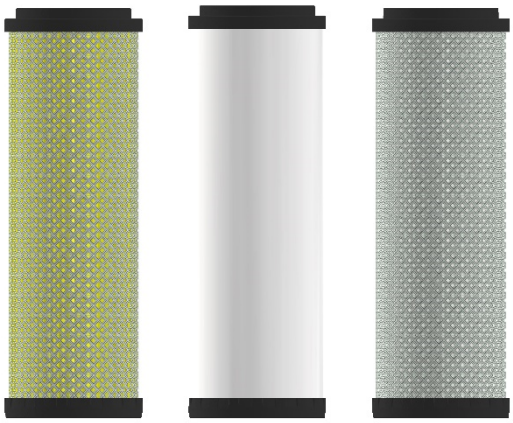
# Replacement Element
# VF / MF / SMF / AK

## MARK old type MBP / MBM / MBS / MBA



## Description

***ultrafilter*** replacement filter elements have been developed for high efficient removal of solid particles, oil aerosols, water, hydrocarbons, vapours and odours from compressed air.

## Filter Element Rating According ISO 8573-1

| Filtration grade | Solid particles class | Water class | Oil class |
|---|---|---|---|
| MBP/VF | 6 | / | / |
| MBM/MF | 2 | / | 2 |
| MBS/SMF | 2 | / | 1 |
| MBA/AK | 2* | / | 0/1 |

Validated according to ISO12500-1, ISO12500-2 and ISO12500-3

* Valid if "SMF" filter cartridge is installed upstream

## Technical Specification

| | MBP/VF | MBM/MF[5] | MBS/SMF[5] | MBA/AK[5] |
|---|---|---|---|---|
| Operating temperature | 1,5 - 65 °C/ 35 - 149 °F | 1,5 - 65 °C/ 35 - 149 °F | 1,5 - 65 °C/ 35 - 149 °F | 1,5 - 45 °C/ 35 - 113 °F |
| Operating pressure | 0 - 16 barg/ 0 - 232 psi | 0 - 16 barg/ 0 - 232 psi | 0 - 16 barg/ 0 - 232 psi | 0 - 16 barg/ 0 - 232 psi |
| Differential pressure (dry) | 10 mbar/ 0,145 psi | 50 mbar/ 0,725 psi | 80 mbar/ 1,160 psi | 60 mbar/ 0,870 psi |
| Differential pressure (wet) | 20 mbar/ 0,290 psi | 120 mbar/ 1,740 psi | 190 mbar/ 2,756 psi | / |
| Particle retention (nominal) | 99,99% (3 µm) | 99,9999% (0,1 µm) | 99,9999% (0,01 µm) | / |
| Particle retention rate ISO[3] | 95 % | 99,98 % | 99,9994 % | / |
| Residual oil content[4] | / | < 0,1mg/m³ | < 0,01mg/m³ | < 0,005mg/m³ |
| Flow Direction | INSIDE to OUTSIDE | INSIDE to OUTSIDE | INSIDE to OUTSIDE | INSIDE to OUTSIDE |
| Capacity (ISO12500-2)[5] | / | / | / | 20 min |

[3]Tested according to ISO12500-3, 1bar(a), nominal flow, VF 03/10 (MBP), MPPS-(5µm) ; MF & SMF 03/10 (MBM & MBS), MPPS-(0,3µm)
[4]Tested according to ISO12500-1, MF & SMF 03/10 (MBM & MBS), Oil aerosol viscosity 32mm²/s, inlet concentration 10mg/m³
[5]Tested according to ISO12500-2, AK 03/10 (MBA), tested with n-Hexane, test concentration 100mg/kg, 80% Saturation
[6]Cross reference ultrafilter to MARK (old) filtration grades: VF = MBP, MF = MBM, SMF = MBS, AK = MBA

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ULTRAFILTER
THE FILTRATION MANUFACTURER
Kronsbein ultrafilter ®

## Materials

| | MBP/VF | MBM/MF | MBS/SMF | MBA/AK |
|---|---|---|---|---|
| Filter media | Acrylic fibers, cellulose | Borosilicate micro fibers | Borosilicate micro fibers | Borosilicate micro fibers |
| Protection media | Polyester fleece | Polyester fleece | Polyester fleece | Polyester fleece |
| Drainage media | / | Polyester needle felt | Polyester needle felt | / |
| Adsorption media | / | / | / | Activated carbon granulate |
| Support (inner-outer) | Stainless steel 1.4301 | Stainless steel 1.4301 | Stainless steel 1.4301 | Stainless steel 1.4301 |
| Bonding | Polyurethane | Polyurethane | Polyurethane | Polyurethane |
| Endcaps | PA6 with 30% glass fibers | PA6 with 30% glass fibers | PA6 with 30% glass fibers | PA6 with 30% glass fibers |
| Sealing | NBR | NBR | NBR | NBR |

## Size

| Model | Diameter [mm] | Height [mm] | Flow Capacity [Nm³/h] | Flow Capacity [scfm] | Fits into filter housing |
|---|---|---|---|---|---|
| XX 10 _ _ | 51 | 60 | 60 | 35 | 10 |
| XX 13 _ _ | 51 | 70 | 78 | 46 | 13 |
| XX 20 _ _ | 51 | 140 | 120 | 71 | 20 |
| XX 33 _ _ | 75 | 125 | 198 | 117 | 33 |
| XX 60 _ _ | 75 | 225 | 335 | 197 | 60 |
| XX 85 _ _ | 75 | 325 | 510 | 300 | 85 |
| XX 130 _ _ | 75 | 505 | 780 | 459 | 130 |
| XX 170 _ _ | 90 | 510 | 996 | 586 | 170 |
| XX 250 _ _ | 90 | 760 | 1500 | 883 | 250 |
| XX 400 _ _ | 140 | 750 | 2400 | 1413 | 400 |

XX = Filtration grade **ultrafilter** filter element type VF, MF, SMF or AK
_ _ = Filtration grade MARK old filter element type MBP, MBM, MBS or MBA
Exemple: **ultrafilter** filter elemment type SMF 130 MBS (is alternative for MARK old filterelement type MBS 130)

## Correction Factors

To calculate the correct capacity of a given filter based on actual operating conditions, multiply the nominal flow capacity by the appropriate correction factor(s).
CORRECTED CAPACITY = NOMINAL FLOW CAPACITY x $C_{OP}$

### Operatin Pressure

| [bar] | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [psi] | 29 | 44 | 58 | 72 | 87 | 100 | 115 | 130 | 145 | 160 | 174 | 189 | 203 | 218 | 232 |
| $C_{OP}$ | 0,38 | 0,5 | 0,63 | 0,75 | 0,88 | 1 | 1,13 | 1,25 | 1,38 | 1,50 | 1,63 | 1,75 | 1,88 | 2,00 | 2,13 |

## Maintenance

MBP/VF, MBM/MF, MBS/SMF - Replace filter element at least once per year or when pressure drop reaches 350mbar.

MBA/AK - Replace filter element at least every 6 months.



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