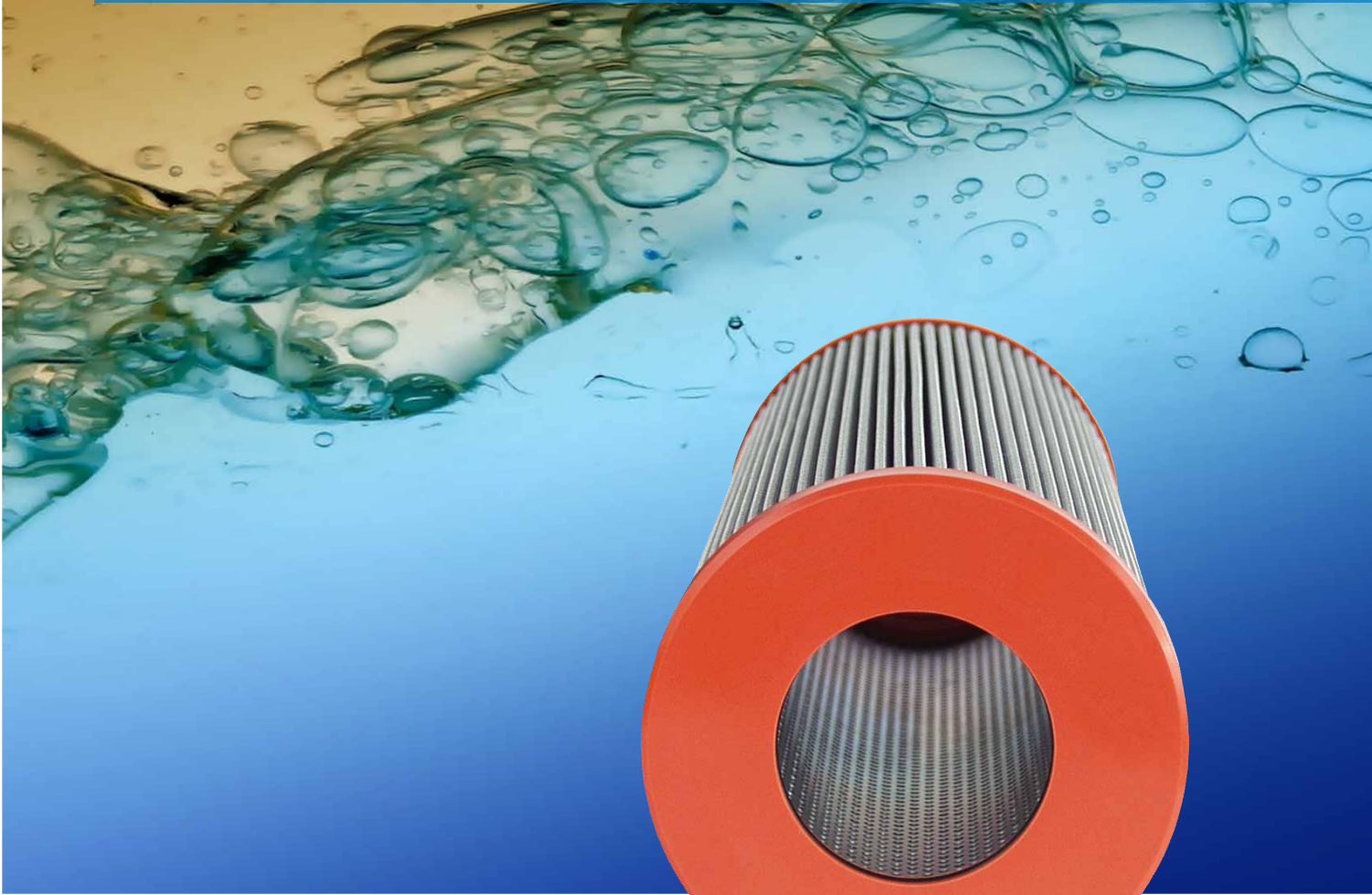


WATERSORP  
Internormen Product Line



# Filter Elements for Water Absorption and particle retention

**EATON**

*Powering Business Worldwide*



**INTER  
NORMEN**

# Filter Elements for Water Absorption and Particle Retention

## Features:

- Absorb free and emulsified water from oil
- Filter particulate contamination at the same time
- Reduce oil aging and deadditivation of fluids

## Watersorp Applications

- Hydraulic oils
- Lubrication oils
- Ester oils
- Poly-alpha olefines
- Vegetable oils
- Diesel oils

Watersorp elements can be used in off-line filters (NF), stationary filter units (US), stationary filter units with plate heat exchanger (USP), and mobile filter units (UM).

| Nominal Size         | Element Size  |
|----------------------|---------------|
| NF 250               | 1x 01.WS.250  |
| NF 631               | 1x 01.WS.630  |
| NF 1000              | 1x 01.WS.1000 |
| US 20, UM 20, USP 20 | 1x 01.WS.250  |
| US 40, UM 40, USP 41 | 1x 01.WS.630  |
| US 80, UM 80, USP 81 | 1x 01.WS.630  |
| US 161, USP 161      | 1x 01.WS.630  |
| US 320, USP 320      | 1x 01.WS.1000 |

We recommend that you use the Watersorp elements only off-line – that is how the highest possible efficiency is guaranteed.

## Calculating the number of Watersorp elements needed (at 139 sus):

$$\frac{\frac{\text{system volume (liters)}}{100\%} \times \text{H}_2\text{O}\%}{\text{water absorption capacity (liters)}} = \text{quantity of elements}$$

## WVG Filter Media

### Features:

- WVG is a combination of fine filter glass fiber media with a special water absorption fleece media
- Designed with a six layer fold bellow guaranteeing water retention rates according to ISO 16889
- Guaranteed dirt holding capacity
- Guaranteed collapse pressure resistance



NF 1000



US 40



UM 40

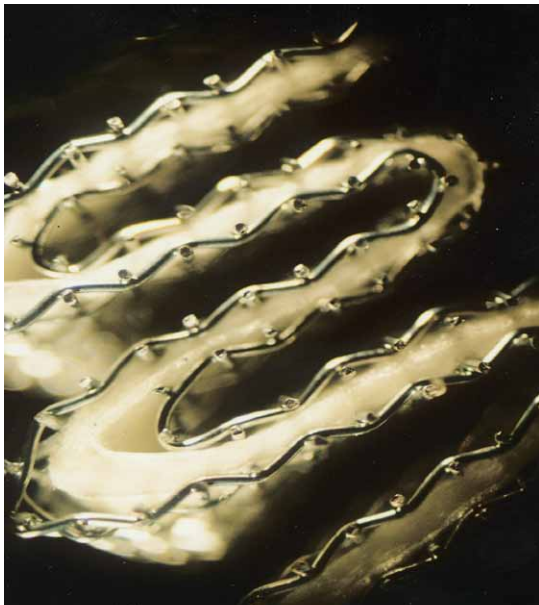


UM 80

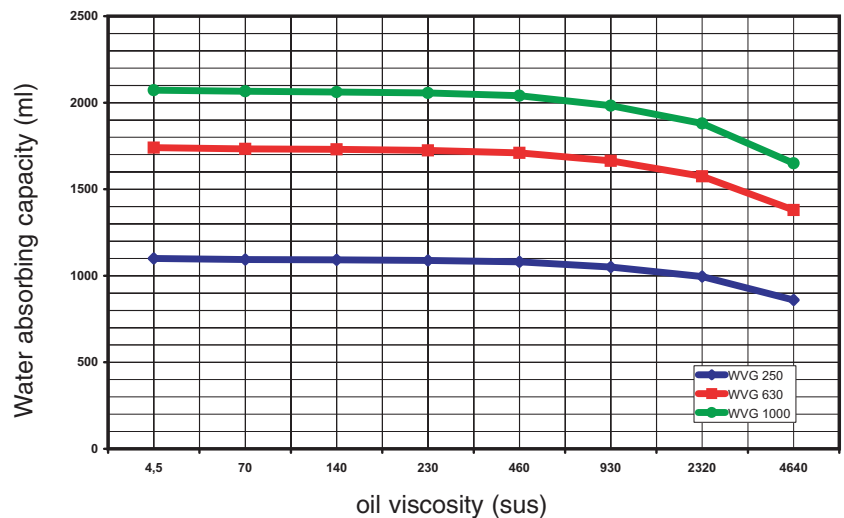
# Watersorp Filter Elements for Water Absorption

## Technical Data:

| Elements  | 01.WSNR250.3WVG   | 01.WSNR630.3WVG   | 01.WSNR1000.3WVG  | 01.WSNR250.10WVG  | 01.WSNR630.10WVG  | 01.WSNR1000.10WVG   |
|---|---|---|---|---|---|---|
| <b>Filter surface:</b>  | 1139 in <sup>2</sup> (7350 cm <sup>2</sup> )                | 1946.6 in <sup>2</sup> (12,560 cm <sup>2</sup> )              | 2913 in <sup>2</sup> (18,800 cm <sup>2</sup> )              | 1139 in <sup>2</sup> (7350 cm <sup>2</sup> )                | 1946.6 in <sup>2</sup> (12,560 cm <sup>2</sup> )              | 2913 in <sup>2</sup> (18,800 cm <sup>2</sup> )              |
| <b>Water absorbing capacity</b><br>at $\Delta p = 87$ psi (6 bar):  | 1,045 ml/in <sup>2</sup> (.162 ml/cm <sup>2</sup> )         | 1,045 ml/in <sup>2</sup> (.162 ml/cm <sup>2</sup> )           | 1,045 ml/in <sup>2</sup> (.162 ml/cm <sup>2</sup> )         | 1,045 ml/in <sup>2</sup> (.162 ml/cm <sup>2</sup> )         | 1,045 ml/in <sup>2</sup> (.162 ml/cm <sup>2</sup> )           | 1,045 ml/in <sup>2</sup> (.162 ml/cm <sup>2</sup> )         |
| <b>Retention rate</b><br>(according to ISO 16889):  | $\beta$ 5(c) > 200  | $\beta$ 5(c) > 200  | $\beta$ 5(c) > 200  | $\beta$ 10(c) > 200   | $\beta$ 10(c) > 200   | $\beta$ 10(c) > 200   |
| <b>Dirt-holding capacity</b><br>at $\Delta p_{\text{end}} = 87$ psi (6 bar)<br>(according to ISO 16889):  | 45 mg/in <sup>2</sup> (7 mg/cm <sup>2</sup> )               | 45 mg/in <sup>2</sup> (7 mg/cm <sup>2</sup> )                 | 45 mg/in <sup>2</sup> (7 mg/cm <sup>2</sup> )               | 55.5 mg/in <sup>2</sup> (8.6 mg/cm <sup>2</sup> )           | 55.5 mg/in <sup>2</sup> (8.6 mg/cm <sup>2</sup> )             | 55.5 mg/in <sup>2</sup> (8.6 mg/cm <sup>2</sup> )           |
| <b>Collapse pressure resistance</b><br>(according to ISO 2941) $\Delta p_{\text{max}}$ :  | 145 psi (10 bar)  | 145 psi (10 bar)  | 145 psi (10 bar)  | 145 psi (10 bar)  | 145 psi (10 bar)  | 145 psi (10 bar)  |
| <b>Spec. water holding capacity</b><br>bei/ at $\Delta p = 29$ psi:<br>bei/ at $\Delta p = 58$ psi:<br>bei/ at $\Delta p = 87$ psi:<br>(Test dust: ISO-MTD) | 0.16 gal (615 ml)<br>0.24 gal (925 ml)<br>0.3 gal (1190 ml) | 0.23 gal (875 ml)<br>0.35 gal (1320 ml)<br>0.45 gal (1700 ml) | 0.3 gal (1045 ml)<br>0.4 gal (1575 ml)<br>0.5 gal (2025 ml) | 0.16 gal (615 ml)<br>0.24 gal (925 ml)<br>0.3 gal (1190 ml) | 0.23 gal (875 ml)<br>0.35 gal (1320 ml)<br>0.45 gal (1700 ml) | 0.3 gal (1045 ml)<br>0.4 gal (1575 ml)<br>0.5 gal (2025 ml) |
| <b>Spec. dirt-holding capacity</b><br>bei/ at $\Delta p = 29$ psi:<br>bei/ at $\Delta p = 58$ psi:<br>bei/ at $\Delta p = 87$ psi:<br>(Test dust: ISO-MTD)  | 0.07 lb (34 g)<br>0.09 lb (43 g)<br>0.11 lb (51 g)          | 0.11 lb (49 g)<br>0.13 lb (61 g)<br>0.16 lb (74 g)            | 0.13 lb (58 g)<br>0.16 lb (73 g)<br>0.19 lb (88 g)          | 0.09 lb (42 g)<br>0.11 lb (52 g)<br>0.14 lb (63 g)          | 0.13 lb (60 g)<br>0.17 lb (75 g)<br>0.2 lb (90 g)             | 0.16 lb (71 g)<br>0.2 lb (89 g)<br>0.24 lb (108 g)          |



### Water absorbing capacity subject to oil viscosity



### IFPM/IFPS - Fluid Purifier Systems for Advanced Fluid Management:

Eaton's Internormen IFPM/IFPS fluid purifier systems are designed for viscosity ranges from transformer oils to heavy gear lube oils (ISO 460). They can remove free, emulsified, and dissolved water, free and dissolved gases, and particulate contamination down to 1 $\mu$ m. The fineness of the filter - ranging from very fine to coarse - is selected according to the kind of contamination. The IFPM/IFPS systems are available in four different standard sizes from 5.3 gal/min to 26.4 gal/min (20 to 100 l/min), mobile (IFPM) or stationary (IFPS).



# Additional Solutions From Eaton's Internormen Product Line



## Water-in-Oil Monitoring Solutions

Mobile and stationary water sensor units (WSPS 01/05, WSH 01, and WSTM 01) enable you to perform:

- Monitoring and diagnostics of hydraulic and lubrication fluids
- Measurements of saturated water in oil
- Temperature measurements
- Periodic or continuous, in-line and off-line measurements



## BFD - Desiccant Breather Filters

- Reduce the influence of humidity and prevent it from entering the system or a tank
- Remove particulate contamination
- Extend fluid life
- Reduce downtime of machinery
- Reduce system component repairs and replacements

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