Undercut Gates

Undercut Gates are generally used to control the flow of large (+4") material. They are generally of very robust construction to withstand the high impact loads and wear. Undercut gates can be designed to easily close through a column of large material without jamming. This is because the tolerances can be made large and the pinch point at the closed position easily eliminated. Undercut gates are not applicable for metering flow, are difficult to seal, and require more headroom that some other gate designs.

APPLICATIONS

The typical undercut gate application is:

- Loading rock and raw ore from loading hoppers into haul trucks.

POSITION INDICATION

For some undercut gates it is necessary to determine when they are open and closed.

Some of the devices available to determine the gate blade position are:

- A limit switch can be used to detect the closed or open position.
- A proximity switch can be used to detect the closed or open position.
- Position indication devices are available from the actuator manufacturers to indicate the actuator and therefore the gate blade position.

ACTUATORS

The actuators available for use on undercut gates are:

- Hydraulic cylinder
- Air cylinder
- Electric linear actuator

SEALS

Seals are generally not applicable to undercut gates.

CONSTRUCTION MATERIALS

Undercut 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 high brinell abrasion resistant liners to protect the blade and fixed part of the gate.
- The entire blade can be fabricated from abrasion resistant steel and replaced when worn out.
- 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.
- The leading edge of the blade can be reinforced with replaceable wear bars to prolong blade life.

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Email: materials@hmagrp.com