

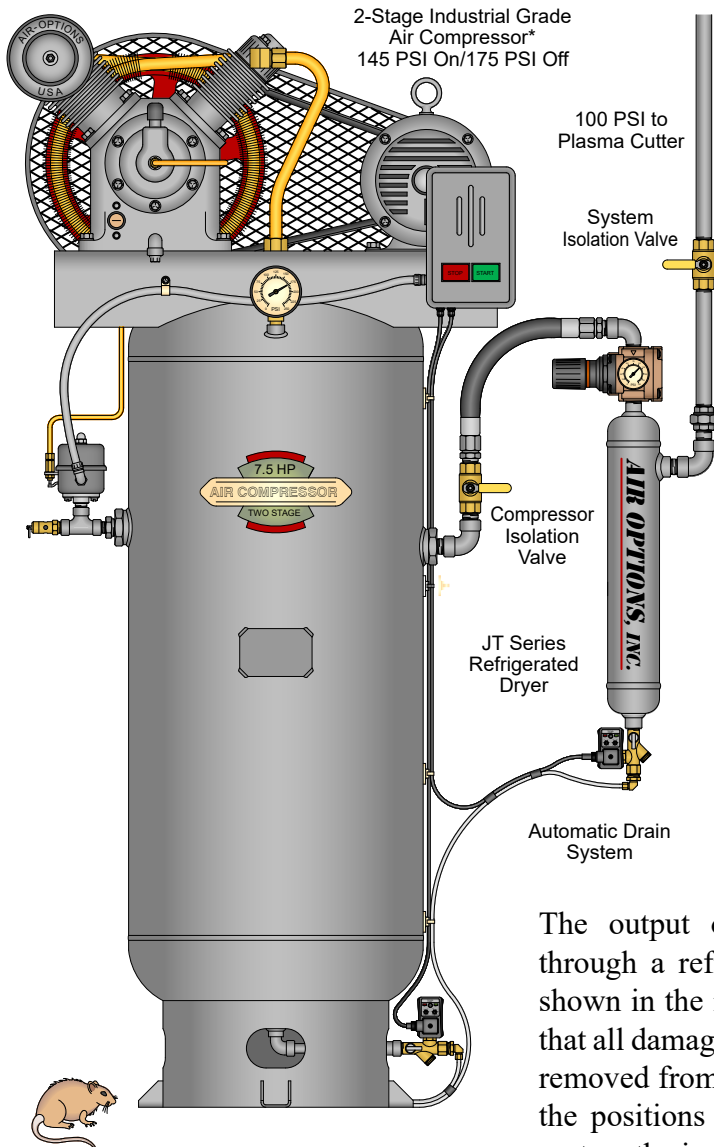
# Technical Bulletin 108

Copyright 2024 by Air Options, Inc.

## Compressed Air Systems for Plasma Cutters

by Brian S. Elliott

Most plasma cutting systems require clean, dry compressed air. So, what does that mean and how do we get it? The compressed air for a plasma cutter can be supplied from a fairly standard compressed air system. The illustration below shows a 7.5 HP compression system, which will comfortably carry up to a 100 Amp cutter. The compression system shown uses a 2-stage, 7.5 HP industrial grade packaged piston compressor (240/480 VAC, single or three-phase.) The output of the tank is processed through a JT-type refrigerated compressed air dryer.



While a simple compression system like the one shown will provide a nearly perfect air stream for plasma cutting, the problem with many installed plasma cutting systems is the quality and capacity of the equipment. Only industrial grade compressors should be used for plasma cutting applications. These compressors **CANNOT** be purchased at home improvement, department, or hardware stores. Industrial grade compressors must be purchased from reputable compressed air dealers. Online sources make this selection process very friendly. \*See Technical Bulletin Num. 103 for a review of industrial grade compressors commonly available in the U.S.

The capacity of the compressor is critical! Generally speaking, the capacity of the compressor should be 3 times the requirement of the plasma cutter. As an example, if your plasma cutter requires 6 SCFM, then an 18 SCFM compressor (5 HP) should be selected. The compressor will operate at a 30% duty cycle (1 minute on, 3 minutes off.) The reason for this is to provide a suitable “off” interval, allowing the compressor pump sufficient time to properly cool. The proper capacity of the compressor is critical for the reliable operation of your plasma cutter.

The output of the compressor is processed through a refrigerated dryer, like the JT dryer shown in the illustration. The dryer will ensure that all damaging moisture and oil are effectively removed from the air stream. Also, take note of the positions of the isolation valves and drain system.

Air Options, Inc.  
P.O. Box 35984  
Houston, Texas 77235-5984  
Ph.: 713-721-9619  
E.Mail: Info@Air-Options.com

JTDryers.com

A complete bound copy of Air Options Technical Bulletins can be purchased on our web site at: [JTDryers.com/jt-order-now](http://JTDryers.com/jt-order-now)



# AIR-OPTIONS, INC.

Advanced Technologies for Compressed Air