# WATER CONTROL GATES



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## SPECIALISED WATER CONTROL GATES

AWMA specialise in engineering bespoke water control gates to meet project requirements.

## FEATURES & BENEFITS

- Extremely high head pressure (proven up to 100 tonne).
- Full perimeter sealing.
- Materials to withstand aggresive environments.
- Diverse sizes and orfices.
- Accommodating short shut-down periods.
- Unique retrofit to site requirements.
- Highly specified conditions.
- For sites allowing no or restricted civil works.
- Submerged installations.
- Integration into fully automated processes.
- Containment of dry, solid or gaseous mediums.
- Chemical containment.
- Underground (tunnelling or mining) applications.
- Low impact designs to minimise injury to ecological assets.
- Infrastructure with 100 year life expectancy.
- Low whole of life costs.



## APPLICATIONS

 AWMA develop, design, manufacture and install specialised control gates and associated automation systems for applications across all industry sectors.



## SPECIALISED WATER CONTROL GATES

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

 All of AWMA's Water Control Systems are custom sized to ensure they meet specific site requirements.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- Materials used in the construction of AWMA's specialised gate range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

• The seal performance of AWMA Water Control Gates exceed that required by the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- AWMA's gates typically have a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

## INSTALLATION

### MOUNTING OPTIONS

- · Gate products are developed to meet specifications
- Early project involvement ensures development of the most appropriate gate product and specifications for the application.

#### ACTUATION SYSTEMS

- AWMA offer numerous options for operation including manual, mechanical, automated, hydraulic, pneumatic, powered or electrically actuated systems.
- Staged upgrade programs are also available.

### OPERATION SYSTEMS

- A range of options are available for control and operation of specialised gate systems:
- Integration into new or existing SCADA systems optional.
- Global, web based operating platforms for remote control and monitoring.
- Solar, mains, pneumatic or hydraulically powered.
- Variety of lifting mechanisms available, including AWMA's selfengaging lifting frame.
- Storage and transportation solutions available.
- Associated systems include warning lights, water level indicators, automated message systems, reflective signage, video feeds and battery backups.

### COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA flood defence systems.
- · Comprehensive on and/or off site training available.



HEAD OFFICE

Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## CUSTOM Flood Gates

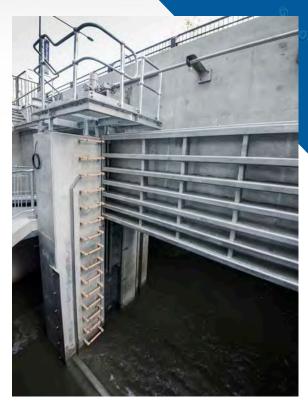
AWMA's FLOOD FREE range includes tailored-made flood defence gates, barriers and equipment that is specifically designed, manufactured and installed to meet site and operational requirements.

## FEATURES & BENEFITS

- Engineered and innovative suite of solutions.
- Isolates property and assets from rising storm and flood waters.
- Devices to suit openings of any size or shape.
- Isolate or re-direct flows with head pressures up to 20m.
- Designs for new structures or retrofit existing infrastructure.
- Storage, transportation and deployment options.
- Proven Solutions.

## **APPLICATIONS**

- Flood Mitigation.
- Storm Water Harvesting.
- Tidal Control.
- Asset Protection.
- Environmental Management.







## CUSTOM Flood Gates

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

• All AWMA Flood Free Systems are custom sized to ensure they meet specific site requirements.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- Materials used in the construction of AWMA's Flood Defence Systems have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

• The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- AWMA Flood Free Systems have a minimum 25 year design life.
- · Minimal maintenance is required ensuring low 'whole of life costs'.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All procedures are developed within AWIMA's accredited ISO 9001 Quality Management System to ensure each gate is manufactured to a high standard, tested and ready for trouble free operation.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

## INSTALLATION

### MOUNTING OPTIONS

- Barriers are designed to retrofit existing infrastructure or 'green field sites'.
- AWMA offer install supervision for all turn-key installations.

### ACTUATION SYSTEMS

 AWMA offer numerous options for operation including manual, mechanical, automated, hydraulic, pneumatic, powered or electrically actuated systems.

#### **OPERATION SYSTEMS**

- A range of manual, automated and automatic options are available for the control of AWMA's customised flood gates.
- Associated systems include warning lights, water level indicators, automated message systems, reflective signage, video feeds and battery backups.

### COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA flood defence systems.
- · Comprehensive on and/or off site training available.



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## **ULF PENSTOCKS**

AWMA's ULF Penstock range consists of undershot regulating penstocks for flow regulation, diversion, level control or isolation. The ULF Penstocks are also known as Sluice Gates, Slide Gates, Sluice Valves, Stop Gates or Water Gates.

## FEATURES & BENEFITS

- Resilient seals on three sides of the aperture (for full perimeter sealing see the TLF, SLF or WLF Penstocks).
- Can be modulating for flow regulation.
- Bi-directional sealing available.
- Both rising and non-rising spindle configurations available.
- Custom designed and fabricated to suit any size or shaped orifice.

## **APPLICATIONS**

- The ULF Penstock range is commonly used for many applications across all industry sectors.
- Undershot isolation and regulation.
- Undershot regulation of open channel flow.





## **ULF PENSTOCKS**

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These materials offer superior endurance in wastewater and freshwater applications.
- Materials used for penstock door and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Materials used in the construction of the ULF Penstock range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

• The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The ULF Penstock range has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'.
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

All AWMA products meet relevant Australian and international standards.

- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

## **INSTALLATION**

### MOUNTING OPTIONS

- The ULF Penstocks are typically wall mounted.
- The side frames can be face mounted or embedded.
- The sill is available in a raised or flat sill configuration.
- · Mount to concrete headwalls, in a channel or within channel rebates

### ACTUATION SYSTEMS

- Choose from
  - Rising Spindle or
  - Non-Rising Spindle
- Handwheel, electric, hydraulic or pneumatic actuator.
- Portable 12VDC actuator and 240VAC actuator available.
- Accepts portable petrol power actuator system.

### OPERATION SYSTEMS

- Integration into new or existing SCADA systems optional.
- Global, web based operating platforms for remote control and monitoring.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available



Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.

www.awmawatercontrol.com.au

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## TLF PENSTOCKS

AWMA's TLF Penstock range consists of an undershot gate with a full perimeter seal, providing flow isolation for fully submerged on or off seating applications.

## FEATURES & BENEFITS

- Resilient seals around all four sides of the aperture.
- Excellent sealing for med-high head applications.
- Can be modulating for regulation of flows.
- Bi-directional sealing optional.
- Both rising and non-rising spindle configurations available.
- Custom designed and fabricated to suit any size or shaped orifice.

## **APPLICATIONS**

- Full perimeter seal provides excellent sealing performance for applications across all industry sectors.
- Isolation of pipe openings and orifices over 300mm in diameter.
- Suitable for flow isolation or regulation.





## TLF PENSTOCKS

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These
  materials offer superior endurance in wastewater and freshwater
  applications.
- Materials used for penstock door and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Materials used in the construction of the TLF Penstock range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

• The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The TLF Penstock range has a minimum 25year design life.
- Minimal maintenance is required offering low "whole of life costs".
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

### **INSTALLATION**

### MOUNTING OPTIONS

- Ideal for pit and headwall installations
- The TLF Penstocks are typically wall mounted.
- ACTUATION SYSTEMS
- Choose from
  - Rising Spindle,
- Non-Rising Spindle or
- AWMA's Rising/Non-Rising Spindle Arrangement

#### **OPERATION SYSTEMS**

- Integration into new or existing SCADA systems optional.
- Global, web based operating platforms for remote control and monitoring.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available.



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Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## **SLF PENSTOCKS**

AWMA's SLF Wedge Penstock range consists of an undershot gate with a full perimeter seal, providing flow isolation for fully submerged ON or OFF seating applications.

## FEATURES & BENEFITS

- SLF Penstocks are designed to achieve industry leading seal performance.
- Integration of UHMWPE wedges compress seals when gate is closed for excellent sealing.
- Excellent performance in low to high head applications.
- Full perimeter continuous seal, mechanically affixed to gate leaf.
- Seals manufactured from plasticised PVC.
- Bi-directional sealing as standard feature.
- All serviceable components affixed to the gate leaf for ease of maintenance.
- Available in rising and non-rising spindle configurations.
- Custom designed and fabricated to suit any size or shaped orifice.

## APPLICATIONS

- Full perimeter seal provides excellent sealing performance for applications across all industry sectors.
- Isolation of pipe openings and orifices over 300mm in diameter.





## **SLF PENSTOCKS**

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

#### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and wedges to provide maintenance free bearing surfaces.
- Materials used for penstock door and frames include grades 304, 316, 2205 and 2507 stainless steel.
- Materials used in the construction of the SLF Penstock range have a high corrosion resistance and can be operated for many years with minimal maintenance.

#### SEALING

- Seals affixed to gate leaf.
- The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The SLF Penstock range has a minimum 25year design life.
- Minimal maintenance is required offering low "whole of life costs".

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

## **INSTALLATION**

### MOUNTING OPTIONS

- Ideal deal for pit and headwall installations
- The SLF Penstocks are typically wall mounted

### SPINDLE OPTIONS

- Choose from
- Rising Spindle,
- Non-Rising Spindle or
- AWMA's Rising/Non-Rising Spindle Arrangement

### ACTUATION SYSTEMS

- Include:
- Manual
- Portable Actuator
- DC Motor
- AC
- Hydraulic
- Pneumatic

### COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- · Comprehensive on and/or off site training available.



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## WLF PENSTOCKS

AWMA's WLF Penstock range consists of a sluice type top sealing penstock featuring a wedge lock seal, designed for high head applications.

## FEATURES & BENEFITS

- Resilient seals around all four sides of the aperture.
- A unique design applies a positive seal pressure as the gate fully closes providing excellent sealing under high head pressures.
- Bi-directional sealing.
- Single and dual spindle configurations available.
- Both rising and non-rising spindle configurations available.
- Custom designed and fabricated to suit any size or shaped orifice.

## APPLICATIONS

- Full perimeter sealing accommodates high head pressures for excellent sealing performance across all applications.
- Isolation of flow under high head applications.
- Suitable in corrosive environments.
- Excellent for Dam Isolation





## WLF PENSTOCKS

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These materials offer superior endurance in wastewater and freshwater applications.
- Materials used for penstock door and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Alternative material options are available to suit the application and/ or environment specific requirements.
- Materials used in the construction of the WLF Penstock range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

 The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The WLF Penstock range has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'.
- If required, all the wearing components can be changed, with ease, on site. The WLF Penstock has specifically been designed with the seals mounted on the gate leaf, rather than the frame, for ease of maintenance.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

## INSTALLATION

### MOUNTING OPTIONS

- Typically wall mounted.
- The WLF Penstocks are ideal for pit installations.

### ACTUATION SYSTEMS

- Choose from
  - Rising Spindle,
  - Non-Rising Spindle or
  - AWMA's Rising/Non-Rising Spindle Arrangement
- Handwheel, electric, hydraulic or pneumatic actuator.
- Portable actuation systems available.

### **OPERATION SYSTEMS**

- Integration into new or existing SCADA systems optional.
- Global, web based operating platforms for remote control and monitoring.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available.



## HEAD OFFICE

Phone +61 3 5456 3331Email info@awmawatercontrol.com.au118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## **DLF PENSTOCKS**

AWMA's DLF Penstock range consists of downwards opening, decant weirs.

## FEATURES & BENEFITS

- Modulating for regulation of flows.
- Accurate overshot flow and upstream pool level control.
- The unique design keeps spindles out of the open water way to eliminate obstruction and maintenance issues.
- Bi-directional sealing optional.
- Single and dual spindle configurations available.
- Both rising and non-rising spindle configurations available.
- Custom designed and fabricated to suit any size or shaped orifice.

## **APPLICATIONS**

- The DLF Penstock range is utilised for applications across all industry sectors.
- Isolation and flow regulation.
- Small to medium decanting applications.





## **DLF PENSTOCKS**

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

#### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These
  materials offer superior endurance in wastewater and freshwater
  applications.
- \* Materials used for penstock door and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Materials used in the construction of the DLF Penstock range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

• The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The DLF Penstock range has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

### **INSTALLATION**

### MOUNTING OPTIONS

• The DLF Penstocks are typically wall mounted.

### ACTUATION SYSTEMS

- Choose from
  - Rising Spindle,
  - Non-Rising Spindle or
- Handwheel, electric, hydraulic or pneumatic actuator.
- Portable actuation systems available.

### **OPERATION SYSTEMS**

- · Integration into new or existing SCADA systems optional.
- Global, web based operating platforms for remote control and monitoring.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available.



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Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## DECANT GATES

AWMA's Decant Gate is a high frequency modulating gate for decanting applications, featuring a specialised cable drive mechanism.

## FEATURES & BENEFITS

- Specialised AWMA positive drive cables mitigate risks associated with component wear in high frequency, modulating gate systems.
- Designed to extend the design life of decanting infrastructure.
- Designed in partnership with key stakeholders.
- Minimal risk of mechanical failure, common in equipment with high frequency duty cycles.

## **APPLICATIONS**

• Medium to large decanting water and waste water applications.







## **DECANT GATES**

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation and civil costs.

#### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- · Constructed from marine grade aluminium or stainless steel.
- Components designed for long term immersion in corrosive environments.
- Materials used in the construction of the DLF Penstock range have a high corrosion resistance and can be operated for many years with minimal maintenance.

#### SEALING

• The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The Decant Gate has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

### INSTALLATION

#### MOUNTING OPTIONS

• Decant Gates are typically mounted to a concrete headwall.

### ACTUATION SYSTEMS

- · Handwheel, electric, hydraulic or pneumatic actuator.
- Portable actuation systems available.

#### **OPERATION SYSTEMS**

- Integration into new or existing SCADA systems optional.
- Global, web based operating platforms for remote control and monitoring.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available.



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## STOPLOGS

AWMA's Stoplog range consists of fabricated modular segments of any size, joined to effectively isolate flows for maintenance, re-direction or containment.

## FEATURES & BENEFITS

- Stoplogs are typically designed for installation and removal under equalised head conditions (no flow). AWMA design options include equalisation valves and roller guides.
- The addition of roller guides allow the Stoplogs to be removed under full head differential.
- Custom designed and fabricated to suit any size or shaped orifice.
- Uni-direction sealing as standard with bi-directional models available on request.
- Insertion and removal of boards via AWMA's self engaging Lifting Frame.
- Storage solutions available.

## **APPLICATIONS**

- The Stoplog range is utilised for applications across all industry sectors.
- Isolation of open channel flow for maintenance purposes.





## STOPLOGS

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These materials offer superior endurance in wastewater and freshwater applications.
- Materials used for penstock door and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Alternative material options are available to suit the application and/ or environment specific requirements.
- Materials used in the construction of the Stoplog range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

 The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

#### MAINTENANCE

- The Stoplog range has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'.
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

### **INSTALLATION**

### MOUNTING OPTIONS

- The Stoplog range is typically wall mounted.
- The side frames can be face mounted or embedded.
- The sill is available in a raised or flat sill configuration.

### ACTUATION SYSTEMS

• Mechanical lifting devices available.

#### **OPERATION SYSTEMS**

• Insertion and removal of boards via AWMA's self engaging Lifting Frame.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available.



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Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## BULKHEADS & Roller gates

AWMA's range of Bulkheads and Roller Gates significantly reduce friction associated issues of in-flow insertion and containment for high head isolation applications.

## FEATURES & BENEFITS

- AWMA design options include equalisation valves and roller guides to allow Bulkhead Gates to be operated under flow conditions.
- Top seals are available for submerged apertures.
- Designed to withstand high head pressures.
- Uni-directional sealing as standard with bi-directional models available on request.
- Variety of lifting mechanisms optional.
- Storage solutions available.

## APPLICATIONS

- The Bulkhead Gate range is utilised for applications across all industry sectors.
- Isolation of open channel flow for maintenance purposes.
- Emergency isolation points.





## BULKHEADS & Roller Gates

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These materials offer superior endurance in wastewater and freshwater applications.
- Materials used for penstock door and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Alternative material options are available to suit the application and/ or environment specific requirements.
- Materials used in the construction of the Bulkhead range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

 The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The Bulkhead range has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'.
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

### **INSTALLATION**

### MOUNTING OPTIONS

- The Bulkhead frames are designed for wall, channel or embedded side frame mounting.
- The sill is available in a raised or flat sill configuration.

### ACTUATION SYSTEMS

- Mechanical lifting devices available.
- OPERATION SYSTEMS
- Variety of lifting mechanisms available, including AWMA's selfengaging lifting frame.

### COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- · Comprehensive on and/or off site training available.



HEAD OFFICE Phone +61 3 5456 3331 Email in

Phone +61 3 5456 3331Email info@awmawatercontrol.com.au118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## ROUND BOTTOM BULKHEADS

AWMA's Round Bottom Bulkheads are custom engineered for isolating benched profiles, incorporating integral equalisation valves, specialising in high head applications.

## FEATURES & BENEFITS

- AWMA design options include equalisation valves and roller guides to allow Bulkhead Gates to be operated under flow conditions.
- Top seals are available for submerged apertures.
- Designed to withstand high head pressures.
- Uni-directional sealing as standard with bi-directional models available on request.
- Variety of lifting mechanisms optional.
- Storage solutions available.

## APPLICATIONS

- The Bulkhead Gate range is utilised for applications across all industry sectors.
- Isolation of open channel flow for maintenance purposes.
- Emergency isolation points.





## ROUND BOTTOM BULKHEADS

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

#### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These materials offer superior endurance in wastewater and freshwater applications.
- Materials used for penstock door and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Alternative material options are available to suit the application and/ or environment specific requirements.
- Materials used in the construction of the Bulkhead range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

 The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

#### MAINTENANCE

- The Bulkhead range has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'.
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

### **INSTALLATION**

### MOUNTING OPTIONS

- The Bulkhead frames are designed for wall, channel or embedded side frame mounting.
- The sill is available in a raised or flat sill configuration.

### ACTUATION SYSTEMS

- Mechanical lifting devices available.
- OPERATION SYSTEMS
- Variety of lifting mechanisms available, including AWMA's selfengaging lifting frame.

### COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- · Comprehensive on and/or off site training available.



HEAD OFFICE Phone +61 3 5456 3331 Ema

Phone +61 3 5456 3331Email info@awmawatercontrol.com.au118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## SEGMENTED STOPBOARDS

AWMA's Segmented Stopboard range consists of fabricated modular segments of any size, joined to effectively isolate flows for regulation, re-direction or containment.

## FEATURES & BENEFITS

- Modular segments are fabricated to suit project requirements.
- Designed to suit square and rectangular openings up to 6m wide.
- Allows overshot level regulation as well as flow isolation.
- Consists of dedicated extruded section with embedded seals.
- Uni-directional as standard. Bi-directional sealing designs available upon request.
- Storage solutions available.

## APPLICATIONS

- The Segmented Stopboard range is utilised for applications across all industry sectors.
- Isolation of open channel flow for maintenance purposes.
- Isolation and regulation of open channel flow.
- Regulation of environmental flows.





## SEGMENTED STOPBOARDS

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

#### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- Mostly constructed from marine grade aluminium.
- Materials used in the construction of the Segmented Stopboard range have a high corrosion resistance and can be operated for many years with minimal maintenance.

#### SEALING

• The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The Segmented Stopboard range has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

### **INSTALLATION**

### MOUNTING OPTIONS

- The Stopboard frames are designed for wall, channel or embedded side frame mounting.
- The sill is available for use on either a flat or raised sill.

### ACTUATION SYSTEMS

• Mechanical lifting devices available.

### OPERATION SYSTEMS

Insertion and removal of boards via the AWMA manual Lifting Ladder.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- · Comprehensive on and/or off site training available.



HEAD OFFICE

Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## LAYFLAT GATES

AWMA's LayFlat (Tilting Weir) Gate range incorporates downwards opening tilt gates for accurate regulation and isolation of flows.

## FEATURES & BENEFITS

- The design includes a gate leaf that is hinged across the bottom and actuated via a cable hoist mechanism.
- Single bay and multi-bay designs available.
- The LayFlat Gate range has a dedicated volumetric flow algorithm available that has been independently certified.
- The modular design allows for the actuation system to be self contained or separately mounted.
- Accurate overshot flow and level control.
- Integrated emergency bulkhead guides.
- Suits structure openings of all sizes and are custom sized to suit their required application.



## **APPLICATIONS**

- The LayFlat Gate range is utilised for applications across all industry sectors.
- To date, AWMA has manufactured Australia's largest tilting LayFlat Gates required to regulate environmental flows.
- Proven to accuratly regulate irrigation, environmental and storm water flows.
- Fish-friendly, suitable for environmental applications.



## LAYFLAT GATES

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These materials offer superior endurance in wastewater and freshwater applications.
- Materials used for penstock door and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Alternative material options are available to suit the application and/ or environment specific requirements.
- Materials used in the construction of the Bulkhead range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

 The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The LayFlat range has a minimum 25 year design life.
- Minimal maintenance is required offering low "whole of life costs".
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

### **INSTALLATION**

### MOUNTING OPTIONS

- The LayFlat Gates can be mounted to the upstream or downstream side of new or existing structures to maintain 100% of the original open waterway.
- Alternatively they can be mounted inside the structures.
- Options include:
  - Upstream slab mount; self contained actuation
  - In structure mount; separately mounted actuation
  - In structure mount; separately mounted raised actuation.

### ACTUATION SYSTEMS

- Handwheel, electric, hydraulic or pneumatic actuator.
- · Portable actuation systems available.

### OPERATION SYSTEMS

- Integration into new or existing SCADA systems optional.
- Global, web based operating platforms for remote control and monitoring.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available



## HEAD OFFICE

Phone +61 3 5456 3331Email info@awmawatercontrol.com.au118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## SIDEWINDERS

AWMA's SideWinder is a horizontal opening slide gate.

## FEATURES & BENEFITS

- Resilient seals along the bottom, sides and when required across the top of the aperture.
- Uni-directional as standard. Bi-directional sealing designs available upon request.
- Custom designed and fabricated to suit any size or shaped orifice.

## **APPLICATIONS**

- The SideWinder range is typically used in vertical slot, fish way applications.
- Suits any application where vertical travel of the gate leaf is restricted.





## SIDEWINDERS

## DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These
  materials offer superior endurance in wastewater and freshwater
  applications.
- Materials used for penstock door and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Materials used in the construction of the SideWinder gate range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

• The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The Sidewinder range has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

## INSTALLATION

### MOUNTING OPTIONS

• SideWinders are typically wall mounted.

### ACTUATION SYSTEMS

- · Handwheel, electric, hydraulic or pneumatic actuator.
- Portable actuation systems available.

### **OPERATION SYSTEMS**

- Integration into new or existing SCADA systems optional.
- Global, web based operating platforms for remote control and monitoring.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available.



### HEAD OFFICE

Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## HEAD & DISCHARGE GATES

AWMA's Head & Discharge Gate range is a dual leaf gate design consisting of overshot and undershot gates in the one frame.

## FEATURES & BENEFITS

- Regulate flows and water levels with the upper gate leaf.
- Set flow rate or fully drain the upstream pool with the lower gate leaf.
- Lift both gates leaves completely out of the water way to allow for unobstructed flow.
- Suitable for single and multi-bay sites.
- Uni-directional sealing as standard.
- Both rising and non-rising spindle configurations available.
- Accurate overshot and undershot flow and level control.
- Custom designed and fabricated to suit any size or shaped orifice.

## **APPLICATIONS**

- The Head & Discharge Gate range is utilised for applications across all industry sectors.
- Most commly used for regulating and draining open channel systems.





## HEAD & DISCHARGE GATES

### DESIGN

### DESIGN SUPPORT

• AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These
  materials offer superior endurance in wastewater and freshwater
  applications.
- Materials used for gates and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Materials used in the construction of the Combination Gate range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

• The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The Head & Discharge Gate has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

- All AWMA products meet relevant Australian and international standards.
- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

## **INSTALLATION**

### MOUNTING OPTIONS

- · Head & Discharge Gates are typically wall mounted.
- The side frames can be face mounted or embedded.
- The sill is available in a raised or flat sill configuration.

### ACTUATION SYSTEMS

- Handwheel, electric, hydraulic or pneumatic actuator.
- Portable actuation systems available.

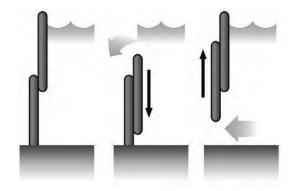
### OPERATION SYSTEMS

- Integration into new or existing SCADA systems optional.
- Global, web based operating platforms for remote control and monitoring.

## COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available.





HEAD OFFICE Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## COMBINATION GATES

AWMA's Combination Gate range is a dual leaf gate design consisting of overshot and undershot gates in the one frame.

## FEATURES & BENEFITS

- Combination Gates allow many options for overshot and undershot flow regulation and control, within a single gate structure.
- Regulate flows and water levels with the upper gate leaf.
- Set flow rate or fully drain the upstream pool with the lower gate leaf.
- Lift both gate leaves completely out of the water way to allow for unobstructed flow.
- Custom designed to meet flow regulation, operation and site requirements.
- Suitable for single and multi-bay sites.
- Uni-directional sealing as standard.
- Both rising and non-rising spindle configurations available.
- Accurate overshot and undershot flow and level control.
- Custom designed and fabricated to suit any size or shaped orifice.

## APPLICATIONS

- The Combination Gate range is utilised for applications across all industry sectors.
- Multiple regulation and isolation options for medium-large applications.





## COMBINATION GATES

### DESIGN

### DESIGN SUPPORT

 AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- AWMA use ultra high molecular weight polyethylene (UHMWPE) for penstock door guides and/or wedges to provide maintenance free bearing surfaces.
- Plasticised PVC or EPDM are used for the manufacture of seals. These
  materials offer superior endurance in wastewater and freshwater
  applications.
- Materials used for gates and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Materials used in the construction of the Combination Gate range have a high corrosion resistance and can be operated for many years with minimal maintenance.

### SEALING

• The sealing ability of this gate meets the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.

### MAINTENANCE

- The Combination Gate has a minimum 25 year design life.
- Minimal maintenance is required offering low 'whole of life costs'.
- If required, all the wearing components can be changed, with ease, on site.

## MANUFACTURE

### QUALITY

• All AWMA products meet relevant Australian and international standards.

- All fabrication is in accordance with the 'Australian Technical Specification for Fabricated Water Control Infrastructure'.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

## INSTALLATION

### MOUNTING OPTIONS

- Combination Gates are typically wall mounted.
- The side frames can be face mounted or embedded.
- The sill is available in a raised or flat sill configuration.

### ACTUATION SYSTEMS

- Handwheel, electric, hydraulic or pneumatic actuator.
- Portable actuation systems available.

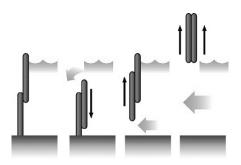
### OPERATION SYSTEMS

- Integration into new or existing SCADA systems optional.
- Global, web bas

### COMMISSIONING

### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available.





## HEAD OFFICE

Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



## FLAP GATES

The AWMA Flap Gate is a one way/non-return flap gate designed to prevent backflow.

## FEATURES & BENEFITS

- Automatically isolates stormwater pipes.
- Effective backflow prevention device.
- Dual adjustable pivot arms for robust operation and consistent contact.
- Low head loss.
- Full perimeter sealing.
- Designed for up to 3m head pressure as standard.
- Custom designed to isolate any orifice including pipe and box culvert outlets.
- Requires minimal civil works to install.

## **APPLICATIONS**

- The Flap Gate range is used for many applications across all industry sectors.
- Primarily used as backflow prevention devices for stormwater management and to prevent ingress from tidal flows and floodwater.







## FLAP GATES

### DESIGN

### DESIGN SUPPORT

- AWMA's R&D and Engineering teams are available under Early Contractor Involvement (ECI), to assist in developing water control and screening solutions for bespoke green-field and brown-field sites.
- Flap gates shall have dual adjustable pivot arms for robust operation and consistent contact.

#### SIZES

- All AWMA water control gates are custom sized to ensure they meet specific site and operational requirements.
- Customisation reduces installation costs.

### MATERIALS

- AWMA select materials to meet a minimum design life of 25 years. Where required, AWMA can offer higher grade materials, coatings and protection systems to extend the design life to 100+ years.
- Materials used for doors and frames include marine grade aluminium and grades 304, 316, 2205 and 2507 stainless steel.
- Flap Gate seals shall be mechanically fastened (non-adhesive) and are designed for ease of replacement.
- Plasticised PVC or EPDM are used for the manufacture of seals. These materials offer superior endurance in wastewater and freshwater applications.
- Suitable for corrosive tidal environments.

### MAINTENANCE

- The Flap Gate range has a minimum 25year design life.
- Minimal maintenance is required offering low "whole of life" costs.
- If required, the seal can be changed with ease, on site.

### MANUFACTURE

- All AWMA products meet relevant Australian and international standards.
- All stainless steel welding is continuous to avoid crevice corrosion.
- AWMA hold international accreditations for ISO 9001; Quality, ISO 14001; Environment and ISO 45001 OH&S management.
- AWMA's Integrated Management System aims to provide a framework to deliver products and services that consistently exceed customer expectations.

## INSTALLATION

MOUNTING OPTIONS

- Flap Gates are typically mounted to a culvert headwall or pipe.
- Frame requires a minimum 200mm clearance either side and below the aperture for installation.
- Frame can be a circular design for mounting to the outside of a pipe.

## COMMISSIONING

#### DOCUMENTATION AND TRAINING

- Detailed documentation on operation, testing procedures and maintenance will be provided with all AWMA water control solutions.
- Comprehensive on and/or off site training available.
- The dual pivot arms to be adjusted post install to confirm seal engagement.



### HEAD OFFICE

Phone +61 3 5456 3331 Email info@awmawatercontrol.com.au 118 Roviras Road, PO Box 433, Cohuna Victoria 3568, Australia.



www.awmawatercontrol.com.au www.floodfree.com.au