CHALWYN

World class manufacturer of safety solutions











SYSTEM SELECTION GUIDE

Safety solutions for vehicles and machines working in petrochemical plants

Diesel Engine Safety Solutions

Chalwyn: Over 35 years of Overspeed Safety Solutions

Chalwyn was the original manufacturer of the automatic air intake shut down valve in 1972 to Esso Fawley's licensed flow operated valve design. The need for these types of valves became prevalent after a fatal accident at ICI Wilton in 1969. General awareness of diesel engine runaway in the UK oil and gas industry increased significantly after this unfortunate event which also led to numerous companies implementing safety policies.

Guarding against diesel engine runaway is just as important today as it was then. Chalwyn provides an essential control measure for the catastrophic consequences that can result from engine runaway by supplying a range of diesel engine safety products for equipment and vehicles operating at refineries, gas terminals, and oil storage sites.

Diesel Engines: A Potential Source of Ignition

When a diesel engine is exposed to an external fuel source such as an airborne combustible hydrocarbon in the surrounding environment, it naturally ingests the mixture into the air intake system. Since diesel engines control fuel and not air, the engine can no longer maintain speed control.

A diesel engine can become an ignition source if a 'runaway' or overspeed occurs. This can happen at less than 4% concentration of flammable gas.

The most effective way of shutting down a runaway diesel engine is with an automatic air intake shutoff valve. The valve works to stop the engine at a preset RPM so that dangerous flashback that has ignited gas clouds at oil and gas sites can automatically and quickly be prevented.

New Emission Standards Technology

European emission standards for diesel engines have gradually become more stringent. Since 1996 the standards have systematically reduced levels of particulate matter and nitrous oxides. Tier 4 final engines are now starting to appear in the market equipped with sophisticated exhaust after-treatment components and electronic controls dedicated to reducing emissions.

Chalwyn: Leading Provider of Solutions for Low Emission Diesel Engines

Chalwyn has developed a range of air intake shut down systems that are compatible with the latest engine technology. The new generation of engines forces a necessary move away from traditional D valves to a modern, low restriction electric valve solution.

Oil and gas sites are now requesting a fully automated system that can easily be demonstrated and tested. The following pages provide an overview of our best in class safety solutions for vehicles and machines operating on these sites.

System 1 Euro 5 & 6 Road Vehicles – 12v only

Chalwyn's SVR valve is a compact butterfly valve designed to fit in the tight spaces of modern vehicles such as light duty vans and pickups. The valve is latched open to allow normal use and will close to stop the engine when either the manual switch is operated or the system senses an overspeed. The valve can easily be reset to the open position by hand, when it is safe to do so. The valve can be easily fitted in the intake hose and connected utilizing the electric control system parts that are described below. The Revguard 2 monitors the engine's RPM and will signal the valve to close at a pre-set limit. Features and benefits include:

- A low restriction valve that does not interfere with the engine's management system
- Suitable for intake hoses between 44mm and 77mm
- Powered to close and manually reset to open
- Compact and lightweight

The following parts are required:

- SVR valve
- Revguard 2
- Actuation kit

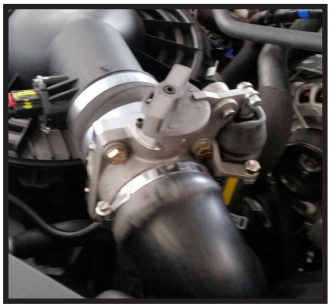
Additional Accessories:

- Wiring kit – EWK-100
- Standard silicone hose kit
- Vehicle specific hose kits available – contact factory

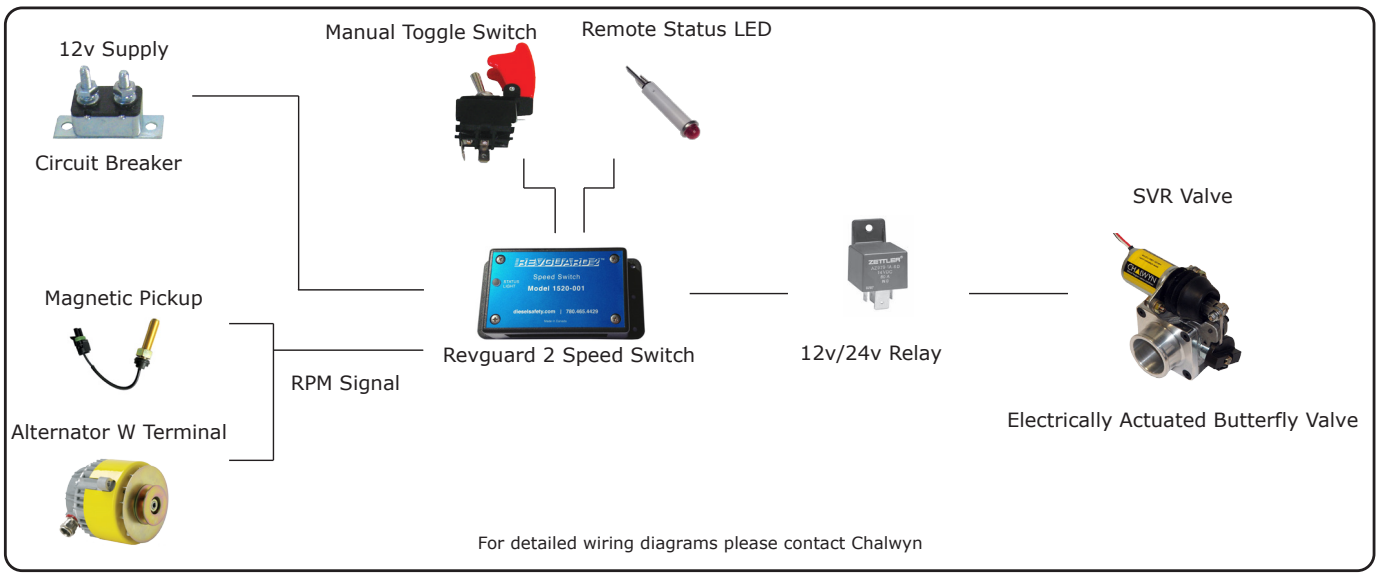
Valve Part Number Identification

Hose Diameter	Part Number
44mm	SVR-281-44
48mm	SVR-281-48
51mm	SVR-281-51
57mm	SVR-281-57
60mm	SVR-281-60
64mm	SVR-281-64
70mm	SVR-381-70
77mm	SVR-381-77





Automatic RPM Overspeed Detection System – 12v



System 2 Euro 5 & 6 Trucks and Cranes – Pneumatic only

Chalwyn's PVX and PVA valves are ideal for heavy duty trucks and cranes with air brakes that can use the air system to control the valve and stop the engine. The automatic reset feature is useful on cab-over trucks where access to the engine is difficult and time consuming. This valve can easily be fitted in the intake hose and connected utilizing the control system parts that are described below. The Revguard 2 monitors the engine's RPM and will signal the valve to close at a pre-set limit. Features and benefits include:

- A low restriction valve that does not interfere with the engine's management system
- Suitable for 24v trucks with air brakes
- Automatically resets
- Manually reset option available

The following parts are required:

- PVX or PVA valve
- Revguard 2
- 24v actuation kit
- The appropriate size hose adaptor
- Pneumatic solenoid
- Pneumatic installation kit

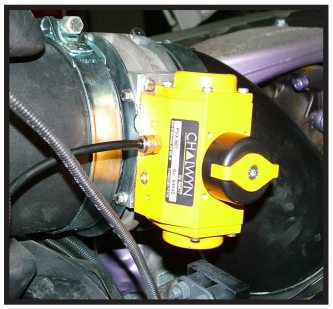
Additional Accessories:

- Wiring kit – 24v EWK-124 or factory pre-assembled EWK-524
- Standard silicone hose kit
- Vehicle specific hose kits available – contact factory

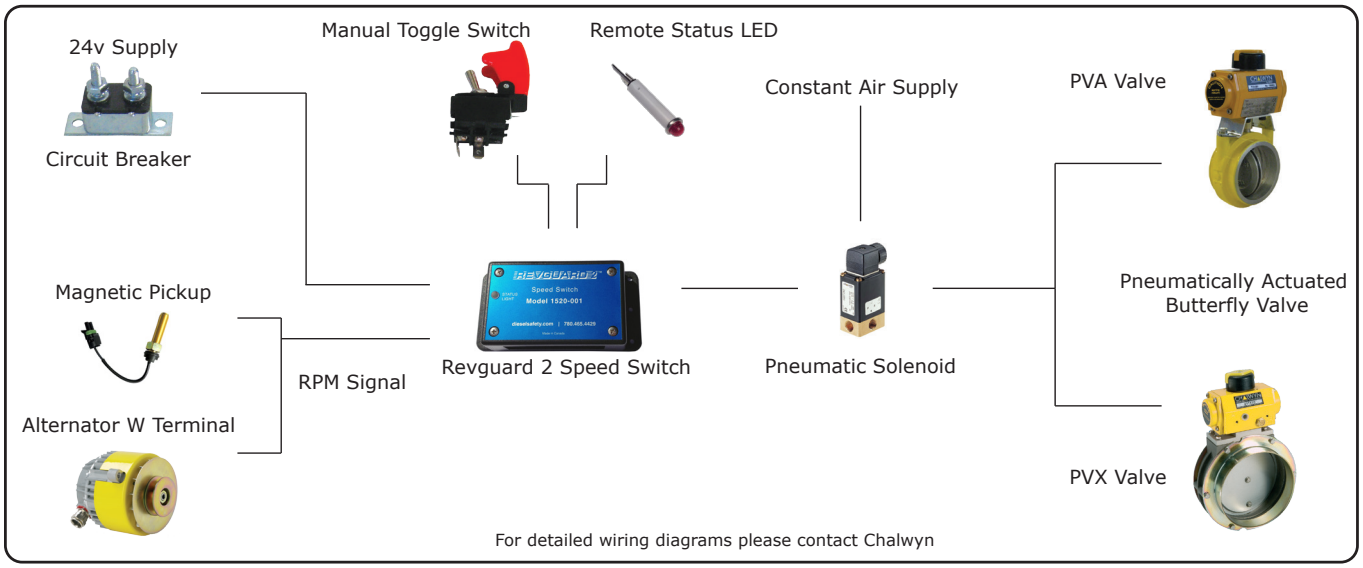
Valve Part Number Identification

Hose Diameter	Part Number
44mm-89mm	PVX-301
89mm-152mm	PVX-501
71mm	PVA-281
89mm	PVA-351
102mm	PVA-401
140mm	PVA-551





Automatic RPM Overspeed Detection System – Air Pressure Operated, Automatic Reset



System 3 Industrial Equipment, Low Emission Engines – 12v or 24v

Chalwyn's SVR and SVX valve is suitable for installation in 12v and 24v low emission off-road vehicles, industrial equipment and generators. This valve can easily be fitted in the intake hose and connected utilizing the control system parts that are described below. The Revguard 2 monitors the engine's RPM and will signal the valve to close at a pre-set limit. Features and benefits include:

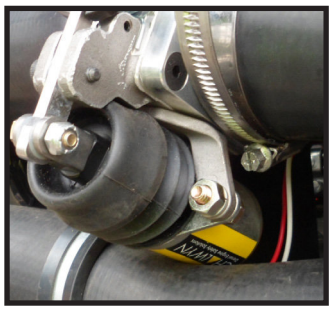
- Suitable for intake hoses between 44mm and 203mm
- Powered to close and manually reset
- The SVX valve can be supplied with a micro switch to give a remote indication of the valve position

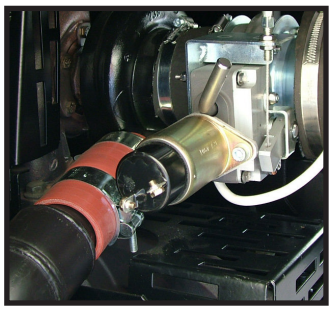
The following parts are required:

- SVR or SVX valve
- Revguard 2
- 12v or 24v actuation kit

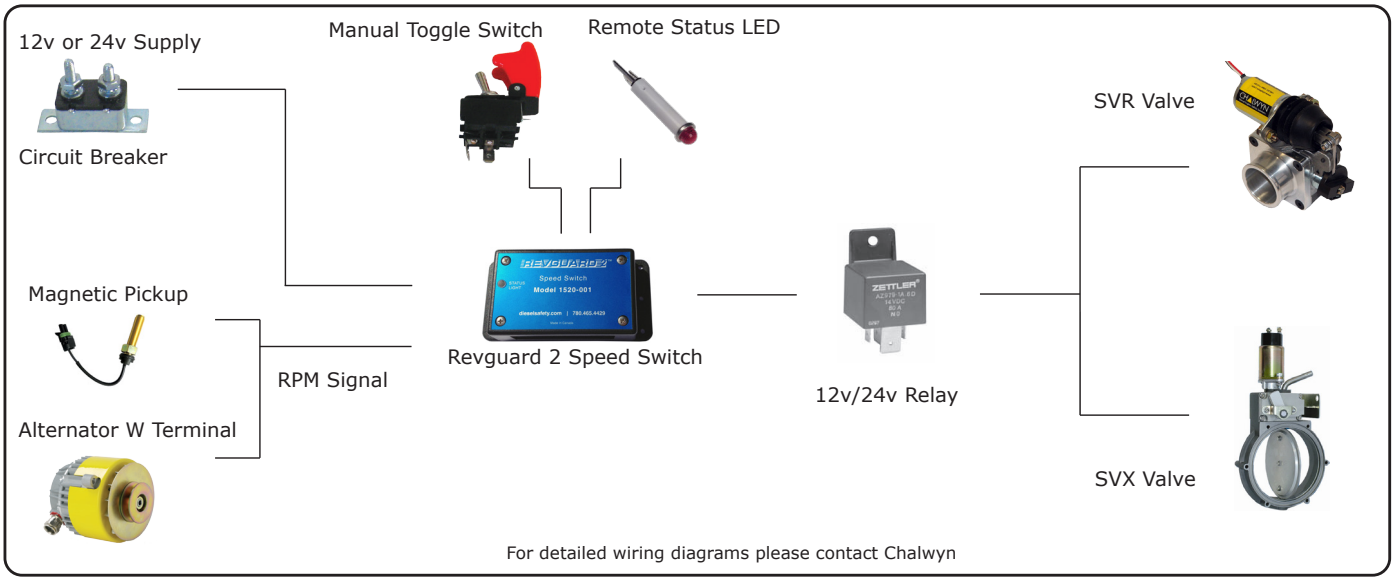
Additional Accessories:

- Wiring kit – 12v EWK-112 or 24v EWK-124
- Factory pre-assembled EWK-512 or EWK-524
- Standard silicone hose kit
- Vehicle specific hose kits available – contact factory





Automatic RPM Overspeed Detection System – 12v or 24v



System 3 Industrial Equipment, Low Emission Engines – 12v or 24v



SVR Valve



Valve Part Number Identification

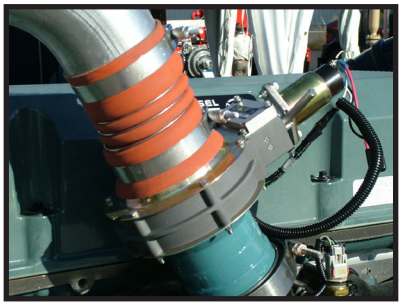
Voltage	Hose Diameter	Part Number
12v	44mm	SVR-281-44
	48mm	SVR-281-48
	51mm	SVR-281-51
	57mm	SVR-281-57
	60mm	SVR-281-60
	64mm	SVR-281-64
	70mm	SVR-381-70
	77mm	SVR-381-77
24V	44mm	SVR-291-44
	48mm	SVR-291-48
	51mm	SVR-291-51
	57mm	SVR-291-57
	60mm	SVR-291-60
	64mm	SVR-291-64
	70mm	SVR-391-70
	77mm	SVR-391-77

Valve Part Number Identification

Voltage	Switch	Size	Hose Diameter	Part Number
12v	No micro switch	3”	44mm-89mm	SVX-381
		5”	89mm-152mm	SVX-581
		8”	178mm-203mm	SVX-881
	With micro switch	3”	44mm-89mm	SVX-380
		5”	89mm-152mm	SVX-580
		8”	178mm-203mm	SVX-880
24v	No micro switch	3”	44mm-89mm	SVX-391
		5”	89-152mm	SVX-591
		8”	178mm-203mm	SVX-891
	With micro switch	3”	44mm-89mm	SVX-390
		5”	89mm-152mm	SVX-590
		8”	178mm-203mm	SVX-890



SVX Valve



Control System Parts and Accessories

Option 1 Individual parts required

Revguard 2 Speed Switch



- Trips when RPM exceeds desired set point
- 12v or 24v power source required
- Monitors the alternator pulse signal output
- Also suitable for magnetic pickup output

Actuation Kit (12v or 24v)



- Relay with base plug
- Circuit breaker
- Momentary toggle switch
- LED lamp

Electrical Wiring Kit

EWK-100 – Road vehicles only*
EWK-112 – 12v Kit
EWK-124 – 24v Kit



- Enclosure box with mounting plate
- Split loom cable tidy – 5 meters
- Cable gland x 1
- Insulated crimps and terminals
- Single core cable (white, red & black)
- Fixings
- Momentary push button switch
- Warning label

*Enclosure box not included

Option 2 Factory assembled to reduce installation time

Electrical Wiring Overspeed Kit

EWK-512 – 12v Kit
EWK-524 – 24v Kit





Includes:

- Revguard 2 Speed Switch
- Actuation kit
- Waterproof electrical wiring kit

Frequently Asked Questions

What information do I need to determine which valve and installation accessories to use?
Engine model, photographs and pipe measurements help to identify the correct valve and installation accessories.

Where should I install the valve as I can see there are three possible locations?

1. Intercooler to manifold hose – Best location to choose providing the reset control knob can be reached and the engine cover will close.
2. Air cleaner to the turbo inlet – An acceptable location assuming the engine is not able to continue running on air drawn through its breather system.
3. Turbo to intercooler – The hot pipe from turbo to intercooler is generally too hot for the valve to function. Check with Chalwyn before considering this position.

Where do I mount the Revguard 2?
The Revguard 2 is usually mounted inside the vehicle cab behind the glove box or in a convenient location.

The toggle switch (with red flip up cover) should be accessible for testing.

How is the speed determined?
The speed signal is picked up from the engine's alternator. The W terminal or stator pin will provide the correct input to the Revguard 2.

How do I test the system?
The Revguard 2 manual includes full instructions on how to complete the following 2 tests:

- Test 1: Valve function check – to stop the engine when running in an idling condition
- Test 2: System operation check – to stop the engine at the 50% test mode speed

Are there any fitting dealers in the UK?
We have several regional companies and partners in the UK already trained on installation. Contact us for more information.

Where can I find local distributors outside the UK?
To contact your closest international distributor, please visit our website at www.chalwyn.com.

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