



**MASTER YOUR  
CRAFT WITH  
INGERSOLL RAND**



## UNDERSTANDING YOUR AIR COMPRESSOR NEEDS

You have this brilliant plan to start your own craft brewery but now you need to understand the correct way to setup your compressed air system, which will determine if your brewery will sink or swim.

### Selecting Your Compressor

The first step is ensuring that your air compressor is the right size for your brewery. This is a critical step, not only for the actual brewing process, but for your wallet as well. To determine which air compressor would work best in your brewery, ask yourself:

1. What do you need it for? Bottling? Keg filling or cleaning? Packaging?
2. What is the flow that your system needs?
3. How much space do you have?
4. What is your power source?

There are two types of air compressors that may be appropriate based on the answers to the questions above: reciprocating and rotary screw.

### Reciprocating Vs. Rotary Screw Air Compressors

Reciprocating compressors, also known as electric single-stage or two-stage compressors, are available in many sizes, voltages, and horsepower options. These compressors sit on horizontal or vertical tanks ranging from 30 to 120 gallons, run 200 or 230V, with 5, 7.5, 10, 20 or 25HP.

Our rotary screw compressors, range from 5-500 HP, and have components throughout the compressor that involve high-tech technology and a built-in Total Air System (TAS) that provide clean, dry air in the single package. This alone will save you up to 80% of the traditional installation cost of individual air treatment equipment components.

Be sure to consult with an Ingersoll Rand representative before purchasing your compressor. We want to make sure that you have the right setup to fulfill the needs for your brewery.

## PARTS & ACCESSORIES FOR YOUR SYSTEM

An air compressor isn't the only type of equipment that you will need to completely bring your craft beer from production to the bar. To have an efficient compressed air system, you will need to invest in a variety of accessories that not only improve your system, but ensure that the compressed air being used throughout the operation is clean.

### Piping

If you didn't have clean compressed air in your brewery, where would you be? Unfortunately, still at the drawing board. Compressed air is essential for the brewing industry from bottling, capping, packaging, and labeling, etc. With that being said, making sure that all your components air compressor and parts, are up in working order keeps your brewery open for business. Most people forget that even though your compressor is pushing out air, your piping holds a lot of the accountability. Your compressor takes the time to compress clean, so don't contaminate it by using the wrong piping!

- PVC Piping: Unfortunately, although this type of piping is considered the most common because it is readily available, it could also be considered dangerous. PVC will eventually become brittle over time when used in a compressed air system

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**The use of PVC is an OSHA violation, which means you could incur a hefty fine.**

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- Rubber Hoses Piping: Rubber hoses work as a temporary solution, but they are not energy or cost-efficient. When you use rubber hoses, you tend to have pressure drop due to the hose not being rigid. In addition, over time your hoses will start to create an odor because of the rubber breaking down, which will eventually find its way into your beer.

## **BAD SMELLING BEER = BAD FOR THE BUSINESS.**

- Ingersoll Rand SimplAir Piping: The SimplAir piping system's high-quality, light weight, marine-grade aluminum construction delivers cost savings at all stages of ownership. The SimplAir system provides superior corrosion resistance to keep pipe interior surfaces free of the oxidation-based contamination that can occur with steel systems — contamination that can not only cause turbulence and pressure loss but can also cause problems if corrosion-related debris enters sensitive equipment. In addition, the installation and modification process are easy with push-to-connect fittings for a variety of different sizes:
  - 14mm piping is true push-to-lock fittings
  - 20-40mm piping is pre-torqued
  - 50mm and above piping needs to be pushed and wrenched tightened

### Refrigerated Dryer

Did you know that every time the temperature rises 5°F per 100 cfm of compressed air, your system generates another five gallons of moisture per day? Meaning over a summer month, you will have to remove at least 150 gallons of unwanted moisture in your compressed air system due to high temperatures. Moisture wreaks havoc on your equipment and beer, leading to unplanned downtime and unwanted waste. Excess moisture in your air system can throw off important pH levels, grow bacteria, lead to corrosion in the piping and various compressor issues.

Having a refrigerated dryer installed to your system will clean up your lines and keep your brewing operations running efficiently. A refrigerated dryer is a standard choice if you are looking for a low maintenance solution. These dryers work by cooling down the air. The warm air enters the dryer, where it is cooled down to 37°F. The liquid is then removed from the compressed air by a water trap. After that, the air is then reheated to room temperature and pushed through your system ready to be used.

### Drain Valves

The main purpose of a drain valve is to remove condensation from compressor, receiver tanks, dryers as well as from aftercoolers, filters, and drip legs. Without a drain valve, your compressor will collect water and the tank will begin to rust, becoming the air that will be pumped into your beer, changing how the beer tastes and smells. There are different options, depending on your preference:

- **Electronic Timer Drain** is a cost-effective electronic drain valve (EDV) that is designed to automatically discharge condensation using an easy to operate built-in timer. Offered in a variety of outlet pipe and orifice sizes, this compact and reliable drain valve can meet system demands easily. Ultra bright LED lights alert the user when the power is on and the valve is open.
- Our **Electronic No-Loss (ENL) Drain Valves** offers an environmentally friendly way to remove condensation. These leak-proof, low-maintenance drains eliminates air loss and clogging while saving you hundreds of dollars in energy costs a year. This type of drain valve can attach to a wide variety of compressors and accessories, and their lightweight, compact design makes it easy to use them in confined spaces.
- The newly enhanced **PNLD II** units are heavy-duty industrial drain valves that remove condensate without wasting compressed air. The pneumatically-powered PNLD II requires no electricity, pre-settings, or manual

intervention. Designed to complement all compressed air systems including compressors, filters, water separators, dryers, coolers and receivers, the PNL D II is easy to install and will not clog.

### Pressure Regulator (PacE)

Most compressed air systems experience fluctuating demand. This can cause unstable system pressure, requiring compressors to cycle on and off.

As CO<sub>2</sub> enters the keg, it displaces your beer at a constant pressure, replacing the space where the poured beer use to be. With CO<sub>2</sub> filling that empty space, your keg is able to maintain a pressure set by your regulator. Making sure that your beer stays at a constant PSI keeps your beer carbonated by preventing the CO<sub>2</sub> from dissolving and leaking out.

If you have too much pressure, it could result into fast pouring and extremely foamy beer with large bubbles. To prevent this problem, you will have to adjust your pressure immediately to a proper, lower level. If you wait +24 hours to adjust your pressure, it will leave your newly brewed beer permanently foamy and over-carbonated.

If you have too little pressure, your beer will still pour foamy, but it will look looser than if there is too much pressure, such as having smaller bubbles giving it a “soapy” looking. If you wait too long to adjust the pressure, you will have flat beer.

The typical solution is to overcompensate by using additional compressors and/or by increasing overall system pressure. However, these approaches increase overall operating costs and air loss due to leaks as well as damage to compressors and point-of-use equipment. The PacE regulator from Ingersoll Rand allows you to view the amount of pressure going through your compressed air system to ensure you have proper pressure for your craft beer.

### Food Grade Lubricant

Operating air compressors in a food grade environment carries a high concern for contamination if not maintained properly. When ambient air is compressed, the contaminants within the air become concentrated. Pollutants such as dirt, rust, pollen, water vapor can be found throughout your compressed air system if you don't have the proper treatments. When you don't properly maintain your compressed air system, you will find sludge, acid, and varnish throughout your compressor and piping system. In order to protect your equipment and business is a great idea to invest in Ultra FG Lubricant.

Ingersoll Rand's Food Grade Lubricant is a synthetic alkylated naphthalene base fluid that provides better inherent temperature stability, detergent action and stabilizers that keep the lubricant from breaking down. Additionally, the blend does not form abrasive deposits such as those formed by mineral oils and conventional polyalphaolefins (PAOs). These characteristics prevent acid formation and ingested material deposits from accumulating in critical areas of the compressor, extending service life and enhancing performance.

Ensuring that you are using the correct food grade lubricant will keep your product safe if incidental contact occurs and increases your productivity by keeping your compressor running trouble-free longer with less maintenance requirements for life.

No matter where your craft brewing operations are heading—toward a better product, to wider distribution, or from kegs to cans—how fast you reach your goals, and how much it costs you to get there, is determined by the quality and reliability of your compression system.

**Plan for the future of your brewery with a fully tailored system that allows you to adapt to your ever-changing needs.**

[www.IngersollRandCompressor.com](http://www.IngersollRandCompressor.com)