

# Selecting and Measuring Pipe Fittings & Pipe

## Pipe Basics

Have you ever tried to order fittings, pipe, nipples, or valves and had difficulty determining the proper size? If so, you're not alone. Even experienced maintenance people are sometimes confused by the industry's terminology and method of sizing.

To put it simply, there are three specifications you need to know before joining a pipe with a valve or fitting: *thread style*, *thread type*, and *thread size*. The thread types must be compatible and the sizes must be the same in order for two components to fit properly.

### Thread Style

There are two thread styles: tapered and straight (parallel).



**Tapered threads**, which are the most common type of threads, have a slight taper towards the end of the fitting. When threads are mated and tightened together, they compress to form a seal. The mated threads not only hold the fitting in place but also seal the connection.



**Straight (parallel) threads** maintain the same diameter along their entire length. They're used for mechanical joining and serve one purpose—to hold a fitting in place. Straight threads require a seal to make a tight connection.

### Thread Type

For a list showing all the available thread types along with a guide for which thread types are compatible, please see page 3.

### Thread Size

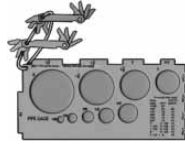
**Tapered threads** are referred to as pipe size in our catalog. While you may be familiar with the terms IPS, size, and nominal pipe size, they all have the same meaning as pipe size.

Pipe size is not the actual measured size of the threads, but rather an industry designation. You can determine pipe size by using the sizing guides at the bottom of this page (a sizing chart is shown at the top of each pipe and pipe fitting page). However, for the most accurate sizing, use a sizing gauge or kit (sold separately at right).

Most **straight (parallel) threads** are measured the same way as tapered threads. The exceptions are UN/UNF and metric threads, which are the actual measured size; therefore you can use a ruler to determine the size.

## Pipe Size Measuring Gauge and Kits

We've assembled these kits to help you accurately determine the size of your pipe and fittings.



**Pipe Size Measuring Gauge**—Measure NPT and BSPT threads for both male and female pipe sizes. You'll get a plastic gauge that measures male and female threads in pipe sizes: 1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", and 2". It also includes two thread pitch gauges for measuring NPT and BSPT threads.

**5887T1** ..... Each \$8.94



**Thread Pitch Measuring Kit**—You'll get four gauges that measure the pitch of BSPT, BSPP, metric, NPT, and UN/UNF threads: a caliper; and an instruction manual. The gauges and caliper are metal. Furnished in a folding plastic case.

**7863K1** ..... Each \$30.12



**Pipe Size Sample Kits**—You'll get 90° elbows that have male threads on one end and female threads on the other to measure your NPT or BSPT threads. Elbows are brass. Packed in a cardboard box.

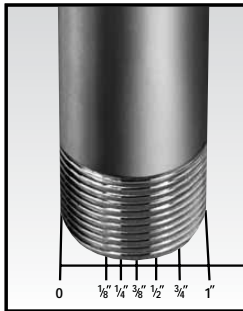
**7843K1 Kit**

For Pipe Sizes	NPT Kits		BSPT Kits	
	Each	Each	Each	Each
1/8", 1/4", 3/8", 1/2", 3/4", 1"	<b>7843K1</b>	\$20.03	<b>7843K3</b>	\$22.05
1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"	<b>7843K2</b>	64.79	<b>7843K4</b>	71.27

**Other gauges and sizers for measuring pipe size and pipe threads can be found on pages 2173, 2174, and 2175.**  
 Note: BSPT and BSPP threads are also known as 55° Whitworth threads.

## Sizing Guides

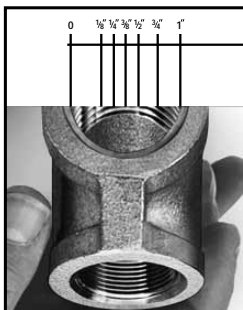
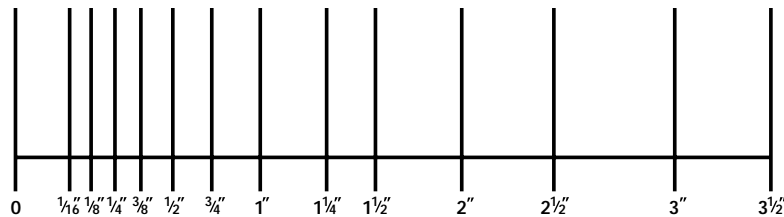
Most ordering problems are caused by incorrectly measuring the pipe size. Use the sizing guides below to determine the correct size.



Measuring pipe and a male fitting (OD).

### For measuring pipe and fittings with external (male) threads:

To determine the size of an externally threaded pipe or male fitting, place the outside edge of the pipe on the line with the "0". The line that the opposite edge of the pipe touches gives the size of the pipe. Photo at left shows the use of the guide below.



Measuring a female fitting (ID).

### For measuring fittings and valves with internal (female) threads:

To measure a female fitting, center the opening of the fitting against the bottom edge of this page. Align the top of the threads on one wall (not the wall itself) with the line marked "0". The line that aligns with the top of the threads on the opposite wall gives the size of the fitting. Photo at left shows the use of the guide below.

