

# DORIN 2018

## INNOVATION FIRST: a 100-years history

Press Release 26-Sep-18, Fiesole

### **DORIN - Hall 6 Stand 316**

Compressor manufacturer DORIN, globally well-known, is showcasing its widest product range, including its highly technological innovations, at stand 6-316.



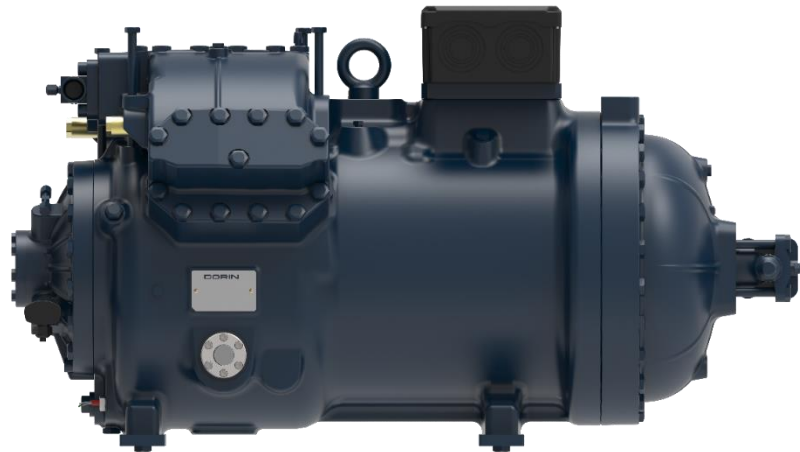
DORIN stand at MCE 2018



DORIN stand at CHILLVENTA 2016

### **NEW CO<sub>2</sub> TRANS-CRITICAL COMPRESSORS: - Efficiency First!**

One of the most appreciated DORIN line of compressors is the **CD Range for CO<sub>2</sub> transcritical and subcritical applications**, a real reference on the market for high energy efficiency, environmental friendliness, user-friendliness and reliability. CD



CD 600 CO<sub>2</sub> TRANSCRITICAL Compressor

reciprocating compressors offer maximum energy efficiency and are designed for a very comprehensive number of applications such as commercial and industrial refrigeration. CD compressors offer the market with **the widest range capacity of choices, larger than any other competitors on the market**, ranging from 1,5 hp for single compressor units, to 160 hp for large industrial applications.

**CD ranges** are the widest available in the market and thanks to the automotive solutions thereby deployed, offer system designers the most reliable and robust choice for their CO<sub>2</sub> based equipments.

**CD compressors** are particularly **suitable for supermarket applications** in their 2-4 cylinders platforms, while the 6-cylinders versions, are perfectly matching with the larger duties typically featured by industrial and process cooling systems.

**CD compressors also offer double stage solutions: DORIN is the sole manufacturer proposing trans-critical compressors for LT applications.**

**CD Ranges** vast success rely on the very many high technology solutions in place for all their components: end users full satisfaction has been our main concern and driver during our compressor engineering process. For instance, specific **technical solutions, unique in the market, such as the external discharge manifold** drastically reduces the internal heat transfer between compressor HP and LP sides when compared to direct competitors design; this **ensures utmost efficiency and considerably lower heat transfer to the oil**, thus assuring much better lubricity figures into the entire drive gear.

All these technical features are implemented in the entire **CD Range**, including **CD600 Series**: this new compressor family features motor nominal power up to **160HP** and up to **80 m<sup>3</sup>/h** displacement for trans-critical applications: this **being the largest CO<sub>2</sub> transcritical compressor size in the market as of today** and representing the ideal solution for **large warehouses, food processing plant and industrial applications**, offering the possibility to drastically reduce the number of compressors installed on the rack, thus saving in space, investment costs and energy consumption when compared with similar equipment using NH<sub>3</sub>.

## **DORONICA – CMM Compressor Management Module**

The reliability of cooling system is strongly dependent on the correct control of



**H3400CC - H5 Series HFC Compressor**

compressor working parameters which must be performed using precise and reliable analysis tools. Relying on a long tradition in compressor manufacturing, **DORIN** has

set a course for the future with its electronic **Compressor Management Module - CMM**.

**CMM** will be available as an accessory for the 4, 6 and 8-cylinder semi-hermetic compressors with an oil pump lubrication both for HFC and CO2 refrigerants. The **DORIN CMM** uses a new **specifically designed software** developed internally to



*CMM - Compressor Management Module*

ensure the complete integration of our products into end-user plants safety and control systems, managing and recording all the main functional compressor data. Thanks to the possibility of further simple customizations it adapts its performance to the demands of the system within different installing and operating conditions.

The **DORIN CMM has a circular non-volatile rewritable memory (EEPROM)** which stores all the alarms, warning and events, as well as other data. For each log it is also recorded the date and time that are always up to date even when the module is missing power as it is equipped with a lithium battery. If one of the values goes out of the pre-set range, the module signals this state and store it in the history log available through the Modbus connections.

**DORIN CMM allows the system manager to control remotely all his plants** from a single PC position, reducing drastically the management costs and granting a faster intervention in case of system failure.

## **DORIN SLCR - STEPLESS CAPACITY REGULATION**

Capacity control is often used to match output cooling capacity supplied by the compressor to the actual request from the plant.

Dorin semihermetic compressors install the **DORIN SLCR** starting form 4 cylinders compressors up to the 8-cylinder compressors of any of the below ranges:

- H range – HFC standard compressors
- HEX range – ATEX approved compressors for HC
- HEP range – specifically designed compressors for R134a applications
- TH range – Dorin renowned Tandem Series.

Compressors are generally sized to match the maximum capacity required by the plant design, however, in standard operating conditions, the actual cooling



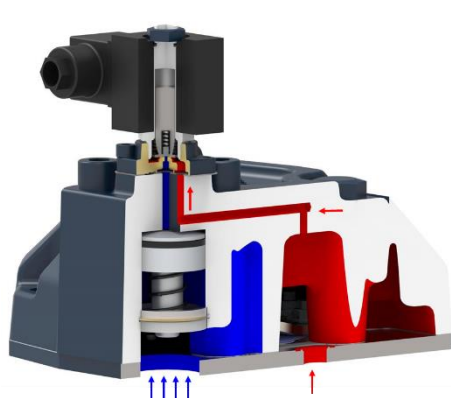
H/HEX 7500 CC - H/HEX7 Series HFC/ATEX compressors

capacity is lower. Since many years capacity control systems have been using on semi hermetic compressors to prevent high switching cycles which can occur in case of cooling capacity surplus, reducing the risk of component wear and finally increasing the compressor reliability.

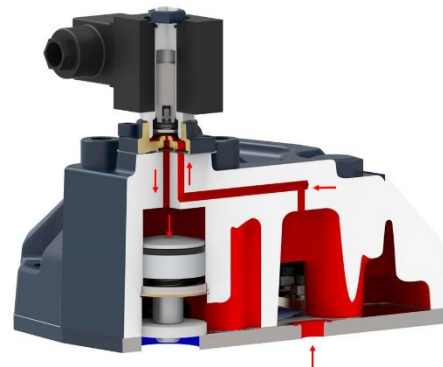
**DORIN SLCR is an evolution of traditional capacity control system**, whose main defect was the limited adaptability to system requirements since the number of capacity control steps was dependent on the number of compressor heads.

With the new **DORIN SLCR it is possible** to match the cooling capacity supplied by the compressor to the actual needs of the system continuously and without steps, **optimizing costs and savings.**

In short, **with DORIN SLCR it is possible to cut off the suction refrigerant**



Full load working condition

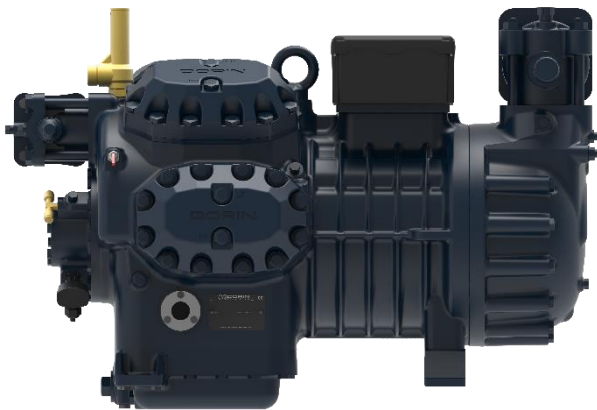


DORIN SLCR working condition

**flow** of cylinders related to the capacity control head, through a control piston driven by a solenoid valve.

The **DORIN SLCR** is made by a piston and a coil sized to be activated in high frequency ON/OFF cycles **allowing a cooling capacity variation range from 10% to 100% of full compressor power**. It is possible to install a **DORIN SLCR** on each head of a 4 and 6 piston compressor while on the 8-cylinder compressor, our expert technicians recommend not to apply more than two **DORIN SLCR**.

## **CDS\_7 - 8-CYLINDERS FOR CO2 SUBCRITICAL APPLICATIONS**



CDS\_7 Range – Model  
CDS9001B – 122,82 m<sup>3</sup>/h, 80 Hp

**CDS-7** represents the largest CO<sub>2</sub> subcritical compressor range actually available in the market. With its 4 models it can reach a **top** displacement of **123 m<sup>3</sup>/h** and **80 HP** nominal motor power, allowing to match high cooling capacity with a small number of compressors.

**CDS-7** compressors **perfectly suite large LT heavy industrial applications** arranged either in a cascade system with another refrigerant on top, or in a full CO<sub>2</sub> booster configuration.

Its **high internal flow optimization** and the **perfect matching of electrical motor sizes with compressor displacements** make **CDS-7** the most efficient compressor range on the market available for its size.

## **TRANSFORMER - NEW 12-CYLINDERS COMPRESSOR**



H8 Range – Model H18000CC – 518m<sup>3</sup>/h, 180Hp

An astonishing new project came to light in 2018 aiming at reducing the stress of the end user in relation to capacity required, spare parts management and overall plant management costs.

**The new TRANSFORMER REFRIGERATION COMPRESSOR** is a globally new concept of manufacturing compressors, where common main parts and components make it possible to switch from one configuration to the other thanks to minor variable and changes: in fact the same engineering platform will serve as the base for both large sizes HFCs and CO2 sub-critical compressors

**TRANSFORMER** is a 12-cylinder compressor module that can have different configuration depending on the application.

Its **SEMIHERMETIC CONFIGURATION**, brings to the **H8 compressor family**, with nominal motor powers ranging **from 100 to 180 HP** with a displacement available **from 303 to 520 m<sup>3</sup>/h**. Ideal for industrial application. **H8** can satisfy also large commercial project where space is an issue and management savings a must. The same platform will also serve the CO2 configuration for very large sub-critical applications, by generating the so-called **CDS8** range.

The **OPEN TYPE CONFIGURATION** will enrich the already vast and famous as well as globally well appreciated and sold **VS Series** compressors. The new models **120-130-140-150 VS** will enlarge the offer of swept volume ranging **from 4000cm<sup>3</sup> to almost 6000 cm<sup>3</sup>** and allowing displacements **from almost 350 m<sup>3</sup>/h to 518 m<sup>3</sup>/h**. These largest models of **VS Series** will allow larger systems in very harsh marine conditions and industrial environment.

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*Officine Mario Dorin is a company established in 1918, manufacturing compressors since 1932. Based in the area of Florence (Tuscany), Italy, OMD reaches all over the world thanks to its commercial partnerships and internal technical-commercial personnel. OMD is present in more than 90 countries supplying always perfect and reliable products, following the principle of its founder Mr Mario Dorin "...the main thing is that our products must always be perfect...".*

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