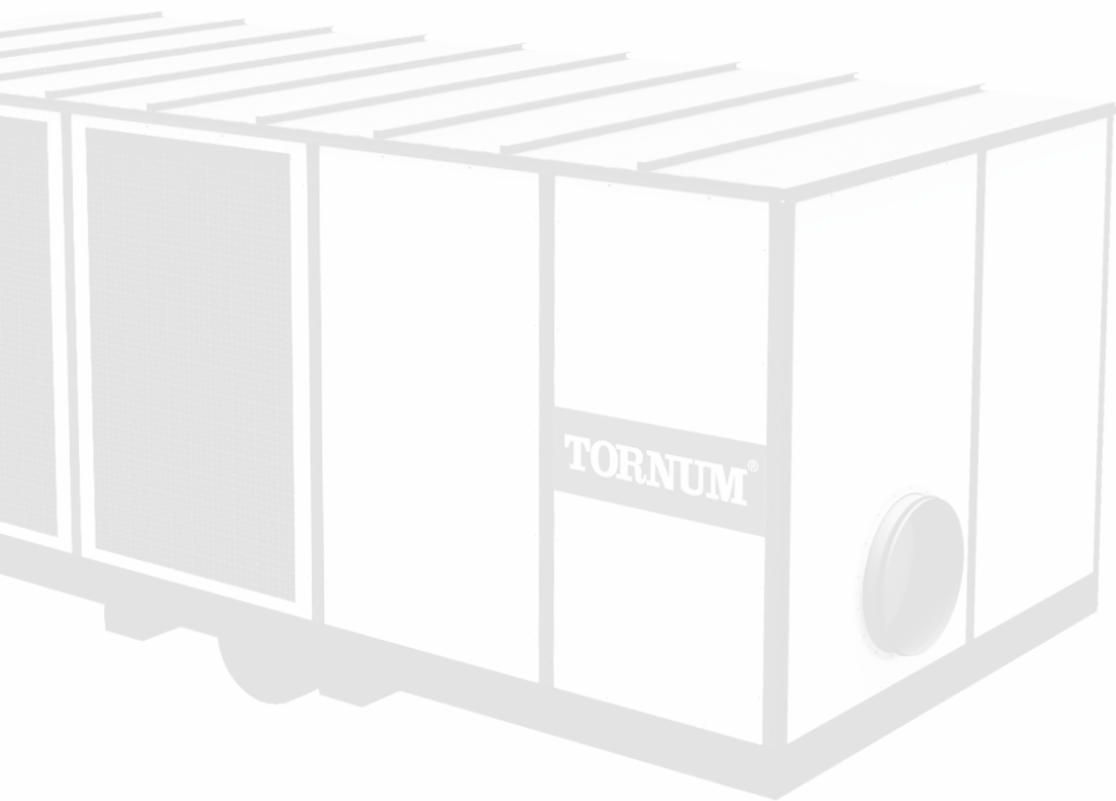
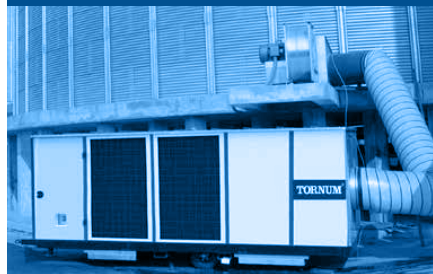


Tropical Grain Cooler TGC-H



**SOLUTIONS FOR
THE WORLD'S
MOST IMPORTANT
BUSINESS**



**Optimizes grain
quality control**

**Always safe storage
conditions**

**Built for hot and
humid environments**



TORNUM[®]

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Heat is grain's mortal enemy

AS GRAIN BREATHEs, it loses both weight and value. Mould, fungi and insects can develop quickly if the grain is not stored under the correct conditions.

With a Tornum Tropical Grain Cooler you control both the temperature and the relative humidity of the cooled air, regardless of ambient conditions – eliminating the need for toxic chemicals to protect your grain from insect damage.

ECO-FRIENDLY REFRIGERATION

The refrigerant system used in our Tropical Grain Cooler is a state-of-the-art indirect cooling system that uses 80 percent less ecological refrigerant compared to traditional systems. This is achieved by cooling water which is pumped through a cooling coil, which in turn cools the air flowing through.

As grain is hygroscopic, the relative humidity of the cooled air must be controlled prior to entering into the grain mass. That is why the cooled air also passes through a re-heating coil, to balance the humidity levels to the grain being chilled. This requires no added energy, since excess heat from the refrigeration system is used for this process.

The cooling process is fully automatic and controlled through a PC system which is programmed to handle all types of grain.



Tornum Tropical Grain Cooler

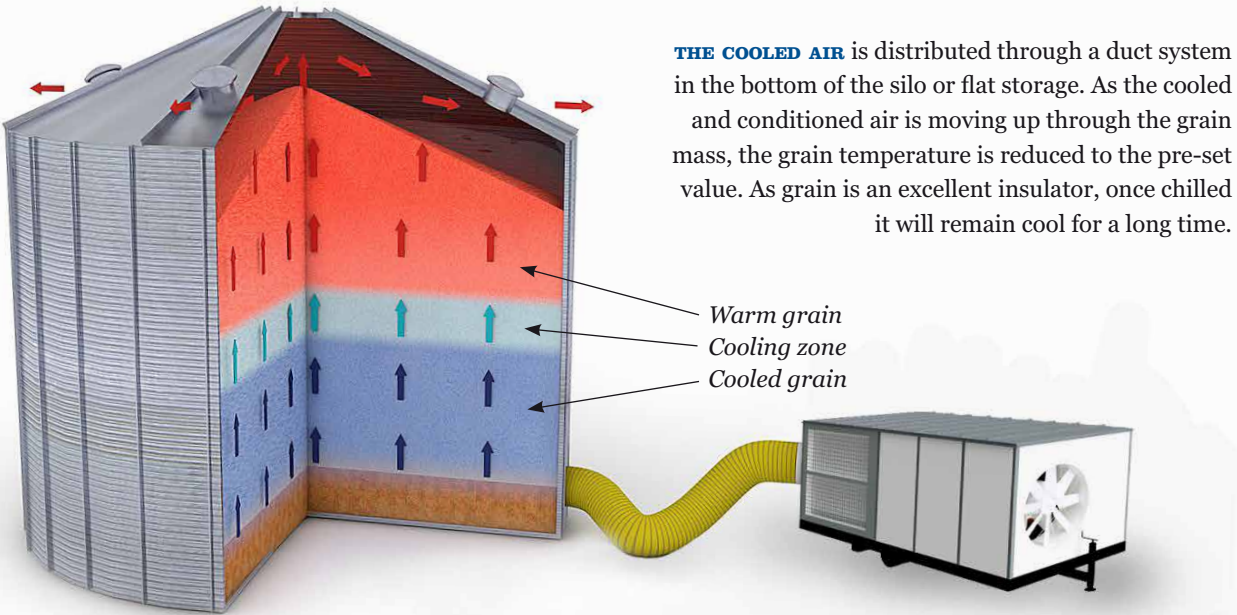
– ECO-FRIENDLY, ECONOMICAL AND PRACTICAL

SIMPLY STATED, GRAIN IS our food. By using our Tropical Grain Cooler, you can make sure it is treated the way it deserves. Grain is also a living material and has to be handled accordingly. A Tornum Grain Cooler accomplishes what nature cannot always provide – a safe storage temperature regardless of the ambient conditions.

Controlling the temperature in your grain storage is the natural way of preserving the grain and optimizing its quality. Our truly eco-friendly system uses 80 percent less ecological refrigerant compared to traditional systems. Among the many advantages of using our Tropical Grain Cooler you will find:

- OPTIMUM PROPERTIES IN THE COOLED AIR
- AUTOMATICALLY ADJUSTS TO AMBIENT CONDITIONS
- ALWAYS SAFE STORAGE CONDITIONS
- ELIMINATES THE NEED FOR INSECTICIDES
- COOLING ADDS TO DRYING EFFECT – EVERY 10 °C/18 °F OF TEMPERATURE REDUCTION = UP TO 0.75 % DRYING
- COMPLETE CONTROL – WHEREVER YOU ARE
- LOW COST OF OPERATION

Cooling in a silo



THE COOLED AIR is distributed through a duct system in the bottom of the silo or flat storage. As the cooled and conditioned air is moving up through the grain mass, the grain temperature is reduced to the pre-set value. As grain is an excellent insulator, once chilled it will remain cool for a long time.

Warm grain
Cooling zone
Cooled grain

Adjustable draw bar with parking support.



The robust enclosure has been designed to withstand many years of heavy duty industrial use.



Control cabinet with touch-screen terminal, prepared for connection to the internet.



Ø 500 mm air outlet.



Easy overview anywhere

THE COOLER LOCATION must have a mobile connection to the internet, alternatively via Ethernet cable and TCP. No apps are needed, just a standard web browser such as Chrome or Firefox. The screen provides a clear view of the cooling process, with all important data visualized.

When connected this way, you have full control over the cooling process – wherever you are.

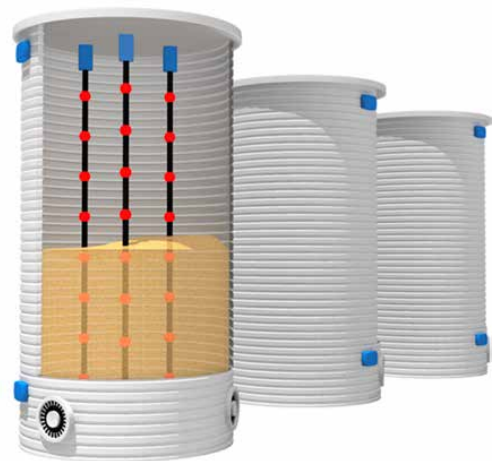


Optional equipment

SEVERAL TYPES of optional equipment that will enhance the functionality of your grain cooler are available – see our website, www.tornum.com, or ask your nearest representative. These are just a couple of the options available:

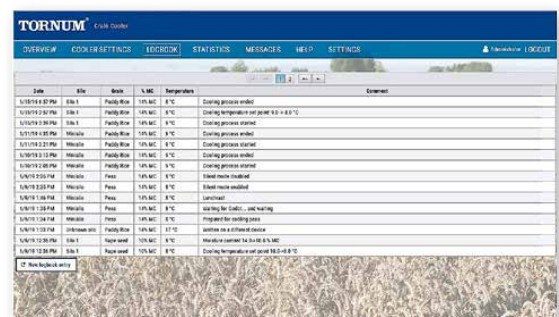
STORAGE TEMPERATURE MEASURING

The machine displays the cooling progress in the storage space using installed temperature cables (see image above), including estimated remaining cooling time. *Please note: temperature sensing cables must be provided and installed by the customer.*



AUTOMATIC LOG BOOK

This function automatically saves and displays all events when changing grain type or moisture content and temperature settings as well as start and stop times. This data is shown in the log book under the Statistics tab. The latest changes are also displayed on the terminal.



Technical data

MODEL	TGC-H 1	TGC-H 2	TGC-H 3			
Nominal compressor cooling capacity at +40 °C/104 °F condensing temperature, 10° C/50 °F evaporating temperature	192 kW 655,100 btu/h	260 kW 887,100 btu/h	297 kW 1,013,400 btu/h			
Power Nominal input power Maximum input power Minimum main fuse, 400 V	71 kW 95 kW 200 A	86 kW 109 kW 250 A	108 kW 133 kW 250 A			
Cooling capacity at different compressor capacities Temperature cooling range	Airflow m³/h	Capacity tons/day	Airflow m³/h	Capacity tons/day	Airflow m³/h	Capacity tons/day
From 30 °C @ 65 % Rh to 10 °C	12,632	379	17,105	513	19,539	586
From 35 °C @ 65 % Rh to 10 °C	8,754	263	11,854	356	13,541	406
From 40 °C @ 65 % Rh to 10 °C	6,351	191	8,600	258	9,824	295
From 30 °C @ 65 % Rh to 15 °C	17,455	524	23,636	709	27,000	810
From 35 °C @ 65 % Rh to 15 °C	10,827	325	14,662	440	16,748	502
From 40 °C @ 65 % Rh to 15 °C	7,375	221	9,987	300	11,408	342
Weight (kg/lbs)	5,000/11,000	5,600/12,350	On request			
Maximum transportation speed (km/h/mpH)	5/3	5/3	5/3			

The capacities are valid for an air requirement of 800 m³/ton, your values may vary. Capacity is affected by type of grain, temperature, moisture content, type of storage, storage height, pressure drop in aeration systems and different ambient conditions.

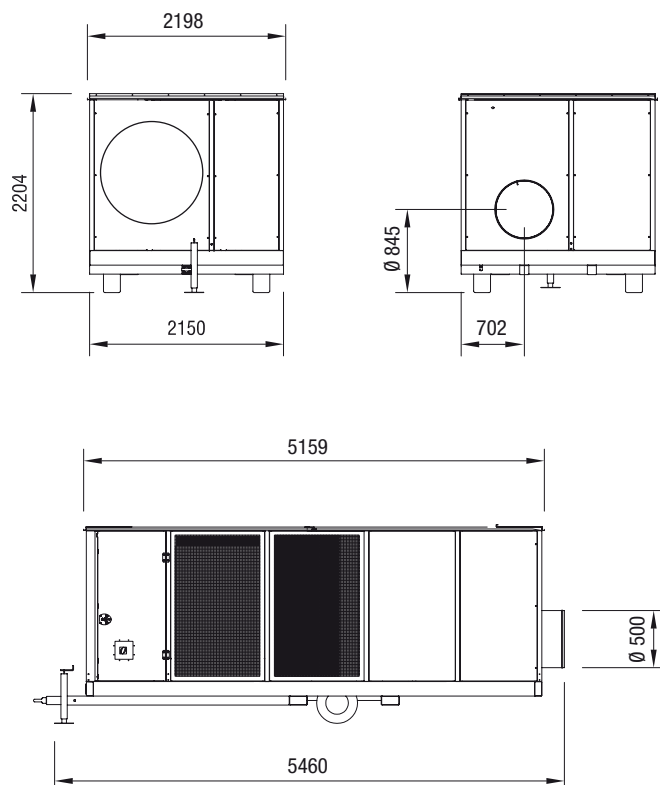
A compact, mobile solution

TORNUM TROPICAL GRAIN COOLERS are designed to work in high ambient temperature conditions. They are fully computerized and ready for immediate use, once connected to the main power supply. The units are fully mobile and come with an external temperature sensor and a 5 metre flexible hose for connection to the storage aeration system.

As an option, the cooler can be connected to temperature cables in the storage. Depending on the type of temperature cables used, automatic stop of the cooler according to set temperature levels is possible.

Tornum Grain Coolers can be shipped in a 20 ft standard container.

Dimensions in millimetres, model shown TGC-H 1 and 2.



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DUE TO PRODUCT DEVELOPMENT, WE RESERVE THE RIGHT TO MAKE ALTERATIONS WITHOUT PRIOR NOTICE.