What is ACO Q-Plate?

ACO Q-Plate orifice plates are designed for use where an ACO Q-Brake vortex is not the most effective solution. To suit application requirements, the range is available with or without remote bypass and drain down and is designed to match a variety of manhole configurations. A neoprene sealing gasket and fixing holes are featured on each unit.



ACO Q-Plate with remote draindown and bypass recommended for all orifice apertures less than 100mm



ACO Q-Plate

ACO Q-Plate Bypass features

- Manufactured from 304 stainless steel
- Orifice aperture up to 150mm
- Sealing pipe gasket
- Emergency drain-down and access cable
- Bypass door (with improved seal) and latch
- Flat or curved radius to suit manhole diameter
- Manhole fixings

ACO Q-Plate features

- Manufactured from 304 stainless steel
- Four fixing positions
- Pipe sealing gasket
- Manhole fixings
- Flat or curved radius to suit manhole diameter

ACO Q-Plate Specification and design process

To suit project requirements, two options of ACO Q-plate are available:

ACO Q-Plate Bypass
< 100mm orifice with remote drain-down and bypass (also available up to 150mm)

ACO Q-Plate
>100mm orifice without remote drain-down and bypass

In order to complete this process and deliver the product options available, please provide the ACO engineers with the following information:

- The proposed design flow – maximum allowable discharge
- The proposed design head – invert of outlet pipe to top water level
- The proposed outlet pipe diameter
- The proposed type and size of outlet manhole

Before production can commerce, ALL of the above information must be verified on ACO's Contract Review Document issued at the time of order placement.

Finished product

From this information ACO will size and design the ACO Q-Plate to meet the design criteria and to suit the prosed surface water application.

ACO will supply:

- Head discharge table & graph
- ACO Q-Plate installation details
- Information for manhole sizing

Guide to installing an ACO Q-Plate

Step 1:

Construct the chamber that is to house the ACO Q-Plate orifice control. Note that if the chamber has a curved wall (e.g. a concrete ring manhole), the diameter of the chamber should be specified on the order and Contract Review Document for the ACO Q-Plate Orifice control unit.

Step 2:

There should be a small sump under the outlet to ensure the orifice control does not easily block, ideally there should be upstream sediment and debris traps. When the chamber base is benched, there should be a minimum 200mm deep sump below the bottom of the unit as shown on the sketch.

Step 3:

Offer the ACO Q-Plate orifice control unit up to the outlet pipe. Ensure the unit is upright (arrow pointing vertically up) and that the orifice is correctly positioned at the invert of the outlet pipe.

Check there is a good seal between the orifice plate and the outlet pipe. Mark the position of the fixing holes on the chamber wall. Remove the unit and drill fixing holes to suit the bolts supplied with the unit.

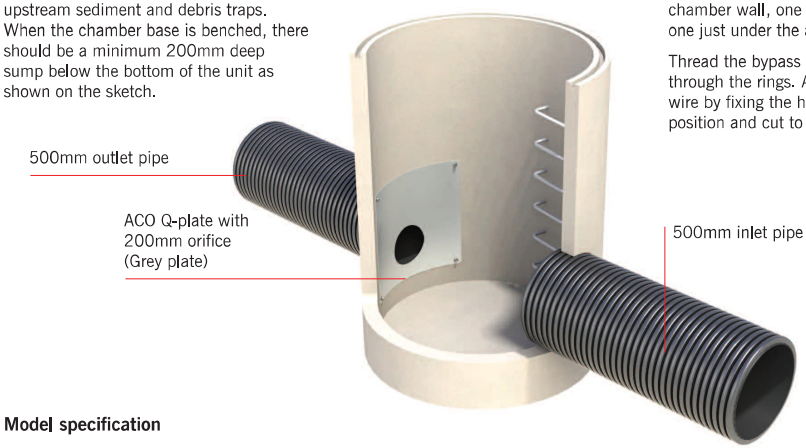
Step 4:

Place bolts into the drilled holes. Locate the ACO Q-Plate orifice control onto the bolts (again check it is correctly aligned). Ensure that the gasket is flat against the wall. Fit the nuts and tighten them to pull the unit against the gasket and seal it against the wall.

Step 5:

If you have been supplied the Q-Plate with the drain down and bypass door fix the two wire guide rings (supplied) to the chamber wall, one approx mid height and one just under the access cover.

Thread the bypass door lifting wire through the rings. Adjust the length of the wire by fixing the handle in the correct position and cut to length if necessary.



Model specification

ACO Q-Plate orifice control *with remote drain down and bypass (delete as appropriate), ##mm orifice designed to suit a pipe outlet size of ###mm, a design head of ## mm and design flow of # litres per second.

#insert information as appropriate.