Backflush Treatment Unit

The BTU unit with integral backflushing filter is a turnkey automatic filtration unit for watermiscible cooling lubricants, oils or washing water which continuously filters solid particles, such as very fine magnetic and non-magnetic metal particles, corundum, sand particles etc. It provides long-term filtration producing reduced-particle filtrate. The quality of the filtrate is dependent on the separation limit of the filter used.

A BTU unit generally consists of:
- Backflushing filter for the main filtration
- Process twist sieve (PTS) to treat the backflushed volume
- Buffer tank with components (only BTU1)
- Control

The process twist sieve (PTS) is a component which is fitted downstream from the backflushing filter to filter the backflushed volume. In this way, with the help of the twist sieve, a further filtration process is carried out via the backflushing line.

The solid particles from the backflushing volume are collected in a bag filter which is suspended under the twist sieve. When this is full, it is easy to dispose of by pulling open the drawer.

The fluid filtered by the twist sieve or the bag flows back to the buffer tank (BTU1). As soon as the fluid level in the buffer tank reaches the upper switch point of the level gauge (optional), the tank pump (optional) empties the tank.

Due to the short-term pressure shock when backflushing the automatic filter and due to the tangential inlet flow, the fluid is filtered by the wire mesh inside the twist sieve. Approx. 70 % of the backflushing volume passes through the twist sieve and is therefore already filtered when it flows into the buffer tank below the filter via the channel on one side of the twist sieve.

The remaining 30 % of fluid which is heavily contaminated with particles is forced by the centrifugal force and gravity through an opening in the floor of the twist sieve down into a bag filter. The fluid is filtered though the bag from the inside to the outside. Particles are retained and the cleaned emulsion flows into the buffer tank. The pressure shock ensures that the wire mesh (TopMesh) is flushed at every backflushing process, i.e. the twist sieve is self-cleaning and practically maintenance-free.

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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## How to Build a Valid Model Number for a BTU:

### BOX 1
**Unit Type**
- BTU1 = Add-on unit
- BTU3 = Tank-top unit

### BOX 2
**Filtration Rating**
- 25 = D25
- 40 = D40
- 60 = D60
- 80 = D80
- 100 = D100
- 150 = D150

### BOX 3
**Bag Filter Material**
- PE = Polyester
- PP = Polypropylene
- N = Nylon

**Bag Filter Filtration Rating**
- 25 = 25 µm
- 50 = 50 µm
- 100 = 100 µm
- 150 = 150 µm

### BOX 4
**Twist Sieve Housing/Buffer Tank Material**
- EE = Housing and buffer tank: stainless steel
- EN = Housing: stainless steel; buffer tank: carbon steel
- NN = Housing and buffer tank: carbon steel
- NE = Housing: carbon steel; buffer tank: stainless steel
- EEE = Housing, buffer tank, filter frame: stainless steel

### BOX 6
**Control Functions**
- 0 = Unit without control function
- N1 = Level monitoring of buffer tank
- N2 = Level monitoring of bag filter
- N3 = Level monitoring of buffer tank and bag filter
- S = Control complete

### BOX 7
**Pump**
- T = Return pump in buffer tank (only possible with BTU1)

### BOX 8
**Modification Number**
- X = The latest version is always supplied

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**Example:**

Box 1: BTU1
Box 2: 80
Box 3: PP
Box 4: EE
Box 5: S
Box 6: T
Box 8: X

**Selection:**

= BTU1-80-P-50-EE-S-T-X

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**Table: Filter Model Number Selection**

<table>
<thead>
<tr>
<th>Box</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>BOX 1</td>
<td>Unit Type</td>
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<tr>
<td>BOX 2</td>
<td>Filtration Rating</td>
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<td>BOX 3</td>
<td>Bag Filter Material</td>
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<tr>
<td>BOX 4</td>
<td>Bag Filter Filtration Rating</td>
</tr>
<tr>
<td>BOX 5</td>
<td>Twist Sieve Housing/Buffer Tank Material</td>
</tr>
<tr>
<td>BOX 6</td>
<td>Control Functions</td>
</tr>
<tr>
<td>BOX 7</td>
<td>Pump</td>
</tr>
<tr>
<td>BOX 8</td>
<td>Modification Number</td>
</tr>
</tbody>
</table>

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**Legend:**

- BTU
- ATF
- PLF1
- PVD
How to Build a Valid Model Number for an AutoFilt® for BTU:

<table>
<thead>
<tr>
<th>BOX 1</th>
<th>BOX 2</th>
<th>BOX 3</th>
<th>BOX 4</th>
<th>BOX 5</th>
<th>BOX 6</th>
<th>BOX 7</th>
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Example: NOTE: One option per box

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<tr>
<th>BOX 1</th>
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<td>E</td>
<td>2</td>
<td>L</td>
<td>A-E-1-E-E-E-2-L</td>
</tr>
</tbody>
</table>

**BOX 1**
- **AutoFilt®**
  - A = RF3-C
  - B = RF3-CG
  - D = RF3-0
  - E = RF3-0G
  - F = RF3-1
  - G = RF4-1
  - H = RF4-2

**BOX 2**
- **Control**
  - 0 = w/o control
  - E = EPT

**BOX 3**
- **Voltage**
  - RF3
  - 0 = w/o control
  - 1 = 3x 400 V/N/PE, 50 Hz
  - 2 = 3x 400 V/X/PE, 50 Hz
  - 3 = 3x 500 V/X/PE, 50 Hz
  - 4 = 3x 230 V/N/PE, 50 Hz
  - 5 = 3x 230 V/X/PE, 50 Hz
  - 6 = 3x 415 V/X/PE, 50 Hz
  - 7 = 3x 415 V/N/PE, 50 Hz
  - 8 = 3x 460 V/N/PE, 50 Hz
  - RF4
  - M = w/o control; with solenoid valve 230 V AC
  - N = w/o control; with solenoid valve 24 V DC
  - O = w/o control; with solenoid valve 230 V AC
  - P = w/o control; with solenoid valve 24 V DC

**BOX 4**
- **Materials Of Housing (RF3 Only)**
  - 0 = Carbon steel, external primer (“N”)
  - 1 = Carbon steel, external primer, internal coating (“NM”)
  - 3 = Stainless steel (“E”)
  - AA = Configuration (AAE): aluminum, aluminum, stainless steel
  - EE = Configuration (EEE): stainless steel, stainless steel, stainless steel
  - NN = Configuration (NNE): carbon steel, carbon steel, stainless steel

**BOX 5**
- **Materials Of Backflushing Valve**
  - RF3
    - N = Carbon Steel
    - E = Stainless Steel
  - RF4
    - 1 = Coaxial Valve
    - 2 = Ball Valve

**BOX 6**
- **Differential Pressure Gauge**
  - RF3
    - 1 = Pressure Chamber Aluminum
    - 2 = Pressure Chamber Stainless Steel
    - 3 = With chemical seal Stainless Steel
  - RF4
    - F = Fixed value: 0.5 bar
    - A = Adjustable: 0.1 - 1.0 bar
    - G = GW indicator, N/C

**BOX 7**
- **Flange Options (RF3 only)**
  - 1 = Filter outlet opposite filter inlet (standard) (not for RF3-C)
  - 2 = Filter outlet offset by 90° clockwise to standard
  - 3 = Filter outlet offset by 180° clockwise to standard

**BOX 8**
- **Filter Elements (RF3)**
  - B = KD25
  - C = KD40
  - D = KD60
  - E = KD80
  - L = KS50
  - M = KS100
  - N = KS150
- **Filter Elements (RF4-1)**
  - B = KMD25
  - C = KMD40
  - D = KMD60
  - E = KMD80
  - L = KMS50
  - M = KMS100
  - N = KMS150
- **Filter Elements (RF4-2)**
  - B = KND25
  - C = KND40
  - D = KND60
  - E = KND80
  - L = KNS50
  - M = KNS100
  - N = KNS150
How to Build a Valid Model Number for a Process Twist Sieve:

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<tr>
<th>BOX 1</th>
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</tbody>
</table>

= PTS-40-250-E-L-2-50

**Unit Type**

- PTS = Process twist sieve

**Filtration Rating**

- 25 = D25
- 40 = D40
- 60 = D60
- 80 = D80
- 100 = D100
- 150 = D150

**Diameter**

- 180 = Ø 180 mm (only for RF4, without)
- 180/1 = Ø 180 mm (only for RF4-1, with bracket)
- 180/2 = Ø 180 mm (only for RF4-2, with bracket)
- 250 = Ø 250 mm (only for RF3-C and RF3-0)
- 450 = Ø 450 mm (only for RF3-1)

**Housing Material**

- N = Carbon steel, primed
- E = Stainless steel

**Housing Length**

- K = Short (standard for PTS-180)
- L = Long (standard for PTS-250/-450)

**Level Switch**

- 0 = Without
- 1 = With level switch stainless steel (only for diameters 250 mm, 450 mm)

**Bag Filter Material**

- PE = Polyester
- PP = Polypropylene
- N = Nylon

**Bag Filtration Rating**

- 25 = 25 µm
- 50 = 50 µm
- 100 = 100 µm
- 150 = 150 µm

**Modification Number**

- X = The latest version is always supplied