Oil Filter Cut-Away Comparison Kit
Motorcraft Oil Filter Construction

- Steel Case - Multiple flutes for easy removal
- Efficient Filter Media
- Corrugated Steel Center Tube
- Anti-Drain-Back Valve - Heat Resistant Silicone
- Pressure Relief / By-Pass Valve At Inlet
- End cap seam is crimped and rolled securely
### Motorcraft Oil Filters

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>Pressure Relief Valves</strong></td>
<td>Feature an up-front (threaded-end) pressure relief valve design which prevents unfiltered oil from reaching the engine</td>
</tr>
<tr>
<td><strong>Anti-Drain Back Valve</strong></td>
<td>Top selling Motorcraft oil filters utilize silicone rubber anti-drain back valves for higher heat resistance</td>
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<tr>
<td><strong>Center Tubes</strong></td>
<td>Corrugated steel center tubes that withstand pressure surges and prevent leakage</td>
</tr>
<tr>
<td><strong>Quality Construction</strong></td>
<td>Motorcraft filters have well-bonded end plates and consistent pleat spacing</td>
</tr>
<tr>
<td><strong>Media Area</strong></td>
<td>Filter media is formulated to meet Ford OEM requirements and media area is larger for optimal efficiency and capacity</td>
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<td></td>
<td>Pleat number and height equate to more filtering surface area and greater filtering capacity</td>
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### Aftermarket Oil Filters

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Pressure Relief Valves</strong></td>
<td>Many aftermarket filters use a dome-end design relief valve which may allow unfiltered oil into the engine</td>
</tr>
<tr>
<td><strong>Anti-Drain Back Valve</strong></td>
<td>Many aftermarket anti-drain back valves are constructed of nitrile rubber that can become brittle over time when exposed to hot oil</td>
</tr>
<tr>
<td><strong>Center Tubes</strong></td>
<td>Many aftermarket filters have plastic center tubes</td>
</tr>
<tr>
<td><strong>Quality Construction</strong></td>
<td>Some aftermarket filters are not well bonded, allowing unfiltered bypass</td>
</tr>
<tr>
<td><strong>Media Area</strong></td>
<td>Some aftermarket filters may use lower-quality steel case</td>
</tr>
<tr>
<td></td>
<td>Aftermarket filter media is not designed to meet Ford's requirements and the media area is typically smaller</td>
</tr>
</tbody>
</table>
Motorcraft Design Advantages

Typical Oil Filter Alignment on Engine

FL-820S

Open Pressure Relief / By-pass Valve

Oil flow to engine

Aftermarket

Oil flow to engine

Sludge picked up in oil

Sludge build up
Motorcraft vs. Pennzoil

Motorcraft FL-820S
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

Pennzoil PZ-42
- 15 Flutes
- Metal tension clip
- Dome-end pressure relief valve (may allow contaminants back into engine)
- Metal end caps
- Metal center tube
- 36 pleats, 2 2/8” High
- Metal end caps
- Anti-drainback valve – Nitrile Rubber (prone to harden with heat)
Motorcraft vs. Fram

Motorcraft FL-820S
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8 ” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

Fram PH-2
- None, black mat paint finish
- Metal tension clip
- Paper end caps
- Metalcenter tube
- 37 pleats, 3 “High
- Anti-drainback and pressure relief valve – Nitrile Rubber (prone to harden with heat)
Motorcraft vs. Bosch

Motorcraft vs. Bosch

- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

Bosch

- 15 Flutes
- Metal tension clip
- Metal center tube
- Metal end caps
- 63 pleats, 2 3/8” High
- Dome-end pressure relief valve (may allow contaminants back into engine)
- Anti-drainback valve – Heat Resistant Silicone

FL-820S

#3410
Motorcraft vs. Champ

Motorcraft FL-820S
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

Champ PH-820
- 15 Flutes
- Metal tension clip
- Fibrous end caps
- 58 pleats, 2” High
- Plastic cage center tube
- Anti-drainback and pressure relief valve – Nitrile Rubber (prone to harden with heat)
Motorcraft vs. AC-Delco

Motorcraft FL-820S
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- Metal tension clip
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

AC-Delco PF-1250
- 15 Flutes
- Metal tension clip
- White fiber end caps
- Plastic cage center tube
- 58 pleats, 2 2/8” High
- Anti-drainback and pressure relief valve – Nitrile Rubber (prone to harden with heat)
Motorcraft vs. Valvoline

Motorcraft
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

Valvoline
- 15 Flutes
- Metal tension clip
- White fiber end caps
- 58 pleats, 2 2/8” High
- Plastic cage center tube
- Anti-drainback and pressure relief valve – Nitrile Rubber (prone to harden with heat)

FL-820S

VO-47
Motorcraft vs. STP

Motorcraft
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone
- FL-820S

STP
- 15 Flutes
- Metal tension clip
- Metal end caps
- White fiber end caps
- 58 pleats, 2 2/8” High
- Plastic cage center tube
- Anti-drainback and pressure relief valve – Nitrile Rubber (prone to harden with heat)
- S-2
Motorcraft vs. Mighty

Motorcraft
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

Mighty
- 15 Flutes
- Metal tension clip
- White fiber end caps
- 58 pleats, 2 2/8” High
- Plastic cage center tube
- Anti-drainback and pressure relief valve – Nitrile Rubber (prone to harden with heat)

FL-820S

M-4651
Motorcraft vs. ProLine

Motorcraft FL-820S
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8 ” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

ProLine PPL-24651
- 15 Flutes
- Metal tension clip
- Metal end caps
- 56 pleats, 2 3/8” High
- Metal center tube
- Anti-drainback valve – Nitrile Rubber (prone to harden with heat)
- Dome-end pressure relief valve (may allow contaminants back into engine)
Motorcraft vs. Fleetguard

- **Motorcraft (FL-820S)**
  - 50 flutes. More flutes for easy removal
  - Metal tension clip
  - Metal center tube
  - Metal end caps
  - 50 pleats, 2 5/8” High
  - Internal pressure relief valve at inlet
  - Anti-drainback valve – Heat Resistant Silicone

- **Fleetguard (LF-3681)**
  - 15 Flutes
  - Metal Spring for tension
  - Metal center tube
  - Metal end caps
  - 52 pleats, 2 3/8” High
  - Anti-drainback valve – Nitrile Rubber (prone to harden with heat)

- **Dome-end pressure relief valve (may allow contaminants back into engine)**
- **Heat Resistant Silicone**
- **Nitrile Rubber (prone to harden with heat)**
Motorcraft vs. Mobil 1

**Motorcraft FL-820S**
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

**Mobil M1-210**
- 15 Flutes
- Metal tension clip
- Dome-end pressure internal relief valve (may allow contaminants back into engine)
- Metal end caps
- 55 pleats, 2 1/8” High
- Metal center tube
- Anti-drainback valve – Heat Resistant Silicone

FL-820S
M1-210
**Motorcraft vs. K & N**

- **FL-820S**
  - 50 flutes. More flutes for easy removal
  - Metal tension clip
  - Metal center tube
  - Metal end caps
  - 50 pleats, 2 5/8” High
  - Internal pressure relief valve at inlet
  - Anti-drainback valve – Heat Resistant Silicone

- **HP-2010**
  - No flutes, 1” nut tacked to can
  - Metal tension clip
  - Metal end caps
  - 55 pleats, 2 1/8” High
  - Metal center tube
  - Dome-end pressure relief valve (may allow contaminants back into engine)
Motorcraft vs. Wix

Motorcraft vs. Wix

- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

Motorcraft FL-820S

Wix #51372

- 15 Flutes
- Spring for tension
- Metal end caps
- Metal center tube
- 61 pleats, 2 6/8” High
- Anti-drainback and pressure relief valve – Heat Resistant Silicone
Motorcraft vs. PRO-TEC

Motorcraft:
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

PRO-TEC:
- 15 Flutes
- Spring for tension
- Metal end caps
- Metal center tube
- 52 pleats, 2 6/8” High
- Internal pressure relief valve at inlet
- Anti-drainback and pressure relief valve – Heat Resistant Silicone

FL-820S

#159
Motorcraft vs. NAPA Gold

- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal end caps
- 50 pleats, 2 5/8" High
- Metal center tube with internal pressure relief valve
- Anti-drainback valve – Heat Resistant Silicone

FL-820S

- 15 Flutes
- Spring for tension
- Metal end caps
- 59 pleats, 2 6/8" High
- Metal center tube
- Anti-drainback and pressure relief valve – Heat resistant silicone

#1372
Motorcraft vs. Car Quest

Motorcraft
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

FL-820S

Car Quest
- 15 Flutes
- Spring for tension
- Metal end caps
- 54 pleats, 2 7/8” High
- Metal center tube
- Anti-drainback and pressure relief valve – Heat resistant silicone

R85272/ B4651
Motorcraft vs. MotorTrend ML2

Motorcraft FL-820S
- 50 flutes. More flutes for easy removal
- Metal tension clip
- Metal center tube
- Metal end caps
- 50 pleats, 2 5/8” High
- Internal pressure relief valve at inlet
- Anti-drainback valve – Heat Resistant Silicone

MotorTrend ML-2
- 15 Flutes
- Metal tension clip with spring and plastic clip as pressure relief valve (may allow contaminants back into engine)
- Paper end caps
- 37 pleats, 3” High
- Metal center tube
- Anti-drainback valve – Nitrile Rubber (prone to harden with heat)