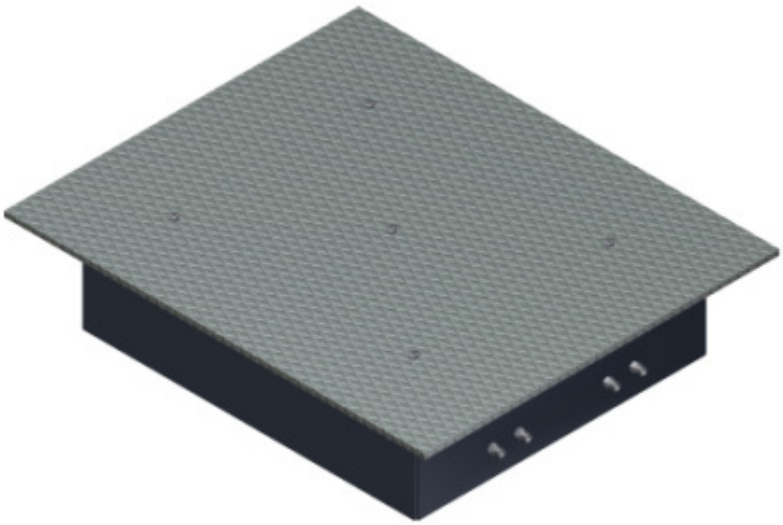
User Manual

Escon PD5710/PD5715/PD5720/ PD5730



version 1.0
software version n/a
document number 314021

ESCON®

Copyright

Disclaimer

All efforts have been made to ensure the accuracy of this manual. However, should any errors be detected, Altus-Escon-Company B.V. would greatly appreciate being informed of them. The above notwithstanding, Altus-Escon-Company B.V. cannot assume any responsibility for any errors in this manual or their consequences.

The information contained in this document is subject to change without notice and does not represent a commitment on the part of the copyright holder. The software, associated hardware and documents are furnished under license agreement. The software, associated hardware and documents may be used only in accordance with the terms of that agreement.

Altus-Escon-Company B.V. contact details

The manufacturer of the Escon PD5710/PD5715/PD5720/PD5730 is Altus-Escon-Company B.V.. The manufacturer can be contacted at:

Altus-Escon-Company B.V.

Drachmeweg 26

2153 PA Nieuw Vennep

The Netherlands

Phone:	+31(0)88 258 37 00
Fax:	+31(0)88 258 37 90
Website:	www.altus-escon.com
E-mail:	sales@altus-escon.com

CE Regulation Compliance

The product complies with all applicable CE directives (see "Declaration of conformity to CE directions" on page 35).

Contents

ESCON®

Chapter 1

About this manual

In This Chapter

Audience

This user manual is intended for persons who operate the Escon PD5710/PD5715/PD5720/PD5730.

Altus-Escon-Company B.V. requires that these operators:

- Have sufficient technical knowledge and experience to do the assigned tasks
- Can recognize and prevent hazards
- Have read and understand this manual
- Have been correctly trained
- Follow the procedures in this manual

Scope

The purpose of this manual is to:

- Describe the operation of the system
- Describe its operating principles and general construction
- Explain safety features and safety precautions
- Highlight possible hazards
- Describe procedures to operate the system
- Describe solutions to system problems

Organization

This user manual contains the following chapters:

- Introduction (on page 9): contains a short description of the system.
- Safety (on page 11): describes safety features of the Escon PD5710/PD5715/PD5720/PD5730 and safety precautions to obey when you operate or do work on the system. Read this section before installation, operation and maintenance.
- Specifications (on page 13): contains specification of the Escon PD5710/PD5715/PD5720/PD5730.
- Functional description (on page 15): contains a functional description of the Escon PD5710/PD5715/PD5720/PD5730.
- Operating instructions (on page 25): contains all procedures necessary to operate the Escon PD5710/PD5715/PD5720/PD5730 safely.
- Troubleshooting (on page 27): contains procedures to solve problems encountered operating the Escon PD5710/PD5715/PD5720/PD5730 and lists error messages.
- Preventive maintenance (see "Maintenance" on page 29): contains maintenance procedures that can be done by the operator.

Lay-out conventions

In this manual, we use a number of typographical conventions to highlight particularly important information, and to guide you through the manual. This section lists these conventions.

Three types of list are used:

1) Lists that are numbered (like this sentence), contain actions you must carry out in sequence.
- In lists that use bullets (like this sentence), the sequence is not critical.

❶. Legend numbers in figures

Note
Text with additional information, such as expanded explanations, hints or reminders.

Caution
Indicates situations that can damage the system.

Warning
Indicates the presence of a hazard that can cause death or severe personal injury, if the hazard is not avoided.

Commands (like menu items and buttons) are **bold**. Menu names are also **bold**.
Example: On the remote control press **4**.

Information that needs special attention, is *italic.*
Example: Use the **Emergency Stop** button *only* in emergencies.

In online documents, cross-references are underlined and blue. You can click on the link to view this topic. When you are reading this document on paper, the cross-reference will tell you the topic title and the page number.
Example: see Organization (on page 6).

Availability of this manual

Altus-Escon-Company B.V. expects a copy of this manual to be available to the user.

One copy should always be available near the system.

ESCON®

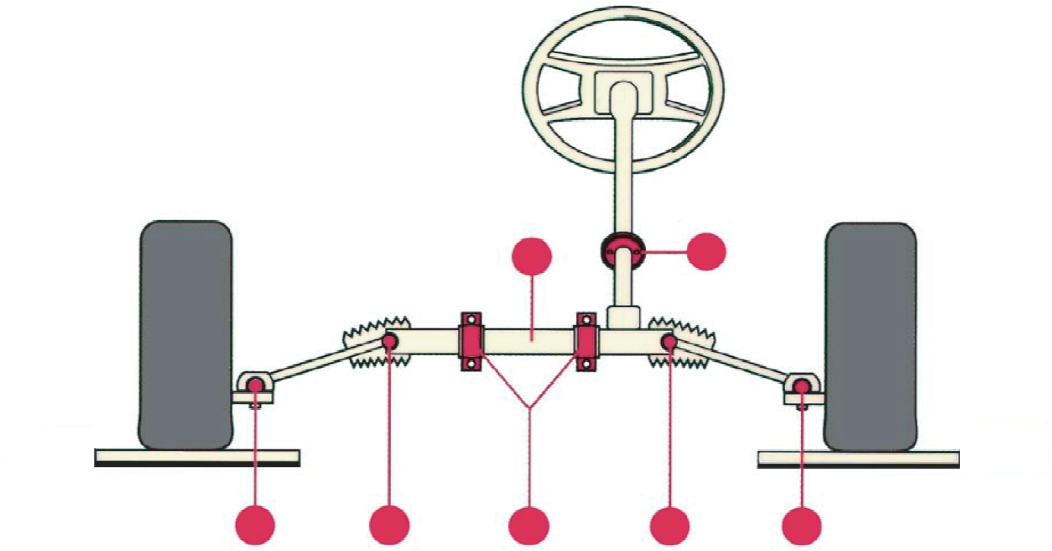
Chapter 2

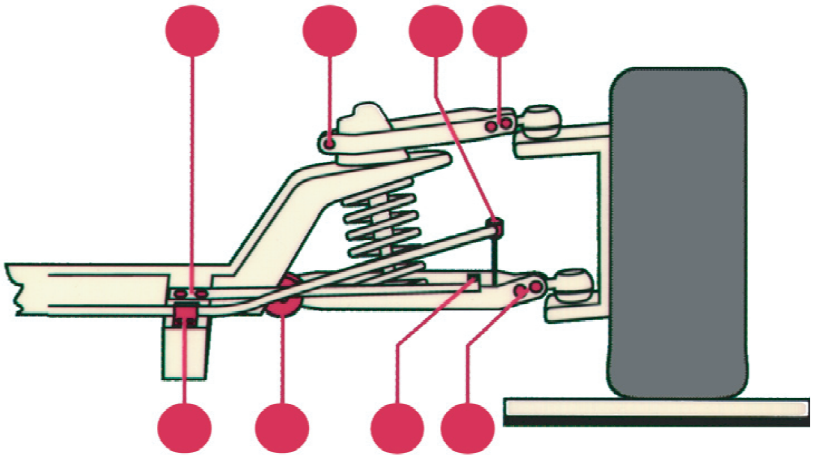
Introduction

In This Chapter

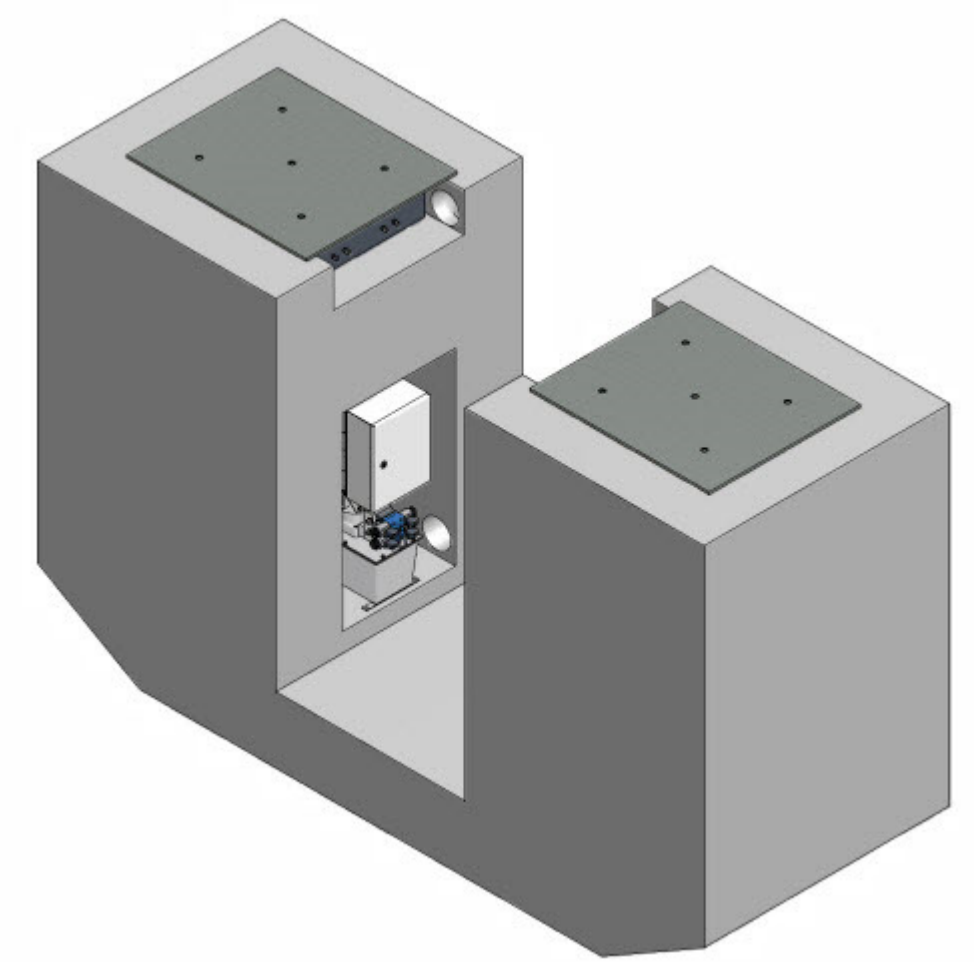
The play detector

The hydraulic play detector is designed for statutory testing of Heavy Goods Vehicles (HGV) and Public Service Vehicles (PSV). The play detector checks for play and wear in the suspension and steering parts.





The system consists of two platforms and a control unit with a control lamp. The vehicle is placed with one axle on the platforms. The platforms will pull the wheels along, so the wheel will move relative to the vehicle body. This reveals play and wear in the suspension and steering components.



You control the platforms using a handheld control lamp: this means that you can move the platforms while you are underneath the vehicle to inspect it. A bracket is supplied for safe storage of the control lamp.

ESCON®

Chapter 3

Safety

In This Chapter

General safety instructions

Warning
In case of te PD 5715 and 5730, keep the wireless control lamp at a save place. If you accidentally touch the the control lamp, the plates move immediately.

- Always follow the instructions in this manual to prevent damage to the play detector and vehicle, and injuries to personnel.
- Only properly trained and authorized personnel are allowed to operate and service the play detector.
- Lock the mains switch when the play detector is not in use.
- During the test, make sure nobody stands close to the mechanical unit. If necessary, block accesses or provide a color marking.
- Do not remove or short-cut the safety features.
- The operator is only permitted to do maintenance as described in Preventive maintenance in the user manual.
- Do not park a vehicle on any part of the play detector.
- The play detector must only be operated within its rated capacity (see "Specifications" on page 13). The play detector is designed for large vehicle testing: Heavy Goods Vehicles (HGV) and Public Service Vehicles (PSV).
- Read the user manual before you install the batteries on the wireless control lamp.
- Read the user manual before you connect the adapter to the wireless control lamp.
- Do not install non-rechargeable batteries in the wireless control lamp. Non-rechargeable batteries explode when charged.
- Always install the battery charger near the play detector. When you push a button accidentally, the plates of the play detector move immediately.

Safety around hydraulic systems

The hydraulic system in the play detector uses a high pressure. Always be careful when working in the vicinity of a hydraulic system.

Warning

Pinhole leaks can cause serious injuries: liquid under pressure can be injected into the skin as if from a hypodermic syringe.

You will feel only a slight stinging sensation at the time of injection. Several hours later, the wound will begin to throb and severe pain begins. If not treated, you may lose the infected area.

Consult a doctor immediately if you suspect injection.

- Wear oil-proof gloves.
- Never use your hand or any other part of your body to try and locate a leak: use a piece of wood or cardboard instead.

System safety features

The play detector has the following safety features:

- Any button on the control lamp: when you release the button, the platforms stop immediately.

If your local electrical regulations require that an emergency stop is installed, ask your installer to add the emergency stop to the power supply.

ESCON®

Chapter 4

Specifications

- Maximum drive over weight: 20,000 kg per axle, 10,000 kg per wheel
- Maximum horizontal force: 30 kN per plate
- Longitudinal/transversal movement: 100 mm
- Movement speed: 40 mm/s
- Motor:
  - Power: 3.0 kW
  - Voltage: 3 phase, 400 V, 50 Hz
- Cable length PD5710/PD5720: 6.5 m
- Working pressure: 150 bar

Dimensions and weigth

Play detector plate	Dimensions	950 x 800 x 217 mm (l x w x h)
	Weight	300 kg each
Hydraulic control unit	Dimensions	360 x 300 x 875 mm (d x w x h)
	Weight	36 kg

Wireless control lamp

- Working range: up to 10 m without obstacles
- Standby time: up to 3 months with fully charged batteries
- Working time with power-LED on: up to 4 hours with fully charged batteries
- Working time with power-LED off: up to 10 hours with fully charged batteries
- Charging time: up to 5 hours in case of fully discharged batteries
- Batteries: 2 x AA NiMH rechargeable, capacity 1900 – 2500 mAh (Sanyo Eneloop HR-3UTGA recommended)
- Battery charger: 5 VDC stabilized, min. 1 A

ESCON®

Chapter 5

Functional description

This chapter describes the play detector and explains how it works.

In This Chapter

System overview

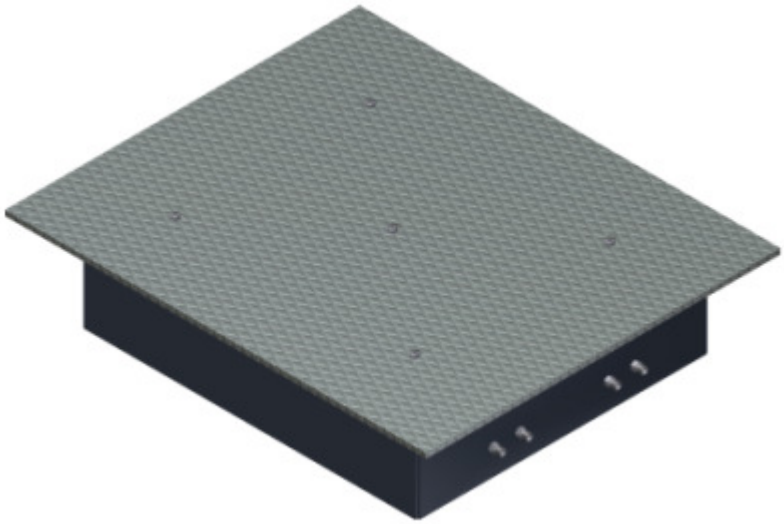
The main parts of the system are:

- Floor unit (on page 16)
- Hydraulic control unit (on page 24)
- Control lamp:
  - Control lamp PD5710 (on page 17)
  - Control lamp PD5715 (on page 18)
  - Control lamp PD5720 (on page 20)
  - Control lamp PD5730 (on page 22)

Floor unit

The floor unit consists of two platforms, one for the left wheel and one for the right wheel.

Each platform is moved by two hydraulic cylinders. The platforms move the wheels, revealing any play in the suspension components.

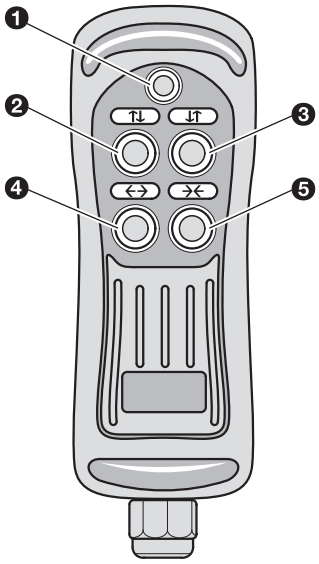


The friction between the wheel and the platform is lower than the friction of most roads. This limits the force exerted on the suspension to a safe level.

Control lamp PD5710

The play detector is provided with a wired control lamp. You use the lamp to visually check the vehicle suspension for play and wear. Buttons on the lamp allow you to control the platforms.

The figure shows an example of a control lamp.

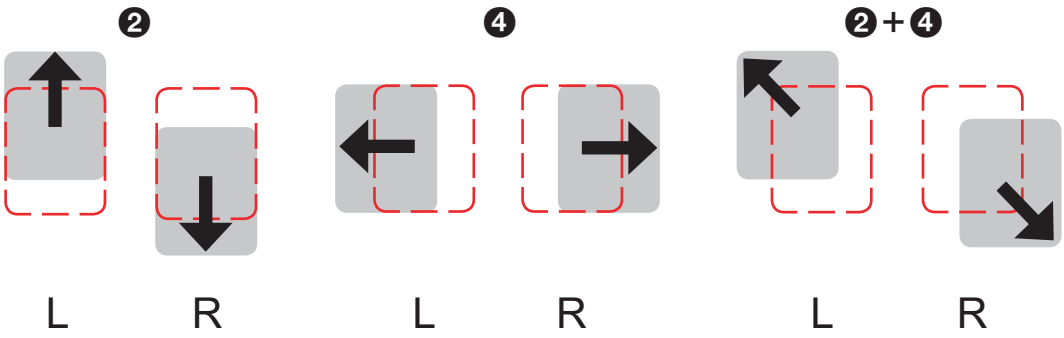


The functions of the control lamp are explained below:

BUTTON	FUNCTION
❶	Switch lamp on/off
❷	Move the left platform to the front, and the right platform to the rear
❸	Move the left platform to the rear, and the right platform to the front
❹	Move the left platform to the left, and the right platform to the right
❺	Move the left platform to the right, and the right platform to the left

To move the platforms diagonally: press two buttons at the same time.

The platforms move in opposite directions. When one platform moves to the front, the other platform moves to the rear:



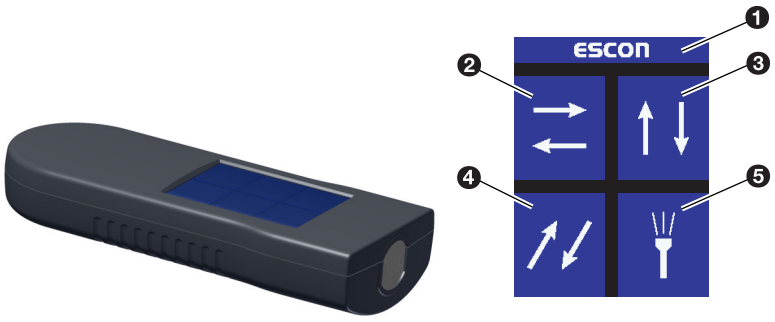
The platforms will move as long as you keep the button pressed, or until they reach the end of their stroke. Release the button to stop the platforms.

Control lamp PD5715

The play detector is provided with a wireless control lamp. You use the lamp to visually check the vehicle suspension for play and wear. The control lamp has a touch screen that allows you to control the platforms.

The wireless control lamp comes on as soon as you touch the touch screen. The control lamp shuts down if it is not used for one minute. Press the screen to activate the control lamp again.

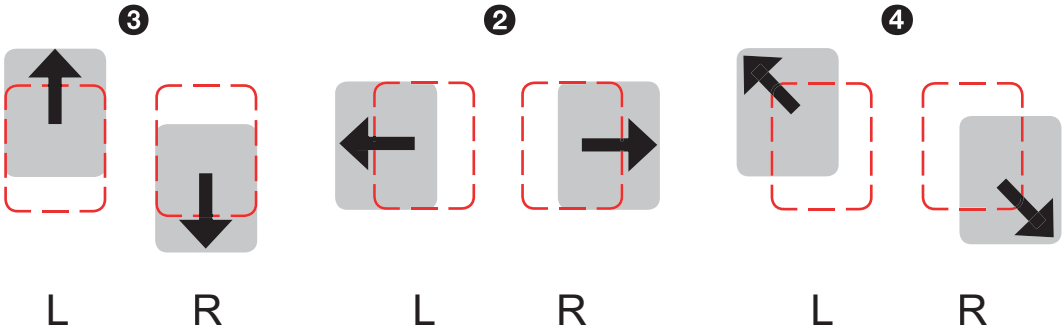
The figure shows an example of a control lamp.



The functions of the control lamp are explained below:

BUTTON	FUNCTION
❶	Battery level. When ❶ shows a red bar, the battery level is too low.
❷	Move the platforms to the left and right.
❸	Move the platforms to the front and rear.
❹	Move each plate along the diagonal.
❺	Switch lamp on/off.

The platforms move in opposite directions. When one platform moves to the front, the other platform moves to the rear:

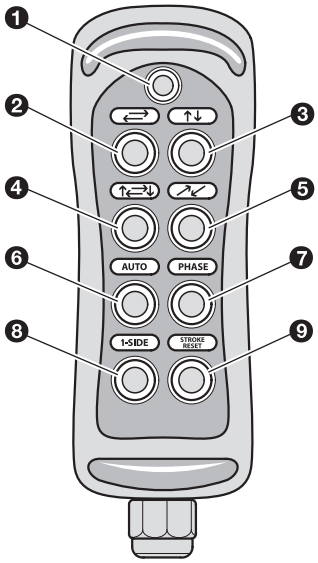


The platforms will move as long as you keep the button pressed, or until they reach the end of their stroke. Release the button to stop the platforms.

Control lamp PD5720

The play detector is provided with a wired control lamp. You use the lamp to visually check the car suspension for play and wear. Buttons on the lamp allow you to control the platforms.

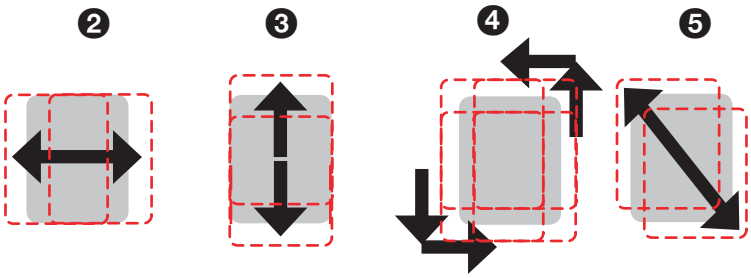
The figure shows an example of a control lamp.



The functions of the control lamp are explained below:

BUTTON	FUNCTION
❶	Switch lamp on/off.
❷	Move the platforms to the left and right.
❸	Move the platforms to the front and rear.
❹	Move each plate in a rectangle.
❺	Move each plate along the diagonal.
❻	Manual/auto switch. Press the button to switch between Manual and Auto mode. ▸ In manual mode: when you press buttons 2-4, the plates move one stroke. ▸ In Auto mode: when you press buttons 2-4, the plates keep moving as long as you keep the button pressed.
❼	Phase switch. This changes how each movement is done. ▸ For movement ❷ and ❸: move both platforms in the same direction or in opposite directions. ▸ For movement ❹: reverses the direction of movement. ▸ For movement ❺: switches to the other diagonal.
❽	1-Side switch: ▸ Normally, both platforms move. ▸ Press the button to move only the left platform.

BUTTON	FUNCTION
	▸ Press the button again to move only the right platform. ▸ Press the button again to move both platforms.
❾	Stroke/Reset switch: Move the plates to the rest position.



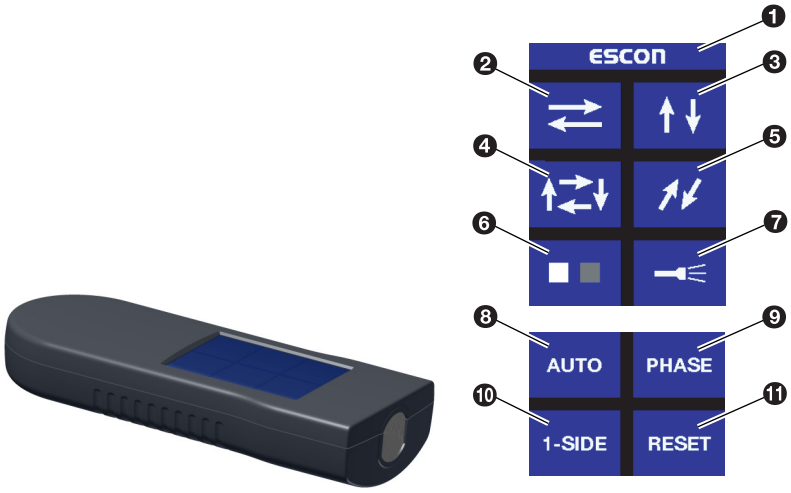
The platforms will move as long as you keep the button pressed, or until they reach the end of their stroke. Release the button to stop the platforms.

Control lamp PD5730

The play detector is provided with a wireless control lamp. You use the lamp to visually check the vehicle suspension for play and wear. The control lamp has a touch screen that allows you to control the platforms.

The wireless control lamp comes on as soon as you touch the touch screen. The control lamp shuts down if it is not used for one minute. Press the screen to activate the control lamp again.

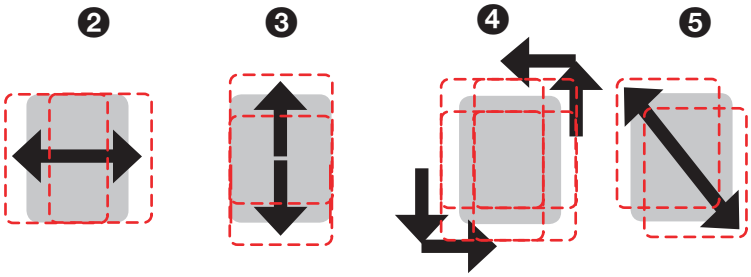
The figure shows the buttons of the control lamp.



The functions of the control lamp are explained below:

BUTTON	FUNCTION
❶	Battery level. When ❶ shows a red bar, the battery level is too low.
❷	Move the platforms to the left and right.
❸	Move the platforms to the front and rear.
❹	Move each plate in a rectangle.
❺	Move each plate along the diagonal.
❻	Screen switch. Switches between the upper and lower screen.
❼	Switch lamp on/off.
❽	Manual/auto switch. Press the button to switch between Manual and Auto mode. ▸ In manual mode: when you press buttons 2-4, the plates move one stroke. ▸ In Auto mode: when you press buttons 2-4, the plates keep moving as long as you keep the button pressed.
❾	Phase switch. This changes how each movement is done. ▸ For movement ❷ and ❸: move both platforms in the same direction or in opposite directions. ▸ For movement ❹: reverses the direction of movement. ▸ For movement ❺: switches to the other diagonal.

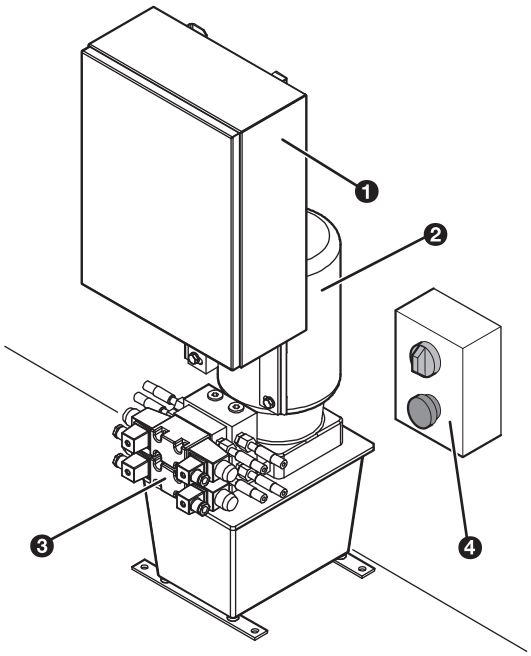
BUTTON	FUNCTION
⑩	1-Side switch: ▸ Normally, both platforms move. ▸ Press the button to move only the left platform. ▸ Press the button again to move only the right platform. ▸ Press the button again to move both platforms.
⑪	Stroke/Reset switch: Move the plates to the rest position.



The platforms will move as long as you keep the button pressed, or until they reach the end of their stroke. Release the button to stop the platforms.

Hydraulic control unit

The hydraulic control unit contains the following items:



1) Control box

   This contains the electrical components.

2) Hydraulic motor and pump

   This provides power to the platforms.

3) Valve block

   This contains the hydraulic valves.

4) Main switch and emergency stop button (not supplied)

Note
If your local electrical regulations require that an emergency stop and/or mains switch is installed, ask your installer to add these to the power supply.

ESCON®

Chapter 6

Operating instructions

This chapter describes the procedures to operate the play detector.

In This Chapter

Operator safety

Operators and technical service should be familiar with all safety aspects. To ensure your safety, you must carefully read the chapter on safety (on page 11) before performing any tasks on the play detector.

Emergency stop

If an emergency situation occurs, press the emergency stop button (if present).

The platforms will return to the neutral position when you stop pressing the buttons on the control lamp.

Start up after an emergency stop (if installed)

To start up after an emergency stop (if installed):

1) Turn the mains switch to switch off the unit.
2) Check and cancel/solve the reason for using the emergency stop.
3) Reset the emergency stop. Turn the emergency stop button clockwise and release it.
4) Continue with the start-up procedure (see "Start up the play detector" on page 25).

Start up the play detector

To start up the play detector:

1) Make sure there is no vehicle on the play detector.
2) Turn the mains switch to switch on the unit.

The play detector is ready.

Preparation for the test

Before the vehicle is driven onto the play detector, make sure:

- The tire pressures are at the specified value.

Wear and play test

To perform the wear and play test:

1) Move the vehicle until the wheels are on the platforms.
2) Switch the engine off.
3) Engage the handbrake.
4) Press the brake pedal.
5) Do not remove the key from the ignition. Make sure the steering lock does not engage.
6) Use the control lamp to inspect the suspension and steering components, and use the buttons on the control lamp to move the platforms.
7) When you have finished the test, move the vehicle off the platforms.

Shut down the play detector

To shut down the play detector:

1) Switch the mains switch off.

ESCON®

Chapter 7

Troubleshooting

This chapter helps to find solutions for problems that can occur when you use the play detector.

In This Chapter

Troubleshooting tables

SYMPTOM	POSSIBLE CAUSE	ACTION
Platform does not move	▸ No mains supply	Check the mains supply.
	▸ Insufficient oil pressure	Check the oil supply. Check the hydraulic system (on page 27).
	▸ Fuse has blown	Replace the fuse.
Control lamp does not come on	▸ No mains supply ▸ Fuse has blown ▸ Lamp is defective	Check the mains supply. Replace the fuse. ▸ Replace the lamp.
	In case of the wireless control lamp: ▸ The wireless control is charging ▸ Battery charge is low	Charge the wireless contro lamp (see "Charge the wireless control lamp" on page 30) and wait until the batteries are fully charged.

Check the hydraulic system

Work safely when checking the hydraulic system (see "Safety around hydraulic systems" on page 12).

To check the hydraulic system for leaks:

- Wear oil-proof gloves.
- Never use your hand or any other part of your body to try and locate a leak: use a piece of wood or cardboard instead.
- Small (pinhole) leaks may be difficult to detect. Sometimes the only evidence is a small puddle of oil.

ESCON®

Chapter 8

Maintenance

This chapter describes the maintenance the operator is responsible for.

In This Chapter

Maintenance safety

- You are not allowed to adjust the play detector. Only trained service engineers are allowed to adjust.
- Shut down the play detector before you perform any maintenance on the play detector.

Maintenance schedule

Note
Most of the parts of the play detector are free of any maintenance. The bearings are greased for life.

Note
If you do not use the wireless control lamp for more than 2 weeks, charge the batteries and remove the batteries from the control lamp.

FREQUENCY	ACTION	REFERENCE
During operation	Make sure there are no abnormal noises or other unusual signs during operation.	
Daily	Charge the wireless control lamp.	Charge the wireless control lamp (on page 30).
Weekly	Clean the parts of the play detector.	Clean the parts of the play detector (on page 30).
Yearly	Contact the supplier of the play detector for yearly maintenance.	

Clean the parts of the play detector

Keep the play detector clean and dust free.

Clean the sheet metal with a lukewarm soap solution.

Caution
Do not use aggressive or abrasive detergents.

Caution
Do not use a high pressure cleaner.

Charge the wireless control lamp

Caution
Only use the delivered charger to charge the wireless control lamp.

Charge the wireless control lamp as follows:

1) Connect the 5 Volt adapter to the wireless control lamp.

Charging only starts if the battery level is low enough. A yellow moving bar on the top right of the wireless control lamp indicates that the battery is charging. When the batteries are full, the control lamp switches to sleep mode.

When the control lamp is charging, you can still move the play detector. However the lamp does not work.

Replace the batteries of the wireless control lamp

Warning

- Read the user manual before you install the batteries on the wireless control lamp.
- Read the user manual before you connect the adapter to the wireless control lamp.
- Do not install non-rechargeable batteries in the wireless control lamp. Non-rechargeable batteries explode when charged.

Always install the battery charger near the play detector. When you push a button accidentally, the plates of the play detector move immediately.

Use batteries of the following type: 2 x AA NiMH rechargeable, capacity 1900 – 2500 mAh (Sanyo Eneloop HR-3UTGA recommended). See www.eneloop.info for more information on these batteries.

Replace the batteries as follows:

1) Remove four screws at the back of the wireless control lamp.
2) Open the control lamp.

Caution
Do not touch any electronic component. The electronic components can get damaged by static electricity.

3) Remove the old batteries.
4) Install the new batteries according to the +/- indication in the battery holder.
5) Close the control lamp cover.
6) Install the screws.

ESCON®

Chapter 9

Disposal

In case of disposal separate collection of waste is mandatory in the European Community. For more information on the correct disposal of this product please contact your supplier.

ESCON®

Chapter 10

Declaration of conformity to CE directions

Manufacturer:	Altus-Escon-Company B.V. (Altesco)
Address:	Drachmeweg 26
	2153 PA Nieuw Vennep
	The Netherlands
Equipment:	Modules for testing passenger cars, vans, trucks and trailers, brake and/or suspension and/or sideslip or play testing
Equipment modules:	Escon PD5710/PD5715/PD5720/PD5730
Year of manufacture:	2013

Altus-Escon-Company B.V. declares under his own responsibility that the above identified products are conform to the international standards described in the Low Voltage Directive 2006/95/EC, the Machinery Directive 2006/42/EC and in the EMC Directive 2004/108/EC.

It is pointed out that it is not allowed to take modules into operation as part of a compounded installation before the latter has been declared to comply with the Machinery Directive. Any alteration to the equipment, improper use or installation voids this Declaration.

Most of the Altesco equipment modules are conform to the national Dutch standard “Besluit Voorschriften Meetmiddelen 1997 / Regeling Voertuigen 2009” and are certified, possibly under a different model designation by Nederlands Meetinstituut:

NMi

The Altesco equipment is provided with the CE-mark:

CE

Nieuw Vennep, Monday, March 18, 2013

Altus-Escon-Company B.V., Victor C. Stuyts, President

Index