



# FORMED BELLOWS VS. EDGE-WELDED METAL BELLOWS

	FORMED BELLOWS	EDGE-WELDED METAL BELLOWS
<b>Production</b>	Uses hydraulic pressure to force metal tubes to expand inside a mold	Welding of male and female metal diaphragms to create a convolution, then welding a series of convolutions to each other to create a bellows core.
<b>Materials of Construction</b>	Limited to metals with high elongation properties such as brass and bronze.	Can be produced from a wide range of materials including corrosion-resistant alloys and specialty metals.
<b>Characteristics</b>	<p>Thick, formed walls with inherent rigidity and stiffness.</p> <p>The process of forcing material into a form can create inconsistent wall thickness on both the OD and ID of the bellows unit which present as points of potential vulnerability or failure.</p>	<p>Individual metal diaphragm thickness is measured in mils (thousandths of an inch.) This characteristic allows for dramatically greater flexibility, range of motion, and space allowance.</p> <p>Preferred choice for harsh environments.</p>
<b>Spring Rate</b>	Formed bellows typically have a thicker convolution structure with higher spring rates and larger deviations than edge-welded bellows, impacting precision loading.	Edge-welded bellows seals accommodate the addition or subtraction of individual convolutions, enabling a precise spring rate. Achieving the correct spring rate lightens the force affecting the faces which generates less heat, leading to longer seal life.
<b>Cost</b>	<i>Typically</i> less expensive per piece than an edge-welded bellows unit when produced high volume. Higher tooling & set up costs.	<i>Typically</i> less expensive than formed bellows for small volume runs. Actual costs are variable due to quantity, materials of construction and size.