

# datasheet

## Connecting your Regulator June 2013

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### Remember:

**Tube = outside diameter,  
Hose = internal diameter.**

Always select a tubing material that is suitable for the intended gas, sounds pretty obvious doesn't it? Please consider the following:-

#### Pressure

The working pressure of the tubing must match or exceed the maximum outlet pressure of the regulator to which it will be connected.

#### Chemical / Material compatibility

Ensure that the tubing material will not react, age or degrade with the intended service gas.

#### Working conditions

Assess the working area where the tubing will be installed. Will for example, the tubing be subjected to harsh conditions – heat, cold, external chemical or mechanical attack.

#### Tubing Performance in the event of an Emergency

Consider how the tubing material will behave in the event of (say) a fire. If the tube were to fail, melt or burst, then will the ensuing gas release enhance the impact of the fire? Metallic or metal armoured tubing may offer greater resistance to fire. Also, by fitting a re-settable flashback arrestor, fitted with a thermal cut-off valve, would stop the supply of gas at an ambient temperature of approximately 100 degree C.

#### Internal Diameter

Unless it is required to, the tubing should be sized as to not restrict the flow rate at the required working pressure. In most cases, a first approximation can be had from compressed air flow

tables or nomograms. Hydrogen and Helium will, however, tend to flow at greater rates for a given diameter than more 'air-like' gases, like Nitrogen or Oxygen.

#### Properly fitted Tubing

Ensure that the tubing is properly fitted. Joints and connections, as a rule of thumb, should be kept to an absolute minimum, they are mechanical weaknesses and potential leak paths. Joints or connections in tubing should always be kept well away from open sources of ignition. Consider the options available and remember **DO NOT MODIFY THE REGULATOR OUTLET.**

#### Problematic Connection

Connecting your regulator to your equipment or process can be problematic, Why?

As industrial grade, brass regulators are typically supplied with a 3/8" BSP male, cone recessed outlet – right handed for Oxygen and the Inert gases and left handed for flammable gases.

As this is a hose fitting it doesn't easily lend itself to connecting up to your gas applications, which are supplied by tube. We can therefore find that users remove the factory fitted outlet or construct a convoluted array of connectors, which can subject them to the danger of gas leakage or unplanned chemical reactions.



### Contact Information:

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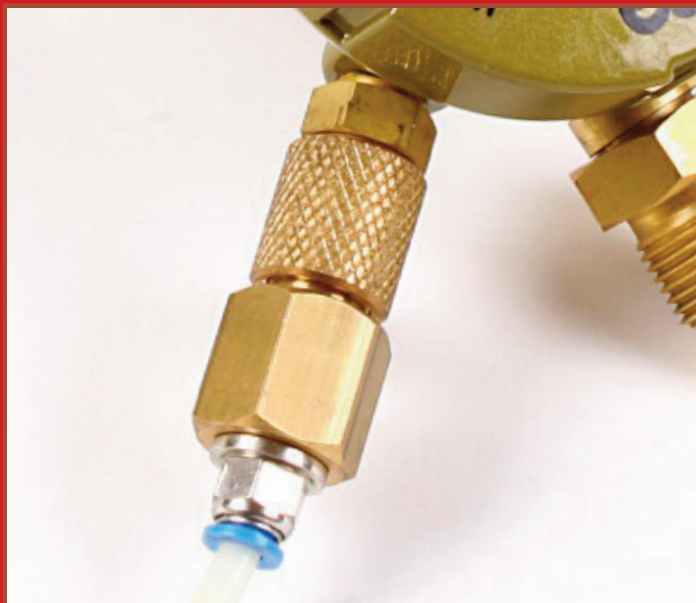
The-Gas-Safety.co has a simple and safe solution 'EasiDaptor'.

This unique fitting has been developed to be easy to use, quick to fit and above all, safe and reliable to use. Designed and manufactured in the United Kingdom to the highest quality assured systems, it has a maximum working outlet pressure range of up to 100 barG. It is available threaded right and left handed and is oxygen safe. There is no need for thread tape, seals or rings and it looks so neat.

EasiDaptor screws straight onto the regulators 3/8" BSP male, cone recessed outlet and terminates with a 1/4" female port, available as either, right hand or left hand and in BSP or NPT. Into this your push fit or compression type fitting can be easily inserted

### Compression Fittings

These are, perhaps, the most obvious solution for metallic tubing. Metallic or some very hard walled plastics may be chosen for corrosive, toxic & flammable service and/or for high pressure &/or small bore instrument lines. For example Hydrogen & Helium supplies to chromatographs. For direct connection to your gas regulators we would, recommend that via an EasiDaptor, a suitable compression fitting can be selected with relative ease, whether in brass or stainless steel and for a range of sizes from 1/8" outside diameter to 6mm outside diameter, in either metric or imperial.



- |               |  |
|---------------|--|
| <b>99-100</b> | <b>Right-hand in x 1/4" BSP Female out</b> |
| <b>99-101</b> | <b>Left-hand in x 1/4" BSP Female out</b>  |
| <b>99-105</b> | <b>Right-hand in x 1/4" NPT Female out</b> |
| <b>99-106</b> | <b>Left-hand in x 1/4" NPT Female out</b>  |



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### Push Fit Connectors

For hard walled plastic tubing. In this case – as is normally always the case – tubing size is specified in terms of outside diameter. The best way to do this with the less reactive gases at higher pressures is to use a push fit connector in conjunction with our EasiDaptor.



### Swivel Nut & Hose Tails

For soft walled plastic tubing and hoses, simply select a 3/8" BSP swivel nut and a hose tail of suitable outside diameter, to fit the inside diameter of the tubing or hose to be used. We can supply brass hose tails for 5mm, 6mm, 8mm, 10mm & 12mm inside diameter plastic tubing, each including the 3/8" BSP swivel nut. Tubing should of course, be secured using a hose clip, once it has been pushed fully onto the hose tail. We supply 'O' / Ear clip pliers and O / Ear clips in a wide range of sizes. Confusingly it's the outside diameter of a hose that would be quoted when sizing a suitable clip.



### Please Note:

Great care must be taken when setting up rigs or experiments with push fit, quick release couplings, as the mechanism for miss-connection (right cf. left handed threads) is quite effectively defeated! Anti-confusion techniques, like colour banding for matching hoses to the correct connectors may be employed.

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