



Thorwesten Explosion Diverters

B-4.1

INTRODUCTION

Thorwesten Explosion diverters mitigate the effects of an explosion traveling in ductwork by providing a controlled path for pressure and flame venting.

CONCEPT

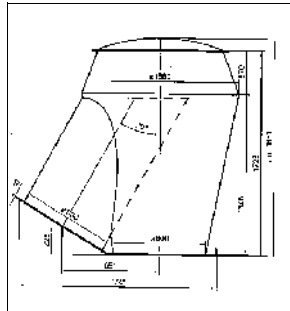
A diverter by design uses the natural process flow in an altered direction to vent the deflagration. When deflagration travels down the pipe it runs by diverter design into an explosion vent at a controlled bend, which allows the flame and pressure to vent itself to an open area.

BENEFITS

- √ Low cost mitigation of a deflagration.
- √ Requires no scheduled part replacement.
- √ Units require little if any reconditioning after an explosion.
- √ Some units self re-close.
- √ Passive device does not require electrical controls.

DESCRIPTION

Diverters are available in sizes from 4 inches to 28 inches. Two basic styles of diverters are available. The first style uses a standard rupture disc at the top of the unit to vent flame. The cost effective unit requires vent replacement after system activation.



The second style uses an explosion door to vent the explosion. Diverters size 4, 6, 8, 10 & 12 inches require manual resetting of the diverter. When a deflagration occurs the explosion door strikes against a heavy hinged, free moving baffle plate which absorbs the energy of the impact during its 270° rotation. The device is factory preset and lead sealed. Sizes 14, 16, 18, 20, 22, 24 & 28 inches automatically re-close themselves after an event. When an explosion occurs, strategically placed plates are compressed on activation to slow the door as it opens, air-cushioning the explosive force. After activation and release of the explosive force, the unit returns spring controlled to its original closed position. When it is required, a pressure equalizer is provided to prevent ductwork damage when the valve re-closes. Sentinel switches are available for all valves to electrically signal other systems, controls or components.

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