

Gallagher Vapour Recovery



What you need to know about VR

The fuel vapour you smell as you fill your car is an expensive chemical, dangerously carcinogenic to humans and a major pollutant to the environment.

Vapour Recovery (VR) regulations are in place in many countries throughout the world. In Australia, New South Wales has mandates for the recovery of vapour already in place, with other states likely to adopt these soon.

VR compliance is a concern for forecourt owners and their staff. Escaping vapour creates pollution and contributes to climate change.

The worldwide fuel industry approaches VR at two levels. VR Stage 1 relates to the petrol storage tanks, piping, vents, and the tanker delivery process. VR Stage 2 applies to retail deliveries of fuel to the end user.

As a site owner you can choose a central vacuum that offers a quieter dispensing environment, or an integrated solution that provides an easily installed per dispenser option. Both options enable operators to fully comply with all existing VR legislation.

The current fuel system standards ensure liquid fuels are held in sealed piping and tanks.

The difficulty faced by system designers is to manage and provision the storage of product. Fuel has a natural tendency to become vapour if allowed.

Fuel is an expensive asset, often sold at a minimal margin. It is critical to seal fuel and its vapour into the storage tanks effectively.

Under current and proposed legislation, businesses are required to provide capital and cover on-going costs to ensure fuel vapour is controlled. The current regulated VR systems are a forced expense that do not improve the sales opportunity.

The Gallagher Vapour Recovery solutions provide the opportunity for legislative compliance that support personal health and a reduction in environmental green house gases.

Many sites in Australia and New Zealand have petrol tanks that have open vents in various layouts, which contribute to known loss of fuel through vaporisation.

A VR1 verified tanker delivering to a VR1 tank site will reduce losses by ensuring this vapour is not lost to atmosphere during the delivery process.

Gallagher
vapour recovery
solutions go
beyond just
compliance

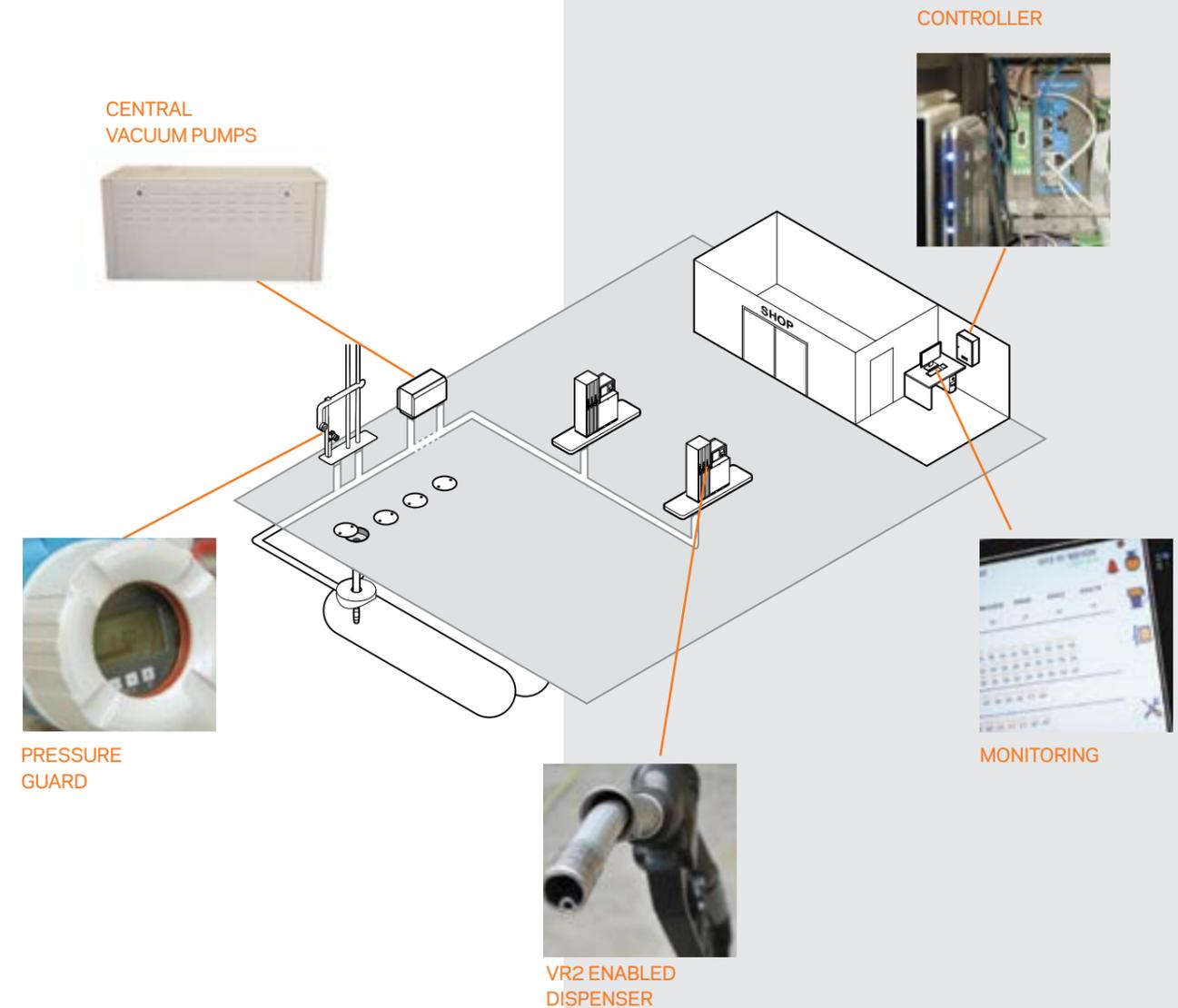
Making the right choice

THE BUILDING BLOCKS FOR AN OPTIMAL GALLAGHER VAPOUR RECOVERY SOLUTION

Gallagher and our service provider network can work with customers to review the combination of modules that target the key drivers for Vapour Recovery on a site. Our VR solutions have been designed around modular component-based architecture.

We work with you, bringing your knowledge and experience together with our expertise and the support of our Service Providers.

Together, we can build a system that is designed around your priorities. We can help you prioritise major considerations such as site layout, compliance and environmental impact. Whatever the requirement from your VR site, Gallagher can provide a solution, built from this architecture that is perfect for you.



Flexible Solutions

ONE SOLUTION DOESN'T WORK FOR EVERYONE. THAT'S WHY WE OFFER A RANGE.

Our Vapour Recovery range provides cost effective solutions for service station operators.

Our solutions create a new way of looking at the problem of vapour recovery. Even in non-compliant VR zones, any service station can act now with the certainty of a commercially sound decision.

Gallagher and our Service Providers will work with you to select the perfect combination of VR equipment to suit your needs.

THE CONTROLLER IS THE 'BRAINS' OF GALLAGHER'S VAPOUR RECOVERY SOLUTIONS.

At its most essential level, the cabinet contains the components to monitor tank pressure, while in more advanced systems it may control the entire VR1 and VR2 operation. The component design allows the Controller to be easily upgraded and enhanced to suit the individual system requirements.



VR1

VR2

STATUS INDICATOR

This module is available in either VR1 or VR2 form, and both are inherently upgradeable to cope with changing conditions and legislation.

For both VR1 and VR2 the Green LED indicates status 'OK' (within the prescribed limits). The Amber LED indicates "Warning" levels accompanied by an audible alarm. Under the regulation, when "Warning" conditions arise, depending on test type, the service person will have 7 or 30 days to correct and reset the system or the site pumps will be shutdown automatically.

The VR2 version also allows for the termination of RS485 wiring from each dispenser on site, for the Vaporix unit in each dispenser head. The Vaporix is a data centre and a TUV certified measuring device that reports a range of data and status including the required VR ratio, fuel flow rate and hydrocarbon content for every petrol delivery.

PRESSURE GUARD

The Pressure Guard combined with a monitoring system enables you to fully comply with VR1 legislation. As a compliance requirement for sites within VR1 and combined VR1/VR2 New South Wales regulated zones, it has the required German TUV certification to record and alert on pressure readings from the petrol tank's vent manifold.

A very accurate pressure gauge is mounted directly on the tank vent piping. The recording system connects from the Pressure Gauge to the Vapour Recovery Controller with intrinsically safe wiring. The VR Controller manages the data and produces daily reports. Pressure readings are taken every 30 seconds. If readings fall outside the prescribed range, alerts are given. If fault conditions persist beyond the prescribed limit, the VR Controller will shut down the site in accordance with legislated requirements.



INTEGRAL VACUUM USES A PUMP FOR EACH DISPENSER

The Integral Vacuum VR2 option has the vacuum source integrated into every dispenser enabling suction from either side of the dispenser. It uses VR2 nozzles to capture escaping vapour and includes VR2 pipe-work to return vapour to the underground storage tanks.

The Durr vacuum pump has the required electrical approval (IEC Ex) for hazardous zones and activates with each nozzle lift. It is part of the VR2 TUV certification of the system and provides vacuum to the required recovery ratio of 100% +/-2% in TUV testing, +/-5% in configuration and +/-15% in operation on site.



CENTRAL VACUUM USES ONE PUMP FOR ALL DISPENSERS

The Central Vacuum employs vacuum pumps housed in a cabinet away from the dispensers. This provides the source to recover the vapour from every filling point on site.

Special VR2 nozzles are used at the dispenser to capture the escaping vapour and also include VR2 pipe-work to return that vapour to the underground storage tanks. A liquid trap ensures liquid condensate does not enter the vacuum pump of the module.

The Central Vacuum module has the required electrical approval (IEC Ex) for hazardous zones and is part of the VR2 TUV certification of the system. It provides vacuum to the required recovery ratio of 100% +/-2% in TUV testing, +/-5% in configuration and +/-15% in operation on site.

The benefits of this module depend on site layout and the number of petrol dispensers in operation on the forecourt.



Monitoring

VR MONITORING OVERVIEW

Under the New South Wales VR regulations, the site owner or occupier is responsible for all compliance to the VR1 and VR2 guidelines. Our monitoring solutions are about collection, control, and accurate reporting of VR data into a useful format that meets site requirements. This will allow the regulatory bodies to complete their statutory processes. The huge volume of required data under VR regulation is a necessary function but the storage and sorting of that data into the essential views is the smart partnering model.

Pick a monitoring solution that fits the site, people, and process. Leave the compliance needs to us. Gallagher ensures that Vapour Recovery is not your worry.

STATUS DISPLAY

With the Status Display, your system is fully compliant. It can monitor VR1, VR2 or both and is to cope with future changes in the VR zoning and legislation.

The 8.9" touch screen shows real-time status of the VR1 and VR2 health of site. Data reports, including those required for VR legislation compliance are accessed within the Service region.

While the primary purpose of this data is to provide information to site inspectors, it also offers a valuable diagnostic tool for service engineers. Drop-down lists are used to filter the data selection as required.

At the touch of a button, the data is retrieved and displayed in a self-contained, scrollable window within the page. This allows the user to view the whole report at a readable resolution without the need to navigate through multiple pages of information.



REMOTE MONITORING

VR Compliance is an involved and complicated process. Understanding the management of VR for a site owner/manager is a huge burden. Training on site staff to administer the correct process if a VR fault occurs on Site can also be concerning.

With Gallagher Fuel Systems Remote Monitoring System we take care of every aspect of "Compliance" for you. Gallagher Fuel Systems will monitor your VR Status and if an error occurs we diagnose the fault remotely. If required, an alert message with diagnostic information is sent to an Authorised Service Provider (ASP).

The ASP is then able to attend the site and resolve the issue, often before any site staff are aware that a fault has occurred and well before an automatic shut down occurs. With Remote Monitoring, site staff need very little involvement in both understanding the regulations and attending to Site VR faults.

Full compliance is achieved and maintained with minimal Site intervention.



Choosing your ideal system

GALLAGHER CAN WORK WITH YOU TO DESIGN A COMBINATION OF MODULES THAT TARGETS YOUR KEY DRIVERS FOR VAPOUR RECOVERY. THE CHART BELOW SHOWS HOW THE SYSTEM 'BUILDING BLOCKS' CAN BE COMBINED TO CREATE A SOLUTION FROM A BASIC VR1 CAPABLE SITE TO A MONITORED, FULLY COMPLIANT, LOW ENVIRONMENTAL IMPACT OPERATION.

System Code	Pressure Guard	VR2 (Central)	VR2 (Integral)	Status Display	Remote Monitoring	Compliance	
						VR1	VR2
VR1-75	●						
VR1-100	●			●		✓	
VR1-150	●				●	✓	
VR2-75		●					
VR2-85			●				
VR2-100		●		●			✓
VR2-150		●			●		✓
VR2-200			●	●			✓
VR2-250			●		●		✓
VRT-100	●	●		●		✓	✓
VRT-150	●	●			●	✓	✓
VRT-200	●		●	●		✓	✓
VRT-250	●		●		●	✓	✓

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