FRIGOR TEC

GRANIFRIGOR®	KK 35 AH with Hygrotherm®	KK 70 AH with Hygrotherm®	K
Cooling performance in 24 hours [1] [2] [t/day]	**35 – 65**	**65 – 120**	
Chilled air flow rate [m³/h]			
at static counter-pressure / unit characteristic			
1.000 Pa (approx. 100 mm WC)	2.240	4.000	
2.000 Pa (approx. 200 mm WC)	1.430	3.200	
3.000 Pa (approx. 300 mm WC)	–	2.200	
4.000 Pa (approx. 400 mm WC)	–	–	
Refrigerating capacity compressor [kW]			
at +30 °C condensation temperature			
and 0 °C evaporation temperature	9,6	15,6	
Total power consumption (average value) [kW]	**5,0**	**8,0**	
Total max. power and current consumption [kW/A]	7 / 15	11 / 23	
Electrical connection [4] [A]	16	35	
Connection cold air hose Ø [mm]	200	300	
Condensation water runoff average [l/h]	5	8	
Condensation water runoff hose Ø [inch]	1/2	1/2	
Dimensions [mm] / **weight** [kg]			
with tyres	3.405 x 1.300 x 1.865 / 511	3.555 x 1.300 x 1.885 / 559	
with swivelling casters	2.055 x 860 x 1.565 / 438	2.330 x 860 x 1.680 / 520	

All specifications are valid for 400 V-3 Ph-50 Hz

[1] Grain cooling to 10 °C

[2] At an average outside temperature (day's median) of 20 °C, an average relative air humidity (outside air) of 52 %, and an average grain moisture of 16 % up to maximum capacity under favourable conditions and at 1000 Pa counter pressure.

[3] incl. heat register

[4] acc. CEE

Subject to technical change.

K 140 AHY with Hygromat®	KK 140 Tropic with Hygromat®	KK 180 AHY with Hygromat®	KK 220 AHY with Hygr
110 – 170	**115 – 195**	**170 – 325**	**220 – 350**
5.700	6.500	10.800	11.600
4.900	5.600	10.000	10.500
3.500	4.600	8.900	9.300
–	3.100	7.000	7.400
31.3	46,9	46,9	62,6
14,0	**19,0**	**19,0**	**27,0**
26 / 48[3)]	28 / 51[3)]	37 / 73[3)]	52 / 98[3)]
63	63	125	125
300	300	400	400
16	16	24	32
$^1/_2$	$^1/_2$	$^3/_4$	$^3/_4$
3.710 x 1.300 x 1.980 / 850	4.140 x 1.300 x 2.400 / 1.000	3.400 x 1.400 x 1.980 / 1.250	3.400 x 1.470 x 2.480 /
2.610 x 935 x 1.775 / 820	2.850 x 1.010 x 2.200 / 950	3.000 x 1.240 x 1.800 / 1.160	3.140 x 1.310 x 2.300 /

FrigorTec GmbH is certified according to DIN EN ISO 9001 : 2000
FrigorTec GmbH is member of:
Society for the Support of the German Milling School, Bonn / Germany
Rationalisation Curatorship for Agriculture, Rendsburg / Germany
School providing vocationaleducation in Agribusiness, Warberg / Germany
Corn exchange, Luzern / Swiss

TÜV acceptance testing in our factory.
An additional test at the installation site is usually not necessary for the GRANIFRIGOR®.

CE

TÜV CERT
DIN EN ISO 9001 : 2000
QA-Nr. 04100980464-002

omat®	KK 220 Tropic with Hygromat®	KK 400 AHY with Hygromat®	KK 400 Tropic with Hygromat®
	230 – 360	**395 – 630**	**415 – 630**
	12.000	21.000	21.000
	11.200	19.800	19.800
	9.900	17.000	17.000
	7.800	15.000	15.000
	96,3	115,2	145,0
	37,0	**56,0**	**65,0**
	49 / 95 [3]	94 / 164 [3]	80 / 150 [3]
	125	200	200
	400	600	600
	37	53	53
	$^3/_4$	$^3/_4$	$^3/_4$
1.420	3.839 x 1.470 x 2.619 / 1.800	3.950 x 1.970 x 2.860 / 2.630	3.950 x 1.970 x 2.860 / 2.630
1.280	3.190 x 1.410 x 2.461 / 1.640	3.700 x 1.940 x 2.700 / 2.470	3.700 x 1.940 x 2.700 / 2.470

Prevent the spoiling of your harvest – the natural and effective way!

Spontaneous heating of the grain often causes great damage. Systematic hygiene regulations and the call for natural treatment of the produce grain without chemical substances are standards that must be attained. We have an answer for all these demands: GRANIFRIGOR®.

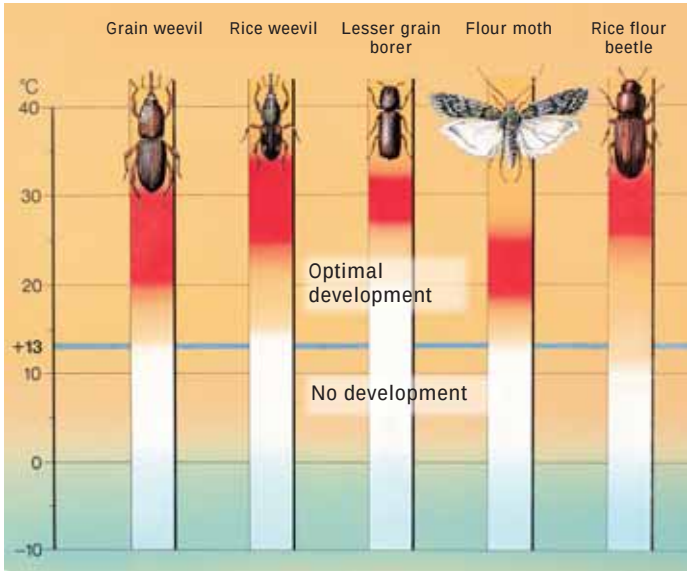
The GRANIFRIGOR® cooling device is used to cool down grain immediately after the harvest, independent of the weather. This effective method prevents the spoiling of freshly harvested grains, which heats up spontaneously due to its cellular respiration. Carbon dioxide, water and heat are released by this respiration – with extensive consequences: Loss of dry substance as well as the development of insects, microbes and mildew. Spontaneous heating depends on the grain's moisture and temperature. The principle is also valid for oil seeds such as rapeseed.

Since we know how grain "functions", the GRANIFRIGOR® operates according to two successful principles:

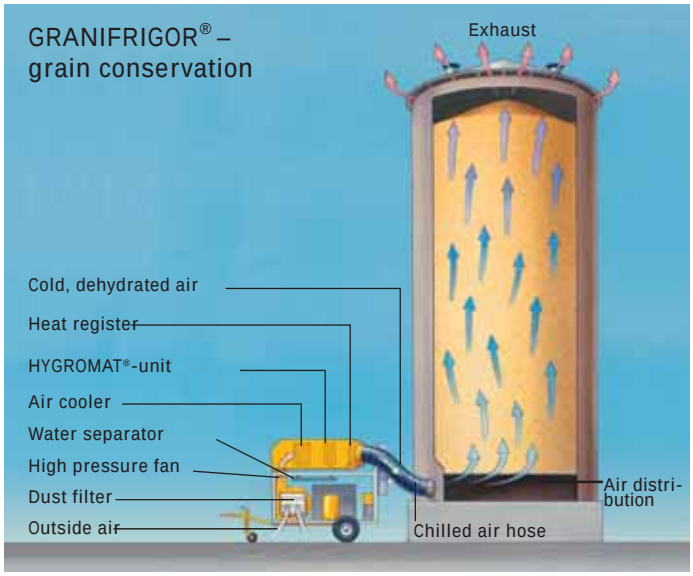
1. Prompt cooling to below +13 °C once the grain has been stored in: This puts insects into diapause so that they have no chance to multiply (see illustration below). Additionally the development of mildew is effectively prevented, respiration losses are minimised, and drying expenditures are also reduced by the drying effect of the cooling.
2. No ventilation with non-conditioned outside air: Grain seeds are hygroscopic. This means that depending on the temperature an equilibrium develops between the moisture content of the seeds and the relative humidity of the ambient air. Moisture develops if dry grain is exposed to humid air. The grain begins to spoil. Therefore aeration by fans is completely dependent on the weather. Furthermore, the ambient temperature during harvest time is usually much too high.

Mode of operation:

The fan of a GRANIFRIGOR® grain cooler draws in the surrounding air (see illustration below). This air is cooled by an air conditioner (evaporator) to the desired temperature. The following HYGROMAT® unit warms the cold air again automatically. This lowers the relative humidity and adapts to the conditions of the bulk grain. No moisturizing can occur, which would be rather damaging. This cooled and dried air is fed through the air distribution of the warehouse or the silo system and is forced through the grain. The air is then released to the outside through the exhaust vents of the storage facility. The outgoing air extracts the absorbed heat and moisture.



Insects that are dangerous to grain can develop at a temperature starting at 13 °C. GRANIFRIGOR® cools the grain to below 13 °C and thereby ensures optimal freshness and quality of the harvest.



The GRANIFRIGOR® process was developed by FrigorTec GmbH (formerly product devision of Axima and Sulzer Escher Wyss) in co-operation with the Düsseldorf University and the Bundesforschungsanstalt für Getreide (Federal Grain Research Institute) in Detmold in 1968.

We pass on only what we have produced by our own hands.

In the parent plant in Amtzell, Germany all products made by FrigorTec GmbH are developed, constructed and produced. Every device passes a quality inspection with test runs before delivery. We sell the FrigorTec solutions in over 80 countries through our worldwide distribution network.

FrigorTec (formerly product devision of Axima and Sulzer Escher Wyss) – The specialist for refrigerators and heat pumps:

CRANEFRIGOR – Crane air conditioning units for the steel industry. For air-conditioning of crane cabins and the crane electronics.

STANDARDFRIGOR – Standard cooling units and heat pumps for cooling of production equipment in production processes.

SHELTERFRIGOR – Container cooling units for various applications.

Distributor:

FRIGOR TEC

FrigorTec GmbH • Hummelau 1
88279 Amtzell/Germany
Tel.: +49 75 20/91482-0
Fax: +49 75 20/91482-22
info@frigortec.de
www.frigortec.com

Nr. 01-06 englisch

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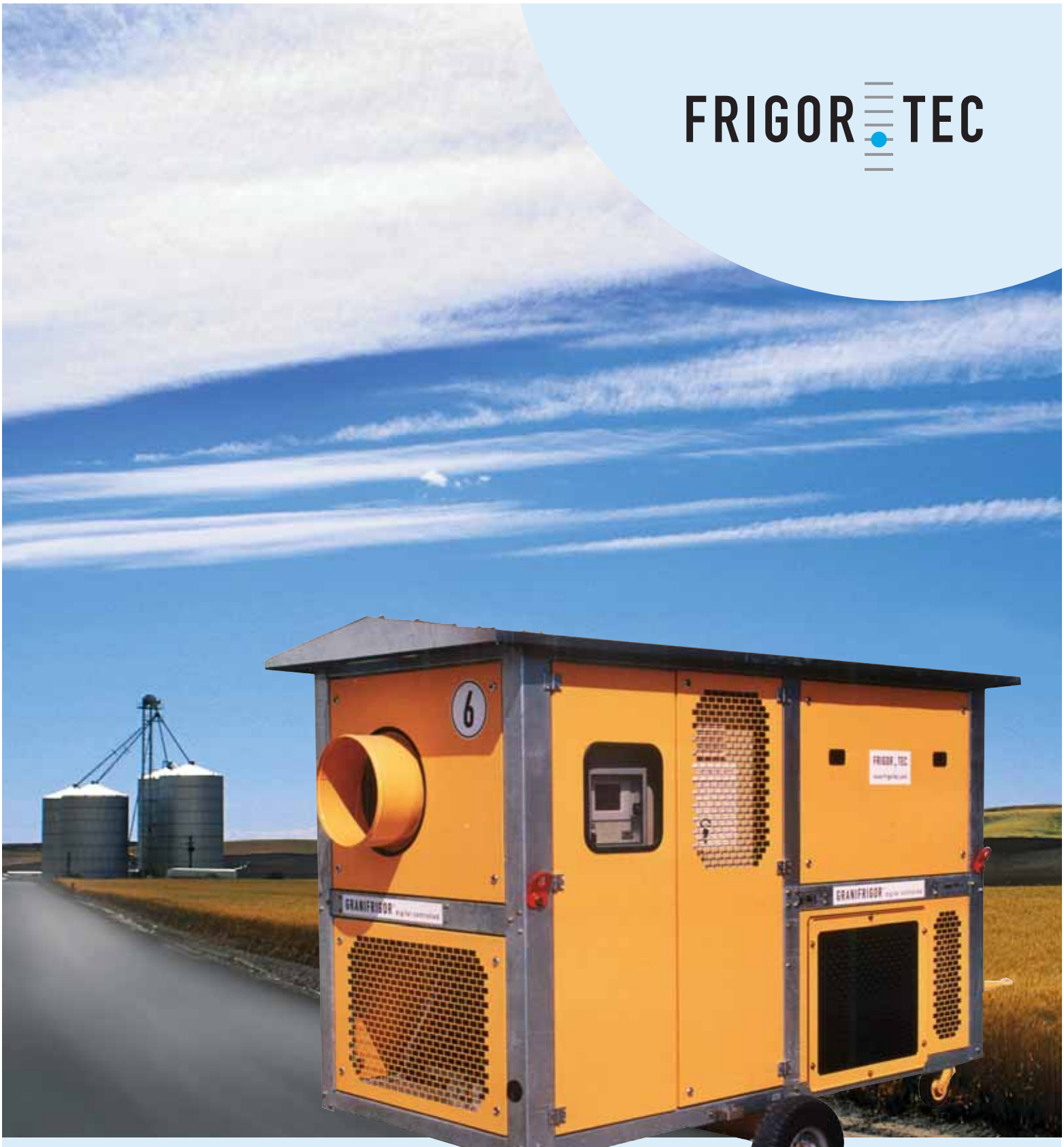

GRANIFRIGOR® – natural grain conservation

www.frigortec.com