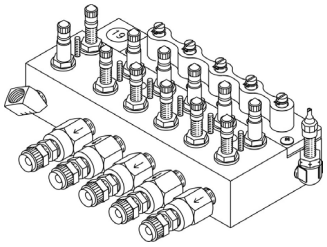
# Flow Finder Manifolds



As the first air pipe manifold designed as a serious leak locating tool, the System Studies Flow Finder Manifold™ offers unparalleled ease and accuracy in air flow measurement.
What makes our manifolds uniquely different from old style manifolds are their built-in Flow Finders™. Each chamber in the manifold is equipped with a Flow Finder to measure the outgoing flow to an individual cable. Another Flow Finder, of a higher flow range, measures incoming flow from the air pipe.

One of the primary advantages of installing and using Flow Finder Manifolds in your air pressure system is that they do not need to be turned off in order to take a manual reading. Each of the manifold's Flow Finders is equipped with a precision orifice which creates a small pressure differential proportional to the volume of air flowing through the device. This pressure differential can be accurately measured and converted to an air flow reading either manually using a System Studies Flow Gauge™ or remotely by a High Resolution Flow or Dual (pressure/flow) Transducer™.

Because there is no re-routing and restricting of air flow during the reading process (as is the case with old style manifolds when read by a portable flow rater), the stabilized reading from the Flow Finder Manifold is extremely accurate ( ± one percent of the Flow Finder's full scale reading). And with no manifold ports to shut off and turn back on after a reading, there is no fear of ever leaving a maintenance hole with air flow to an individual cable shut off.

Flow Finder Manifolds are available in two models, P/N 9800-3060 and P/N 9800-3070. Both of these models provide air distribution to a maximum of five cables (via five outgoing ports, each containing a Flow Finder). In addition to its five outgoing ports, the 9800-3060 Flow Finder Manifold is equipped with an incoming port to measure the total flow into the manifold.

Unlike the 3060 manifold, the 3070 model is not a standalone manifold; it is designed to be used only in conjunction with the 3060 to provide air delivery at locations with more than five cables.

The Flow Finder Manifolds can be ordered with a variety of tubing connector fittings and flow ranges to meet your specific air distribution needs (see explanations below). Some models are supplied with nickel-plated brass check valves on each of the outgoing ports to prevent air from back feeding into the manifold if a leak of break in the air pipe occurs.

## SPECIFICATIONS

### Performance

The pressure drop across any of the manifold's internal Flow Finder orifices is 0.188 PSI or 1.3 kilopascals (kPa) at full air flow, and 0.05 PSI (0.34 kPa) at half flow. Readings are taken manually using a System Studies Flow Gauge (9800-3100). Accuracy of an air flow reading is ± 1 percent of the full scale reading.

The Flow Finder Manifold can be used in conjunction with a high valve assembly, which is installed at a convenient, accessible location in the maintenance hole. The high valve enables remote flow readings to be taken from the Flow Finder Manifold, eliminating the need to climb into the maintenance hole.

### Material

The manifold housing is constructed of durable nickel-plated brass. Assembly parts and materials are either stainless steel or nickel-plated brass. All gaskets are made of silicone rubber. Individual flow chamber valve on/off controls are stainless steel.

### Operating Range

Flow Finder Manifolds have been tested and confirmed for reliable operation within the following parameters:

Operating Temperature Range: -40˚F (-4˚C) to +220˚F (104.4˚C)

Maximum Pressure: will withstand 20 PSI (138 kPa) over the entire operating temperature range

### Manual Measurement

Equipped with two sampler valves on each Flow Finder port to accommodate a Flow Gauge.

### Remote Measurement

The manifold's two tank valves on the incoming Flow Finder port are used to make pneumatic connection to a High Resolution Flow or Dual (Pressure/Flow) Transducer.

### Dimensions

The six port manifold is 3 inches (7.6 cm) high, 2.5 inches (6.4 cm) deep (including valves), and 6.5 inches (16.5 cm) wide. The five port model measures 5.25 inches (13.3 cm) wide; the other dimensions are identical to those of the six port manifold. Mounting holes are centered and placed 3 inches (6.4 cm) apart.

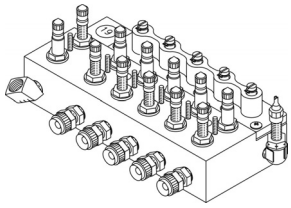
### Shipping Weight

Both the 3060 and 3070 models weigh approximately 6 pounds (2.7 kg)

## MODEL DESCRIPTIONS

The P/N 9800-3060 Flow Finder Manifolds are intended to be used in applications where a traditional five port manifold would be used. Please note that while the product description indicates that the manifolds are six port manifolds, only five outgoing ports are provided. The sixth port is used to measure incoming flow from the air pipe.

**9800-3060-LBS Manifold, 6-Port, Low Range, 3/8" Brass Fittings**



This "L" range Flow Finder Manifold is equipped with five 0-9.5 SCFH Flow Finders (for the outgoing cable ports) and one 0-19 SCFH Flow Finder in the incoming port. Tubing connectors are nickel plated brass, 1/4" NPT to 3/8" tube.

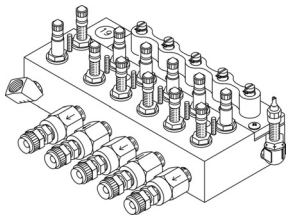
**9800-3060-MBS Manifold, 6-Port, Medium Range, 3/8" Brass Fittings**

Supplied with the same connector fittings as the "LBS" model described above, this "M" range manifold model is equipped with 0-9.5 SCFH Flow Finders in each of the outgoing ports and a 0-47.5 SCFH Flow Finder in the incoming port. It is identical in appearance to the 9800-3060-LBS shown above.

**9800-3060-HBS Manifold, 6-Port, High Range, 3/8" Brass Fittings**

The high range Flow Finder Manifold ("H" designation) is equipped with a 0-95 SCFH Flow Finder in the incoming port and 0-19 SCFH Flow Finders in the outgoing ports. Like both models above, this version is equipped with nickel plated brass, 1/4" NPT to 3/8" tubing connectors.

**9800-3060-LBV Manifold, 6-Port, Low Range, 3/8" Brass Fittings, Check Valves**



The "LBV" Flow Finder Manifold is equipped with five 0-9.5 SCFH Flow Finders (for the outgoing cable ports) and one 0-19 SCFH Flow Finder in the incoming port. Tubing connectors are nickel plated brass, 1/4" NPT to 3/8" tube, and each of the outgoing ports is equipped with a nickel plated brass check valve.

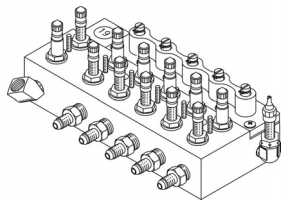
**9800-3060-MBV Manifold, 6-Port, Medium Range, 3/8" Brass Fittings, Check Valves**

This Flow Finder Manifold is equipped with the same connector fittings and check valves as described in the "LBV" model above. However, rather than having a 0-19 SCFH Flow Finder installed in the incoming port, this "M" model is equipped with a 0-47.5 SCFH incoming Flow Finder.

**9800-3060-HBV Manifold, 6-Port, High Range, 3/8" Brass Fittings, Check Valves**

Also equipped with nickel-plated brass check valves and 1/4" NPT to 3/8" tubing connectors, this Flow Finder Manifold model contains 0-19 SCFH Flow Finders in the outgoing ports and a 0-95 SCFH incoming port Flow Finder.

**9800-3060-LSS Manifold, 6-Port, Low Range, 37° Flared Stainless Steel Fittings**



The "LSS" Flow Finder Manifold is different from the models described above in that it is supplied with stainless steel, 37° flared tubing connector fittings (to be used with braided stainless steel tubing). The "L" designation denotes the range of Flow Finders supplied: a 0-19 SCFH in the incoming port and five 0-9.5 SCFHs in the outgoing ports.

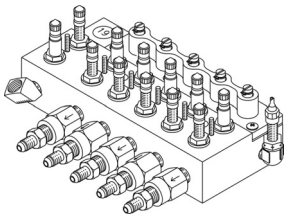
**9800-3060-MSS Manifold, 6-Port, Medium Range, 37° Flared Stainless Steel Fittings**

The medium range ("M") of this Flow Finder Manifold designates a 0-47.5 SCFH Flow Finder for the incoming port and 0-9.5 SCFH Flow Finders for the outgoing port. Like all "SS" designations, the manifold is equipped with five 37° degree, flared stainless steel tubing connector fittings.

**9800-3060-HSS Manifold, 6-Port, High Range, 37° Flared Stainless Steel Fittings**

This high range Flow Finder Manifold ("H" designation) is equipped with a 0-95 SCFH Flow Finder in the incoming port and 0-19 SCFH Flow Finders in the outgoing ports. Like both models above, this version is equipped with 37° degree, flared stainless steel tubing connector fittings.

**9800-3060-LSV Manifold, 6-Port, Low Range, 37° Flared Stainless Steel Fittings, Check Valves**



The "SV" Flow Finder Manifold contains both stainless steel, 37° degree flared tubing connectors and nickel-plated brass check valves on each of the five outgoing ports. The "L" designation represents the range of Flow Finders supplied: 0-19 SCFH (incoming port) and 0-9.5 SCFH (outgoing ports).

**9800-3060-MSV Manifold, 6-Port, Medium Range, 37° Flared Stainless Steel Fittings, Check Valves**

Identical in appearance to the "LSV" model above, this "M" range manifold is supplied with a 0-47.5 SCFH Flow Finder in the incoming port and 0-9.5 SCFHs in each of the outgoing ports. Connector fittings are 37° flared, stainless steel, and a nickel-plated brass check valve is installed between each fitting and the manifold body.

**9800-3060-HSV Manifold, 6-Port, High Range, 37° Flared Stainless Steel Fittings, Check Valves**

This manifold is equipped with a 0-95 SCFH Flow Finder in the incoming port and 0-19 SCFH Flow Finders in each of the outgoing ports. It also includes nickel-plated check valves on each of the outgoing ports.



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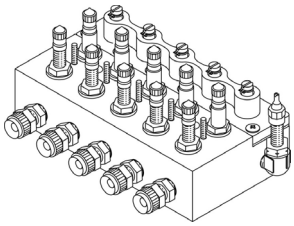
The P/N 9800-3070 five-port Flow Finder Manifold is intended to be used only with the P/N 9800-3060 model. Like the 3060, it contains a Flow Finder in each of its five outgoing ports, but it does not include an incoming port with a Flow Finder.

**9800-3070-LBS Manifold, 5-Port, Low Range, 3/8" Brass Fittings**

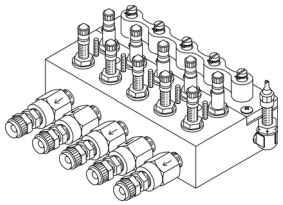


This Flow Finder Manifold is equipped with five 0-9.5 SCFH Flow Finders, one for each outgoing cable port. The manifold's "BS" tubing connectors are nickel-plated brass, 1/4" NPT to 3/8" tube. Please note that this model, and all 9800-3070 manifolds, are intended to be used with the 6-port manifolds. For this reason no input port is provided.

**9800-3070-HBS Manifold, 5-Port, High Range, 3/8" Brass Fittings**

The high range ("H") version of the 3070 "BS" Flow Finder Manifold is equipped with 0-19 SCFH Flow Finders in each of its cable ports. It is supplied with the same 1/4" NPT to 3/8" tube, nickel-plated brass fittings as the "LBS" model described above.

**9800-3070-LBV Manifold, 5-Port, Low Range, 3/8" Brass Fittings, Check Valves**

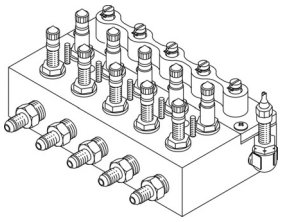


This Flow Finder Manifold is equipped with five 0-9.5 SCFH Flow Finders, one for each of the cable ports. The "BV" designation identifies the manifold's nickel-plated brass, 1/4" NPT to 3/8" tubing connectors and nickel-plated brass check valves.

**9800-3070-HBV Manifold, 5-Port, High Range, 3/8" Brass Fittings, Check Valves**

Like the 3070 "LBV" version described above, this Flow Finder Manifold is equipped with five nickel-plated brass, 1/4" NPT to 3/8" tubing connectors and nickel-plated brass check valves. The "H" designation pertains to the manifold's five 0-19 SCFH Flow Finders.

**9800-3070-LSS Manifold, 5-Port, Low Range, 37° Flared Stainless Steel Fittings**

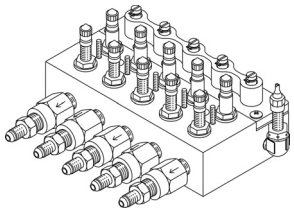


The 3070 "LSS" Flow Finder Manifold is different from the models described above in that it is supplied with stainless steel, 37° flared tubing connector fittings (to be used with braided stainless steel tubing). The "L" designation denotes the range of Flow Finders supplied: 0-9.5 SCFH in each of the five outgoing ports.

**9800-3070-HSS Manifold, 5-Port, High Range, 37° Flared Stainless Steel Fittings**

This Flow Finder Manifold is identical to the 3070 LSS described above, except that it is equipped with 0-19 SCFH Flow Finders in each of the five outgoing ports.

**9800-3070-LSV Manifold, 5-Port, Low Range, 37° Flared Stainless Steel Fittings, Check Valves**



The 3070 "LSV" Flow Finder Manifold has one 0-9.5 SCFH Flow Finder in each of its five outgoing ports. It is also equipped with five 37° flared, stainless steel fittings (to use with stainless steel braided tubing) and five nickel plated brass check valves.

**9800-3070-HSV Manifold, 5-Port, High Range, 37° Flared Stainless Steel Fittings, Check Valves**

This 3070 Flow Finder Manifold is identical in appearance and function to the 3070 LSV described above, except that it is supplied with 0-19 SCFH Flow Finders in each of its cable ports.

**9800-3070-CSV Manifold, 5-Port, Custom Range, 37° Flared Stainless Steel Fittings, Check Valves**

The "C" designation in this part number indicates that the manifold can be ordered with Flow Finders in ranges other than 0-9.5 SCFH or 0-19.0 SCFH. In most cases, this designation is used when the desired outgoing port flow range for the manifold is 0-47.5 SCFH.

## ASSOCIATED TOOLS AND EQUIPMENT

**9800-3100 Tool, Flow Gauge**

The Flow Gauge is an air flow measuring device used in conjunction with Flow Finders, Flow Finder Manifolds, and High Resolution Flow and Dual Transducers. Using a "quick connect" sampler assembly, the Flow Gauge attaches directly to the two sampler valves on the device to be measured. It displays output in four color-coded flow ranges, corresponding to the output of each of the four Flow Finder ranges. A times two button on top of the gauge makes it possible to read flow rates up to twice the maximum rated flow range of device being read.

## FLOW FINDER MANIFOLD

| PART NUMBER | RANGE* | FITTINGS** |
|---|---|---|
| 3060 SIX PORT (1 incoming from pipe; five outgoing to cables) | L, M, H, C | BS, BV, SS, SV, BT |
| 3070 FIVE PORT (Used with 3060 to feed 10 cables) | L, H, C<br>(Designates output range only) | BS, BV, SS, SV, BT |

Please note that the part number, range and fitting must be specified when ordering a Flow Finder Manifold.

***Flow Finder Ranges:**

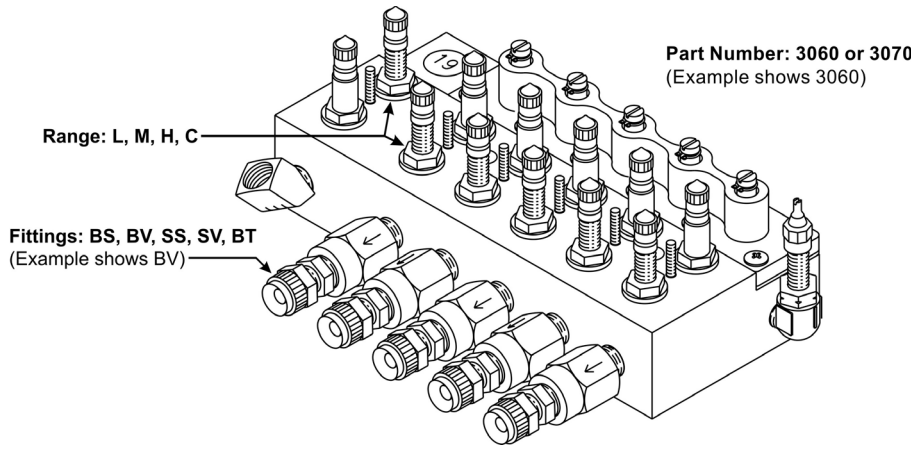
- **L** Low: Input = 19.0 SCFH, Output = 9.5 SCFH
- **M** Medium: Input = 47.5 SCFH, Output = 9.5 SCFH
- **H** High: Input = 95.0 SCFH, Output = 19.0 SCFH
- **C** Custom: Multiple output ranges to meet customer specifications (contact System Studies Incorporated)

***Fittings:**

- **BS** Manifold(s) supplied with nickel-plated brass, standard tubing connectors. For use with 3/8" plastic tubing.
- **BV** Manifold(s) supplied with nickel-plated brass, standard tubing connectors, along with nickel-plated brass check valves on all outputs. For use with 3/8" plastic tubing.
- **SS** Manifold(s) supplied with stainless steel, 37° flared tubing connectors. For use with 1/4" stainless steel braided tubing.
- **SV** Manifold(s) supplied with stainless steel, 37° flared tubing connectors, along with nickel-plated check valves on all outputs. For use with 1/4" stainless steel braided tubing.
- **BT** Manifold(s) supplied with nickel-plated brass tubing connectors. For use with 1/4" plastic tubing.

**Ordering Examples:**
If you ordered part number 3070-H-SV, for example, you would receive a five port Flow Finder Manifold with a high flow range (0-19 SCFH flow ranges at each of the manifold outports) and stainless steel, 37° flared tubing connectors with nickel-plated brass check valves. Please note that this model cannot be used as a stand-alone manifold; it must be used in conjunction with the 3060 Flow Finder Manifold.

A 3060-L-BS is a six port Flow Finder Manifold equipped with a 0-19 Flow Finder measuring incoming flow and 0-9.5 SCFH Flow Finders for each of the outports. Five nickel-plated brass tubing connectors are supplied for each of the manifold's outports, and one nickel plated brass, 45° street elbow with a 1/4" NPT thread is supplied to accommodate input from the air pipe.



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