



## Cooling Info

February 2006

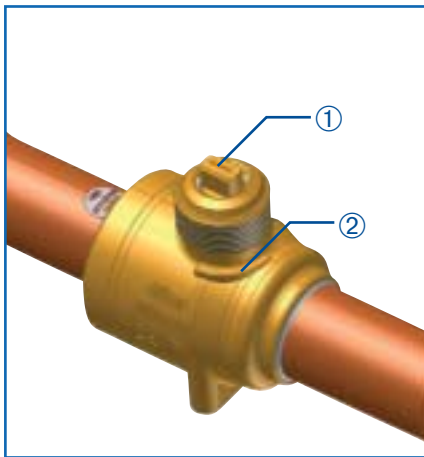
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### Refrigeration and Air Conditioning Controls

## Further improved GBC ball valves

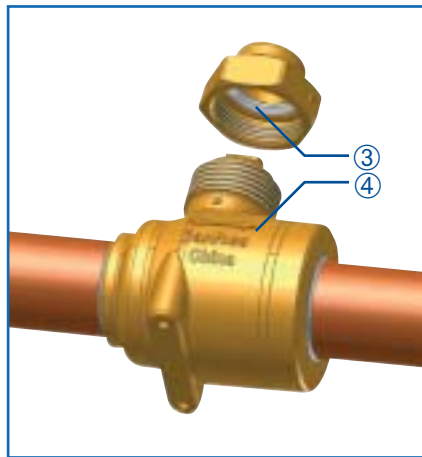
Early 2005, Danfoss introduced a new ball valve design. The new GBC ball valves have been a great success. We have, however, received valuable feedback from the market and due to this we have further improved the design and functionality of the GBC ball valves.



#### Improvements

##### 1) New spindle design

The new spindle can be operated with a wrench. The Allen key is no longer needed. The arrows on top of the spindle indicate the flow direction – it's easy to see if the valve is open or closed.



##### 2) Turning indicator

This marking indicates the turning range of the spindle. To set the valve from a fully open position to a fully closed position, turn the spindle clockwise 1/4 of a turn.

##### 3) Improved cap seal

The sealing ring inside the cap has been changed from rubber to PTFE (Teflon) to ensure an even tighter sealing.

Due to the new cap there is a small increase of the total height. All other product specifications remain the same.

##### 4) Bi-flow indication

The arrow indicates that the GBC can be used in bi-flow applications.

*The changes will be gradually implemented beginning of 2006.*

## Refrigeration and Air Conditioning Controls

# The new EKC series: flexible regulation for a wide range of applications

Danfoss has been known for a long time as a pioneer in the development and use of electronic controls and systems. Now, Danfoss presents the EKC 204, a totally new, cost-effective refrigeration controller, which is easy to use and minimizes service costs.

The EKC 204 is part of the new EKC series, a full range of refrigeration controllers suited to all traditional applications such as cold rooms, single cooling circuits with 2 stage controlled twin compressor units, grouped freezing islands with synchronised defrost, display cabinets, food production, storage etc. Whilst the **EKC 102** and the **EKC 202** are very cost-effective versions, each fulfilling specific tasks, the **EKC 204** is an **universal solution** which can be used in all kinds of installations, whether they are new or already existing. This multi-purpose controller has nine predefined functions from air temperature control and defrost to more advanced applications such as

control of two compressors, lights, fans, rail heat, hot gas defrost and alarm output. An internal switch permits a quick and user-friendly set-up.

Whilst the EKC 204 combines numerous tasks and thus presents a very advantageous solution which also helps in reducing stocks, the entire EKC range, including EKC 102 and EKC 202, displays technical features of great interest:

- All controllers are **directly connectable to 230V** supply without the need for a transformer.
- Defrost periods can be scheduled, thanks to a **RTC defrost clock**.
- The new **"copy key"** with room for



25 controller set-ups ensures fast and easy programming.

- PT1000 sensors fully comply to **HACCP Standard** EN 441-13 and provide measurement accuracy without the need for calibration.
- **Up to 3 sensors** permit the display and control of product temperatures etc.
- **High current relays** for direct compressor start up to 6 amps inductive current due to intelligent relay control.

The EKC range once more proves the great expertise of Danfoss in designing electronic control systems intended to save time for installation and commissioning of refrigeration systems whilst maintaining a high quality standard. The end-user benefits from better monitoring and control, ensures **compliance with HACCP** standards and saves money due to optimised operation, such as synchronised and scheduled defrost periods. Additionally, the IP65 protection enhances the lifetime and reliability of the controllers as they are protected against water damage during cleaning.

The EKC202 and the EKC204 versions can both be **connected to Adap-Kool® systems** which is also a major advantage for end-users who are already using this highly professional control system.

*For further information and documentation, please visit our website or contact your distributor or the local Danfoss team.*

### Quick selection table EKC 102, 202 and 204

Type	Code n°	Relais	Compressor/Solenoid valve (SPST)	Defrost (SPDT/SPDT)**	Ventilator (SPST)	Alarm/Light/Aux/ (SPDT)	Control 2 Compressors (SPDT)	Analog input	Digital input	PT1000 sensors	PTC and NTC sensors	Optional copy key	LON-Module optional	Clock function with backup	HACCP Function via System	HACCP Function included	Selection application	Weighted Temp. sensor	Coordinated defrost	Coordinated defrost via System	
EKC 102 A	084B8500	1	16A					1		■	■	■									
EKC 102 B	084B8501	2	16A				16A	2	1	■	■	■									
		2	16A			16A		2	1	■	■	■									
EKC 102 C	084B8502	2	16A	16A				2	1	■	■	■									
		2	16A			16A		2	1	■	■	■									
EKC 202 A	084B8521	2	16A	8A				2	1	■	■	■	■	■	■						■
		2	16A			8A		2	1	■	■	■	■	■	■						■
EKC 202 B	084B8522	3	16A	16A	8A			2	1	■	■	■	■	■	■						■
EKC 202 C	084B8523	4	16A	16A	8A	8A		2	1	■	■	■	■	■	■						■
EKC 204 A1	084B8520	4	16A	16A	8A	8A		3	2	■	■	■	■	■	■	■	■	■	■	■	■

\*\* Defrost relay with change-over Contact for 102 C/204 A and Single contact for EKC 202 B/202 C/204 A1

