



CS TOWER.

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

English

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2. ELECTRICAL SAFETY

Electrical Supply and Wiring to the Air Curtain

All electrical wiring and connections **MUST** be carried out by a competent qualified electrician in accordance with the latest edition of IEE wiring regulations and local statutory regulations if applicable.

Please, refer to Wiring Diagrams for connecting electrical supply and control cables to the air curtain in the CS cold store installation manual included in the package of the unit/s supplied.

3 SPECIFICATIONS

Air Curtain/s Configuration	Electrical Supply (V/ph/Hz)	Total Rated Power Input max(kW)	Total Current per phase max (A)	Structure Weight (kg)
Top unit: CS max 1000 Bottom unit: CS max 2000	Not available*			
Top unit: CS max 1500 Bottom unit: CS max 2000	Not available*			
Top unit: CS max 2000 Bottom unit: CS max 2000	230/1/50 230/1/50	0.82 0.82	3.5 3.5	200 200

Table 1

* Configuration only available upon request.

4. INTRODUCTION

Established in the 1960s, Thermoscreens is a leading air curtain manufacturer that exports to over 60 countries worldwide.

As with all our products, the CS Tower for CS coldstore max range of air curtains is designed with safety in mind.

The CS Tower is designed to be anchored to the concrete floor inside coldstore facilities, positioned vertically and as close to the door opening as possible.

Please complete the following details for your reference:

Date of Purchase

Place of Purchase

Serial Number

Proof of purchase is required to make a claim under warranty.

Please ensure that the content of this document is thoroughly followed as any deviation in the installation from the recommended installation may invalidate any warranty claim.



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5. DELIVERY CONTENTS

The following items are supplied in the package at delivery.

NOTE: If any parts are missing or damaged contact your place of purchase.

Air Curtain + Vertical Platform Modules



Other content included if ordered

JTL box
Monitoring Cabinet

Wall brackets and fixings



4 off Wall Brackets
6 off M10 x 30 Hex Bolts
6 off M10 Serrated Flange Nut
2 off M10 x 70 threaded bar
12 off M12x65mm Hex Bolt.

Components not included

M12 Floor Anchor bolts.
M10 Wall fixings for Wall brackets
securing
Drilling template
Liftings Brackets

6. TOOLS REQUIRED

The following tools are required for installation:

- Flat blade screwdrivers
- Pozi head screwdrivers
- 10mm spanner
- Adjustable spanner
- 17mm socket set and spanner
- 19mm socket set and spanner
- Allen Key Set
- SDS drill
- Ladders
- Scissor Lift
- Appropriate lifting equipment: Fork lift or similar

7. SAFETY NOTICE

Read all instructions before commencing assembly and ensure all personnel involved in assembly are trained and competent. Ensure the following is observed during installation:

- This is a two-person minimum operation for safe handling.
- Do not attempt assembly with damaged or missing components
- Ensure usage of correct Personal Protective Equipment (PPE) during the installation of this vertical platform system.
- Use mechanical lifting equipment for all vertical movements
- Check load capacity of all equipment before use
- Never exceed safe working load limits
- Clear the work area of personnel not involved in the lift
- Keep hands and fingers clear of moving parts and connections
- Always use a calibrated torque wrench
- Under-tightening can lead to structural failure
- Over-tightening can strip threads and damage components

8. TORQUE SETTINGS

For all carbon steel bolts used in this assembly (Grade 8.8) follow the recommended Standard Metric Fasteners Torque Values as indicated in the ISO 898

Bolt Size	Dry (Nm)	Lubricated (Nm)
M8	20 Nm	17 Nm
M10	40 Nm	34 Nm
M12	70 Nm	60 Nm

9. INSTALLATION

The CS Tower should be mounted vertically by a doorway of a cold store facility and as close to the wall as it is possible. It should not be built-in or recessed in any way.

Pre-Assembly Checks

Before commencing on-site assembly, the floor surface must be inspected for level, cracks, or any other defects. It is essential to confirm that the floor can support the design load — if there is any doubt, this must be referred to a structural engineer before proceeding. All components received on site should be checked against the packing list to confirm that nothing is missing, and each section must be inspected for any damage that may have occurred during shipping. All fasteners should also be verified as present and in good condition.

Site Preparation

Step 1: Prepare Floor and Drill Holes

Begin by placing the base plate template (not provided) in its intended position and use it to mark the locations of the anchor holes on the floor. Once marked, clean the area thoroughly with a brush to remove any dust or debris that may have accumulated. Using a rotary hammer drill fitted with an SDS-plus bit, drill each hole to a minimum depth of 90mm, as required for the M12 RawlBolt anchor or M12 resin studs. The installer must select the fixing method best suited to the floor type present at the coldstore to ensure the firmest possible connection.

Take care throughout this process to ensure that all holes are drilled perpendicular to the floor surface.

Step 2: Clean Drilled Holes

Once drilling is complete, it is essential that each hole is thoroughly cleared of drilling dust before the anchors are inserted. Using a manual blow pump, blow out each hole and repeat this process a minimum of four times per hole. This step must not be rushed or skipped — any debris remaining in the hole will directly reduce the holding capacity of the anchor.

Step 3: Insert RawlBolt Anchors / resin studs

Begin by removing the pre-assembled bolt and washer from the anchor kit. Insert the shield anchor into the prepared hole, then tap it gently into place using a rubber mallet until it sits flush with the floor surface. It is important to use only light, controlled taps throughout this process — over-striking the anchor must be avoided.

Where resin studs are used in place of mechanical anchors, inject the resin cartridge into the prepared hole, filling it to approximately two-thirds of its depth. Immediately insert the threaded stud with a slow, twisting motion to ensure even distribution of the resin and to eliminate any air pockets. The stud must then be held or supported in the correct position and left completely undisturbed for the full curing time specified by the resin manufacturer — this will vary depending on the product used and the ambient temperature on site. Under no circumstances should any

load be applied to the stud before curing is complete, as this will compromise the integrity of the fixing. Once fully cured, verify that the stud is firmly set before proceeding. Using a hacksaw carefully cut the projecting bolt flush with the nut, ensuring the base plate is not damaged or marked in any way.

CS Tower Installation

Step 1. Install Base Section

Identify the unit labelled as “bottom unit”. Ensure the base section is received on site via forklift or manual lifting as appropriate and positioned directly above the prepared anchors. Ensure the vertical platform module is fitted so the countersunk bolts are on the floor side. The section is then lowered carefully until the anchor holes align with the bolts. With the anchors in position, place a washer over the threaded portion of each anchor and lower the base plate onto the anchor bolts. Follow either method described in pages 9-10 for handling the base section.

Hand-tighten all bolts until they are firmly seated, then use a calibrated torque wrench to tighten each bolt to the specified torque of 50 Nm, tightening them in a cross-pattern, working diagonally to ensure even loading across the base plate. All bolts must be marked with a paint pen immediately after torquing.



Remove 4 off M12 bolts fitted on the top plate (only fitted in the factory for safe transportation. Only M8 locating screws are to be in place when the second unit is fitted on top.



Method 1: Forklift Transport (Standard Method)

The forklift used must have a minimum capacity of 1,000 kg and be capable of lifting to a height of 4.7 metres. The forklift lifting brackets only supplied upon request with the units should be fitted to the top of the base section assembly and secured using M12 bolts and nuts. Before proceeding with the lift, confirm that the forklift forks fit smoothly into the bracket pockets and that the work area has been cleared of all personnel. The base section should then be lifted to the required height, positioned directly above the prepared anchor locations, and lowered carefully until it sits on the floor anchors. Bolts must be secured immediately upon lowering. The entire process is then repeated in a similar fashion for the top section. Following each lift, all fasteners must be checked to confirm they remain tight, paint marks must be verified as unbroken, and the bracket should be inspected for any visible signs of damage.



Method 2: Alternative — Manual Lifting with Eye Bolts & Slings

⚠ This method requires trained lifting personnel and properly rated rigging equipment.

Four M12 eye bolts, each rated to a minimum of 1,000 kg, should be fitted to each hole in the corners of the top plate. Chain slings or webbing straps of suitable rating are then attached to

the eye bolts using properly rated shackles, and a spreader bar must be fitted to the slings to prevent any pinching or damage to the structure. None of these elements are supplied with the units; it is the installer's responsibility to ensure they are available on site at the time of installation. The entire process is then repeated in a similar fashion for the top section. Following each lift, all fasteners must be checked to confirm they remain tight, paint marks must be verified as unbroken, and the bracket should be inspected for any visible signs of damage.

Once connected to the crane or lifting hoist, a slow test lift of 5–10 cm must be performed and held before proceeding to the full lift. The section is then raised smoothly to the required height, positioned above the mounting point, and lowered carefully onto the floor anchors. Lifting slings must remain in place and must not be removed until the anchor bolts have been fully secured.

Step 2. Stack Top Section

Remove 4 off M12 bolts fitted on the base plate (only fitted in the factory for safe transportation. Only M8 locating screws are to be in place when the second unit is fitted on top.



The appropriate lifting method is prepared for the top section - follow either method described in pages 9-10 for handling the top section -, which is then raised and positioned above the base section with the base plates aligned. The section must be lowered gently and alignment confirmed before any fasteners are secured.

Step 3. Final Assembly & Security

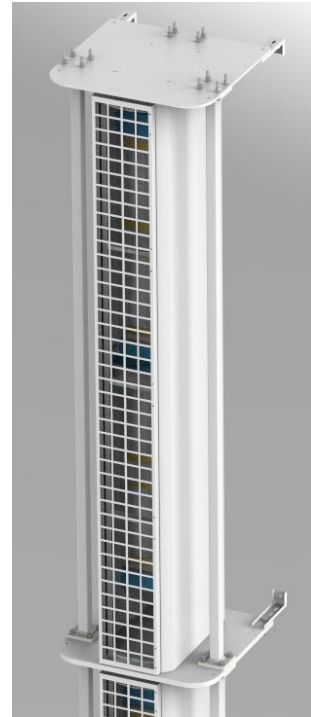
With both sections in position, the lifting brackets are removed from the top section and the connecting fasteners inserted through the beams at the middle and top joints. All beam connectors must be torqued to specification, and all anchor bolts checked and re-torqued if necessary. Paint marks on all critical fasteners must be refreshed, and a thorough final visual inspection carried out across the entire assembly.



The wall brackets should then be loosely fitted to the corner holes in the top plates using the M10 bolts provided, positioning them against the wall but leaving them free to move at this stage. With the brackets held in place, the fixing hole locations can be transferred accurately onto the wall surface and marked for drilling. The method of fixing to the wall is left to the installer's discretion and must be selected based on the specific site conditions and wall construction — no wall fixings are supplied with this unit.

Once the appropriate fixing method has been determined, the wall should be prepared accordingly, whether that involves drilling and cleaning holes for anchor bolts or resin studs, or any other preparation required by the chosen fixing system. With the wall fully prepared, the wall brackets can be brought to their final position and the fixings installed. All bolts should be tightened in accordance with the requirements of the fixing system selected and the bracket manufacturer's specification.

The completed installation must be documented with photographs, and all records filed in the maintenance logbook.



CRITICAL: Anchor Bolt Inspection Protocol

All anchor bolts must be subjected to a monthly inspection without exception. During each inspection, the paint marks applied at installation should be examined closely — any misalignment, offset, or break in the mark is a clear indication that the bolt has moved and must be addressed immediately.

Any bolt found to have loosened must be re-torqued to 50 Nm without delay, and the paint mark must be refreshed following re-torquing. All inspections, along with any re-torquing work carried out, must be fully documented. Should any bolt require re-torquing on more than two occasions, this is an indication that an underlying issue may be present, and further investigation must be undertaken.

10. MULTIPLE CS SYSTEMS INSTALLATION

To Master/Slave two or more CS air curtains together, ensure the site has been provided with a monitoring cabinet so both units receive the control signal simultaneously.

The maximum height for a vertical stack is 4.6 m (CS2000 +CS2000 vertical).

Ensure all incoming electrical mains supply cables are suitable for the total power rating of the air curtain stack.

11. COMMISSIONING THE SYSTEM

11.1 Verify system operation

To commission the system, verify the following conditions are met:

- Both units installed have been commissioned as instructed by the commissioning document for a single air curtain.
- All CS Tower fasteners have been torqued to the torque indicated in the section “Torque Settings”. Even if a fixing assembly has been sent from factory and remained untouched during the installation process, ensure they have been torqued and marked as their tightness might have been compromised by an incorrect handling during transportation.

11.2 Instruct customer and hand over

Before leaving site, hand over the installation to the customer/end user or their representative.

Explain that any person operating the air curtain must be given supervision and instruction by the person responsible for their safety, concerning the safe use of the unit and to understand any hazards involved. Children and those with reduced physical, sensory or mental capabilities should not operate the air curtain.

Recommend that the doorway should be closed whenever possible but that during times of high pedestrian use it will become an ‘open doorway’. The air curtain then serves an essential purpose by saving energy and providing comfort to occupants.

Explain that the inlet grilles must be cleaned regularly and the unit serviced at schedule intervals – see section 14: Service & Maintenance.

NOTE: Leave these instructions with the customer/end user or their representative!!

12. SIGN OFF

Complete the following once commissioning is completed:

Installer signature		Customer signature	
Installer name		Customer name	
Installer company		Customer company	
Date		Date	

13. FAULT CONDITIONS

In the event of abnormalities in the performance of the air curtains which could impact in the integrity of the CS Tower, ensure that both units have been disconnected from the mains and call the technical team for further investigation.

Fault conditions troubleshooting

Issue	Likely Cause	Solution
Platform is not level	Uneven floor or incorrect anchor depth	Use shims under base plate; re-level with spirit level
Bolts are loose (paint marks offset)	Vibration or impact; under-tightening	Re-torque to 50 Nm; refresh marks. If recurring, investigate cause
Bolt cannot be tightened beyond 30 Nm	Stripped thread or anchor shield failure	Remove bolt; inspect thread. Replace if damaged. Re-install new anchor
Drilling creates dust/no anchor engagement	Hole not cleaned; debris in hole	Remove anchor; re-clean hole with blow pump 4+ times; re-insert
Visible corrosion on fasteners	Moisture or salt exposure; zinc plating failure	Clean with wire brush; apply corrosion inhibitor. Replace if severely corroded
Cracks visible in concrete around anchors	Concrete failure or overload	STOP USE. Contact structural engineer immediately
Top section misaligned with base section	Improper lowering during assembly	Lift section with proper equipment; carefully re-position and lower

14. SERVICE & MAINTENANCE

WARNING: Failure to adequately maintain the units and provide a suitable cleaning schedule will result in a loss of performance and reduced life expectancy of the air-curtain.

Every week

Apart from the weekly maintenance indicated for the individual air curtains as instructed by the CS coldstore manual supplied, ensure the following:

- Visual inspection of floor anchor bolts torque marks remain unchanged.
- Visual inspection of the wall brackets firmly secure to the wall.
- Check for any visible movement or displacement

Every 2 months

WARNING: Before servicing, isolate and disconnect the air curtain from the electrical power.

WARNING: The following servicing and maintenance must be carried out by a competent electrician or a Thermoscreens appointed technician. Operator must be trained on working at heights.

Apart from the 2 to 3 month maintenance indicate for the individual air curtains as instructed by the CS coldstore manual supplied, ensure the following:

- Using M12 torque wrench ensure all four floor anchor bolts are secured to the torque specified in the section "Torque settings" .
- Using an M10 torque wrench ensure all the bolts used to secure the wall brackets are tighten to the torque specified in the section "Torque Settings". Also ensure integrity of the way of fixing the wall brackets to the wall.
- Inspect full integrity of the CS Tower structure.

Reconnect electrical supply and test to ensure correct operation (see Section 16: Commissioning).

15. WARRANTY

All units are covered by a two year warranty.

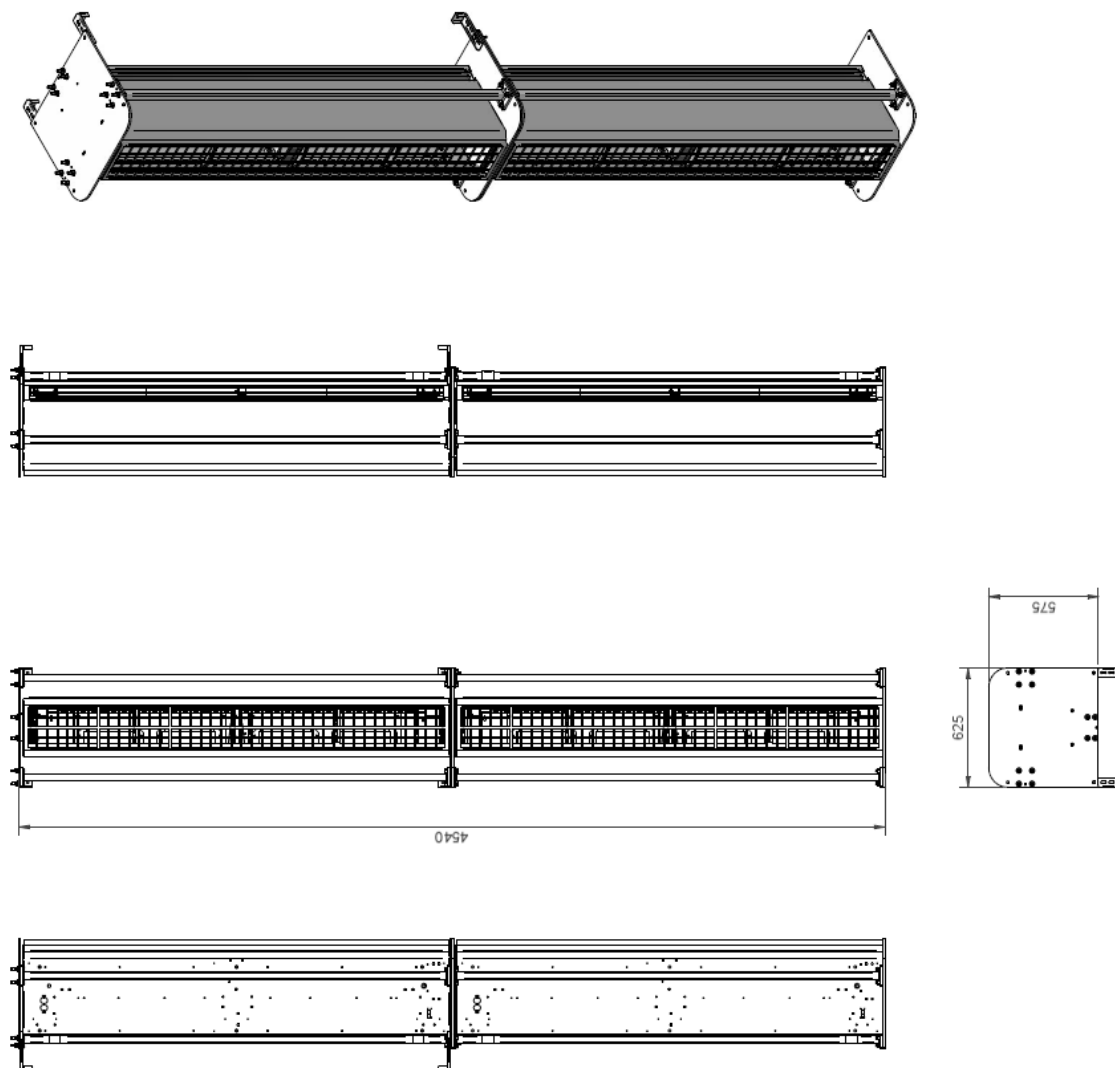
Failure to adequately maintain the unit may void the warranty. If any problems are encountered, please contact your installer/supplier.

Failing this please contact the Thermoscreens warranty department.

Care has been taken in compiling these instructions to ensure they are correct. Thermoscreens Ltd. disclaims all liability for damage resulting from any inaccuracies and/or deficiencies in this documentation. Thermoscreens Ltd. retain the right to change the specifications stated in these instructions.

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APPENDIX A — DIMENSIONS OF CS 2000 + CS 2000 Configuration