



# HRA - 7800 G2

## User/ Installation Manual

### Guide to intelligent Parking



Manufacturer:

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# INTRODUCTION

Congratulations on your purchase of the HAWK HRA-7800 back up sensor, designed to aid operation when backing up your vehicle. Simple to operate and use, the HAWK HRA-7800 back up sensor notifies you with a series of beeps, voice announcements, and incorporates an LCD display to notify you when the rear of your vehicle approaches an object or obstruction.

Before using the HAWK HRA-7800 back up sensor, be sure to practice and test the product in order to familiarise yourself with the display, buzzer, voice indicators, and detection zones as they vary by vehicle.



**Warning:** Improper use of the backup sensor could result in injury or death! This back up sensor is strictly a drive assist device. It is not a substitute of driver's responsibilities when backing up the vehicle. Please drive carefully and follow all local and EU laws when backing up your vehicle. Commercial Electronics does not guarantee or assume any liability for injuries or damage that occurs while backing your vehicle. This product should not be considered a safety device for any purpose. Proper driving skills, including slowing down, using your mirrors and having another person as a visual assist are all proper precautions to be taken in order to safely back your vehicle.

- Changes or modifications to this unit not expressly approved by the party responsible for compliance will void the user's authority to operate the equipment. Any change(s) to the equipment will void CE compliance.

## Features

1. Display: LCD display
2. Alarm buzzer and human voice alarm; select the alarm mode via a switch on the back of the display.
3. The system will work 2 minutes when reverse gear engaged.
4. The system will work 2 minutes when pressing the micro switch.
5. Show 5 direction distances at the same time and show the nearest distance on the display.
6. Anti-false alert technology.

## Specifications

- Rated voltage: DC12v
- Operating Voltage: 9V to 18V
- Temperature: -30 C - +80C
- Rated current: 20mA – 200mA
- Detecting distance: 7.8” – 70” (0.2-1.8m)

- Displaying distance: 15” – 70” (0.4-1.8m)
- Ultrasonic frequency: 40Khz

## What is Included

- ECU (Electronic Control Unit)
- LCD display
- 6- ultrasonic sensor connection cables
- 20mm hole saw
- Power cable with triggering switch
- User/ Installation manual

## Tools Required

- Tape measure
- Electric drill
- Digital Multi-meter
- Wire stripper
- Electrical tape

## Operation

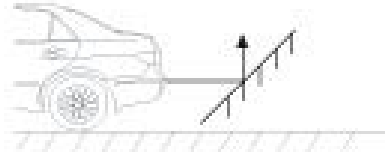
The following table below show general reaction when reversing gear is engaged. The system will first test all the sensors when the reversing gear is engaged and then the system starts sensing objects to the rear of your vehicle.

Alarm Mode	Awareness	Distance	Sound	Digital Display
	Safe mode	52-68in	Bi ...Bi...	52-68
Buzzer Alarm	Safe mode	36-52in	Bi..Bi..	36-52
	Alarm mode	24-36in	Bi.Bi.	24-36
	Alarm mode	16-24in	BiBi	
	Danger mode	0-16in	Biiii	P
Human	Safe mode	60-68in	Bi.. Bi..	60-68
Voice Alarm	Alarm mode	6-60in	Voice reminder	16-60
	Danger mode	0-16in	stop	P

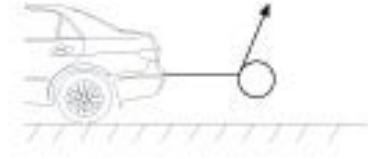
## False Readings

Detection errors may occur due to the following cases:

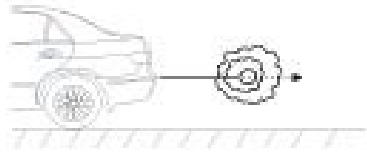
Smooth sloping surface



Smooth round object



Items absorbing sound, e.g. cotton



1. Heavy rain or snow, a contaminated or damaged sensor(s) could result in detection errors.
2. Clean sensors of any mud or debris. Immediately replace any damaged sensor when detected by the system.
3. Heavy smoke or vapour from exhaust, due to a cold start or a poorly running engine can also result in a false reading.
4. The performance may be affected if installed on metal bumper.

## Self-Test function

The back-up system only activates when the vehicle is placed in reverse gear. When placed in reverse gear the system first does a diagnostic check to ensure the system is fully functional and reports any sensor malfunctions within the back-up system. If there is any malfunction with the sensors, the LCD display will show following error message.

**EE Check sensor make sure sensor facing up or connected properly.**

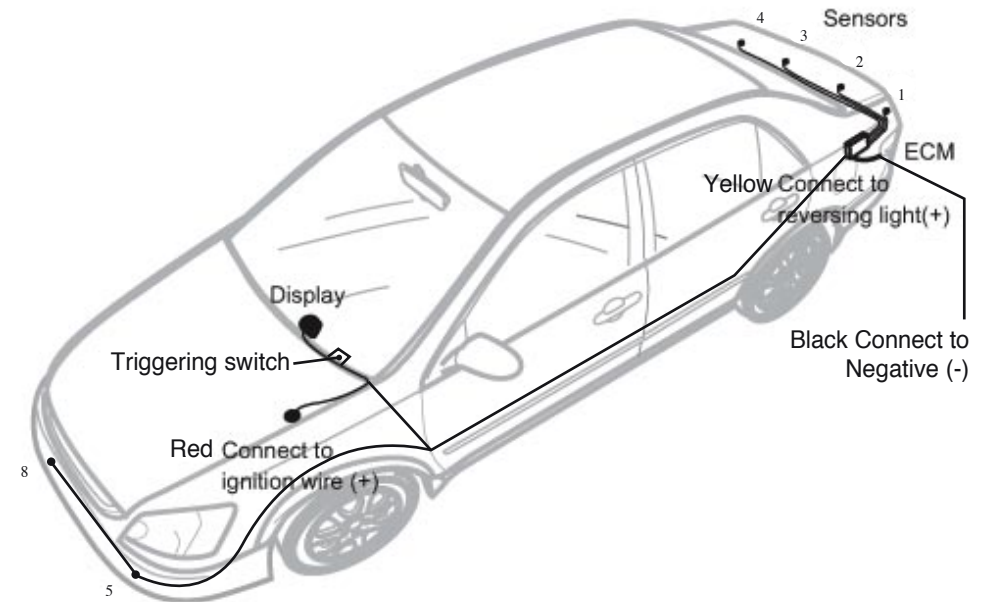
**EC Check control box make sure all cables connected properly.**

## Installation

Note: Before installing system let the components of the exhaust system cool down. This will make the installation safer and preclude heat damage to the backup sensor wiring or components.

## Installation Diagram

The following illustration shows the general location of the components of the backup system.



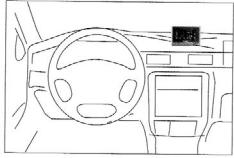
Note: Before drilling any holes in the vehicle ensure that the area behind is clear of any electrical, hydraulic, or support members etc.

1. Drill the holes in the bumper as indicated in the installation diagrams below and install the sensors. Sensors 1, 4, 5 and 8 should NOT be mounted on the curve of the bumper.
2. Install the sensor vertically; the “up” arrow must be pointing upwards.
3. Connect the Red wire of the control unit to the (+) positive of ignition wire.
4. Connect the Black wire (-) to the vehicle’s chassis.
5. Connect yellow wire to the (+) positive wire of the vehicle reverse indicating light.
6. Install the triggering micro switch on the panel, system will work when pressing the triggering switch. It is especially helpful when you want to park the car inside of the garage without engaging reverse gear. System will stay on for 2 minutes.
7. Clean the area of the dashboard where the LCD display is going to be mounted.
8. Remove the sticker off the bottom of display. Also remove protective screen cover from LCD screen.
9. Mount the display on the dashboard by firmly pressing down the display.
10. Connect the display unit, and then connect all sensors one by one.

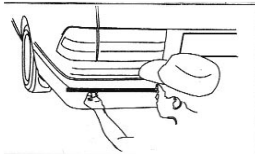


## Installation

### 1. Installation of the screen



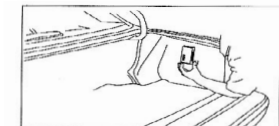
The screen stick on the panel Which suitable for the driver



4. To ensure the best detect position, the sensors 5 & 8 must be installed beside the edge 30-40cm, suggested 30cm.

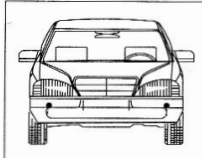


7. Measuring the distance between sensors 1 & 4 and marking a (L) sign.

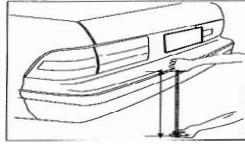


1. The main unit must be installed in the trunk to avoid moisture & heat.

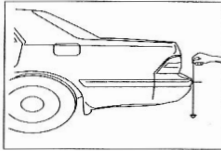
### 2. Installation of detectors



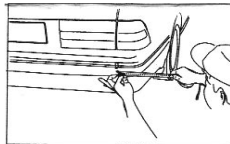
1. The sensors 5 and 8 must be installed at Same level.



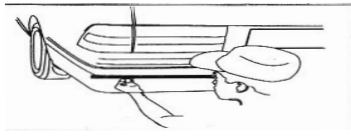
2. The distance between The ground and the sensors is about 50-65cm, suggested 55cm.



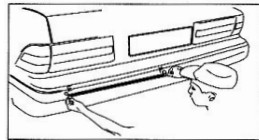
3. The sensors must be installed perpendicular to bumper & avoid attaching on the metal.



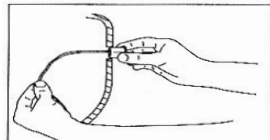
5. After measurement, make a symbol.



6. To ensure best detecting results, the sensors 1 & 4 must be installed near the edge 8-13cm, suggested 11cm.

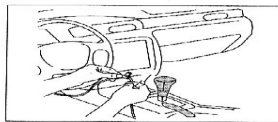


8. Marking the points of sensors 2 & 3 by 1/3 L.

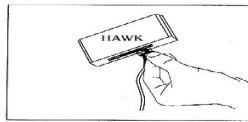


9. Using the 20mm drill, drill through the point which is marked, secure the sensors into the holes.

### 3. Installation of main unit



2. Lead out the power wire from the startup facility of the vehicle, connect it to the power supply wire of the main unit.



3. Plug the power supply wire, screen wire & sensors wire respectively to the inputs of the main unit family.



Install the sensor vertically, the "up" sign must be on upside.

## After installation Test

Use the following to test and verify the operation of the backup system.



Warning: Do not stand behind a moving vehicle death or injury could occur. Prior to testing, set the hand brake On, ignition key On (do not start), step foot on brake and shift the vehicle into reverse. Ensure that the engine is not running while proceeding with the following tests.

Test the system operation with a piece of wood (8 inches wide x 3 feet, 3 inches high) after the installation. Start with the wood more than 8.4 feet away from the vehicle. Then move the wood closer to the vehicle and ensure that the buzzer and voice audible, LCD, and distance indicators display correctly.

## Trouble shooting

### No buzzer or display at power up?

1. Is power wire connected to ECU correctly?
2. Verify (+) 12v at ECU when vehicle is in reverse.
3. Verify the ground connection.
4. Have you connected to the correct reversing indicator wire?
5. Do you have a minimum of (+) 12V and ground at the display?

### False warning tone or false LCD flashing

1. Is the sensor mounted too low or pointing to the ground?

### Sensors do not detect any objects?

1. Is the vehicle's exhaust smoking? Correct or allow it to clear before proceeding with testing.
2. Are sensors properly plugged into the correct sockets?

### Consumer Warranty

Commercial Electronics (“HAWK®”) promises to the original purchaser to repair or replace with a comparable reconditioned model any HAWK unit (hereafter the “unit”), excluding without limitation the siren, the remote transmitters, the associated sensors and accessories, which proves to be defective in workmanship or material under reasonable use during one year from date of purchase. provided the following conditions are met: the unit was professionally installed and serviced by an authorized HAWK dealer; the unit will be professionally reinstalled in the vehicle in which it was originally installed by an authorized HAWK dealer; and the unit is returned to HAWK, shipping prepaid with a legible copy of the bill of sale or other dated proof of purchase bearing the following information: consumer’s name, telephone number and address; the authorized dealers name, telephone number and address; complete product description, including accessories; the year, make and model of the vehicle; vehicle license number and vehicle identification number. All components other than the unit, including without limitation the siren, the remote transmitters and the associated sensors and accessories, carry a one-year warranty from the date of purchase of the same. This warranty is non-transferable altered, the unit has been modified or used in a manner contrary to its intended purpose; the unit has been damaged by accident, unreasonable use, neglect, improper service, installation or other causes not arising out of defects in materials or construction. The warranty does not cover damage to the unit caused by installation or removal of the unit. HAWK, in its sole discretion, will determine what constitutes excessive damage and may refuse the return of any unit with excessive damage. TO THE MAXIMUM EXTENT ALLOWED BY LAW, ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, ARE EXPRESSLY EXCLUDED; AND HAWK NEITHER ASSUMES NOR AUTHORIZES ANY PERSON OR ENTITY TO ASSUME FOR IT ANY DUTY, OBLIGATION OR LIABILITY IN CONNECTION WITH ITS PRODUCTS. HAWK DISCLAIMS AND HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING ITS AUTHORIZED DEALERS OR INSTALLERS. HAWK SECURITY SYSTEMS, INCLUDING THIS UNIT, ARE DETERRENTS AGAINST POSSIBLE THEFT. HAWK IS NOT OFFERING A GUARANTEE OR INSURANCE AGAINST VANDALISM, DAMAGE OR THEFT OF THE AUTOMOBILE, ITS PARTS OR CONTENTS; AND HEREBY EXPRESSLY DISCLAIMS ANY LIABILITY WHATSOEVER, INCLUDING WITHOUT LIMITATION, LIABILITY FOR THEFT, DAMAGE AND/OR VANDALISM. THIS WARRANTY DOES NOT COVER LABOR COSTS FOR MAINTENANCE, REMOVAL OR REINSTALLATION OF THE UNIT OR ANY CONSEQUENTIAL DAMAGES OF ANY KIND. IN THE EVENT OF A CLAIM OR A DISPUTE INVOLVING HAWK OR ITS SUBSIDIARY, THE PROPER VENUE SHALL BE ENGLAND & WALES . THE MAXIMUM RECOVERY UNDER ANY CLAIM AGAINST HAWK SHALL BE STRICTLY LIMITED TO THE AUTHORIZED HAWK DEALER’S PURCHASE PRICE OF THE UNIT. HAWK SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, ANY CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGES, DAMAGES FOR THE LOSS OF TIME, LOSS OF EARNINGS, COMMERCIAL LOSS, LOSS OF ECONOMIC OPPORTUNITY AND THE LIKE. NOTWITHSTANDING THE ABOVE, THE MANUFACTURER DOES OFFER A LIMITED ONE YEAR WARRANTY TO REPLACE OR REPAIR THE CONTROL MODULE AS DESCRIBED ABOVE.