




AUTOMATED PNEUMATIC TANKER HATCH



Driving Innovation – Improving Safety, Productivity and Quality



Pivotal Edge is a ground operated, pneumatic controlled manhole cover for Tanks and Trainers

Fast, Tough, Easy and Safe

Pivotal Edge have developed **automated hatches that operate remotely, significantly reducing the risk of driver and operator injury whilst improving efficiency in particular truck turn around time**. Manually opening your covers wastes valuable time and puts your drivers at risk.

Pivotal Edge is Fast

Pivotal Edge works remotely, so drivers can open the tanker covers from the safety of the ground or even the cab, saving time. With Pivotal Edge, there's no climbing, so you can cut load times. The reduced physical demands on your drivers, keeps your valuable drivers and trucks on the road. Improved loading turnaround will ensure better fleet utilization and contribute to improved customer service.

Pivotal Edge is Tough

The people who designed Pivotal Edge are also the people who use them. No matter the weather conditions or situation, Pivotal Edge has passed every real world test it's been subjected to, and by keeping moving parts to a minimum, maintenance and service is kept to a minimum too!

Pivotal Edge is Easy

The Pivotal Edge Manhole cover is easy to install, the light-weight aluminum construction does not require any structural modifications to be installed on your trailers. Units can easily be retrofitted on existing equipment or installed on your new trailers and tankers. Pivotal Edge have developed a 24 " Rail Hatch adaptor.

Pivotal Edge is Safe

Pivotal edge ensures safe loading of trucks, trailers and ISO containers, as drivers open tank covers from the safety of the ground thereby minimising the risk of potentially serious and permanent injury. Reducing the risks associated with opening and closing hatch lids when loading including manual handling tasks , trip, slip and fall hazards from height.

How does it work

Once the cover reaches the closed proximity switch it will be securely latched into the six cast hold downs. The pneumatic seal is inflated to 275 Kpa using regulated and filtered truck air.

Fast Productivity improvements	Tough Low maintenance cost
<ul style="list-style-type: none"> ✓ Faster and easier access, Driver stays in the cab or on the ground reducing time required to climb up onto the tanker or up to a platform and manually open and close hatch for each load. 	<ul style="list-style-type: none"> ✓ Low maintenance, keeping moving parts to a minimum ensures maintenance and service is kept to a minimum .
<ul style="list-style-type: none"> ✓ Faster turn around time potential time saving of 10 minutes per load, depending on loading operation configuration. With increase traffic pressure and time taken to complete a load all of which can influence the earning potential of a truck, all time savings have a direct dollar benefit . 	<ul style="list-style-type: none"> ✓ Low maintenance and easy replacement of parts means there is little need for highly specialized maintenance crews making it easy to fit into the regular service maintenance schedules.
<ul style="list-style-type: none"> ✓ Faster pumping out , the units are rated to be pressurized up to 2.5 bar allowing for safe but faster discharging of loads improving truck or rail wagon turnaround. 	<ul style="list-style-type: none"> ✓ Low risk of failure out on the road, built in functionalities like the air knife to keep the unit clean, the open close indicator on the control box and the ability to purge and reseal, reduce the risk of encountering problems on the road.
<ul style="list-style-type: none"> ✓ Faster cleaning of manhole, the air knife functionality makes sure the manhole lip is cleaned on sealing ensuring low wear on seal and improving sealing reliability. 	<ul style="list-style-type: none"> ✓ Low replacement rate on Seals , seal contracts whilst the unit is opening , in standby and closing ensuring wear on the seal is minimized due to abrasion and friction. Simulated factory testing demonstrates a seal life in excess of 100 000 cycles is achievable.
Easy Easy to install and operate	Safe Reduces workplace health and safety risks
<ul style="list-style-type: none"> ✓ Easy to access control box fitted to truck or in the cab, unit is operated from the safety of the ground with single button control 	<ul style="list-style-type: none"> ✓ Reduces the Manual tasks of opening and closing hatches, as Pivotal Edge hatch opens automatically there is no requirement for the driver to bend down, unfasten and lift hatches.
<ul style="list-style-type: none"> ✓ Easy confirmation that the hatch and vessel are sealed, an open close indicator light on the control box confirms the hatch is sealed and the load is ready for transport. 	<ul style="list-style-type: none"> ✓ Reduces the working at height risks, as the Pivotal Edge hatch opens automatically from a control at ground level, there is no need for drivers to climb onto a tanker.
<ul style="list-style-type: none"> ✓ Easy resealing from the ground, purge functionality ensure the unit can be resealed if it loses charge for any reason. 	<ul style="list-style-type: none"> ✓ Reduces trip and fall risks, as the Pivotal Edge hatch opens automatically from a control at ground level, there is almost no need to climb up and down ladders and stairs and walk on top of tankers.
<ul style="list-style-type: none"> ✓ Easy and quick installation of manhole cover, the light-weight aluminum construction does not require any structural modifications to be installed on your trailers. Units can easily be retrofitted on existing equipment or installed on your new trailers and tankers. Pivotal Edge have developed a 24 " Rail Hatch adaptor. 	<ul style="list-style-type: none"> ✓ Reduces Slip hazards, as the Pivotal Edge hatch opens automatically from a control at ground level there is no need for a driver to walk on top of a taker.

- ✓ Fast
- ✓ Tough
- ✓ Easy
- ✓ Safe

Seal life expectancy is significantly Reduced if installation of unit has not Been carried out correctly. If you are Seeing lower than expected seal life call HM for some trouble shooting advice.

In busy metro areas drives may be required to do this task 6 and 8 times per day. Some transport companies can attribute 2 to 3 FTI's per month and possibly 6 to 10 MTI's and LTI's per annum to the performance of this task.

In the past climbing onto tankers has caused serious and permanent injuries .

Busy drives in metro regions may be required to climb up and down a ladder or stairs 6 to 8 times per day.

This is a high risk activity as the top can be wet, icy or dusty with potentially hazardous powders near the hatches. This environment can easily lead to serious slips and falls even if safety rails are in place.

Design features that set the Pivotal Edge apart from the market:

- ✓ **Easy and quick installation of manhole cover**, the light-weight aluminum construction **does not require any structural modifications to be installed on your trailers**. Units can easily be retrofitted on existing equipment or installed on your new trailers and tankers.
- ✓ **Easy installation there is no welding required for installation** the Pivotal Edge is compatible with most 20 " manholes and has an adaptor for 18 " **manholes**.
- ✓ **Easy to adapt** the Pivotal Edge have developed a **24 " Rail Hatch adaptor**, to ensure easy installation of hatches onto rail tanks.
- ✓ **Low replacement rate on Seals** , the **seal contracts** whilst the unit is opening , in standby and closing ensuring wear on the seal is minimized due to abrasion and friction. Simulated testing demonstrates a seal life of 140 000 cycles is achievable.
- ✓ **Faster cleaning of manhole**, the **air knife functionality** makes sure the manhole lip is cleaned on sealing thereby ensuring low wear on seal and improving sealing reliability.
- ✓ **Tough design** the **hinge pin assembly** has no bearings to clog up and or seize
- ✓ **Faster pumping out** , the units are rated to be **pressurized up to 2.5 bar** allowing for safe but faster discharging of loads improving truck or rail wagon turnaround.
- ✓ **Easy resealing from the ground**, **purge functionality** ensure the unit can be resealed if it loses charge for any reason.
- ✓ **Easy confirmation that the hatch and vessel are sealed**, an **open close indicator light on the control box** confirms the hatch is sealed and the load is ready for transport.
- ✓ **Tough inflatable gasket** maintains a positive seal

Pivotal Edge FAQ's

How does the seal work?

Once the cover reaches the closed proximity switch it will be securely latched into the six cast hold downs. The pneumatic seal is inflated to 40 psi for a typical road tanker using regulated and filtered truck air.

What pressure has the cover been tested to?

Static testing to 65 psi has been done.

How often does the cover need service?

The cover is designed to require minimal maintenance item that need to be watched are:

- Excessive hardened product buildup.
- Air leaks around the seal.
- Binding of components
- Check for abrasions on air lines

What is the certified operating pressure of a Pivotal Edge hatch?

The typical operating pressure for road tankers is 2 bar and for rail tankers its 2.5 bar, the Pivotal Edge hatches are therefore certified to operate to 2.5bar.

What is the expected life cycle of the hatch seal?

Automated factory trials indicate 140 000 cycles was achievable.

How do I know the hatch is sealed?

There is an indicator light on the control box which confirms the hatch and unit are sealed.

What if the seal leaks

If the inflatable seal develops a leak it can be replace by removing the top cover. This should be done in a safety cage. Replacement should only take a few minutes. The seal requires no adhesives to hold it into place.

Will the seal leak while I am driving in the rain?

The top cover has been designed to channel the water to drain on the outside of the latches. Also the seal is only deflated when the cover is open. A check valve will maintain the pressure in the seal even when the trailer air is released or drained.

What will it take to install the pivotal edge?

They are easy to install. No specialty tools are required. Takes between two to four man hours to install.

What happens if someone tries to open the cover when the tank is pressurized?

There will be lots of dust and noise, but no damage to the cover.

What temperature is the seal rated for?

-40° C to 65° C

Why would you build this

Jay and Brad both work in the industry and saw the need to protect the drivers from the risks involved. Drivers on the trailers and driver fatigue of climbing the ladders or up the existing fall protection stairs. Every load has the risk of two trips or falls.

PIVOTAL EDGE

