + 7 A

Power lock relay capacity..15 A

Max capacity negatives outputs (Aux 1 and Engine Cut)..300 mA

WARNING

When the remote control LED **flashes** while pushing a button the
"BATTERY MUST BE CHANGED" (12 vdc Mod. GP 23 A) !

(Unlock / Lock functions will still operate for a short time)
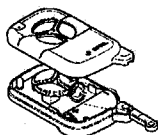
■ **OPTIONS AVAILABLE:**

- Siren with back-up battery SIR 2, **Cod.3560.0101** / SIR 3, **Cod.3560.0102;**

- Siren without back-up battery SIR 4, **Cod.3560.0103;**

- Ultrasound module MUS 2, **Cod.3560.0009;**

- Hyperfrequency module, **Cod.3560.0004;**

- Universal power-window module MAV 3, **Cod.3560.0000** / MAV 6, **Cod. 3560.0003;**

- Power-window module MAV 8, **Cod. 3560.0011;**

- VALET Push-Button for user programming , **Cod.6006.0032;**

- Relay 12 V - 30 A (n.o.), **Cod.3304.0071;**

- Relay 12 V - 15/30 A (n.o./n.c.), **Cod.3304.0079;**

- SHOCK-SENSOR module MSS 1, **Cod. 3560.0008.**

NOTE : The mechanical key supplied with the Spal siren SIR 2 / 3 **IS NOT** an emergency key.
It switches off the siren only !

1) TURNING THE MECHANICAL KEY IN POSITION **ON,** THE SIREN WILL DO AN ACOUSTIC SIGNAL CONFIRMATION.

2) IF THE SIREN IS CONNECTED AT THE CONTROL UNIT, IT WILL DO THE FIRST ALARM CYCLE ONLY <u>30 sec.</u>
AFTER THE SWITCHING ON (the key ON).

NOTE: When the car battery (or the control unit 4-pole connector) is disconnected, the siren will begin to sound
In Self-powered mode for approximately <u>30 sec.</u>, both if the alarm system is enabled or disabled.

<u>To prevent useless absorption, the internal siren batteries are recharged only when the car is running.</u>

□ **CARJACK PROTECTION MODE** (# 7)

This function is **activated** by pressing remote control **P2** button (Led constantly on) when the ignition key is turned on and the doors locked.
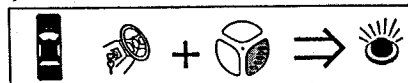
It is **deactivated** by pressing remote control **P1** button (the LED goes out) when the ignition key is turned on and the doors locked.
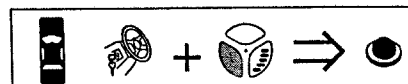
The ANTI-CARJACK function can be ACTIVE or PASSIVE, but in both cases the engine cut will not be activated until the ignition key has been turned off for safety reasons (and after a complete alarm cycle).

- ACTIVE MODE -

With ignition key in on position (or car in motion) press P2 (the function is active), when a door is opened and then closed the LED will go out, starting a 2 minute count.
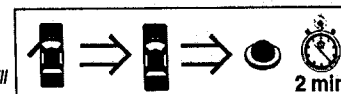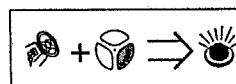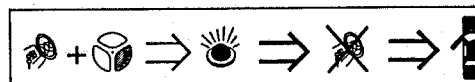
After 20 sec. the LED will start to flash and 2 min. later the unit performs an alarm cycle (visual and acoustic), but without activating the engine cut
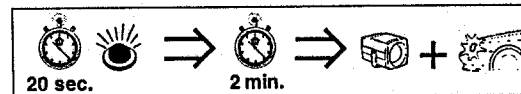
| 20 sec. | 2 min. |

During this period the remote control will be disabled; the only way to get out of the ANTICARJACK status is to enter the PASSWORD using the ignition key, with the doors locked.

- PASSIVE MODE -

With ignition key in on position (or car in motion) press P2 (the function is active), the ignition key must be turned off before a door is opened. This will leave the function in PASSIVE Mode.

The car can be used absolutely normally and the unit does not give any signals of other modes of operation.

When the car is restarted it is essential to enter the PASSWORD using the ignition key; otherwise the 2 minute count will start.

After 20 sec. the LED will start to flash and 2 min. later the control unit performs an alarm cycle without cutting out the engine (the car is in motion).
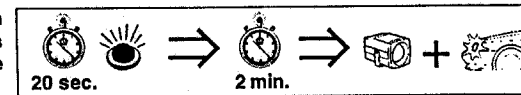
| 20 sec. | 2 min. |

During this period the remote control will be disabled; the only way to get out of the ANTICARJACK status is to enter the PASSWORD using the ignition key, with the doors locked (i.e. turn on the ignition key a number of times equal to the number loaded in the memory).

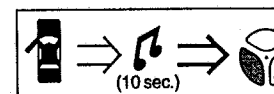□ **PASSIVE AUTOARMING MODE** (# 8)

This function allows the unit to turn on automatically 30 sec. after the last door has been closed, **without locking the doors and without activating the module control** (Ex.: power window/Ultasound).

The unit starts to count the 30 sec. **only when it detects the opening and closing of a door with the ignition key off** (the count will be reset by an AUX function or if a door is opened again; when the door is closed the count will restart from the beginning).
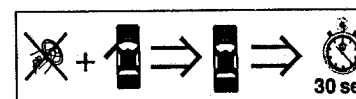
Activation is signalled by **3 flashes of the parking lights and 3 chirps** (if programmed).

Once the unit has automatically armed itself (and once the neutral period has elapsed) when a door is opened a 10 sec. beep is heard to allow the unit to be disactivated (press the remote control P1 button) before the system switches to alarm status.

When the Passive Autoarming function is enabled, the Auto Rearm function is also enabled !

☐ CURRENT SENSING *(# 1)*

When opening a door, the unit is triggered by a sensor that detects the current draw of the internal lights (function # 1, programmed ON).

NOTE: *This function will be automatically excluded if the "hazard button" is pressed before closing the car by remote control.*

☐ CHIRPS *(# 2)*

Once user programming function # 2 has been programmed as ON, the siren will emit chirps whenever the car is unlocked or locked.

These can be disabled momentarily by pressing and then releasing button P3 before the relative button P1 (to unlock) or P2 (to lock).

🎲 + 🎲   🎲 + 🎲

SILENT UNLOCK   SILENT LOCK

The CHIRP function will be reactivated and audible the first time the control unit will be armed or disarmed.

☐ EXTENDED LOCK/UNLOCK PULSE *(# 3)*

Set ON # 3 function for all cars with pneumatic lock system (Ex.: MERCEDES-AUDI).
LONG Time power lock system *(Unlock = 3 sec. / Lock = 3 sec.).*

☐ COMFORT MODE

- Automatic *(# 4)*

To have a "complete" automatic power door lock and power window (and roof) closing procedure in car with COMFORT system (Ex.: BMW-VW-Opel), when closing the car *(P2 button, lock time = 30 sec.).*

- Manual *(# 5)*

To have a complete control on the "total or step by step" power window / roof closing procedure in car with COMFORT system (Ex.: BMW-VW-Opel).

🎲 *For example car being closed, "external module exclusion" mode activated, the windows can be lifted at your convenience by pressing P3+P2 buttons !*

☐ EXTERNAL MODULES EXCLUSION *(# 6)*   *(power windows, ultrasound, etc.) and COMFORT system*

🎲 The remote module command *(function # 6)* is disabled by pressing button P2 of the remote control for more than **2 sec.** when the alarm system is armed.

In the car with **COMFORT** system (Ex.: BMW-VW-Opel) the automatic window / roof closing function can be excluded by keeping pressed the P2 button when closing the car.

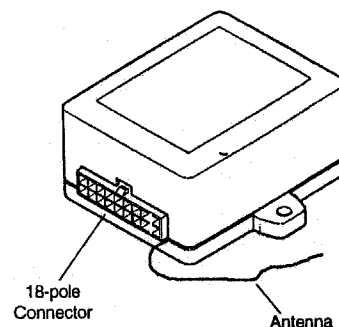*The parking lights flash 6 times to confirm the disabling.*

This function will be deactivated the first time the control unit is disarmed.

REMOTE CONTROL FUNCTIONS
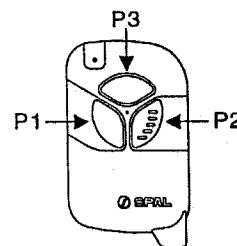
🎲 **P1** = Disarm Unit, **OFF** (TO UNLOCK THE CAR);

🎲 **P2** = Arm Unit, **ON** (TO LOCK THE CAR);

🎲 **P1+P2** = PANIC Alarm;

🎲 **P3** = Auxiliary 1 Output (White/Black wire);

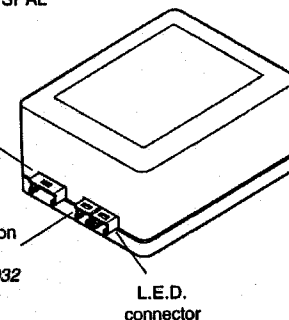🎲 *P3+P2 = Auxiliary Output for "manual" Comfort function;*

CONTROL UNIT LAYOUT

Connector for external SPAL modules:
- *Ultrasound MUS-1 (Code.3560.0005);*
- *Hyperfrequency (Cod.3560.0004);*
- *Shock Sensor MSS 1 (Cod.3560.0008).*

VALET push-button connector
Spal Cod.6006.0032

L.E.D. connector

18-pole Connector   Antenna

POWER LOCK SYSTEM SET-UP

Timed POWER LOCK
Time Setting
(standard programming)

SHORT Time { UNLOCK = 0.5 sec.
             { LOCK = 0.5 sec.

✳ *This function IS NOT activated !*
To let the function be operative see the
PROGRAMMING USER mode
(page 15)
(see "Automatic Comfort ")

COMFORT Power
Lock with SHORT
UNLOCK time
(Ex.: BMW - VW - Opel)

{ *UNLOCK = 0.5 sec.*
{ *LOCK = 30 sec.*

WARNING

Set 3 sec. time for all cars with pneumatic lock system (Ex.: Old model MERCEDES-AUDI) !

This function IS NOT activated !

To turn this feature on see the PROGRAMMING USER mode *(page 15)*

18 - POLE CONNECTOR

RED wire : Positive power supply line to parking light. Connect to the constant +12 volt source and install the 15 A fuse provided (Ex.: battery);

BLACK wire : Ground. Connect directly to the car body or to an original grounding device;

PURPLE wire : Positive wire for internal electronic circuit feed .
Connect to a constant +12 volt source already protected by a fuse
(Ex.: internal dome light) ;

ORANGE wire : Switch +12 volt source controlled by ignition key.
Connect to a constant ignition, even when cranking;

YELLOW wires (2) : Positive parking light output. Connect one of the two wires to the right wire and the other to the left (European cars only).
American cars hook both yellow wires to the parking light wire;

GREY wire : Instantaneous negative alarm input to be connected to the original pinswitches on the doors (front and rear);

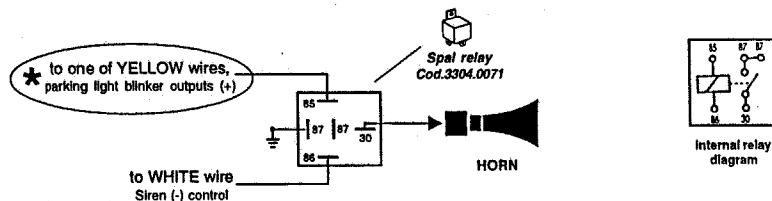   **N.B.** Use the diodes (e.g. 1N4004) to separate the original parallel pinswitches lines !

GREY/BLACK wire : Instantaneous negative alarm input to be connected to the pinswitch on the hood / trunk;

WHITE/BLACK wire : Negative (-) **Auxiliary 1** output (max 300 mA);

PINK wire : Negative (-) Output (max 300 mA) for **Engine Cut** (with external relay);

BROWN wire : Constant negative (-) Output (max 10 mA) when armed for **External Module control** (Ex.: Spal MAV 3 / MAV 6 power-window modules or the like);

WHITE wire : Constant negative (-) Output "when the alarm is triggered" (max 1A) for **External Siren** control (Spal SIR 4, Code 3560.0103).
A horn can be connected following this diagram:

★ to one of YELLOW wires, parking light blinker outputs (+)

Spal relay Cod.3304.0071

to WHITE wire Siren (-) control

HORN

Internal relay diagram

GREEN/BLACK wire
GREEN/RED wire
GREEN wire
BLUE/BLACK wire
BLUE/RED wire
BLUE wire
} Controls for universal power lock systems. See installation diagrams on page 9.

The following two fuses are supplied:
- **15 A** for the RED wire; **5 A** for power lock control supply (pls.note required fuse size for vehicle application).

9 **USER PROGRAMMING** (to personalize the operating functions)

> **NOTE :** To enable this function, the relative "Spal VALET Button" supplied, Code 6006.0032 must be used
> (OPERATION TO BE CARRIED OUT BY THE INSTALLATION TECHNICIAN ONLY) !

Programmable functions	Standard Programming
1) Current sense	OFF
2) Chirps	OFF
3) LONG Time (3 sec) power lock	OFF
4) Automatic Comfort (for original systems)	OFF
5) "Manual" comfort (by TX)	OFF
6) External Modules control	OFF
7) CarJack Protection	OFF
8) Passive Autoarming	OFF
9) Passive Engine Cut activation	OFF
10) Password	"1 - 1 - 1 - 1"

NOTE: Enter the VALET status (press buttons P1+P2 within 5 sec. after the ignition key has been turned on) !

To enter the user programming, proceed as follows :

- **Turn off the ignition key** and press the VALET Button within 5 sec. for at least **5 sec.** (keeping it pressed), the LED will flash once and 1 chirp will be heard to confirm.

- Release the button and press it again immediately (once), keeping it pressed, to access programming step No. 1 (Power down sensor); the LED will flash once and 1 chirp will sound to confirm.

- Still keeping the VALET Button pressed, press the remote control P1 button to program function No.1

    The function considers changes whenever P1 is pressed :
    1 LED flash + 1 chirp = OFF   2 LED flashes + 2 chirps = ON

- Release the VALET Button and press it again immediately (once), keeping it pressed, to access programming step No. 2 (External Modules control); the LED will flash twice and 2 chirps will be heard to confirm.

Now move through the table of functions step by step, to obtain a number of flashes of the LED and of chirps equal to the number of the function (up to No. 9).

- When the last programming (No. 10, Password) is reached, a 4 figure number can be set ("1111" is programmed as standard, 1 to 9 are valid figures) as the system password. If the VALET button will be released and repressed, the standard code will be kept.

Keep the VALET button pressed, turn the ignition key ON and then OFF: the LED will start to flash.
To set the **first** figure, turn the ignition key ON after the LED has flashed for a number of times that corresponds to the **first** figure of the Password you choose.

-Turn the ignition key OFF before a **3 sec.** time has elapsed: the LED will flash again. Turn the ignition key ON to set the second figure following the same procedure as before.

- Enter the **4** figures of the new Password; when setting the 4th figure, the programming procedure comes to the end. A chirp and a flashing of the LED will confirm the end of the procedure.

> **IMPORTANT**
> The 3 remote control P1+P2+P3 buttons can be pressed together to come back to the initial standard programming settings (keeping the VALET Button pressed).
> The LED will flash three times and 3 chirps will be heard for confirmation.

To get out of the programming procedure, simply release the VALET Button for more than 5 sec.
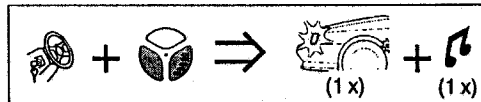NOTE : Remember to get out of the VALET status !

7 VALET MODE

Some alarm features can be TEMPORARILY excluded by entering the VALET mode.

To enter, follow this procedure :

- *Insert the key and switch the ignition on;*

- *Press the remote control P1+P2 buttons within 5 sec.*

(1 x)   (1 x)

A chirp signal is heard and the parking lights flash to indicate that this function has been activated.

In VALET status (when the ignition key is turned off), the LED flashes continuously!

"Functions still activated"

- **Unlock / Lock by remote control;**
- **Car locator;**
- **Auxiliary output AUX 1;**

- Chirps
- "Manual" Comfort
(if programmed, see page 15 !)

Functions Disactivated

-Alarm sensors;
-Remote Panic Alarm;
-Passive Autoarming;
-Passive Engine Cut activation;
-Auto Rearm;
-Carjack Protection ;
-"Automatic" Comfort (30 sec);
-Engine Cut;
-External modules control.

To get out of VALET status, repeat the procedure
(press the remote control P1+P2 buttons within 5 sec. after the ignition key has been switched on).

8 EMERGENCY SYSTEM DISARM

This function allows the alarm system to be COMPLETELY disabled if the remote control is NO LONGER in your possession.
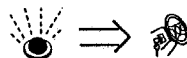
The system can be disabled using the PASSWORD but to enter, follow this procedure:

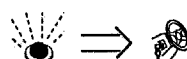*(NOTE: "1-1-1-1" is the standard programmed password)*

-Turn the ignition key ON and OFF 3 times *(within 5 sec.);*

! When turning the ignition key OFF the 3rd time the LED starts to flash !

- Turn the ignition key ON after the LED has flashed for a number of times that corresponds to the first figure of the Password *(Ex.: "1" when using the standard Password: the first flash).*

- Turn the ignition key OFF, the LED will flash again: turn the ignition key ON when the LED has flashed a number of times that corresponds to the second figure of the Password *(Ex.: "1" again when using the standard Password: is the first flash).*
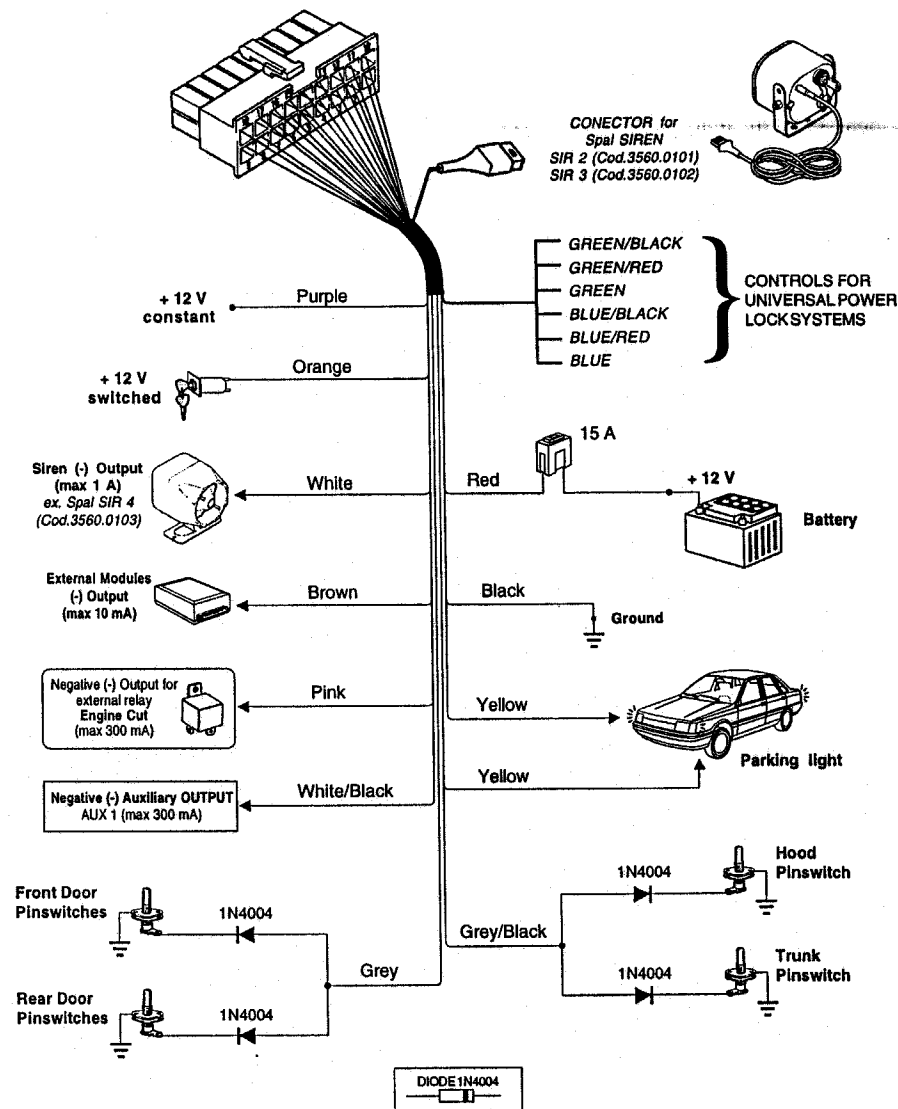
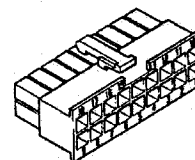- Follow the same procedure for the other TWO figures of the Password.

In case of an error, the LED will be constantly on after a few seconds.

To confirm that the PASSWORD has been correctly received, the LED will switch off and at the same time the parking lights flash once, 1 chirp and 1 door unlock pulse is given.

18-POLE CONNECTOR

CONECTOR for
Spal SIREN
SIR 2 (Cod.3560.0101)
SIR 3 (Cod.3560.0102)

GREEN/BLACK
GREEN/RED
GREEN
BLUE/BLACK
BLUE/RED
BLUE
} CONTROLS FOR UNIVERSAL POWER LOCK SYSTEMS

+ 12 V constant — Purple

+ 12 V switched

Orange

Siren (-) Output (max 1 A) ex. Spal SIR 4 (Cod.3560.0103) — White   Red   15 A   + 12 V   Battery

External Modules (-) Output (max 10 mA) — Brown   Black   Ground

Negative (-) Output for external relay Engine Cut (max 300 mA) — Pink   Yellow

Negative (-) Auxiliary OUTPUT AUX 1 (max 300 mA) — White/Black   Yellow   Parking light

Grey/Black

Front Door Pinswitches — 1N4004   1N4004   Hood Pinswitch

Grey

Rear Door Pinswitches — 1N4004   1N4004   Trunk Pinswitch

DIODE 1N4004

18 Pole CONNECTOR DIAGRAM

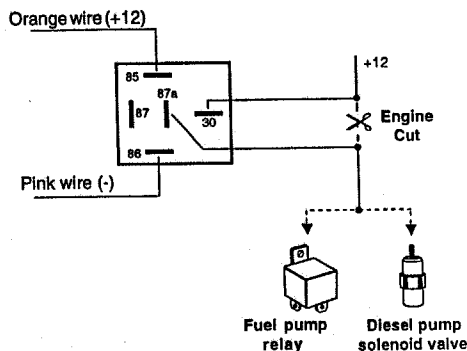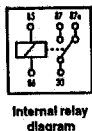| 1	BLUE/RED	10	BLUE/BLACK
2	WHITE	11	BLUE
3	WHITE/BLACK	12	GREEN
4	GREY/BLACK	13	GREEN/BLACK
5	GREY	14	GREEN/RED
6	PINK	15	YELLOW
7	BROWN	16	RED
8	ORANGE	17	YELLOW
9	BLACK	18	PURPLE

ENGINE CUT DIAGRAM

An external relay must be used to activate the Engine Cut function.
**It operates on the starter and/or the fuel pump relay (or diesel pump solenoid valve):**

> **WARNING**
> Never disconnect ignition system on gas driven cars equipped with
> catalytic converters !

1) Find the wire connected to the electric fuel pump relay (or diesel pump solenoid valve), cut it and connect one terminal to the **87a**-pole and the other terminal to the **30**-pole relay (Spal Cod. 3304.0079).

Orange wire (+12)

Pink wire (-)

+12

Engine Cut

Spal relay Cod.3304.0079

Internal relay diagram

Fuel pump relay   **Diesel pump solenoid valve**

2) Find the original wire (+12) which controls the starter from the ignition key block, cut it and connect the two wire terminals to the **87a**-pole and to the **30**-pole relay (Spal Cod. 3304.0079).

Orange wire (+12)

Pink wire (-)

+12

STARTER MOTOR
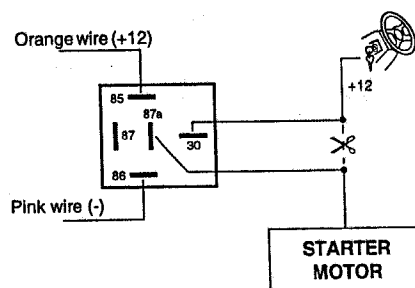
> **IMPORTANT**
> A Double Engine Cut is possible by connecting the TWO relays as shown in the diagram !
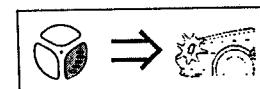> (max 300 mA)

---

2 PANIC ALARM   30 sec.

A complete **30 sec.** alarm cycle can be remote controlled by pressing **P1+P2** buttons when the car is already locked and the system already armed (after the neutral time).
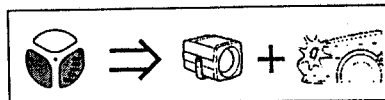
This function can be stopped by pressing P1 button .

3 CAR LOCATOR

This functions is used to find the car in a parking lot, for example .

If remote control **P2** button is pressed when the car is locked and the system is armed (after the neutraltime), the **parking lights** will be turned on for a **25 sec.** period.
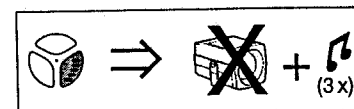
The protection system will not be disarmed !

4 SIREN EXCLUSION (silent alert)   14 sec.

When the system is armed, it is possible to disconnect the siren *by pressing* the **P2** button *a second time* within **14 sec.** *from the arming procedure (during the neutral time).*

(3 x)

A 3 chirp warning to confirm the procedure is heard.

If an alarm cause is detected the unit will provide the VISUAL alarm only (30 sec.) using the parking lights, but the siren signal is not heard (silent alert).

This function will be disactivated when disarming the system by the remote control.

5 ALARM MEMORY

When the system is disarmed by the remote control, and an alarm cycle has taken place during the user's absence, the LED will flash as follows :

- slow sequence of flashes = *Door / Hood / Trunk alarm*

- fast sequence of flashes = *Current sense / Ultrasonic / Microwave alarm / Shock sensor*

The LED will only signal the last alarm occured.

This sequence will be deleted when the ignition key is turned on.

6 TRIGGER ZONE CHECKING

Electronic and mechanical trigger zone checking *(door/hood/trunk pinswitches, ultrasonic/microwave)* is available during the neutral time (40 sec.).

40 sec.
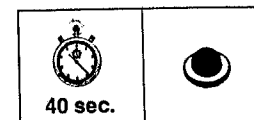
The unit will confirm that the alarm system is operating correctly by switching the LED off for about 0.5 sec. (it was steady on).

When the installation has been completed and the battery has been reconnected, the unit is NOT Activated (OFF), the power door lock and the modules are not activated.

The parking lights are turned on (for 1 sec.) to indicate that the control unit is operating correctly.

1 ALARM

A ARMING

The alarm system will be armed just by pressing the P2 remote control button (for 0.5 sec.) near the car.

(3 x)   (3 x)
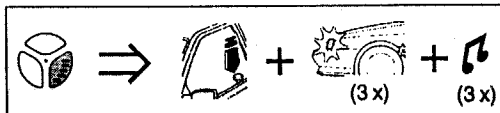
The alarm system cannot be armed if the ignition key is turned on (+12).

3 short flashes of the parking lights (if programmed a 3 chirp signal is heard as well), and the continuous LED confirms the correct arming.

The door locking, the Engine Cut and the modules are immediately activated.

B PROTECTION   40 sec.

When the **40 sec.** initial neutral time has elapsed the LED flashes regularly; the following sensors are activated and are ready to detect any possible alarm triggers:

a) Current sense *(Ex.: Power Down, internal dome light. This function IS NOT activated, to let the function be operative see the PROGRAMMING USER mode, page 15).*

b) Detection of movement in the passenger compartment by volumetric detectors supplied as optional (ULTRASOUND *Spal Code.3560.0009*, HYPERFREQUENCY *Spal Code.3560.0004)*; or for stroke of the car detected by SHOCK SENSOR module *(MSS 1 Cod.3560.0008).*

c) Attempt to open doors / hood / trunk;

C ALERT   30 sec.

Whenever an alarm sensor is triggered, the unit emit an alert signal (acoustic and visual) for **30 sec.**
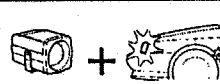
The *acoustic* alarm cycle can be repeated *3 times max* regardless of any new attempt.
The *visual* alarm signals are limited to 10 times and can be triggered at any new attempt.

MOMENTARY ALERT MUTING
If the remote control P1 button is pressed during an alert cycle, **only the siren and the parking light flashing are stopped,** but the protection system is not disarmed (doors locked and Engine Cut in operation).
The unit still operates and is ready to produce a new alert cycle after a 5 sec. interval.
The P1 button must be pressed again to open the car *(two stage disarm).*

D DISARMING

The alarm system is disarmed by pressing the remote control P1 button (for 0.5 sec.) near the car.

(1 x)   (1 x)
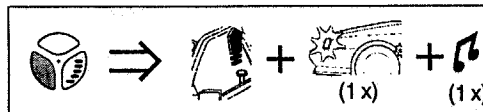
A long flashing of the parking light, the power doors unlocked and the LED switched off confirm the good reception of the command (if programmed, 1 chirp signal from the siren is heard as well).

If an alarm cycle has already been produced by the control unit, the LED flashes according to a preset coded sequence (alarm memory, see page 13).

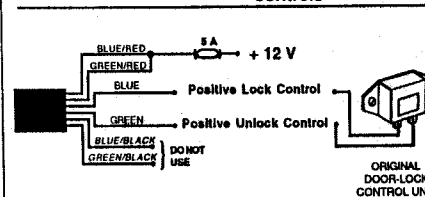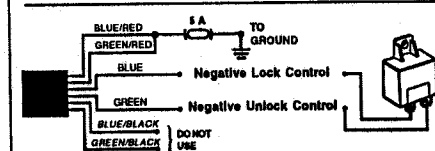**DIAGRAM 1** - *Original system with POSITIVE controls*

DIAGRAM 2 - *Original system with NEGATIVE controls* *

* *For any installations to be carried out with Spal power door locks kit (Example Cod. 3700.0004 / 5), follow the installation instructions in the respective manual.*

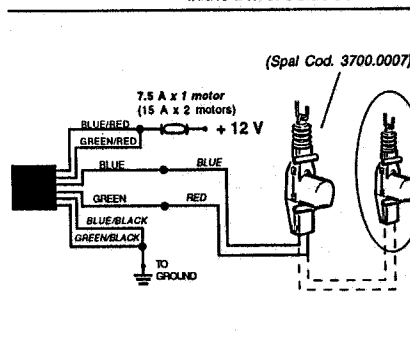**DIAGRAM 3** - *Original system Without Actuator in the Driver's side door*

DIAGRAM 4 - *Original system Without Control Unit, controlled by an Original Switch (Example CHRYSLER, GM U.S.A. ...)*
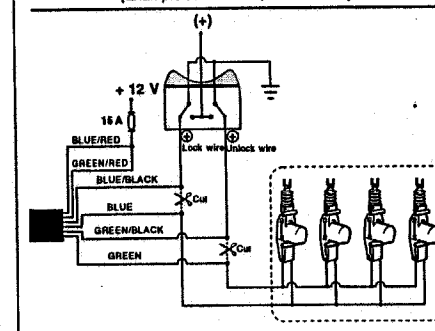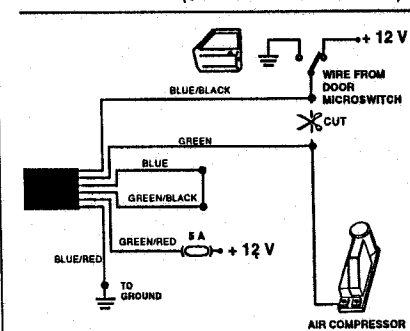
DIAGRAM 5 - *Original pneumatic lock system (Old models MERCEDES - AUDI)*

CAUTION : *This time setting IS NOT activated !*
To let the function be operative see the PROGRAMMING USER mode *(page 15)*

LONG Time	UNLOCK = 3 sec.	LOCK = 3 sec.
COMFORT Power Lock with LONG UNLOCK time	UNLOCK = 3 sec.	LOCK = 30 sec.

DIAGRAM 6 - *Original system with Variable Voltage Door Lock (Example U.S.A. cars)*
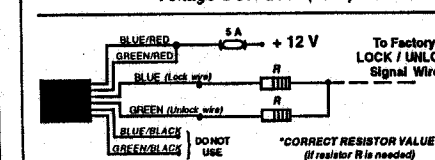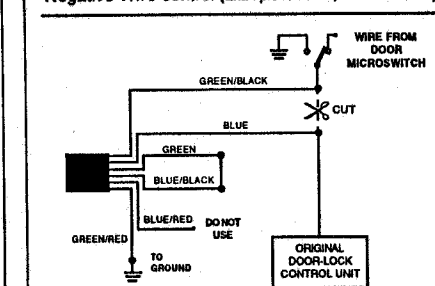
DIAGRAM 7 - *Original system with Only One Negative Wire control (Example NISSAN, MITSUBISHI...)*
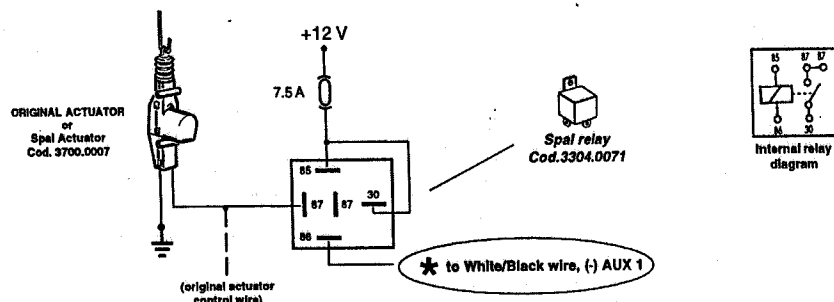
EXAMPLES OF AUXILIARY OUTPUT CONNECTION

-Connection diagram for AUX 1 output

(the user must choose between function "A and B")

A **TRUNK RELEASE !**

*System with no polarity on actuator control wire when at rest ! (Ex.: original and/or Spal system)*

ORIGINAL ACTUATOR
or
Spal Actuator
Cod. 3700.0007

+12 V

7.5 A

Spal relay
Cod.3304.0071

Internal relay
diagram

(original actuator control wire)
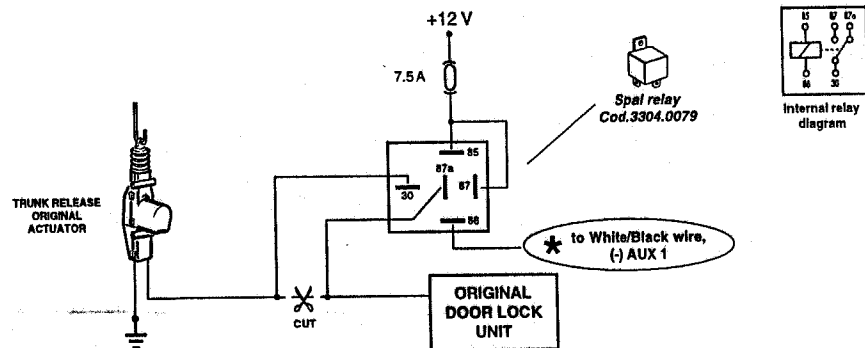
★ to White/Black wire, (-) AUX 1

-If the relay is connected as indicated in the diagram :

when the car is locked or unlocked (alarm on/off), the user can open the trunk/ hatchback of the car by pressing button **P3** on the remote control *(for about 2 sec.)*, releasing the locking mechanism directly (Aux 1).
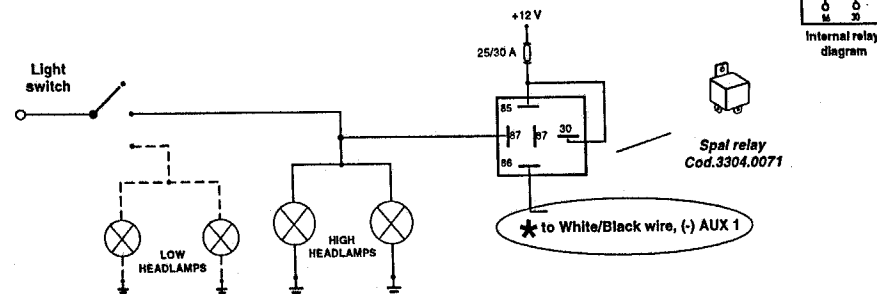
The function is activated with a slight delay to avoid accidental operations.

*System with rest at ground on actuator control wire !*   *(Ex.: original system)*

TRUNK RELEASE
ORIGINAL
ACTUATOR

+12 V

7.5 A

Spal relay
Cod.3304.0079

Internal relay
diagram

CUT

ORIGINAL
DOOR LOCK
UNIT

★ to White/Black wire, (-) AUX 1

B **LIGHT YOUR WAY !**

*Conventional type high or low beam headlamp circuit !*

Light switch

+12 V

25/30 A

Internal relay diagram

Spal relay
Cod.3304.0071

LOW HEADLAMPS

HIGH HEADLAMPS
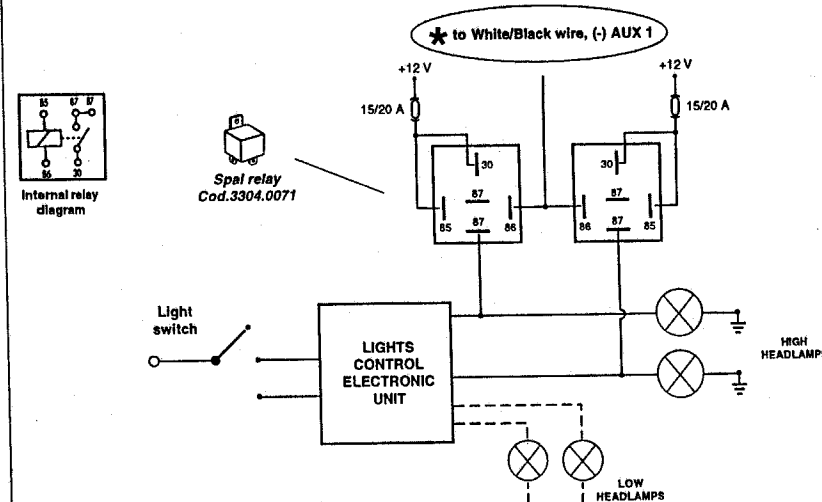
★ to White/Black wire, (-) AUX 1

If the relay is connected as indicated in the diagram :

when the car is locked or unlocked (alarm on/off), by pressing button **P3** on the remote control (for about 2 sec.) the user can have the high or low headlamps switched on as long as the button is pressed (Aux 1).

The function is activated with a slight delay to avoid accidental operations.

*Electronically controlled high or low beam headlamp circuit !*

★ to White/Black wire, (-) AUX 1

+12 V

15/20 A

+12 V

15/20 A

Internal relay diagram

Spal relay
Cod.3304.0071

Light switch

LIGHTS
CONTROL
ELECTRONIC
UNIT

HIGH HEADLAMPS

LOW HEADLAMPS

N.B. **# 2 external relays (Ex.: 30 A - 12 V, Spal Cod. 3304.0071) and wires of minimum gauge Ø 1,5 mm² must be used to make this type of system.**

CAUTION

When the auxiliary command is given (with the alarm on) the control unit will NOT detect any alarm triggers active, such as: "trunk release"; "headlamp switch-on" or etc...

The system automatically switches to alarm search status when the trigger (Ex.: trunk release) is cancelled; otherwise, it will remain in standby status, ignoring any other triggers.