

MVX-Series Diesel Engine Air Shut Down Valves

(Cable operated closure/integral reset lever types)

Selection, Application and Maintenance

SPECIAL VALVE MVX-304

This is a special version of valve type MVX-303 but with twin pull cables. The installation and maintenance instructions given for MVX-303 are otherwise generally applicable.

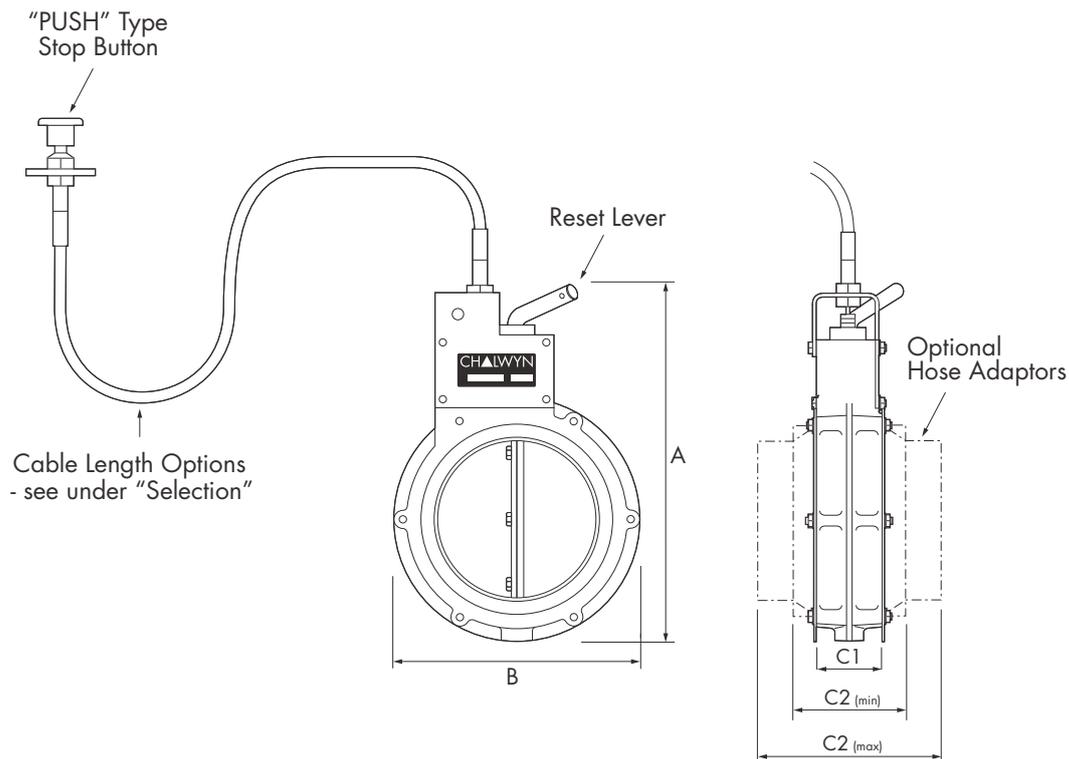
Valve Numbers

| | | |
|---------|---------|---------|
| MVX-301 | MVX-302 | MVX-303 |
| MVX-501 | MVX-502 | MVX-503 |
| MVX-801 | MVX-802 | MVX-803 |

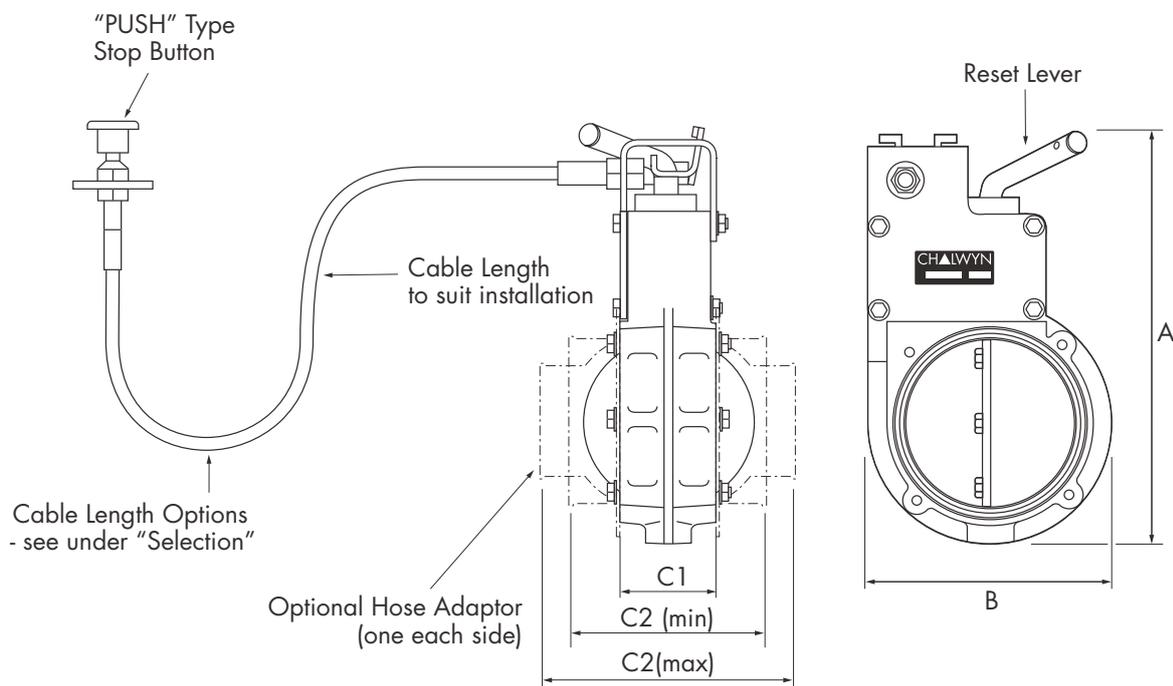
DESCRIPTION

A range of mechanically actuated diesel engine air intake closure valves based on standard Chalwyn 3", 5" and 8" butterfly valves. Suitable for both hazardous and non-hazardous area applications where a cable operated stop control combined with a valve mounted reset lever is required. Available in basic flange mounted form or fitted with hose adaptors or an integral flame trap housing. Body and disc manufactured in corrosion resistant hard anodised aluminium with PTFE coating. Spindle and mechanism made from 316 stainless steel.

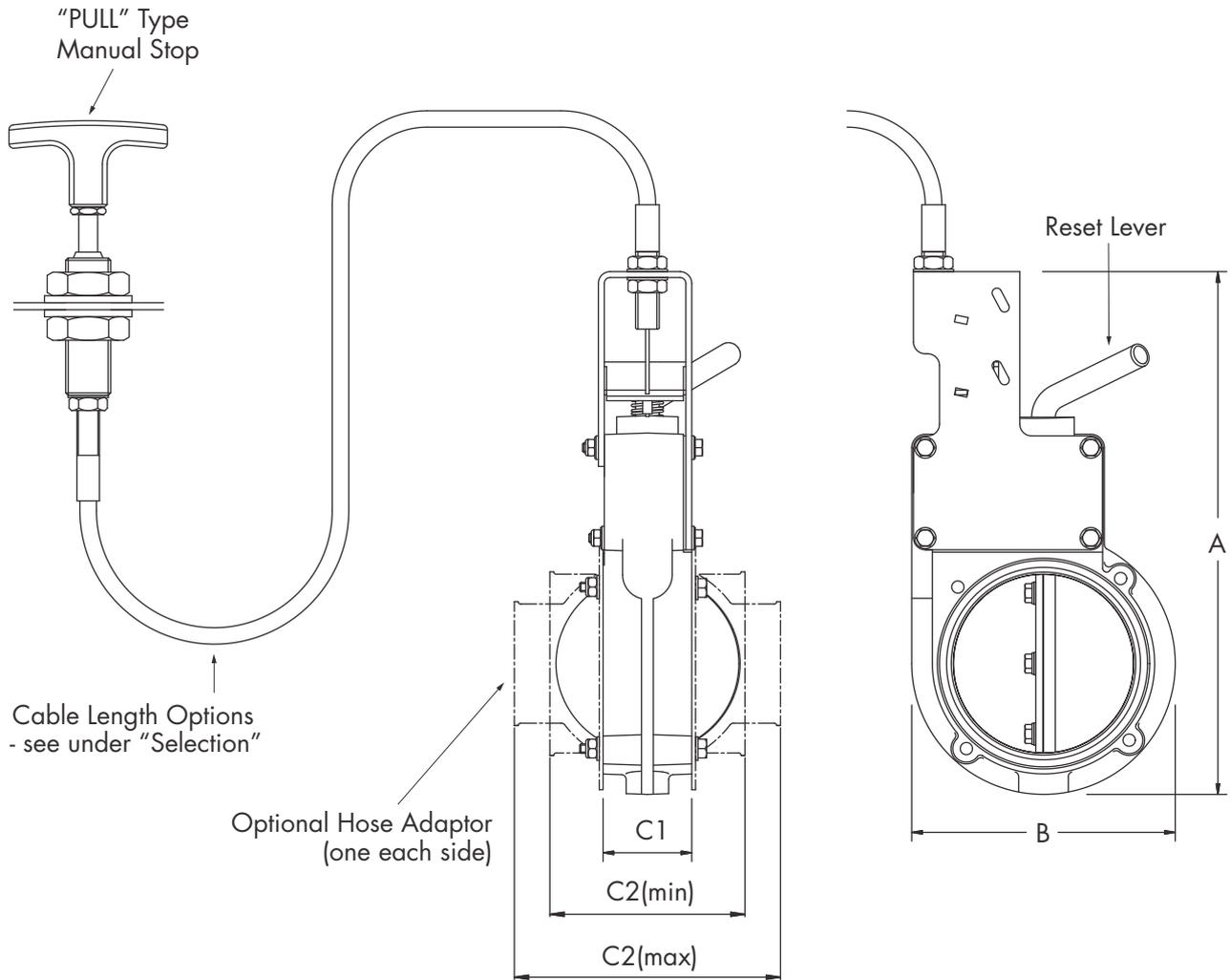
Typical Arrangement: Valve Types MVX-301, MVX-501 and MVX-801



Typical Arrangement: Valve Types MVX-302, MVX-502 and MVX-802



Typical Arrangement: Valve Types MVX-303, MVX-503 and MVX-803



Main Dimensions (mm)

| Valve Types | Nominal Bore Diameter | A | B | C ₁ | C ₂ minimum & maximum |
|-------------------------------|-----------------------|-------------------------|-------|----------------|-------------------------------------|
| MVX-301 MVX-302 MVX-303 | 76 (3") | 190.0 190.0 223.0 | 111.5 | 37.5 | 82.5 to 112.5 |
| MVX-501 MVX-502 MVX-503 | 127 (5") | 246.0 246.0 279.0 | 167.0 | 45.5 | 102.0 to 157.5 |
| MVX-801 MVX-802 MVX-803 | 203 (8") | 346.5 346.5 377.5 | 257.0 | 56.0 | 136.5 to 185.5 |

Note:

Maximum temperature of the engine intake air at the MVX valve not to exceed 150°C. (See also "Installation" - page 5).

SELECTION

Determine the size and position of the MVX 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 positioned such that the reset lever will be easily and safely accessible and that a reasonably straight run is available for the shut down cable. Select the cable length required from the options listed below.

Remote “Push” Button and Cable Assembly Options (to suit valves MVX-301/302, MVX-501/502 or MVX-801/802)

| Assembly part No. | Length (meters) |
|-------------------|-----------------|
| RBC--100 | 1.0 |
| RBC-150 | 1.5 |
| RBC-200 | 2.0 |
| RBC-300 | 3.0 |

Select the required length of the manual shut down cable from the table. Alternative lengths may be available on request.

Cable options for use with “PULL” Handle RTD-100 (To suit valves MVX-303, MVX-503, or MVX-803)

| Cable part No. | Length (meters) |
|----------------|-----------------|
| CLD-100 | 1.0 |
| CLD-150 | 1.5 |
| CLD-200 | 2.0 |
| CLD-300 | 3.0 |

Select the required length of the manual shut down cable from the table. Alternative lengths may be available on request. Also order handle RTD-100.

If the valve is to be fitted into a hose as opposed to flange mounted, suitable hose adaptors may be selected from the table below for ordering with the valve.

Hose Adaptor Options

| 76mm (3") Bore Valves | |
|-----------------------|-------------------------------|
| Adaptor Part Number | To Suit Hose Bore mm (inches) |
| HAX-320 | 38 (1½) |
| HAX-322 | 44.5 (1¾) |
| HAX-301 | 51 (2) |
| HAX-302 | 54 (2 ⅙) |
| HAX-303 | 57 (2 ¼) |
| HAX-304 | 60 (2 ⅜) |
| HAX-305 | 63.5 (2 ½) |
| HAX-306 | 67 (2 ⅝) |
| HAX-307 | 70 (2 ¾) |
| HAX-308 | 73 (2 ⅞) |
| HAX-309 | 76 (3) |
| HAX-312 | 82.5 (3¼) |
| HAX-314 | 89 (3 ½) |
| HAX-319 | 102 (4) |

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

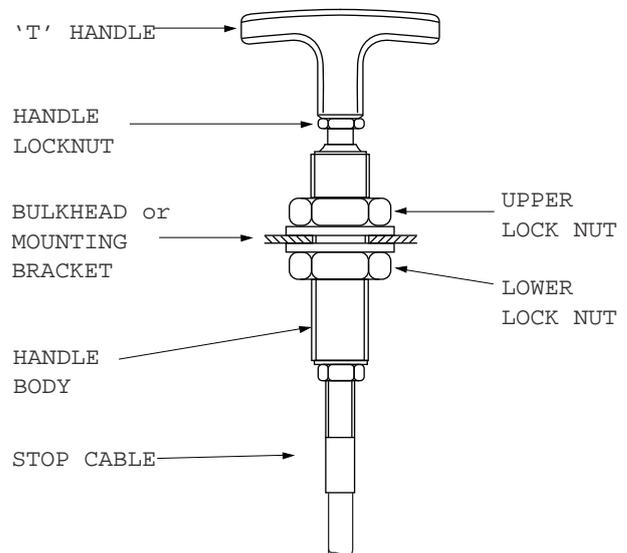
| 127mm (5") Bore Valves | |
|------------------------|-------------------------------|
| Adaptor Part Number | To Suit Hose Bore mm (inches) |
| HAX-501 | 89 (3 ½) |
| HAX-502 | 92 (3 ⅝) |
| HAX-503 | 95 (3 ¾) |
| HAX-504 | 98 (3 ⅞) |
| HAX-505 | 102 (4) |
| HAX-506 | 105 (4 ⅙) |
| HAX-507 | 108 (4 ¼) |
| HAX-508 | 111 (4 ⅜) |
| HAX-509 | 114 (4 ½) |
| HAX-510 | 117.5 (4 ⅝) |
| HAX-511 | 121 (4 ¾) |
| HAX-512 | 124 (4 ⅞) |
| HAX-513 | 127 (5) |
| HAX-518 | 140 (5 ½) |
| HAX-523 | 152 (6) |

INSTALLATION

1. In the case of a naturally aspirated engine, the Chalwyn MVX shut down valve should generally be fitted as close to the engine air intake manifold as possible. If an intake flame trap is also fitted, the MVX valve must be installed upstream (air cleaner side) of the flame trap.
2. To avoid excessively high intake air temperatures at the MVX valve when fitted to a turbocharged engine, it may be necessary to fit the MVX valve either upstream of the turbocharger or downstream of the intercooler (where fitted). Again, if an air intake flametrap is also fitted, the valve must be installed upstream of the flametrap.
3. Where more than one MVX valve is installed on an engine, as in the case of an engine with multiple intake pipes, the shut down valves must be arranged to all close simultaneously.
4. The 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. The possibility of a hose collapse on closure of the shut down valve must be avoided.
7. Any engine crankcase breather connections into the intake system between the MVX 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.

8. For valves with the "pull" handle cable operated manual shut down, fit the 'T' handle assembly RTD-100 through a suitable Ø20mm (3/4"dia) hole in a bulkhead or mounting bracket as follows. Release the handle locknut. Remove the handle, handle locknut and upper locknut and washer. Thread handle body through the bulkhead/bracket. Refit upper locknut and washer. Adjust lower and upper locknuts to position handle and tighten. Refit handle locknut and handle. Tighten locknut.



OPERATION

Prior to starting the diesel engine, the MVX valve must be latched open by rotating the reset lever clockwise as far as possible. Once latched, the reset lever will remain in the latched open position until manually released by the remote stop button.

To carry out an emergency closure of the MVX intake valve to stop the engine, operate the manual stop control. No attempt should then be made to restart the engine until the MVX valve is again latched open.

MAINTENANCE

MONTHLY:

Check that the fasteners locating the MVX valve and any associated intake systems or support bracket fasteners are securely tightened.

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

Run engine, preferably at low idle. Operate the stop button. The engine should stop within a few seconds. If not, check that the shut down cable is properly adjusted and that there are no leaks in the intake system between the MVX valve and the engine. If this does not resolve the problem, remove the MVX valve and return to Chalwyn for further investigation.



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Chalwyn's Quality Management
System is approved by LRQA.

