CHALWYN
by AMOT

Automatic Fuel Shut Down Valves

Selection, Application and Maintenance

Valve Numbers
FSX-200
LST-200

CE226 (9)

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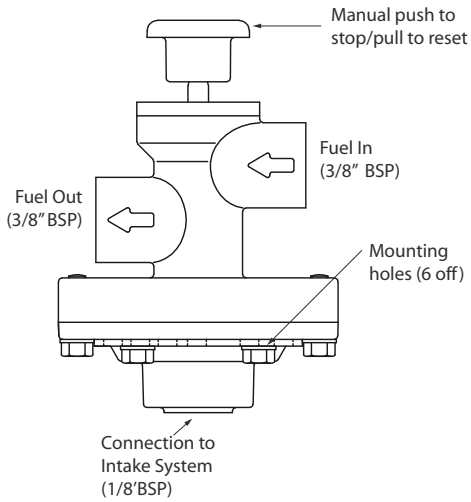
DESCRIPTION

FSX-200

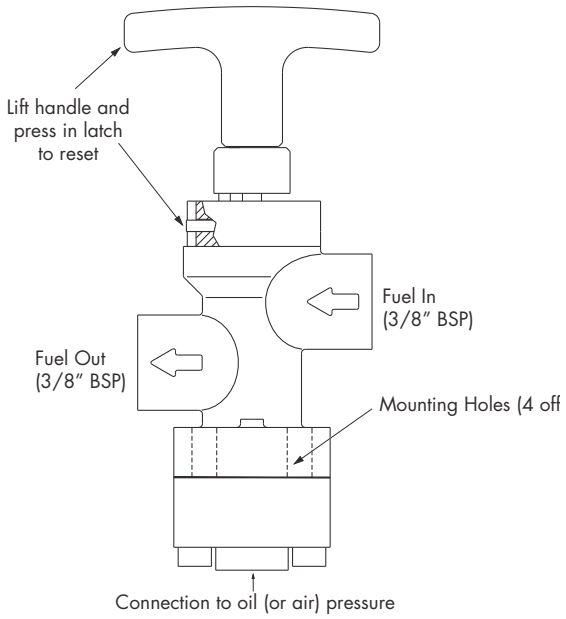
Designed to automatically close on engine overspeed when used in conjunction with an air intake closure valve, the FSX-200 also incorporates a manual shut down push button.



Note. Reset only required after an engine shut down using the air intake shut down valve or after direct manual shut down of the FSX-200.

LST-200

Automatically shuts down the fuel supply on loss of engine lubricating oil pressure (or loss of oil/air pressure signal from an engine shut down control circuit).



Note. The LST-200 normally only requires reset after an engine shut down due to the closure of the LST-200.

IMPORTANT NOTE: Chalwyn Automatic Fuel Shut Down valves are designed to be fitted in addition to the standard engine fuel stop and not to replace it.

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SELECTION

FSX-200

This valve is only suitable for application where it is to be used in conjunction with a Chalwyn 'D', 'Z' or 'X' air intake shut down valve. The FSX-200 is operated by the rapid change in engine air intake pressure caused by air intake valve closure. It will trip even where for any reason the air intake valve does not seal sufficiently well to fully stop the engine. The FSX-200 also incorporates a manual fuel stop button.

LST-200

The LST-200 is suitable for applications where automatic fuel shut down is required on loss of an oil or air pressure signal. This signal may be engine lubricating oil pressure or may be the output from a diesel engine shut down control system comprising sensors monitoring various engine parameters.

INSTALLATION

Install the Chalwyn Engine Fuel Shutdown valve as close as possible to the engine injection pump. Support the valve using the bracket/mounting holes provided.

Note: Fuel system pressure at the point of installation not to exceed 14 bar.

Additional Installation Details for the FSX-200 :-

a) **IMPORTANT.** If this installation is to be carried out on a flame protected engine with an air intake flame trap fitted, ensure the connection into the intake system lies between the intake shut down valve and the intake flametrap. If the connection can only be made on the engine side of the flametrap, ensure that the fittings and pipework are in compliance with flameproof requirements.

b) If a Chalwyn fitting kit for the FSX-200 has been purchased, use the small bore copper tube and compression fittings to connect the fitting at the base of the FSX-200 with the fitting installed in the 'D', 'X' or 'Z' series air intake closure valve. Ensure this connecting pipework is leak free and clamped to avoid excessive vibration.

Note : 'X' Series (butterfly valves) have two possible positions for the fuel shut down adaptor FKX-001. Select the position on the engine side of the valve. Fit blanking plug FKX-002 into the unused position. Ensure adaptor and blanking plug are securely tightened.

c) If the Chalwyn fitting kit has not been purchased, use small diameter (about 1/8" or 3mm bore) metallic pipe and fittings to connect the 1/8" bsp tapping of the FSX-200 to the engine air intake system at a suitable point between the intake shut down valve and the intake ports to the engine cylinder head. Ensure this connection is leak free and that the pipe is suitably clamped to avoid excessive vibration.

Additional Installation Details for the LST-200

a) Valve trip point 0.7 bar (10 psi) falling.

b) Maximum oil/air pressure signal to valve not to exceed 10 bar (145psi).

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OPERATION

To bleed the engine fuel system and/or prior to first start,ensure that the fuel shut down valve has been reset - see diagrams page 2.

FSX-200. First start. Once engine is running, trip the air intake shut down valve. The engine should immediately stop and the stop button on the FSX-200 should automatically retract to the stop position. Once the engine has stopped the FSX-200 may be reset by pulling out the stop button or, alternatively, if left for a few minutes to permit any differential fuel pressure across the fuel valve to fully decay, the FSX-200 will generally automatically reset itself. Note. If the stop button on the FSX-200 is manually operated to stop the engine there may be a delay in action whilst any residual fuel between the FSX-200 and engine is used.

LST-200. First Start. Run up engine. Check that the Reset Latch has moved outwards. Reduce the shut down input signal pressure to below 0.5 bar. Check that the Reset Handle (see page 1) moves inwards towards the valve body and that the engine shuts down within a minute or so (the actual time period to shut down is a function of both the amount of fuel in the pipe between the LST-200 and the engine fuel pump and also the engine speed/load) Reset LST-200.

Note: Chalwyn Fuel Shut Down valves do not require to be reset following a normal engine shut down using the standard engine fuel stop.

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MAINTENANCE

Weekly

Check valve for any sign of fuel leakage from connections, joints or vent. Rectify any leaks.

Three Monthly: FSX-200

a) Stop engine using air intake shut down valve. Engine should stop within a few seconds and the stop button on the FSX-200 should retract to the stop position. Reset the stop button by pulling out.
b) Stop engine using the stop button on the FSX-200. Engine should stop within a maximum of a minute or so (subject to the quantity of useable fuel in the pipe-work between the FSX-200 and engine fuel injection pump).
c) Ensure FSX-200 is reset.

LST-200

a) Reduce the pressure signal input to below 0.7 bar. The engine should stop within a minute or so depending on amount of fuel trapped between valve and fuel injection pump.
b) Reset LST-200

Six Monthly : FSX-200 only

a) Remove the 6 off M5 screws and washers retaining the diaphragm cover. Carefully remove the cover but do not remove the centre nut retaining the diaphragm.
b) Clean cover and orifice.
c) Clean and inspect exposed area of diaphragm and retaining disc. (If diaphragm is damaged withdraw the valve from service and return to Chalwyn for investigation).
d) Refit cover. Carry out checks listed as “three monthly” before returning to service.

General

If the fuel shut down valve fails to operate satisfactorily during above checks, remove valve from service and return it to Chalwyn for investigation.

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