

**PiWalk™** Version 1

# User Manual

Release: 29-01-2015

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Closed Loop Grit Blasting





Any person intending to operate this equipment or any person intending to be in the vicinity during its operation must receive proper training.

Do not operate this equipment before reading and completely understanding all the warnings, cautions, operating procedures, and instructions contained in this manual. Do also read and understand the manual of the Pinovo® closed loop blasting and recycling unit PiSys™ and other relevant tools used with this equipment.



## 1 INTRODUCTION

The PiWalk™ (Version 1) is a walk-behind closed loop grit blasting tool to be used with PiSys™ closed loop blasting and recycling unit. The tool is primarily intended for blast cleaning of medium sized, horizontal steel structures. The surface is blast cleaned by using fused brown alumina as blasting medium. “White Metal” surface cleanliness according to SA 3 (ISO 8501-1) and SSPC-SP5 can be easily achieved in addition to an anchoring profile up to 110 µm. Furthermore, the Pinovo® closed loop grit blasting method inherently delivers feathered edges ideally suited to spot blasting and high quality coating repair.

Another advantage of Pinovo® grit blasting tools is the closed loop circulation system covering the entire treatment process. The result is complete elimination of discharges related to the work, as well as excellent utilization of the blasting medium. Brown fused aluminum oxide circulates in the system and may be re-used up to 15 times reducing media consumption and waste generation up to 85 % compared to conventional dry abrasive blasting technologies. In addition, the operators are never in direct contact with the actual blasting and waste material, which is collected automatically in the integrated waste management system.

No significant clean-up or further work is required after the Pinovo® preparation process, the surface is ready for painting or other post-treatment. The low noise and dust free Pinovo® surface preparation process minimizes the impact on surrounding trades and equipment.

The PiWalk™ has different adapters (see Chapter 4).

## 2 SAFETY INSTRUCTIONS








The products described in this manual are intended for knowledgeable, experienced users of abrasive blasting equipment. It is the responsibility of the user to ensure that proper training has been completed and to have the relevant certificates from the Pinovo training program ([www.picademy.no](http://www.picademy.no)).

It is the responsibility of the users to familiarize themselves with the appropriate laws, regulations and safe practices that apply to these products and materials that may be used with these products, and that a safe work environment is provided.

Any use outside the sphere of application specified by Pinovo is not approved. Such use, any failure to comply with the instructions given herein, or any modification of the product without the explicit written consent of Pinovo will invalidate the warranty, and Pinovo refuses to accept liability.

In addition to information on installation and operation, this instruction manual may contain **WARNINGS** and **CAUTIONS** pertaining to user safety. A **WARNING** indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury. A **CAUTION** indicates a potentially hazardous situation, which, if not avoided, may result in minor or major injury. Do not attempt to operate this tool until you have read and understood all safety precautions and instructions listed in this manual. **INCORRECT OPEARATION OF THIS UNIT CAN CAUSE SERIOUS INJURY.**

### 2.1 Warnings

 <b>WARNING</b>	Enclosed blasting equipment may cause serious injury – protect hands, feet, eyes and hearing.
 <b>WARNING</b>	Show outmost care when connecting and operating the system. <b>ALWAYS THINK SAFETY FIRST!</b>
 <b>WARNING</b>	Wear PPE at all times when operating the PiWalk™. The type of respiratory protection should be considered depending on material being removed, e.g. lead-based coatings.
 <b>WARNING</b>	Do not use closed loop grit blasting tools on surfaces of unknown thickness or temperatures above 70°C without proper risk assessment.
 <b>WARNING</b>	Before starting the PiWalk™, ensure that all fixing screws, bolts and fittings are mounted correctly and securely tensioned. Also ensure that whip-checks and safety pins are used for all hose-connections and hook-ups.
 <b>WARNING</b>	Check all hoses for damage before starting the system.
 <b>WARNING</b>	Check for wear inside the PiWalk™ regularly. Change adapters regularly. Clean PiWalk™ from dust inside regularly.

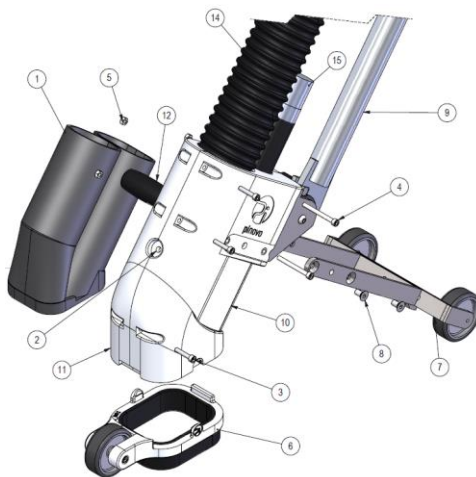
<b>⚠ WARNING</b>	Do not repair or replace any portion of Pinovo equipment using components that are not original Pinovo replacement parts or components that are not approved by Pinovo.
<b>⚠ WARNING</b>	Do not cut, obstruct, restrict or pinch pneumatic control lines. Doing so could prevent the proper activation and deactivation of the remote control system, resulting in the release of high speed media and compressed air.
<b>⚠ WARNING</b>	The use of this product for any purpose other than originally intended or altered from its original design is prohibited.
<b>⚠ WARNING</b>	You must NEVER place your hand or fingers underneath the ‘Blast Head’ or point the ‘Blast Head’ of the PiWalk™ at yourself or anybody else while the system is pressurised.

## 2.2 Cautions

<b>⚠ CAUTION</b>	Never install, remove or perform any maintenance on the PiWalk™ when the system is pressurized.
<b>⚠ CAUTION</b>	Always use the dead man’s switch when operating the system. The dead man’s switch must never be set deliberately in an interlocked or blocked position, which could hamper the safety release of the switch.
<b>⚠ CAUTION</b>	Only use Pinovo® Blasting Grit in the appropriate size, preferably sizes F16 to F46
<b>⚠ CAUTION</b>	Blasting of oil contaminated parts may result in contaminated surfaces, clogged abrasive, and/or malfunctioning of the equipment.
<b>⚠ CAUTION</b>	Valves must be opened slowly to allow seal to function correctly and to give a safe operation.
<b>⚠ CAUTION</b>	Never operate the PiWalk™ while wearing loose hanging chains, hanging ID/Security badges or garments.
<b>⚠ CAUTION</b>	Never start the PiWalk™ before its hoses are properly secured and safely located.
<b>⚠ CAUTION</b>	The PiWalk™ should be properly maintained and stored when not in use to avoid damage to parts.
<b>⚠ CAUTION</b>	Always consider the workplace, access and risk factor prior to installation.
<b>⚠ CAUTION</b>	Always connect the hoses with safety line to fixed structure if working above 2 meters free fall.

### 3 OPERATING INSTRUCTIONS

The following illustration shows the different parts of the PiWalk™ version 1 (Article Number 11286)\*:



1. Wear rubber assembly
2. Square nut
3. Screw M6x30
4. Screw M6x60
5. Nut M6
6. Adapter (see chapter 4)
7. Wheel suspension assembly
8. Screw M8x16
9. Handle assembly
10. Left housing
11. Right housing
12. Handle
13. Label
14. Antistatic suction hose
15. Fan nozzle

\* Not all parts of PiWalk™ version 1 and 3 are compatible. For an overview of the parts of PiWalk™ version 3 (Article Number 11286V3) see “User Manual PiWalk – Version 3”.

- Before using the PiWalk™, perform a visual inspection, ensuring that all parts are in place and in good condition.
- Before fastening the adapter to the PiWalk™, ensure that either:
  - The system (PiSys™) is depressurised
  - The dead man twin hoses are disconnected
- Ensure that all hoses and connections are properly fastened.
- Make sure that all hoses are earthed all the way from the PiSys™ unit to the blast head.
- To fasten the adapter, place it flush to the opening of the housing and push it towards the housing to snap it into place.

- Put the adapter wearing rubber in place, if necessary. It is very important that this is done properly, otherwise the grit will wear out the adapter and the housing very quickly. It is also important to change the wearing rubber in time.
- When starting to work with the PiWalk™, the ‘Blast head’ **MUST** be placed against the surface that is intended for blasting
- You must **NEVER** place your hand or fingers underneath the ‘Blast Head’ of the PiWalk™.
- You must **NEVER** point the ‘Blast Head’ of the PiWalk™ at yourself or anybody else.
- To be used with Pinovo® Blasting Grit (size F16 – F46).
- Recommended process parameters (PiSys™ 100):
  - Blast pressure: 4.5 –5 bar
  - Suction pressure: 8 bar
  - Grit feed: 4 turns
- To achieve full abrasive and dust recovery the blast head must be in tight contact with the surface at all times. Do not apply excessive force that may cause the adapter brush to bend into the abrasive flow. Make straight, even passes.
- To start blast cleaning with the PiWalk™, activate the dead man’s handle.
- When stopping/pausing the blast operation, release the dead man’s handle. Wait until the system has come to a complete stop (no grit passing through) before lifting the blast head off the blast area.
- The PiWalk™ closed loop grit blasting tool in combination with the PiSys™ blast and recycling unit, Pinovo® hoses, and Pinovo® Blasting Grit is approved for operation in potentially explosive atmospheres (ATEX zone 1 and zone 2) – see also chapter 6.

## 4 ADAPTERS

- In case the adapter wear rubber is worn out, it should be replaced by the additional wear rubber supplied in the adapter package.
- In case the brushes and/or the main adapter part are worn-out or damaged, the adapter needs to be replaced with a new one.

### **⚠ CAUTION**





- Using a worn-out adapter can cause dust leakage, high noise levels, and may result in damage to other parts or the surroundings.

- Use of wear parts not supplied by Pinovo and/or other repair methods may compromise function and operational safety.

**⚠ WARNING**

- Before changing the adapter, ensure that the system cannot be started, for example by either:
  - Depressurizing the system (PiSys™) or
  - Disconnecting the dead man twin hose
- The adapters can be released from the tool by pressing the snaps and pulling the adapter from the housing.

The following adapters are available for the PiWalk™ closed loop grit blasting tool

<p><b>11419 PiWalk™ Adapter Flat</b> To be used on flat surfaces in combination with the PiWalk™ closed loop grit blasting tool.</p>	<p>Flat </p>	
<p><b>11420 PiWalk™ Adapter Flat XL</b> To be used on flat surfaces in combination with the PiWalk™ closed loop grit blasting tool. Provides more stability than the PiWalk™ “FLAT” adapter, but has a larger footprint.</p>	<p>Flat </p>	

In case you need adapters for additional surface geometries, please, contact your local Pinovo representative.

Adapters can be ordered by contacting your local Pinovo representative or directly via Pinovo’s website: <http://www.pinovo.com/spares-requisition.html>

Please use the article number provided in this manual for your orders.

## 5 EXCHANGE OF WEAR PARTS

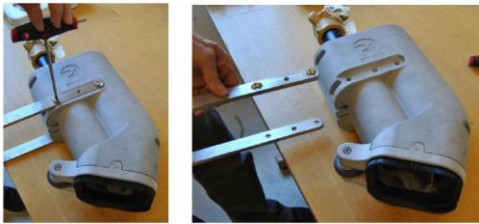
The 76 mm suction hose connected to the PiWalk™ housing is to be checked prior to every start-up, and needs to be replaced when worn out. Contact your local Pinovo representative.

**Only use original replacement hoses supplied by Pinovo.**



The wear rubber\* inside the PiWalk™ housing (see Chapter 3 – No 1) needs to be inspected frequently, at least every working shift. In case the rubber thickness is reduced to less than 1.5 mm, the wear rubber should be replaced. For ordering the “PiWalk™ Wear Rubber Kit”\* (Article Number 11291), contact Pinovo services.

In order to exchange the wear rubber parts, please, follow the instruction given below:



Detach “wheel suspension assembly” (7) from main housing (10, 11) by removing the four screws (8) as shown on the left



Detach “handle assembly” (9) from main housing (10, 11) by removing the two screws (4)



Remove “adapter” (6)  
Remove the three screws (3) to open the main housing (10, 11)  
Use a knife or another pointed tool to cut loose the “wear rubber assembly” (1)



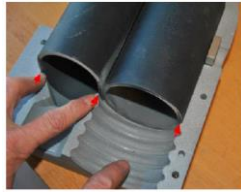
Open main housing and release the nozzle (15) and suction hose (14).  
Remove worn out “wear rubber assembly” (1) and insert the new wear parts



Align glued connection of the “wear part assembly” (1) with the upper rim of the housing (11) as indicated by the arrows

\* Wear rubber parts for PiWalk™ version 1 are not compatible with wear rubber parts for PiWalk™ version 3. For an overview of the parts of PiWalk™ version 3 (Article Number 11286V3) see “User Manual PiWalk – Version 3”.





Align upper end of “wear rubber assembly” as indicated on the left  
 Insert nozzle (15) and suction hose (14) and assemble main housing (10, 11).  
 Fasten screws (3)



If necessary, insert the remaining rubber part.  
 Attach “handle assembly” (9) and “wheel suspension assemble” (7)

The PiWalk™ tool should be inspected at least every working shift for accumulation of dust inside the tool as significant amounts of dust might impair proper functioning. Dust layers on hot surfaces may also act as an ignition source for potentially explosive atmospheres.

## 6 ATEX



The PiWalk™ closed-loop grit blasting tool can be used in potentially explosive atmospheres zone 1 (subgroup IIA T4) and zone 2 for treatment of steel surfaces. The compliance with the requirements of the European Directive ATEX 94/9/EC is provided for use in combination with:

- an ATEX-conform PiSys™ closed-loop grit blasting unit – grounded according to instruction
- antistatic Pinovo suction and blast hoses
- Pinovo Blasting Grit up to size F16


Pinovo cannot affirm compliance with the requirements of the European Directive ATEX 94/9/EC if the PiWalk™ tool is used in combination with other blasting equipment, other hoses, and/or other blasting media.

## 7 ACCESSORIES

The following accessories are available for working with the PiWalk™ tool.

<p><b>PiWalk™ Hose – Ergonomic Relief Harness</b></p> <p>The ergonomic relief harness can be used during work with the PiWalk™ closed loop grit blasting tool. The suction and blast hoses can be attached to the harness in order to ease the operators work.</p> <p>For more information, please, contact your local Pinovo representative.</p>	
<p><b>PiTrolley</b></p> <p>The PiTrolley can be used to support suction and blast hoses during operation of the PiWalk™ tool. This will improve maneuverability of the tool and will relieve the operators strain during operation.</p> <p>For more information, please, contact your local Pinovo representative.</p>	

## 8 TECHNICAL DATA

Size L x W x H (mm), excluding hoses	500 x 248 x 350 950 x 350 x 1010 (with handle bar)
Nozzle Type	9.5 mm Fan nozzle
ATEX conformity	CE  II 2G IIA T4

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