

Horizontal slide gates are very versatile pieces of equipment. They can be as basic as a 18" square gate and a hydraulic cylinder with a manual pump, or as complicated as a fast acting, totally automatic, totally sealed, quadruple blade, dewatering gate with continuous position feedback, close pocket, and infinitely variable blade position.

Horizontal slide gates require little headroom, are very durable and can be easily maintained. Depending on the flow characteristics of the material

being controlled, horizontal slide gates can be used to regulate flow into a process or onto a conveyor. Materials with arching and rat holing problems generally require other methods of flow regulation, but the horizontal slide gate is still useful as a flow shut off device.

The compact design of the horizontal slide gate facilitates sealing the system in which it is installed against the escape of dust particles. The precise control with which the blade can be positioned and the potentially high blade speed (up to 750mm per second) makes the horizontal slide gate suitable for precise batching operations.



Applications

The large range of sizes available (450mm to 2100mm square) makes this gate suitable for a very large number of applications.

Double blade gates can be used to provide flow regulation of coal onto high capacity reclaim conveyors from open storage piles, storage buildings, or vertical silos. These gates can be preceded by pile activators to prevent arching and rat holing. Typically these gates will be mounted perpendicular to the reclaim conveyor to facilitate loading coal onto the center of the conveyor. This system is sometimes preferred to large mass flow hoppers and mass flow gates.

Horizontal slide gates can also be used to reclaim from coal stockpiles at low to moderate rates for raw coal or clean coal, with flow regulation being handled by trim gates down stream of the reclaim gate or by another flow regulator such as a vibrating feeder.

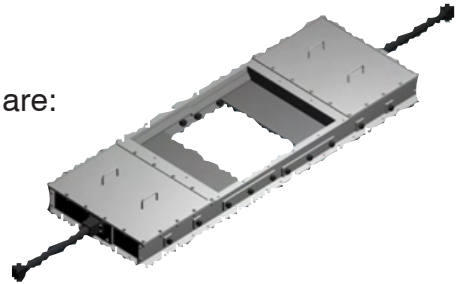
Quadruple blade horizontal slide gates are sometimes used to transfer a large amount of coal from a surge bin or silo into a weigh bin very rapidly and, by using one or more set points, control the shut off very accurately.

Other applications are as emergency shut off gates to allow maintenance of downstream equipment without unloading the material in storage, and to control discharge from bins, silos or open storage into trucks or rail cars.

Actuators

The actuators available for use on horizontal slide gates are:

- Hydraulic
- Electric over Hydraulic
- Electric
- Pneumatic



Seals

Seals are available for a wide range of applications including:

- To prevent or reduce escaping dust.
- To isolate the gate from vibration.
- To prevent the transfer of forces between the gate and other structure or equipment.
- To prevent the escape of water or to direct water to a collection point.

Construction Materials

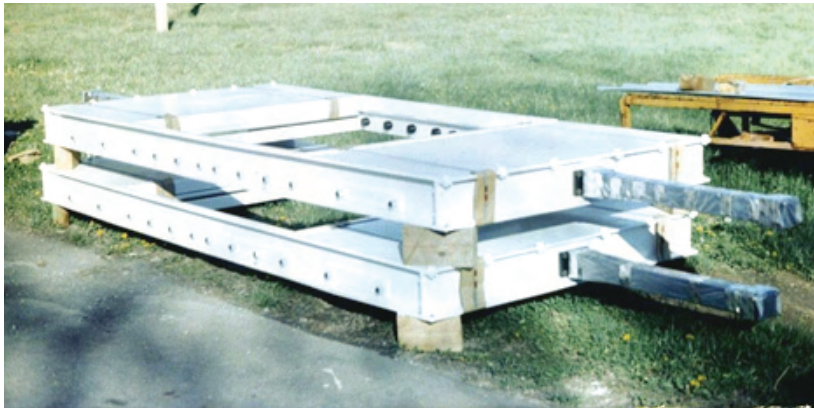
Horizontal slide gates can be fabricated from or equipped with a wide range of construction materials depending on the characteristics of the bulk material being handled. Some examples of construction materials for different applications are:

- Carbon Steel with abrasion resistant liners to protect the blade supports can be used for most applications
- Polished stainless steel blade liners can be used to reduce the friction between the bulk material and the gate blade, thereby reducing the force required to open the blade.
- Stainless steel can be used in all areas in contact with acidic material to prevent corrosion. In some instances it may be necessary to fabricate the entire gate from stainless steel.
- Blade supports can be commercially available needle bearing rollers, stainless steel rollers or low friction plastic slide bearings.

Position Indication

Especially for totally sealed gates, it is important to have a method of determining the position of the gate blade. For gates used to adjust the flow of material, it is necessary to monitor the position of the blade at all times. For some gates it is necessary to determine when they are closed, for others when they are open, and for others when they are both open and closed. Some of the devices available to determine the gate blade position are:

- A limit switch can be used to detect whether the gate is closed, open or at any pre-set intermediate position.
- A proximity switch can be used to detect the closed, open or any pre set intermediate position.
- A sensor can be used to continually detect the gate blade position.
- For visual indication, a rod attached to the gate blade can be extended outside the gate through a grommet to indicate the blade position.
- Integral position indication is available from actuator manufacturers to indicate the gate blade position.



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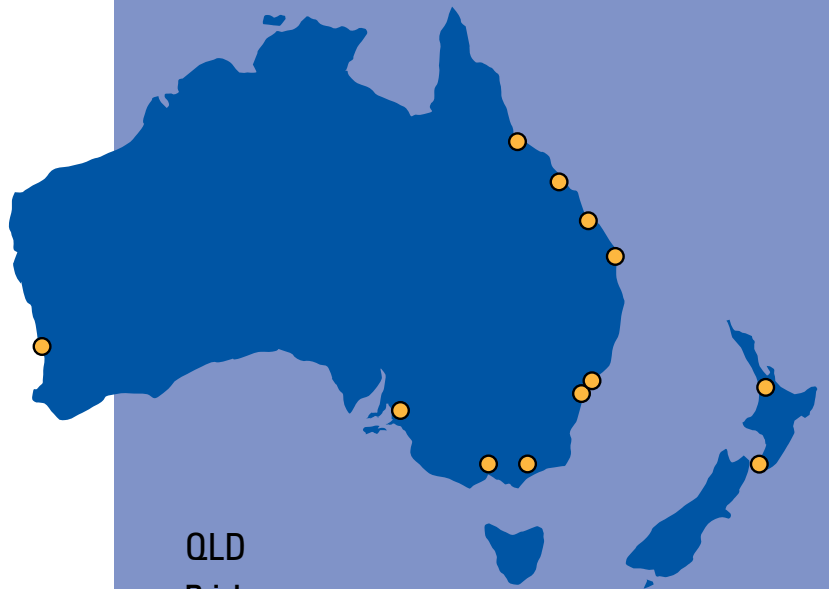
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