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Application Procedure Specification Dhatec Pipe Raiser

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Change Record

Rev.	Description of Revision
00	First Issue
01	Connecting Pipe Raiser to trailer added (P.16) and cutting and placing the Anti-Skit (Appendix B0
02	General update + layout
03	Font style



Revision: 03

General Information

Equipment	Pipe Raiser
Supplier Name	Dhatec B.V.
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Do not carry out any repairs or modifications on the equipment without consulting Dhatec B.V., doing so will invalidate the guarantee. The guarantee is also invalidated if accidents and damage of any form are caused as a result of improper use and/or not obeying the warnings in general as explained in this user guide. Dhatec B.V. accepts no responsibility for any personal accidents as a consequence of not following the safety instructions and warnings. This is also the case for consequential loss in any form.



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Safety Requirements

These are general guidelines, all personnel involved should adhere to the safety requirements of the particular location at which they are performing their operations.

Dhatec recommends wearing of suitable PPE while handling their products. This includes gloves, safety shoes, safety glasses, safety helmet, hearing protection and suitable work clothing.

The working areas should be kept tidy at all times in order to minimize the risk of trips and slips.

All personnel involved should use suitable manual handling techniques and follow industry recommended guidelines for lifting and moving, such as those described in "Ergonomic Guidelines for Manual Material Handling" published by the National Institute for Occupational Safety and Health (Publication 2007-131), or those otherwise prescribed by the client.

Required Equipment

For installation of the Pipe Raiser, some general tools are needed;

- Measuring tape to place the blocks to the right configuration





- A knife to cut the Anti-Skid layers to the according length (be cautious of your safety while working with a knife)





- A hammer to place the pins (be cautious of your safety while working with a hammer)



Figure 2. Safety Hammer



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Introduction

Transporting line pipes is not without risks. Pipes are heavy and can cause serious damage or injury if not handled carefully. These instructions describe the recommended practice of working with System88 as a support for line pipes. The recommendations are based on guidelines from official institutes as well as collision and braking tests in practice. Follow the instructions carefully and take extreme care when handling line pipes. Four steps are distinguished:

1. Before loading \rightarrow 2. Load pipes \rightarrow 3. Transport pipes \rightarrow 4. Unload pipes



Figure 4. PE-block



Figure 5. Locking pin + clip



Figure 6. Pipe Raiser

Instructions

1. Before Loading

- A. Inspect the components as shown in figure 4,5 and 6 on the following critical failures and discard the component when it shows one of these failures.
 - The holes in the PE-block may not be oval or have a diameter larger than Ø 23 mm.
 - The PE-block may not show permanent deformation or cracks.
 - Edges of the PE-block may not wear off more than 10 mm.
 - The steel profile may not show permanent deformation.
 - The steel profile may not show signs of rusting through.
 - Locking pin may not show permanent deformation.
 - Locking pin may not show signs of rusting through.
 - Safety clip must have its original shape. The ring has to lock under springy tension.
 - B. Make sure that the block surface is free from snow, ice, oil or anything that could influence friction between the PE-bock and pipe.
 - C. Follow the step by step assembly instructions from steps 1-11.
 - D. Use block Type C (50 t/m 56 inch) or block Type D (58 t/m 60 inch) for the base section.^[1]
 - E. Use block Type B for the 'raising unit'.^[1]
 - F. Secure each block with two locking pins and two clips.
 - G. Check with a tape measure if the setting is conform the Pipe Configurations.^[1]
 - H. Make sure the total weight of both pipes will not exceed 7.500 kg per Pipe Raiser. When the two pipes have a different weight, the heaviest pipe has to be the lower pipe.

Number of Pipe Raisers	Maximum total weight of 2 pipes
2	15.000 kg
3	22.500 kg
4	30.0



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2. Load pipes

- A. Make sure that the pipe surface is free from snow, ice, oil or anything that could influence friction between pipe and PE-block.
- B. Place Anti-Skid layers on the PE-blocks.
- C. Carefully place the pipe on the PE-blocks of the single profile.
- D. Check the space between the single profile and the pipe, this must be between 10 and 25 mm. If not, unload the pipe and recheck the measures with Pipe Configurations^[1].
- E. Place Anti-Skid mats on the pipe and on the other PE-blocks. Anti-Skid layers should be 200 mm wide and always be used in combination with tie-downs. Then carefully place the next pipe on the other pipe and against the 'raising unit'.
- F. Tie-downs are obligatory, follow VDI2700 prescriptions. In combination with the Anti-Skid layers, use 8 tiedowns (STF750 daN, LC 2500) for a 25 ton load.
- G. Use half of the tie-downs from left to right and the other half of the tie-downs from right to left.
- H. Use 3 tie-downs to connect the pipes to each other.

3. Transport pipes

- A. The Pipe Raiser is designed to withstand the forces applied to a load as prescribed by VDI2700. This prescription must be followed for safe transport.
- B. Adapt driving style to weather conditions.

4. Unload pipes

- A. Check if the load is stable before unloading.
- B. Be careful when removing tie-downs because of the high tension.
- C. Carefully unload the upper pipe.
- D. Remove the Anti-Skid layers.
- E. Carefully unload the lower pipe.
- F. Carefully dismantle the Pipe Raiser by using the Step by Step Assembly from step 10 to step 1.
- G. Before using the Pipe Raiser for another transport always follow the instructions. Start with inspection of the components like described in step 1A.

End note

This recommended practice is put together with great care. When safety risks are noticed which are not covered by this instruction please contact Dhatec to share this finding.

- [1] Pipe Configurations are supplied with the first delivery, contact our office for copies and updates.
- [2] Truck drivers should have been educated to load their vehicles properly and therefore are assumed to be familiar with loading prescriptions.



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Step by step assembly

The assembly of the Pipe Raiser occurs in a simple manner, only general tools are needed. In this manual, every step will be clearly explained. All the parts of the Pipe Raiser have to be secured by the locking pins (Ø20 x 125 mm) and the clips, as is shown in the pictures. The adjustments of the blocks, the support for the upper pipe and the support for the connecting rod should be done as described in the configurations in appendix A. The connecting rod between de support for the upper pipe and the base section is specific for each adjustment. For every adjustment, a different connecting rod should be used!

It is important that Anti-Skid layers are used between all contact surfaces, this will reduce the number of tie-downs significantly.

To give you an idea the next table shows the number of tie-downs that are needed, with and without Anti-skid layers.

	Number of tie-downs (S _{TF} 750 daN, LC 2500)		
Total weight of the pipes	With Anti-Skid layers	Without Anti-Skid layers	
30.000 kg	9	45	
25.000 kg	8	38	
20.000 kg	6	30	
15.000 kg	5	23	
10.000 kg	3	15	
5.000 kg	2	8	

When there are still questions about the use of the Pipe Raiser after reading this manual, please feel free to contact Dhatec BV.

Step 1: Place the base profile on an Anti-Skid layer.



Step 1: The Anti-Skid layer should be placed on the truck. Then the base section of the Pipe Raiser should be placed in the middle of the Anti-Skid layer. See appendix B for cutting lengths and placement of Anti-skid layers



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Step 2: Place the base section that will host the vertical column



Step 2: The base section that hosts the vertical column should be placed at the end of the base profile. The base section must be secured with locking pins (Ø20 x 125 mm) and clips.





Step 3: The vertical column should be placed in the base section. The vertical column must be secured with locking pins (\emptyset 20 x 125 mm) and clips.



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Step 4: Place the first side bracing



Step 4: The side bracing, existing of two profiles, must be connected to the vertical column and the base section. The side bracing must be secured with locking pins (Ø20 x 125 mm) and clips.



Step 5: The side bracing, existing of two profiles, must be connected to the vertical column and the base section. The side bracing must be secured with locking pins (Ø20 x 125 mm) and clips.

Step 5: Place the next side bracing



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Step 6: Place the support that will host the connecting rod



Step 6: The support that will host the connecting rod must be placed over the base profile. The support must be secured with locking pins (Ø20 x 125 mm) and clips.

Step 7: Place the support for the upper pipe



Step 7: The support for the upper pipe must be placed on the vertical column. The support must be secured with locking pins (\emptyset 20 x 125 mm) and clips.



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Step 8: Place the connecting rod



Step 8: The connecting rod must be connected to the two supports. The connecting rod must be secured with locking pins (Ø20 x 125 mm) and clips.

Step 9: Placing the System88 blocks on the Pipe Raiser



Step 9: Place a System88 block B on the upper support. To support the lower pipe two System88 blocks C (50-56 inch) or System88 block D (58-60 inch) needs to be placed on the base profile. The System88 blocks must be secured with two locking pins (Ø20 x 125 mm) and clips per block.



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Step 10: Check the Pipe Raiser configuration



Step 10: Check the Pipe Raiser construction before placing the pipes on the Pipe Raiser. The following three points of interest need to be checked.

- 1. The parts of the Pipe Raiser shouldn't show any sign of permanent deformation or signs of rusting through. If those signs are noticed, those parts should be rejected. It is not allowed to use those parts!
- 2. Be sure the right way of assembling is followed and all the parts are secured with locking pins and clips.
- 3. Use the right configuration as is shown in appendix A

Loading of the pipes on the Pipe Raiser

Step 11: Place Anti-Skid layer on the System88 blocks.



Step 11: Place Anti-Skid layer on the System88 blocks. These Anti-Skid layer will reduce the number of tie-downs significantly.



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Step 12: Place the first pipe on the Pipe Raiser.



Step 12: Place the first pipe on the Pipe Raiser. When the two pipes have a different weight, the heaviest pipe must be the lower pipe.

Step 13: Place Anti-Skid layer on the first pipe.



Step 13: Place Anti-Skid layer on the first pipe. These Anti-Skid layer will reduce the number of tie-downs significantly.



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Step 14: Place the second pipe on the Pipe Raiser.

Step 14: Place the second pipe on the Pipe Raiser.

Step 15: Securing the pipes with tie-downs.



Step 15: Securing the pipes with tie-downs. The number of tie-downs is depending of the weight of the pipes.



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Securing the Pipe Raiser to the trailer when no pipes are loaded on the assembly

When the Pipes must be loaded or are unloaded it can occur that the truck has to drive with only the Pipe Raisers on the Trailer. To secure the Pipe Raisers on the trailer the Profile-to-Trailer Connecter can be used.



Instruction for securing the Pipe Raiser with the Profile-to-Trailer Connector

Fasten the Profile-to-Trailer Connector with a pin to the profile, secure the pin with a clip. Hook the other end of the Profile-to-Trailer Connector to the trailer. Only fasten the Profile-to-Trailer Connector and do not tension it. Place the Profile-to-Trailer Connector on the other side of the Pipe Raiser in a similar way, when both sides are fastened the Profile-to-Trailer Connectors can be tensioned and the Pipe Raiser will be Fixated. When applying the Profile-to-Trailer Connector is not possible, contact Dhatec for another suitable solution.



Appendix A: Pipe Raiser configurations Configuration 50" pipes



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Configuration 52" pipes





Configuration 54" pipes





Configuration 56" pipes





Configuration 58" pipes





Configuration 60" pipes





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Appendix B: Anti-skid Rubber Mat

The Anti-skid Rubber Mat for the Pipe Raiser will be delivered as a roll of 10 meters long. The Anti-Skid Rubber Mat must be cut in several pieces and lengths. It should be placed on the following places: underneath the Pipe Raiser, between the pipe and System88 Block C or System88 Block D and between the pipes.

Underneath the Pipe Raiser

Start by cutting out a piece of 2,5 meters and a piece of 1,5 meters. The 2,5 meters Anti-Skid Rubber Mat should be placed underneath the base profile, and the piece of 1,5 meters must be placed perpendicular to the first piece. The Pipe Raiser must be fully supported by the Anti-Skid.



Between the Pipe and System88 Block C or System88 Block D

A piece of 2,5 meters must be cut and placed over System88 Block C and System88 Block D. The Anti-Skid on System88 Block B will already be applied. If it gets damaged it can be replaced with a piece of 20 cm Anti-Skid Rubber Mat.





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Between the pipes

After placing the first pipe, cut a piece of Anti-Skid out of 1.5m and place it over the first pipe. This Anti-Skid mat should be placed between the two pipes before the second pipe is placed. As shown in the Figure below.

