

**LINO International, Inc.**



# Guide to Cast Iron Fittings

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Plumbing pipes come in a variety of materials such as cast iron, copper, PVC, and PEX. Fittings are iron, brass, plastic, and copper. This guide covers cast iron fittings, their purpose, and applications.

### **WHAT ARE CAST IRON FITTINGS?**

**Cast iron fittings** work well for water, gas, sewage, compressed air, oil, and more in industrial and commercial applications. It is much stronger than copper or plastic pipe, but not as common in residential installations today. Historically, plumbers used cast iron and they continue using it today for larger diameter water mains.

### **TYPES OF PIPE FITTINGS**

Pipe fittings come in a huge variety of types such as elbows, offsets, T-joints, Y-joints, cross joints, gate valves, ball valves, non-return valves, reduction fittings, couplers, and flange fittings. For example, they help connect pipe to oil or water tanks.

Cast iron screwed fittings work well with water, oil, sewage, and compressed air, and are relatively inexpensive. You can find these fittings at the inlet or outlet of central heating boilers/furnaces, on pumps and air compressors, and other connection applications in commercial and industrial structures.

Because cast iron is less expensive and stronger than brass, cast iron fittings offer many advantages, especially when you need large sizes.





### SIZES OF FITTINGS, PIPE SIZES, AND THREADS

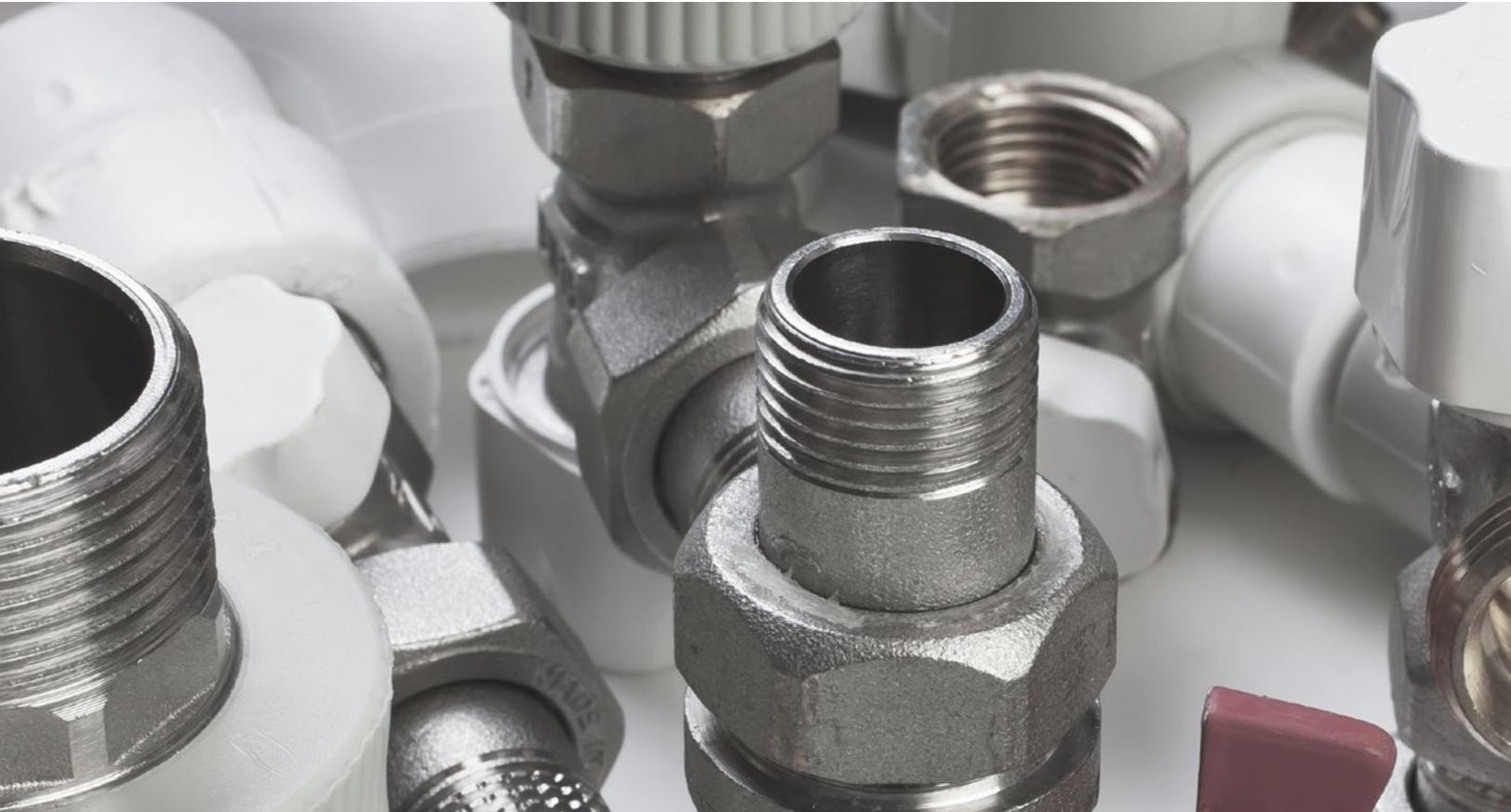
Pipe and fittings sizes are confusing at first glance. For example, when you measure a 1/2 inch pipe or fitting, neither the external nor internal diameter, or the diameter of the thread will be 1/2 inch. Historically, plumbers named these pipes and fittings 1/2 inch because they referred to the internal diameter of the pipe with a 1/2 inch fitting. In early days, these pipes were quite thick walled.

Cast iron fittings today follow the National Pipe Thread Taper (NPT) standard defined in ANSI/ASME B1.20.1. You can find cast iron fittings from sizes 1 and 1/2 inch to 15 inches. This dimension refers to the internal diameter of iron pipe used with the fittings. The size you use depends on the pipe's application, such as sanitary and storm drain, waste, or vent.

### HUB VS. NO-HUB COUPLINGS

Before **no-hub couplings** were invented in the 1960's, you connected hub and spigot **cast iron piping** with hubs using lead, oakum, melting pots, burners, special clamps, cast iron ladles, join runners, and caulking irons. All these tools made sure the plumber could pour melted lead into the fitting and the lead to flow evenly around the entire pipe to seal it properly. It took skill and precision, coupled with years of practice, to become a master plumber with hub and spigot cast iron piping.

No-hub couplings turned installation of cast iron pipe from a hazardous, tedious, highly-skilled trade to a simpler, quicker, less-tools-needed, much safer occupation.



## HOW TO USE SCREWED PLUMBING FITTINGS

Cast iron pipe with a screwed end normally has a tapered male thread which mates with a female thread on the other fitting. Plumbers wrap [plumbing tape](#) or thread sealing cord around the threads to increase lubrication and connect with a watertight seal. The thread also fills in the gap between the male and female thread, sealing the joint.

You can also smear jointing compound over the tape on the joint in case the tape catches on the threads while you screw the fitting into place.

Traditionally, hemp and jointing compound sealed joints. And in some applications, if temperature was excessive, tape would be unsuitable and jointing compound was used.

You may run into situations when male and female threads are parallel. This situation requires a fiber washer or O-ring compressed by a flange on the fitting. Some applications include a spigot or a hot water tank.

Winding tape onto fittings requires trial and error. Sometimes you can wind the tape tight enough that you only need a few layers. Other times, the pipe fittings are a loose fit, and you will need extra tape.



## CONCLUSION

Engineers and plumbers use [cast iron pipes](#) and fittings today in most commercial buildings like hospitals, hotels, banks, office buildings, schools, vehicle dealerships, automotive repair shops, and more. Often, local or state building codes require contractors use cast iron pipe for various reasons, such as quieter operation.

Learning about [cast iron fittings](#), their uses, and history helps to make sure you're using the right materials for your application.

## THE LINO INTERNATIONAL DIFFERENCE

Your source for [Cast Iron Pipes](#), [Couplings](#), [Fittings](#), Plumbing Supplies, and [Safety Equipment](#).

With over 20 years of service to the plumbing industry, Lino is a reliable partner with quality products, on-time shipments, great value, and guaranteed service. We are an experienced partner for all your plumbing supply and logistical needs.

You can depend on Lino's team of experienced plumbing and wholesale representatives. We efficiently manage customer and order information with our business information systems.

Our cast iron pipe and fittings have been through various quality testing processes, including accuracy of dimension, chemical composition, crush, and impact strength. Our focus on robust quality control process has allowed Lino to achieve ISO 9000 certification. Products exceed relevant ASTM, and CISPI standards are one phone call away.

With our systematic and data-driven approach to inventory and supply chain management, we consistently satisfied customers needs.

Lino's staff in the USA works directly with our factories in China to provide clear communication and coordination to meet the needs of our customers.