

As the leader in valve spring manufacturing, COMP Cams® has committed enormous resources in development of new valve spring designs, new materials, and new processing technologies.

Following our intense, and analytical process of valve spring design, COMP Cams® springs are manufactured to the most demanding requirements in the industry.

From the time that our valve spring wire is formulated to the time you open a spring box, no detail is overlooked in providing you with the highest quality product available anywhere.

You can be assured that our valve springs are at the cutting edge of technology, and are the finest available.

How we do it

Making our technologically advanced COMP Cams® Engine Lab™ springs begins with the manufacture of material for each specific spring application. Valve spring demands in the rigorous applications of high performance means that material is super critical to the quality and performance of the final product.

Material characteristics and composition are the heart of the superior COMP Cams® Engine Lab™ valve springs. So it goes without saying that you just don't jog down to the nearest hardware store to buy wire to make valve springs. Material development is an expensive and complex process, to which we have invested enormous resources to bring you the very best valve spring possible.

The materials used in our springs are created through collaboration between COMP Cams® engineers, and metallurgists. Together they formulate the best materials possible for the application-specific design process.

Our spring materials are then produced at the best steel mills in the world. The result is spring material that surpasses manufacturing requirements as set fourth by SAE (Society of Automotive Engineers).

That means that every Engine Lab™ spring is made from the finest application-specific material available. However, the process does not end there. That's because our engineers and metallurgists are constantly searching the most prestigious steel mills and wire producers the world over, seeking the most advanced technology and the highest quality materials.

Material is key

Even though our springs are made from the Super Clean wire, material integrity is by no means taken for granted. From the moment each run of valve spring wire is produced, it undergoes rigorous quality assurance testing. This is done to prove that our spring wire meets and exceeds the demands of the application for which it is intended. Quality control testing on our spring wire is accomplished in three steps: tensile testing, surface inspection, and chemical analysis.

Tensile testing measures the strength of our materials. And when this phase is complete we are sure that tensile strength of our wire will meet and exceed its assigned application.

Surface inspection is achieved through a process called eddy-current testing. This is an electro-magnetic process employed to microscopically inspect the wire surface defects and any defective material is naturally rejected. 100 percent of our valve spring wire is eddy-current tested. Not just once, but twice.

The eddy-current process is first done during wire manufacture when the material is drawn from wire rod down to its final size. Then it's done again when the wire is coiled into a spring.

Finally, a chemical composition analysis is made to insure that the material properties of the wire are precisely correct. Using a process known as EDS, (Energy Dispersive Spectroscopy) our wire is checked to be sure the composition is correct for its intended application.

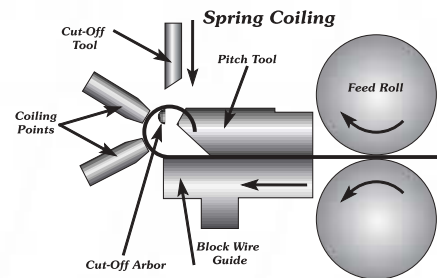
What all of this testing means to you is that you can be confident that the integrity of our spring material is unsurpassed and the steel used in your springs is the best and most correct for your springs.

Spring Coiling and Production

Once the wire has passed its rigorous testing and is certified, actual production of our Engine Lab™ springs begins. COMP Cams® Engine Lab™ valve springs are processed in a dedicated-cell utilizing the most advanced CNC equipment available in manufacturing. Our springs are manufactured to the specific and exacting tolerances of our engineers for the specific application intended. It also means that each spring is consistent from batch to batch.

Each spring is coiled, stress relieved, ground, deburred, shot-peened and heat set under very exacting requirements. The entire process is carried out by a highly-trained cell-dedicated team whose only job is to assure that our springs are consistent, accurate and created to our specifications and standards.

Our springs are coiled on the most advanced CNC machines in the industry. This assures that each and every spring is wound to the exacting specifications required for each application. The use of this high tech equipment cannot be underestimated because this is where the rubber meets the road, so to speak. The transfer of engineering design to accurate wire coiling is imperative, and we have employed the most precise equipment in the world to make sure that each spring design is made to our demanding requirements.



COMP Cams® springs are coiled on the most advanced CNC machines in the industry.

Following coiling, springs are stress relieved. Since the coiling operation permanently bends the wire, this operation removes harmful residual stresses from the wire. This step puts the spring in an oven for a prescribed amount of time and temperature. In this operation, the temperature is held to a two-degree tolerance for stress relief.