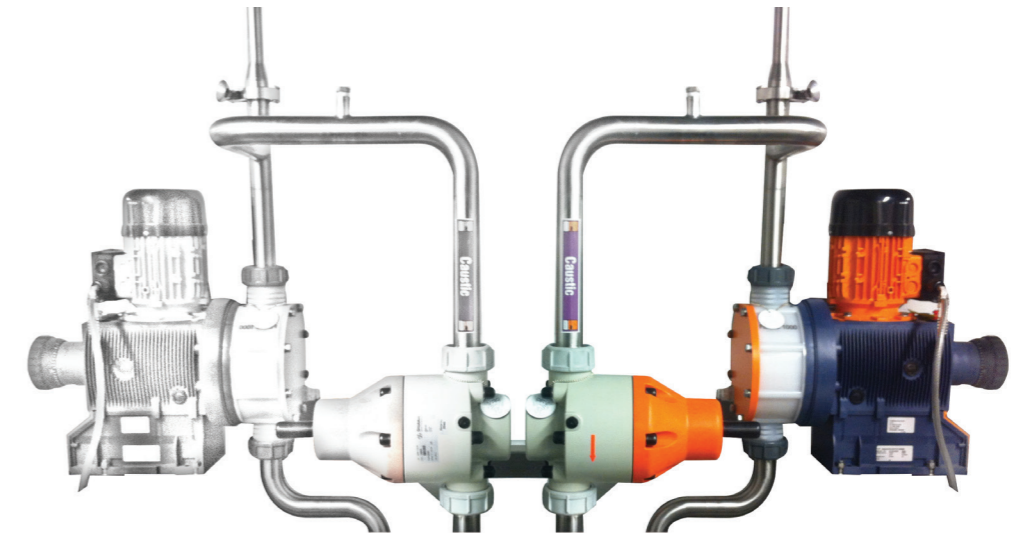
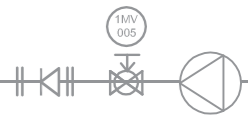


## INTRODUCTION TO DQD

DQD Engineering Ltd is an established process engineering company with foundations in pipework, fabrication, welding, manufacture, and service of process systems. DQD is able to offer a complete or individual package, from design through to service of process systems. This makes DQD one of the leading specialist contractors in the UK, offering customers an unrivalled level of service. DQD have a commitment to quality which ensures that all procedures are carried out to the highest industry standards. DQD's involvement in specific industry quality standards, GAMP, cGMP, etc. ensures quality is built into every stage of its procedures. DQD offers a complete service, thoroughly documented from design to project completion handover.

DQD will tailor a flexible package from its wide range of services to suit customers' needs and budgets, from the supply of individual technical expertise to design, manufacture and installation of complete turnkey systems, both in the UK and abroad.



## DESIGN & ENGINEERING

DQD's design facilities allow the total flexibility to create exactly the system required by the customer, either working from an informal brief or to customers' own detailed designs or specifications.

DQD's innovative approach and use of advanced equipment means it can ensure total accuracy and quality of build. Equipment such as computer-controlled orbital welders allows for a smooth, ultra-hygienic finish in pipes, tanks and vessels. The video boroscope and advanced surface finish measurement equipment allows DQD to check and document all internal finishes automatically and accurately. Commitment to excellence and continuing technical development provides customers with the assurance of total performance quality.



## SERVICE & CALIBRATION

Service and maintenance is a critical focal point for those clients that no longer carry in-house engineering or maintenance resource.

DQD offers planned and unplanned system support to all our clients across the UK, mainland Europe and world wide, comprising the following key areas:

- Hygienic calibration of sterile system instrumentation and equipment.
- System passivation.
- Preventative maintenance.
- Equipment inspection and maintenance.
- Reactive maintenance.
- System re-validation.
- Control system restoration.
- Purified Water system (PWS), Water for injection System (WFI), process system, and control system upgrades.
- Documentation and certification.



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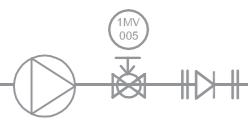
## AUTOMATION & COMMISSIONING

DQD systems are designed for ease of use to run on a day-to-day basis, and can be totally automated. Even the most complex of systems are user friendly and only require the minimum of staff training. What is more, the comprehensive control panels will keep customers completely up to date on the functioning of the system.

DQD offers a complete service, encompassing all aspects of a turnkey package, from design and fabrication of custom-built process systems to associated automation and controls.

DQD commissioning includes system or equipment start up, adjustments, fine tuning, cycle development, testing, installation, and documentation flexibility. DQD ensures commissioning is performed and completed correctly, the system or equipment will be in a 'state of control', which ensures the system or equipment is ready for formal qualification, testing, and approval. Commissioning tasks supplement the validity and regulatory compliance during qualification of GMP systems and equipment.





## VALIDATION

DQD systems are fully validated and include the following:

### Design Qualification (DQ)

- Generation of user requirement specifications
- Verification of these type corresponding user requirement specifications
- Supplier evaluation / audit
- Check the challenge of the design by GMP audits
- Product Quality Impact Assessment
- Specifying validation documentation requirements of suppliers
- Agreements with the suppliers about the performance targets
- Factory Acceptance Test (FAT), Site Acceptance Test (SAT) and commissioning procedures

### Installation Qualification (IQ)

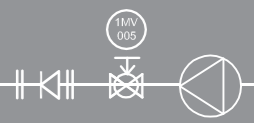
DQD ensures systems have been delivered and installed in accordance with design drawings, vendor recommendations and in-house requirements. A record of the main features of the equipment or system installed are produced, and ensures that they are supported by sufficient and appropriate documentation to implement satisfactory operation, maintenance and control of changes.

### Operational Qualification (OQ)

All DQD systems are taken into service before the start of OQ, to ensure they are complete, and that the system assembly and pre-qualification checks ensure that the device is fully functional and that documentation is complete.

### Performance Qualification (PQ)

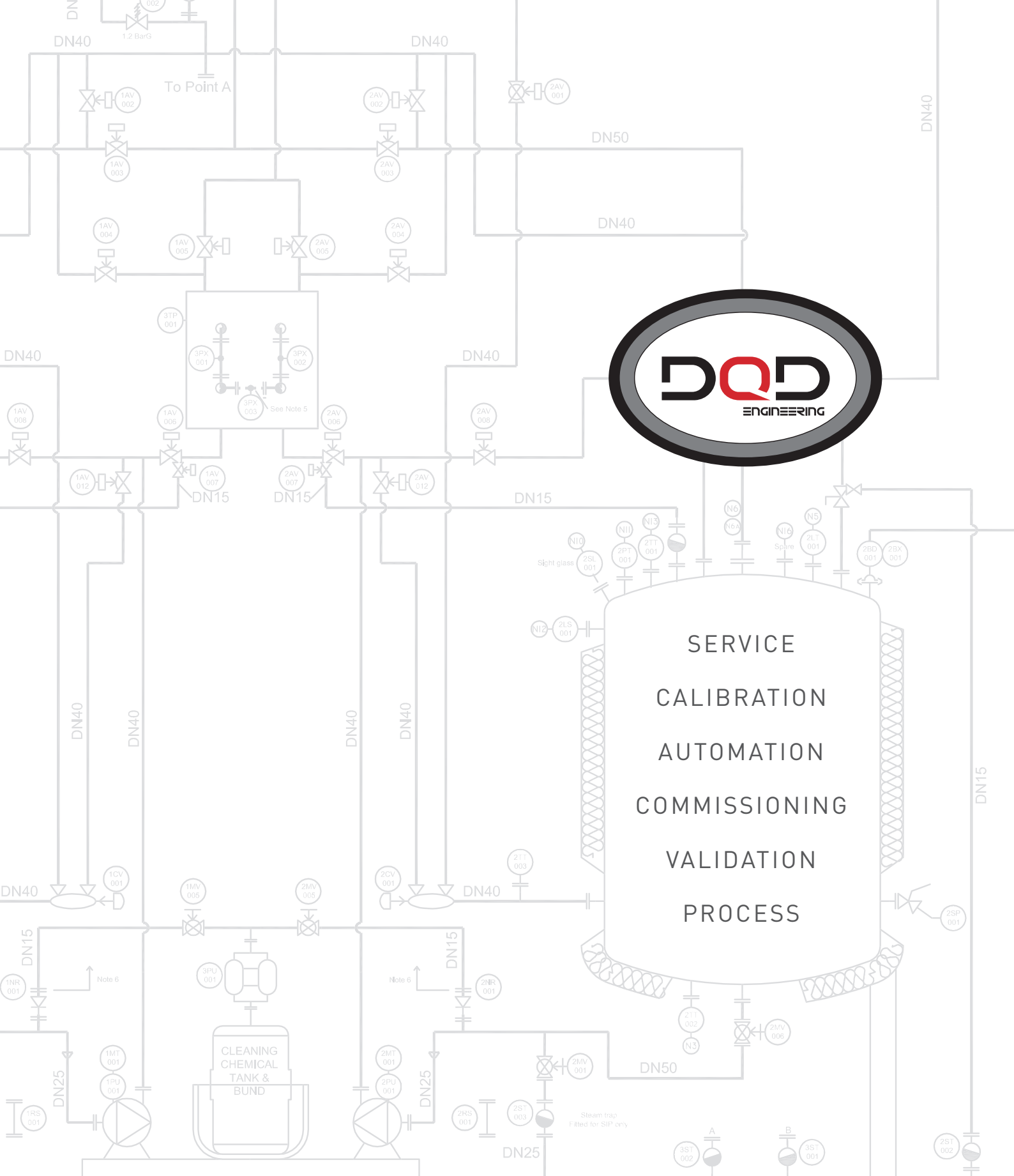
DQD provides documented evidence, based on a series of production runs, that the system or equipment performs consistently and produces components or products meeting pre-determined specifications.



## PROCESS SYSTEMS

When creating a process system, there are a thousand and one decisions to be made and an endless range of components to choose from. DQD's strict quality control, assessment procedures and all-round experience ensures that only the highest quality components are used, to guarantee the system provides optimum performance. Our unique approach to in-factory testing ensures correct equipment integration before delivery, not during commissioning.





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