CHALWYN
DIESEL PROTECTION SYSTEMS

Automatic Fuel Shut Down Valves

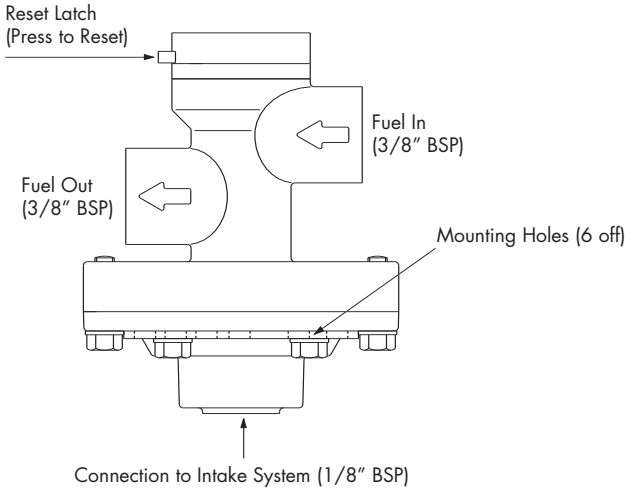
SELECTION, APPLICATION AND MAINTENANCE

Valve Numbers
FSX-100
LST-200

DESCRIPTION

FSX-100

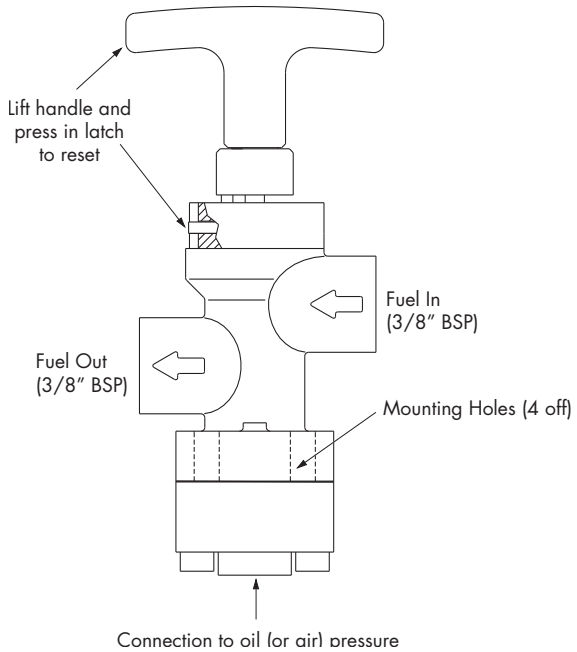
Designed to automatically close on engine overspeed when used in conjunction with an air intake closure valve. It incorporates a manual reset control for use after automatic closure as required by BS EN 1834:2000.



Note. The FSX-100 only requires reset after an engine shut down using the air intake shut down valve.

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.

SELECTION

FSX-100

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-100 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.

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-100 :-

a) **IMPORTANT.** If this installation is to be carried out on a flameprotected 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-100 has been purchased, use the small bore copper tube and compression fittings to connect the fitting at the base of the FSX-100 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-100 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).

OPERATION

To bleed the engine fuel system and/or prior to first start, manually reset the fuel shut down valve (see diagrams - page 1).

FSX-100. Start engine. Run up. Trip the engine air intake shutdown valve. The engine should immediately stop and the FSX-100 should latch in the closed (Reset Latch out) position. Reset FSX-100.

LST-200. Start engine. Run up. 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.

MAINTENANCE

Weekly

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

Three Monthly: FSX-100

a) Stop engine using air intake shut down valve.
b) Check FSX-100 Reset Lever has moved outwards to expose approximately 4mm of the lever, but do not reset.
c) Start engine. Engine should only run for a short period using any residual fuel trapped between the FSX-100 and fuel injectors.
d) Reset FSX-100.

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-100 only

a) Remove the 6 off M5 screws and washers retaining the diaphragm cover. Carefully remove the cover and spring 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 spring and 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.

NOTES:

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