**THE CUSTOMER’S PRODUCT**

- Portable carbon/sulfur determinator determines the chemical composition of a specimen of metal by burning a sample and analyzing the gases given off.
- Original design included an 8-station valve package, three remote-mounted valves and a regulator.
- Utilizing 45 different models of valves from 23 suppliers, plus manufacturing their own custom manifolds for all products.

**THE REQUIREMENTS**

- Reduce inventory costs by standardizing on fewer pneumatic valves from fewer suppliers.
- Reduce the expense of maintaining the inventory and tracking purchases.
- Increase robustness of valve package.
- Allow customer to concentrate on its core competency in instrument design.

**THE HUMPHREY ENGINEERED SOLUTION**

- Reduced the size and complexity of the pneumatic control valve manifold.
- Standardizing on the Humphrey HK5 valve for all instruments eliminated multiple valve acquisition costs.
- Each unit 100% fully tested.
- Manufactured in clean environment.
- New manifold assembly enhanced the product’s robustness and versatility for field applications.
Starting with the initial desire to reduce costs by standardizing its inventory, the customer discovered a broad range of other benefits to the Humphrey Engineered Solutions approach. The versatile HK5 valve would fit virtually all the control requirements, reducing both the purchasing costs and the design costs. Humphrey’s core competency in pneumatic design also enabled the customer to concentrate on its core competency – instrument design, not valve manifold manufacturing.

In addition, utilizing Humphrey to supply a completed sub-assembly further reduced the cost of materials, assembly and testing. Instead of a maze of tubing, connectors and separate components that had to be installed and tested, the customer now could simply install a 100% pre-tested sub assembly.