

Part number:

**HYDROMA**

HYDRAULICKÉ SYSTÉMY

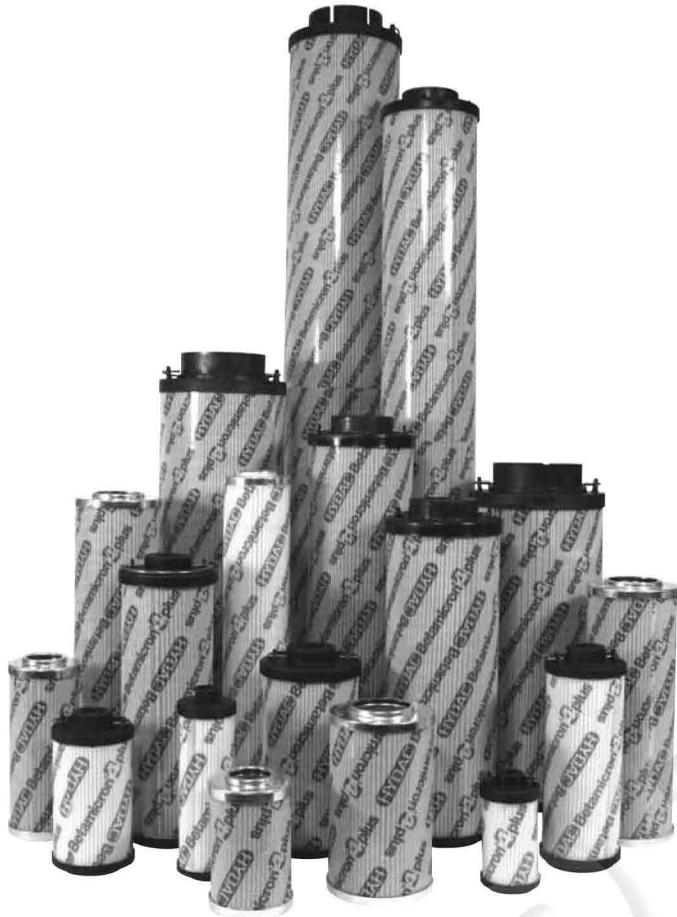
**HIDROMA  
SYSTEMS**

UKŁADY HYDRAULICZNE

**HYDROMA**

ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

## Betamicron® Series High Pressure and Return Filter Elements



### Optimized Two/Three Layer Filter Mesh Pack Structure with NEW Glass Fibers

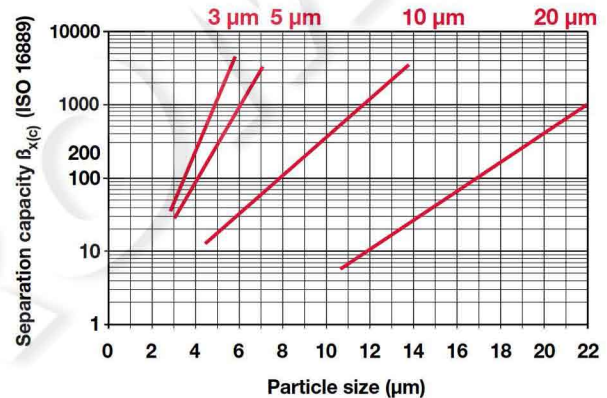
New filter medias were developed for the new Betamicron®4 filter elements. Due to the two or three stage filter media structures, highest contamination retention, highest Beta efficiencies and stability, and favorable  $\Delta p/Q$  characteristics are achieved.



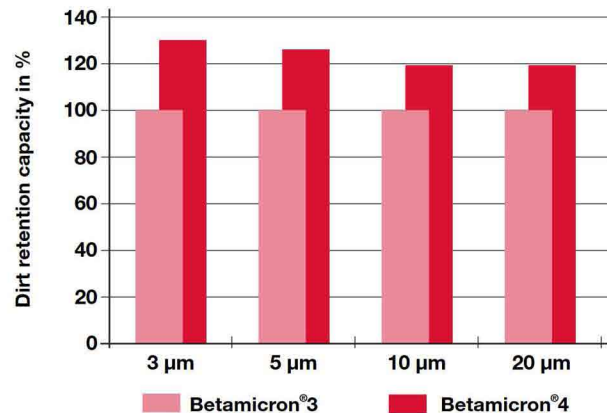
**Longer element service life and energy cost savings due to particularly low pressure losses across the element**



**Better component protection and longer system service life due to improved Beta efficiency (with filter ratings 3 and 5  $\mu m$ )**



**Longer element service life and lower operating costs due to increase in the contamination retention capacity by up to 30% globally**



### Good. Better. Best Betamicron®4.

With the previous Betamicron®3 technology you were always on the leading edge of element performance:

High levels of fluid cleanliness over the long term for hydraulic and lubrication systems have always been achieved by Betamicron®3.

The new generation Betamicron®4 leaps ahead in system performance:

**Excellent performance data resulting in reduced Life Cycle Cost.**

### The Key Innovations of Generation 4 are

- Optimized mesh pack structure with newly developed filter media, support, and transition layers
- Improved performance data (optimized Beta efficiency, contamination retention,  $\Delta p/Q$  characteristics, and Beta stability)
- Patented process for longitudinal seam bonding increases seam integrity
- Element plastic components have been made conductive to aid in static discharge
- Use of spiral lock seam support tubes lowers element weight
- Element outer wraps are made of plastic (polyester) to reduce environmental impact and improve fatigue resistance

### Technical Data

- Collapse burst pressure
- Low pressure differential: 290 psid (17 bar) - BN4HC
- High pressure differential: 3045 psid (210 bar) - BH4HC
- Filter element ratings
- 3, 5, 10, 20  $\mu m$

# Filter Elements

## Element Outer Wrap Protection

The star-shaped pleated filter mesh pack is enclosed by a stable outer wrap made of plastic (polyester). This outer wrap distributes the incoming fluid evenly over the mesh pack (diffusor). Moreover, the fluid does not flow directly through the mesh pack, since this outer wrap dampens the flow forces and protects the element from pulsating flows. This element has an extremely high flow fatigue strength. The mesh pack is naturally protected against mechanical damage, e.g. when elements are being installed. Outer wrap allows customer logos to be imprinted, and used as the advertising medium for OEMs, thus ensuring a higher percent capture of spare parts business. At the same time, the user can rely on the fact that he will always get a genuine spare part.



**High operational reliability, because the sensitive filter mesh pack is protected against direct fluid flow forces and pulsations**



**Ease of handling, because the compact element is protected against damage in transit and during its installation**



**Protection against product piracy through “brand labeling”**

## Patented Longitudinal Seam Bonding Method

Due to an innovative bonding process of the longitudinal seam, a tight homogeneous integration of the open filter mesh pack ends is ensured, even in the case of varying loads. A particle transition from the dirt to the clean side is reliably prevented as well as down stream media migration.



**High operational reliability, even under dynamic loads, due to tight longitudinal seam bonding.**

## Zinc Free Structure

To prevent the formation of zinc soap, which occurs mainly when water-containing fluids (HFA/HFC) and bio-oils are used and come in contact with zinc coated components, no zinc-containing components are employed.



**High operational reliability, because elements cannot be blocked as a result of the formation of zinc soap**



**Savings in storage costs, because the filter elements can be used universally with all fluids.**

## Reduction of Life Cycle Costs Life Cycle Cost – what does this mean?

Today the term **Life Cycle Cost** is a dominating topic among suppliers, machine builders and end users.

Life Cycle Costs are the total costs of a system, machine or component from procurement through to its scrapping.

The reduction of Life Cycle Cost is one of the **mega trends** in mechanical engineering. The **objective** is to communicate the **total cost** reduction impacts on Life Cycle Costs.

This creates a better basis for the customer to make the best buying decision.

Large end users are setting this trend.

Leading car makers, for example, require truthful information about the Life Cycle Costs and derived variables – e.g. costs for machine tools over 10 years, for presses up to 30 years. Decisions on new investments by machine manufacturers are based on the machine price and the Life Cycle Cost calculations offered.

This changed and holistic understanding of cost by leading end customers naturally results in new challenges for machine manufacturers. System concepts, subsystems and components used must also stand the test with regard to their influence on the Life Cycle Cost.

## Betamicon®4 elements are the winners in the “Life Cycle Cost Contest”

Cost	Minimized					
	Optimized Mesh Pack Structure	Optimized Longitudinal Seam	Zinc-free Structure	Spiral Lock Seam Support Tubes	Protective Outer Wrap	Discharge Capability
Energy	•					
Personnel	•	•			•	•
Logistics			•	•		
Failure	•	•	•		•	•
Production	•	•				•
Repair	•	•	•		•	•
Maintenance	•	•	•		•	•
Spare Parts	•	•	•		•	•
Waste Disposal				•		

# Filter Elements

## “D” Pressure Elements Model Code

	<b>0060</b>	<b>D</b>	<b>010</b>	<b>BN4HC / V</b>
<b>Size</b> _____				
0030, 0035, 0055, 0060, 0075, <b>0095</b> , 0110, <b>0140</b> , 0160, 0240, 0280, <b>0300</b> , 0330, 0450, <b>0500</b> , <b>0650</b> , 0660, <b>0900</b> , <b>0990</b> , 1320, 1500				
<b>Type</b> _____				
D				
<b>Filtration Rating (micron)</b> _____				
3, 5, 10, 20 = BH4HC, BN/HC, <b>V</b> 25, <b>50</b> , <b>74</b> , <b>100</b> , <b>149</b> , <b>200</b> = W/HC				
<b>Element Media</b> _____				
BH4HC = Betamicon®-H element ( <i>High Collapse</i> ) <b>V</b> = Metal fiber	BN4HC = Betamicon®-N element ( <i>Low Collapse</i> ) W/HC = Wire mesh			
<b>Supplementary Details</b> _____				
(omit) = standard				
SO103H= Modification of BN/HC element for phosphate ester				
SO155H= Modification of BH/HC element for phosphate ester				
<b>V</b> = Fluoroelastomer (FPM) seals				
<b>W</b> = Element suitable for oil-water emulsions (HFA), water polymer solutions (HFC) ( <i>only for V and W elements</i> )				

## “DN” Pressure Elements Model Code

	<b>0063</b>	<b>DN</b>	<b>010</b>	<b>BH/HC /</b>
<b>Size</b> _____				
0040, 0063, 0100, 0160, 0250, 0400				
<b>Type</b> _____				
DN				
<b>Filtration Rating (micron)</b> _____				
3, <b>6</b> , 10, <b>25</b> = BH/HC, BN/HC				
<b>Element Media</b> _____				
BH/HC = Betamicon®-H element ( <i>High Collapse</i> ) BN/HC = Betamicon®-N element ( <i>Low Collapse</i> )				
<b>Supplementary Details</b> _____				
(omit) = standard				
<b>V</b> = Fluoroelastomer (FPM) seals				
<i>Model Codes Containing RED are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability</i>				

## Hydraulic Data

### Permissible $\Delta P$ across element

- Betamicon®-H (BH/HC): 3045 psid (210 bar)
- Betamicon®-N (BN/HC): 290 psid (20 bar)
- Metal fiber (V): 3045 psid (210 bar)
- Wire mesh (W/HC): 290 psid (20 bar)

### Temperature Range

- -22° to 250°F (-30° to 100°C) (*only possible with NBR seals*)

### Compatibility with Hydraulic Media

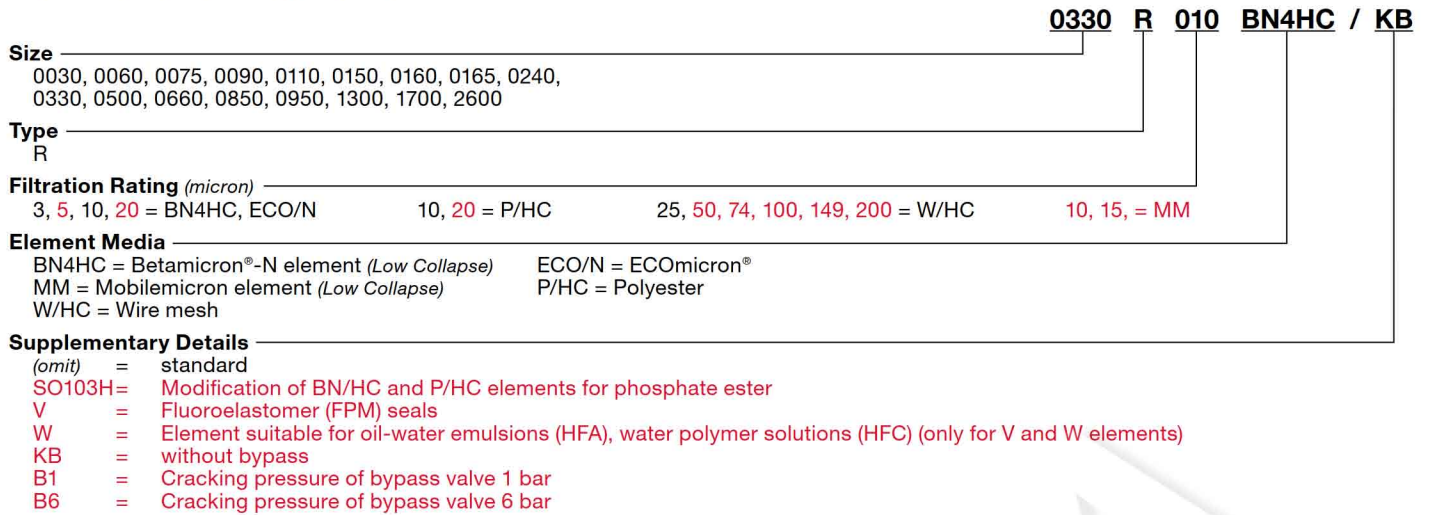
- Suitable for use with mineral oils, lubrication oils, non-flammable fluids, synthetic and rapidly biodegradable oils.  
For use with water, please contact HYDAC

### Flow Fatigue Stability to ISO 3724

- High fatigue resistance due to solid filter material supports on both sides and high inherent stability of filter elements

# Filter Elements

## “R” Return Elements Model Code



## “RN” Return Elements Model Code



## “RK” RKM Elements Model Code



## Hydraulic Data

### Permissible $\Delta P$ across element

- Betamicon®-N (BN/HC): 290 psid (20 bar)
- Paper (P/HC): 145 psid (10 bar)
- Wire mesh (W/HC): 290 psid (20 bar)
- Betamicon®/Aquamicron® (BN/AM): 145 psid (10 bar)
- Aquamicron® (AM): 145 psid (10 bar)
- ECOmicron® (ECO/N): 145 psid (10 bar)
- Mobilemicron (MM/RK): 145 psid (10 bar)

### Temperature Range

- -22° to 250°F (-30° to 100°C) (only possible with NBR seals)

### Compatibility with Hydraulic Media

- Suitable for use with mineral oils, lubrication oils, non-flammable fluids, synthetic and rapidly biodegradable oils.

### Flow Fatigue Stability to ISO 3724

- High fatigue resistance due to solid filter media supports on upstream and downstream sides and high inherent stability of filter layers.

### Cracking Pressure of Bypass Valve (..R.. only)

- $\Delta P = 3 \text{ bar} + 0.5 \text{ bar}$

### Graphs of Bypass Valve (..R.. only)

- The bypass valve graphs apply to mineral oils with a density of 0.86 kg/dm<sup>3</sup>. The differential pressure of the valves changes proportionally to the density.

