

Application

Rodney Hunt Miter gates are normally used to shut off flow at a navigational lock or in a waterway for maintenance of downstream equipment or to protect against flooding. As the name refers, Miter gates are made up of two gate leaves that provide closure at a “miter” or angle pointed towards the upstream side of water flow.

These gates are standard in navigation locks because they provide a completely unobstructed flow path when open. Their simple construction offers long service life and low maintenance. Miter gates are designed for flow or pressure in only one direction.

These gates can be opened or closed more rapidly than other types of gates of the same size but the operation is always under a balanced head. For this reason, filler gates are incorporated into the design. Filler gate size and method of operation depend on the volume of the area that must be refilled before operating the main gate.

Rodney Hunt offers custom-designed sizes and configurations to suit the project needs with and size up to 500” x 360” square or rectangular with heads up to gate height in series described below:

SERIES: A-812 Stainless Steel Miter Gates
A-832 Structural Steel Miter Gates

Construction

Miter gates are constructed of two leaves supported by hinges on the lock wall. When closed the leaves form a shallow pointed arch angled upstream. In the closed position, under the head, each leaf bears on a lock wall and the tip of the other leaf at the center of the lock. This arch shape is very efficient for spanning larger distances between lock walls.

Gate leaves consist of a skin plate supported by horizontal and vertical ribs connected with to verticals post at the lock wall.

Each end vertical post rests on a pintle block at the sill level. The top of the post is supported by a hinge bracket.

Water thrust transmitted through the girders goes to the pintle blocks and into the walls and floor slab.

Actuation

Rodney Hunt offers both power and manual options for operating Miter gates.

Smaller gates can be operated manually with a bevel or worm gear drive. The manual operation may be the only practical choice for remote navigation locks where there is no power.

In concept, electric operators are the same as on quarter-turn butterfly valves. They come standard with limit switches, torque switch and a manual override is standard. Complete accessories are available and include indicator lights, integral reversing starters, pushbuttons, potentiometers, space heaters, sensors, transmitters, transducers, and other control features.

Hydraulic actuators can utilize plant air, water, or oil operating media. Hydraulic power units can include adjustable closure rates control systems and failsafe closure and valve position sensors.

Material

Miter gates can be manufactured in carbon steel, stainless steel, and duplex stainless steel depending on the corrosiveness of the media and desired length of service life. Miter gates have resilient seals. Neoprene and EPDM are common by Viton can be supplied.



147.6” x 204.7” Structural Steel Miter Gate for Britannia outfall
 SWPS MCGM Mumbai, India