

# CHALWYN

World class manufacturer of safety solutions



## System Selection Guide

Safety solutions for vehicles and machines  
working in petrochemical plants

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## System 1 Euro 5 & 6 Road Vehicles - 12V only

Light duty vans and pickups can be fitted with an electric valve in the intake hose. This is connected with the electric control system parts described below. The valve is latched open to allow normal use and closes to stop the engine when either the manual switch is operated or the system senses an overspeed. The valve is easily reset open by hand when safe to restart.

- Small vans and pickups require a low restriction valve that does not interfere with the engine's management system
- The SVR valve is a compact butterfly valve designed to fit in the tight spaces of modern vehicles
- The Revguard speed switch monitors the engine's rpm and will signal the valve to close at a pre-set limit
- Suitable for intake hoses between 44 mm and 77 mm
- Powered to close and manually reset to open
- Compact and light weight



### The following parts are required:

- SVR valve from selection chart
- Revguard 2 speed switch (1520-001)
- 12V Installation Kit (AK2-E1-RM-CH)

### Optional Parts

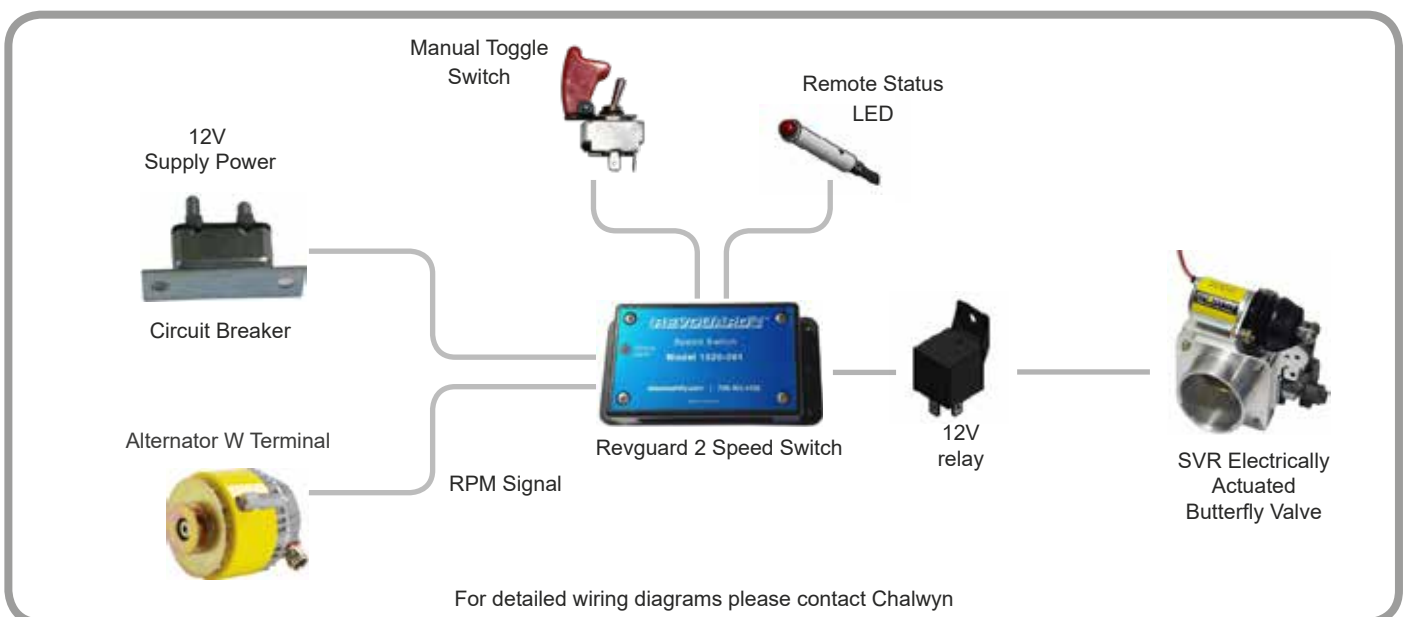
- Wiring kit (EWK-100)

### Details of parts on page 5

SVR Valve Selection Chart

SVR Valve Selection Chart		
12V	44 mm	SVR-281-44
	48 mm	SVR-281-48
	51 mm	SVR-281-51
	57 mm	SVR-281-57
	60 mm	SVR-281-60
	64 mm	SVR-281-64
	70 mm	SVR-381-70
	77 mm	SVR-381-77

## Automatic RPM Overspeed Detection System - 12V manual reset



## System 2 Euro 6 Trucks

Heavy duty trucks with air brakes can use the vehicle's air system to control the valve and stop the engine. The feature of automatic reset is useful on cab-over trucks where access to the engine is difficult and time consuming. The parts below make an effective solution for most popular trucks.

The engine is stopped by a low restriction pneumatic butterfly valve suitable for low emission Euro 5 and 6 trucks. The Revguard speed switch monitors the engine's rpm and will signal the valve to close at a pre-set rpm.

- Suitable for 24V trucks with air brakes
- Automatically resets
- Manual reset option available

### The following parts are required:

- PVX or PVA Valve from selection chart
- Revguard speed switch (1520-001)
- 24V Installation Kit (AK2-E2-XM-CH)
- The appropriate size hose adaptor (HAX-\*\*\*) PVX only
- Pneumatic Solenoid (SVA-200)
- Pneumatic Installation Kit (SKA-100)

For crane applications contact factory for installation kit recommendation.

### Details of parts on page 5

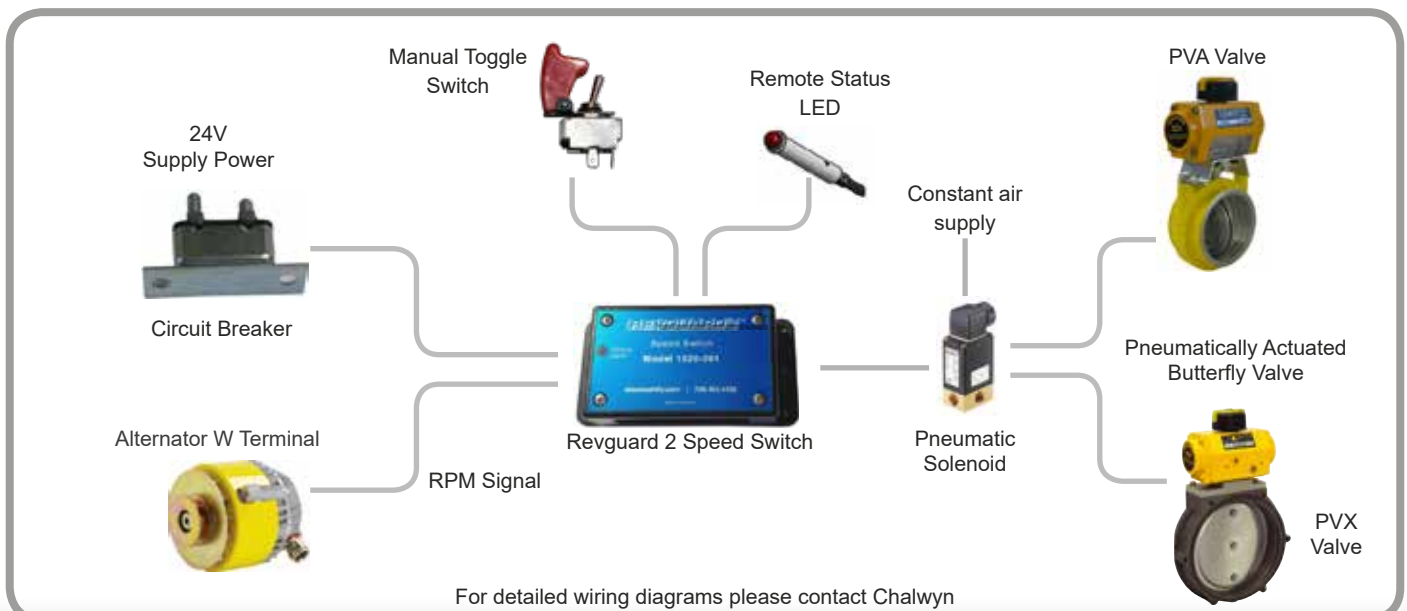
System 2 is compatible for cranes with air brakes if access to the engine's intake pipework is limited and the air shut off valve can not be manually reset.



PVX / PVA Valve Selection Chart

Pneumatically Operated	44 - 89 mm	PVX-301
	89 - 152 mm	PVX-501
	71 mm	PVA-281
	89 mm	PVA-351
	102 mm	PVA-401
	140 mm	PVA-551

## Automatic RPM Overspeed Detection System - Air pressure operated, automatic reset



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

Low emission off-road vehicles, portable plant and generators can be installed with these 12V or 24V butterfly valves. The Revguard speed switch monitors the engine's rpm and will signal the valve to close at a pre-set limit. Chalwyn has a wider range of electric valves not shown here for many varied applications.

- Suitable for intake hoses between 44 mm and 152 mm
- Powered to close and manually reset
- The valve can be supplied with a micro switch to give a remote indication of the valve position

### The following parts are required:

- Butterfly valve from selection chart
- Revguard speed switch (1520-001)
- Electrical wiring kit (EWK-112 or 124) or
- Factory pre-assembled (EWK-512 or 524)

### Details of parts on page 5

SVX Selection Chart (plus hose adaptors)				
12V	No Micro Switch	3"	44 - 89 mm	SVX-381
		5"	89 - 152 mm	SVX-581
	With Micro Switch	3"	44 - 89 mm	SVX-380
		5"	89 - 152 mm	SVX-580
24V	No Micro Switch	3"	44 - 89 mm	SVX-391
		5"	89 - 152 mm	SVX-591
	With Micro Switch	3"	44 - 89 mm	SVX-390
		5"	89 - 152 mm	SVX-590



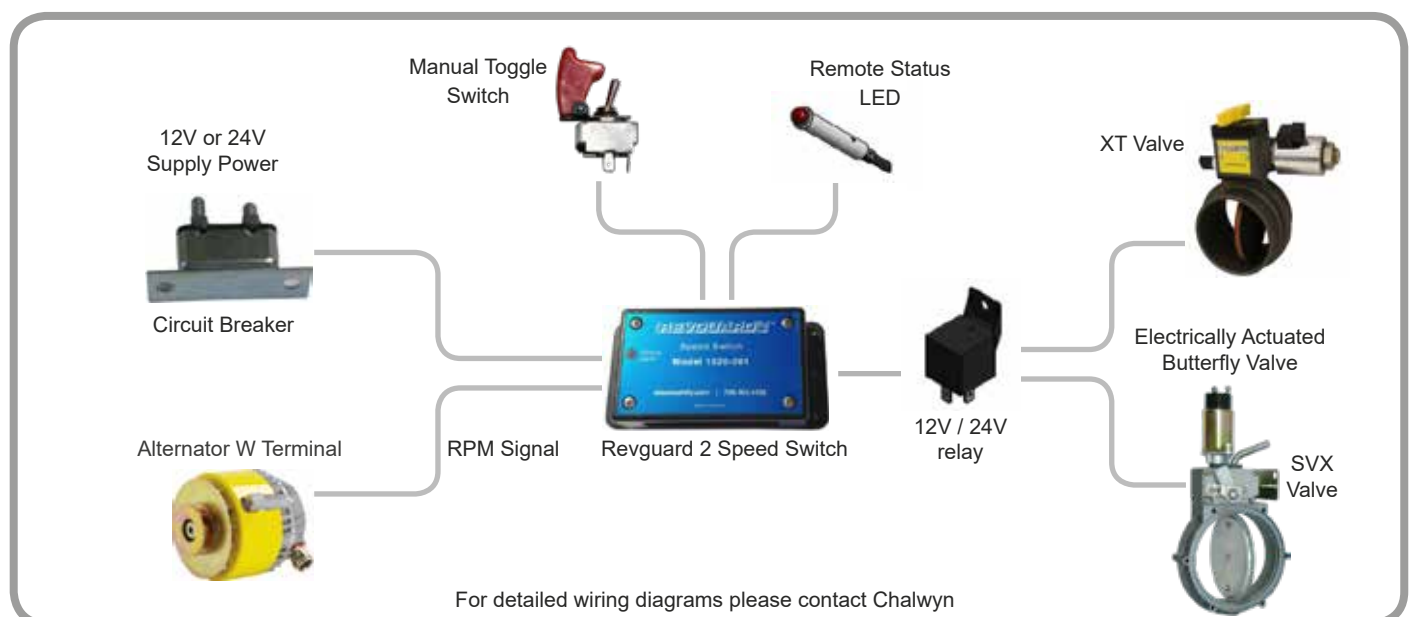
SVX Valve



XT Valve

### XT Valve Selection Chart

Integral end diameters		No Switch	With Switch
12V	89 mm	XT35A1A	XT35A1B
	102 mm	XT40A1A	XT40A1B
	127 mm	XT50A2A	XT50A2B
	140 mm	XT55A2A	XT55A2B
	152 mm	XT60A2A	XT60A2B
	178 mm	XT70A2A	XT60A2B
	203 mm	XT80A2A	XT80A2B
24V	89 mm	XT35B1A	XT35B1B
	102 mm	XT40B1A	XT40B1B
	127 mm	XT50B2A	XT50B2B
	140 mm	XT55B2A	XT55B2B
	152 mm	XT60B2A	XT60B2B
	178 mm	XT70B2A	XT60B2B
	203 mm	XT80B2A	XT80B2B





## Control System Parts and Accessories

### Revguard 2 Speed Switch (Part number 1520-001)

- Trips when RPM exceeds desired set point
- 12V or 24V power source required
- Monitors the alternator pulse signal output



### Installation Kit (Part number AK2-E\*-RM-CH)

#### 12V or 24V Installation Kit includes

- Relay with base plug
- Circuit breaker
- Momentary Toggle Switch and cover
- LED lamp



### Wiring Kit (EWK-100)

- Road vehicles only

### Electrical Wiring Kit (EWK-112 or -124)

- EWK-112 - 12V kit
- EWK-124 - 24V kit

Includes enclosure, single core cable insulated crimps, split loom conduit, cable glands, warning label, mounting plate, relay, circuit breaker and switch



### Electrical Wiring Kit (EWK-512 or -524)

**Complete installation factory assembled to reduce installation time. Includes:**

- Revguard 2
- Electrical Wiring Kit



### Silicone Hose Kit (IK-XXXH-01)

- Silicone hose connectors from 1½" to 7" with a pair of Constant Torque clamps



## Additional information

### Survey information

Engine information, photographs and pipe measurements to identify the correct valve and installation accessories. The System 1 parts are usually common to all 12V vehicles without air brakes.

### Valve location

**Intercooler to manifold hose** - Best location to choose providing the reset control knob can be reached and the engine cover will close. The temperature at this location rarely exceeds 90°C.

**Air cleaner to the turbo inlet** - An acceptable location assuming the engine is unable to continue running through air drawn through breather system.

**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. SVR valves have a maximum operating limit of 120°C.

### Revguard Speed Switch – Mounting position

The Revguard is usually mounted inside the vehicle cab behind the glove box or in a convenient location inside the engine bay. (The EWK kit includes a weatherproof box.)

The toggle switch (with red flip up cover) should be accessible for testing. The system status LED needs to be visible when operating the switch during stationary testing.

### System wiring diagrams

The Revguard Installation Manual explains how the system is installed and includes wiring diagrams for the complete kit.

### Engine speed signal

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.

Some alternators require the cover to be removed first, Chalwyn will be able to advise on specific models.

### Testing the system

The Revguard manual includes full instructions on how to complete the following two 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

### Installation time

This will depend on the type of system being installed. The EWK-5XX kit comes complete, factory pre-assembled to reduce installation time. Contact us for further advice on specific models.

### UK Fitting dealers

We have several regional companies and partners in the UK already trained on installation. Contact us for more information.

### International distributors

To contact your closest distributor outside the UK please visit our website at [www.chalwyn.com](http://www.chalwyn.com).

### Further help and support

Steve Gale and Darren Webber are available to discuss and explain details of these systems. Please call Chalwyn on 01284 715739 to discuss your requirements.

Open Monday to Friday 8.00 am to 4.30 pm.

## History

A fatal accident at ICI Wilton in 1969 led to general awareness of diesel engine runaway in the UK oil and gas industry. Chalwyn first manufactured an automatic air intake shut down valve in 1972 to Esso's licensed flow operated valve design. Esso Fawley was the first customer to have a safety policy, followed by BP, Shell, Texaco, Mobil, Phillips 66 and Total.

Today Chalwyn supplies a range of diesel engine safety products for equipment and vehicles operating at refineries, gas terminals and oil storage sites providing an essential control measure for the catastrophic consequences that can result from engine runaway.



## Diesel engine runaway

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 over speed occurs. This can happen at less than 4% concentration of flammable gas. The engine must be prevented from an uncontrolled runaway by fitting a shut off valve. This prevents over speed by stopping the engine at a pre-set rpm.



## New 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.

## The solution

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 be easily demonstrated and tested.



Chalwyn has more than 40 years of experience and is the industry leader in manufacturing engine safety shut down valves to support the oil and gas industry. We have worldwide sales offices with manufacturing facilities in the United Kingdom, Canada and the United States to serve our global markets.

Our broad range of engine safety solutions includes AMOT, Roda Deaco, Rigsaver and Chalwyn brands.



Contact our sales offices below for more information:

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Chalwyn's Quality Management System is approved by LRQA

