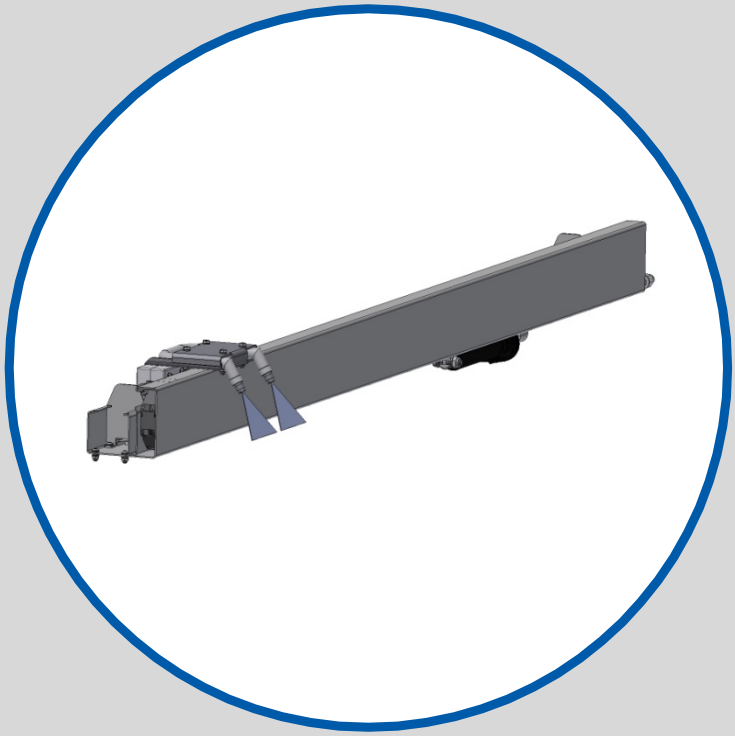
Appendix

Hydrotech Drumfilter HPC

High pressure cleaning system



Revised: 22/04/2015 EN

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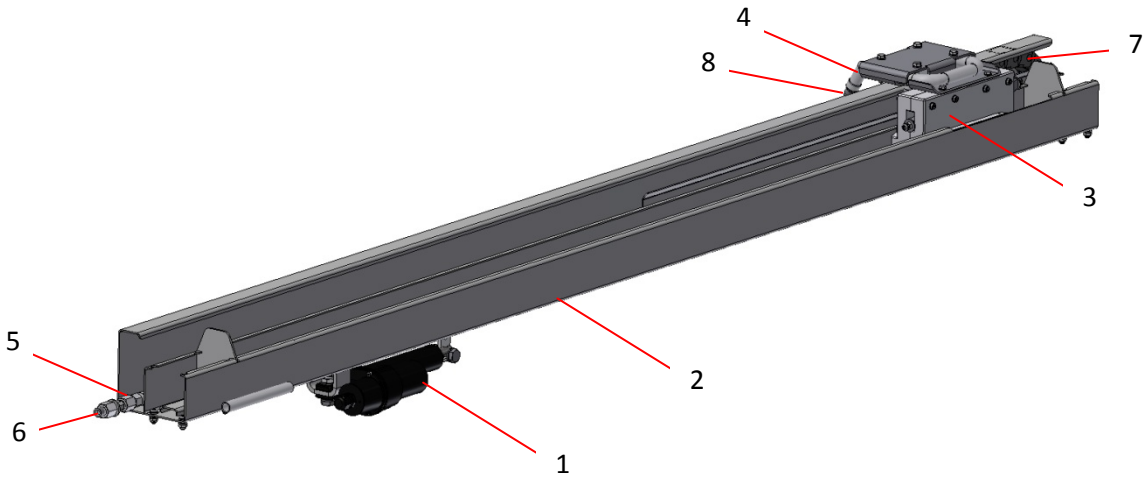
1. INTRODUCTION

This appendix contains instructions for the Hydrotech Drumfilter HPC (High pressure cleaning system.

2. HYDROTECH DRUMFILTER HPC (HIGH PRESSURE CLEANING SYSTEM)

2.1 Overview



1. Electrical actuator
2. Profile beam
3. Slide block
4. Backwash pipe
5. Back pressure valve or solenoid valve (optional)
6. Connection point for high pressure washer
7. High pressure hose
8. Spray nozzle

2.2 High pressure pump

The HPC system shall be connected to a high pressure pump dimensioned to provide 8,2 l/min at 80bar. It is recommended to use a high pressure pump with possibility to adjust the pressure. The high pressure pump is not included in the HPC system as standard but can be supplied upon request.

Remark: Pressures above 80 bar will cause excessive wear on the filter media.

2.3 Functional description

Function:
The HPC system is designed to reduce the need for chemical cleaning of the filter panels. It is a system that operates at maximum 80 bar pressure. Two high pressure backwash nozzles clean the filter media during rotation of the filter drum. The backwash nozzles are assembled on a backwash pipe mounted on a slide block. The slide block is positioned by the means of an electrical actuator. The system is equipped with a back pressure valve or solenoid valve (optional) to prevent flow thru the spray nozzles when the system is in standby (applicable when a pressurized feed system is used). A High pressure pump (optional) can be supplied upon request.

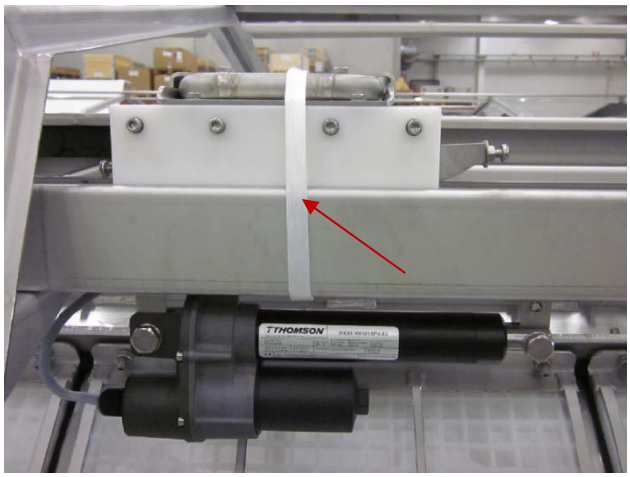
Backwash sequence:
When the HPC system is activated the filter drum starts to rotate. The high pressure pump starts and pressurised water flow thru the spray nozzles via the high pressure hose and back pressure valve. For systems equipped with solenoid valve (optional), the valve shall open prior to the start of the high pressure pump. The spray nozzles clean one section of the filter panels during rotation of the filter drum. When the spray nozzles have cleaned the current filter panel section on the filter drum for one revolution, the electrical actuator moves to its outer position and back to its inner position again. The slide block has now moved to the next filter panel section to clean. When the spray nozzles have cleaned this filter panel section on the filter drum for one revolution, the electrical actuator is activated again. Then this procedure is repeated until the whole drum has been cleaned. The high pressure pump stops followed by the stop of the drum rotation. For systems equipped with solenoid valve (optional) the solenoid valve closes when the pressure in the HPC system has dropped, followed by the stop of the drum rotation.

Remark:
Installation (electrical/mechanical) and use of the included components must follow manufacturers' recommendations and must be performed by authorized personnel. Local regulations must be followed.

2.4 Start up and operation

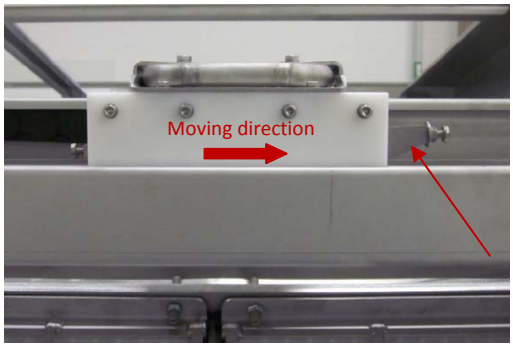
1. Check the equipment for transport damage

2. Remove the transport locking device

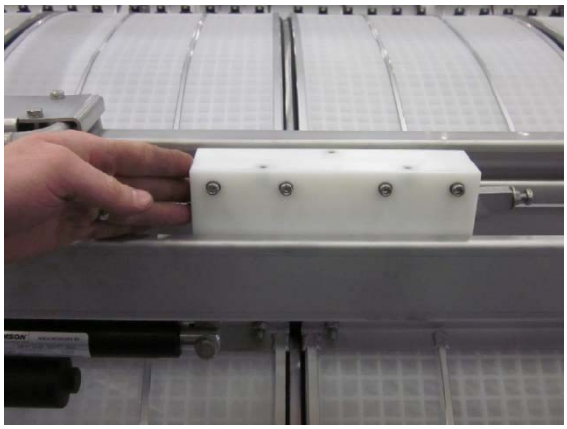
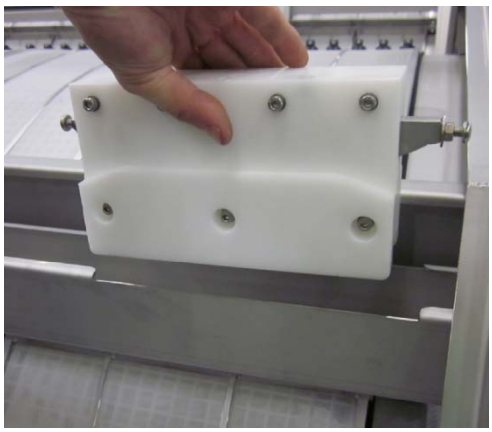


3. Remove the spray bar bracket from the slide block.

4. Make sure that the balance weight inside the slide block is positioned towards the service recess in the profile beam.

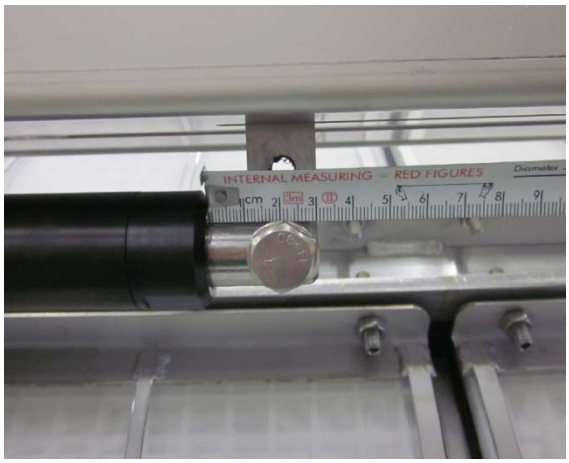


5. Push the slide block to the service recess and lift out the slid block from the profile beam.

6. Measure the inner position of the actuator.

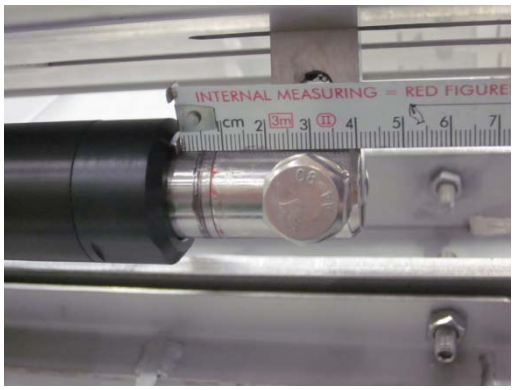
   The below example shows the measurement 30mm.



   Remark: The actuator have a maximum stroke of 100mm and it is important that the actuator stroke is adjusted so that it can never be stalled in the inner/outer end positions since this will cause damage to the actuator.

7. Make a rough adjustment on the actuator stroke so that it is set to approx. 80mm with its inner position 10mm from the inner end stop and 10mm from the outer end stop.

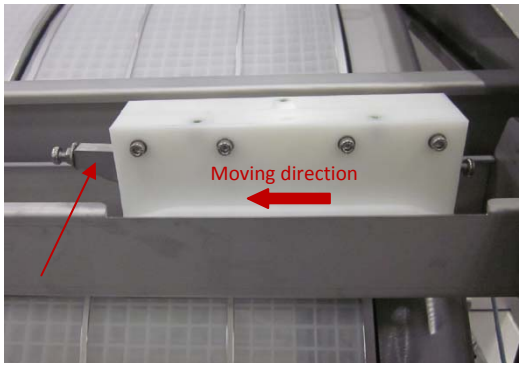
   The below example shows the measurements 40mm (inner position) and 120mm (outer position).



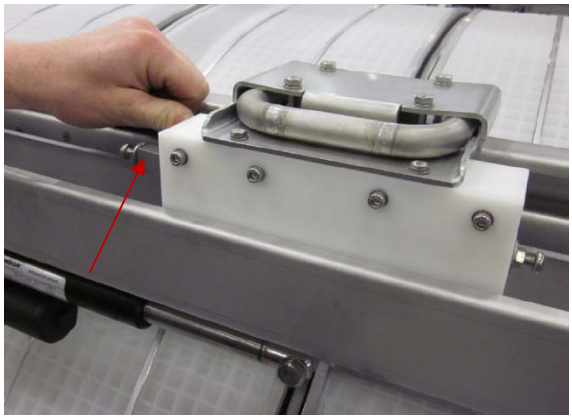
8. Make the fine adjustment on the actuator stroke so that it is set to 97-99mm without any stalling in the inner/outer end positions.

   The below example shows the measurements 31mm (inner position) and 129mm (outer position).


9. Place the slide block in the profile beam and redirect the balance weight so that it is positioned towards the spray bar bracket. Push the slide block back to the spray bar bracket and assemble the spray bar on the slide block.



10. Push the slide block “backwards” until it stops. Note the balance weight position.



11. Run the actuator sequence and make sure that the slide block moves properly and that the stroke is 97-99mm without stalling in the inner/outer end positions according to above instructions. If the stroke is less than 97mm make adjustments to reach the recommended values.

    Remark: If the stroke is less than 97mm it can cause damage to the equipment

12. Connect the high pressure pump and run the full high pressure cleaning sequence with tap water.

3. MAINTENANCE SCHEDULE

Check/Action	Maintenance interval
Visually inspect the system for worn out or damaged parts	Twice a month or another interval based on experience from the application in question.
Check for foreign objects interfering with the drive rail/slide block	Twice a month or another interval based on experience from the application in question.
Check the nozzles with respect to clogging. When cleaning is required remove the nozzle tip from the spray bar and use compressed air or a plastic brush to clean the nozzle tip. Never use a wire brush, metal pins or similar as these can damage the nozzle	Twice a month or another interval based on experience from the application in question.

User guide in original

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