

## CUSTOMISED VALVE SOLUTIONS

T-T Flow are experts in providing engineered waterworks valves. We manufacture and supply not only a range of standard valves but custom valves suitable for all applications.



# T-T Flow<sup>®</sup> Valves



## ABOUT US

T-T Flow are professionals in the design, manufacture and distribution of engineered valves and associated ancillary equipment to the water, process and allied industries.

Our flexible approach allows the supply of just a single valve, a combination of stock products or the ability to work with our clients to provide a complete engineered valve package, along with ancillary equipment. Meeting your specifications, combining our products and services with that of other T-T divisions, we are able to offer cost-effective, customised, single-sourced packages.

Designed in the UK, our in-house team of experienced engineers, utilise the latest design software, continually re-evaluating products and materials to ensure that relevant international and regional standards, and market requirements are met.

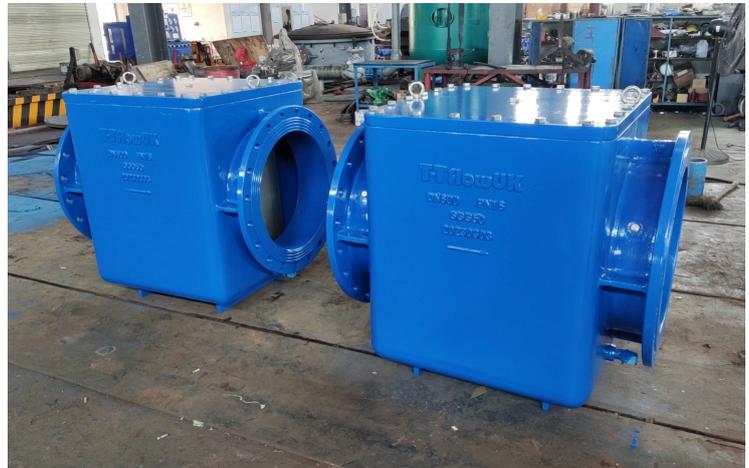
T-T Flow heavily invest in research and development. The highest production standards are achieved through considerable resource investment in the latest equipment and techniques, including finite element analysis and rapid prototyping. In-house test facilities allow for full product testing including pressure (both seat and shell), mechanical, electrical and endurance.

## T-T FLOW BENEFITS

- Unique product designs supported by third party approvals
- Technical advice from knowledgeable engineers
- Cost effective, customised and single sourced packages
- Fully equipped machine assembly shop
- In house calibrated test facilities
- Supporting documentation, certification and CAD drawings
- Extensive stock of products offering same-day delivery
- Comprehensive after-sales support
- Buy online with next day delivery

### Inline Basket Strainers

The luxury Peninsula Hotel which dominates Kowloon, Hong Kong, turned to T-T for custom multi-basket inline strainers to filter the site's service water intake. Our experts worked closely alongside the client's engineers in order to guarantee their rigorous standards were satisfied, maintaining a high attention to detail throughout the project.



### Actuated Plug Valves Improve Manufacturing Productivity

UK-based fresh ready meal manufacturer, Charlie Bingham, once famed for the world's most expensive ready meal, turned to T-T for process automation solutions. Several pneumatically modulating eccentric plug valves were deployed, resulting in improved productivity and process efficiency on the site.



### Damped Check Valves for Hong Kong Drainage Services Department

The US\$2M upgrade of Tsing Yi Sewage Treatment Works, overseen by the Drainage Services Department of the Hong Kong government, required four DN400 swing check valves with twin external damped weighted arms equipped with flow sensing switches. The client was impressed with the machined weld deposit seats and WRAS Approval, demonstrating third party functional testing.



### Custom Check Valve for Southern Water

Southern Water, based in West Sussex (UK), serves 4.7M wastewater customers and maintains 365 treatment works in the UK. When in need of a replacement for an obsolete swing check valve, with integral quick-release coupling and imperial flange drillings necessary, they turned to T-T for a speedy bespoke solution.



### Fabricated Gate Valve

Steel has been produced at the Port Talbot site in Wales since 1901, producing more than 5M tonnes annually. T-T supplied a custom fabricated DN750 gate valve with imperial flange drilling to the site, maintaining a historically face-to-face dimension that ensured minimal downtime by enabling a speedy installation.



### Upgrading Flap Valves for the Thames Tideway Scheme

The Thames Tideway Tunnel is a US\$5B super sewer designed to intercept overflows and protect the River Thames. T-T have supplied double hinge flap valves with upgraded materials and coatings to both the Albert Embankment and Blackfriars Bridge sections of the project. The coatings ensure longevity, while the majority have custom back plates to accommodate specialist anchor bolts.



### PN40 Gate Valves for Hydroelectric Scheme

The construction of the £13.6 million Loch Eilde Mor hydroelectric scheme in Scotland required custom high-pressure isolation valves in order to manage the application's extreme pressure, so T-T Flow designed and manufactured three BS5163 DN150 metal seat gate valves with a pressure rating of 40 Bar – way above our standard 16 bar design.



### Air valves for £1 billion wastewater network

A 63 acre, mixed-use development – including 3000 homes and 850,000 sq ft of offices – came to our experts in need of custom air valves for their waste management system.

Due to the size and mixed amenities of the site, the air valves needed to be able to reliably and effectively operate within very high and variable flow rates. Working alongside the development's principal contractor, T-T Flow designed, fabricated, pre-assembled and delivered the air valves ready for installation.



### Custom Butterfly Valves for Oil Refinery

A major Iraqi-based oil refinery required custom-actuated butterfly valves for a large-scale plant refurbishment and came to T-T Flow to supply them.

T-T assembled 30 lugged centric butterfly valves to EN598 and rated to 175psi, coating the carbon steel body of the valves in a chemical-resistant epoxy resin to meet the demands of the application.



### High Temperature Air Valves for Scottish Distillery

T-T Flow supplied fully customised air valves to a historic distillery in Scotland. Due to waste product handling, the valves needed to be able to manage viscous material that reaches temperatures of 100°C - much higher than conventional air valves handle.

The supplied valves were manufactured in grade SS316/1.4401 stainless steel for corrosion resistance in the aggressive environment, with upgraded elastomers to ensure a reliable seal at high temperatures.



### DN250 PN16 Actuated Plug Valve for flow control

When it comes to flow control T-T Flow have the answer. When asked to supply a valve to modulate a wastewater pipeline we provided the perfect solution. The Towcester STW within the Anglian Water region was undergoing an upgrade due to increased demand. An eccentric plug valve with close-coupled modulating electric actuator that would effortlessly integrate into the clients' site protocol was supplied.



### 2" Duplex stainless steel air valves for a corrosive environment

T-T Flow supplied specialist air valves to the US \$25M Falklands Mare Harbour improvement scheme. Due to the arduous salt laden environment careful product selection was vital. We were tasked to provide three function air valves with an integral anti-surge mechanism to minimise the potentially damaging effects of water hammer. The valves were constructed in Duplex stainless steel for increased corrosion resistance, and used WRAS approved materials.



### DN150 PN40 Gate Valves for a high pressure systems

The construction of the US\$18M Loch Eilde Mor hydro-electric scheme in Scotland required some custom high pressure isolation valves. T-T Flow designed and manufactured three BS5163 DN150 metal seat gate valves with a pressure rating to 40 Bar, which also had an ISO5210 interface for actuation. Given the application and to avoid contamination only WRAS compliant materials were used.



### DN400 BS10 Table H Recoil Check Valve for prevention against water hammer

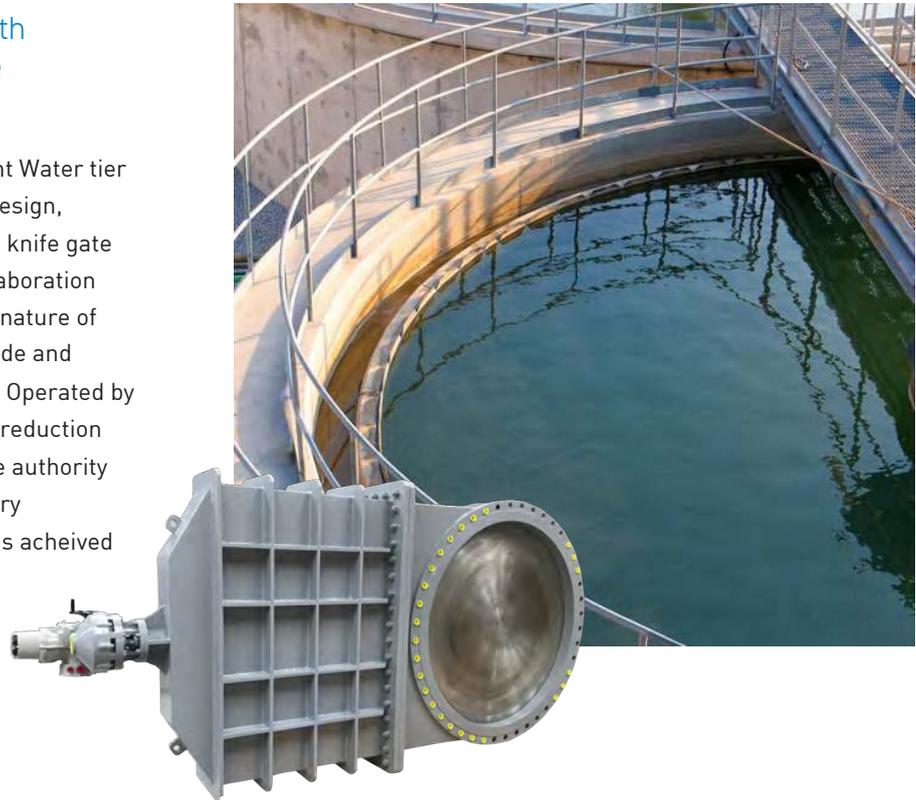
While undertaking a sewage treatment works upgrade the principal contractor needed to replace an old 16" single door recoil check valve. Site investigation had identified an imperial design with flange drillings to BS10 Table H.

T-T were approached when it became apparent that the appointed framework supplier did not have the willingness to deliver. Recoil check valves are suited to systems where high velocities and fast flow returns are present.



### DN1800 Knife Gate Valve with Actuator for a large pipeline application

Working closely with a Severn Trent Water tier 1 contractor we were engaged to design, manufacture and deliver a DN1800 knife gate valve. From the outset a close collaboration was established due to the critical nature of this valve to Melbourne STW upgrade and neighbouring distribution network. Operated by means of an electric actuator with reduction gearbox. Representatives from the authority and contractor witnessed the factory acceptance testing and delivery was achieved within an agreed quick timescale.



### DN400 Non-Return Valve with bypass for a potable water application

T-T relished the opportunity to provide a product that other manufactures were too quick to decline. One such example involved the supply of a WRAS approved swing check valve incorporating an integral bypass arrangement for a pumped potable water pipeline. While others were reluctant, T-T submitted engineering drawings for client review and secured the contract.



### Large airport application for our standard products

Al Maktoum International Airport in Dubai is expected to become the worlds largest passenger airport annually handling more than 160 million passengers. Working closely alongside the principal contractor and securing stringent local authority product approval; T-T supplied a range of Aquavault resilient seat wedge gate valves and Aquabrake double orifice air valves.



### International factory acceptance testing

The US \$26M Jordanian West Zarqa Force Main to As-Samra WwTW project involved the construction of a new 21.3 kilometre DN1200 pipeline. T-T were engaged to design and manufacture a number of custom engineered valves including wedge gate valves with stainless steel hydraulic actuation cylinders, stainless steel air valves and ball valves; all rated to 25 Bar. T-T welcomed an international consortium to oversee the factory acceptance testing in our facility.



### Interlocks

For critical process applications, the correct sequencing of equipment is vital. To avoid inadvertent human error, interlocks can be utilised to authorise valve actuation. T-T Flow, have manufactured and supplied several interlocking valve system across the United Utilities region, involving the supply of diverter valves for caustic chemical handling. Such systems reduce error and allow sites to run more efficiently, minimising pollution and risk.



### Indicating headstocks

T-T's in-house fabrication facility allows for the site-specific manufacture of operating equipment, in a variety of materials. Where valves are inaccessible operating equipment is installed to ergonomically position the operating element. Variants available with handwheel, gearbox, actuation, visual position indication and switches.



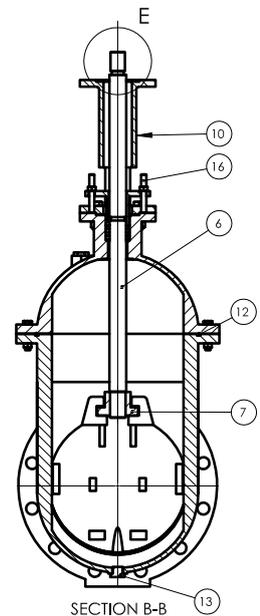
### High Performance Knife Gate Valves for Anaerobic Digestion

T-T Support UK municipality, Severn Trent Water, with US \$27M food waste to green energy plant. The site processes 50,000 tonnes of food waste a year to produce renewable gas that is pumped into the distribution network. The company serves around eight million customers across the Midlands and mid-Wales. T-T were invited at an early stage to support project design engineers in product selection to optimise the system. Consequentially 87 stainless steel (grade 316L/1.4404) lugged knife gate valves were supplied ranging in size from DN150 to DN300; many having pneumatic cylinders with solenoid valve, inductive limit switches and junction box.



### Replacing Obsolete Valves

When approached to replace an archaic valve, the team welcomed the challenge. A contractor working on behalf of United Utilities at Damas Gill reservoir was looking to replace an obsolete DN300 wedge gate valve having BS10 Table D flanges, but gland packed for lateral (push/pull) operation. A number of these valves were used to control the water level in the reservoir serving the local population. The supplied valve was submerged and controlled by means of an extension spindle acting through a headstock.



## ENGINEERING SERVICES

Our modern and fully equipped workshops, including full test control systems, fabrication facilities, paint shop, machine tools and over-head crane are complemented by extensively trained and knowledgeable electro-mechanical engineers and coded welders.

Combining our skills and facilities we are also able to supply a comprehensive selection of associated engineered equipment with many items being adaptable to suit your exact requirements, including:



- EN545 & EN598 ductile iron pipe fittings and fabrications
- Extension spindles
- Floor pedestals
- Jointing materials
- Valve mounting kits
- Outreach support brackets (adjustable)
- Pipe couplings and adapters
- Valve open/close status sensing adapters
- T keys

## STANDARDS AND COMPLIANCE

**WRAS COMPLIANCE** - Many of our valves are made with WRAS approved components to ensure suitability for potable water applications. Ask one of our sales team for more information.



**QUALITY STANDARDS** - We ensure all of our products comply to ISO standards.



**ACHILLES UVDB QUALIFIED** - Achilles UVDB provides a fair, open and transparent means of supplier selection for potential tender opportunities.

