Porous metal flow control.

Where the only variation is in design.
Mott porous metal. The most reliable means of restricting gas flow.

Mott precision porous metal flow restrictors are reliable, cost-effective replacements for orifices, capillaries, or micrometering valves. A porous metal flow restrictor is, in effect, a multiple orifice device with many very small holes, creating a vast number of random pathways. Typically, a Mott porous metal restrictor has a porous surface area 500 times that of an equivalent orifice.

Greater corrosion resistance - Mott offers a wide variety of metals and alloys to accommodate special needs, such as corrosion resistance. Standard construction consists of stainless steel but Mott flow restrictors can also be made from Inconel®, Monel®, Hastelloy®, Alloy 20, nickel, gold, silver and titanium.

Design flexibility - Mott flow restrictors accommodate virtually any flow requirement, with ratings greater than 1 Standard Cubic Foot per Minute (scfm) to 1 x 10⁻⁶ Standard Cubic Centimeters per Second (scce/sec). Porous metal elements encapsulated in sleeves measuring \( \frac{1}{8} \)" or \( \frac{1}{4} \)" outside diameter, or mounted within a variety of standard fittings are also available.

For technical data on a specific Mott flow restrictor, or to help identify the best design for your application, contact us with the following parameters:
1. Type of gas
2. Upstream pressure
3. Downstream pressure
4. Desired flow rate (positive pressure, ATM or vacuum)
5. Fitting (if applicable) a. Type b. Size c. Material

Application examples – Gas flow control in breathing apparatus • flow control of liquid medicine • flow control of gas chromatographs • safety devices on anesthesia equipment • gas mixing into beverages • fuel metering in space probes.

Custom flow restrictors.
Mott can design and manufacture flow restrictors to meet virtually any special requirement. For applications involving exotic materials, high pressures and flows, non-stocked standard fittings and special hardware, Mott will accurately fulfill customer-directed specifications. Or, you can request assistance from Mott to help create the best design. Either way, Mott offers the experience and quality in manufacturing to provide a reliable solution.

High-purity flow restrictors.
For applications with ultra-pure gases, Mott offers a distinct line of high-purity flow restrictors. Standard materials of construction are 316L SS porous media and 316 SS or 316L SS housing. High-purity units are cleaned and bagged in Mott’s Class100 clean room environment to ensure maximum out-of-box cleanliness. For information on these types of restrictors, contact Mott for additional literature or technical assistance.

Hastelloy is a registered trademark of Haynes International, Inc. Inconel and Monel are registered trademarks of Special Metals Corporation.
Fitting flow restrictors.

The same Mott flow restrictor elements available in encapsulated sleeves are also offered in standard fittings – tube union, male adapter and hex nipple. Flow restrictor/fitting combinations are available for virtually any flow, gas and pressure requirement.

- Standard compression fittings: tube union, male adapter and hex nipple with flow restrictor installed and calibrated
- Materials of construction: 316L stainless steel, 300 Series stainless steel sleeves. For other materials, consult factory.
- Flow tolerance: +/- 7.5%. Consult factory to confirm flow tolerances for non-standard restrictors.
- Hole for press fit – 1/16”-diameter restrictors:
  - 0.1243/0.1247” ream, 32 RMS finish
- Hole for press fit – 1/32”-diameter restrictors:
  - 0.2506/0.2510” ream, 32 RMS finish
- Maximum test pressure – 1500 psig
- Flow rate: 1000 sccm
- Maximum test pressure – 1500 psig

**Specifications.**

- Available in 1/4” OD x 1/8”, and 1/4” OD x 1/4”
- Standard materials of construction: 316L stainless steel, 300 Series stainless steel sleeves. For other materials, consult factory.
- Flow rate: +/- 7.5%. Consult factory to confirm flow tolerances for non-standard restrictors.
- Hole for press fit – 1/16”-diameter restrictors:
  - 0.1243/0.1247” ream, 32 RMS finish
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**Table:**

<table>
<thead>
<tr>
<th>Type &amp; Size</th>
<th>Fitting Material</th>
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<tbody>
<tr>
<td>5100 Series</td>
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<tr>
<td>Tube Union</td>
<td>Brass 316 SS</td>
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<tr>
<td>1/4” x 1/4”</td>
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<tr>
<td>5110 Series</td>
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<tr>
<td>Male Adapter</td>
<td>Brass 316 SS</td>
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<tr>
<td>1/8” Tube</td>
<td>Brass 316 SS</td>
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<tr>
<td>1/8” NPT</td>
<td>Brass 316 SS</td>
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<tr>
<td>1/4” Tube</td>
<td>Brass 316 SS</td>
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<td>1/4” NPT</td>
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<tr>
<td>5120 Series</td>
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<tr>
<td>Hex Nipple</td>
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Fittings other than above – consult factory.