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Volume 22, Issue No 3

Busy times here at IDEST with our accreditation reconfirmed by UKAS, many inspections completed, new inspectors trained, new website, new admin office and more - we share the good news.

The deadline for ISO18119 transition is getting close, are you ready?

Our new website is up and running and features a new members area.

Need some Standards? We can help.

Some interesting points from recent inspections shared for all to learn.

Wall thickness measurement

The IDEST Inspector team has agreed that, for steel and aluminium cylinders, wall thickness must be conducted at ALL PIs and PIATs. This is to ensure that the wall thickness is more than the minimum wall thickness stated by the manufacturer on drawings and/or stamped on the cylinder.



It is almost impossible to know whether a cylinder has been shot-blasted such that the wall thickness has been compromised. By conducting a wall thickness check, over several locations along the cylinder walls, the condition can be verified and recorded.

Wall thickness is included on the template worksheets, provided by IDEST recently, in preparation for BS EN ISO 18119 coming into mandatory effect on 1st January 2023.

IDEST maintains accreditation



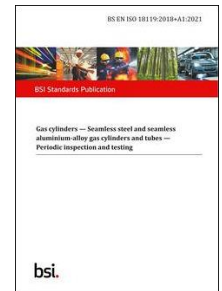
Following an intensive 3-day audit by UKAS in July we are pleased to report that IDEST passed with flying colours and our ISO/IEC 17024 accreditation as a body certifying persons against specific requirements, is maintained.

The only recommendation was that during inspections IDEST should request a form of identification from the technician candidates, so please be prepared for this during your next inspection.

ISO 18119 transition countdown...

On 1st January 2023, the old standards BS EN 1968:2002 and BS EN 1802:2002 will be formally superseded by BS EN ISO 18119:2018+A1:2021 which must be used from then onwards.

Centres that have not been inspected and certified by IDEST to the new ISO 18119 standard will no longer be able to operate.



The inspectors are doing everything possible to ensure all centres have the opportunity for an inspection to the new standard ahead of the hard deadline, please work with us by ensuring you have made any necessary changes within your documentation and procedures, and to flexibly accommodate inspection dates.

Potentially unsafe air gun valve

One of our centres has reported customers bringing in cylinders for filling, which have a 300 Bar airgun cylinder valve attached that appears to be non-conforming to EN 144-1 or ISO 10297 (see photo).



We believe the valves are sold by The Shooting Party, a West Midlands based airgun and shooting sports company, as part of a setup called the [AirForceOne® PCP Airgun Charging System](#).

There is no information on the valve and the seat mechanism doesn't seem work very well. In three cases the valve was effectively blocked and on another the burst disc blew whilst filling. The burst disc sealing technique also appears to be poor. The risk is that the valve appears to unscrew as normal, and an unsuspecting person might not realise the cylinder remains under pressure. The centre's decision to refuse to fill these cylinders and recommend that a replacement valve is fitted, is supported by IDEST.

New IDEST administration office

The IDEST administration office move was completed on schedule in May. Neil Minto and Gordon Lambert joined Lizzi Russell for the open day:



The office provides excellent facilities for business meetings, third party audits etc. The new contact details are:

IDEST Administration Office
c/o Bailey Russell,
14 High Northgate,
Darlington, DL1 1UN
Tel: 01325 238250
Email: admin@idest.co.uk.

Quadrant labels – registered design!

A quick reminder that the IDEST logo and Quadrant Labels are propriety registered designs of IDEST, and it is compulsory for test centres inspecting under IDEST accreditation to use the official quadrant labels. This ensures correct information is presented and appropriate quality maintained.



If you see unauthorised use of the IDEST logo or 'copycat' third party quadrant labels, then please let us know, so we can take action where appropriate.

IDEST Quadrant label guidance

Some centre technicians have reported problems using the IDEST quadrant labels. The stated problems are of labels ripping when being taken off the sheet or not sticking to the cylinder shoulder.

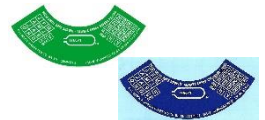


The labels are made from a non-tamper material, which does break up if not used carefully and correctly. Ian Jackson, our printer, always sends out a compliment slip with the label orders, which contains guidance on how to best use the labels.

The advice given is:

- Remove the label carefully, using a sharp knife or scalpel blade.
- Do not allow fingers to touch the adhesive on the back.
- Degrease the area where the label is to be affixed, using denatured alcohol or methylated spirits.
- Affix the label when the cylinder is warm; not less than 18°C. This will ensure good adhesion to the cylinder surface.

Technicians, who have followed this advice, state that they no longer have any problems with the IDEST green or blue quadrant stickers.



Why 700 Bar pressure gauges?



Recent inspections have revealed several centres using master and/or working pressure gauges with maximum ranges as low as 400 Bar. Clearly this is not sufficient to proof or volumetric test a 300 Bar cylinder. But even a 450 Bar gauge is not really suitable.

BS EN 837-2:1997 standard for selection and installation recommendations for pressure gauges, section 4.2.1 pressure range states "*The range should be such that the maximum working pressure does not exceed 75 % of the maximum scale value for steady pressure or 65 % of the maximum scale value for cyclic pressures*". ASME B40.1-1998 also recommends "*that the normal operating pressure should be confined to 25% to 75% of the scale. If pulsation is present, then the maximum operating gauge pressure should not exceed 50% of the full-scale range.*"

The standards make these recommendations for both accuracy (gauges typically are more accurate away from their limit values) and longevity (a gauge will last longer when not continuously stressed to its limits).

BS EN ISO 18119:2018 Section 14.2.3.3 states that "*The pressure indicated on the pressure gauge shall not be less than the test pressure and shall not exceed the test pressure by 3% or 10 bar, whichever is the lower*". And indeed, exceeding the test pressure by the values given requires the cylinder to be scrapped (and the customer reimbursed).

For this reason, IDEST strongly advise centres to use master and working pressure gauges with at least 700 Bar maximum range.

Torque wrench calibrations

The tools to correctly tighten cylinder valves to manufacturer's specification are an essential part of both PI and PIAT to ensure that the valve is fitted not so tight that it strains the threads and not too loose that it can easily be dislodged. For this reason, IDEST requires that torque wrenches are calibrated annually.



Since ISO 6789:2003 was withdrawn and replaced by ISO 6789:2017 parts 1 and 2, the subject of torque tool calibrations has become a lot more complex. Part 1 covers design and means that newly purchased wrenches are likely to come with a manufacturer's "declaration of conformance". Part 2 covers calibration putting greater emphasis on uncertainties and other factors that might cause the calibration values to vary. The result is calibrations that used to take around 35 trials may now require around 135 trials per hand tool and therefore the cost of calibration has increased. And many older torque wrenches (pre-dating 2017) may not be built to high enough quality to pass a calibration using the 2017 standard.

As the new standard is so onerous some calibration laboratories still offer calibrations under the ISO 6789:2003 (withdrawn) standard.

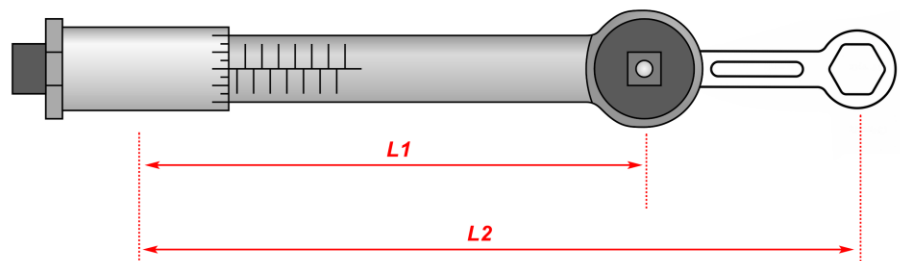
IDEST will accept manufacturer's "declaration of conformance" for new wrenches. For wrench calibrations, whilst ISO 6789:2017 is the 'gold standard', accredited calibrations to the ISO 6789:2003 (withdrawn) standard remain acceptable as these fully satisfy the underlying engineering needs.

Best accuracy with torque adapters

Any time you increase the length of a moment arm you are increasing the torque it generates. Many torque adapters, including IDEST's own G5/8" Extractor Plug (photo), can do exactly that.



Here's the formula to calculate the correct torque wrench setting when using an extension in line with the wrench:



$$T_s = T_a * \left(\frac{L_1}{L_2}\right)$$

where:

Ts = torque setting (reading) of the wrench

Ta = actual torque applied (torque needed)

L1 = original length of wrench

L2 = extended length of wrench including extension

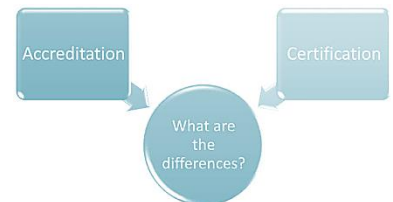
Accredited Certification vs. Certification

A frequent query regarding calibration certificates is why IDEST insists on ISO 17025 'accredited' laboratory rather than just a 'certified' laboratory.

Standards help to improve efficiency by preventing parties to a contract from having to establish rules of good practice for each project. Accreditation and certification both provide assurance that an organization's products, processes, or services conform to the requirements of a particular standard. But, crucially, only accreditation (aka accredited certification) indicates technical competence.

Certification can be provided by any third party, but accredited certification may only be provided by a third party that has been formally recognised by a national accreditation body (typically UKAS in the UK).

Insisting upon accredited certification of test and calibration laboratories avoids expensive and time-consuming additional checks and assessments that would significantly increase IDEST costs.



Even when working with an accredited testing and calibration laboratory it is essential to check their schedule of accreditation to ensure that the specific calibration activity is covered by their accreditation. Some laboratories may only hold accreditation in relation to a particular type of testing.

IDEST actively maintain a list of accredited testing and calibration laboratories to help you choose an appropriate company for your needs.

Buying Standards? – Get 50% off



Access to current relevant Standards is a mandatory requirement for IDEST certification. This is to ensure Technician's operate in accordance with best practice at all times.

IDEST is now able to assist centres with the purchase of paper copies of most Standards at 50% of full price. If you wish to avail of this benefit, please contact [Lizzi](#) in the admin office.

Go Diving Show

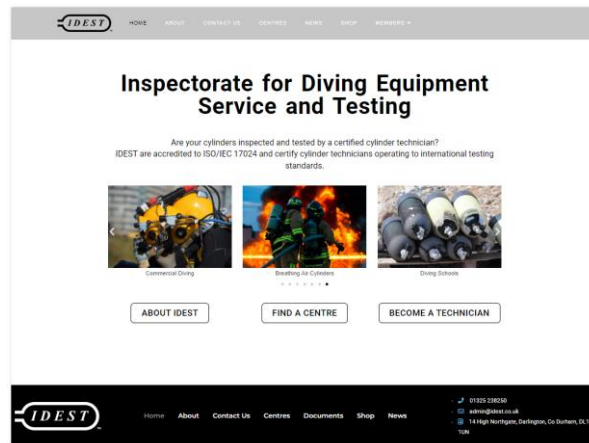


Did you see the IDEST stand and show presentation at the Go Diving Show in Coventry on 4th - 6th March? IDEST attended to increase awareness amongst divers of improving safety through having their cylinders tested by certified Test Centres at appropriate intervals. IDEST presence and messaging was well received.

Next year we hope to further increase our impact with a more interactive stand so letting us know of examples of interesting or extreme failed cylinders and valves would be much appreciated.

New IDEST Website and Members Area

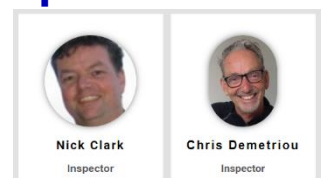
Take a look at the new IDEST website at www.idest.co.uk. A lot of work has been done to create a clean looking and responsive website to promote IDEST and IDEST Centres. The website now includes a map with search facility to help divers find their nearest IDEST centre (so please ensure you notify us of any changes to your business address or contact details).



There is also a new 'members' area www.idest.co.uk/members. This private area is where you will be able to find and download Technical Information Sheets, Past issues of Torque and other useful information.

IDEST Welcomes two new Inspectors

Following formal training and successful appraisal Nick Clark and Chris Demetriou have joined the team of IDEST Inspectors. Nick is based on the central South Coast and has over 30 years' experience in engineering and quality of life safety products. Chris has been based in Cyprus for over 20 years and has extensive experience in the operation of dive centres, cylinder testing workshops and hyperbaric facilities.



IDEST Test Centre Update

We have had the following changes to the IDEST Test Centre listing since the last issue of Torque.

New centres

None

Leaving centres

Scubaducks [7A], closed down

Sub-Surface Central T/A Canary Divers [8J], closed down



A final thought...

We hope you've enjoyed reading this issue of Torque. Please let [Lizzi](#) have your feedback on this issue and suggestions for topics in upcoming editions. Thank you!