SMF Filter & GPD Grid Protection Disk for SMN Injection Moulding Mixing Nozzle

The StaMixCo SMN Injection Moulding Mixing Nozzle contains eight (8) very efficient static mixing elements that homogenize the polymer melt during injection. Our Research & Development activities have resulted in new auxiliary products that provide great value to an end user and can easily be combined with the existing SMN static mixing elements:

- SMF Filter
- GPD Grid Protection Disk.

**BENEFITS** of these two devices are as follows:

- **SMF Filter:**
  - **Protects** nozzle tip, hot runner system and tooling when processing regrind material by filtering unwanted solids (e.g. aluminium metal parts, pebbles, etc.) in the polymer melt that a magnetic separator does not catch and thus avoids clogging and/or damage to downstream equipment.
  - **Holds back** partially melted pellets until melted

- **GPD Grid Protection Disk:**
  - **Protects** the SMN static mixing elements from possible damage during a “Cold Start” when a slug of unmelted polymer under high pressure can strike the face of the mixing elements and damage them. The GPD is extremely strong and prevents unmelted polymer from striking the mixing elements.

- **SMF and GPD devices are easily retrofit** into existing SMN Mixing Nozzles::
  - O.D. of SMF Filter and GPD Grid Protection Disk = O.D. of mixing elements
  - Length of SMF Filter = Length of two mixing elements
  - Length of GPD (Grid Protection Disk) = Length of one mixing element

Figure #1 shows the STAMIXCO SMF Filter family. For dimensions, please refer to Table #1 below. Figure #2 shows different installation combinations. On the left side, the SMF filter is installed on feed side (inlet) of the SMN static mixing elements; in the center, the SMF Filter is placed at the outlet of the static mixing elements; and on the right side, the first static mixing element has been replaced by the corresponding GPD Grid Protection Disk.
SMF Filter Design – INSTALLATION AND CHARACTERISTICS

View of SMF-Filter showing main dimensions – \( L_f = 2 \times L_{ME} \)

GPD – Grid Protection Disk – INSTALLATION AND CHARACTERISTICS

View of GPD showing the installation – \( L_{GPD} = L_{ME} \)

<table>
<thead>
<tr>
<th>Type</th>
<th>I.D. (mm)</th>
<th>O.D. (mm)</th>
<th>( N_{SP} ) ( (B_{SP}^* = 1 \text{ mm}) )</th>
<th>( L_{F/GPD} ) (mm)</th>
<th>( L_f / L_{ME} )</th>
<th>fits to mixing nozzle</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMF-12</td>
<td>12</td>
<td>18</td>
<td>6</td>
<td>16.0</td>
<td>2 **</td>
<td>SMN-12</td>
</tr>
<tr>
<td>SMF-18</td>
<td>18</td>
<td>26</td>
<td>8</td>
<td>22.5</td>
<td>2</td>
<td>SMN-18</td>
</tr>
<tr>
<td>SMF-22</td>
<td>22</td>
<td>30</td>
<td>11</td>
<td>27.0</td>
<td>2</td>
<td>SMN-22</td>
</tr>
<tr>
<td>SMF-27</td>
<td>27</td>
<td>35</td>
<td>13</td>
<td>33.0</td>
<td>2</td>
<td>SMN-27</td>
</tr>
<tr>
<td>SMF-33</td>
<td>33</td>
<td>42</td>
<td>15</td>
<td>40.0</td>
<td>2</td>
<td>SMN-33</td>
</tr>
<tr>
<td>SMF-40</td>
<td>40</td>
<td>50</td>
<td>19</td>
<td>48.0</td>
<td>2</td>
<td>SMN-40</td>
</tr>
<tr>
<td>GPD-18</td>
<td>18</td>
<td>26</td>
<td>-</td>
<td>11.25</td>
<td>-</td>
<td>SMN-18</td>
</tr>
<tr>
<td>GPD-22</td>
<td>22</td>
<td>30</td>
<td>-</td>
<td>13.5</td>
<td>-</td>
<td>SMN-22</td>
</tr>
<tr>
<td>GPD-27</td>
<td>27</td>
<td>35</td>
<td>-</td>
<td>16.5</td>
<td>-</td>
<td>SMN-27</td>
</tr>
</tbody>
</table>

* Upon request, \( B_{SP} \) can be adjusted to 0.7 to 1.5 mm
** Upon request, SMF-12 can be delivered with \( L_f / L_{ME} = 3 \) (minimum purchase of 5 pieces required)

Table #1: SMF and GPD dimension - Tolerances of OD and \( L_{F/GPD} \) equal to those of the corresponding SMN size

Additional Information Regarding the SMF Filter and GPD Grid Protection Disk:

- Material:
  SMF: DIN 1.2344 (X40CrMoV51), Nitrided
  GPD: 17-4PH (1.4542/A630) heat treated stainless steel
- Flow direction: any direction
- Availability: stock item

A young company with over 60 years of employee accumulated experience in static mixing technology.

Stamixco Ltd.
Kronaustrasse 10
CH-8404 Winterthur, Switzerland
Tel: +41 52 338 17 11
Fax: +41 52 338 17 33
E-mail: info@stamixco.com

North and South America
StaMixCo LLC
235 – 84th Street
Brooklyn, NY 11209, USA
Tel: +1 (718) 748 4600
Fax: +1 (718) 833 8827
E-mail: stamixco@msn.com

NOTE: We believe the information contained in this brochure is correct. However, the information is not to be construed as implying any warranty or guarantee of performance. We reserve the right to modify the design and construction of our products anytime based on new findings and developments. © 2010

SMF_GPD_10.2010