3” Spin Klin™

Automatic disc filtration system for low to medium flow rates in a compact footprint

**features:**
- Micron-precise depth filtration of solids
- Innovative disc technology captures and retains large amounts of solids
- Long-term operation with minimal maintenance
- Easy and simple operation
- Short automatic backwash with regulated water volume for a small water footprint
- Permanently eliminates the need to replace filter media
- Compact design

<table>
<thead>
<tr>
<th>inlet/outlet</th>
<th>flow rate</th>
<th>filtration degrees</th>
<th>max. operating pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 - 200 mm (6” - 8”)</td>
<td>90 - 200 m³/h (400 - 880 gpm)</td>
<td>55 – 400 micron</td>
<td>10 bar (145 psi)</td>
</tr>
</tbody>
</table>
How the 3” Spin Klin™ Systems Work

General
The Arkal 3” Spin Klin™ series are modular, all polymeric, automatic disc filters with a patented self-cleaning backwash mechanism. The 3” Spin Klin™ systems range in flow rates from 90 m³/h (396 gpm) to 200 m³/h (880 gpm) with filtration degrees ranging from 55 - 400 micron. Inlet/Outlet from 160 - 200 mm (6” - 8”) diameter.

The Filtration Process
The discs are stacked on the Spin Klin™ spine and assembled according to pre-determined water filtration requirements. During filtration, the discs are compressed by means of a pre-loaded spring and differential pressure, forcing the water to pass through the grooved disc surface, thus trapping the solids.

The Backwash Process
Activated by a pre-determined time command or differential pressure, the system enters backwash mode. The inlet valve port shuts as the drain valve port opens. During the backwash process, pressure is released and the spine’s piston elevates, releasing the compression on the discs. Tangential jets of filtered water are then forced through the nozzles positioned along the spine. At this stage the discs spin freely, loosening the trapped solids which are then flushed out. During the flushing cycle each filter pod is backwashed sequentially, while the other pods continue to supply filtered water downstream. When a pod begins the backwash cycle, the system valves automatically reverse the flow in the pod, allowing filtered downstream pressurized water to backwash the filter.

<table>
<thead>
<tr>
<th>Construction materials</th>
<th>Filter Housing &amp; Lid</th>
<th>RPA (Reinforce Polyamide) or RPP (Reinforce Polypropylene)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc elements</td>
<td>PP (Polypropylene) or PA (Polyamide)</td>
<td></td>
</tr>
<tr>
<td>Backwash valves</td>
<td>RPA (Reinforce Polyamide) or RPP (Reinforce Polypropylene)</td>
<td></td>
</tr>
<tr>
<td>Manifolds</td>
<td>PP (Polypropylene)</td>
<td></td>
</tr>
<tr>
<td>Seals</td>
<td>NBR or EPDM, (Viton optional)</td>
<td></td>
</tr>
<tr>
<td>Control Tubing</td>
<td>PE or PA</td>
<td></td>
</tr>
</tbody>
</table>

Disc material type availability according to filtration degree:

<table>
<thead>
<tr>
<th>Color Code</th>
<th>Gray</th>
<th>Purple</th>
<th>Green</th>
<th>Brown</th>
<th>Black</th>
<th>Red</th>
<th>Yellow</th>
<th>Blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micron</td>
<td>20</td>
<td>40</td>
<td>55</td>
<td>70</td>
<td>100</td>
<td>130</td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>PP Disc</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP</td>
</tr>
<tr>
<td>PA (Nylon) Disc</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP, PA</td>
<td>PP</td>
</tr>
</tbody>
</table>
### General Data

<table>
<thead>
<tr>
<th>Filter Type</th>
<th>3 unit battery</th>
<th>4 unit battery</th>
<th>5 unit battery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. working pressure*</td>
<td>10 bar [145 psi]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. backwash pressure</td>
<td>2.8 bar [40.6 psi]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum recommended flow rate</td>
<td>90 m³/h [396 gpm]</td>
<td>120 m³/h [527 gpm]</td>
<td>150 m³/h [660 gpm]</td>
</tr>
<tr>
<td>Filtration volume</td>
<td>6,888 cm³ [420 in³]</td>
<td>9,184 cm³ [560 in³]</td>
<td>11,480 cm³ [700 in³]</td>
</tr>
<tr>
<td>Filtration area</td>
<td>5,280 cm² [818 in²]</td>
<td>7,044 cm² [1,092 in²]</td>
<td>8,800 cm² [1,364 in²]</td>
</tr>
<tr>
<td>Inlet/Outlet diameter</td>
<td>150 mm [6&quot;]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. working temperature*</td>
<td>60°C [140°F]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry weight standard</td>
<td>95 kg [209 lb]</td>
<td>115 kg [253 lb]</td>
<td>135 kg [297 lb]</td>
</tr>
</tbody>
</table>

*Maximum operating pressure and temperature are interdependent parameters and are given for general reference only. Please consult your authorized Amiad representative for the application specific parameters.

### Backwash Data

<table>
<thead>
<tr>
<th></th>
<th>3 unit battery</th>
<th>4 unit battery</th>
<th>5 unit battery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve drain port</td>
<td>80 mm [3&quot;]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flushing time</td>
<td>30 seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. flow for backwash</td>
<td>20 m³/h [88 gpm]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Typical Installation Drawing

![Typical Installation Drawing](image)

### Dimensions

<table>
<thead>
<tr>
<th></th>
<th>3 unit battery</th>
<th>4 unit battery</th>
<th>5 unit battery</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Length</td>
<td>942 mm [37 3/32&quot;]</td>
<td>1192 mm [46 15/16&quot;]</td>
<td>1442 mm [56 25/32&quot;]</td>
</tr>
<tr>
<td>B Width</td>
<td></td>
<td>853 mm [33 19/32&quot;]</td>
<td></td>
</tr>
<tr>
<td>C Height</td>
<td></td>
<td>1287 mm [50 21/32&quot;]</td>
<td></td>
</tr>
</tbody>
</table>

### Head Loss Graphs (in clean water)

![Head Loss Graphs](image)

*head loss is based on a 130 micron disc

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1. **Note:** All Flanges According to ANSI, ISO, BS PN10.
2. **ELENA:** 1634M0604VU9
3. **4*3” S.K. FILTERS “SAPPHIRE”**
4. **PLASTIC BATTERY**
5. **ASSEMBLY DRAWING**
6. **25/10/2010 NIKOLAY ZALI OLEG**
7. **ELENA Changing construction for manifold 12/02/2014 02**
8. **111003-000044 DRW. NO:**
9. **Backup Drawing:**
10. **Rev. 02**
11. **Scale: NO Amiad Water Systems Ltd. reserves the rights to make changes.**
12. **All copy rights reserved to Amiad Water Systems Ltd.”**
13. **Path-T: \ DRAWINGS ARKAL CATALOG-SOLID \ BATTERIES \ 3 inch Filters \ Twin \ AGRICALTURE \ Sapphire \ 1634M06___9**
14. **SUBJECT/PROJECT:**
15. **PART NAME/TITLE:**
16. **CAT. NO:**
17. **MATERIAL:**
18. **DRAWN:**
19. **CHECKED:**
20. **APPROVED:**
21. **B.O.M.:**
22. **CONFIDENTIAL PROPERTY INFORMATION.”**
The Americas

USA
Amiad USA Inc.
Web: www.amiadusa.com | E-mail: infousa@amiad.com

Brazil
Amiad Sistemas de Água Ltda.
E-mail: infobrasil@amiad.com

Mexico
Amiad México SA DE CV,
Web: www.amiad.es | E-mail: infomexico@amiad.com
Irrigation office: E-mail: infomexico-irr@amiad.com

Asia

India
Amiad Filtration India Pvt Limited
Web: www.amiadindia.com | E-mail: info-india@amiad.com

China
Amiad China (Yixing Taixing Environetc Co., Ltd.)
Web: www.amiad.com.cn | E-mail: marketing@taixing.cc

South-East Asia
Filtration & Control Systems Pte. Ltd.
E-mail: info-singapore@amiad.com

Australia

Amiad Australia Pty Ltd.
Web: www.amiad.com.au | E-mail: sales@amiad.com

Europe

Amiad Water Systems Europe SAS
E-mail: info@amiad-europe.com

German branch office
E-mail: info@amiad.de

United Kingdom
Amiad Water Systems UK Limited
E-mail: info-uk@amiad.com

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