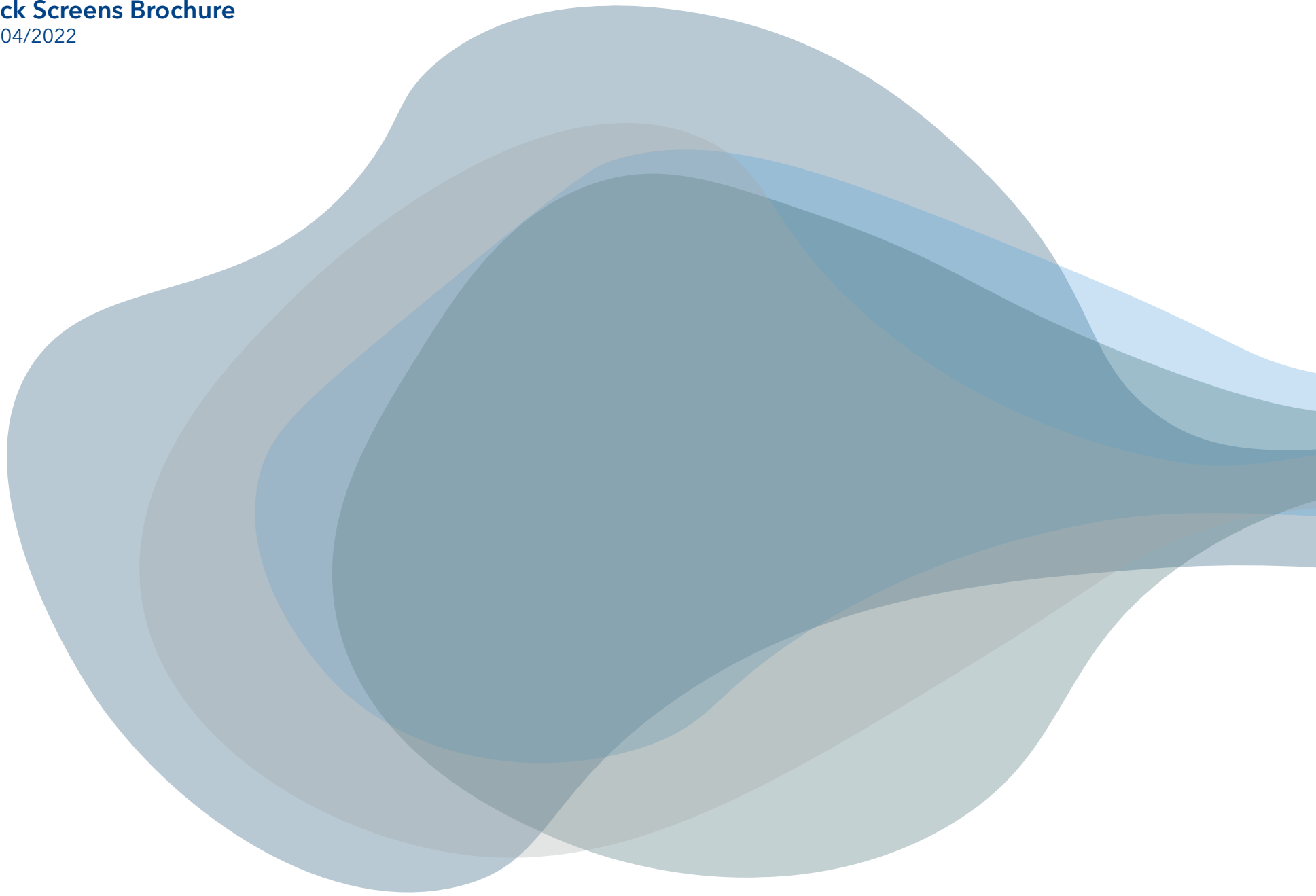


UP

**Sock Screen**  
Property of Ultrapharma BV

# Sock Screens Brochure

21/04/2022



## Table of Contents

1. Introduction .....	4
2. Mesh explained.....	4
3. Pressure drop calculation .....	6
4. Suitable gaskets & Materials.....	8
5. 1in Sock Screen.....	10
6. 1.5in Sock Screen.....	11
7. 2in Sock Screen.....	12
8. 2.5in Sock Screen.....	13
9. 3in Sock Screen.....	14

# Sock Screens Brochure

21/04/2022

## 1. Introduction

Sock screens offer a greater soil collection capacity than standard flat screens. If the capacity of a standard flat in situ filters is not sufficient then the Sock screen is a good alternative. They are available in 150 mm (6in) and 50 mm (2in) lengths.

All of our Sock screens are produced in house at Ultrapharma (The Netherlands). After production they will be chemically cleaned to avoid impurities.

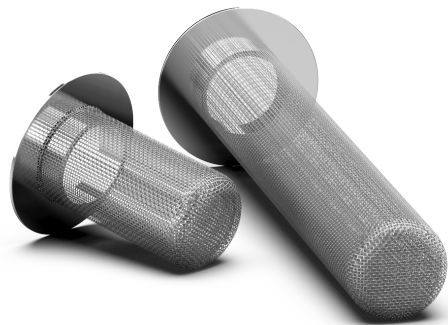
The Sock screen is made of 3.1 certified stainless steel and supplied with:

- Removable elastomeric gasket
- Removable PTFE gasket
- Removable Steam-Flon® gasket

All materials will be supplied with Heat number/ Lot number. [Bonded PTFE or Steam-Flon® on request, a longer delivery time may apply.](#)

### Available Sizes

1in through 3in (TC 50.5 -TC 91)  
DIN32676 A, B, C same TC diameters



## 2. Mesh explained

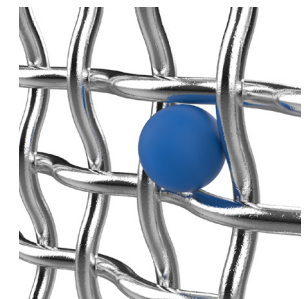
### Available Mesh Sizes

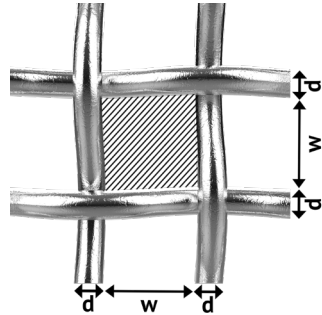
Mesh (wire/inch)	Approx. retention in microns	Wire Ø in mm	Open area in %
16x16	1220µ	0,37	50,7
40x40	415µ	0,22	42,7
60x60	260µ	0,16	30,3
80x80	180µ	0,14	31,4
100x100	142µ	0,11	30.3

[Other Mesh sizes on request, minimum order quantity and a longer delivery time may apply.](#)

### Retention

The nominal retention of a square mesh screen is based on the size of a perfectly spherical ball which then is just retained. In real life, the objects we would like to retain are not perfectly square and the absolute retention might be slightly different. A particle can have many different shapes. For example a hair has a diameter Ø 0,1 mm but the length can be centimeters long. If the hair arrives perpendicular to the screen it might pass a 100 mesh screen. With the single layer screen which we are discussing now it is not an exact science. It is important to take into account the physical shape of the particles anticipated in your system when choosing your mesh sizes.





### Warp, Weft, Aperture & Wire diameter

The length wires are called warp wires, the wires which are weaved into it in width are called weft wires. Do note that with a square weave as shown in the picture, these two are interchangeable.

The space in between two warp or weft wires is called the aperture (w), whereas the wire diameter (d) is the thickness of the wire.

### Mesh Open Area ( $A_0$ )

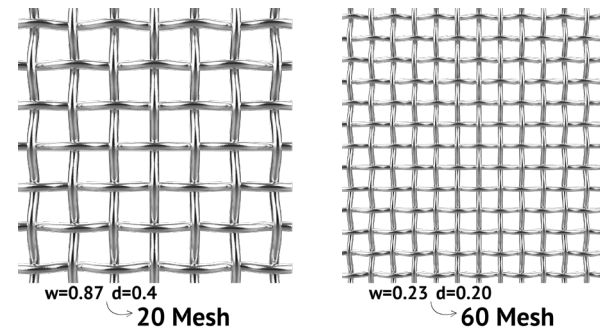
The mesh open area describes the total of all apertures as percentage of the mesh surface.

$$\text{Mesh Open Area } (A_0) = \left( \frac{w}{w + d} \right) \times 100\%$$

### Mesh calculation

The mesh count describes the number of apertures per imperial inch is calculated as follows:

$$\text{Mesh} = \frac{25.4 \text{ mm}}{w \text{ (mm)} + d \text{ (mm)}}$$

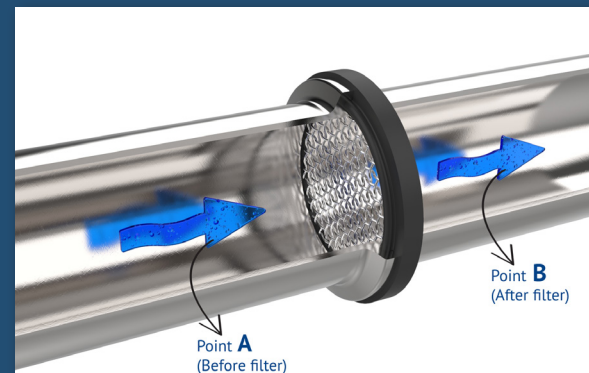
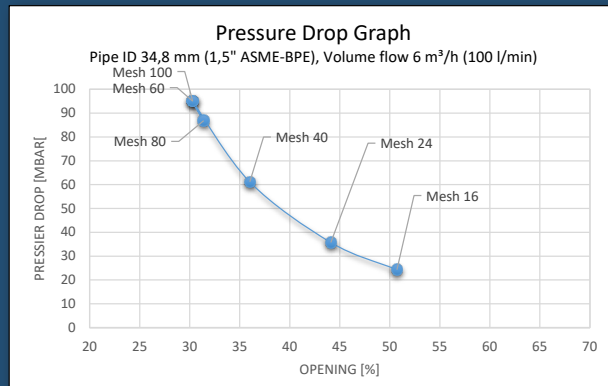


## 3. Pressure drop calculation

### What is Pressure Drop?

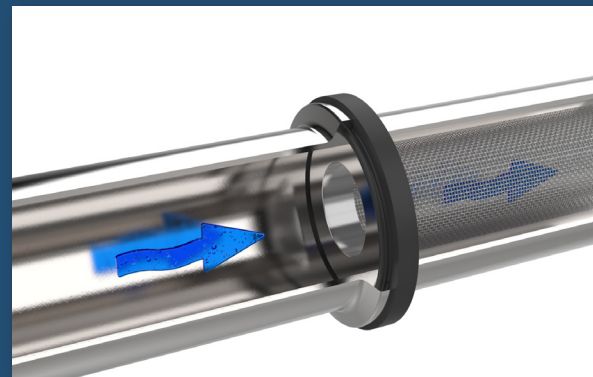
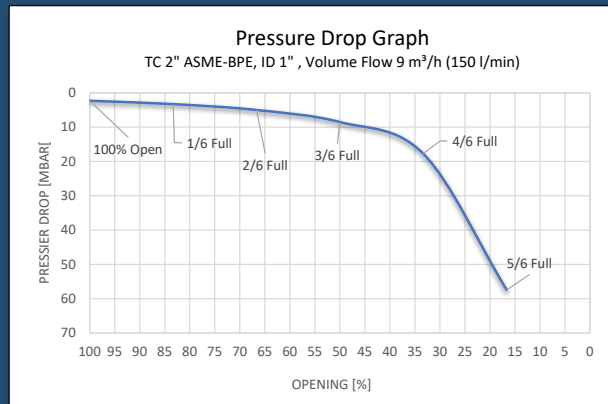
Because filters in your process equipment can be an obstruction to the flow, depending on the Mesh Open Area ( $A_o$ ), they can cause the phenomenon known as pressure drop. Simply put, pressure drop is the difference in total pressure between two points in your system. In our case it describes a change in pressure from point A (before filter) to point B (after filter). With filters, the higher the drop, the greater the impact on performance.

When using a flat screen we can calculate the pressure drop (Mbar) using the Mesh Open Area ( $A_o$ ) and the Volume flow ( $m^3/h$ ) in your system. This pressure drop is calculated with unused screens, you can imagine that when the screen gets clogged the Pressure Drop will rise. As you can see in the table below, less opening means more pressure drop.



## Pressure Drop of a Sock screen

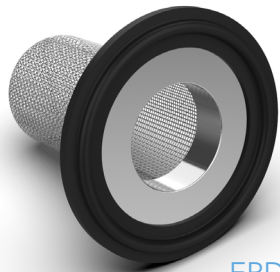
Clogged up screens can have a large impact on the performance of your system, because they can cause high Pressure Drops. This is where Sock screens have the advantage. Sock screens can be partially clogged up, but still don't have a large pressure drop. In the graph you can see the Pressure Drop of a 1.5in, 40 mesh, length 150mm Sock screen when it gets clogged up more and more. You can notice that when it's 5/6 full, the pressure drop is still the same as a flat mesh 40 screen.



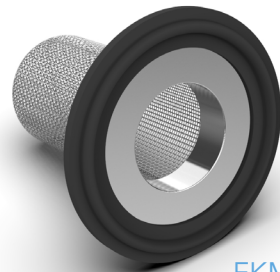
#### 4. Suitable gaskets & Materials

Material	Compound Number	FDA CFR 177.2600	USP Cytotoxicity <87>	USP Class VI-121° <88>	USP Physicochemical testing	Conform ADIF	Temperature Range
EPDM	CMD-1004	✓ 177.2600	✓	✓	✓	✓	-40°/+150° (short +170)
FKM	CMD-1010	✓ 177.2600	✓	✓		✓	-30°/+170°
PL. Silicone	CMD-1012	✓ 177.2600	✓	✓	✓ EP 3.1.9.	✓	-60°/+200°
TFM	CMD-1028	✓ 177.1550	✓	✓	✓	✓	-75°/+260°
Steam-flo <sup>®</sup>	CMD-1019	✓ 177.1550	✓	✓	✓	✓	-195°/+288°

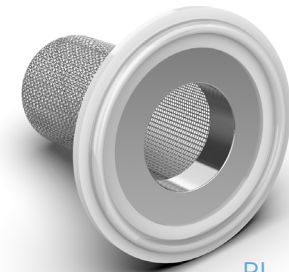




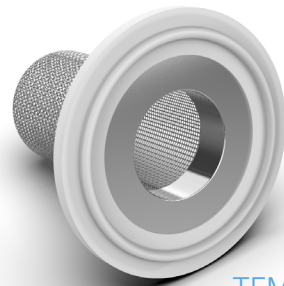
EPDM  
Removable



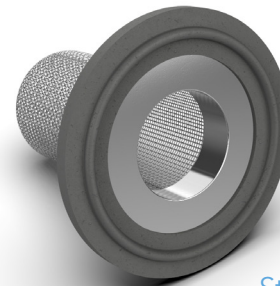
FKM  
Removable



PL. Silicone  
Removable



TFM/PTFE  
Removable



Steam-Flon<sup>®</sup>  
Removable

# Sock Screens Brochure

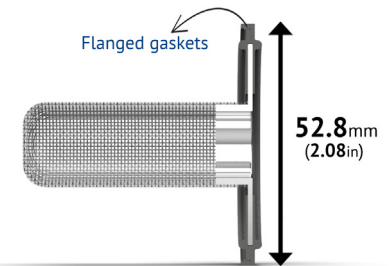
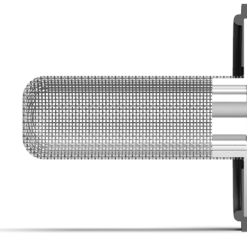
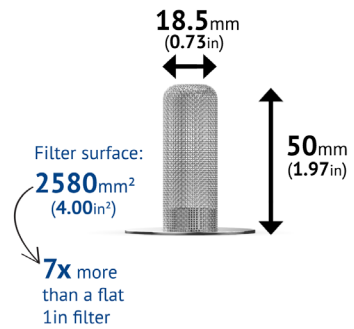
21/04/2022

## 5. 1in Sock Screen

1" Sock Screen available for TC:

ASME 1in  
SMS DN25  
ISO DN25  
DIN DN25

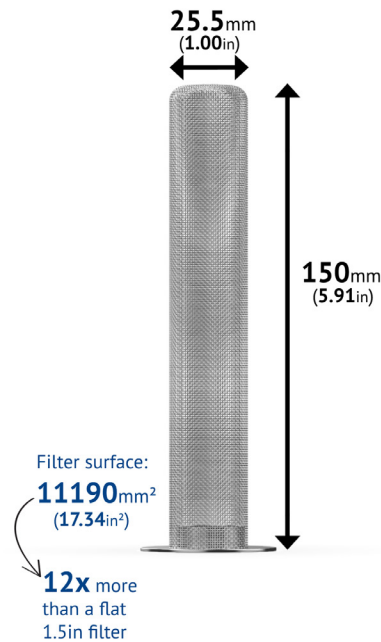
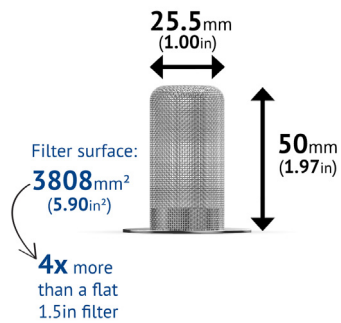
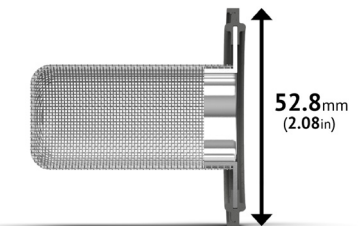
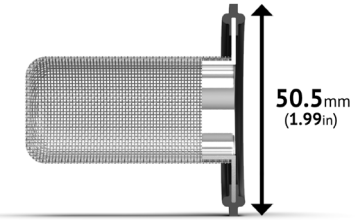
Only available in length 50mm



6. 1.5in Sock Screen

1.5" Sock Screen available for TC:

- ISO DN25
- SMS DN33.7
- DIN DN32
- ASME 1.5in
- SMS DN38
- DIN DN40



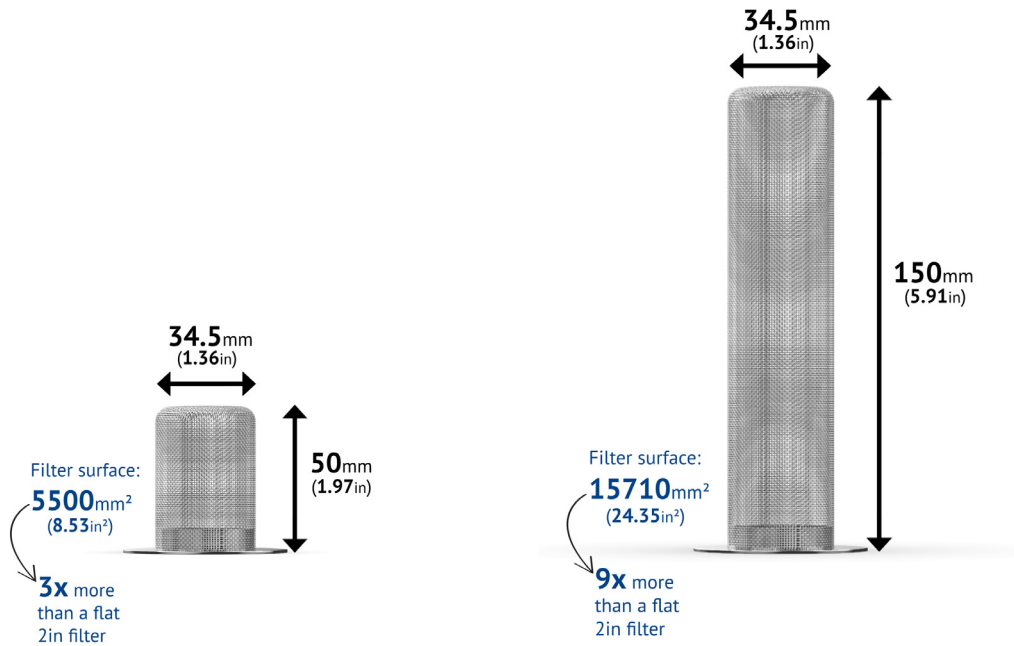
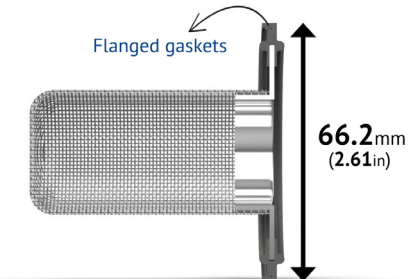
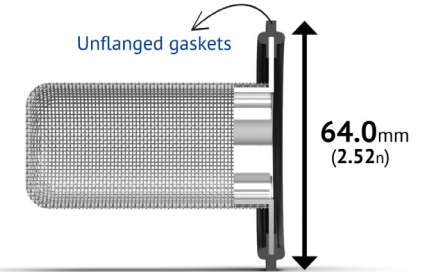
# Sock Screens Brochure

21/04/2022

## 7. 2in Sock Screen

2" Sock Screen available for TC:

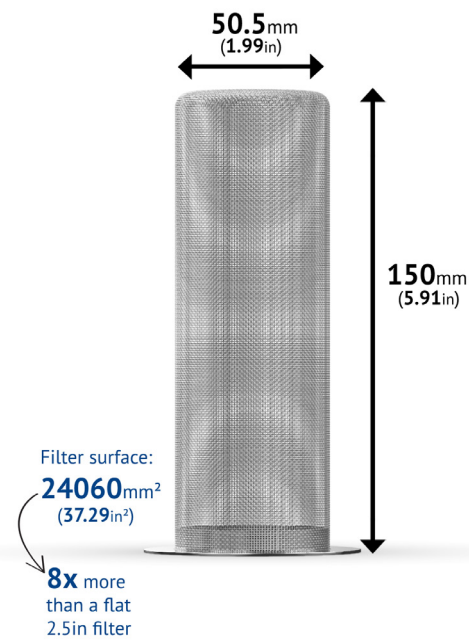
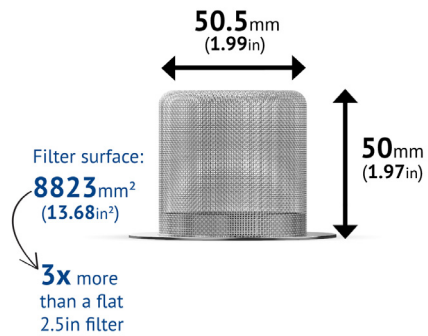
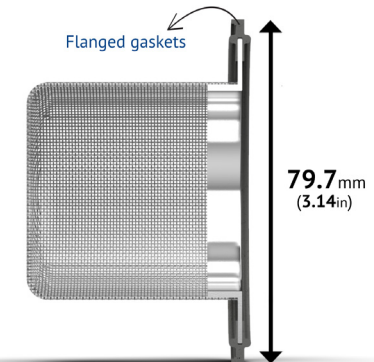
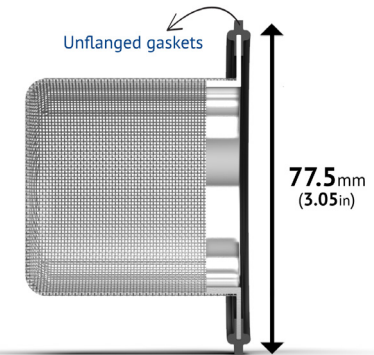
- ISO DN32
- ISO DN40
- ASME 2in
- SMS DN51
- DIN DN50



## 8. 2.5in Sock Screen

2.5" Sock Screen available for TC:

ISO DN50  
ASME 2.5in  
SMS DN63.5



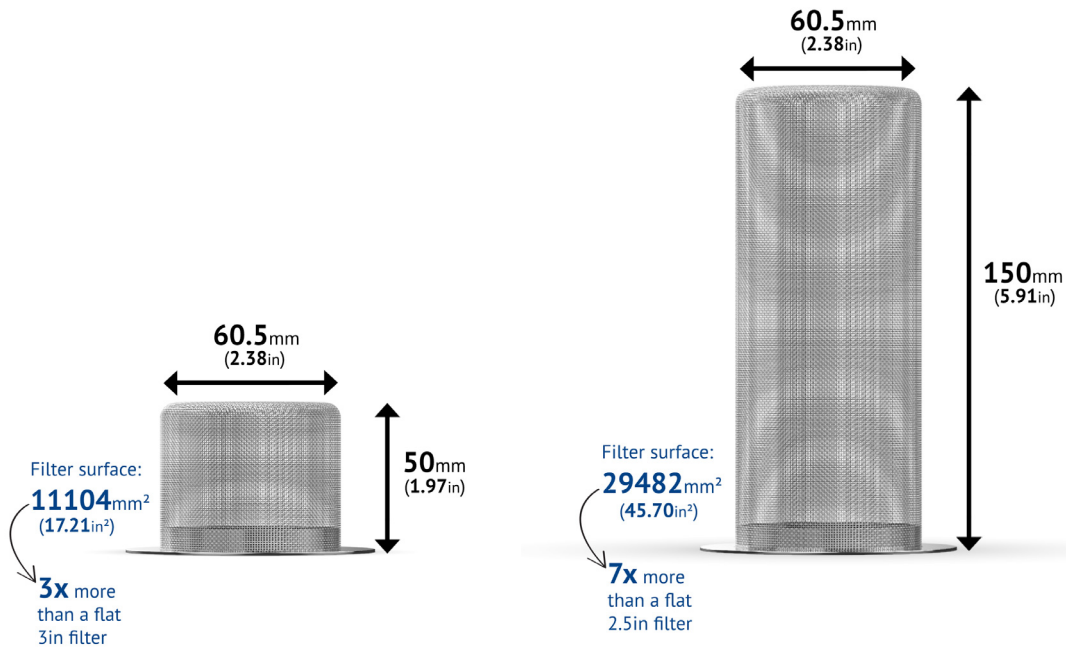
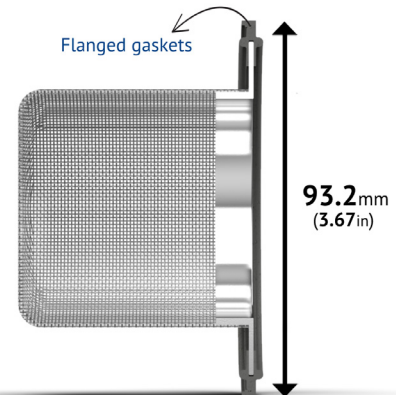
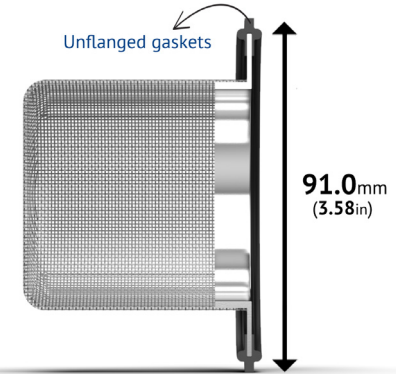
# Sock Screens Brochure

21/04/2022

## 9. 3in Sock Screen

3" Sock Screen available for TC:

DIN DN65  
ISO DN65  
ASME 3in  
SMS DN76.1





 **Ultrapharma**<sup>bv</sup>

De Droogmakerij 12  
1851 LX Heiloo  
The Netherlands  
+31 856 200 900  
[info@ultrapharma.com](mailto:info@ultrapharma.com)

