

**Original instructions**



**AVANTI**  
*Established 1885*®

**AVANTI FALL PROTECTION SYSTEM**

**User's, Installation and Maintenance Manual  
Model Runner System 2000/2002**

**CE**

# AVANTI Fall Protection System

## User's Manual and Installation Instructions

All safety statements, specifications, hazards, and inspections defined shall apply only to the version of product specified in this manual. The images and representations in this manual may vary slightly from the actual product you are using; please review your product label(s) to ensure a proper match.

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## Limited Warranty

Avanti Wind Systems A/S warrants that commencing from the date of shipment to the Customer, and continuing for a period of the longer of 365 days thereafter, or the period set forth in the standard Avanti warranty, the Fall Protection System (“Product”) described in this Manual will be free from defects in material and workmanship under normal use and service when installed and operated in accordance with the provisions of this Manual.

This warranty is made only to the original user of the Product. The sole and exclusive remedy and the entire liability of Avanti under this limited warranty, shall be, at the option of Avanti, a replacement of the Product (including incidental and freight charges paid by the Customer) with a similar new or reconditioned Product of equivalent value, or a refund of the purchase price if the Product is returned to Avanti, freight and insurance prepaid. The obligations of Avanti are expressly conditioned upon return of the Product in strict accordance with the return procedures of Avanti.

This warranty does not apply if the Product (i) has been altered without the authorization of Avanti or its authorized representative; (ii) has not been installed, operated, repaired, or maintained in accordance with this Manual or other instructions from Avanti; (iii) has been subjected to abuse, neglect, casualty, or negligence; (iv) has been furnished by Avanti to Customer without charge; or (v) has been sold on an “AS-IS” basis.

Except as specifically set forth in this Limited Warranty, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES,

INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, SATISFACTORY QUALITY, COURSE OF DEALING, LAW, USAGE OR TRADE PRACTICE ARE HERBY EXCLUDED TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW AND ARE EXPRESSLY DISCLAIMED BY AVANTI. IF, PURSUANT TO ANY APPLICABLE LAW, TO THE EXTENT AN IMPLIED WARRANTY CANNOT BE EXCLUDED AS PROVIDED IN THIS LIMITED WARRANTY, ANY IMPLIED WARRANTY IS LIMITED IN TIME TO THE SAME DURATION AS THE EXPRESS WARRANTY PERIOD SET FORTH ABOVE. BECAUSE SOME STATES DO NOT PERMIT LIMITATIONS ON THE DURATION OF IMPLIED WARRANTIES, THIS MAY NOT APPLY TO A GIVEN CUSTOMER. THIS LIMITED WARRANTY GIVES CUSTOMER SPECIFIC LEGAL RIGHTS, AND CUSTOMER MAY HAVE OTHER LEGAL RIGHTS UNDER APPLICABLE LAWS. This disclaimer shall apply even if the express warranty fails of its essential purpose.

In any cases of dispute the English original shall be taken as authoritative.

## EC Type-Examination Certificate

Directive for Personal Protective Equipment

Certificate No.: **DK-0200-PPE-2034 version 2**  
Issued by FORCE Certification A/S - EC-notified body number 0200

In accordance with the Danish Working Environment Authority Regulation No. 683 of June 10<sup>th</sup> 2013, which in Denmark implements the Council Directives No. 89/686, No. 93/68, No. 93/95 and No. 96/58, EC type-examination certificate is issued to:

Manufacturer: **AVANTI Wind Systems A/S**  
**Høgevej 17-19**  
**3400 Hillerød**  
**Denmark**

Identification of Personal Protective Equipment:

Type: **Equipment for protection against falls from a height.**  
**Guided type fall arrest system with safety rail on**  
**vertically fixed ladders. With integrated energy absorber.**  
**Optional use of climb-assist system.**

Designation: **Avanti Fall Arrest System 2000/2002 (improved editions)**  
- **Locking lever according to drawing 47799050**  
- **Locking lever according to drawing 47799068**

Manufactured by: **AVANTI Wind Systems A/S with sub-suppliers as stated**  
**in the appendix to the EC type-examination certificate.**

The examined samples are found to fulfil the relevant requirements stated for the following tests:  
**EN 353-1:2002** **Guided type fall arresters including a rigid anchor line**  
**prEN 353-1:2008** **Guided type fall arresters including a rigid anchor line**  
**Avanti Climb-assist** **System combined with the use of Avanti Climb-assist and**  
**release-strap (optional)**  
**AS/NZS 1891.3:1997** **Fall-arrest devices (clause 3.2, 3.3, 3.4, 3.7, and 3.8)**  
**RFU CNB/P/11.073** **Requirements and test procedure (including fallback falls**  
**dynamic tests, tested with 40 kg and 136 kg)**

Documentation for observance of relevant requirements stated in Appendix 1 of Regulation No. 683 of June 10<sup>th</sup> 2013 and the basis for the type examination are described in the appendix to this certificate. The manufacturer must inform FORCE Certification A/S of any contemplated changes. The examined type of personal protective equipment is class III equipment and a quality control agreement with a notified body must be available.

FORCE Certification A/S task No.: 113-26039

Date of issue: 2013-07-05

Date of expiry: 2017-02-07



Niels Ovesen  
Certification manager



Kasper Munk Eliassen  
Examiner

Extracts from this EC Type-Examination Certificate may only be reproduced with a written permission from FORCE Certification A/S

# 1 Caution

- a) A competent is familiar with and is trained within the AVANTI Fall Protection System (FPS), and the following standards: EN 363, EN 353-1. An AVANTI Fall Protection Technician has successfully participated in the AVANTI Fall Protection course and is considered competent. A user is familiar with the correct usage of the FPS and have had an introduction to personal protection equipment.
- b) Assembly, maintenance and testing of the FPS may only be performed by a competent person.
- c) Users are obliged to read and understand this User's Manual.
- d) A copy of the User's Manual must be handed out to the fall protection users and must be available for reference.
- e) If more than one person is trusted with one of the above tasks, the employer shall appoint a supervisor in charge of operation.
- f) If the FPS is re-sold outside the original country of destination the reseller shall provide instructions for use, for maintenance, for periodic examination and for repair in the language of the country in which the product is to be used.
- g) The ladder system shall be capable of supporting 15 kN. This shall be verified by calculations made by a qualified engineer or by static load testing.
- h) Always remove the FPS from the rail when not in use; the FPS is not intended to be parked on the rail when freely suspended.
- i) The FPS is only to be operated by users being proper trained in daily inspections, working in heights and practice operation of the system.
- j) For optimal operation, enhanced safety and better climbing ergonomics; the climber is recommended to maintain a distance of minimum 10 cm from torso to ladder during regular climb. A good climbing position is easily obtained by leaning the upper back against the tower.

# 2 Danger

- a) The FPS may not be used by persons under influence of alcohol or drugs that may jeopardize working safety.
- b) Only people instructed to the FPS by a qualified trainer may use the system.
- c) The owner must ensure that a rescue plan that deal with any emergencies that could arise during work is in place and that the users are familiar with this.
- d) If any damager or faults are found during operation, or in case of circumstances which may jeopardize safety:
  - Immediately stop the work in progress
  - Contact the site responsible e.g. the turbine owner or the site foreman.
- e) No warranty is provided against damage resulting from reconstruction or modification of equipment or use of non-original parts which are not approved by the manufacturer.
- f) The FPS may not be used outside its limitations, or for any purpose other than that for which it is intended.
- g) The FPS should be handed out and treated as a personal protection equipment.
- h) The weight of the user including clothing and equipment shall be within 40 and 136 kg.
- i) The maximum number of multiple users is 3.
- j) Keep a distance of 6 meter between each user during ascend and descend. No more users may use the 2 x 6 meter rail simultaneously as this will jeopardize the system statics.
- k) The first two meters the user may not be protected against hitting the ground. Take precautions.
- l) Prior first use an expert must inspect the system.

- m) If oil, grease or the like has leaked onto the safety rail – wipe it of.
  - n) If oil, grease, chemicals or the like has leaked onto the shock absorber or in any kind been in contact with the webbing, have an AVANTI FPS technician replace the shock absorber.
  - o) After 5 years of use replace the shock absorber. Date of expiration is printed on the shock absorber label.
  - p) Operation temperature -30° / +60° Celsius.
  - q) In connection with the FPS only full body harnesses approved according to EN 361 may be used.
  - r) The complete FPS has been manufactured and approved according to EN 353-1 and RfU 11.073.
- The Type-examination of the FPS has been performed by: FORCE Certification A/S, NB 0200, Park Allé 345, DK-2605 Brøndby.
- The production control of the FPS is performed by: FORCE Certification A/S, NB 0200, Park Allé 345, DK-2605 Brøndby.
- s) Ladders supplied by AVANTI comply with the requirements of EN 131, EN ISO 14122.
  - t) The AVANTI supplied carabiner is approved according to EN 362 requirements and shock absorber according to EN355 requirements.
  - u) All parts and units have been especially developed for the FPS 2000/ 2002 and as such cannot be used in other Fall Protection Systems.
  - v) These instructions must be kept together with the FPS.
  - w) When ever using the FPS it's very important always to make sure, that the harness is connected by the D-ring complying with the demands for climbing in vertical fall arrest safety systems on ladders. This information shall be described in the user manual from your harness supplier.
  - x) It's necessary to use alternative fall protection when stepping in or off the ladder. The FPS must not be disconnected from the rail before establishing alternative fall protection. The FPS must always be attached to the D-ring in the harness before connecting or disconnecting it to the rail.
  - y) When working or resting at the ladder it's essential that the user uses alternative safety. The FPS is only approved as fall arrest safety when ascending or descending the ladder.
  - z) Never twist the shock absorber, it may cause the system to fail.



*The owner must verify the need for 3rd party fall protection device inspections with the local authority and comply with the standards specified.*

## 3 Description of equipment

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### 3.1 Purpose

#### **The FPS and the safety rail in this User's Manual serve the following purposes:**

- The FPS is intended for use during ascent and decent on stationary ladders installed in towers, pylons, well shafts, manholes etc.
- The FPS is a safety device traveling on a rail which prevents falling / reduces personal injuries if fall occur.
- The safety rail is designed for permanent installation in one place.
- The FPS can be mounted on different shapes and brands of ladders, as long as approval is issued by AVANTI according to page 14, section d.

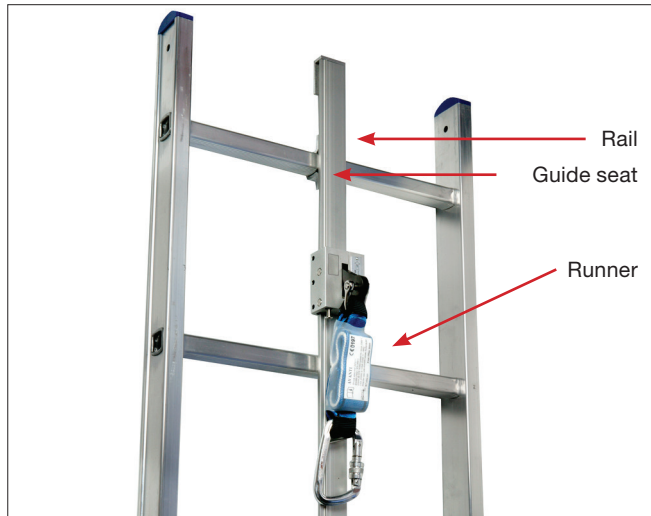
#### **The FPS and the safety rail are not designed for:**

- Securing horizontally,
- Securing equipment,

### 3.2 Function

The user attaches the runner to his harness by means of an integrated shock absorber and carabiner. Before starting the climb, user clicks the runner onto the safety rail. When climbing the runner glides upwards on the safety rail. In case the user experiences a fall the runner will lock onto the safety rail and arrest the fall.

### 3.3 Component overview:



Rail and runner on ladder



Runner System 2000/2002

## 4 Daily inspection

- 1) Before any use the FPS must be checked for visual damage, wear and tear, and other defects. Pay especially attention to the shock absorber.
- 2) During ascent look for visible damage and loose parts along with loose bolts on ladder, rail or joints.
- 3) Equipment with defects or equipment that leaves doubt concerning safe use must be checked by an expert.



*Do not use FPS if it looks defective or parts are missing.*

Before using the FPS, perform a pre-use check following the “Appendix B: Daily Inspection Checklist /Visual test for Runner System 2000/2002” to verify that the FPS can be used. If any of the checks does not pass, the FPS cannot be used.

## 5 Instructions for use



### DANGER!

- The runner, the shock absorber, and the carabiner comprise a safety system. Never adapt, extend, or change in any way this system.
- The arrow on the runner must point upwards – otherwise it will not arrest a fall.
- Do not use FPS if it looks defective.

Engaging the release mechanism or handling of the runner during ascent or descent can hinder the safe function of the braking mechanism.





- a) Before using this FPS make sure to wear an approved harness in accordance to the producer's prescriptions.
- b) Fasten the FPS carabiner in the D-ring of the full body harness. Remember to choose connection in the chest D-ring for fall arrest according to the description in the user manual of the harness. When FPS is mounted, it's important that the shock absorber isn't twisted – it shall be mounted straight between the runner and the carabiner.

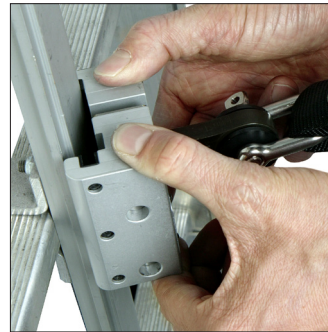
**Always make sure that the FPS is connected to the D-ring of the full body harness when mounting/dismounting the runner.**

- c) With the arrow on the plate pointing upwards the runner is clicked onto the safety rail. (see picture 1)

Open runner by pushing bottom left steel tap lock and pull left and right runner side apart.

Place one of the runner sides on its respective safety rail side with the runner arrow pointing upward (1).

1

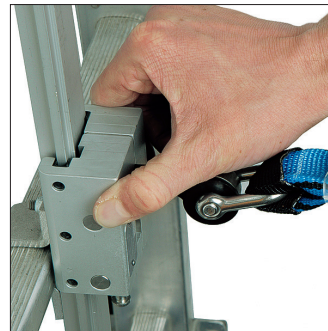


2



While lifting the break lever, tilt the runner so both runner sides are round each side of the safety rail (2).

3



Push the two runner body parts together until the bottom left steel tap lock pops back in position and locks the runner body. Make sure it is locked correctly (3).

Remove runner by pushing the bottom left steel tap and pull the runner sides apart.

**Before dismantling assure you are in a safe area or secured by another FPS.**

**DANGER!**

- If the FPS has blocked a fall or has been removed from service because of doubts, it may only return to service after inspection by a competent person (FPS technician). The competent person must confirm in writing, that the FPS is OK to use again.
- When ever using the AVANTI FPS it's very important always to make sure, that the harness is connected by the D-ring complying with the demands for climbing in vertical fall arrest safety systems on ladders. This information shall be described in the user manual from your harness supplier.
- In order to be safest possible it's very important that the FPS is mounted in the directed D-ring of the harness before entering the ladder – Furthermore it's important that the FPS is attached in the direct D-ring when exiting the ladder. Don't dismantle the runner from the harness before being at safe support, in order to avoid dropping the FPS.
- When working or resting at the ladder it's essential that the user uses alternative safety. The AVANTI FPS is only approved as fall arrest safety when ascending or descending the ladder.



- e) If the system gets wet let the shock absorber air-dry naturally. Do not use any kind of heating.
- f) Store FPS out of direct sunlight and protected from heat and dust.

## 7 Annual inspection

Every 12 months an expert must inspect the Fall Protection System paying special attention to the safety rail and the runner. If not -according to work-regulations this will void the warranty.

Are the yearly tests not performed the warranty is void, and AVANTI renounce all liability and claims that may appear.

AVANTI runs "fall protection technician classes" on regular basis.

If interested contact AVANTI.



*Annual inspection may only be conducted by a competent person, strictly following the AVANTI's inspection procedures.*

## 8 Ordering spare parts

When parts are found to be missing stop working - the system must be taken out of use!

Rail and ladder: Contact an AVANTI expert to replace/repair the missing parts and carry through a FPS inspection.

FPS: Contact an AVANTI expert to replace/repair the missing parts and carry through a FPS inspection.

## 6 Maintenance

- a) Dry FPS and rail with a dry cloth.
- b) Keep all parts free of oil, grease, paint and chemicals.
- c) Never place liquids or sharp objects in the vicinity of the Fall Protection System as these may damage the equipment.
- d) The shock absorber harness can be cleaned using a weak sulpho-solution and a soft brush. Subsequently, rinse with lots of pure water.

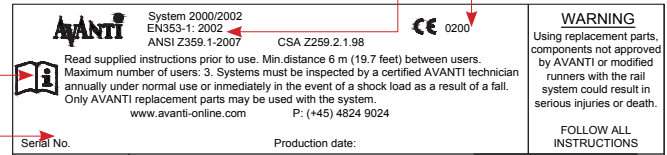
# 9 Marking

Upward direction when mounted onto rail  
 Read instructions before use  
 Runner production no.  
 EEC-notified body no.  
 AVANTI product name  
 Standard no.



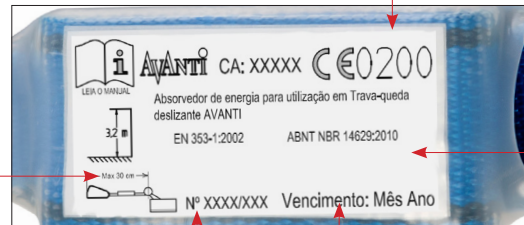
Runner rating plate

EEC-notified body no.  
 Standard no.  
 Production batch no.  
 Read instructions before use



Rail rating plate

Max distance between safety rail and harness 0,3 m  
 Shock absorber expiration month  
 Batch no.  
 Standard EN no. for shock absorber  
 EEC-notified body no.



Shock absorber label

## 10 Fitting instructions

- a) An expert must be in charge of the FPS fitting. The expert takes full responsibility for the fitting and guarantee that the installation is done in accordance to these instructions.
- b) Prior to mounting the system, ensure that the ladder involved will be able to carry the load.  
Please refer to manufacturer's documentation to check that the system fulfils mandatory standards
- c) Ensure that the ladder intended for mounting the AVANTI FPS complies with the requirements of EN 131, EN ISO 14122 internal rung width must be minimum 340mm (All AVANTI ladders do)
- d) Ladder with rung geometries that differs from AVANTI's may call for special rung fittings.  
These must be calculated and approved by AVANTI.
- e) Before installing the fall protection rail ensure that all parts are present.  
Refer to parts list delivered along with the FPS.
- f) The ladders shall be installed vertically with a maximum inclination of  $\pm 5^\circ$ .

Installing the FPS you will need the following parts.



Rung fitting



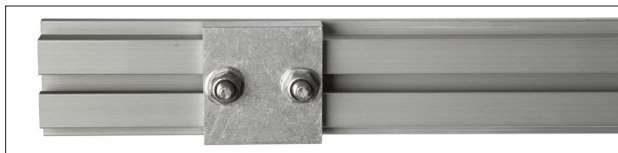
Rung fitting mounted on a safety rail.



Hammerhead bolt with self-locking nut



Fish joint connector



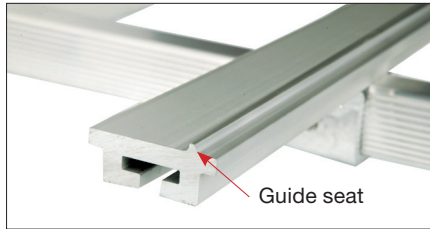
Top and bottom stopper



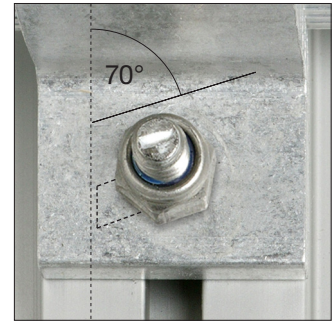
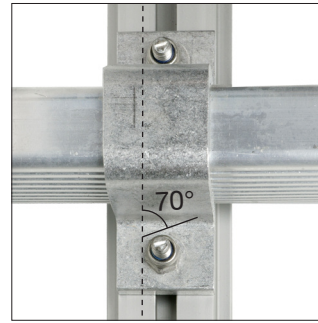
Runner System 2000/2002

## Mounting of rail onto ladder:

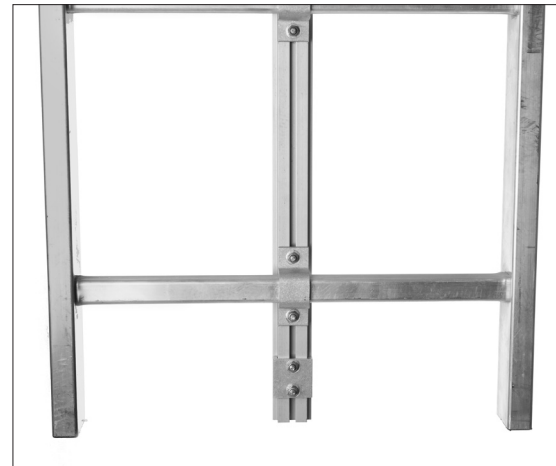
1. Place the safety rail in the centre of the ladder with **the guide seat situated on the left side.**



2. Mount the fall protection rung fittings with hammerhead bolts as follows:
  - At the bottom or second last rung of the safety rail ladder.
  - At min. every 3rd rung never allowing more than 2 rungs in a row without rung fitting.
  - At the top rung of the safety rail ladder.
3. When joining more ladder sections use profile fish joints. Assure that 2 hammerhead bolts are used for each rail end - that is 4 per fish joint. Minimum 1 mm – maximum 4 mm gap between the rail connections (see picture of fish joint connector at page 15).
4. The indicator mark on the hammerhead bolt must be positioned in an angle of 70° to the safety rail. (see fig below)
5. Tighten the hammerhead nut with 8 Nm.
6. Self-locking nuts must be used at all times, ensure that:
  - The bolt extends from the nut by at least half of the thread diameter.
  - If it has become possible to loosen the nut by hand replace the nut.



7. End stops shall be fitted at the top and bottom of the safety rail, and at any point where the runner could unintentionally run off the rail and there is a potential fall hazard.
8. During installation in wind turbine towers mount a stopper on the rail top of each individual tower section, then technicians can use the FPS when erecting (connecting tower sections) the tower.



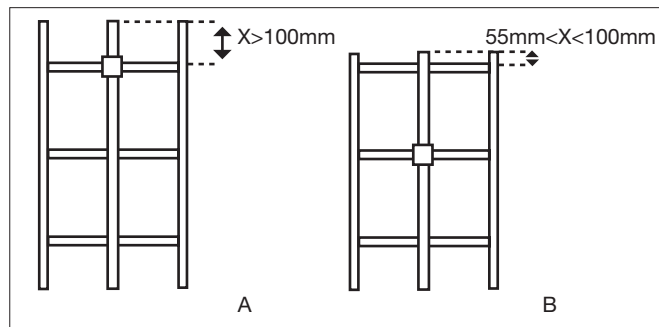
### Connection of ladder and rail in tower flange connections.

In case the rail and ladder is installed in a wind turbine tower before the tower is assembled the ladder and rail may need adjustment during tower assembly. Please follow the cutting and fitting instructions below.

#### Ladder Top:

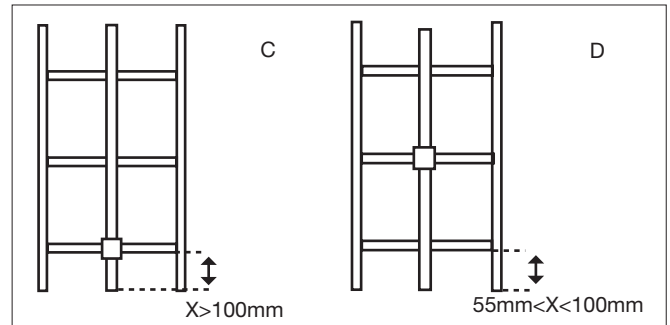
A rung fitting is always mounted on the top rung of each tower section.

1. After cutting-off the safety rail above the step, the safety rail must extend minimum 55mm **above** the step.
2. If the rail is cut to less than 100 mm **above** the step ( $x < 100$  mm) the fitting must be moved down one step (See fig. B below).



#### Ladder Bottom:

3. After cutting-off of the safety rail **below** the rung, the safety rail must extend minimum 55mm below the rung.
4. If the rail is cut to less than 100 mm **below** the rung ( $x < 100$  mm), the rung fitting - if any, must be moved up one rung (See fig. D below).



5. If it is not a bottom tower section there must always be a rung fitting on one of the two lower rungs. If this is not the case this must be retro fitted.

#### General fitting instructions:

- The FPS shall only be fitted with original system parts.
- All system elements must be checked on site, even if the ladders are supplied with the rails already fitted.
- The ladder joints are to absorb the vibrations and torsional stress. Not the safety rail.
- Top end of the rail is allowed to pass the ladder rung with 100 mm.

# 11 Inspection before initial use

Before first use an expert must inspect the FPS. The inspection must be done following appendix A and filled in for later reference.

## Ladder rung:

- Ensure that no dents, holes, or cracks have any influence on the step stability.
- Dents may not exceed 10 mm in diameter or be more than 1 mm deep.
- If dents are found on the rung edges or corners the step stability can no longer be guaranteed. Replace step.

## Ladder style

- Ensure that no dents, holes, or cracks have any influence on the style stability.
- Dents may not exceed 20mm in diameter or be more than 1 mm deep.
- If dents are found on the style edges or corners the style stability can no longer be guaranteed. Replace the ladder section.

## Ladder connections

- Maximum deviation on rung distance at flange connection is 30mm.

## Ladder end

- On the top end and bottom end of the ladder a protection guard such as the AVANTI rubber feet or end cap must be in place. During construction of wind turbine towers a top stopper must be mounted on each individual tower section.

## Safety rail

- Ensure that the safety rail fittings are mounted according to the mounting section in this manual.
- Ensure that no sharp rail ends are present.
- Check the legibility of the product marking. If marking is not present have an expert replace them.
- Ensure that a top and a bottom stop is mounted.

## Safety rail connections

- Ensure that profile fish joints are mounted using two hammerhead bolts, 4 in total, on each safety rail section leaving min **1 - 4 mm** between each safety rail, and that the indicator mark on the hammerhead bolt is turned 70°
- Make sure all hammerhead bolts and self locking nuts present on the system are torqued with 8 Nm.

<b>TESTING FORM:</b>			
AVANTI FALLPROTECTION TYPE 2000/2002 EN 353-1/RfU 11.073 DK-0200-PPE-2034	User's Name: Phone: Name of inspector: Date of inspection:		
Tower (WEA-No.):			
<b>Ladder inspection</b>		<b>OK</b>	<b>not OK</b>
Rung:	No dents, holes, or cracks influence on rung stability No dents larger than 10 mm in diameter or 1 mm deep No dents on rung corners Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Style:	No dents, holes, or cracks influence on style stability No dents on style larger than 20 mm in diameter or 1 mm deep No dents on rung corners Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Ladder connections:	Distance between ladder ends less than 30 mm	<input type="checkbox"/>	<input type="checkbox"/>
Ladder ends:	AVANTI rubber feet or end cap mounted	<input type="checkbox"/>	<input type="checkbox"/>
General:	Dirt (oil, corrossion etc.) on ladder	<input type="checkbox"/>	<input type="checkbox"/>
<b>Rail</b>			
Rung fitting:	At 1 <sup>st</sup> or 2 <sup>nd</sup> rung at the <b>beginning</b> of each ladder section At 1 <sup>st</sup> or 2 <sup>nd</sup> rung at the <b>end</b> of each ladder section At min. Every 3 <sup>rd</sup> rung Min. 2 fittings for each shortened rail Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Rail connections (Fish joint):	Fish joint fastened with 2 hammerhead bolts on each rail All hammerhead bolt indication marks in an angel of 70° to the rail Max 4 mm distance between rail ends Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Rail:	No sharp edges Mounted in accordance to the installation instructions Rail mounted with guide claque in left side (see 3.3)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
General:	Dirt (oil, corrossion etc.) on ladder	<input type="checkbox"/>	<input type="checkbox"/>
<b>General</b>			
	Resting platform in place and fixed	<input type="checkbox"/>	<input type="checkbox"/>
	All screws in place and fixed	<input type="checkbox"/>	<input type="checkbox"/>
	Labels and markings legible	<input type="checkbox"/>	<input type="checkbox"/>
	Other damage: _____		
<b>Ladder safe for use:</b> <input type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> <b>Ladder use prohibited:</b> <input type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b>			
<b>If the fall protection use is prohibited mark the ladder as closed. In this case a Service Lift must not be used either. Mark Service Lift as closed.</b>			
These inspections may only be performed by AVANTI or by an expert. At least every 12 month an inspection by an AVANTI fall protection technician shall be carried out. The inspection results must be entered in a test journal and filed for later reference.		Inspector's Signature	



<b>TESTING FORM:</b>			
AVANTI FALLPROTECTION TYPE 2000/2002 EN 353-1/RfU 11.073 DK-0200-PPE-2034	User's Name: Phone: Name of inspector: Date of inspection:		
Tower (WEA-No.):			
<b>Ladder inspection</b>		<b>OK</b>	<b>not OK</b>
Rung:	No dents, holes, or cracks influence on rung stability No dents larger than 10 mm in diameter or 1 mm deep No dents on rung corners Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Style:	No dents, holes, or cracks influence on style stability No dents on style larger than 20 mm in diameter or 1 mm deep No dents on rung corners Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Ladder connections:	Distance between ladder ends less than 30 mm	<input type="checkbox"/>	<input type="checkbox"/>
Ladder ends:	AVANTI rubber feet or end cap mounted	<input type="checkbox"/>	<input type="checkbox"/>
General:	Dirt (oil, corrossion etc.) on ladder	<input type="checkbox"/>	<input type="checkbox"/>
<b>Rail</b>			
Rung fitting:	At 1 <sup>st</sup> or 2 <sup>nd</sup> rung at the <b>beginning</b> of each ladder section At 1 <sup>st</sup> or 2 <sup>nd</sup> rung at the <b>end</b> of each ladder section At min. Every 3 <sup>rd</sup> rung Min. 2 fittings for each shortened rail Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Rail connections (Fish joint):	Fish joint fastened with 2 hammerhead bolts on each rail All hammerhead bolt indication marks in an angel of 70° to the rail Max 4 mm distance between rail ends Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Rail:	No sharp edges Mounted in accordance to the installation instructions Rail mounted with guide claque in left side (see 3.3)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
General:	Dirt (oil, corrossion etc.) on ladder Other damage: _____	<input type="checkbox"/>	<input type="checkbox"/>
<b>General</b>			
	Resting platform in place and fixed All screws in place and fixed Labels and markings legible Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>Ladder safe for use:</b> <input type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> <b>Ladder use prohibited:</b> <input type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b>			
<b>If the fall protection use is prohibited mark the ladder as closed. In this case a Service Lift must not be used either. Mark Service Lift as closed.</b>			
These inspections may only be performed by AVANTI or by an expert. At least every 12 month an inspection by an AVANTI fall protection technician shall be carried out. The inspection results must be entered in a test journal and filed for later reference.		Inspector's Signature	

<b>TESTING FORM:</b>			
AVANTI FALLPROTECTION TYPE 2000/2002 EN 353-1/RfU 11.073 DK-0200-PPE-2034	User's Name: Phone: Name of inspector: Date of inspection:		
Tower (WEA-No.):			
<b>Ladder inspection</b>		<b>OK</b>	<b>not OK</b>
Rung:	No dents, holes, or cracks influence on rung stability No dents larger than 10 mm in diameter or 1 mm deep No dents on rung corners Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Style:	No dents, holes, or cracks influence on style stability No dents on style larger than 20 mm in diameter or 1 mm deep No dents on rung corners Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Ladder connections:	Distance between ladder ends less than 30 mm	<input type="checkbox"/>	<input type="checkbox"/>
Ladder ends:	AVANTI rubber feet or end cap mounted	<input type="checkbox"/>	<input type="checkbox"/>
General:	Dirt (oil, corrossion etc.) on ladder	<input type="checkbox"/>	<input type="checkbox"/>
<b>Rail</b>			
Rung fitting:	At 1 <sup>st</sup> or 2 <sup>nd</sup> rung at the <b>beginning</b> of each ladder section At 1 <sup>st</sup> or 2 <sup>nd</sup> rung at the <b>end</b> of each ladder section At min. Every 3 <sup>rd</sup> rung Min. 2 fittings for each shortened rail Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Rail connections (Fish joint):	Fish joint fastened with 2 hammerhead bolts on each rail All hammerhead bolt indication marks in an angel of 70° to the rail Max 4 mm distance between rail ends Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Rail:	No sharp edges Mounted in accordance to the installation instructions Rail mounted with guide claque in left side (see 3.3)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
General:	Dirt (oil, corrossion etc.) on ladder Other damage: _____	<input type="checkbox"/>	<input type="checkbox"/>
<b>General</b>			
	Resting platform in place and fixed All screws in place and fixed Labels and markings legible Other damage: _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>Ladder safe for use:</b> <input type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b> <b>Ladder use prohibited:</b> <input type="checkbox"/> <b>YES</b> <input type="checkbox"/> <b>NO</b>			
<b>If the fall protection use is prohibited mark the ladder as closed. In this case a Service Lift must not be used either. Mark Service Lift as closed.</b>			
These inspections may only be performed by AVANTI or by an expert. At least every 12 month an inspection by an AVANTI fall protection technician shall be carried out. The inspection results must be entered in a test journal and filed for later reference.		Inspector's Signature	

**Appendix B: Daily inspection checklist /Visual test for Runner System 2000/2002**

ISSUE DESCRIPTION		PASS	FAIL	ISSUE DESCRIPTION		PASS	FAIL
1	Is the runner's body free from corrosion, deformation and other damage?			7	Is the Carabiner and shackle free from marks, deformities, wear or traces of corrosion?		
COMMENTS				COMMENTS			
2	Is the break lever free from corrosion, deformation and other damage?			8	Is the locking mechanism of the Carabiner is functioning good? Is the return spring and articulation of the gate working properly?		
COMMENTS				COMMENTS			
3	Are the 4 rivets securely attached to the middle plate? Is the middle plate free of damage or bending?			9	Is the shock absorber's black strap completely covered in the locking pin?		
COMMENTS				COMMENTS			
4	Are the 2 rivets attached securely to the aluminum serial plate?			10	Is the runner easy to close and open? Does it has a frictionless operation?		
COMMENTS				COMMENTS			
5	Are the synthetic guides in place and free from bruises and marks? Is the blank aluminum plate present and sitting tight?			11	Does the break lever move smoothly up and down? Are both the spring and shackle securely attached?		
COMMENTS				COMMENTS			
6	Is the shock absorber in normal shape and free from cuts, burns, seams or has no visible sign of worn?			12	Is the runner sliding smoothly on the rail?		
COMMENTS				COMMENTS			

**VISUAL TEST**



1



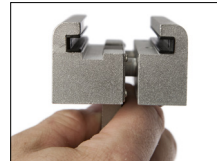
2



3



4



5



6



7



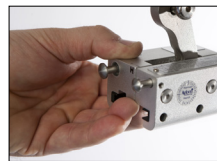
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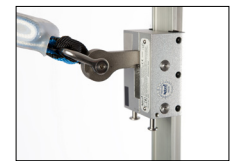
9



10



11



12



