



P2000 / 4000 Series

Owners Manual



Congratulations, You have made a wise investment and an excellent choice in selecting a Precision Park System by Ackton.

Your Precision Park system utilizes the latest technology and quality components to provide you and your family with years of reliable service.

Ackton's products have over 20 years of reverse sensing experience and are manufactured to demanding ISO 9001 and QS 9000 standards. Quality, that has earned the strict European TUV certification.

A great amount of care went into building your Precision Park system. Please take the time to read the manual carefully before installing, as we want you to be as proud of your installation, as we are of the product.

Thank You, for your purchase and safe motoring, from all of us at Ackton Inc.

Function Specification

The Precision Park system consists of two or four ultrasonic sensors, one control unit, one piezo-speaker and an optional display is also available.

The sensors operate both as transmitters and as receivers, which send an ultra high frequency sound wave (sonar) that is reflected off an object and received. The distance from the obstacle is evaluated through the transit time of the signals and is indicated by a sequence of pulse tones, the closer the obstacle, the faster the sequence of pulse tones.

The sensors mount into the rear bumper with the speaker mounted on the rear shelf or rear side panel on an SUV. The display (depending on model) is designed to mount to the top, center of the rear window molding, To be viewed through the mirror or over the shoulder.

Safety Precautions

Warning!

Safety precaution: Failure to observe the instructions could damage the device and impair its function as well as cause injury due to electrical current.

Warning!

Due to the risk of short circuit, always disconnect the negative pole of the battery before starting work. Disconnecting the negative pole of the battery may result in loss of system memory and may need to be reset.

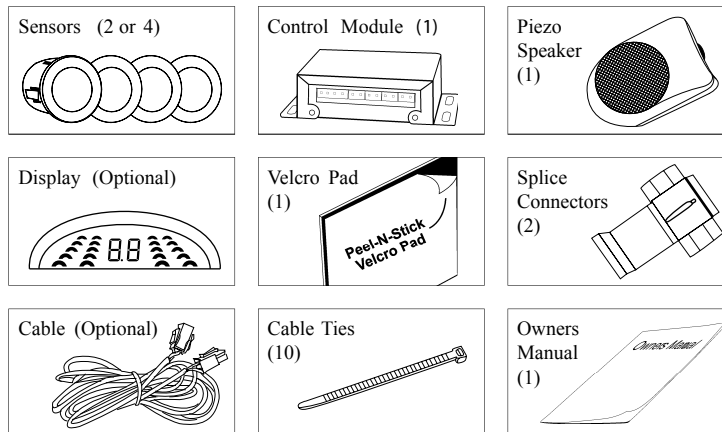
Warning!

Precision Park is intended as a parking aid. Due to the nature of the system, some obstacles may not be detected or may be identified inaccurately due to physical reflection properties. The system does not relieve the driver of their responsibility to exercise caution when reversing and to obey the safety rules and regulations given by the vehicle manufacturer.

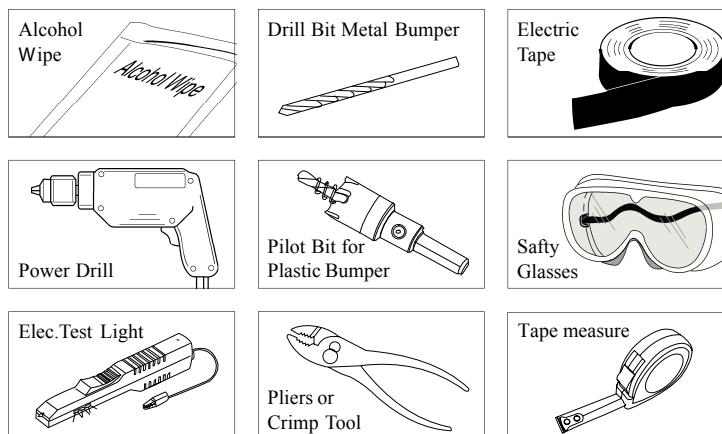
I. Installation Instructions

Material and Tool Check

Insure that all of the components are in the kit, they include:



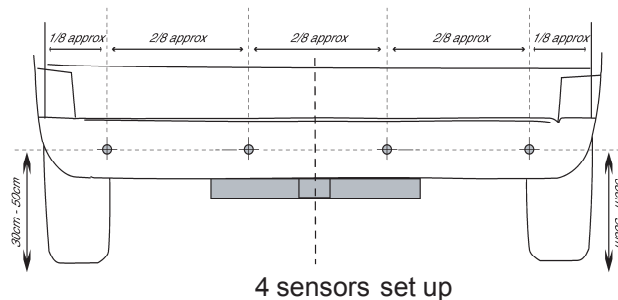
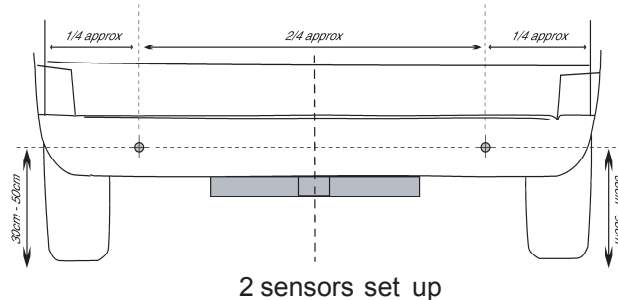
Tools required to install the system:



Other common tools may be required for your specific application.

II. Sensor Installation

- 1). Begin by parking on a flat level surface, set brake and disconnect ground wire from battery.
- 2). Measure the length of the bumper and mark the center point with a mark on masking tape.
- 3). Next locate an imaginary line on the bumper where you would like to align the sensors, that is relatively flat and between 30cm-50cm from ground level. Place a mark at the intersection of the bumper center-point and the sensor height point.
- 4). Near the ends of the bumper, mark the same sensor height on masking tape creating 3 points along the bumper. Run a strip of tape so the top of the tape connects all 3 points. (These points will form the drill line).
- 5). Divide the bumper as shown below for two and four sensor systems and mark with additional strips of tape. To protect the rear corner of the vehicle, mount sensors within 1' from the edge.



6). Prior to drilling check the underside of the bumper to be certain that there are no wires or items that may be damaged by the drill bit. Leave the tape on when drilling to reduce any chipping of the paint that may occur around the opening. (Hint: When using pilot bit, after drilling the pilot hole, reverse drill to make a clean circle in paint prior to drilling out the hole.)

7). Drill a pilot hole or use the pilot bit to drill the 22mm holes for sensor placement. (Use a 22mm straight steel bit when drilling into a steel bumper). Remove tape.

8). Dig out foam in the sensor holes as necessary so as not to inhibit sensor fitting or crimp the sensor cables.

NOTE:

The driver's side is considered the left side of the vehicle.

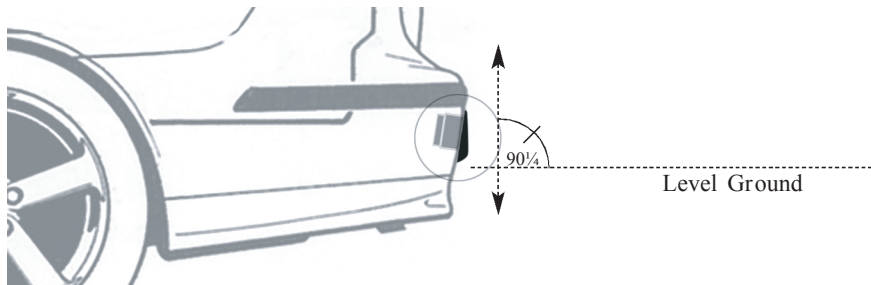
The sensors are marked:

R=Right, CR = Center Right, CL=Center Left, L= Left on four sensor systems

R = Right, L = Left on Two sensor systems

9). Drop the cable through the hole. Gently pull the cables through and push in the sensor, pushing on the sensor edges and never the transducer in the center. Do not force the sensor, (Hint: Use of a coat hanger is often helpful to pull down sensor wires behind bumper.)

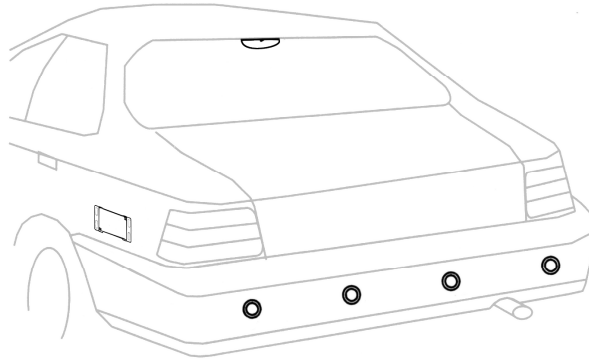
Your sensors may have a slight angle built into the plastic, place the thick part facing down. The sensor face should be 90° to level ground or slightly angled up, to avoid detecting the ground.



III. Control Box, Display & Beeper Installation:

1). Before assembly loose fit the control module in a protected water proof location inside the rear luggage compartment. Place the speaker and locate the display, at top center of the rear window molding.

Check the length of the cables to insure that desired placement is possible given the product components.



2). Cable tie the sensor cables hidden beneath the bumper and bring the cables into the luggage compartment through an existing grommet. Cut grommet if necessary to run the cables through. If there is no access to the trunk from underneath drill a hole suitable for the cables to pass and line with a grommet. Pass the sensor cables through to the trunk.

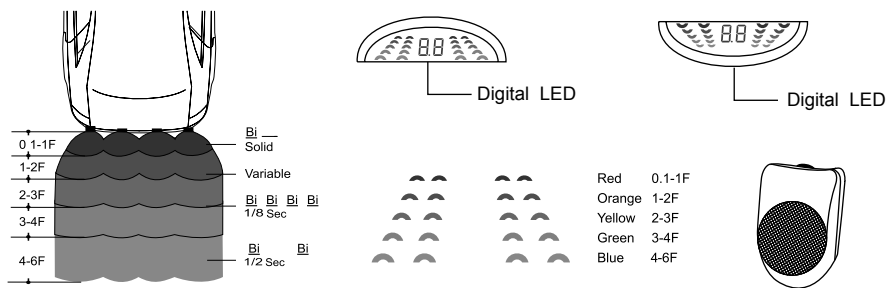
3). Connect sensor cables to the control box, note to match the sensor locations. On two sensor systems, plug into CL and CR on the control box.

4). Connect the display and speaker wire to the control box.

5). Identify the power wire to the reverse lights using a test light. Connect the Red positive wire from the control box to the reverse lights positive lead, and the Black ground wire to the reverse light's ground or other ground using the splice connectors supplied. Electrical tape or shrink-wrap the splices for additional protection.

IV. System Check:

- 1). Connect battery , engage brake, turn the ignition on.
- 2). Shift transmission into reverse and make certain reverse lights are on. Two beeps from the beeper indicates the system is active.
- 3). Note detection patterns and alert levels below .



NOTE:

All measurements are approximate. Due to an objects position, angle, size or shape, the reflected signal may mislead the receiving sensor. For a better understanding we suggest that you test your vehicle with different objects for a better understanding of the systems capabilities.

V. Complete Installation:

- 1). Clean the chosen control box mounting position with alcohol; attach the control box in chosen position using the Velcro type fastener supplied.
- 2). Clean the speaker and display locations with alcohol and attach both items in their chosen location(s)
- 3). Conceal all cables starting at the display and beeper and work towards the control box. Use remaining cable ties to bundle any excess cable or wire. Be certain excess wire is secured and out of the way
- 4). Congratulations on a job well done!

Technical Data

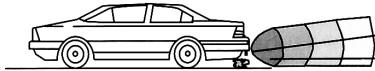
CONTROL BOX		SENSOR	
ITEM	SPECIFICATION	ITEM	SPECIFICATION
Specified voltage	DC12V	Operation voltage range	AC 90~130V P-P
Operation voltage range	DC10.8~15V	Operating temperature	-30°C~80°C
Standby current	Below 100MA	Storage temperature	-30°C~85°C
Operating current	Below 200MA	Operating frequency	40KHz \pm 2KHz
Operating Temperature	-30°C~80°C	Detection angle	120° Horizontal 60° Vertical
Storage Temperature	-40°C~85°C	Detection method	Ultrasonic wave
Operation frequency	40KHz \pm 2KHz		

Trouble-Shooting Guide

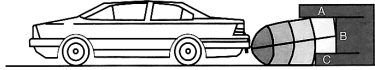
PROBLEM	REASON	SOLUTION
System does not work when reverse gear is engaged	Bad connection of main power lead	Check power lead
	Bad jack connection	Reconnect all jacks
Audio alarm/same distance displayed continuously		Reset the system
	Sensor detects the ground	Adjust angle of sensor installation
No audio alarm when obstacle is in detection range		Reset the system
	Bad sensor connection	Reconnect sensors
False alarm	Sensor detects the ground	Adjust angle of sensor installation
	System sensitivity is too high	Ask your dealer/professional installer to adjust sensitivity

Obstacles may not be detected

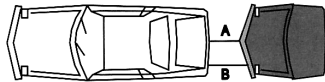
Due to the obstacle's position, angle or size, the reflected signal may not reach the receiving sensor. Complex reflections may also occur in a complex environment causing inaccurate detection. See examples 1, 2, 3, 4, 5 and 6.



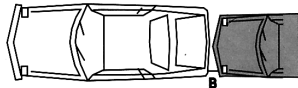
Low lying obstacle



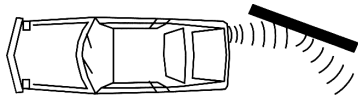
Complex environment: B will be detected but A cannot be detected.



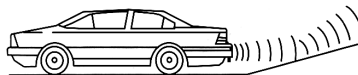
Distance A will be detected first, then distance B, as the car reverses.



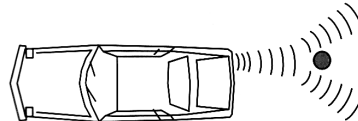
However, as the car nears, A, will fall into the sensor's blind zone. In such cases, the system will misjudge B as the closest distance.



When the car approaches a glass wall (or any other smooth surface) almost paralleled to the body of the car, the wall may not be detected as most of the signal is reflected away.



When the car approaches a smooth slope, the slope may not be detected.



The system may not detect a small, round, smooth pole.

Important notice!

- 1). Precision Park is strictly meant as a drivers aid when parking or backing up your vehicle. Not all objects will be detected by your sensors, therefore you must exercise caution and common sense when reversing your vehicle.
- 2). Reverse your vehicle at a speed lower than 6km per hour for safety purpose.
- 3). Always stop your vehicle when a solid beeping is heard as it indicates an object in a dangerous distance no more than 45cm to your vehicle.
- 4). Execute regular check on your sensors for any dirt or snow, always keep your sensors clean.
- 5). In case of water drops on the surface of the sensor (e.g., washing, raining...etc.), the sensitivity may be decreased by about 20% until water evaporates.
- 6). Keep all the cables and sensors away from the vicinity of high temperature objects such as engine or exhaust which could cause system failure.
- 7). Precision Park components are complex, opening by user may damage its completeness. The manufacturer or its distributors shall NOT take any responsibility for equipment that has been tampered with by the user.
- 8). In case of defective sensor, please check the cable for color coding, match a replacement sensor with the same color code.

Precision Park Limited Warranty

This Warranty covers defects in workmanship and materials for a period of three years from date of purchase. It does not cover any unit that is damaged due to improper installation, or mishandling beyond normal use, or other acts or omissions not sanctioned by the Owner's Manual

The owner is required to return the defective product to their place of purchase and provide dated proof of purchase. The authorized dealer will determine if there is a warrantable condition. If a warrantable condition exists, the component will be replaced free of charge. The owner is responsible for any labor and installation charges.

The Warranty does not include any further obligation whatsoever, including but not limited to actual installation of the replacement unit on the customer's vehicle. No other warranty is expressed or implied. The absolute limit of liability is the purchase price of the unit. Ackton Inc. is not liable for any direct, consequential, indirect or punitive damages of any kind.

Some states do not allow limits on the validity or length of implied warranties or exclusions or limitations of incidental or consequential damages, so this warranty may not apply to you.

This warranty gives you specific legal rights.

ACKTON INC.
Tel: 949-770-8899

23721 Birtcher Drive, Lake Forest, CA. 92630
Fax: 949-770-8892

www.ackton.com