CHALWYN
by AMOT

D-Series Engine Overspeed Shut Down Valves

(Special versions for specific Deutz powered applications)

Installation, Operation and Maintenance

Valve Numbers
D45-F3L
D51-F4L
D51-F4L-AM

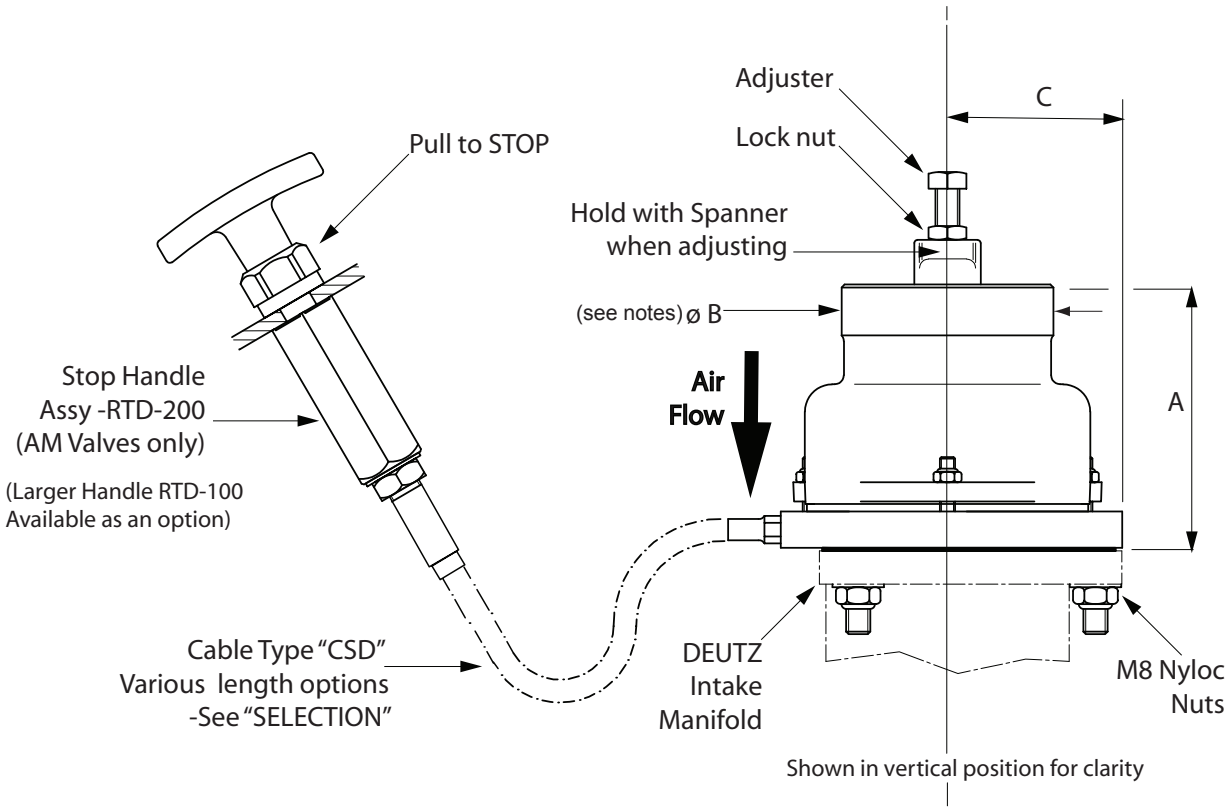
CE246 (4) D45_0909

DESCRIPTION

Custom built versions of the Chalwyn D45 and D51 automatic overspeed shut down valves to suit specific applications of Deutz 1011 and 2011 engine families. Optionally the addition of manual shut down is also available.

The closing force on the valve is provided by the intake air flow passing through. As the air flow increases, the closing force builds up. This is resisted by the valve spring force, the pre-load of which is adjustable such that at a given air flow the resulting force overcomes the spring resistance and causes the valve to close. Once closed the valve will not reset to the open condition until soon after the engine stops.

The basic dimensions for this family of valves are given below.



Valve Type	Auto Overspeed	Auto Overspeed plus manual	A mm	B mm	C mm	WEIGHT (valve only) Kg
D45-F3L	✓		77.5	70	55.5	0.6
D51-F4L	✓		87	70	57.75	0.7
D51-F4L-AM		✓	87	70	57.75	0.7

Notes:

* For basic D45, D51, D45-AM and D51-AM valve data see Chalwyn Publications CE204 and CE207.
* Dimension Ø B conforms to the standard Deutz intake hose bore.

T: +44 (0)1284 715739
sales@chalwyn.co.uk

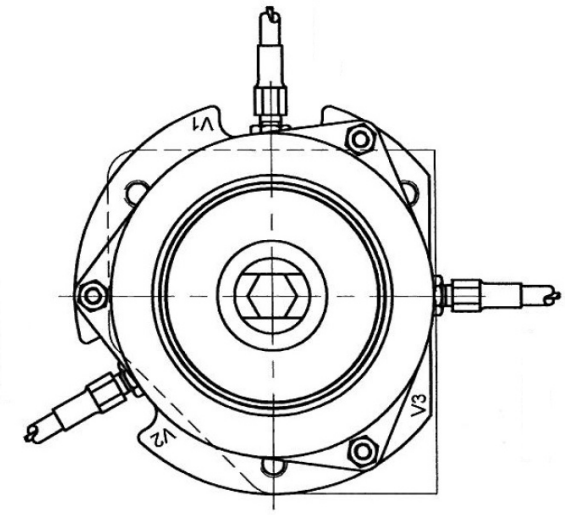
SELECTION

These custom built valves are suitable for Deutz naturally aspirated engines in the power band ranges given below.

Valve type	Engine power at rated Speed hp	Engine power at rated Speed Kw
D45-F3L	10 to 50	7.5 to 38
D51-F4L	20 to 72	15 to 54

For assistance in selecting the correct variant of these valve types please contact your Chalwyn Distributor or the Chalwyn Sales Office in the U.K.

D51-F4L-AM showing choice of cable attachment positions



Valve type	Cable connection orientation
D51-F4L-AMV1	Top central
D51-F4L-AMV2	Left lower
D51-F4L-AMV3	Right central

Select the required length of the manual shut down cable (where applicable) from the selection chart across. Alternative lengths may be available on request.

Select RTD-100 on RTD-200 T handle before ordering.

Cable Part Number	Length (Metres)
CSD-100	**1.0**
CSD-150	**1.5**
CSD-200	**2.0**
CSD-300	**3.0**

Important Note.
Where incorporated the Chalwyn valve manual shut down is intended for emergency use and for system checking only. ALWAYS retain the engine fuel stop system for routine engine shut down.

T: +44 (0)1284 715739
sales@chalwyn.co.uk

FITTING

1. The auto/manual versions of the valve are supplied complete with the manual stop handle and cable fitted and adjusted. Do not separate the cable from handle or valve during fitting.

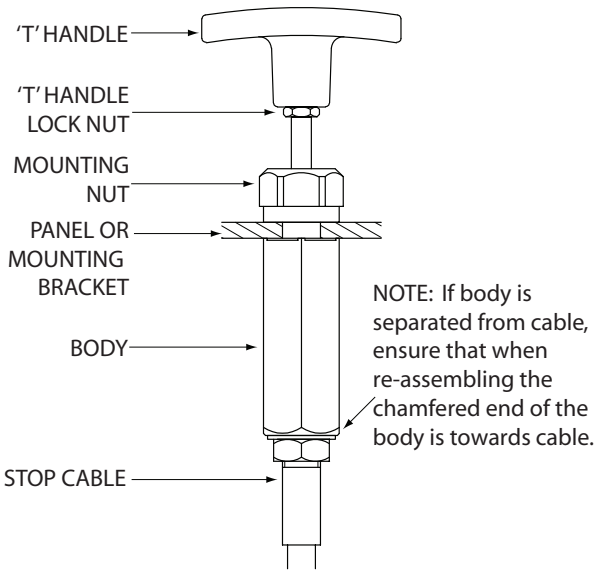
2. These special Chalwyn intake shut down valves are designed for fitting directly to the existing Deutz intake manifold. The existing Deutz gasket is to be reused. Obtain a replacement if the existing gasket is damaged or otherwise not fit for further service.

3. Connect the engine air cleaner to the inlet end of the Chalwyn valve using suitable hose. Ensure that this connection has sufficient flexibility to allow for relative movement between the Chalwyn valve and air cleaner.

4. Disconnect from the intake manifold any crankcase breather system pipework and securely plug the tapping into the manifold. Reconnect the breather pipe to the intake system between the intake air cleaner and the Chalwyn valve.

5. Where applicable, fit the manual shut down lever assembly by preparing either a Ø10mm (3/8") hole for the standard RTD-200 handle or a Ø20mm (3/4") hole for the optional RTD-100 handle, in the panel/bracket to which it is mounted.
   - Release the handle lock nut.
   - Remove the handle, handle lock nut and mounting nut.
   - Offer up the RTD-200 body to the back face of the panel/bracket allowing the internal rod of the RTD-200 to project through the prepared hole.
   - Refit the mounting nut and fully tighten.
   - Refit handle lock nut winding as far as possible onto the threaded rod.
   - Refit handle winding hard down onto the lock nut and then tightening lock nut onto the handle. Note during this operation the handle and lock nut will need to be held out against the valve spring return load.

Handle assembly type RTD-200



T: +44 (0)1284 715739
sales@chalwyn.co.uk

ADJUSTMENT

Once the Chalwyn valve is installed, adjustment of the overspeed trip setting is carried out using the adjuster and lock nut (refer to diagram). Basically rotating the adjuster clockwise will increase the engine speed at which automatic shut down occurs.

As supplied, the valve will be adjusted such that shut down will generally occur well below the engine high idle speed. To increase the speed at which automatic shut down occurs, proceed as follows:

1. In the case of valves fitted with manual shut down, check that the manual shut down control is in the run condition i.e. the 'T' handle is pushed inward.

2. Start engine. Slowly accelerate. Note speed at which shut down occurs.

3. Remove hose at **air inlet** to Chalwyn valve to expose the adjuster and lock nut (see diagram).

4. Release lock nut. Turn adjuster clockwise one turn. Tighten lock nut.

5. Refit inlet hose to valve.

6. Start engine. Slowly accelerate. Note speed at which shut down occurs.

7. Repeat steps '**3**' to '**6**' until the first setting at which the engine does not shut down at high idle speed (i.e. full throttle, no load). Then either:

a) Use the results of shut down speed versus adjuster setting as a calibration check to make a final adjustment to give the required setting (typically 10% to 15% over high idle).

or

b) If a very precise setting is not required, turn the adjuster a further one turn clockwise to take the shut down above high idle speed by a suitable margin. When using this setting procedure it may be found that the engine occasionally shuts down during the normal operation. If so, turn the adjuster clockwise by a further one half turn.

8. Ensure the adjuster lock nut is fully tightened. (Use a thread lock adhesive on the lock nut threads).

Note:

Jammed Valve
If in the course of adjusting a valve it jams on its seat, release by turning **CLOCKWISE** viewed from adjuster end.

T: +44 (0)1284 715739
sales@chalwyn.co.uk

MAINTENANCE

Daily: Valves with a manual shut down feature. Once a day check engine stops satisfactorily when the manual stop is operated.

Three Monthly:

1. Disconnect intake pipework. Release three M8 Nyloc nuts to remove the valve from the intake manifold. Take care not to damage the Deutz gasket between valve and intake manifold. (Note, if this gasket is not suitable for further service obtain a replacement before re-fitting the valve.)

2. Inspect the valve internally for cleanliness. If necessary, clean in paraffin or white spirit taking normal precautions. Dry the valve thoroughly.

3. Check there is no excessive wear and that the valve moves smoothly over its complete operating stroke. **DO NOT LUBRICATE.**

4. Refit valve. Check valve setting based on the “Adjustment” instructions given herein.

5. In the case of valves with a manual shut down control, run the engine at medium speed and then pull the manual stop handle. The engine should come to a complete stop within a few seconds.

Important Notes:
The three monthly routine maintenance period requirement is dependent on the operating conditions to which the equipment is exposed and, by experience, may need to be varied.

Any maintenance problems not covered by the routine maintenance schedule should be discussed with your Chalwyn Distributor before any repair work is undertaken

T: +44 (0)1284 715739
sales@chalwyn.co.uk

NOTES:

T: +44 (0)1284 715739
sales@chalwyn.co.uk

Chalwyn by AMOT
sales@chalwyn.co.uk
www.chalwyn.com

A division of Roper Industries Limited

UK
Western Way
Bury St Edmunds
Suffolk, IP33 3SZ
Tel: +44 (0)1284 715739
Fax: +44 (0)1284 715747

USA
8824 Fallbrook Drive
Houston
TX 77064
Tel: +1 (281) 940 1800
Fax: +1 (713) 559 9419

Canada
3230 - 97 Street
Edmonton,
Alberta, T6N 1K4
Tel: +1 (780) 465 4429
Fax: +1 (780) 469 6275