



	<h1>DAMS, RESERVOIRS AND HYDROPOWER</h1>	 Glenfield Invicta <i>Delivering Project Solutions</i>
				



An aerial photograph of a large dam and reservoir. The dam is a long, concrete structure with a spillway on the right side. The reservoir is a large body of blue water. The surrounding landscape is lush and green, with rolling hills and dense forests. In the foreground, there is a grassy area with a small structure and a power line tower. The sky is clear and blue.

As a leader in our industry, we are committed to bringing the highest quality and safest product on time to our customers, using the latest technology while acting responsibly, respecting the environment, and providing meaningful jobs for our employees.



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Who We Are

EXPECT... Solutions, Not Just Products



Glenfield Invicta have been designing and manufacturing specialist engineered valves and penstocks for Dams, Reservoirs and Hydropower for more than 170 years.

Our work goes far beyond installation; we make sure our products have an unrivalled lifespan, offering some of the best extended warranties in the industry.

We specialise in providing our customers with full end-to-end service solutions of the highest standard covering every stage of your project; concept through to commissioning. The consistency and longevity of our work has placed us as market leaders across a wide range of water and non-utility infrastructure projects.

Our expertise and knowledge set us apart, together with our track record for delivering projects on time and to the highest standards. Our commitment

to training and health and safety gives our customers peace of mind on every project. All products and service solutions provided are in accordance with the relevant UK, European and International standards.

As a dedicated member of the AVK Group, our customers gain access to industry leading selection of quality, valves, penstocks and fittings.

Glenfield Invicta and the AVK group are synonymous with engineering excellence worldwide. How do we remain at the forefront of our industry? We keep innovation at the heart of everything we do; from delivering the latest engineering solutions to improving the lifespan and safety of our products at every opportunity.

Both in the UK and across world, we support the critical need to invest in Dams and Reservoirs to help manage our most vital resource, as well as protecting against the increasing demands brought about by changing environmental and climatic conditions.

Hydropower is a beacon for green, sustainable energy. It is a key player in making sure our industry is a strong contributor to supporting the UK and other nations in achieving global environmental targets.

Our environmental impact is of critical importance and our commitment to sustainability is steadfast. We have embraced the principles of ISO 26000:2010 as a template for managing our sustainability journey in support of AVK Group's objectives.

Our expertise and knowledge set us apart, together with our track record for delivering projects on time and to the highest standards.

Our proactive approach to reducing our carbon footprint and improving our sustainability is reflected in our policies and commitments to do the right thing by our staff, our customers, and the communities we operate in.

The AVK Group of businesses across the world acknowledge the ten principles of the UN Global Compact, which are concerned with human rights, labour, environment and anti-corruption. In addition, we fully support the UN Sustainable Development Goals (SDGs).



An aerial photograph of a large dam and power station. The dam is a long concrete structure with two large spillways. To the left of the dam is a large, multi-story building, likely the power station. The dam is situated in a lush, green valley with dense forests on the surrounding hills. In the background, there are rolling mountains under a cloudy sky. The water behind the dam is calm, while the water in the foreground is turbulent, creating white rapids.

Glenfield Invicta has a clear vision,
'To provide market leading valve and
penstock engineering excellence across
water and non-utility infrastructure projects.'

Technical Capabilities

EXPECT... A Long-Term Partnership

Whatever you may need, we can provide

Glenfield Invicta is a leading supplier of large diameter valves for dams, reservoirs and hydropower installations around the world.

Glenfield Invicta's product portfolio includes an extensive range of:

- Submerged discharge valves
- Free discharge valves
- Reservoir specification metal seated gate valves
- Auto self-closing Butterfly valves
- High performance recoil check valves
- Anti-vacuum air valves
- Automatic pressure and level control valves
- Penstocks and sluice gates
- Roller gates
- Bulkheads
- Needle valves
- Stoplogs
- Dismantling Joints
- Flange Adaptors

Within our vast range of capabilities Glenfield Invicta can provide a comprehensive range of engineering site solution packages. Our specialist teams come to you to identify the perfect solution - from feasibility and site audit to installation and extended warranties.

Engineering Site Solutions:

- Valve, penstock and actuator: site surveys and health checks
- Valve supply, installation, refurbishment and replacement
- Design and manufacture of ancillary equipment
- All associated enabling, electrical and civil engineering services
- Equipment commissioning
- Scheduled maintenance and servicing contracts
- Extended warranties
- Post contract training
- UK coverage

Wherever you are, so are we

Our geographical presence and product range may be global, but our focus is local. We stay close to our customers throughout the entire process. The proximity allows us to better understand our customers' needs and tailor our solutions to fit them.

Being a global player, we are able to provide highly engineered products and service solutions approved to international standards whilst understanding and adapting to local specifications and project requirements.



Glenfield Invicta 30,000 m² - Kilmarnock Facility



We build on and invest in long-term partnerships, because our customers are much more valuable than a single transaction.

When it comes to valves, hydrants, fittings and accessories, our customers expect long lasting solutions. We combine the product portfolio and engineering services of a global leader with the support of our local teams.

Where do you go for...

...technical information



ONLINE PRODUCT SELECTION

PDF BROCHURES



WEBSITES



VIDEO TUTORIALS

INTERACTIVE ANIMATIONS



2D DRAWINGS



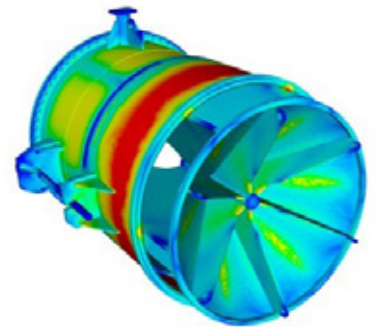
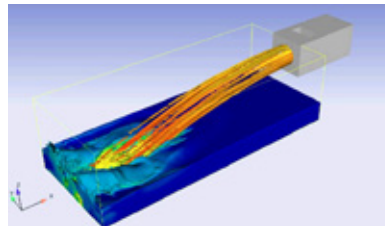
3D DRAWINGS

TECHNICAL DOCUMENTS

Solving real technical engineering problems using finite element analysis and computational fluid dynamics.

Finite Element Analysis

- Prove adequate strength for the design pressures
- Highlight areas of high stress



...engineering



NETWORK MODELLING

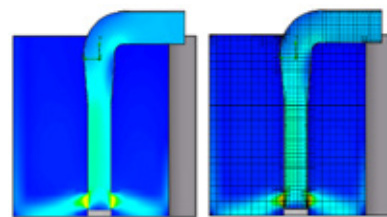
CFD ANALYSIS

FE ANALYSIS



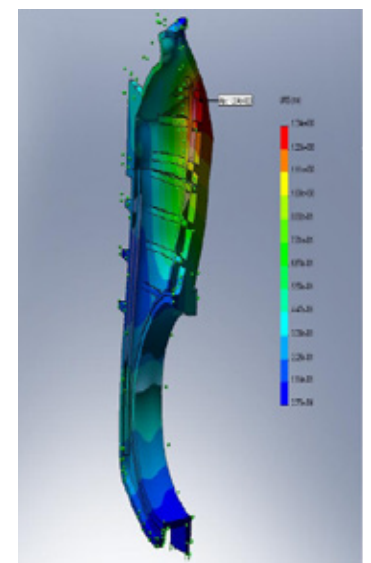
HYDRAULIC SYSTEM CALCULATIONS

FLUID TEST LABORATORY



Computational Fluid Dynamics (FE Analysis)

- Verify the flow characteristics and determine the flow rate
- Highlight areas of restriction and potential areas of cavitation



...support



ENGINEERING SITE SOLUTIONS



TECHNICAL PRODUCT TRAINING
AFTER SALES MAINTENANCE
AGREEMENTS

Technical Capabilities

EXPECT... Quality in Every Step

Technical product training

As business leaders, we have a commitment to service that goes above and beyond the day-to-day activity.

We have a responsibility to ensure customers receive the best from our products and as such we offer free training and insights into the manufacturing processes.

Our training sessions are tailored to your requirements and held at any of our offices across the UK, or, at your convenience, at your site. Any number of delegates can be catered for and training is suited to the various levels of experience and product knowledge – from new employees through to refresher courses for advanced engineers.



Your trusted advisor

Our mission is to deliver a framework in a smooth and efficient way, utilising our technical expertise and group specialists.

Adopting a collaborative and integrated approach Glenfield Invicta aspire to work closely with you to be a key part in project delivery and design, enabling all dams, reservoirs and hydropower projects to be delivered on time, in full and to budget, offering ongoing support and additional services throughout.

Valve selection and sizing

We assist in the early stages of projects to provide technical support and endeavour to ensure that the optimal valve and system solution is used.

Key information required to determine the correct valve includes:

- Application (isolation, flow control, terminal discharge etc)
- Flow rates (minimum, normal and maximum)
- Pressure heads (static, transient, net)
- Medium (raw water, screened, unscreened)
- Valve material trim
- Actuation (manual, electrical, hydraulic, pneumatic)
- Civil structure / system design

Incorrect Valve Selection and Sizing implications. Potential pitfalls of using the wrong valve.

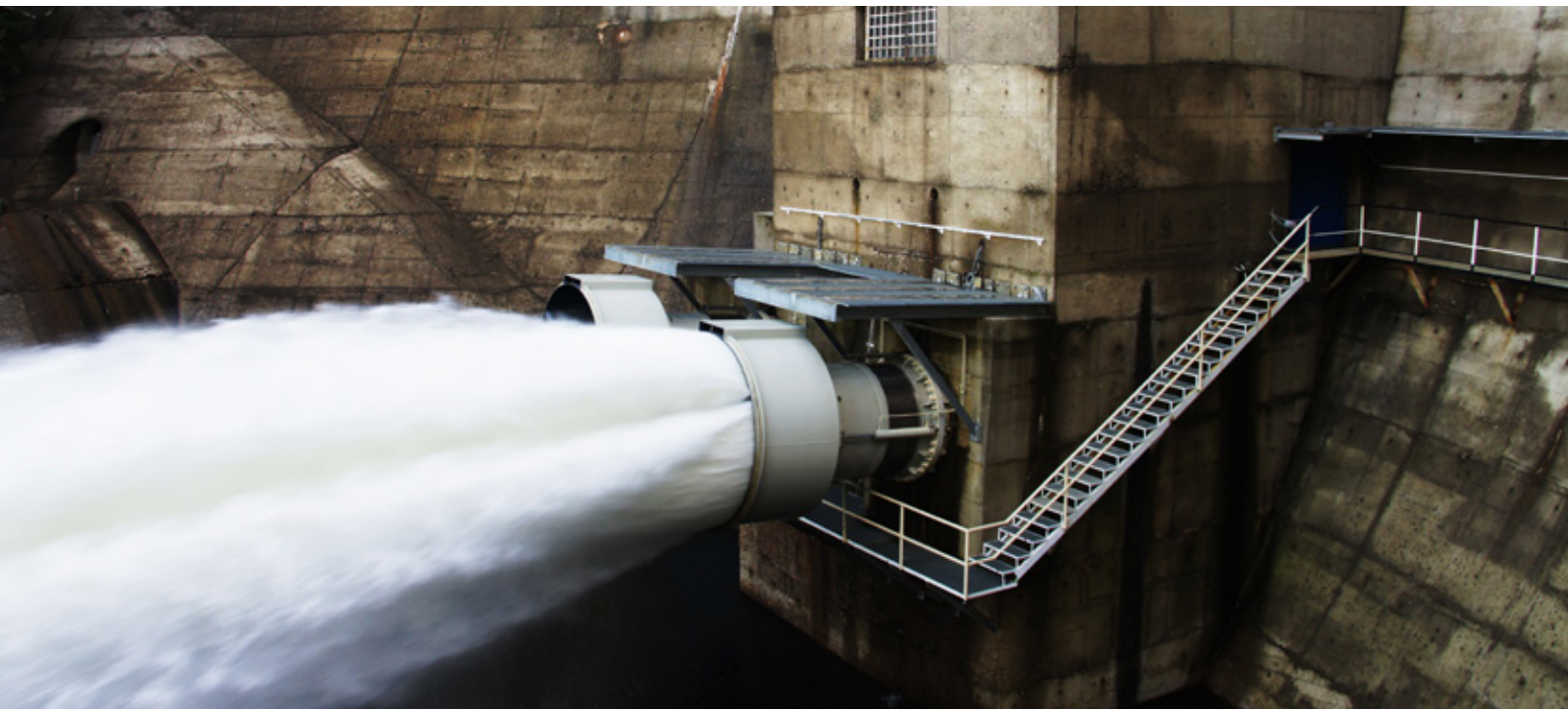
If the wrong valve is used for a particular application, the results can be disastrous!

Apart from valve failures, civil damage, nearby surrounding damage can occur as well as various health and safety issues!

Also, incorrect system information and poor quality products can be equally problematic.



Looking for help with your project?
Simply send an email to -
enquiries@glenfieldinvicta.co.uk



Engineering Site Solutions

EXPECT... Total Savings

Engineering Site Solutions

- Mechanical Installation
- Mechanical Refurbishment
- Electrical Installation
- Electrical Refurbishment
- Asset Management & Maintenance

Our team of highly qualified engineers and project managers are available to support in the design, procurement, installation and planned maintenance of the complete range of AVK Group products.

From our comprehensive database and archive library we can provide drawings, design calculations, bills of material and operating and maintenance instructions for valves supplied by Glenfield Invicta dating back to circa 1900...120 years of documented supply records so far!



Dams, Reservoirs and Hydropower

With increasing pressure on the supply and demand of water both in the UK and globally, it has become increasingly necessary to capture and store more water.

Our skilled and experienced engineers can advise on valve specification and design working closely with clients to ensure that the optimal valve type, size and operation is chosen for each application. We can also supply site solution teams to install and commission products and also to repair, refurbish and maintain valves previously installed.

Glenfield Invicta has the capability to offer a wide variety of valves for all types of dams and reservoir projects.





Industry Leading Range of Valves & Fittings

Glenfield Invicta has the capability to offer a wide variety of valves for all types of Hydropower projects. The extensive range includes:

- Submerged discharge valves
- Free discharge valves
- Reservoir specification metal seated gate valves.
- Auto self-closing Butterfly valves
- High performance recoil check valves
- Anti vacuum air valves
- Automatic pressure and level control valves
- Penstocks and sluice gates
- Roller gates
- Bulkheads
- Needle valves
- Stoplogs
- Dismantling Joints
- Flange Adaptors



Project Management and Engineering Support

A complete supply and installation service offer for AVK group products.

This provides our customers with a single source solution that offers many benefits such as:

- Considerable cost savings
- Minimal plant shutdowns
- Reductions in site programmes
- Long-term solutions
- Extended warranties

The valve supply and installation service offer includes:

- Project engineering and management
- Valve application selection
- Site audit, identification of valve type, size, quantity and condition
- CFD analysis
- Hydraulic calculations
- 3D design
- Supply and fit under pressure connections/hot tapping
- Supply, fit and repair fittings
- Surge analysis



Engineering Site Solutions

Project Focus



Llyn Brenig Reservoir

Project Overview

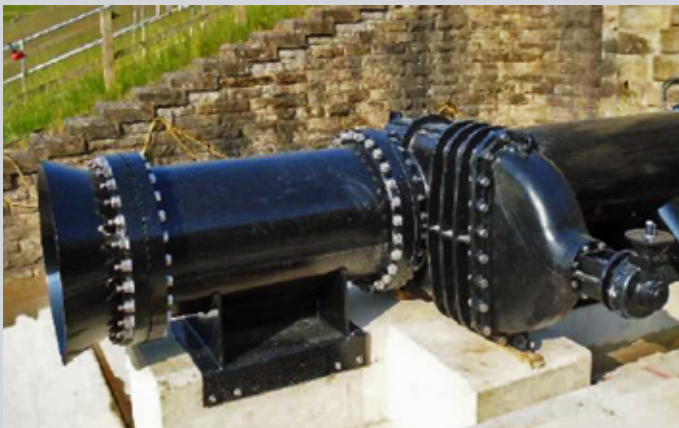
Replacement of existing bulkhead gate and primary gate and supply and installation of new secondary gate.

Specific Requirements

The gates were designed, manufactured and installed by Glenfield Invicta and our sister company Orbinox, in Spain. As well as the supply of gates our engineering support extended to the provision of CFD analysis.

Challenge

Project was 'gold alert' due to single point of isolation during repair works, the bulk head gate was holding back 250 tons of water! Ensuring the safety of the workforce and local population was paramount.



Damflask Reservoir

Project Overview

The scour pipe capacity at Damflask required to be modified and upgraded to meet its 1 million litres per day draw-down target.

Specific Requirements

A standard gate valve of this size installed on its side would typically experience operational issues due to accelerated wear and tear between the body and the wedge. The design of Glenfield Invicta's reservoir specification gate valve, developed with input from Yorkshire Water, incorporates several features that overcame these challenges.

Challenge

Control of the valve was to be automated and Glenfield Invicta supplied the electrical actuator and designed a bespoke extension spindle to connect the bevel gearbox to the actuator. Both the actuator and extension spindle were fitted on site by our engineers.

Ystradfelte Dam

Project Overview

The original spillway had suffered repeated damage due to several incidents of discharge overflow. It was discovered that the spillway had insufficient capacity by modern standards and required a major upgrade.

Specific Requirements

A Glenfield Invicta **Series 857 free discharge valve (DN900)** was selected by Dwr Cymru Welsh Water.

Challenge

One of the key points in this project was to minimise the water jet spread exiting the valve. Glenfield Invicta designed and supplied a remote stainless steel hood which was installed at the downstream end of the discharge valve to contain the jet of water and avoid the conical spray pattern associated with this valve type.



Burnhope Reservoir

Project Overview

To optimise valve configuration to increase drawdown and reduce the risk of damage to the surrounding structures and natural features. For Burnhope Reservoir, flow rates of up to 4.5m³/s had to be controlled.

Specific Requirements

Our engineering team specified the installation of a **DN600 Series 857 free discharge valve** fitted in conjunction with a bespoke hood. With the Series 857, draw down rates can be finely controlled. The bespoke hood was incorporated to limit the width of the discharge plume within agreed limits.

Challenge

The construction space envelopes on the site were restricted. The tailbay into which the drawdown water had to be discharged was narrow and there was no space for a stilling pond.



Engineering Site Solutions

EXPECT... A Prompt Response



Valve Repair, Refurbishment and Replacement

Glenfield Invicta has successfully repaired and refurbished valves on numerous projects in the past 170 years and our reputation is such that we are considered 'specialists' by our customers and their delivery partners.

We are frequently called upon to inspect and recommend a resolution for a whole range of valve related issues including:

- Defective installation
- Operational failure
- Frost damage
- Leakage

We often find that repair and refurbishment solutions are more cost effective for our clients than replacement and we can provide these either in-house or on-site depending upon the prevailing circumstances.

The valve repair, refurbishment and replacement service also offers:

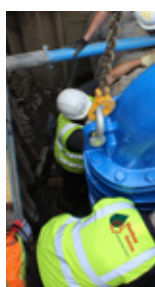
- Valve replacement and refurbishment
- Valve/pump chamber refurbishment
- Supply, install, replace and refurbishment of penstocks
- Feasibility studies
- Design input
- Bespoke pipework and actuation
- Ancillaries
- In-house or on-site servicing

Valve supply and Installation

Glenfield Invicta has established a reputation within the dams, reservoirs and hydropower industries of being a solution provider for valve supply and installation.

We can offer supply and installation on a wide range of valves including:

- Free discharge valves
- Submerged discharge valves
- Gate valves
- Needle valves
- Butterfly valves
- Check valves
- Knife gate valves
- Plug valves
- Control valves
- Air valves
- Penstocks





Commitment to Excellence

The valve supply and installation service offer includes:

- Design input
- Site audit
- Product selection
- Associated ancillaries
- Installation and actuation
- Commissioning
- Testing
- Maintenance
- Extended warranties

Accreditations

The AVK UK Group holds the following Accreditations:



Project Documentation

For all projects we prepare:

- Risk Assessments and Method Statements (RAMS)
- Lift plans
- Inspection Test Plans (ITP) / quality plans and inspection checklists
- Project plan
- COSHH assessments
- Employee training records
- Calibration certificate for lifting equipment
- Portable Appliance Test certificate
- Commissioning procedure and site acceptance test certificate

Quality, Health and Safety and Environment

Our quality ethos from project inception to completion is not limited to the service or product itself, we embrace the entire process, from the early specification to the implementation and after-sales. Quality is not the result of a single link in the chain – it is the sum of all steps. One of our customer promises is to expect quality in every step.

The group has ISO 9001:2008 accreditation

The business is committed to providing environmentally sustainable solutions. We endeavour to reduce our impact on the environment at all times, by conducting risk assessments and monitoring our performance.

The group has ISO 14001:2004 accreditation.

The health and safety of our people, visitors to our projects, and all stakeholders are paramount to us. We have established robust procedures and processes that minimise risk and ensure that everyone recognises their responsibility for safe working practices at all times.

The group has OHSAS 18001:2007 accreditation.



Application Matrix

EXPECT... Lasting Innovations



Valve Type

Bonneted Gate

Radial Gate

Roller Gate

Stop Gate

Penstock/ Sluice Gate

Free Discharge

Submerged Discharge

Fabricated Butterfly

Bottom Outlets

Intake Gate			✓					
Guard Valve	✓							
Discharge Valve		✓				✓	✓	

Intermediate Outlets

Intake Tower								
Intake								
Intermediate Outlet								
Intake Gate			✓					
Guard Valve	✓							
Control / Discharge Valve		✓				✓	✓	

Spillways & Canals

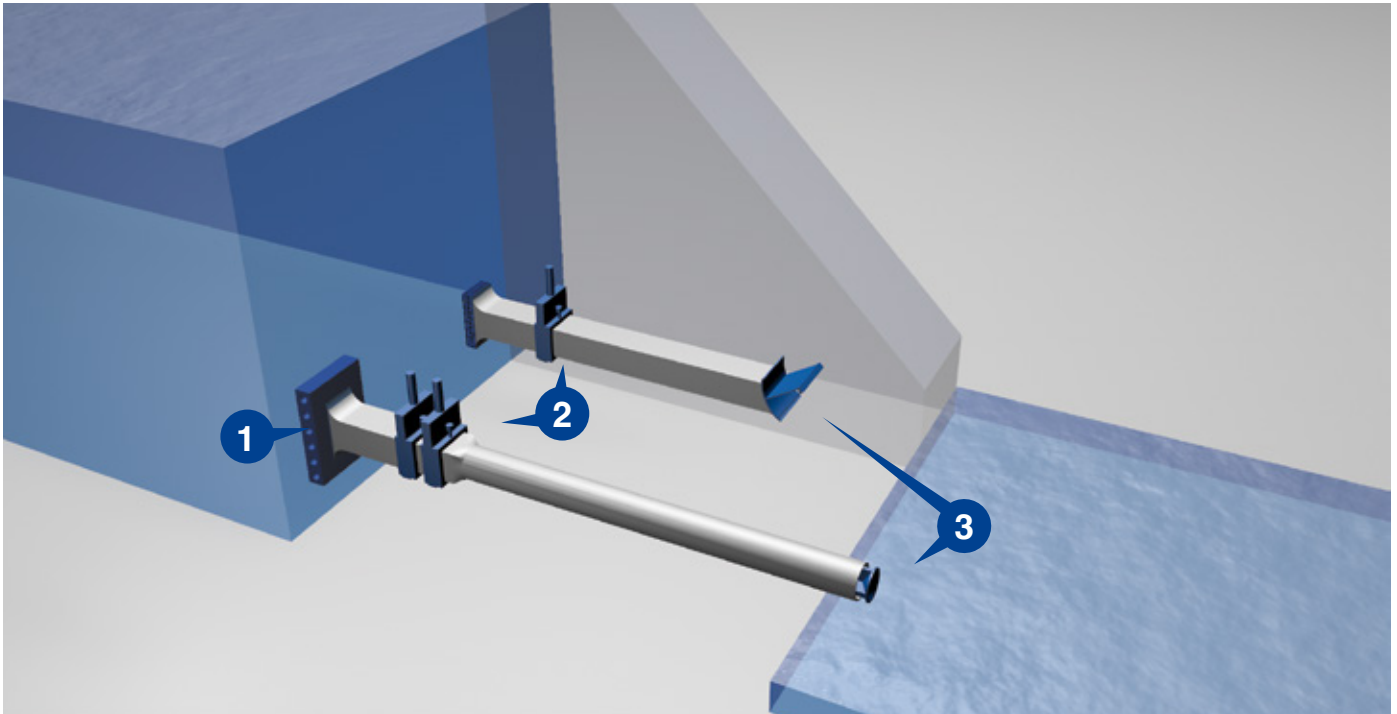
Spillway								
Gate		✓	✓	✓	✓			
Canal								
Gate		✓	✓	✓	✓			
Hydropower & Reverse Pumped Storage								
Reverse Pumped Storage	✓							✓
Hydropower Station								
Intake Control	✓		✓		✓			✓
Turbine Protection			✓					✓
Turbine Bypass/Tailrace	✓					✓	✓	














Butterfly	High Performance Butterfly	Knife Gate	Wedge Gate	Reservoir Specification Gate	Recoil Check	Needle Control	Air	Automatic Control	Spherical	Ball Float
	✓	✓	✓	✓			✓	✓		
						✓				
	✓	✓	✓	✓			✓	✓		
✓	✓		✓	✓		✓	✓	✓		✓
✓	✓	✓	✓	✓			✓	✓	✓	✓
✓		✓	✓	✓			✓			
✓							✓		✓	
		✓	✓	✓		✓	✓		✓	

Dams and Reservoirs

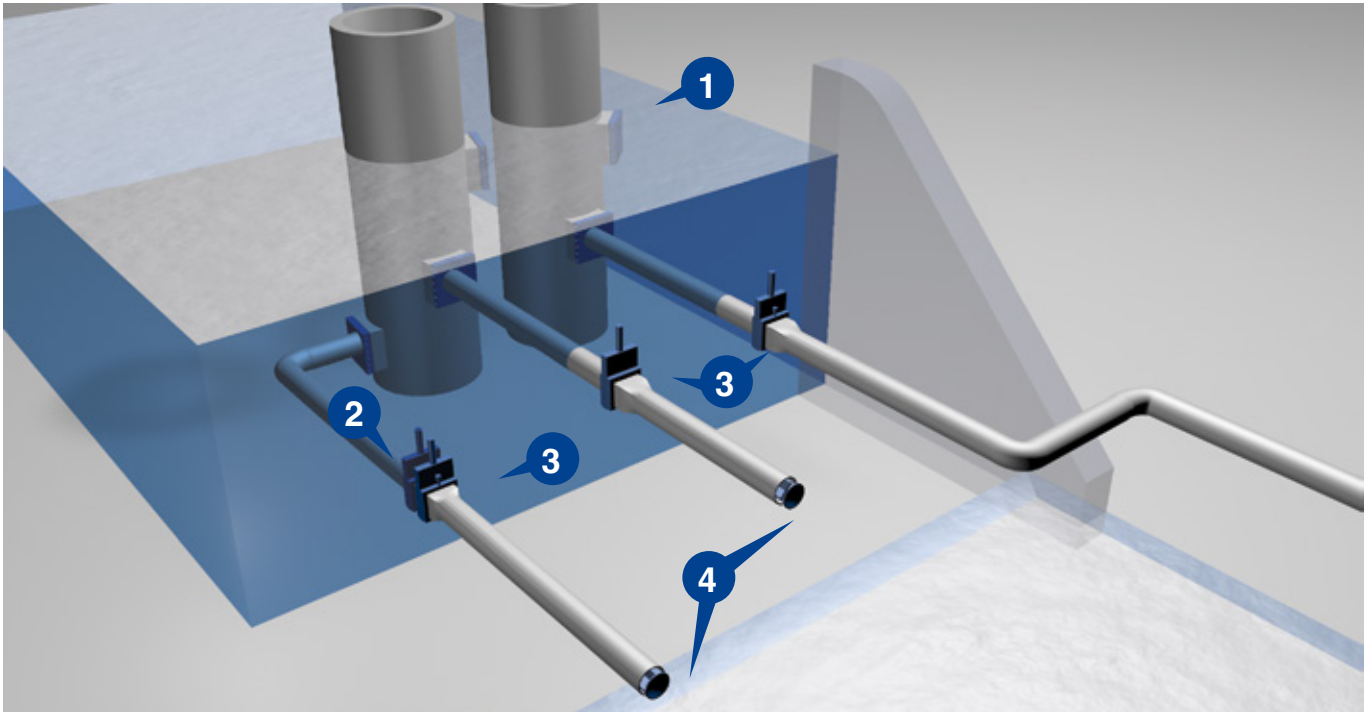
Bottom Outlets






















	Bonneted Gate	Radial Gate	Roller Gate	Free Discharge	Submerged Performance	High Performance	Knife Gate	Reservoir Specification	Needle Control	Automatic Control	Air
1 Intake Gate											
2 Guard Valve											
3 Discharge Valve											

Dams and Reservoirs

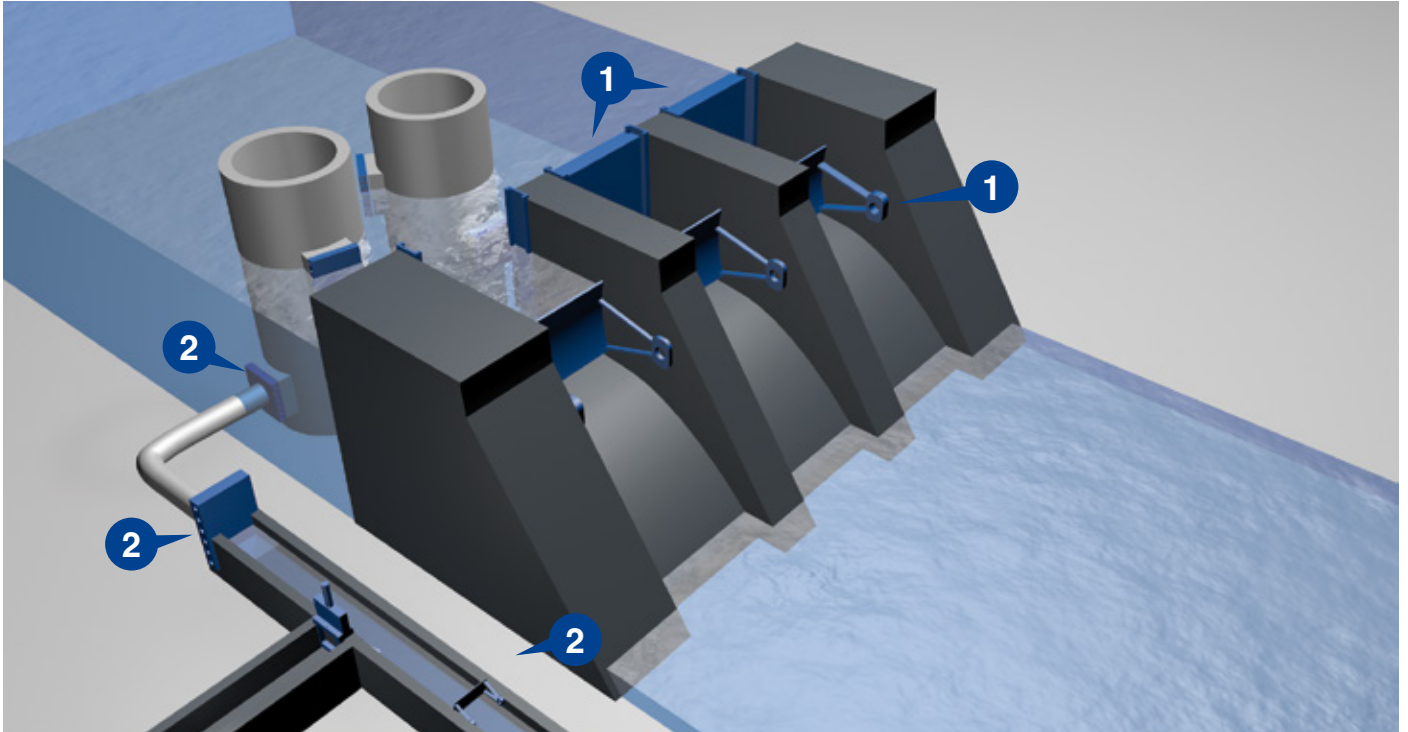
Intermediate Outlets







	Bonneted Gate	Radial Gate	Roller Gate	Free Discharge	Submerged Discharge	Butterfly	High Performance	Knife Gate	Wedge Gate	Reservoir Specification	Ball Float	Needle Control	Automatic Control	Air
Intake Tower														
1 Intake Gate														
Intermediate Outlet														
2 Intake Gate														
3 Guard Valve														
4 Control / Scour / Discharge Valve														

Dams and Reservoirs

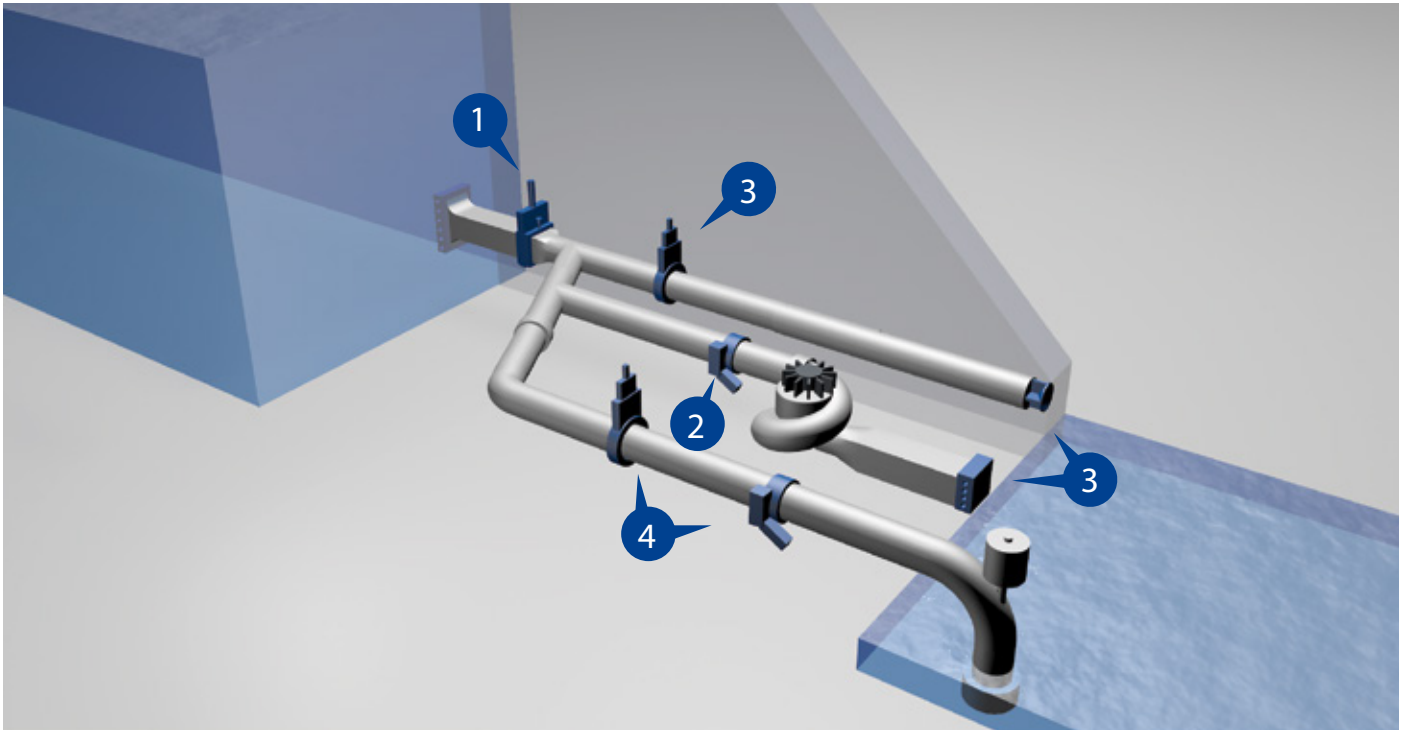
Spillways and Canals



	Radial Gate	Roller Gate	Stop Gate	Penstock / Sluice Gate
Spillways & Canals				
1, 2 Gate				

Hydropower Stations

Reverse Pumped Storage



	Bonneted Gate	Roller Gate	Penstock / Sluice Gate	Free Discharge	Submerged Discharge	Fabricated Butterfly	Butterfly Valve	Knife Gate	Reservoir Specification	Recoil Check	Needle Control	Air Valve	Spherical
Hydropower Station													
1 Intake Control													
2 Turbine Protection													
3 Turbine Bypass /													
Reverse Pumped Storage													
4 Reverse Pumped													

Hydropower

Choosing The Right Air Valve

Glenfield Invicta offer free technical support in addition to a sizing tool, “The Aricad”, to help you make the right choice:

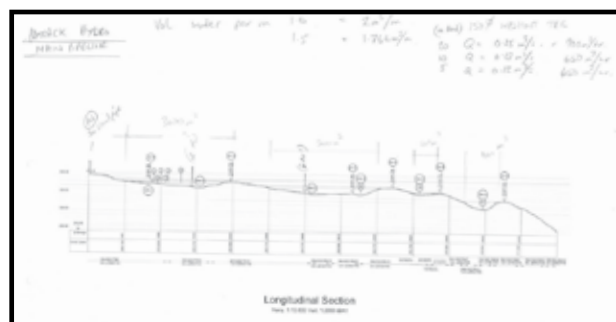


This easy to use software produces reports for engineers as well as procurement teams. With the correct system information, we can help you identify the best product for your scheme; the most suitable location and offer advice on discharge, rupture and inflow characteristics.

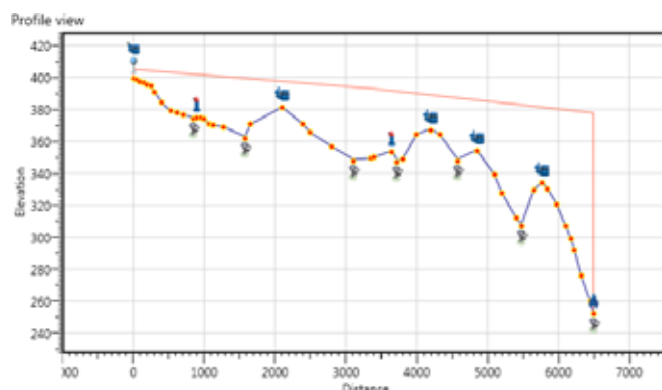


A.R.I VB-060 Air Valve
Supplied to client from Glenfield Invicta (Pattack Hydro Scheme)

Client drawing



ARlavCAD project report

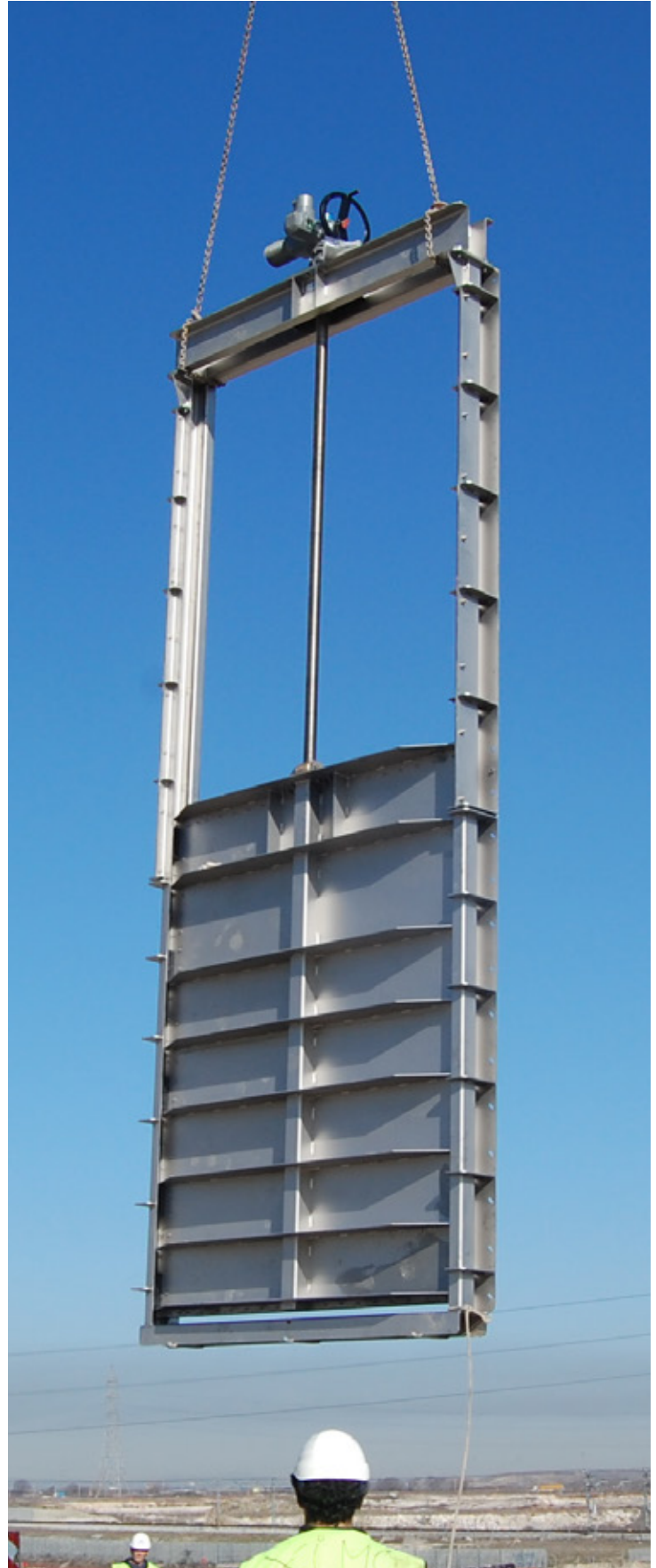


Penstocks: Dams, Reservoirs and Hydropower

Stainless Steel vs Cast Iron Penstocks

10 advantages of stainless steel or HDPE penstocks and flap valves vs cast iron:

- 1** Bespoke fabrication, tailored to suit each unique application and civil structure. Cast iron products are typically available in a range of standard sizes only.
- 2** For channel mounting applications, stainless steel and HDPE penstocks are designed for mounting into rebates, to leave the frame flush with the channel invert and side walls. Cast iron penstocks are designed for face mounting only.
- 3** Much lighter than cast iron, making installation simpler, safer and more economical.
- 4** Less prone to corrosion.
- 5** Vastly superior sealing performance.
- 6** Seals are easily replaceable with product in-situ. Not possible with a cast iron product's bronze sealing faces.
- 7** No adjustment to sealing required throughout lifetime of product. Adjustment of wedges is required with cast iron penstocks and replacement of hinge bushes is required with cast iron flapvalves to maintain original sealing performance.
- 8** Lower torque requirement – cheaper actuation and less wear, meaning longer lifetime. Generally much shorter delivery lead time.
- 9** Cast iron penstocks and flap valves > 600mm are generally cast from new.
- 10** Lower carbon footprint.



Dams and Reservoirs

UK Selected Project List

We have a long and proud heritage of designing, manufacturing and installing high quality valves and penstocks for Dams and Reservoirs which have remained operational even after several decades of rigorous use. Testament to the quality of craftsmanship and build.



Before



After



Burnhope Reservoir

Order Year	Product Description	Project Location
2023	DN600 fixed cone valve & DN800 reservoir spec gate valve 3 x 1600/1400 Series 856 submerged discharge valves 4 x DN1100 reservoir spec gate valves, pipework & trash screens 2 x DN450 reservoir spec gate valves DN1800 concentric butterfly valve 2 x DN450 reservoir spec gate valves 2 x DN450 reservoir spec gate valves DN450 reservoir spec gate valve	Burnhope Reservoir Bewl Reservoir Llyn Celyn Ladybower Reservoir Wraysbury Barrowford Reservoir Burncrooks Daer Reservoir
2022	3 x DN600 reservoir spec gate valves 2 x DN600 reservoir spec gate valves DN600 reservoir spec gate valve 2 x 52" fixed cone valves 2 x DN1800 concentric butterfly valves 6 x DN1200 reservoir spec gate valves 6 x DN700 reservoir spec gate valves & trash screens	Upper Barden Ogston Lower Barden Llyn Celyn Moor Lane Draycote Reservoir Llandegfedd Reservoir
2021	3 x DN900 reservoir spec gate valves 2 x DN600 reservoir spec gate valves DN900 reservoir spec gate valve 3 x DN900 butterfly valves	Loch Thom Bosley Reservoir Prescott Reservoir Grafham Reservoir
2020	DN900 needle control valve DN900 reservoir spec gate valve DN600 fixed cone valve, DN800 Reservoir spec gate valve & DN300 needle valve DN400 reservoir spec gate valve & eccentric plug valve	Llyn Brenig Heigham Reservoir Usk Reservoir Yns Y Fro

*We can provide a historical reference list upon request.



Llandegfedd



Valve Inspection



Kendoon



Upper Carno



Aled Isaf

Hydropower

UK Selected Project List

Successfully supplying to the world's hydropower industry for more than 170 years. Here is a small sample reference list of some of our recent hydropower projects

1000mm x 1000mm Penstocks & Installation - Lochaber (Scotland)



Order Year	Product Description	Project Location
2023	DN450 and DN600 reservoir specific gate valves DN800 reservoir specific gate valve with electric actuator 39" metal seated gate valves - refurbishment DN600 gate and control valves and stop logs	Dolgarrog Whiteadder Reservoir Kinlochleven Hamilton Hydro
2022	12" heavy duty scour valves DN1800 auto self-closing butterfly valves refurbishment DN450 gate and control valves	Kinlochleven Kinlochleven Killington Hydro
2021	12" stainless steel gate valves DN600 gate valves and electrical actuator Stoplog	Lochaber Dinoring Blackwater Hydro
2020	1000mm x 1000mm penstocks & installation Stainless steel scour gate valves (2017 - 2020) 1250 x 1250mm penstock supply and Installation	Lochaber Lochaber Glen Noe
2019	30" gate valve refurbishment Gate valves and mechanical fittings Gate valves High capacity double orifice air valves DN700 & DN900 gate valves & Gearboxes 60" electrically actuated free discharge valve & DN350 electrically actuated needle valve	Loch Dubh Allt Mathaig Laggan Hydro Lussa Glen Buck Lednock
2018	DN1800 ASC BFV refurbishment, anti-vacuum valve & installation (2017/18) Air valves & spares Knife gate valves & butterfly valves	Dolgarrog Dinorwig Lochaber
2017	60" free discharge valve spares Gate valves & ancillaries PN25 gate valves DN1200 gate valve & ancillaries, 1000mm x 1000mm Penstock, 2000mm x 3800mm stoplogs 9" pressure relief valve refurbishment 1500mm x 1500mm & 3000mm x 1600mm penstock installation & anti-vacuum air valves 12" & 48" Needle discharge valve refurbishment	Ffestiniog Strachur Hydro Glenfinnart Hydro Grudie Kinlochleven Pattack Hydro Sloy

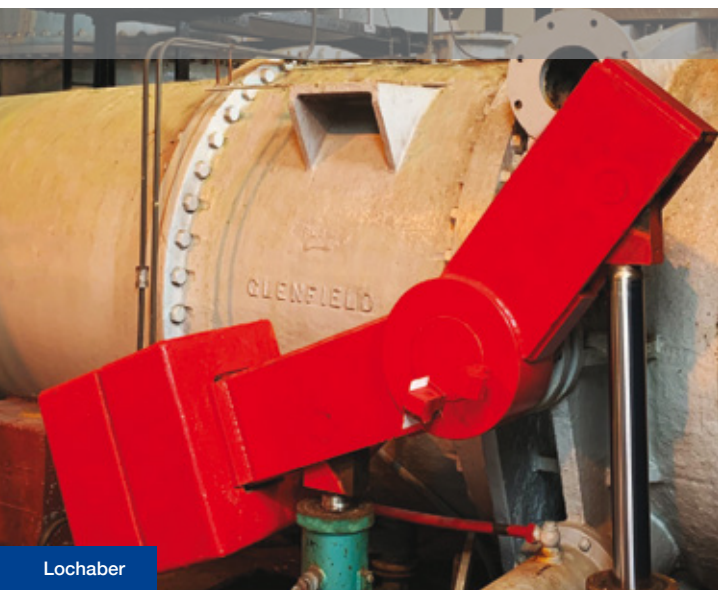
*We can provide a historical reference list upon request.



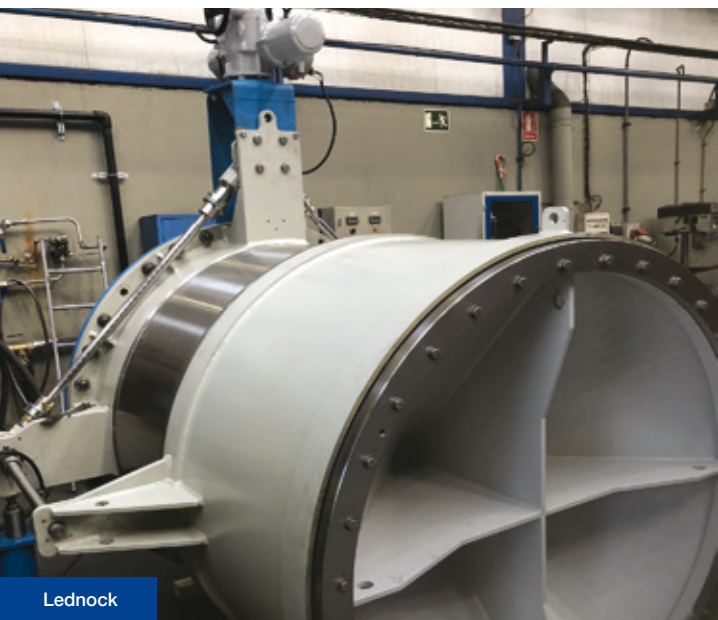
Dolgarrog



Laggan



Lochaber



Lednock



Sloy

Product Range



Bonneted Gate

Carbon or stainless steel fabricated body and gate, bronze seat and hydraulic or electric actuation.

Specifics:

Size:
Up to 2500 x 3500 mm

Pressure:
Up to 20 bar



Radial Gate

Carbon or stainless steel fabricated gate, three or four side sealing with elastomer seals and hydraulic or electric actuation.

Specifics:

Size:
Up to 20000 x 7000 mm

Pressure:
Gate height



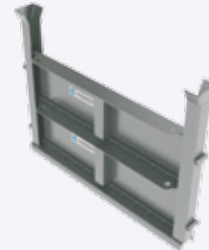
Roller Gate

Carbon steel fabricated gate, roller system for guiding purposes, elastomer seals and hydraulic or electric actuation.

Specifics:

Size:
Up to 6000 x 8000 mm

Pressure:
Up to 10 bar



Stop Gate

Carbon steel fabricated gate, elastomer seals, normally operated with auxiliary lifting equipment / crane.

Specifics:

Size:
Up to 20000 x 7000 mm

Pressure:
Gate height



Penstock / Sluice Gate

Three and four side sealing. Stainless steel full frame and gate, EPDM seals, HMWPE guides and various actuation solutions (manual, pneumatic, electric etc).

Specifics:

Size:
Up to 4000 x 4000 mm

Pressure:
4-side: 1 bar on / 0,6 bar



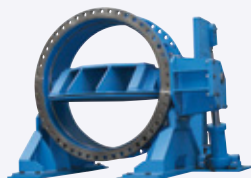
Submerged Discharge Valve

Terminal discharge valve providing submerged energy dissipation and flow control. Type – End of line single flanged. Manual, electrical or hydraulic actuation.

Specifics:

Size:
DN200 – 1800

Pressure:
10 & 16 bar



Fabricated Butterfly Valve

Carbon or stainless steel fabricated body and disc, elastomer seal and hydraulic or electric actuator.

Specifics:

Size:
Up to DN3500

Pressure:
Up to 10 bar (DN3500)
Up to 16 bar (DN2000)
Up to 25 bar (DN1000)



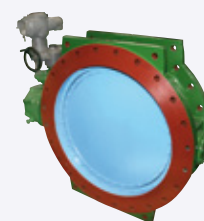
Butterfly Valve

Double eccentric butterfly valve with seal on disc design. Fully bi-directional with drop tight shut off and double flanged connection.

Specifics:

Size:
DN200 – 2800

Pressure:
PN10, 16 & 25 bar



High Performance Butterfly Valve

Boving type double eccentric resilient seal on disk and stainless steel body seat. Drop tight shut off in preferred direction and double flanged connection.

Specifics:

Size:
DN100 – 3000

Pressure:
PN10, 16, 25 & 40 bar



Needle Control Valve

Flow, level and pressure control valve used for in-line and terminal applications.

Specifics:

Size:
DN80 – 2000

Pressure:
PN10, 16, 25, 40, 64 & 100



Knife Gate Valve

Bonneted valve, carbon or stainless steel fabricated body bonnet and gate, elastomer or bronze seat and hydraulic or electric actuation.

Specifics:

Size:
Up to DN3500

Pressure:
Up to 20 bar



Wedge Gate Valve

Metal seated valve for standard isolation applications. Manual, electrical and hydraulic actuation options available.

Specifics:

Size:
DN50 – 2400

Pressure:
PN10, 16 & 25 bar



Reservoir Specification Gate Valve

Heavy duty ductile iron cast valve with shoes, channel guides, pinned rings, jacking screw and increased corrosion protection. Suitable for or higher flow velocities. Manual, electrical and hydraulic actuation options available.

Specifics:

Size:
DN350 – 1800

Pressure:
PN10, 16 & 25 bar



Ball Float Valve

Balanced equilibrium float valve is designed to be fitted in the top of a tank or reservoir to automatically control the rate of filling and shut off completely when a predetermined level is reached.

Specifics:

Size:
DN50 – 300

Pressure:
PN10 & 16 bar



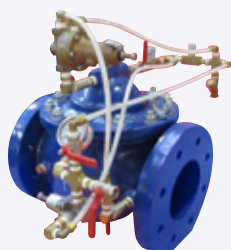
Free Discharge Valve

Cast body or carbon steel / stainless steel fabricated body, elastomer seat and hydraulic or electric actuator.

Specifics:

Size:
Up to DN3000

Pressure:
Up to 20 bar



Automatic Control Valve

Ductile iron body/bonnet and stainless steel body seat globe/diaphragm type valve. Large passageways for higher flow rates and greater cavitation resistance.

Specifics:

Size:
DN50 – 500

Pressure:
PN10, 16, 25 & 40



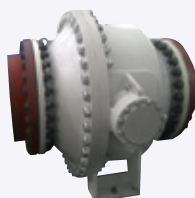
Air Valve

Triple function ventilation air valves with aerokinetic performance. Large discharge capacities and drop tight shut off for full pressure range. Anti-vacuum air valves also available.

Specifics:

Size:
DN25 – 250

Pressure:
PN10, 16 & 25



Spherical Valve

Cast or fabricated, metallic/soft designs, with movable service seal. Counterweight/ hydraulically operated with digital instrumentation systems.

Specifics:

Size:
DN300 - 2000

Pressure:
PN10, 16, 25, 40 & 64



Fabricated Fittings

Series 258 couplings and Series 260 flange adaptors can be universal or tensile resistant. Tested and approved in accordance with BS 8561 Type 1 compliant for PE DN350 to DN630, Type 2 compliant for all ferrous pipes DN350 - DN1200 embodied carbon data available upon request.

Specifics:

Size:
DN350 - 1200

Pressure:
PN10, 16



Dismantling Joint

Series 265 dismantling joints provide easy installation and disassembly of flanged pipework and fittings, or flanged equipment such as valves, meters and pumps. The dismantling joints compensate for axial displacement of the pipe during installation.

Specifics:

Size:
DN300 - 1200

Pressure:
PN10

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With over 170 years' experience we can confidently claim "there's a Glenfield Invicta valve in every continent in the world."

Working with our AVK Group partners, we have the capability to support and deliver your project regardless of complexity or size. We deliver based on global leadership and local commitment.

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IF YOU NEED HELP WITH YOUR PROJECT, PLEASE EMAIL US AT: ENQUIRIES@GLENFIELDINVICTA.CO.UK

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DF&H 09/2023



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