

AQUIKO

Operation & Maintenance Manual

ARF Flap Valve



Trading as Aquatic Control Engineering Ltd

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Introduction and Purpose

Aquatic Control Engineering (ACE) are specialist suppliers and installers of water flow control equipment. Aquatic Control Engineering Ltd is trading as AQUIKO.

This document sets out the requirements and procedures for the installation, operation and maintenance of the AQUIKO ARF Flap Valve. Aquatic Control Engineering conforms to UK CA certification (where applicable*) and compliance to BS7775. ACE conforms and is accredited to ISO 9001 Quality and ISO 45001 Occupational Health and Safety Management systems; alongside a variety of industry standards and ISO 14001 Environmental Management Systems in place.

The AQUIKO ARF Flap Valve is designed to act as a passive flood prevention device, in the form of a non-return valve. The flap valve is placed over outfalls to allow virtually free flow in the intended direction, but prevent return flow as the outfall level rises.

This manual is specifically for the ARF Flap Valve 100-1500mm. The operative installing must ensure they understand this manual prior to commencing installation works. Any purchase of a different size, outside of this product range, should seek further advice from Aquatic Control Engineering prior to commencing any works for installation; your product may require specific instructions.

Technical and Material specifications (summary)

The ARF Flap Valve is manufactured using a combination of High Density Poly Ethylene (HDPE) and Stainless Steel 316, making the equipment:

- Very robust, yet much lighter than comparable strength materials
- Suitable for harsh environments, including sewage and seawater
- UV Stable, recyclable and low-carbon- long lasting
- Virtually maintenance free; see the maintenance section of this manual
- Require very low head differential to operate, delivering low head loss

Safety Considerations

The operative installing must ensure all the correct safety precautions have been taken into account before starting. All legal regulations must be adhered to prior to commencing any works.

Installation should only be carried out by a skilled and qualified person and they must ensure they are working under HSE guidance and rules, along with wearing the correct PPE and using the correct, tested and inspected equipment. Provision of a suitable safe system of work is the responsibility of the installing party.

When lifting is required, the operative installing should ensure they are fully trained in using lifting equipment and ensure a safe working method is adhered to at all times. If slings are required, the operative must ensure they are fully competent and qualified in line with LOLER regulations.



It is advised a risk assessment is completed and understood by the installer prior to commencing works. Risk management and safety precautions should be put in place by the operative installing.

Common safety considerations also include:

- Prevention of unauthorised access and vandalism/theft
- Prevention of trapping during hoisting/maintenance
- General construction installation hazards

If in doubt, please contact Aquatic Control Engineering (ACE) for copies of the design-risk assessment (DRA-ARF) for advice on suitable control measures.

Storage and handling of goods

Please also see Terms and Conditions of Sale regarding responsibility of storage and transport. This product should be transported on a suitably sized pallet relating to the size of the Flap Valve. The product should be moved horizontally only and may require correct lifting equipment.

Prior to installation, the ARF should be stored on a suitably sized pallet, supported flat on a horizontal surface, and away from sources of damage, contamination and tampering.

Fixings that are supplied may also be provided in perishable containers (e.g. boxes) where these should be stored in dry conditions, away from contamination, taking special attention to keep away from other metals.

When handling goods, the equipment should be lifted either flat on a pallet (as delivered) or using the designated lifting point at the top of the spindle.

Warranty

Please see Aquatic Control Engineering's terms and conditions of sale. Warranty will be reviewed providing:

- The equipment is installed, operated and maintained as per the AQUIKO Operation and Maintenance Manual provided
- The equipment is not misused, vandalised or over-loaded; refer to Damage In Transit within terms and conditions of sale

Installation of the ARF Flap Valve

The below set of guidelines should be followed in the manner it is written

Clean and check the mounting surface:

- a. For sealing, this should be within a 2-3mm tolerance per metre, and any pockets or lumps needs to be resolved before fitting



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- b. The surface should be vertical
- c. Clean and, where possible, dry the surface to remove dirt and grease
- d. Check all dimensions to ensure fit.

Prepare the Flap Valve:

- a. Position the Flap Valve in place over the outfall, with the inverts of the outfall and Flap Valve backplate aligned.
- b. Ensure the Flap Valve is level and vertical and secure to prevent movement.
- c. Mark the mounting holes on the wall.
Note: On larger flaps, we would recommend starting with the top corner fixings, and installing these bolts- this prevents movement of the Flap Valve when marking the other holes.
- d. Clean the surface of the Flap Valve back plate to remove dirt, grease and water.
- e. Apply sealant in a continuous 5mm bead around the opening and around the fixing holes (take care not to smear this when moving the Flap Valve into position).
- f. Re-position the Flap Valve as before, and install the top corner anchors as per the resin manufacturer's instruction (enclosed with fixing kit).
- g. Continue to install the remaining anchors in the wall.
- h. To ensure a good seal, check that no resin has exited the fixing hole- remove any resin that would prevent the frame sitting flat to the wall.
- i. Once cured, secure the Flap Valve to the wall using a washer, spring washer and nut on each bolt.
- j. Tighten all fixings evenly, to the recommended torque:
M8-15Nm
M10-20Nm
M12- 40Nm

Note: On larger flap valves, the fixings may require multiple tightening cycles as the seal is compressed.

Cleaning and Maintenance

The ARF Flap Valve is designed to require minimal maintenance, NO GREASING is required; grease can attract dirt and reduce the lifespan of the equipment.

NB: Each application requires site specific assessment relating to frequency of maintenance

The Flap Valve requires occasional visual inspection only, to check for damage, obstruction etc. In certain environments, it may also require cleaning to prevent build up that could cause obstruction.

To clean the equipment, use clean water and a stiff brush.

Cleaning and Maintenance is not included in the purchase.

Disposal

Aquatic Control Engineering work to ISO 14001 Environmental standards and advise all AQUIKO Products are disposed of in an environmentally friendly manner. Where possible, Reduce, Reuse and Recycle methods should apply. Different materials should take into consideration environmental factors and be disposed of using recognised methods.

1. Remove the equipment and sort materials into groups
2. Dispose of all metallic items via registered scrap dealer for recycling
3. Dispose of all recyclable materials via registered carriers/local recycling. (HDPE can be recycled into reusable material, however used in its pure form in this construction for strength).



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