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Manufacturing Capability Statement

2022

Australian Water Engineers

Engineered Flow Control Products and Solutions

A leading specialist in engineered flow control equipment.

From concept design through to installation and commissioning, utilising 50 years of industry expertise to deliver innovative solutions for our customers.

Who we are:

AWE are a group of highly experienced professionals innovating the Australian water and wastewater industries with customised water control equipment. AWE is certified to ISO 9001 where all products are produced under a fully documented quality control system. Safety is paramount.

Our Facility:

AWE operates from a purpose-built 3000 square metre, non-ferrous manufacturing facility in Riverview QLD. The facility is located within easy access of Brisbane via the Ipswich motorway.

Our People:

Our people are our strength. AWE engage, educate, and develop our staff to understand and contribute to the success of our products and services. Engaging and developing the right people ensures our customers receive a high quality solution to their Flow control requirements and many years of trouble-free service.

Our Processes:

Our process starts with your enquiry. Every enquiry receives the attention of our dedicated technical sales engineers. We understand that not all of our customers know what they need or what is possible. We excel at working through your problem to ensure the solution offered exceeds expectations while complying with all project design parameters and specifications.

Concept Defining & Quoting:

Having worked through the enquiry process with your dedicated technical sales engineer, we will arrive at an agreed concept definition. This definition is quoted by your sales engineer and within the quote all key parameters such as sizes, material choice, actuation requirements are listed for your review and adjustment if necessary. A lead time will be agreed based on your requirements and availability of materials required to complete the project. The lead time will specify a period for production of design drawings, a period for approval of design drawings and a period for manufacturing, testing, and installation of the project once design drawings have been approved. Only when you are 100% satisfied and upon your approval will we proceed to an order.

Order Placement & Concept Design:

Once the quote has been accepted and an order placed, a dedicated design engineer is appointed to oversee the design and drafting aspect of the project. The design engineer, in consultation with the sales engineer and within the timeline specified in the quote, will oversee the production of a general arrangement drawing reflecting the key parameters of the quote. This general arrangement drawing is produced using the latest 3D CAD software and is presented to the customer for their review and approval to proceed to the manufacturing phase of the project.

Procurement & Manufacturing

Approval to manufacture is the catalyst for procurement. Long lead time items such as actuators, gearboxes and specialist materials that are not locally available are ordered first to ensure the optimum delivery time is achieved. The customer is informed of any significant issues that may arise during this phase to allow the customer ample time to implement mitigation strategies associated with their construction program.

Products are typically fabricated and machined from either 316 stainless steel, marine grade aluminium, or a combination of the two. The manufacturing sequence typically consists of the following process flow and is all controlled in house:

1. Cutting and processing of flat plate items
2. Pressing of flat plate items into required profiles
3. Machining of fine tolerance assembly feed items
4. Processing of penstock lead screw stems
5. Fabrication, fit-up and welding out of weldments
6. NDT of weldments (if specification requires)
7. Degreasing, pickling and passivation of weldments
8. Assembly of components, including proprietary seals and guides into equipment
9. Final inspection and testing
10. Packing and dispatch

Cutting of flat plate is executed on our state of the art 6kW CNC fibre laser. With an achievable accuracy of +/- 0.1mm the latest fibre laser technology allows for cutting and etching of aluminium plate up to a thickness of 12mm and 316 Stainless steel up to 16mm. Plate profile drawings known as DXF files are produced directly from the CAD model and imported directly into the laser nesting program for cutting. Highly accurate laser cut components are then fed into the next stage of processing.

AWE 6kW CNC Fibre Laser
(1500 x 3000)

Pressing of the flat plate profiles happens via our 4m long 320tonne capacity CNC press brake. With an angular tolerance of +/- 0.5 degrees and a 6mm stainless capacity over 4m. This ensures that 90% of plate pressing can be achieved in-house. Furthermore, our press brake is dedicated to the processing of 316 stainless steel thereby eliminating any risk of cross contamination with carbon steels as it often does when 316 stainless steel pressing is outsourced to general fabrication shops.

AWE 4000 320T CNC Press Brake – Dedicated to 316 Stainless Steel
(4000x320T)

Machining of fine tolerance assembly items are two conventional lathes, milling and slotting machines. Highly skilled operators work from CAD produced engineering drawings and manufacturing ITP's to produce components in stainless steel, aluminium, bronze and various engineering plastics.

A critical mechanical component is the penstock stem /spindle or lead screw. AWE have adopted the advanced manufacturing process of thread rolling to produce superior penstock spindles. Thread rolling is a cold forging process that produces a smooth burnished finish to the thread form. The rolled thread form reduces wear on the gearbox or actuator drive bush than conventional thread forms and has the added benefit of increased tensile strength superior to the irregular and chattered surface finish produced by conventional machine cutting methods. Thread rolling also reduces material wastage when compared to conventional cutting methods.

AWE Thread Rolling

Fabrication and welding is the core skill of AWE's highly skilled and qualified workforce. Fabrication and welding of high grade austenitic, duplex stainless steels and marine grade aluminium destined for service in any industry requires a specific skill set and considered control measures to achieve high quality outcomes. All AWE welding is performed by certified welders using qualified weld procedures under the supervision of a certified welding supervisor.

Iron contamination of products and their manufacturers' reputations are quickly exposed when products are put into service in the water industry. AWE operate from a non-ferrous facility to ensure materials remain contamination free from receipt through to dispatch of the finished goods.

Fabricating and welding non-ferrous materials requires specialist knowledge and experience. The aim is to minimise heat input, thereby avoiding excessive distortion and maintaining optimum corrosion resistance resulting in a superior product. AWE achieve this by utilising the latest 3D CAD software and "force arc" welding technology.

All our fabrications undergo a thorough QA inspection. Any NDT requirements are undertaken by a third-party NATA approved certified welding inspector. Weldments are finished through our pickling and passivation process in accordance with ASTM A380.

AWE proprietary seals achieve high performance over a wide range of head pressure conditions. UHMWPE is the preferred seal material used in our designs as it provides wear resistance and low friction properties. Elastomers such as Neoprene and EPDM compounds tried and evaluated over many years provide the sealing interface between the metallic and low friction plastic elements of our product designs. As with the fabrication of our products, great operator skill and attention to detail is required to ensure assembly of components is performed to a high degree of accuracy and quality to achieve the design intent: a high performance and trouble-free water control device. Performance testing of all AWE products is conducted in house prior to dispatch.

Need More Information?
We're here to help. So if you do have questions, please reach out to our team any time.

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Environmental Strategy
AWE consider all relevant environmental impactors – energy, carbon, water waste, transport, & other emissions.

Refer to our website for further detail on AWE's environmental awareness initiatives.

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