

DCE 100 Series Dust Filter



IMPORTANT

PLEASE READ THIS MANUAL CAREFULLY BEFORE INSTALLATION

EXPLANATION OF SYMBOLS USED



Indicates information on the efficient operation of the collector.



Indicates important information directed towards preventing damage.







Indicates an important warning, designed to prevent injury or extensive damage.

DCE 100 Series Dust Filter

IMPORTANT

These details correspond to the Serial no. nameplate fitted to the equipment to which this Manual refers

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Donaldson Dust Collection Group	
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○ 2017D (EUR)	3339-8006C ○

INTRODUCTION

The DCE 100 series is a compact, cost-effective dust filter, ideal for venting small volumes of dust-laden air on bins, hoppers and vessels on conveying and material handling systems. With a main body manufactured from 304L stainless steel as standard, it is a much better alternative to a sock filter and ensures compliance with the relevant health and safety and CoSHH legislation.

The small circular footprint of the DCE 100 series means it can be optimally positioned on the vessel and, due to its compact design, the venting filter installs readily where headroom is restricted.

When working under normal operating conditions, the dust filter can handle 200-400m³/h of air (depending on unit size and filtration velocity). The fan type unit is rated up to 225m³/h at 50mm w.g. Under full flow conditions, the sound pressure level is a respectable 79dB(A) for the fan type unit. Measurements were taken under semi-reverberant conditions 1 metre from the front of the dust filter.

INSTALLATION

Mounting onto vessel

In order to mount the DCE 100 dust filter onto the vessel, it will be necessary to cut a 295 diameter hole and appropriate fixings on a 345 PCD (refer to Figs. 1 and 2). Prior to mounting, a continuous sealing strip or suitable sealant should be applied to the underside of the body flange to ensure that the joint between the dust filter and the vessel is sealed.



Ensure that dust filter is secure. Bolt in position before opening lid or hinging fan box, as the unit will become unstable.



On fan type units, during maintenance of the diaphragm valve and pilot valve, it is recommended to reposition the locking handwheels to support the manifold after it has been pivoted.



When closing the lid, keep fingers well clear to avoid trapping them between the lid and unit.

Pressure relief

A suitably sized pressure relief valve set at 4.2 bar (60 psig) should be fitted to protect the cleaning system.

Compressed air requirements

DCE 100 Series dust filters require an independent supply of clean, dry compressed air. Details of recommended pressure and air consumption requirements are given in table 1.

A design label is attached to each manifold.

In order to ensure the correct air pressure is maintained, a gauge and moisture separator/pressure regulator should be fitted in the line to the filter.

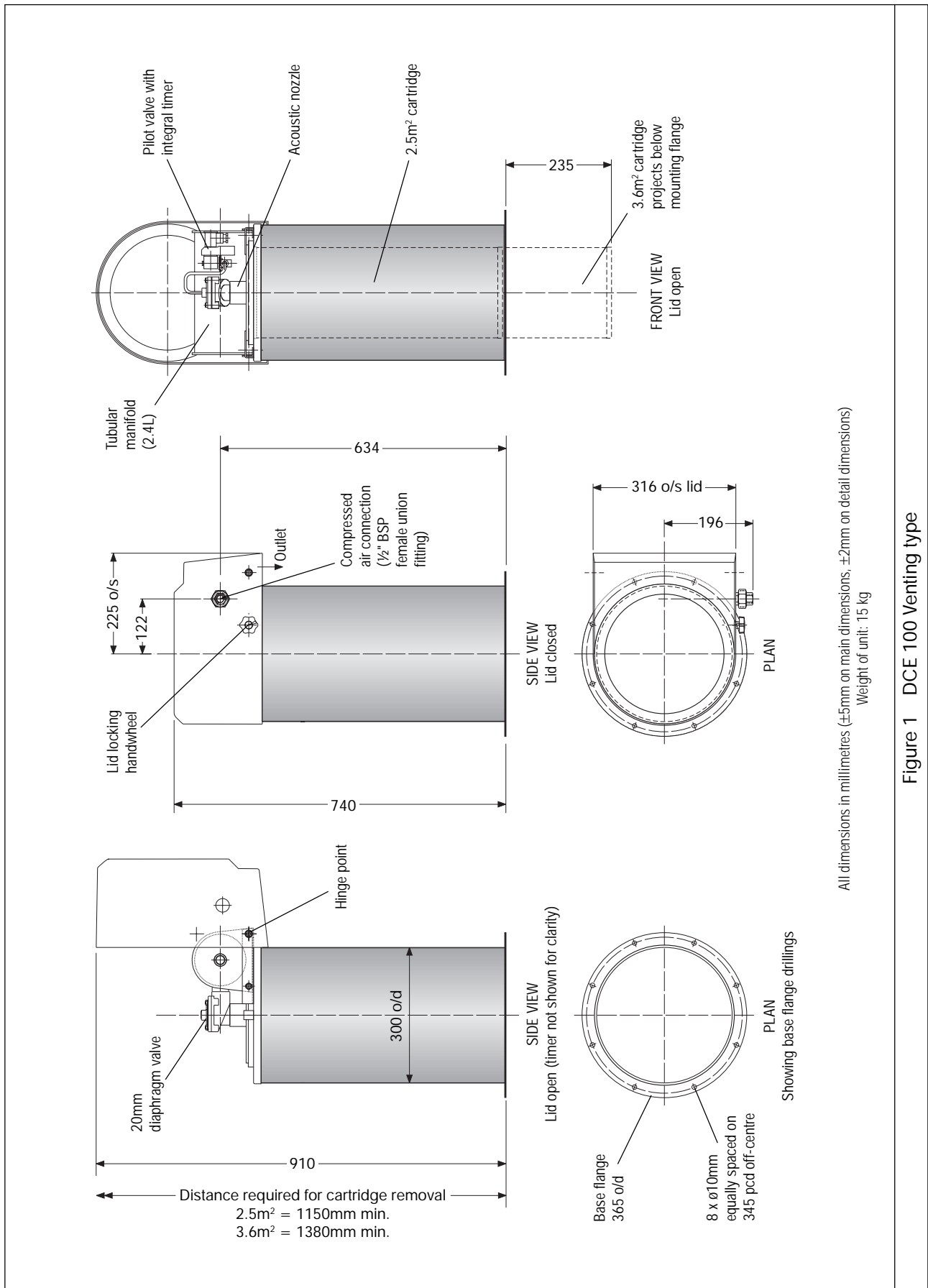
Maximum Operating Pressure: 3.4 bar (50 psi)

Product of Pressure x Volume: 10.1 bar litres

TABLE 1 — COMPRESSED AIR CONSUMPTION

Working compressed air pressure	2.8 bar (40 psig)
Atmospheric air volume – FAD at 12 sec. intervals	1.6m ³ /hr (0.9 cfm)
Pulse duration (fixed)	200 ms
Minimum pipe diameter:	
Flexible connection (typical length 1m)	¼" NB (6)
Rigid pipe run (max. length 30m)	½" NB (12)

DCE 100 Series Dust Filter



All dimensions in millimetres (±5mm on main dimensions, ±2mm on detail dimensions)
Weight of unit: 15 kg

Figure 1 DCE 100 Venting type

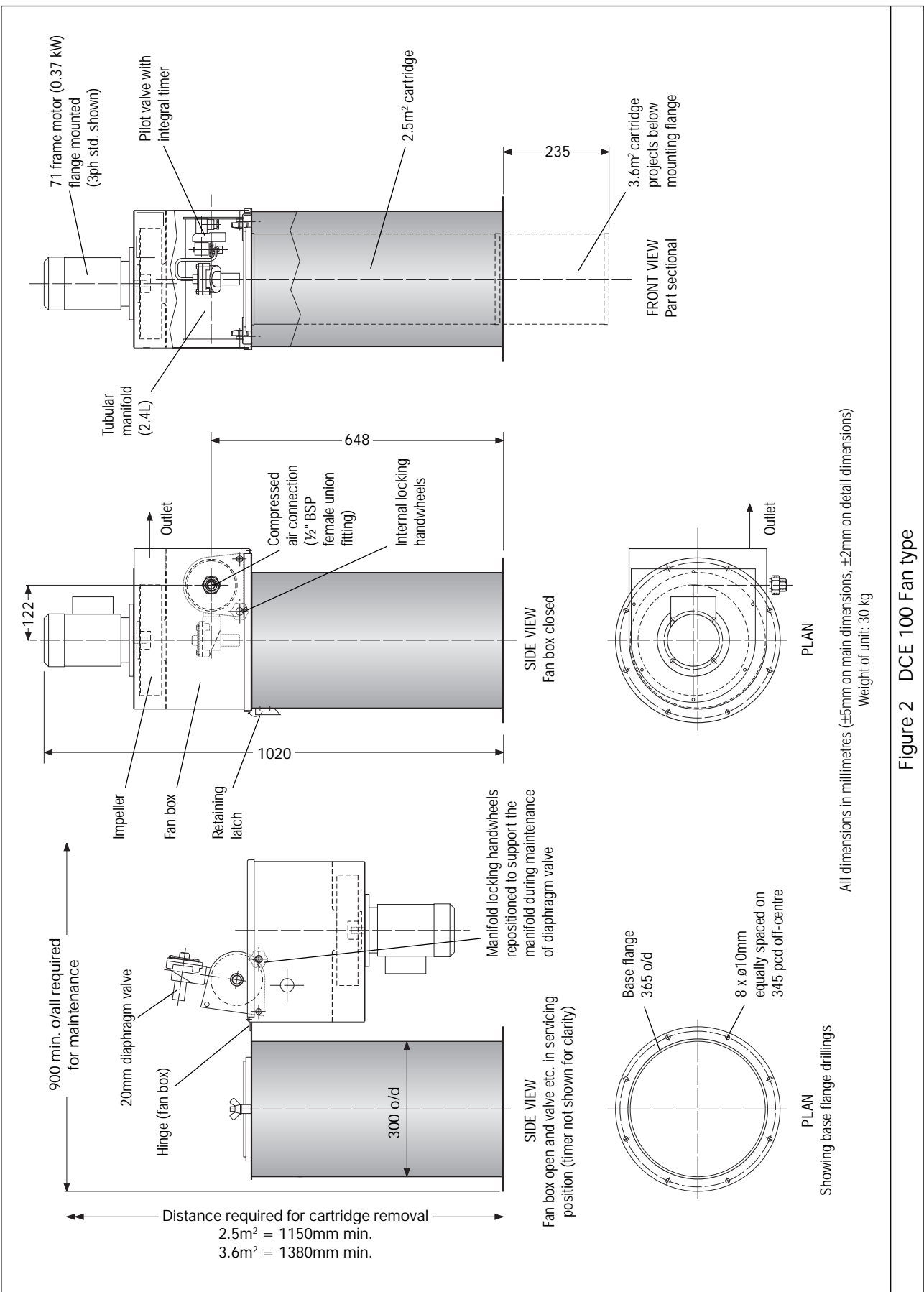


Figure 2 DCE 100 Fan type

DCE 100 Series Dust Filter

SPECIFICATIONS

Electrical details



It is a requirement of the Supply of Machinery (Safety) Regulations 1992 to provide adequate isolation and emergency stop facilities. Due to the varied nature of site installations this cannot be provided by Torit DCE but instead is the responsibility of the customer.



All electrical work should be carried out by competent personnel.



On outside installations, always isolate power before opening the controller in wet weather conditions.

Pulse timer – voltage inputs

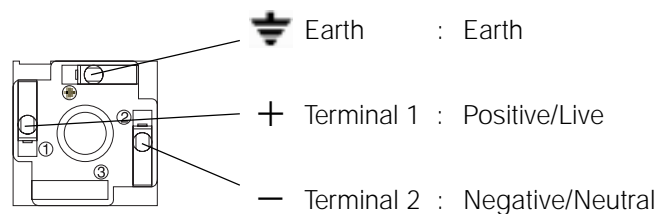
Units can be supplied with various coils (see spares lists for available voltage ranges, items 22A to 22J).

Pulse timer – power requirements

AC version: 15VA (incoming supply fuse 1A)

DC version: 15W (incoming supply fuse 1A)

Connect DIN connector (located on timer assembly) as follows:



Fan Motor

For non-standard motors (i.e. IP65 & alternative voltages) consult Torit DCE. Refer to motor label for connection details (normally located in terminal box lid).

A direct-on-line starter is required for the fan type unit. Refer to table below for overload and cable sizing.

Standard motors		Suitable for voltage ranges
3 phase		220-240V & 380-420V, 50 Hz 200-250V & 380-500V, 60 Hz
1 phase	50 Hz 60 Hz	220-240V, 50 Hz 220-240V, 60 Hz

Fan motor (0.37 kW)	Motor current	Fuse rating	
		HRC amp rating	Fuse wire amp rating
Three phase (400V)	0.92 amp	4 amp	8 amp
Single phase (230V)	3.2 amp	10 amp	16 amp

SPECIFICATIONS

Cartridge Information

The Torit DCE pleated anti-static cartridge is manufactured to high tolerances from spun-bonded polyester material. This incorporates wide pleats to ensure efficient dust cake release. The cartridge locates through a hole in the seal frame, a sealing ring being clamped between cartridge flange and seal frame, producing a dust tight seal. To maintain true anti-static features connection should be made to the unit holding down bolts.



To remove the cartridge it is necessary to open the lid, so allowances should be made for flexible connections to electrical and compressed air supplies.

Fan Performance (50Hz & 60Hz designs available)

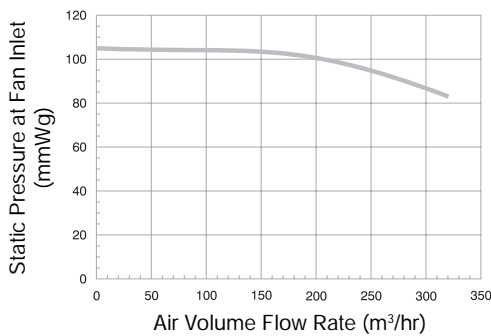


TABLE 4 — SOUND PRESSURE LEVELS

	Fan SPL (L _{EPd})
DCE 125B & 136B	N/A
DCE 125F & 136F	79 dB(A)

TABLE 5 — DESIGN LIMITS

Temperature range	-10°C to +60°C
Pressure range	-200mm WG to +200mm WG



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