CHALWYN
by AMOT

SVX-Series Solenoid Actuated Diesel Air Shut Down Valves

(Energised to stop types)

Selection, Application and Maintenance

Special Valve SVX-592

This valve is a special version of SVX-590. The general installation instructions given for SVX-590 are applicable.
Note:
The solenoid brown cable is positive and the blue negative

Valve Numbers
SVX-380, SVX-381, SVX-390, SVX-391
SVX-580, SVX-581, SVX-590, SVX-591
SVX-880, SVX-881, SVX-890, SVX-891

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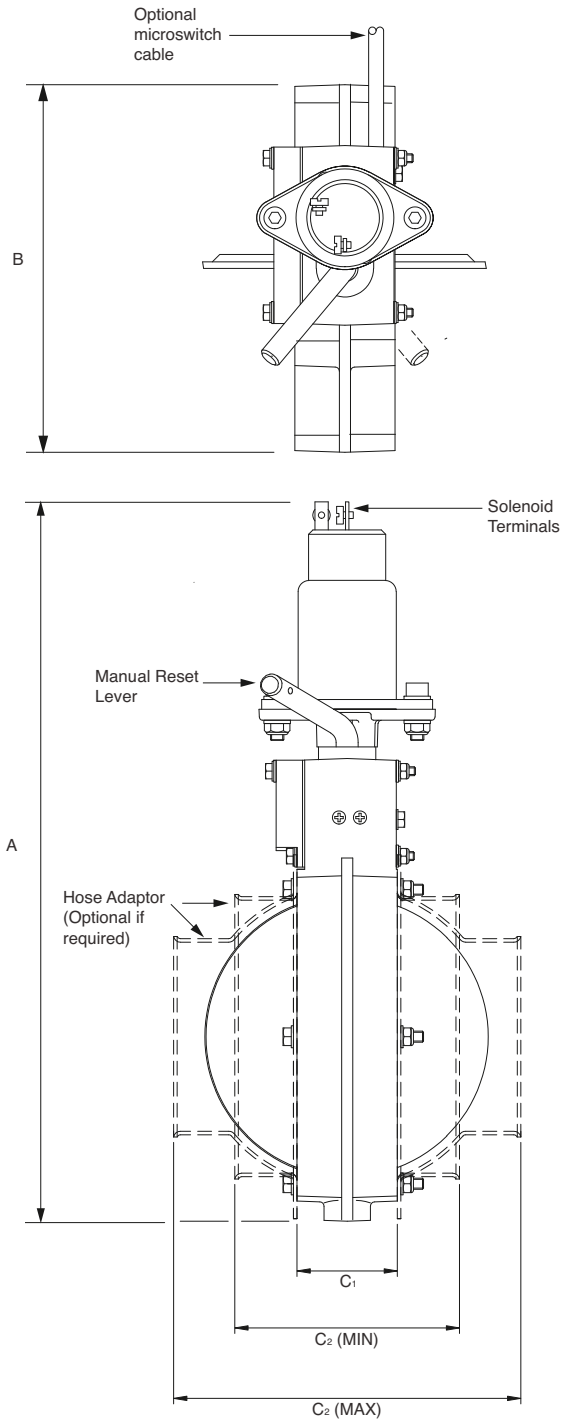
DESCRIPTION

12vdc and 24vdc diesel engine air intake shut down valves designed for mechanical latching in the open (engine run) position and solenoid actuated closure. Based on the standard slimfit Chalwyn 3", 5" and 8" butterfly valves, this product is particularly suited to fire pump and similar applications. It is available in basic flange mounted form or fitted with hose adaptors. Versions with internal microswitches are available to enable status indication. The bodies and discs are manufactured in corrosion resistant hard anodised aluminium with PTFE coating. The spindle and mechanism is made from 316 stainless steel.

Note:
Maximum temperature of the engine intake air at the SVX valve not to exceed 150°C. (See also "Installation" (Mechanical) - See page 4).

Typical Valve Arrangement



Main Dimensions (mm) and Features

Valve Type		Voltage	Nominal Bore Dia.	A	B	C_1	C_2 (min & max)
With Microswitch	Without Microswitch						
SVX-380	SVX-381	12	76 (3")	270	111.5	37.5	82.5 to 112.5
SVX-390	SVX-391	24	76 (3")	270	111.5	37.5	82.5 to 112.5
SVX-580	SVX-581	12	127 (5")	326	167	45.5	102 to 157.5
SVX-590	SVX-591	24	127 (5")	326	167	45.5	102 to 157.5
SVX-880	SVX-881	12	203 (8")	424.5	257	56.0	136.5 to 185.5
SVX-890	SVX-891	24	203 (8")	424.5	257	56.0	136.5 to 185.5

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SELECTION

This valve family is suited to applications where a combination of manual latching to the open (engine run) condition with an electrical signal to close is specified.

Determine the size and position of the SVX valve to be installed. Within the various constraints imposed by the application, the valve should be as generously sized as possible. Check that the valve can be installed such that the electrical cable can be routed away without risk of damage.

Determine voltage of valve required. If a valve status indicator is specified, select a valve with an internal microswitch.

Chalwyn 'X' valves are designed for flange mounting. Alternatively these valves can be supplied with fitted hose adaptors selected from the table below.

Hose Adaptor Options

76mm (3") Bore Valves	
Adaptor Part Number	To Suit Hose Bore mm (inches)
HAX-320	38 (1 1/2)
HAX-322	44.5 (1 3/4)
HAX-301	51 (2)
HAX-302	54 (2 1/8)
HAX-303	57 (2 1/4)
HAX-304	60 (2 3/8)
HAX-305	63.5 (2 1/2)
HAX-306	67 (2 5/8)
HAX-307	70 (2 3/4)
HAX-308	73 (2 7/8)
HAX-309	76 (3)
HAX-312	82.5 (3 1/4)
HAX-314	89 (3 1/2)
HAX-319	102 (4)

127mm (5") Bore Valves	
Adaptor Part Number	To Suit Hose Bore mm (inches)
HAX-501	89 (3 1/2)
HAX-502	92 (3 5/8)
HAX-503	95 (3 3/4)
HAX-504	98 (3 7/8)
HAX-505	102 (4)
HAX-506	105 (4 1/8)
HAX-507	108 (4 1/4)
HAX-508	111 (4 3/8)
HAX-509	114 (4 1/2)
HAX-510	117.5 (4 5/8)
HAX-511	121 (4 3/4)
HAX-512	124 (4 7/8)
HAX-513	127 (5)
HAX-518	140 (5 1/2)
HAX-523	152 (6)

203mm (8") Bore Valves	
Adaptor Part Number	To Suit Hose Bore mm (inches)
HAX-807	178 (7)
HAX-808	203 (8)

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INSTALLATION (MECHANICAL)

1. In the case of a naturally aspirated engine, the Chalwyn SVX shut down valve should generally be fitted as close to the engine air intake manifold as possible. If an air intake flame trap is also fitted, the SVX valve must be installed upstream (air cleaner side) of the flame trap.

2. To avoid excessively high intake air temperature at the SVX valve when fitted to a turbocharged engine, it may be necessary to fit the valve either upstream of the turbocharger or downstream of the intercooler (if fitted). Again, if an air intake flametrap is also fitted, the valve must be installed upstream of the flametrap.

3. Where more than one SVX valve is installed on an engine, as in the case of an engine with multiple intake pipes, the shut down valve control system must be arranged to ensure all valves close simultaneously.

4. This valve may be installed either horizontally or vertically.

5. If hose adaptors are used, the mating hose should be of a reinforced type, provide adequate support for the valve and prevent excessive vibration. If necessary, additional support brackets mounted from the engine should be considered.

6. Particular care must be taken to ensure the integrity of the intake pipework between the Chalwyn valve and intake manifold. Ideally metal pipework should be used and any gaps kept as short as possible, (taking into account any relative movement,) and closed by reinforced hose.

7. Any engine crankcase breather connections into the intake system between the SVX valve and engine, or any internal crankcase breather arrangement venting directly into the engine intake ports must be sealed and replaced by an external breather system venting either to atmosphere or to the intake system upstream of the shut down valve. External breather system kits for various engine types are available from Chalwyn.

INSTALLATION (Electrical)

The actuating solenoid is a two wire type with internal switching from pull to hold current. On supply of power, the full pull current is drawn for less than 1 second before switching to the hold current. Once the valve has closed the power supply to the solenoid can be removed at any time. The valve will not re-open until manually reset.

Electrical Data for the Solenoid

Valve Model	SVX-380 SVX-381 SVX-580 SVX-581 SVX-880 SVX-881	SVX-390 SVX-391 SVX-590 SVX-591 SVX-890 SVX-891
Supply voltage	12 vdc	24 vdc
Pull current	46 amps	25 amps
Hold current	1.1 amps	0.5 amps
Max. length for supply cable (2.5mm^2)	2.7m	10m
Max. length for supply cable (4.0mm^2)	4.2m	16m

Valve models SVX-380, SVX-390, SVX-580, SVX-590, SVX-880 and SVX-890 have a built-in microswitch. This enables an indication of the valve open/close status. The microswitch connections are made as follows:-

Brown : Supply - common
Blue : Makes circuit when valve is closed
Black : Makes circuit when valve is open. (Was yellow/green on early models.)

Maximum rating of microswitch at 12 or 24 volts = 2 amp

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OPERATION

Prior to starting the engine, the SVX valve must be latched open by rotating the manual reset lever clockwise as far as possible. Once latched, the reset lever will remain in the latched open position until released by the action of the solenoid closing the valve. Normal close down of the engine will not cause the valve to shut.

MAINTENANCE

WEEKLY:

Visually check the valve, solenoid and cables for damage or deterioration. Withdraw from service if significant damage or deterioration is observed.

MONTHLY:

Check that the fasteners locating the shut down valve and any associated intake system or support bracket fasteners are securely tightened.

Check that any flexible hoses in the engine intake between the SVX valve and engine are free from damage and suitable for further service.

Run engine, preferably at low idle. Apply the appropriate voltage to the solenoid to close the intake shut down valve. The engine should stop within a few seconds. If not, check there are no leaks in the engine air intake system between the SVX valve and engine. If this does not resolve the problem remove the SVX valve to return to Chalwyn for investigation.

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