



ENVACON Inc.

Engine Valve and Control Technologies

Phone: 780-439-9743
Email: Envacon@envacon.com
Address: 9204 – 41 Avenue
Edmonton, AB T6E 6R7

AIR STOP Diesel Engine positive air-intake shut-off valves are safety devices designed to STOP catastrophic diesel engine over-speeds.

Caused by inhaled combustible gas (a hydrocarbon gas leak) from the surrounding atmosphere uncontrolled over-speeds result in catastrophic engine failure, ignition of the surrounding gas cloud, loss of capital assets, and fatalities.

For an operating diesel engine, an inhaled hydrocarbon gas offers unrestricted fuel enabling exponential RPM increase (many hundreds of RPM per second per second). To counter the risk, the **AIR STOP** valve has a closing time measured in fractions of a second; ideally, the over-speed is subdued before damaging the crankshaft bearings, but stopping the engine by eliminating cylinder combustion is the overriding priority.

AIR STOP valves seal off the engine air intake, cutting off both air and inhaled fuel, while also restricting backfires by blocking reverse flow. During an over-speed, rapid camshaft rotation causes cylinder valves to "float," leading to backfires that can ignite the combustible gas cloud.

THE BUTTERFLY VALVE LIABILITY RISK: Slow gate closure and/or a backfire can force the gate open, allowing flames to travel up the airline and ignite the gas cloud.

Valve Specifications:

Up to a 13" Thru Bore

Actuation Options:

- Manual
- Electric (12VDC & 24VDC)
- Pneumatic
- Hydraulic

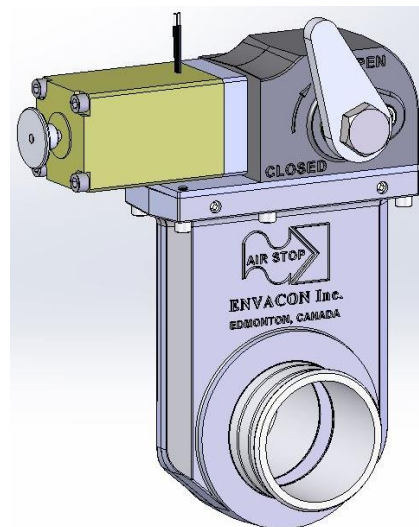
All Connection Types & Sizing

Installation Kits are Available

Contact Us:

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Why AIR STOP?

Verifiable Functionality, Reliable, and Durable: A Validated Safety Device

Validated by cycle testing, shaker table, mule engine, field testing, staged engine over-speeds, OEM development projects, and over two decades of field use.

No Cleaning or Lubrication Required

Under normal engine and valve operation, and with standard field engine shut-down tests, no schedule maintenance is required.

Bi-Direction Positive Gate Sealing

Unobstructed valve through bore; no restriction to the engine air flow, performance, or fuel consumption.

Each valve undergoes gate sealing, pressure vessel integrity, and functionality testing before shipment; the results are recorded with the unique valve serial number.

CHOOSING THE BEST VALVE OPTION

FOR COMPLETE OVER-SPEED RISK PROTECTION

	<i>AIR STOP</i> <i>Gate Valve</i> <i>Design</i>	<i>Butterfly</i> <i>Valve Design</i>	<i>Flapper</i> <i>Valve Design</i>	<i>Swing/Pendulum</i> <i>Gate Valve Design</i>
<i>Bi-directional positive gate sealing enabling backfire restriction and mitigation?</i>	Yes	No	No	Yes
<i>Valve gate restricts through bore and affects engine performance and fuel consumption?</i>	No	Yes	Yes	No
<i>Long term durability and vibration resistance for difficult engine applications?</i>	Yes	No	No	Size Dependent
<i>Frequent maintenance, lubrication, or cleaning required?</i>	No	Yes	Yes	Yes