

# CUNO™ Metal Screen Filters

Cleanable Metallic Filter Series

CUNO™ Metal Screen and Super Metal Screen Series filter cartridges, formerly known as CUNO™ Micro-Screen, are made from stainless steel wire cloth and have perfectly controlled particle removal efficiency.

Metal Screen and Super Metal Screen series filter cartridges are standard available with the following particle retention ratings:

- CUNO™ Super Metal Screen Series: 3, 5, 10, 20 and 40 microns
- CUNO™ Metal Screen Series: 45, 50, 75, 100, 200, 280, 360, 450, 700 and 1000 microns

The Super Metal Screen series filter cartridges incorporate a metal filter media made up of very fine fibres assembled in a three dimensional structure. This unique structure is produced by sintering and calendaring the metal media to produce a highly resistant pure metal bond at each fibre-to-fibre contact point (see figure 1). This produces a depth media. Super Metal Screen filter cartridges offer a high porosity and particle removable efficiency at very low absolute micron ratings. Each Super Metal Screen unit also includes a wire mesh sintered to either side of the filter media to support and strengthen it.

The Metal Screen series filter cartridges comprise a woven metal Metal Screen media made up of stainless steel wires of a controlled size. The Metal Screen nominal rating is determined by both the weaving process, the wire spacing and the wire diameter used (see figure 2).

Metal Screen and Super Metal Screen series filter cartridges have been especially developed by 3M Purification for filtration of fluids with a wide variety of characteristics, including high viscosity, high temperature, high purity and corrosive properties.

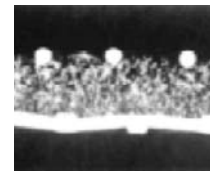


Figure 1: Cross-section of CUNO™ Super Metal Screen Filter Media

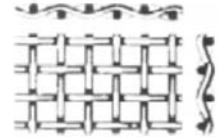


Figure 2: Uniform CUNO™ Metal Screen Series Weave

## Characteristics and performance data

- Comprehensive range of standard filter ratings and configurations
- Standard configurations are available with short lead times and guaranteed prices.
- No fibre migration - even at high differential pressures
- Designed and qualified for high temperature service up to 450 °C
- Compatibility with a wide range of process fluids
- Withstands high pressure differentials across the cartridge enabling the filtration of high viscosity fluids
- Constant particle removal efficiency
- Cleanable (by user) and fully recyclable
- Laboratory tested and inspected
- Industry standard format that can be used in a wide range of vessel types and interchangeable with other cartridges types in the same vessel.

## Applications

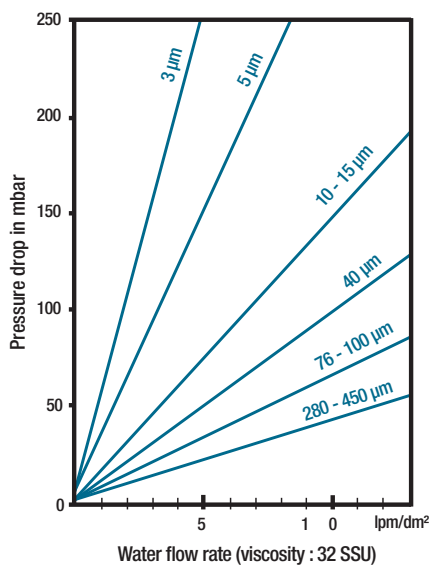
Among the applications afforded by the excellent performances of CUNO™ Metal Screen and Super Metal Screen cartridges are:

- filtration of fuel products
- removal and recovery of catalysts
- filtration of pharmaceuticals, cosmetics and food products
- gel retention (using CUNO™ Super Metal Screen filter cartridges)
- gas purification
- hydraulic system filtration



## Standard CUNO™ Metal Screen and Super Metal Screen Filter Cartridges

Specifications	
Outside diameter	67 mm
Lengths	248 mm (9 ¾") and 496 mm (19 ½")
Format availability	- Industry standard Double Open Ended (DOE) format - Nitrile (Buna N) flat gaskets supplied as standard - High chemical resistance solid PTFE flat gaskets are available separately (as a customer fit option)
Filtration Area	5 dm <sup>2</sup> per 248 mm (9 ¾") module
Materials	
Structural Materials	- CUNO™ Metal Screen: 316L stainless steel throughout - CUNO™ Super Metal Screen: 316L stainless steel throughout
Gaskets	Standard: nitrile (Buna N) Solid PTFE available as a "Customer Fit" option
Service Conditions	
Maximum Operating temperature (with Nitrile Gaskets)	90 °C
Maximum Operating temperature (with PTFE gaskets)	230 °C
Maximum Differential Pressure	Up to 14 bar g depending on the cartridge specific type



### Special Configurations

Metal Screen and Super Metal Screen series filter cartridges can also be configured for special applications.

Special parameters can include:

- Special diameters and lengths.
- Higher differential pressures than standard.
- Special materials including Hastelloy and Inconel or other
- Special end connections

In the 100 years as a filter manufacturer, 3M Purification, formerly called CUNO, has also developed an assortment of special filter housings, duplex assemblies and units designed to particular construction codes for many industrial activities such as aeronautics, nuclear power, pharmaceuticals, chemicals and food processing.

Please ask your local 3M Purification representative for our wide range of possibilities for your specific application.

### Quality Control

All Metal Screen and Super Metal Screen filter cartridges are subject to rigorous quality control during production and prior to shipment.

Super Metal Screen filter cartridges undergo integrity testing to verify their pore ratings.

Cartridges are delivered with a Certificate Of Conformity to ISO 10204 – 2.2 as standard. Other quality certifications are available upon request.

Please ask your 3M Purification representative for further information.

### Cartridge Cleaning

Metal Screen and Super Metal Screen series filter cartridges can be cleaned by the operator using a variety of tried and tested methods, including back flushing, chemical cleaning and ultrasonic cleaning. For further information please contact your local 3M Purification representative.

## Cartridge Characteristics

### 1. CUNO™ Super Metal Screen Series (stainless steel 316L)

Grade	Absolute micron rating (µm)	Initial bubble point* (mbar)	Dirt holding capacity** (mg/cm²)
0003	3	12.3	6.4
0005	5	7.6	5.4
0010	10	3.7	7.5
0020	20	1.8	12.4
0040	40	0.9	25.9

\* Initial bubble point: determined as per ISO standard 4003.

\*\* Dirt holding capacity: determined by the multi pass test (with  $\Delta P = 8$  times initial  $\Delta P$ ).

### 2. CUNO™ Metal Screen Series (stainless steel 316L)

Grade	Nominal micron rating (µm)	Absolute micron rating (µm)
0045	36	36 - 45
0050	40	56 - 63
0100	63	100 - 112
0150	170	240
0200	212	300
0280	250	350
0360	355	500
0450	450	640
0700	710	1000
1000	1000	1400

## Housings

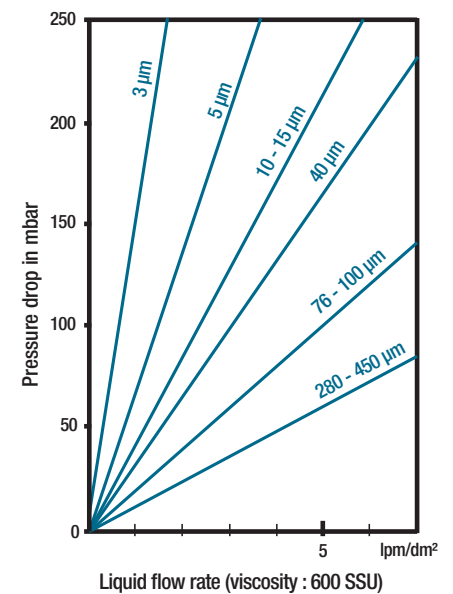
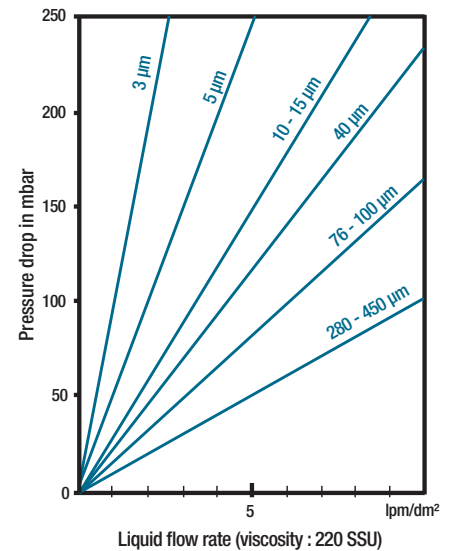
With 100 years experience as a filter manufacturer, 3M Purification has also developed an assortment of vessels, both standards and specials, designed for ease of use and full compliance with all applicable safety codes and construction standards for many and varied industries. These include:

- Nuclear
- Bio/Pharmaceutical
- Food Processing
- Oil & Gas
- Paints & Resins

Please ask your local 3M Purification representative for further information about our full range of vessels.

## CUNO™ Metal Screen Series filter cartridge configurator

Cartridge	Format	Length	Connection	Material	Gasket	Grade
<b>MS</b> = CUNO™ Metal Screen	L = plain	<b>10</b> = 9 ¾" <b>20</b> = 19 ½"	<b>D</b> = D.O.E. (double open end)	<b>6</b> = 316 L stainless steel	<b>A</b> = NB nitrile buna <b>Z</b> = PTFE	<b>0005</b> (Super Metal Screen) <b>0010</b> (Super Metal Screen) <b>0020</b> (Super Metal Screen) <b>0040</b> (Super Metal Screen) <b>0045</b> (Metal Screen) <b>0050</b> (Metal Screen) <b>0100</b> (Metal Screen) <b>0150</b> (Metal Screen) <b>0200</b> (Metal Screen) <b>0280</b> (Metal Screen) <b>0360</b> (Metal Screen) <b>0450</b> (Metal Screen) <b>0700</b> (Metal Screen) <b>1000</b> (Metal Screen)



## CUNO™ Metal Screen Standard Range Part Numbers

Cartridge Format	Length	Connection	Material	Nitrile Gasket	Grade	Previous SKU (for reference only)	New SKU
MS L 1 D 6 A	0003	FD000034005	FD000131892/A1061000				
MS L 2 D 6 A	0003	FD000034039	FD000135554/A1061005				
MS L 1 D 6 A	0005	FD000000147	FD000131132/A1061001				
MS L 2 D 6 A	0005	FD000034047	FD000135562/A1061006				
MS L 1 D 6 A	0010	FD000034013	FD000132957/A1061002				
MS L 2 D 6 A	0010	FD000034054	FD000132692/A1061007				
MS L 1 D 6 A	0020	FD000034211	FD000135570/A1061407				
MS L 2 D 6 A	0020	FD000034062	FD000131975/A1061009				
MS L 1 D 6 A	0040	FD000034096	FD000133419/A1061015				
MS L 2 D 6 A	0040	FD000034104	FD000131991/A1061016				
MS L 1 D 6 A	0045	FD000034286	FD000131967/A1063105				
MS L 2 D 6 A	0045	FD000034393	FD000134136/A1063205				
MS L 1 D 6 A	0050	FD000034385	FD000130332/A1063124				
MS L 2 D 6 A	0050	FD000034476	FD000132916/A1063224				
MS L 1 D 6 A	0100	FD000034302	FD000130274/A1063107				
MS L 2 D 6 A	0100	FD000099123	FD000135612/A1063207				
MS L 1 D 6 A	0150	FD000034310	FD000130266/A1063110				
MS L 2 D 6 A	0150	FD000034401	FD000135588/A1063210				
MS L 1 D 6 A	0200	FD000034369	FD000130324/A1063118				
MS L 2 D 6 A	0200	FD000034443	FD000132031/A1063214				
MS L 1 D 6 A	0280	FD000034328	FD000130308/A1063111				
MS L 2 D 6 A	0280	FD000034419	FD000130688/A1063211				
MS L 1 D 6 A	0360	FD000034377	FD000133021/A1063120				
MS L 2 D 6 A	0360	FD000034468	FD000135596/A1063219				
MS L 1 D 6 A	0450	FD000034336	FD000130316/A1063112				
MS L 2 D 6 A	0450	FD000034427	FD000130340/A1063212				
MS L 1 D 6 A	0700	FD000034351	FD000131926/A1063114				
MS L 2 D 6 A	0700	FD000034450	FD000135604/A1063218				
MS L 1 D 6 A	1000	FD000034344	FD000134102/A1063113				
MS L 2 D 6 A	1000	FD000034435	FD000132551/A1063213				

Cartridge Format	Length	Connection	Material	PTFE Gasket	Grade	Previous SKU (for reference only)	New SKU
MS L 1 D 6 Z	0003	FD000115085	FD000132734/A1161000				
MS L 2 D 6 Z	0003	FD000135794	FD000135794/A1161005				
MS L 1 D 6 Z	0005	FD000037826	FD000131355/A1161001				
MS L 2 D 6 Z	0005	FD000135737	FD000135737/A1161006				
MS L 1 D 6 Z	0010	FD000037834	FD000132726/A1161002				
MS L 2 D 6 Z	0010	FD000037859	FD000131223/A1161007				
MS L 1 D 6 Z	0020	FD000037842	FD000132924/A1161004				
MS L 2 D 6 Z	0020	FD000127452	FD000135422/A1161009				
MS L 1 D 6 Z	0040	FD000088977	FD000135745/A1161015				
MS L 2 D 6 Z	0040	FD000037867	FD000131157/A1161016				
MS L 1 D 6 Z	0045	FD000110318	FD000132569/A1163105				
MS L 2 D 6 Z	0045	FD000037990	FD000135729/A1163205				
MS L 1 D 6 Z	0050	FD000037982	FD000131686/A1163124				
MS L 2 D 6 Z	0050	FD000038022	FD000135711/A1163224				
MS L 1 D 6 Z	0100	FD000037909	FD000135430/A1163107				
MS L 2 D 6 Z	0100	FD000135786	FD000135786/A1163207				
MS L 1 D 6 Z	0150	FD000037917	FD000133013/A1163110				
MS L 2 D 6 Z	0150	FD000088803	FD000135703/A1163210				
MS L 1 D 6 Z	0200	FD000037966	FD000135687/A1163118				
MS L 2 D 6 Z	0200	FD000117511	FD000135695/A1163214				
MS L 1 D 6 Z	0280	FD000037925	FD000135679/A1163111				
MS L 2 D 6 Z	0280	FD000135778	FD000135778/A1163211				
MS L 1 D 6 Z	0360	FD000037974	FD000135653/A1163120				
MS L 2 D 6 Z	0360	FD000123535	FD000135661/A1163219				
MS L 1 D 6 Z	0450	FD000037933	FD000135638/A1163112				
MS L 2 D 6 Z	0450	FD000038014	FD000135646/A1163212				
MS L 1 D 6 Z	0700	FD000037958	FD000135620/A1163114				
MS L 2 D 6 Z	0700	FD000135604	FD000135760/A1063218				
MS L 1 D 6 Z	1000	FD000037941	FD000134243/A1163113				
MS L 2 D 6 Z	1000	FD000135752	FD000135752/A1163213				

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