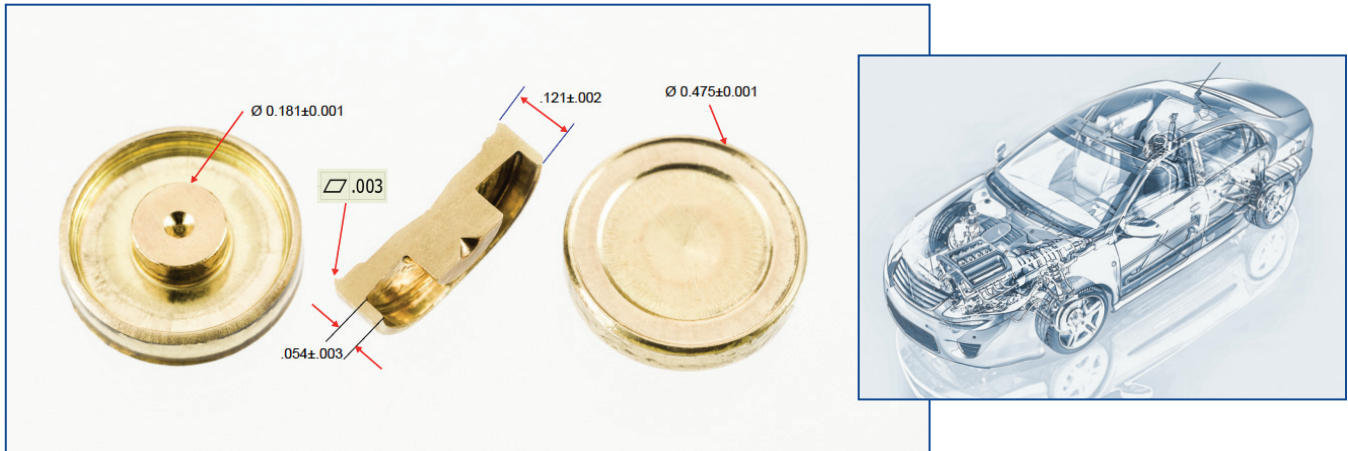


Automotive Pressure Regulator Pin



Industry: Automotive Fuel Systems **Application:** Fuel Pressure Regulator – Hybrid Vehicles

A new valve design used in a fuel pressure regulator for a major automotive part manufacturer presented several challenges for manufacturability. First, the design of the valve seat limited the weight of the part, so to reduce weight, the material between the rubber seal and the spring had to be as thin as possible. Second, the rubber seal molded into the valve seat required compliance with a strict flatness specification of +/- .002” to ensure the rubber over-mold retention ring provided precise and repeatable seating.

Sussex Wire produced the part with a very thin wall meeting the flatness specs, while at the same time, actually improved the valve’s surface strength by virtue of work hardening the material property from the cold forming process. Production quantities exceed 4,000,000 parts per year, with no degradation of tooling or part compliance.

Material: Lead-free CDA 260 Brass

Critical Tolerances:

- ✓ Major OD: +/- 0.0015”
- ✓ Overmold Extrusion Surface Flatness: +/-0.002”
- ✓ Radii: +/-0.0015”

Manufacturing Processes:

- ✓ Cold Heading
- ✓ Extrusion
- ✓ Upsetting
- ✓ Deburring
- ✓ Finishing

Unique Benefits

- ✓ Tight tolerance Pressure Regulator Valve Pin
- ✓ 100% Net Shape – No Material Scrap
- ✓ Significantly lower cost than machined part
- ✓ Work hardening enhances component durability and product life cycle
- ✓ Eco-friendly lead-free brass

To contact Sussex Wire: 1-610-250-7750 / www.sussexwire.com

Engineered Cold Formed Solutions For The Most Demanding Applications

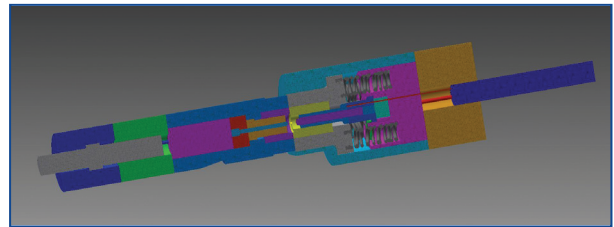
Sussex Wire is a global pioneer in collaborative design, development, manufacture and control of miniature and micro-miniature metal components for customers seeking a better solution for yield, strength, assembly and cost through the application of cold forming technologies.

Mechanical design and assembly firms the world over turn to Sussex Wire for their most advanced near-net-shape part requirements to eliminate material scrap, increase mechanical strength and reduce costly secondary operations.

Sussex Wire employs vertically integrated LEAN practices in design, manufacturing, order and global inventory management including stock custom miniature and micro components for JIT delivery to international customers in the Medical, Automotive, Aerospace, Energy, Appliance, Consumer Electronics, Defense and Semiconductor markets.

Our engineering team applies advanced progression, materials characterization, tooling and manufacturing knowledge to develop cost-effective production routines for each customer's requirements.

Using finite element analysis, quick-turn prototyping, CAD/CAM, soft tooling and in-house tool-making, Sussex has the depth and capabilities to move your project quickly into production.



Quality Systems, Controls, Materials

Standards	ISO9001:2008, ITAR, NIST Traceability	Materials 302 Stainless Steel, 304 Stainless Steel 42-6 Stainless Steel 48 Alloy, 52 Alloy ASTM-F30 Copper Copper Core 2:1, 3:1, & Special Ratios Inconel X750 Kovar ASTM-F15 Molybdenum Nickel – Pure, Nickel Iron Alloys Niobium Platinum/Iridium RA330-04 Silver
Material Control	DFARS, RoHS, AMS	
Dimensioning & Tolerancing	AOI, RAM Optical Metrology, Micrometers, Optical Comparators, Drop Gages, Pin Gages, Vernier, 100% Inspection Capabilities	



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