GAS SAFETY UK, CLIENT UPDATE AUTUMN 2004.

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gas safety UK

Dear All,

Welcome to our Client Update for Autumn 2004.

Since our previous Update (Summer 2004), there seems to have been a theme to the questions we have been asked regarding gas control equipment; especially with regard to purity and the 'grade' of equipment that is required. If this has ever puzzled you then the following points may be of interest.

1. Selection of the appropriate regulator depends [unsurprisingly] on what it is to be used for; is the gas an oxidiser, a flammable, an inert or a corrosive? Is it a single gas or a mixture of gases?
Initially, from a materials compatibility point of view, it is necessary to decide if a regulator is suitable for the service gas or the components of the gas mixture.

2. Having established that there aren't any issues with materials of construction, it is then essential to decide that a given item of gas control equipment is suitable for the inlet pressures that it may encounter (i.e. the cylinder filling pressures) and that it will deliver the service gas in the user's desired pressure range and at the desired flow-rate (if/where this is an issue).

3. We then have to confirm the inlet orientation of the regulator (i.e. base or side entry), the inlet type that will be required (e.g. BS, CGA, etc.), the outlet fitting and if any modification is required for this (or adaptor) and if any ancilliary safety equipment is required (e.g. a flashback arrestor).

4. Clearly, if the gas is corrosive then the requirement to use a regulator made from more expensive materials (e.g. stainless steel) will have been 'flagged-up' straightaway. Otherwise, selection [or recommendation] of equipment grade depends upon the purity of the service gas/application.

5. 'Standard' brass regulators are suitable for a wide variety of industrial and laboratory grade gases and mixtures. Also, further to previous notes on this subject, 'Medical' grade equipment is selected for use especially where the gas is to be administered to a patient.

6. 'Special' regulators are chosen where the purity of the gas (or gases within the mixture) preclude the use of the less expensive regulators. For gas purities up to 99.9999%, we recommend our range of Special Regulators because they are designed and manufactured to ensure that the service gas is not affected by contamination (absorbtion/desorbtion) from materials in gas-wetted path. Unlike the 'Standard' equipment, they are manufactured from bar stock material (brass or stainless steel) and electropolished. Other [purity] critical components (e.g. valve seats, diaphragms, etc.) are produced from non-standard materials (e.g. PCTFE and Hastelloy, respectively) and cleaned to equally high standards. Assembly also takes place under very exacting standards of cleanliness and, finally, unlike the 'Standard' range, each 'Special' regulator is leak tested using helium and only released for sale if it achieves the required (and extremely low) leak rates required by the specification.

In summary, our recommendations to use a particular item of equipment are not arbitrary and we certainly wouldn't recommend an item that was over-engineered or more expensive than necessary unless it was required. It is fair to say though, that we do see a lot of cases where very expensive, high purity gases and gas mixtures are used with equipment of an inappropriate grade. This 'penny wise - pound foolish' approach could result in obvious and detrimental effects on quality (reliability, repeatability, etc.). If, however, a gas or gas mixture can lead to material degradation then any subsequent failure or leakage of the regulator would become a safety issue.

PRODUCT NEWS

1. New EasiDaptors: now available with 1/4” NPT female outlets. The original EasiDaptor has a 1/4” BSP female outlet and this new version has been added to ease the selection of a suitable tube connector as many of you will hold NPT rather than BSP fittings in stock.
Part Number: 99-105 EasiDaptor R/H 3/8” BSP x 1/4” NPTF = £10.49 + VAT
Part Number: 99-106 EasiDaptor L/H 3/8” BSP x 1/4” NPTF = £10.49 + VAT

2. For key operated cylinder valves:
Part Number: 99-147 Spindle Key @ £1.17 + VAT
Part Number: 99-146 Combination Spindle Key & Regulator Spanner @ £3.40 + VAT

REMEMBER: Every key-operated cylinder that is in use must have a key on the spindle to facilitate rapid shutdown in the event of a mishap.

3. SPECIAL [CYLINDER] GAS REGULATORS

High purity, brass, single-stage: Part Number: 99-0168 @ £212.30 + VAT*
High purity, brass, two-stage: Part Number: 99-023 @ £276.00 + VAT*

High purity, stainless steel, single-stage: Part Number: 99-0167 @ £403.80 + VAT*
High purity, stainless steel, two-stage: Part Number: 99-01521 @ £513.00 + VAT*

(*Available with a choice of outlet pressure ranges: 0.1 - 3.0 bar, 0.25 - 6.0 bar or 0.5 - 12.0 bar)

If, at any stage, you are unsure about any aspect of gas safety - please ask.
You can contact us for safety information or advice without obligation.

GAS SAFETY UK

- ☐ ***CYLINDER & CRYOGENIC GAS SAFETY TRAINING***
- ☐ ***INSTALLATION & TESTING OF GAS CYLINDER MANIFOLDS & PIPELINES***
- ☐ ***SUPPLY OF GAS REGULATORS & ASSOCIATED GAS HANDLING EQUIPMENT***

GAS SAFETY UK - PROVIDING INDEPENDENT & COST-EFFECTIVE SAFETY SOLUTIONS FOR USERS OF COMPRESSED (CYLINDER) GASES AND CRYOGENIC LIQUID GASES.

Best regards, David Bayliss
(Technical Manager, Gas Safety UK; Safety & Training Engineer; Partner I.G.S.)

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