

# TLV<sup>®</sup>

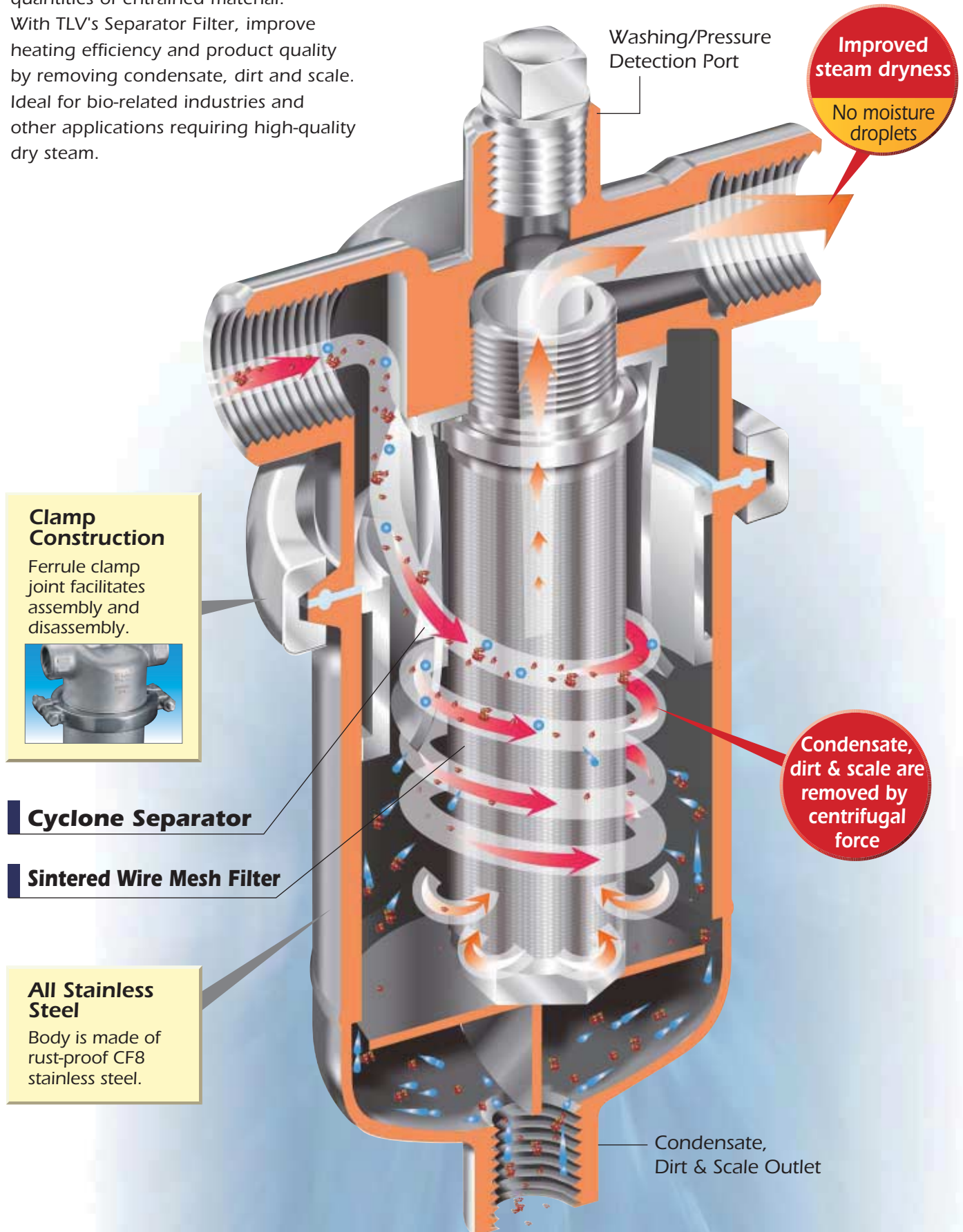
## SEPARATOR FILTER

SF1



# Cleaner filter for longer... ...utilize the cyclone effect.

In regular piping, steam carries large quantities of entrained material. With TLV's Separator Filter, improve heating efficiency and product quality by removing condensate, dirt and scale. Ideal for bio-related industries and other applications requiring high-quality dry steam.



Improved steam dryness

No moisture droplets

## Clamp Construction

Ferrule clamp joint facilitates assembly and disassembly.



## Cyclone Separator

## Sintered Wire Mesh Filter

## All Stainless Steel

Body is made of rust-proof CF8 stainless steel.

Condensate, dirt & scale are removed by centrifugal force

Condensate, Dirt & Scale Outlet

Washing/Pressure Detection Port

# Time between cleaning & replacement is increased, maintenance cost is reduced.

## Typical Applications

- Sterilizers, steam washers, etc.
- Bio-related steam equipment
- Live steam use - food, pharmaceutical
- Non-hazardous gas applications

## Cyclone Separator



### Centrifugal Force and Gravity Remove:

#### ■ 98%\* of Condensate

Eliminating condensate produces the highest quality steam.  
\* for steam velocity up to 30 m/s

#### ■ Large dirt particles & scale

Preventing major sources of filter blockage from reaching the filter results in a longer service life.



**Filter remains unblocked for a long time.**

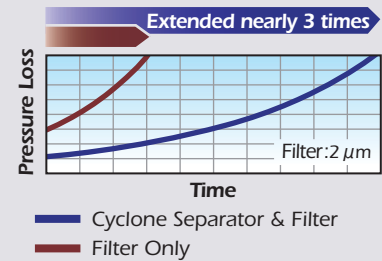


**Easily blocked by large dirt particles**

### Maintenance cycle is nearly 3 times longer!

Compared to a filter with no separator, the time between required maintenance is improved by nearly 3 times.

#### ● Pressure Loss vs. Time



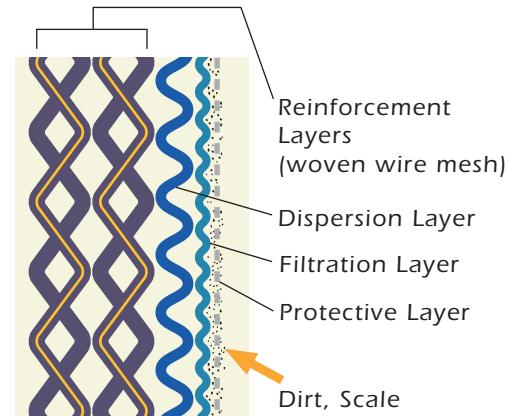
(scale introduction stress test)

## 5-layer Sintered Wire Mesh Filter



### Effective cleaning allows repeated use

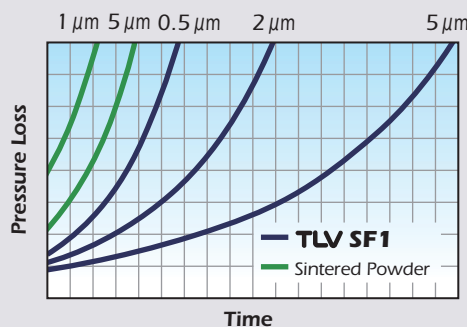
The 5-layer sintered wire mesh filter catches small dirt and scale particles on the outside surface of the filtration layer. Compared to sintered metal powder the wire mesh filter is easier to clean resulting in longer durability, and reusability.



Filter Construction

## Low Pressure Loss

TLV's sintered wire mesh filters provide a longer maintenance cycle than powder filters of the same grade. Therefore, the decision to use a finer filter grade or a more compact filter becomes easier.



#### ■ TLV SF1

Sintered Wire Mesh  
(Dia. 40 mm; Length 125 mm; Surface Area 160 cm<sup>2</sup>)

■ Sintered Powder  
(Dia. 60 mm; Length 250 mm; Surface Area 470 cm<sup>2</sup>)

#### Stress Test Parameters

- Inlet steam pressure : 1 barg
- Flow rate : 30 kg/h
- Iron powder introduced : 50 g/h (average size of particles 8 μm)
- Housing : DN25



## Specifications



Connection	Screwed	Socket Welded	Flanged
Size	1/2", 3/4", 1", 1 1/2", 2"	DN 15, 20, 25, 40, 50	
Maximum Operating Pressure (barg) PMO	10		
Maximum Operating Temperature (°C) TMO	185		
Filter Grade* (µm)	0.5, 2, 5		
Internal & External Finishing**	Acid Cleaning (lost-wax cast)		
Ferrule Clamp	Two-piece two-bolt clamp		
Applicable Fluids***	Steam, Air		

\* Consult TLV for other available filter grades

\*\* Optional electro-polishing (lost-wax cast) available on request

\*\*\* Do not use for toxic, flammable or otherwise hazardous fluids.

PRESSURE SHELL DESIGN CONDITIONS (NOT OPERATING CONDITIONS): Maximum Allowable Pressure (barg) PMA: 10

Maximum Allowable Temperature (°C) TMA: 185

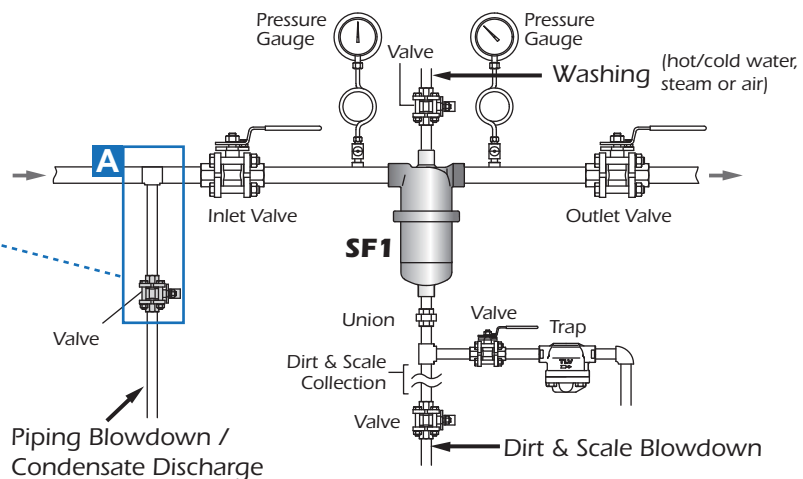
1 bar = 0.1 MPa

**CAUTION** To avoid abnormal operation, accidents or serious injury, DO NOT use this product outside the specification range. Local regulations may restrict this product to below the conditions quoted.

## Piping Examples

### Typical Installation

Ahead of the inlet valve for the **SF1**, install a **valve for piping blowdown** or a **trap** with sufficient discharge capacity when differential pressure is extremely low.

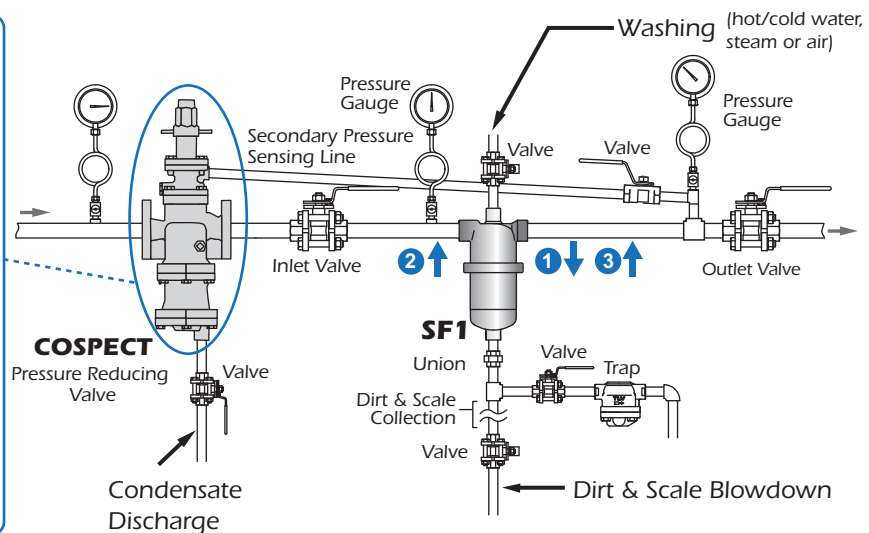


### In cases where more stable pressure is needed

For applications where it is desirable to prevent pressure drop at the outlet due to build-up of dirt/scale at the filter.

Installing a **COSPECT PRV** \*1 with an external pressure sensing line from the outlet of the **SF1** will help supply stable pressure and minimize pressure drop, which gradually increases due to build-up of dirt/scale at the filter.

- 1 Dirt & scale build up, **SF1** outlet pressure drops.
- 2 PRV detects pressure drop and automatically increases **SF1** inlet pressure.
- 3 **SF1** outlet pressure rises to maintain set pressure\*2



\*1 If a PRV other than COSPECT (with built-in strainer, separator, and trap) is installed, the equipment indicated by **A** in the diagram above must be installed ahead of the PRV for the SF1 inlet.

\*2 If it becomes impossible to adjust the pressure with the PRV due to build-up of dirt/scale, clean or replace the filter.

For explanation purposes only, not intended as installation designs.

# TLV EURO ENGINEERING UK LTD.

Star Lodge, Montpellier Drive, Cheltenham, Gloucestershire, GL50 1TY, U.K.

Tel: [44]-(0)1242-227223 Fax: [44]-(0)1242-223077

<http://www.tlv.com>

Manufacturer  
**TLV CO., LTD.**  
Kakogawa, Japan  
is approved by LRQA Ltd. to ISO 9001/14001

