

SVD-S INLET SHUTOFF VALVE

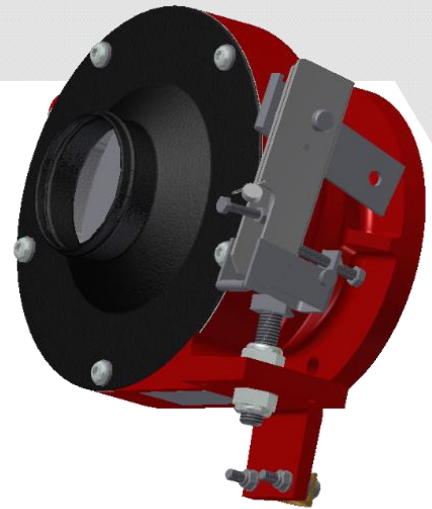
FESTO-LATCH OR
POST-LATCH

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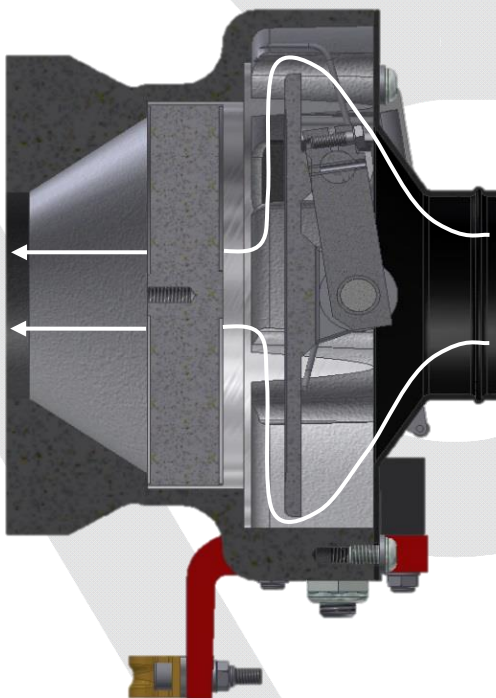
DESCRIPTION

The SVD-S intake shutoff valve is designed for use on normally aspirated diesel engines operating in hazardous areas where potentially flammable gases can be drawn into the engine intake. The unit will automatically shut off with engine overspeed and incorporates a flame arrestor to extinguish an explosion caused by engine inlet flashback. The valve is fully mechanical and manually primed open with a handle/cable. A range of adaptors are available for hose connection. The valve has two latch open options which may be either a simple post-latch version or Festo-latch which is chosen when integrated with a hydraulic control system. Two different flame arrestor crimp sizes are available to optimise backpressure vs flame velocity. The valve can be incorporated into an EN1834-1 compliant system when properly specified and tested.

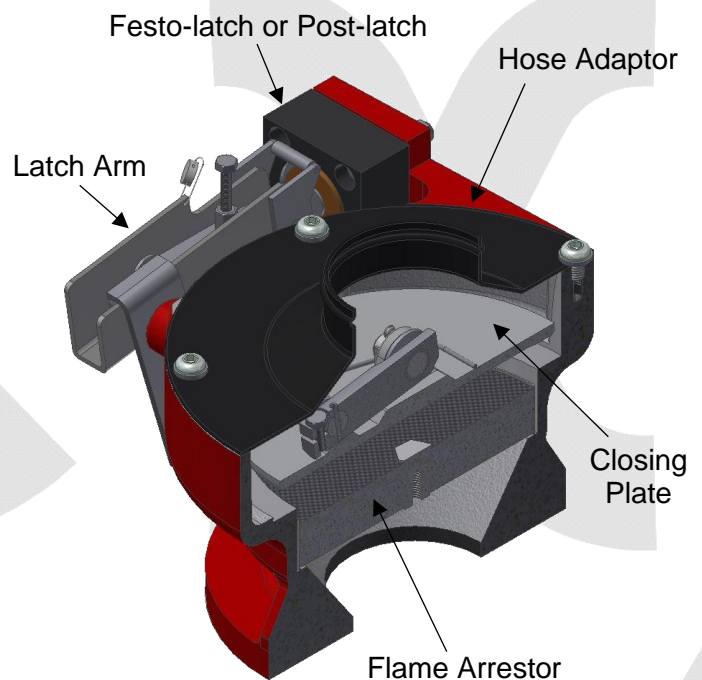


BASIC FUNCTION

Air Flow



Key Components



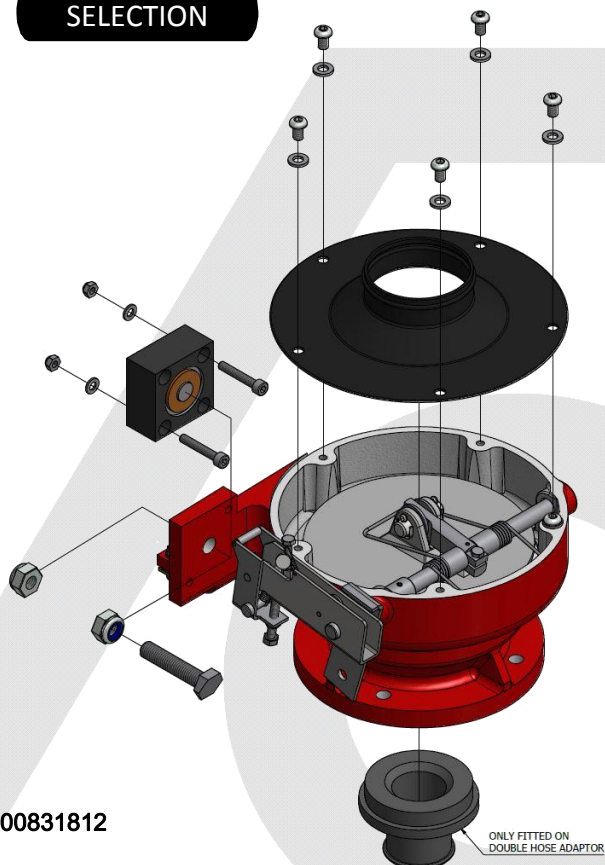
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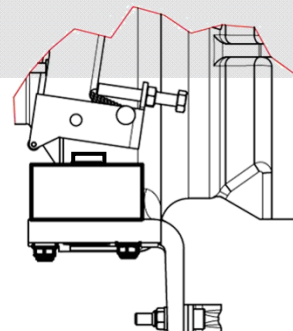
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SELECTION

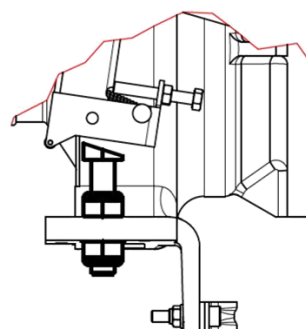


Control Latch Options

The roller assembly rides over the latch upon overspeed



Festo-latch Option
Piston retracts with falling oil pressure



Post-latch Option
Solid post latch

Valve (Single Hose Adaptor + Flange)

		FESTO -LATCH		POST-LATCH	
CRIMP HEIGHT		0.015"	0.018"	0.015"	0.018"
ADAPTOR SIZE	1.50"	-	30029205	-	-
	1.75"	-	30029206	-	30029201
	2.00"	30029234	30029207	30029178	30029202
	2.25"	30029174	30029208	30029175	30029203
	2.50"	30029183	30029209	30029180	30029204
	3.00"	-	30029100	-	30029164

Valve (Double Hose Adaptor)

		FESTO -LATCH		POST-LATCH	
CRIMP HEIGHT		0.015"	0.018"	0.015"	0.018"
ADAPTOR SIZE	1.50"	-	30029215	-	30029210
	1.75"	-	30029216	-	30029211
	2.00"	-	30029217	-	30029212
	2.25"	-	30029218	-	30029213
	2.50"	-	30029219	-	30029214
	3.00"	-	30029226	-	30029223

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Mechanical Stop/Start Cable Assembly

↑ RESET	DO NOT RE-START AGAINST ENGINE SUCTION
↓ EMERGENCY STOP	SYSTEM DAMAGE MAY RESULT

300805919
Label, Post
Latch

↑ START	DO NOT RE-START AGAINST ENGINE SUCTION
↓ EMERGENCY STOP	SYSTEM DAMAGE MAY RESULT

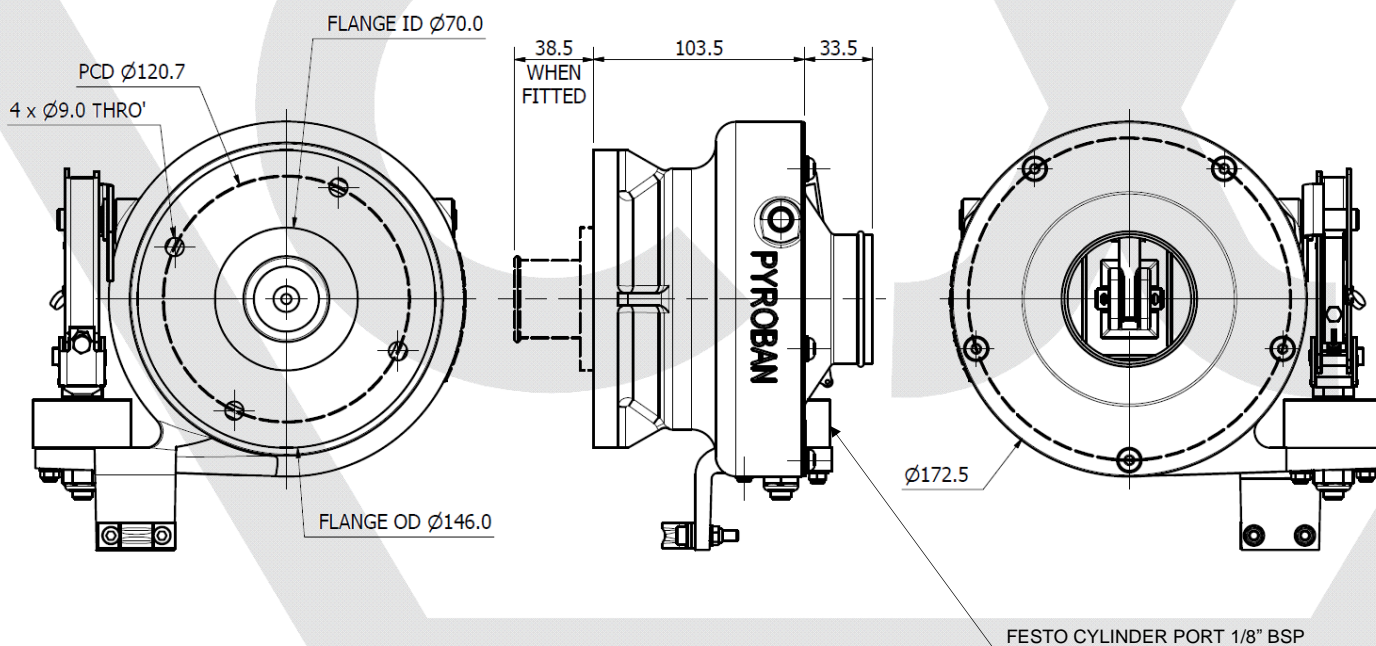
300301836
Label, Festo
Latch

Cable Length	Kit Part No.
1.5m	30029040
2.0m	30029041
2.5m	30029042
3.0m	30029044
3.5m	30029043

Kit contains hand lever, cable, ball
joint and cable fixings.

3" Gasket to fit Flange 70Ø ID - 300302440

DIMENSIONS



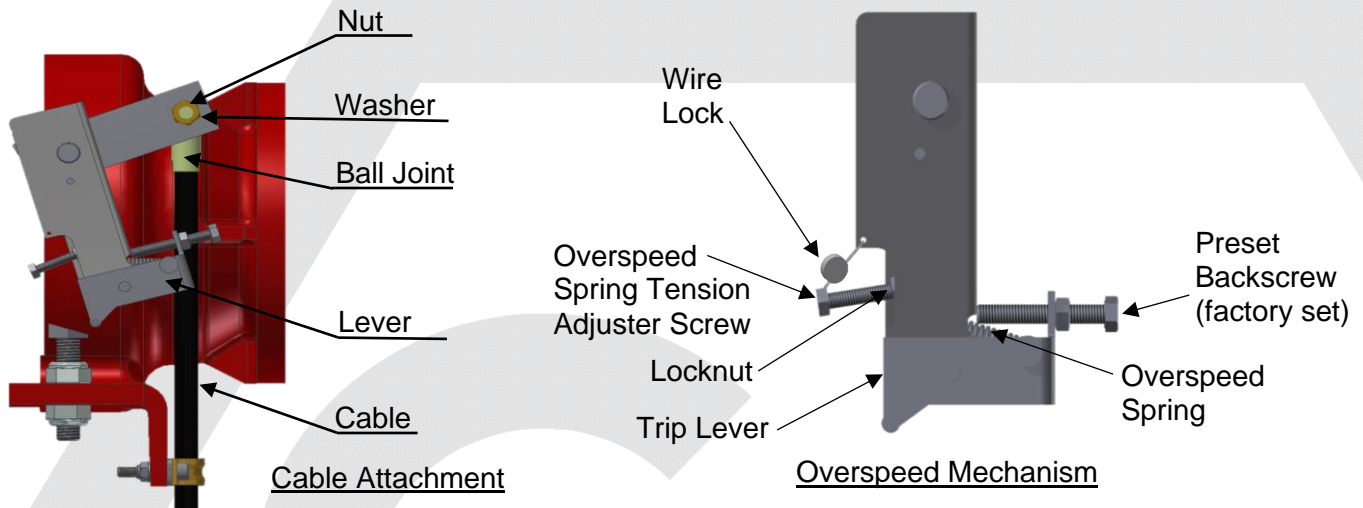
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INSTALLATION



- Fit the valve with the inlet flame arrestor downstream.
- All pipework downstream of the valve must be robust to contain a potential explosion. All other air inlets between the valve and the engine must be closed or rerouted as any leak may prevent the overspeed function working. The inlet, including closures, must undergo a 10 bar leak-free hydrostatic test.
- Position the valve so the valve axis is horizontal.
- To optimise the function of the integral flame arrestor, fit the valve as close as possible to the engine manifold.
- An efficient air filter must be fitted upstream of the valve to prevent the flame arrestor clogging.
- Attach the operating cable to the reset lever at the valve. Mount the hand lever so that the valve opens when the lever is pushed forwards and is in the emergency stop position when pulled back. Check the valve can latch – starting the engine is required for this check with the piston latch option.
- Ensure that the cable run has no tight radius bends that impede the shutdown function. Slacken the locknuts at the valve to ensure the cable is in its neutral (mid) position at rest and re-tighten.
- For Festo-latch operated valves, connect a hydraulic line to 1/8" BSP port. The Festo piston is fully actuated at 1Bar (15psi) and drops out at 0.3Bar (4psi). The maximum pressure in this circuit should not exceed 10Bar.
- To set the overspeed, first start and warm the engine. Next, take the engine to maximum speed. Turn the overspeed adjuster screw to enable the engine to run at this speed. Gradually unscrew until the lever just starts to trip. Turn adjuster screw back in one full turn

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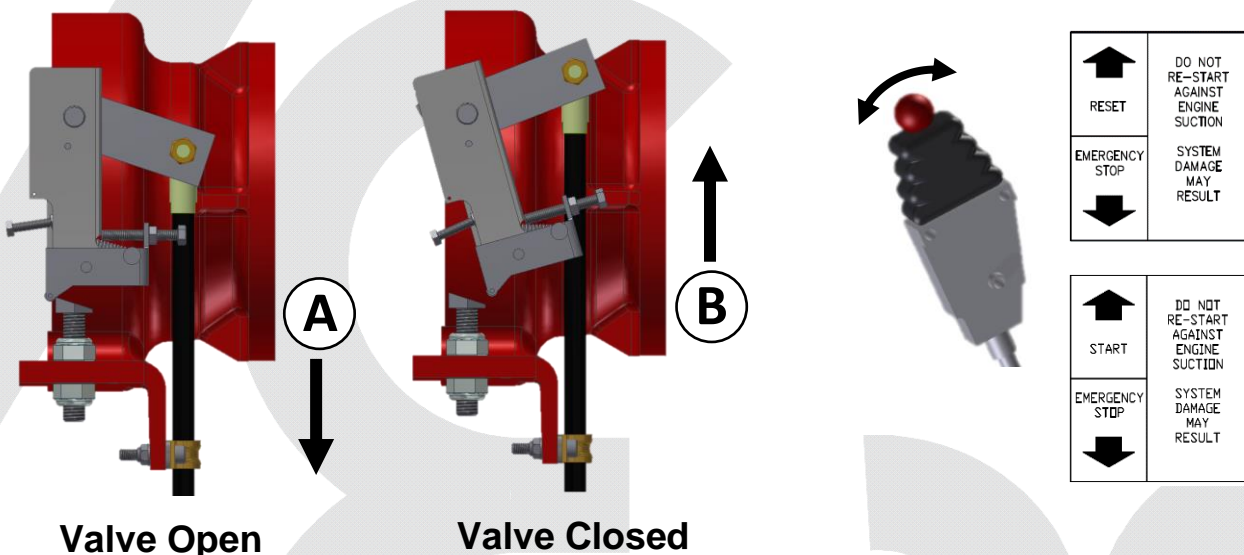
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plus one flat of the hexagonal nut. Repeat this process several times to check repeatability. When satisfied, tighten locknut, wire lock and seal.

- With the engine stopped, the hand lever should rest in the neutral (central) position. Check the lever has adequate movement to latch the valve when pushed forwards and close the valve when pulled back.
- Check the emergency stop by operating with engine running.

OPERATION



- **Engine Start:** Push the hand lever forwards, then start the engine *. For valves equipped with a Festo latch, wait up to 5 seconds before letting go. After letting go of the lever, the vehicle may be driven.

*For Abutment Post fitted valves, pushing the lever forwards is only required after emergency stop or overspeed.

- **Emergency stop:** Pull the hand lever towards you.
- **Overspeed:** This will happen automatically, if in doubt, pull the hand lever towards you.
- After shut-off, it may not be possible to instantly reset the valve for up to 20s as a temporary vacuum is created in the inlet system holding the valve closed. **Never force the hand lever against this vacuum as this may damage the valve and void warranty.**
- Always ensure that the hand lever re-centres with the engine stopped.
- **If an intake flashback occurs in service, inspect the valve for damage and test the overspeed mechanism is functional following the installation section in this PDS.**
- Excessive engine vibration may cause the valve to shutdown prematurely.

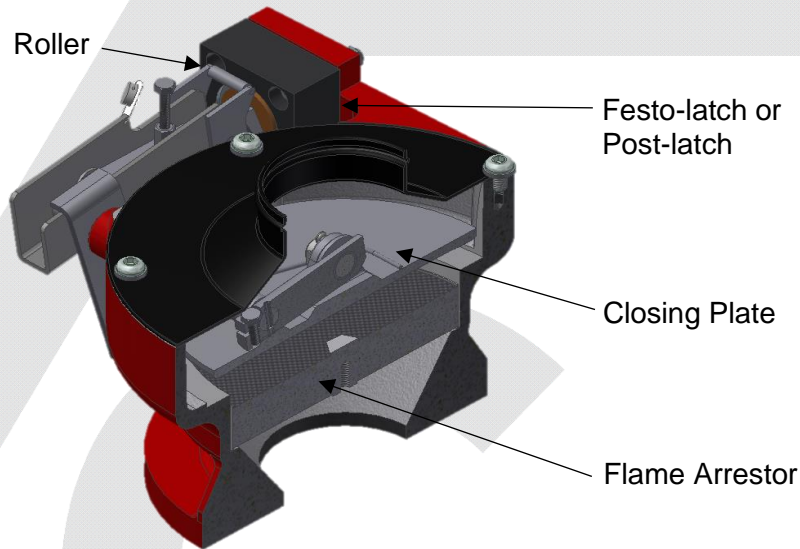
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INSPECTION & MAINTENANCE



After the initial 100 hours (2 weeks) and thereafter every 500 hours (3 months):

- Ensure the roller on the trip lever is free to spin.
- Lubricate the valve spindle and all pivot points with a thin oil.
- Carry out an emergency stop test by pulling the hand lever.
- Ensure the control mechanism moves freely, closes correctly and shuts off the engine.
- If operation of the valve appears to be satisfactory but the engine does not stop within a few seconds, then the inlet system including the inlet manifold should be checked for leaks.
- Regular servicing of the air filter will prevent fouling of the integral flame arrestor. Should the trap become blocked and affect the engine performance, the inlet flame arrestor can be washed in petrol or other suitable solvent, then blown through with compressed air.

Do not attempt to remove the flame arrestor element from the valve. Do not clean the inlet flame arrestor by inserting probes as the fine passages may be enlarged and prevent the flame arrestor function.

When pipework with flanged connections are dismantled, gaskets must be inspected and must be renewed if necessary.

If an explosion occurs in service, the valve must be exchanged for a new component or re-tested.

The valve operating mechanism is manufactured from stainless steel and must not be painted.

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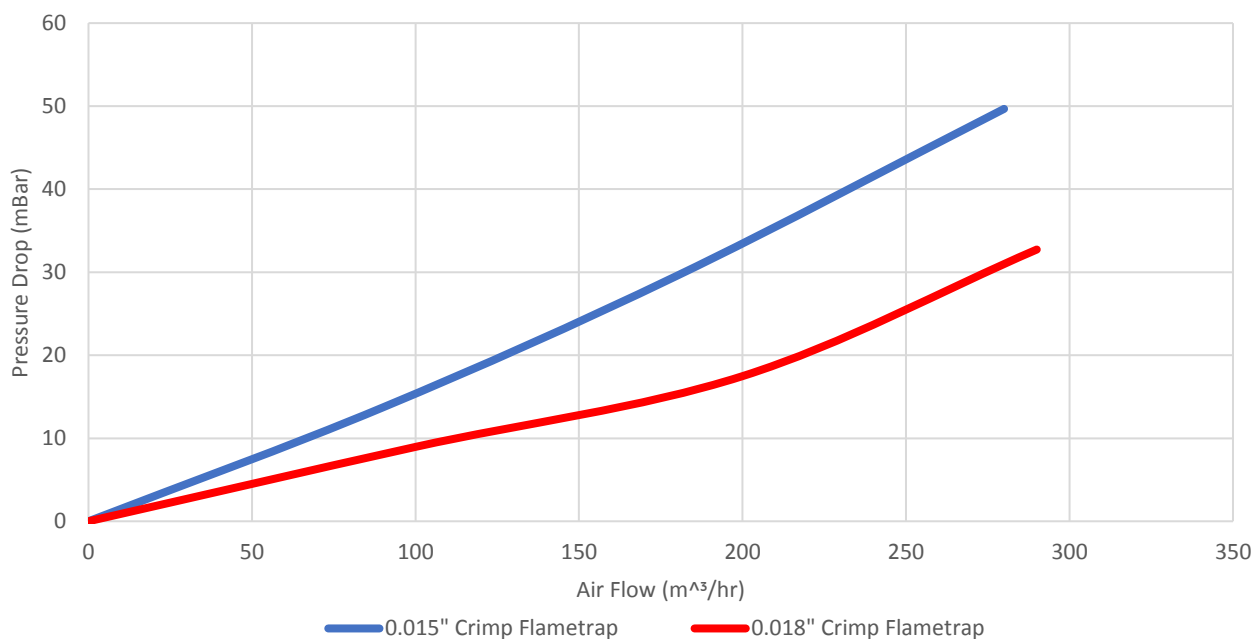
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PRESSURE DROP

Flame Arrestor Pressure Drop



When selecting the SVD Valve, ensure that the maximum intake pressure drop is within the above curve. Allow additional pressure drop for the air filter.

ORDERING SPARE PARTS

Use only genuine Pyroban parts. Order spares or replacement parts directly from Pyroban quoting the Pyroban Part Number. Note that fitting of incorrect parts may invalidate certification.

DISPOSAL

Using information provided in this data sheet advice should be obtained from the waste regulation authority whether special waste regulations apply.

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DECLARATION OF CONFORMITY

We, Pyroban Limited, Dolphin Road, Shoreham-by Sea, Sussex, BN43 6PB, UK, declare that the component mentioned in this data sheet has been designed and manufactured in accordance with the essential health and safety requirements of both EU Directive 2014/34/EU (ATEX) and UK Regulation UKSI 2016:1107 inclusive of subsequent amendments. Compliance with these Directives is established by meeting the technical requirements of the relevant CEN and CENELEC standards.



Dave Waring
Engineering and QHSE Manager

OTHER INFORMATION

Nothing contained in this data sheet is intended to extend any warranty or representation, expressed or implied, regarding the products described herein. Any such warranties or other terms and conditions of sale of products shall be in accordance with Pyroban's standard terms and conditions of sale for such products, which are available upon request. Specifications and machinery may be altered without notice at any time.

CONTACTS

Pyroban Limited
Dolphin Road
Shoreham-by-Sea
W. Sussex
BN43 6PB
United Kingdom

Telephone:

+44 (0) 1273 456800

Email: sales@pyroban.com

parts@pyroban.com

www.pyroban.com