Productivity Solutions...

MOULD & DIE SOLUTIONS

# Machine and Mould Filters:

## Increased productivity, less downtime

**Melt contaminated by metallic, inorganic particles and / or foreign plastic etc., can lead to time consuming and costly delays in production that require removal of the machine nozzle or, in extreme cases, the complete disassembly of a Hot Runner system to clean out a blockage.**

**This is particularly prevalent when moulding with a high percentage of Regrind Plastic where the frequency of contamination is high.**

**Fortunately there are two solutions which help alleviate this situation:**

- **The Ring Gap Filter Nozzle fits onto your moulding machine. This in the long run is the ideal, most cost effective solution if you running a number of different moulds all using regrind material.**
- **For smaller applications the Mould Gap Filter fits into individual moulds. This is a cheaper option for application to just one mould, but each mould will need it's own filter.**

**Both options are extremely quick and easy to clean.**

## Ring Gap Filter Nozzles (MSF)

**Ring Gap Filter Nozzles** intended for Plastic Injection Moulding Machines, are available in four sizes with flow diameters of 5, 6, 10 and 14mm.

In choosing the correct gap size, you need to consider the Nozzle / Hot Runner Gate size in the mould, as well as the Product Shot Weight (Tables in this document will assist).

Ring Gap Filters have the following decisive advantages:

- Gentle filtration of the melt
- Easy cleaning
- Low pressure loss
- Large total flow area
- The filter element and the nozzle tip are replaceable.

A sure sign that the filter is working is an increase in pressure during moulding. This indicates that the filter is performing as expected by trapping foreign bodies, and now needs to be cleaned.

Should you find that the gap you have chosen is smaller than necessary, this can be increased by removing the inner core and using a cylindrical grinder on it to reduce the diameter slightly, thereby increasing the gap size.

For many types of plastics the filter also has a positive after-mixing effect.

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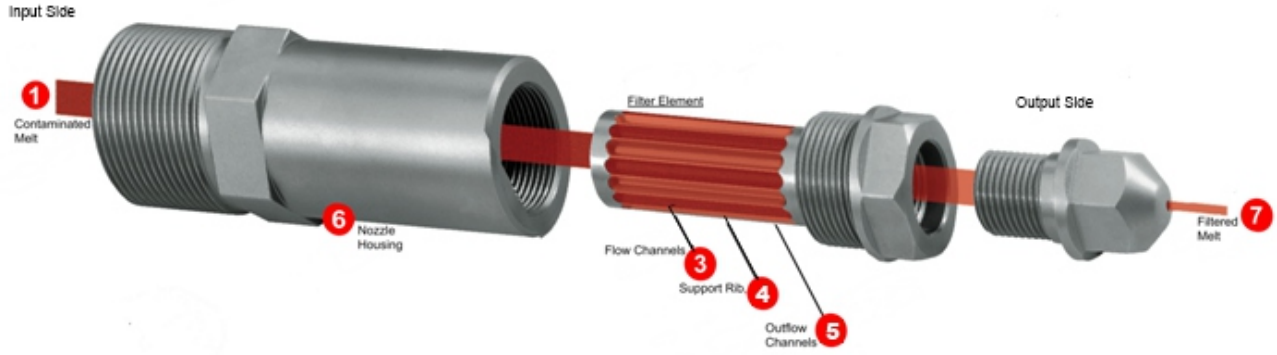
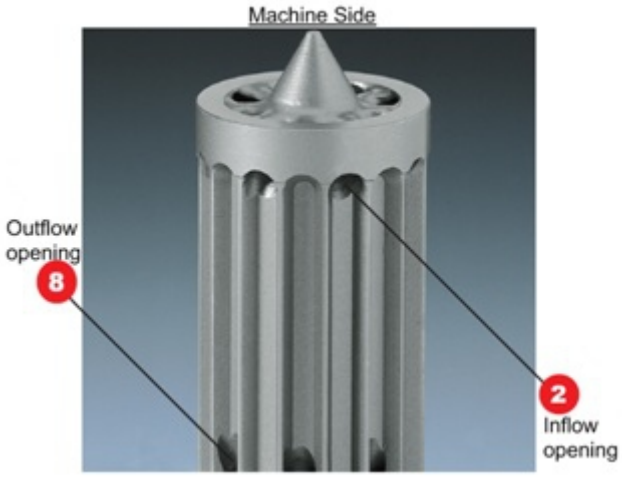
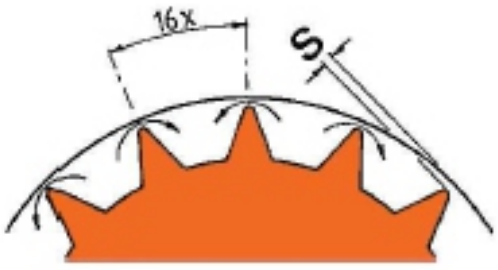
## Operating Principal of the Ring Gap Filter:




- Contaminated melt enters the Ring Gap Filter housing from the Machine Barrel (1)
- Melt flows through the Inflow Opening (2)...
- ...into the Filter Element Inflow Channels (3)
- Melt passes over the Support Ribs (4)...
- ...into the Melt Filter Element Outflow Channels (5).
- Filtration takes place in the gap between the Support Ribs (4) and the inner wall of the Nozzle Housing (6).
- The filtered melt leaves the Filter Element through openings in the outflow channels (8) and enters the Mould and / or Hot Runner System.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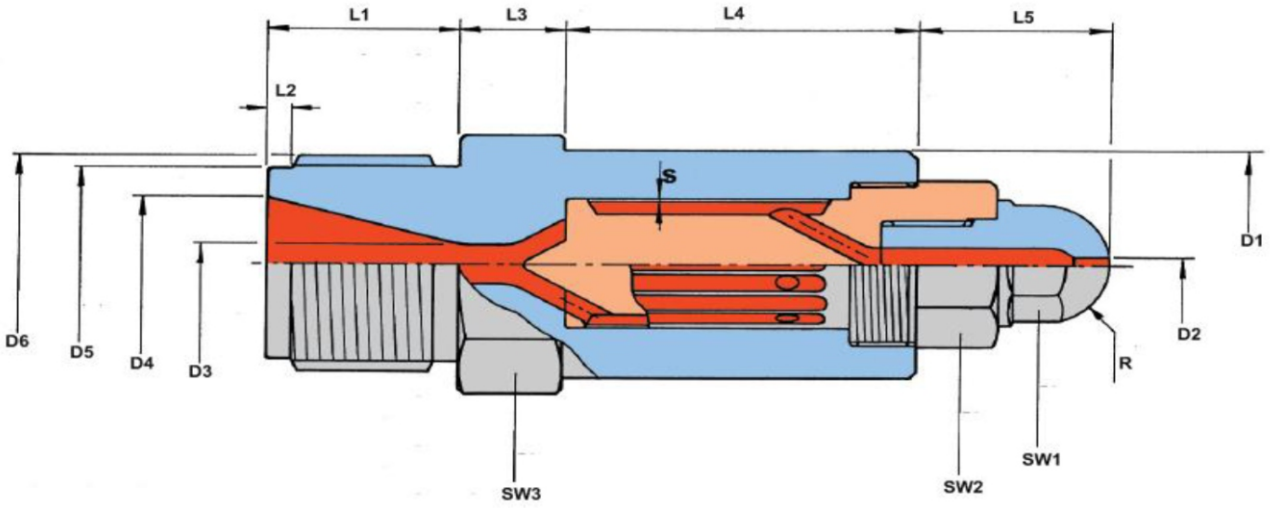
| Nozzle: | MSF 031 | | | MSF 051 | | | MSF 101 | | | MSF 151 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gap Size "S" | 0.1 | 0.15 | 0.2 | 0.15 | 0.25 | 0.4 | 0.25 | 0.4 | 0.6 | 0.4 | 0.8 | 1.2 |
| Nozzle Opening | 0.3 - 0.8 | 0.5 - 1.0 | 0.7 - 1.2 | 0.5 - 1.0 | 0.8 - 1.4 | 1.2 - 2.5 | 0.8 - 1.4 | 1.2 - 2.5 | 2.0 - 3.5 | 1.2 - 2.5 | 2.5 - 4.0 | 3.0 - 5.5 |
| Total Flow-Opening ($mm^2$) | 37 | 56 | 74 | 98 | 160 | 260 | 180 | 285 | 430 | 600 | 1190 | 1780 |
| Max. Shot Weight (PS) | 90 g | 140 g | 200 g | 300 g | 500 g | 1 100 g | 800 g | 1 300 g | 1 900 g | 2 800 g | 5 200 g | 7 600 g |
| Pressure Loss | 10% | 8% | 6% | 9% | 6% | 4% | 8% | 6% | 4% | 8% | 6% | 4% |




| Nozzle: | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | R | SW1 | SW2 | SW3 | S | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSF 031 | 30 | 1.5 - 3.0 | 5 | | | | | | 11 | 41 | 25 | | 15 | 22 | 30 | 0.10 | 0.15 | 0.20 |
| MSF 051 | 40 | 1.6 - 4.0 | 6 | | | | | | 14 | 60 | 32 | | 19 | 27 | 41 | 0.15 | 0.25 | 0.40 |
| MSF101 | 50 | 2.5 - 5.0 | 10 | | | | | | 18 | 70 | 38 | | 22 | 32 | 50 | 0.25 | 0.40 | 0.60 |
| MSF 151 | 80 | 5.0 - 9.0 | 14 | | | | | | 30 | 146 | 64 | | 36 | 50 | 80 | 0.40 | 0.80 | 1.20 |

When ordering, please indicate the variable dimensions according to your specific requirements

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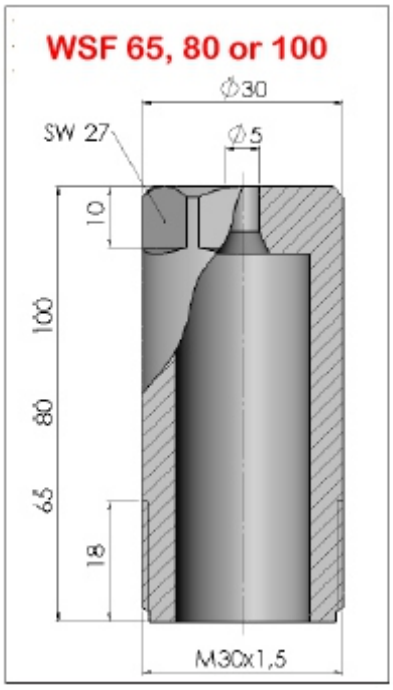
# Mould Gap Filter Nozzles (WSF)

Mould Gap Filters operate on the same principal as the Ring Gap Filters, but are much smaller in size and are designed to fit directly into the mould.

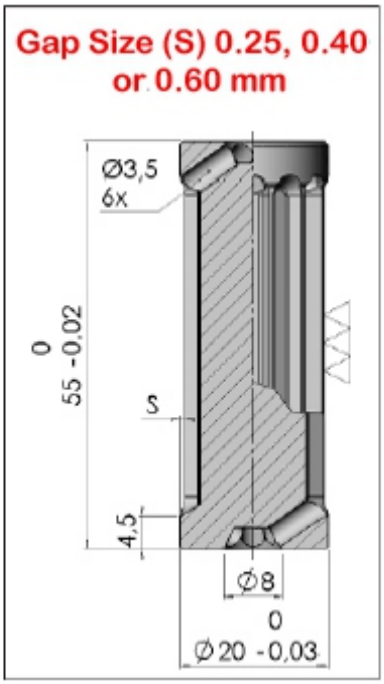
They are available in three standard sizes, having gap distances of 0.25, 0.4 and 0.6mm respectively. In choosing the correct gap size, you need to consider the Nozzle / Hot Runner Gate size in the mould as well as the shot weight. (See table below).

Pressure  increases during moulding indicates that the Filter Nozzle is working and has trapped foreign matter. The filter needs to be removed from the cartridge and cleaned. This is a relatively easy procedure.

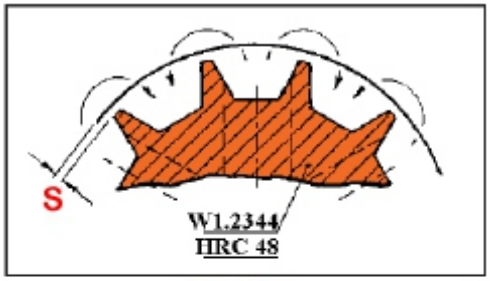
As with the Ring Gap Filter Nozzles, the gap size can be increased with the aid of a cylindrical grinder.



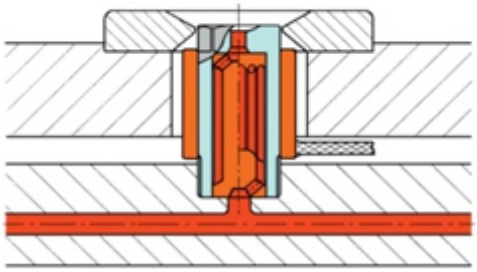

Cartridge Housing




Filter Element




S = Gap



Insertion in Mould

| Gap Size | 0.25mm | 0.40mm | 0.60mm |
|---|---|---|---|
| For Nozzle Opening | 0.8 - 1.5 | 1.2- 2.5 | 2.0 - 3.5 |
| Total Flow Opening | 130mm² | 200mm² | 300mm² |
| Max. Injection Weight | ~650g | ~1200g | ~1900g |
| Pressure Loss | ~8% | ~6% | ~4% |

**When ordering, please state these measurements:**

**WSF - 65, 80 *or* 100**

**Gap Size - 0.25, 0.40 *or* 0.60**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