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# FUNDA Filter / Applications

FUNDA-mentals from Steri: A Total Solution.  
Easy to buy — Easy to use...

## The Exact Solution

With a full range of options and knowledgeable decision support from process experts, our FUNDA filters can be precisely configured to meet specifications. What’s more, you’ll benefit from the flow of design enhancements Steri has been bringing on-line each year.

FUNDA filters are built in the United States by Steri Technologies, the world’s most experienced FUNDA filter manufactures. These filters incorporate important functional enhancements designed by Steri’s engineers, each with a quarter century of hands-on FUNDA experience. With more than 6,000 systems in place worldwide, and hundreds in North America, this technology has an extensive track record of reliable performance across a broad range of applications:

- Activated carbon removal
- Antibiotics separation and other sterile environment processes
- Food industry applications requiring FDA approval, such as edible oil, fatty acids, beer, sugar, cheese and soft drinks
- Fuel and oil additive filtration
- Gold precipitate recovery
- Hazardous materials filtration, including radioactive waste
- Machine oil regeneration
- Photo-chemicals filtration
- Polyol, plasticizer and antioxidant filtration
- Precious metal and other catalyst recovery
- Resin filtration

**Superior design, superlative performance and aggressive support. Easy to buy. Easy to use...**

Steri will earn your business with care and continuity you can count on for the life of your filtration processes.



*7m<sup>2</sup> FUNDA Filter with CIP Manifold*

## Safe, Efficient & Reliable

FUNDA filters are engineered for safe, efficient and reliable operations, even in the most demanding applications involving hazardous materials or sterile environments.

### A Safe Solution

A contained, fully automated system protects people and the environment. Spent cake containing hazardous substances can be efficiently and safely collected for disposal.

### An Efficient Solution

The FUNDA filter will not only help you reduce labor costs, but also virtually eliminate product losses with total heel recovery. Its horizontal, dimpled filter plates assure complete drainage and even cake deposition. They are self-supporting, eliminating the need for outer supports that interfere with cake discharge.

### A Reliable System

Designed to minimize such problems as excessive bearing wear and seal failures, and built by Steri to the highest quality standards, FUNDA filters can meet or exceed rigorous demands of operation with proven reliability in thousands of applications.



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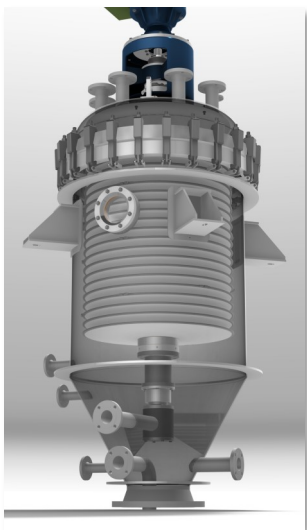


# FUNDA Filter

Centrifugal discharge, pressure leaf filters.  
Compact, enclosed, self-cleaning, multi-plate filters...



FUNDA Type "A"



FUNDA Type "R"

100%  
Heel  
Filtration

100%  
Cake  
Discharge

100%  
Cake  
Drying

Solids Concentration up to 15%. Sizes up to 100m<sup>2</sup>

## FUNDA® Type "A" & "R" Pressure Leaf Filters

**FUNDA-mentals from Steri: A total solution with superior design, superlative performance and professional support. Easy to buy. Easy to use..**

FUNDA filters are compact, enclosed, self-cleaning, multi-plate filters available with integrated heating and drying for manufacturing, pilot and laboratory applications.

With more than 6,000 systems in place worldwide, and hundreds in North America, this "Steri" technology has an extensive track record of reliable performances across a broad range of applications. With a full range of options and knowledgeable decision support from process experts, our FUNDA filters can be precisely configured to meet your specifications.

Manufactured in the United States of America by Steri Technologies, FUNDA filters combine superior design with a program of total support that makes filtration easy from every perspective.



7m<sup>2</sup> FUNDA / North Carolina



12m<sup>2</sup> FUNDA's / Australia



25m<sup>2</sup> FUNDA's / Saudi Arabia



16m<sup>2</sup> FUNDA Filter Nest



84m<sup>2</sup> FUNDA / Louisiana



15m<sup>2</sup> FUNDA Filtration System



Spray Bar for Plate Washing



4" [100mm] Thick Filter Cake

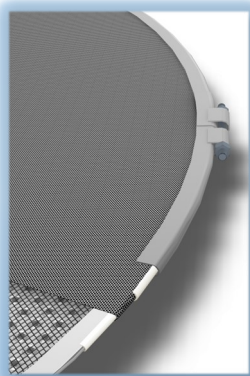




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# FUNDA Filter / Design & Options

Users appreciate the compact design for performance excellence and simple, safe operation...

## Design & Options

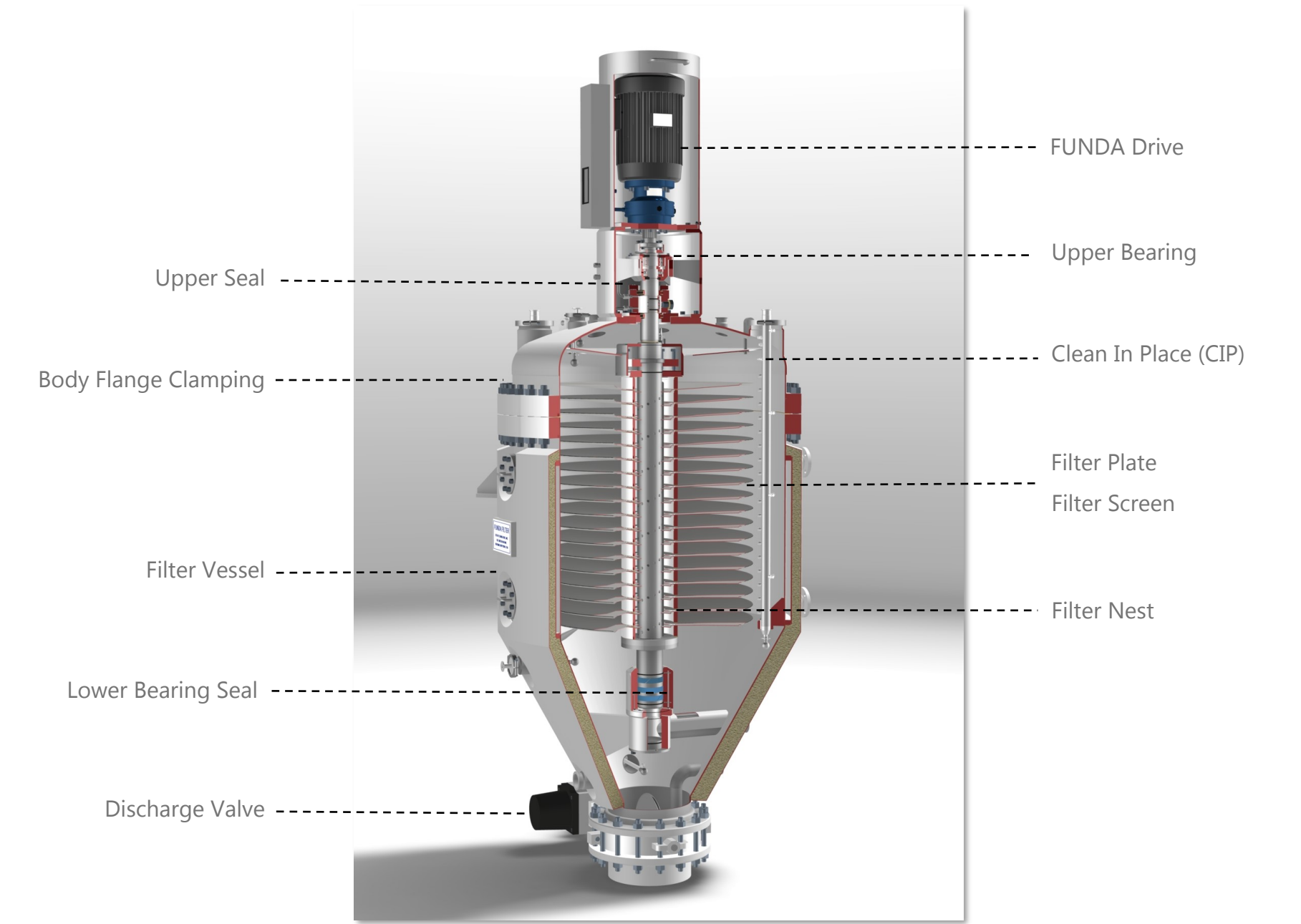
The FUNDA is a centrifugal discharge, pressure leaf filter. They are compact, enclosed, self-cleaning, multi-plate filters available with integrated heating and drying for manufacturing, pilot and laboratory applications.

The top mounted drive assembly can be easily removed from the vessel. Options include hydraulic drive, electric drive with variable speed drive system.

The seal and bearing assembly is designed to eliminate causes of failure, the seal rides on a bearing sleeve instead of the shaft, preventing shaft wear and potential for costly repair. Seal options include lip seals, stuffing box (with or without flushing), mechanical seal or hydraulic bellows seal.

Dished filter plates with spacer rings and sealing gaskets are mounted on a hollow shaft, and secured by a tightening device. The filter media is held in place by a clamp ring and can be quickly and easily changed. Various types of media are available.

## Anatomy of a FUNDA Filter





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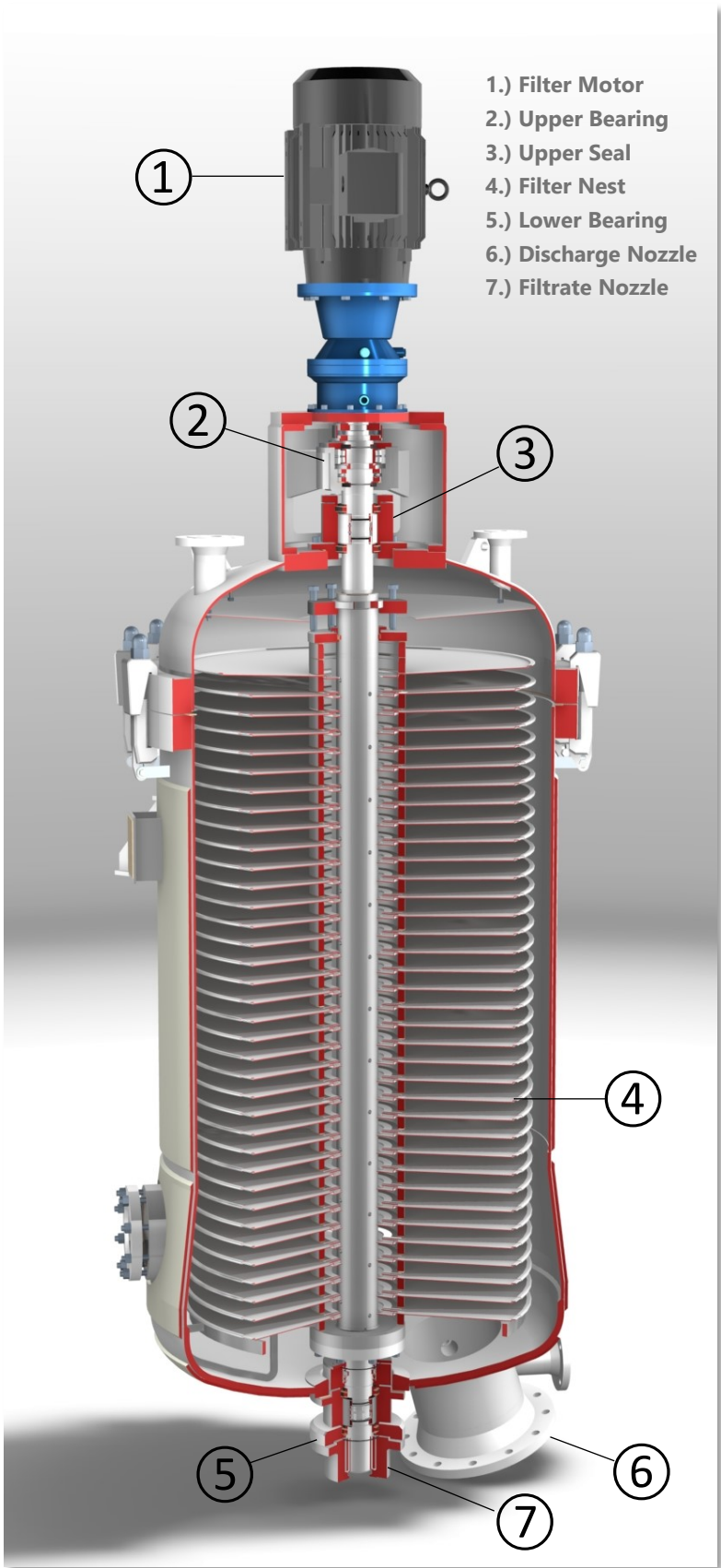
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# FUNDA Filter / Type A

For wet cake discharge...

The FUNDA filter operates one batch at a time to remove solids from liquids. When the batch is complete the filter nest briefly spins at high speed to sling off the cake that was collected on the filter plates. The name FUNDA is the Latin word for: to sling. The **Type A** filter is designed for wet cake discharge and consists of four main parts; the vessel, the head, the filter nest and the filter drive.



### Cake Discharge

Once the filter is empty, the filter nest briefly spins at high speed to sling off the cake. The cake falls to the bottom of the vessel into a receptacle. The Type A FUNDA filter features a wiper blade to aid the removal of wet cake. The wiper blade is attached to the bottom of the filter nest and pushes the cake to the outlet.

### Filter Vessel

The largest part of the FUNDA filter is the vessel. It is cylindrical in form with a dished bottom. The head, which is removable, closes the top of the vessel and supports the filter nest and the drive unit. The filter nest is an assembly of horizontal filter plates stacked on a vertical, rotatable hollow shaft. There are upper and lower bearings and seals for the filter shaft. On the Type A FUNDA filter the lower bearing and seal can be serviced without removing the filter nest.

### Filter Nest & Filter Motor

Each filter plate assembly consists of a filter plate, a support screen, a filter screen and an outer clamp ring. There is also a passage ring and an inner clamp ring. The inner and outer clamp rings hold the filter screen in place while the support screen and the passage ring are trapped between the filter screen and the filter plate. The slightly dished form of the filter plate assures complete drainage of the filtered liquid. The filter drive can be either electric or hydraulic. The hydraulic drive is directly coupled to the filter shaft while the electric drive employs a reducer. When the electric drive motor is mounted vertically above the filter shaft, a gear reducer is installed. The electric drive option uses a programmable VFD speed controller.

### Filtration

During operation the unfiltered liquid is pumped into the vessel and flows around the stationary filter nest. When the vessel is full, the pressure in the vessel begins to rise. This pressure forces the unfiltered liquid through the filter screens. The solids are left on the filter plates and the filtered liquid flows into the hollow shaft to drain out through the filtrate outlet which exits through the bottom of the vessel. The filter nest remains stationary during filtration.

### Heel Filtration

Once filtration is complete some of the unfiltered liquid remains in the FUNDA filter below the lowest filter plate. This is the heel. In order to capture it, the heel can be drained from the filter vessel and pumped to a nozzle on the top of the FUNDA filter. The unfiltered liquid is directed by a distribution plate, which is mounted inside the head of the filter, to gently cascade over the filter plates until all of the heel has been filtered. Due to the dished shape of the vessel bottom of the Type A FUNDA filter, less heel is left at the end of each batch than that which is left in the cone of a Type R FUNDA filter.

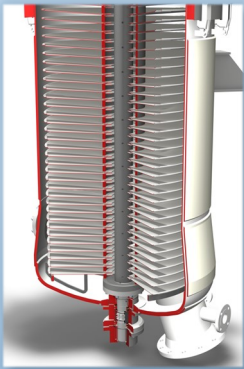




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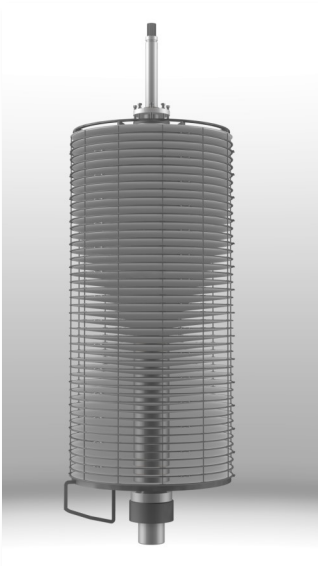


# FUNDA Filter / Type A Sizes

Various available options for meeting stringent applications are assured...

## Comprehensive Options for Slurry Cake Discharge

FUNDA filters by Steri are available in two basic configurations. Type “R” for dry cake discharge or **Type “A” for slurry cake discharge**. For added versatility, type “R” filters can be configured for both dry and slurry discharge.

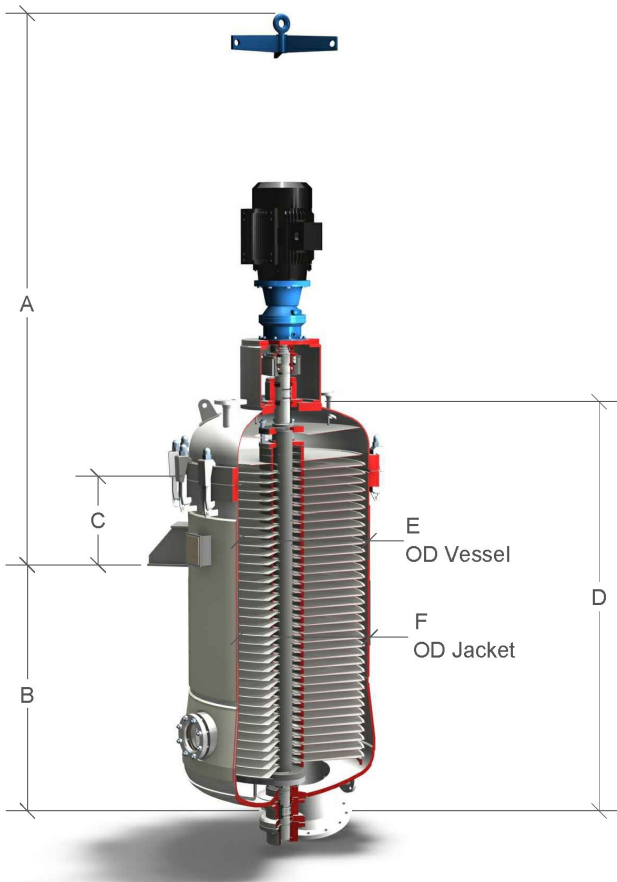


A-50m<sup>2</sup> Filter Nest



A-50m<sup>2</sup> FUNDA Filter

Steri offers a complete range of off-the-shelf options plus the engineering applications know-how to configure your filtration system to your specifications. With standard components proven effective many times over, it’s a sure way to bring a new system on-line quickly and without problems.



Standard connections and dimensions for FUNDA filter type “A”

| Filter Size      | Product Inlet | Filtrate Outlet | Heel Volume Outlet | Over-flow Nozzle | Cake Outlet | Inspec- tion Port | No of Filter Plates | Plate Diami- ter | Spacing* Of Filter Plate | A    | B    | C   | D    | E    | F    | Filter Weight Empty approx. | Filling Volume approx. |
|------------------|---------------|-----------------|--------------------|------------------|-------------|-------------------|---------------------|------------------|--------------------------|------|------|-----|------|------|------|-----------------------------|------------------------|
| m <sup>2</sup>   | inches        | inches          | inches             | inches           | inches      | inches            | Qty                 | mm               | mm                       | mm   | mm   | mm  | mm   | mm   | mm   | kg                          | liters                 |
| 1m <sup>2</sup>  | 1.5           | 1.5             | 1.5                | 1.5              | 3           | 4                 | 9                   | 400              | 30                       | 1540 | 235  | 250 | 730  | 500  | 540  | 700                         | 120                    |
| 2m <sup>2</sup>  | 1.5           | 1.5             | 1.5                | 1.5              | 3           | 4                 | 18                  | 400              | 30                       | 1870 | 555  | 250 | 1050 | 500  | 540  | 950                         | 170                    |
| 5m <sup>2</sup>  | 2             | 2               | 2                  | 2                | 4           | 4                 | 20                  | 600              | 30                       | 2090 | 670  | 250 | 1205 | 700  | 750  | 1300                        | 360                    |
| 7m <sup>2</sup>  | 2             | 2               | 2                  | 2                | 4           | 4                 | 16                  | 800              | 30                       | 2045 | 485  | 300 | 1070 | 900  | 950  | 1400                        | 520                    |
| 10m <sup>2</sup> | 3             | 3               | 3                  | 3                | 6           | 4                 | 22                  | 800              | 30                       | 2265 | 660  | 300 | 1290 | 900  | 950  | 1800                        | 630                    |
| 15m <sup>2</sup> | 3             | 3               | 3                  | 3                | 6           | 4                 | 33                  | 800              | 30                       | 2695 | 1090 | 300 | 1720 | 900  | 950  | 2000                        | 860                    |
| 20m <sup>2</sup> | 3             | 3               | 3                  | 3                | 8           | 4                 | 28                  | 1000             | 30                       | 2640 | 780  | 400 | 1540 | 1100 | 1150 | 2300                        | 1100                   |
| 25m <sup>2</sup> | 4             | 4               | 4                  | 4                | 8           | 4                 | 35                  | 1000             | 30                       | 2895 | 1040 | 400 | 1800 | 1100 | 1150 | 2500                        | 1300                   |
| 30m <sup>2</sup> | 4             | 4               | 4                  | 4                | 10          | 4                 | 43                  | 1000             | 30                       | 3195 | 1330 | 400 | 2090 | 1100 | 1150 | 3000                        | 1550                   |
| 35m <sup>2</sup> | 4             | 4               | 4                  | 4                | 10          | 4                 | 50                  | 1000             | 30                       | 3555 | 1490 | 500 | 2355 | 1100 | 1150 | 3300                        | 1700                   |
| 40m <sup>2</sup> | 6             | 6               | 6                  | 6                | 12          | 4                 | 57                  | 1000             | 30                       | 3810 | 1745 | 500 | 2605 | 1100 | 1150 | 4000                        | 1900                   |
| 45m <sup>2</sup> | 6             | 6               | 6                  | 6                | 12          | 4                 | 63                  | 1000             | 30                       | 4030 | 1875 | 500 | 2825 | 1200 | 1250 | 5000                        | 2550                   |
| 50m <sup>2</sup> | 6             | 6               | 6                  | 6                | 12          | 4                 | 45                  | 1250             | 30                       | 4375 | 1625 | 500 | 2625 | 1400 | 1450 | 6500                        | 3100                   |
| 60m <sup>2</sup> | 6             | 6               | 6                  | 6                | 12          | 4                 | 54                  | 1250             | 30                       | 4710 | 1960 | 500 | 2960 | 1400 | 1450 | 8500                        | 3500                   |

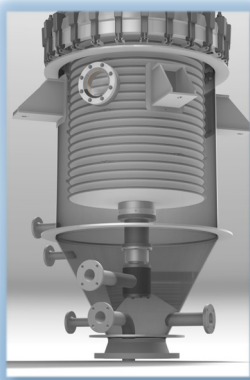
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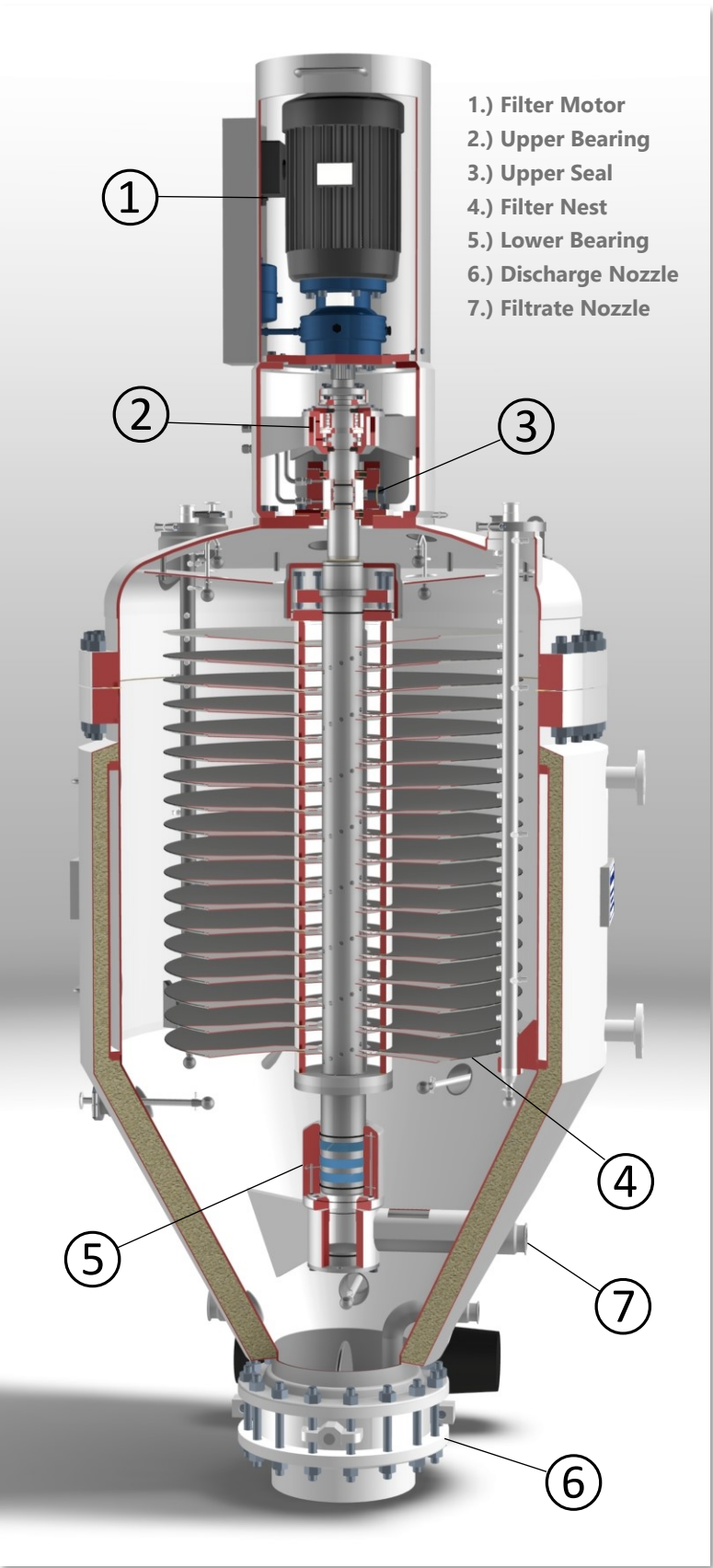
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# FUNDA Filter / Type R

For dry cake discharge...

The FUNDA filter operates one batch at a time to remove solids from liquids. When the batch is complete the filter nest briefly spins at high speed to sling off the cake that was collected on the filter plates. The name FUNDA is the Latin word for: to sling. The **Type R** filter is designed for dry cake discharge and consists of four main parts; the vessel, the head, the filter nest and the Filter Drive.



### Cake Discharge

Once the filter is empty, the cake is dried. The filter nest briefly spins at high speed to sling off the cake. The cake falls to the bottom of the cone where a valve opens to allow the cake to drop into a receptacle.

### Filter Vessel

The largest part of the FUNDA filter is the vessel. It is cylindrical in form with a conical bottom. The head, which is removable, closes the top of the vessel and supports the filter nest and the drive unit. There are upper and lower bearings and seals for the filter shaft. The filter nest is an assembly of horizontal filter plates stacked on a vertical, rotatable hollow shaft. There are upper and lower bearings and seals for the filter shaft. On the Type R FUNDA filter the lower bearing and seal can not be serviced without removing the filter nest.

### Filter Nest & Filter Motor

Each filter plate assembly consists of a filter plate, a support screen, a filter screen and an outer clamp ring. There is also a passage ring and an inner clamp ring. The inner and outer clamp rings hold the filter screen in place while the support screen and the passage ring are trapped between the filter screen and the filter plate. The slightly dished form of the filter plate assures complete drainage of the filtered liquid. The filter drive can be either electric or hydraulic. The hydraulic drive is directly coupled to the filter shaft while the electric drive employs a reducer. When the electric drive motor is mounted vertically above the filter shaft, a gear reducer is installed. The electric drive option uses a programmable VFD speed controller.

### Filtration

During operation the unfiltered liquid is pumped into the vessel and flows around the stationary filter nest. When the vessel is full, the pressure in the vessel begins to rise. This pressure forces the unfiltered liquid through the filter screens. The solids are left on the filter plates and the filtered liquid flows into the hollow shaft to drain out through the filtrate outlet which exits through the side of the cone at the bottom of the vessel. The filter nest remains stationary during filtration.

### Heel Filtration

Once filtration is complete some of the unfiltered liquid remains in the FUNDA filter below the lowest filter plate. This is the heel. In order to capture it, the heel can be drained from the filter vessel and pumped to a nozzle on the top of the FUNDA filter. The unfiltered liquid is directed by a distribution plate, which is mounted inside the head of the filter, to gently cascade over the filter plates until all of the heel has been filtered. Due to the conical shape the vessel bottom of the Type R FUNDA filter, more heel is left at the end of each batch than that which is left in the bottom of a Type A FUNDA filter.

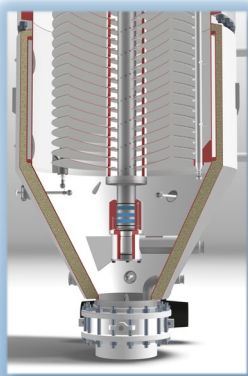




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# FUNDA Filter / Type R Sizes

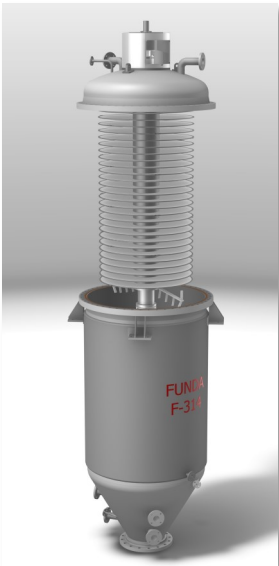
Various available options for meeting stringent applications are assured...

## Comprehensive Options for Dry Cake Discharge

FUNDA filters by Steri are available in two basic configurations. **Type “R” for dry cake discharge** or Type “A” for slurry cake discharge. For added versatility, type “R” filters can be configured for both dry and slurry discharge.

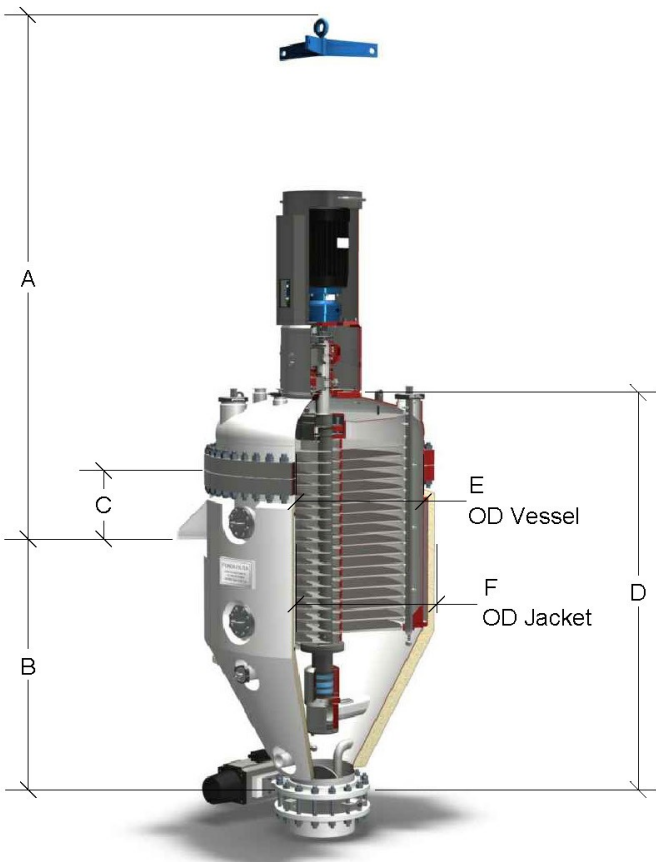


R-20m<sup>2</sup> Filter Nest



R-20m<sup>2</sup> FUNDA Filter

Steri offers a complete range of off-the-shelf options plus the engineering applications know-how to configure your filtration system to your specifications. With standard components proven effective many times over, it’s a sure way to bring a new system on-line quickly and without problems.



Standard connections and dimensions for FUNDA filter type “R”

| Filter Size      | Product Inlet | Filtrate Outlet | Heel Volume Outlet | Over-flow Nozzle | Cake Outlet | Inspec- tion Port | No of Filter Plates | Plate Diame- ter | Spacing* Of Filter Plate | A    | B    | C   | D    | E    | F    | Filter Weight Empty approx. | Filling Volume approx. |
|------------------|---------------|-----------------|--------------------|------------------|-------------|-------------------|---------------------|------------------|--------------------------|------|------|-----|------|------|------|-----------------------------|------------------------|
| m <sup>2</sup>   | inches        | inches          | inches             | inches           | inches      | inches            | Qty                 | mm               | mm                       | mm   | mm   | mm  | mm   | mm   | mm   | kg                          | liters                 |
| 1m <sup>2</sup>  | 1.5           | 1.5             | 1.5                | 1.5              | 10          | 4                 | 9                   | 400              | 30                       | 1646 | 731  | 250 | 1246 | 500  | 540  | 900                         | 190                    |
| 2m <sup>2</sup>  | 1.5           | 1.5             | 1.5                | 1.5              | 10          | 4                 | 18                  | 400              | 30                       | 1970 | 1055 | 250 | 1570 | 500  | 540  | 1100                        | 250                    |
| 5m <sup>2</sup>  | 2             | 2               | 1.5                | 2                | 10          | 4                 | 20                  | 600              | 30                       | 2220 | 1065 | 300 | 1680 | 700  | 750  | 1500                        | 470                    |
| 7m <sup>2</sup>  | 2             | 2               | 1.5                | 2                | 10          | 4                 | 16                  | 800              | 30                       | 2240 | 975  | 400 | 1740 | 900  | 950  | 2000                        | 730                    |
| 10m <sup>2</sup> | 3             | 3               | 2                  | 3                | 12          | 4                 | 22                  | 800              | 30                       | 2474 | 1209 | 400 | 1974 | 900  | 950  | 2400                        | 880                    |
| 15m <sup>2</sup> | 3             | 4               | 3                  | 3                | 16          | 4                 | 33                  | 800              | 30                       | 2900 | 1635 | 400 | 2400 | 1000 | 1050 | 3000                        | 1410                   |
| 20m <sup>2</sup> | 3             | 4               | 3                  | 3                | 16          | 4                 | 28                  | 1000             | 30                       | 2820 | 1420 | 500 | 2320 | 1150 | 1200 | 3100                        | 1670                   |
| 25m <sup>2</sup> | 4             | 4               | 3                  | 4                | 16          | 4                 | 35                  | 1000             | 30                       | 3080 | 1680 | 500 | 2580 | 1150 | 1200 | 3500                        | 1890                   |
| 30m <sup>2</sup> | 4             | 4               | 3                  | 4                | 16          | 4                 | 43                  | 1000             | 30                       | 3380 | 1972 | 500 | 2872 | 1150 | 1200 | 4000                        | 2100                   |
| 35m <sup>2</sup> | 4             | 4               | 3                  | 4                | 16          | 4                 | 50                  | 1000             | 30                       | 3740 | 2130 | 600 | 3130 | 1150 | 1200 | 5100                        | 2350                   |
| 40m <sup>2</sup> | 6             | 6               | 3                  | 4                | 20          | 4                 | 57                  | 1000             | 30                       | 4000 | 2385 | 600 | 3385 | 1150 | 1200 | 5900                        | 2650                   |
| 45m <sup>2</sup> | 6             | 6               | 3                  | 4                | 20          | 4                 | 63                  | 1000             | 30                       | 4210 | 2600 | 600 | 3600 | 1150 | 1200 | 6800                        | 2830                   |
| 50m <sup>2</sup> | 6             | 6               | 3                  | 4                | 20          | 4                 | 45                  | 1250             | 30                       | 4600 | 2490 | 600 | 3590 | 1400 | 1450 | 8000                        | 4000                   |
| 60m <sup>2</sup> | 6             | 6               | 3                  | 4                | 20          | 4                 | 54                  | 1250             | 30                       | 5140 | 2635 | 800 | 3930 | 1400 | 1450 | 10000                       | 4400                   |

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# FUNDA Filter / Operation

Engineered for efficient, reliable & safe operation.  
Even in the most demanding applications...

## Theory of Operation



### Filling

The vessel is filled with unfiltered product or pre-coat, and circulated through the overflow nozzle for an even suspension.



### Pre-coat / Pre-Filtration

The suspension is circulated through the filter elements to produce a porous pre-coat layer.

### Filtration

The filtrate passes through the building filter cake, filter screen and spacer ring area to the hollow shaft and filtrate outlet.



### Heel Volume Filtration

After filtration and/or washing, the heel liquid can be recycled by pump into the vessel head from the bottom outlet. While the liquid is cascading onto the plates, inert gas is also applied to create the necessary filtration pressure until the entire heel has been filtered.

Product recovery is maximized by this process, which is faster and more efficient than systems utilizing scavenger plates.



### Washing

The wash liquid follows the same route as in filtration. Cascade washing using the heel volume filtration method reduces the wash liquid volume.

### Heating / Drying

The cake can be heated and dried in the vessel using hot gases, such as steam, air or nitrogen. As a more efficient alternative to a steady flow of nitrogen in drying, the vessel can be repeatedly pressurized and quickly evacuated, dramatically reducing nitrogen usage.



### Slurry Cake Discharge

The wet cake is flung from the rotating plates, falls to the bottom, and exits through the discharge nozzle, aided by a suitable solvent. Gas pressure may be used to assure the flow of viscous mixtures.

### Dry Cake Discharge

As the filter nest rotates, the dry friable cake is flung from the plates, falls freely to the bottom, and exits through the bottom discharge opening.

## Completely Automated Filtration

Completely automatic filtration systems eliminate manual filter cleaning. FUNDA filtration provide completely automatic treatment in solid-liquid separation processes.

Horizontal filter discs ensure even cake build-up. The entire system can be automated and there is a unique device to filter the entire heel. The cake can be washed or extracted with solvent while still on the filter plates without disturbing the cake.

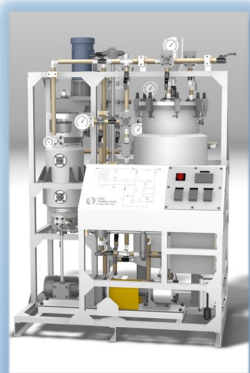




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# FUNDA Rental Systems

Simple to install in virtually any environment.  
Glowing reports in its ease of operation...

## Think Steri for Rentals

Use one of our filters on a rental basis to experience first hand, filtration made easy. You'll see how simple it is to install a Steri filter in virtually any environment. You'll notice and appreciate its compact design. You'll get glowing reports in its ease of operation and purity of output. Steri maintains an inventory of FUNDA filter rentals. FUNDA filters are available in stainless steel in sizes up to 5.0m<sup>2</sup>. The smaller FUNDA filters are skid mounted for fast, easy installation. Put them to use for laboratory work, pilot processes and short term production runs. A rental unit can be cost-effective and up and running in just a few days.

## Think Steri for Lab Testing

### Liquid-Solids Separation and Filtration Testing in Our Lab

Steri now offers testing of your product in our laboratory. For decades now, Steri Technologies has been a leading manufacturer of FUNDA pressure leaf filters.

Steri has several small scale filters in our lab that enable us to test various filter media and filter-aids to determine the most efficient filtration process for your product.



### Think Steri for Lab Filters

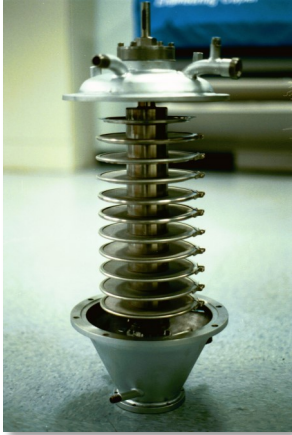
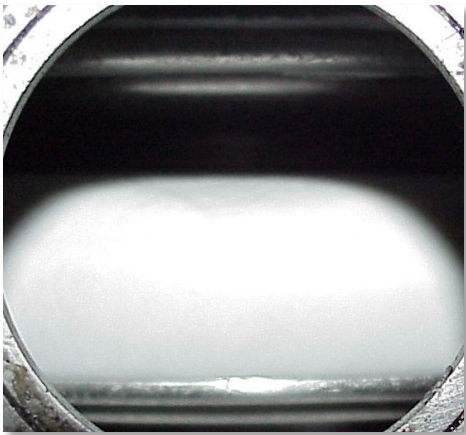
In addition to portable pilot and production models, Steri offers a convenient 0.01m<sup>2</sup> filter to permit you to quickly test filtering feasibility and filter media. We would be delighted to bring it to your plant for a consultation, or provide it on a rental basis

### Try and Buy

All of our rental filters are automatically included in our TRY-and-BUY program. The Steri "Try and Buy" program provides credit for a portion of the rental fee toward the purchase of a full-scale filtration system. And when you compare value and price – made even more cost effective by the special terms available through Try and Buy – you'll select Steri for FUNDA filtration made easy.

### Liquid-Solids Separation and Filtration Testing in your Facility Using our Rental Units

Steri has several small-scale filters available as rental units. Scaled-down, self-contained, skid-mounted versions of our FUNDA line of pressure leaf filters can be rented for in-plant pilot runs or testing. These small-scale rental filters enable you to test various filter media and filter-aids to determine the most efficient filtration process for your product.





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Web: [www.steri.com](http://www.steri.com)



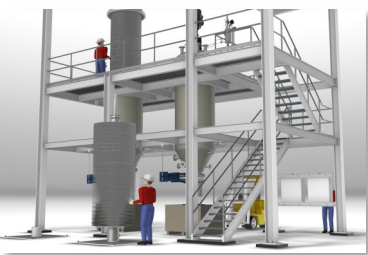
# Turn-Key Systems

Steri plans, designs and manufactures complete automated filtration installations...

## Turn-Key Filtration Systems

Steri Technologies has the engineering expertise to design and fabricate completely self-contained, fully automated, turn-key filtration and process systems.

For decades now, the FUNDA filter has been used all over the world to separate solid matter from liquids. Steri plans, designs and manufactures FUNDA filters as separate units, as filter skids and as complete filtration installations - complete with process engineering and corresponding process guarantees.



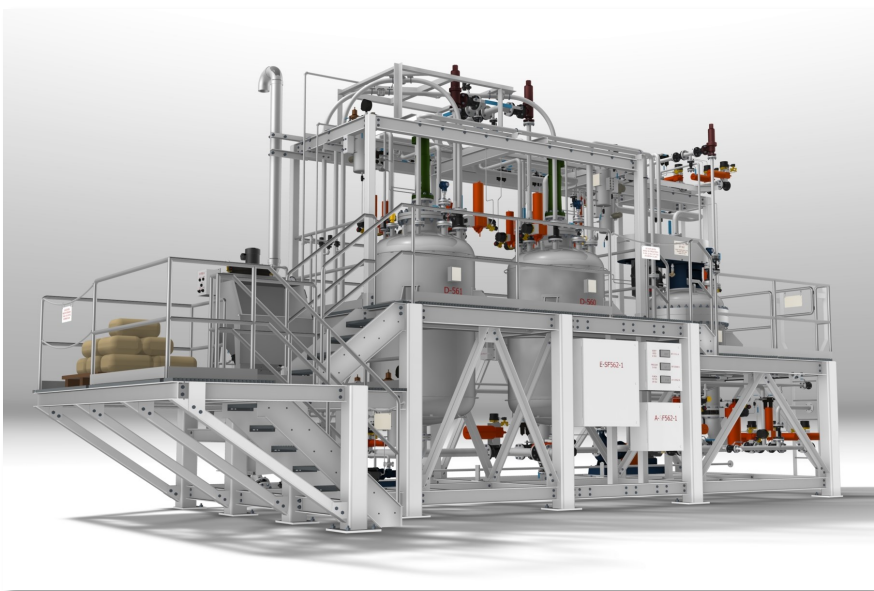
R-80m<sup>2</sup> FUNDA Filtration Unit



R-20m<sup>2</sup> FUNDA Filtration Skid

Sometimes a stand-alone filter does not meet the process requirements, on-site integration capabilities, or scheduling constraints. Sometimes only a complete turn-key filtration system will meet the challenge.

Steri Technologies has the experience of designing filtration systems to exacting customer specifications. Our engineers review the overall process sequence to recommend the most effective means of adding a filtration step.



A-15m<sup>2</sup> FUNDA Skid with Pre-Coat, Body Feed Tank and Bag Loading Station

## Custom Process Systems

Steri designs and builds custom process systems that combine multiple process steps into one skid mounted assembly. Any process steps may be included such as wet & dry material injection, mixing, weighing, filtration, heating, drying and any others that might be needed. We've manufactured various types of stand-alone skidded systems for uses such as industrial process heaters, chilled water filtration, water desalination, laboratory preparation and more...



HVAC Side Stream Filtration

The resulting filtration or process system seamlessly integrates with your overall infrastructure. Our modular systems feature factory level manufacturing and quality control. All custom skids are fully tested before leaving our facility.



Brackish Water Desalination Skid



Cutting / Cooling Oil Mixing Plant



Laboratory Prep Skids



Heating / Cooling Skids



Brackish Water Desalination Plant



Cutting / Cooling Oil Mixing Plant





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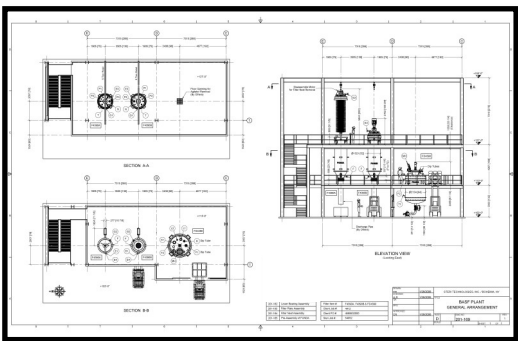
# In-House Engineering

Experienced engineering team that provides complete design support from concept to installation...

## Filter Design, Integration & Process Design Support

### Filter Design

Steri has an experienced engineering team that provides complete design support from concept to installation. Starting right from the proposal stage, we create a clear picture of your filtration system and its integration into your facility using 3D CAD software. As the design evolves the 3D model is continuously updated. Approval drawings and bills of materials are ready for quick turn-around minimizing delays in ordering material. At completion of the project the 3D model is fully updated to reflect the as-built configuration and included in the complete documentation package.



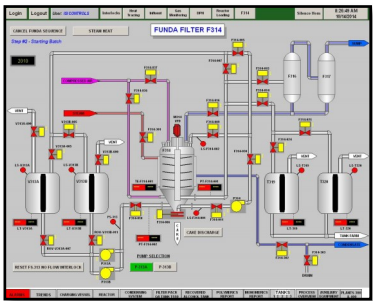
### Integration

Process sequencing maps out the overall design of the filter and how it will fit into your process. Steri works with your engineering team to design an integration plan. The plan identifies any upgrades or modifications that may be required to your existing infrastructure.

### Process Design Support

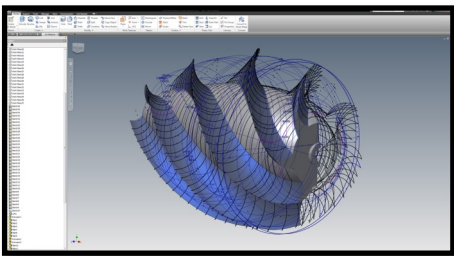
Steri offers process revitalization support for legacy installations. If you have an older Steri filter but do not feel that you are getting the best possible performance we can help. We have a knowledge base of thousands of systems installed world-wide.

Over the course of time, system sequences tend to grow away from the original design intent. A thorough system analysis by one of our engineers can net you performance improvements and cost reductions. As a result of our analysis we then recommend instrumentation upgrades and safety improvements. The instrumentation also allows the process to be automated, reducing down-time. The vent system can be evaluated along with the drying technique. By simplifying the vent routing and incorporating the latest drying techniques the overall cake drying time could be reduced. Steri can review the piping plan uncovering exceeding long piping runs, eliminating contamination between batches of different products. Once all of the these recommendations have been implemented, Steri then establishes baseline operating points including characterized pressure increases as filter loading increased. The data can then be used in conjunction with the instrumentation to optimize the automation program. Sequence review by Steri and the resulting process changes along with automation will increase safety, decrease waste and save money.



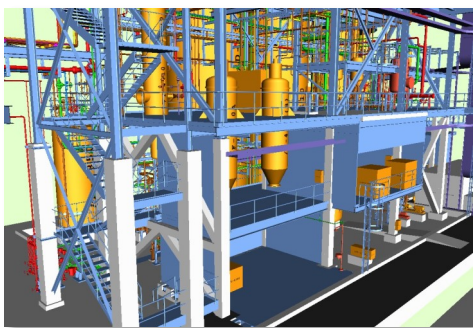
### Process Design

The key to producing a quality product using Steri Filters is process integration. Steri engineering works with you early-on to create a complete filtration process sequence. Part of the sequence development includes an evaluation of your overall system that results in recommended upgrades to your system. Giving you the best performance possible from your new Steri filter. The sequence, which is presented in HMI screenshots, includes all the steps required such as filling, pre-coat, filtration, washing, re-slurrying, drying, discharge and clean-in-place.



### CAD-CAM Machining

Our engineers design every component in 3D right from the start. The software handles complex shapes and standard flanges equally. Once the design is complete the files are sent directly to our CAM software for error free CNC machining. All performed in-house to ensure complete quality control.







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# In-House Manufacturing

Our modern manufacturing facility is equipped with the latest equipment...

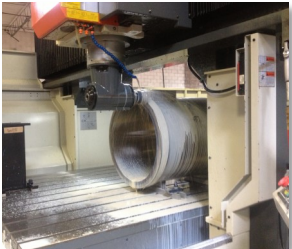
## Machining, ASME Fabrication & Testing

Steri Technologies offers machining and ASME pressure vessel fabrication services to a variety of industries. Our modern manufacturing facility is equipped with the latest manufacturing equipment including CNC milling, lathe, Robotic welding and water jet machines.

We are an ASME and National Board certified company. Our employees take pride in their company and meet your requests with a "can do" attitude. We offer a variety of services:



CNC Lathe



Mill Lathe



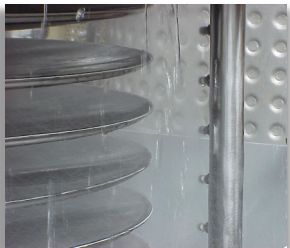
Robotic Welding



Skid Fabrication



System Testing



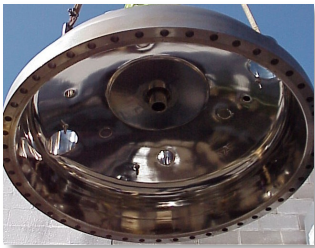
CIP Testing



Waterjet Cutting



ASME Fabrication



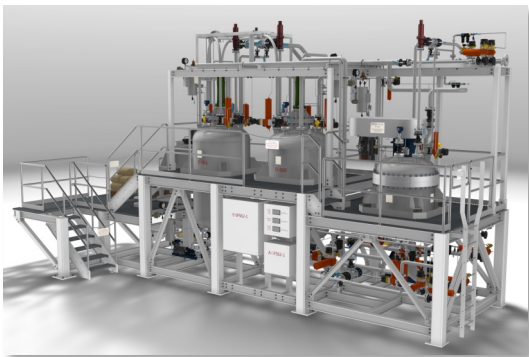
Mechanical Polishing



Laboratory Testing

## From Vision to Reality

3D Model Developed with Client



Final Fabricated Skid

3D Model Developed with Client



Final Fabricated Skid

3D Model Developed with Client



Final Fabricated Skid





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# Start-Up & Support

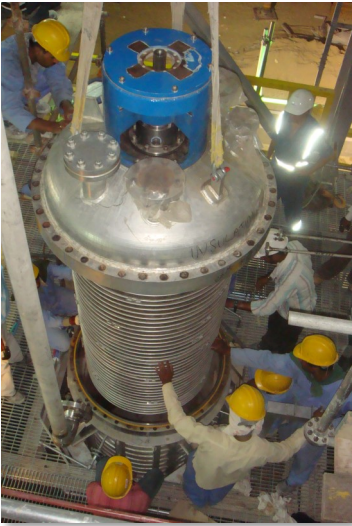
Your Steri system is serviced by the people who manufacture it...

## Commissioning, Start-Up & Site Training

Your filter system can be up and running in just a few hours. Steri provides the level of service that meets the needs of your project. We offer complete system design and installation services to seamlessly integrate our equipment into your process facility. In the design phase Steri will provide all the necessary recommendations for pipe routing and valve placement so that you get the best possible performance from our filter systems. Steri can provide experienced on-site installation support, coordinating the trades such as crane operations, structural steel fabrication, concrete installation, piping and wiring. This complete level of support applies to all Steri products from complete skidded filtration systems to stand-alone filters.



Installation Supervision



FUNDA Filter Installation



Filter Commissioning

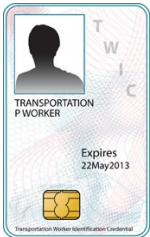


On-Site Training

Steri's service does not end with installation. Our trained technicians will be present during start-up and commissioning to maximize the performance of the filter within your overall process. Once the filter has been commissioned Steri will provide complete on-site training to all operators so that your Steri filter continues to provide maximum service for years to come.

## Technical Support

Steri service technicians are available whenever you need. They have been fully trained on confined space protocols, hold the widely recognized Transportation Worker Identification Credential (TWIC®), and can be dispatched to anywhere in the world.







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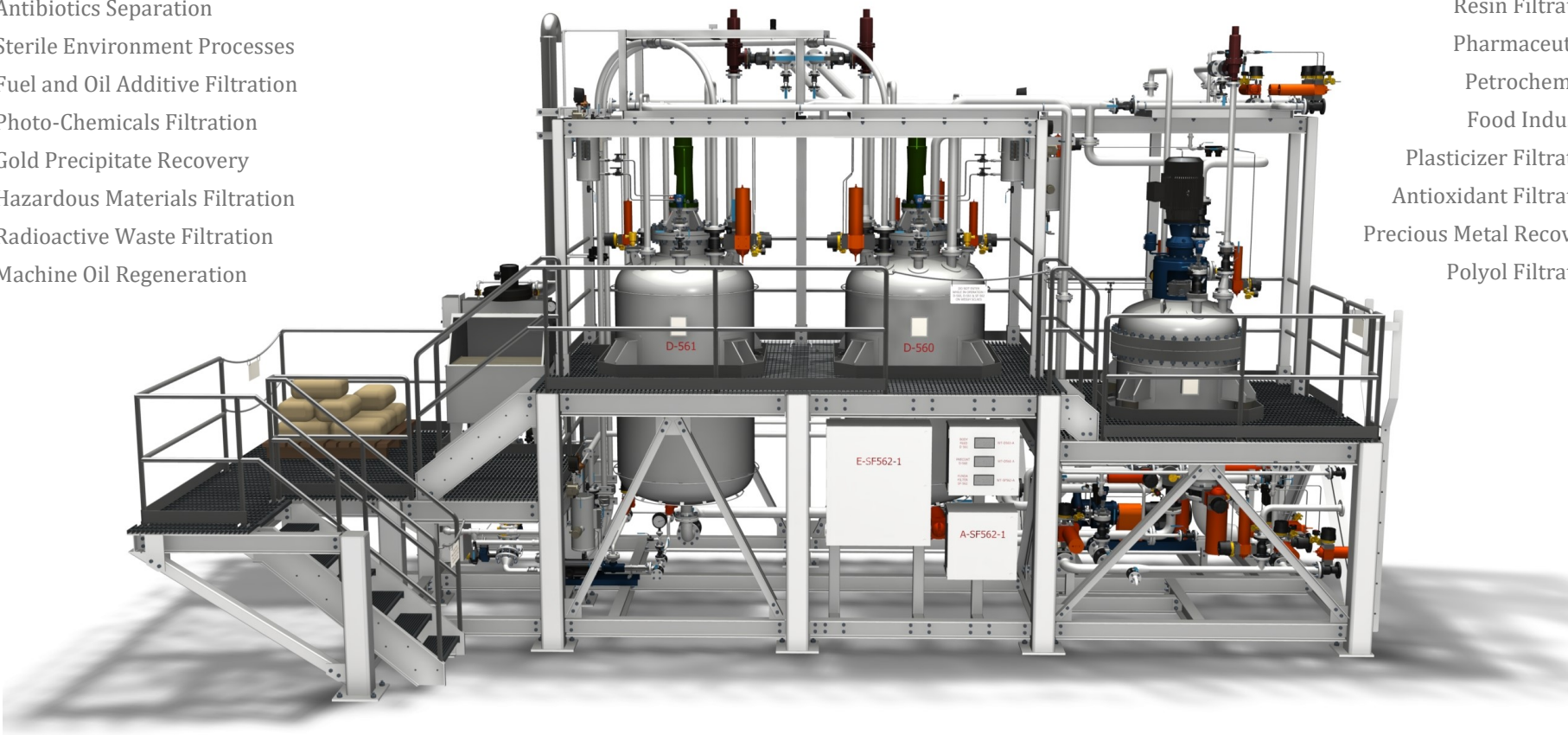
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# Total Filtration Solution

Activated Carbon Removal  
Antibiotics Separation  
Sterile Environment Processes  
Fuel and Oil Additive Filtration  
Photo-Chemicals Filtration  
Gold Precipitate Recovery  
Hazardous Materials Filtration  
Radioactive Waste Filtration  
Machine Oil Regeneration

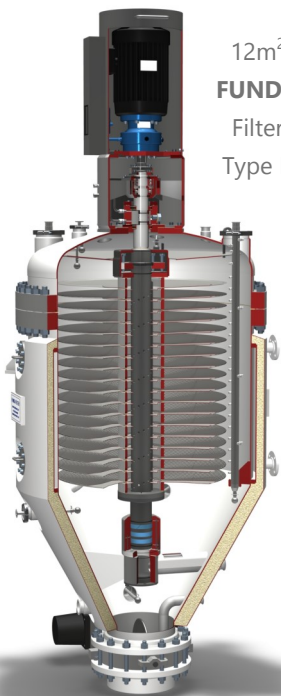
Catalyst Recovery  
Resin Filtration  
Pharmaceutical  
Petrochemical  
Food Industry  
Plasticizer Filtration  
Antioxidant Filtration  
Precious Metal Recovery  
Polyol Filtration



## Steri has the **Right** solution for your **Filtration** application

For decades now, Steri Technologies has been delivering reliable filtration equipment to every continent around the world. Superior designs of **FUNDA** pressure leaf filters , **ZWAG** Nutsche filters , Steri **CANDLE** filters technologies and many more...

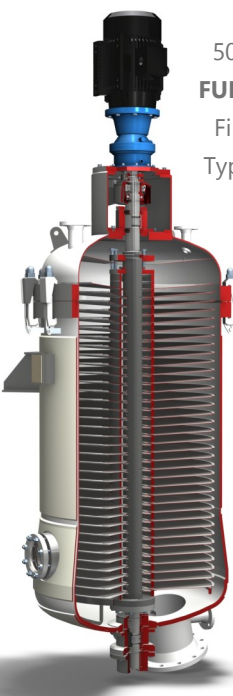
### FUNDA® Filter



12m<sup>2</sup>  
**FUNDA**  
Filter  
Type R

**FUNDA type R,**  
for dry cake discharge.  
0.1m<sup>2</sup> to 100m<sup>2</sup>

**FUNDA®** filters are compact, enclosed, self-cleaning, multi-plate filters available with integrated heating and drying for manufacturing, pilot and laboratory applications. With more than 6,000 systems in place worldwide, and hundreds in North America, this technology has an extensive track record of reliable performances across a broad range of applications.



50m<sup>2</sup>  
**FUNDA**  
Filter  
Type A

**FUNDA type A,**  
for slurry cake discharge.  
0.1m<sup>2</sup> to 100m<sup>2</sup>

### ZWAG® Filter

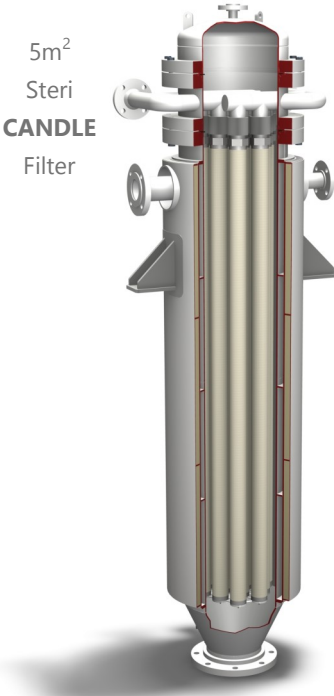


2m<sup>2</sup>  
**ZWAG**  
Nutsche  
Filter

**ZWAG, superior design, superlative performance and professional support.**  
0.1m<sup>2</sup> to 12m<sup>2</sup>

**ZWAG®** is a family of totally enclosed, single-plate Nutsche filters for pressure filtration and vacuum drying. With integral heating and drying, multi-functional ZWAG filters are compact and versatile for manufacturing, pilot and laboratory applications.

### CANDLE Filter



5m<sup>2</sup>  
Steri  
**CANDLE**  
Filter

**Steri CANDLE filters,**  
low solid filtration.  
0.1m<sup>2</sup> to 60m<sup>2</sup>

Steri **CANDLE** filters are enclosed, candle shaped filter elements arranged vertically inside a pressure vessel. The filter cake is formed on the outside of the candle.