

KION C11 / KION C22

EVACUATION & REFRIGERANT CHARGING
EQUIPMENT FOR FLAMMABLE GASES 



GALILEO TP PROCESS EQUIPMENT S.r.l.

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Introduction

KION C has been designed for work with flammable gases and is compatible with a variety of manufactures HVAC/R production lines (refrigerators, deep freezers, air conditioners etc...). To help ensure that consistency is maintained in your product, the **KION C** utilizes a three stage charging system (**Evacuation, Vacuum Decay Test and Refrigerant Charge**). This system was designed to meet the needs of high/very high production rates that require a very accurate refrigerant dose. Thanks to the dosing cylinder metering technology (featuring a special single-effect piston), the dosing cylinder will control exactly the filling amount charged from the beginning until the end of the injection phase by the means of a potentiometer. The **KION C** can charge **HC, CFC, HCFC, HFC and flammable blends**.

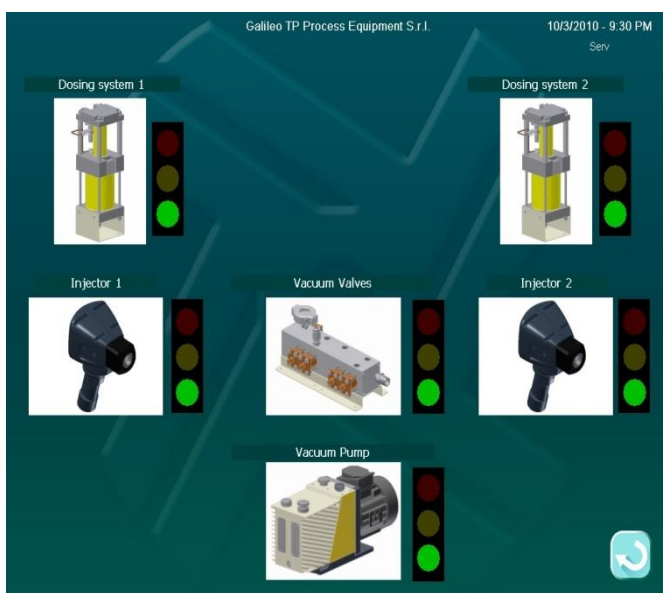
Technical features

Embedded control system

- PC board GALILEO TP SGP32 V2 with microprocessor RISC 32 bit Freescale ColdFire® 5372L

User interface

- **Infrared color touch screen LCD 15" (1024X768)** high brightness
- Designed for industrial environment with extreme temperatures and high humidity.
- *Durable, dirt-resistant and very responsive..*
- The infrared touch screen **can be operated with wet fingers or dirty gloves**. Physical contact is not needed.
- Infrared technology has a greater resistance against electrostatic and magnetic noise.



Vacuum line

- The **KION C** is equipped with a D28 m³/h ATEX double stage rotary vacuum pump, capable to reach a final vacuum of 1 x 10⁻² Pa (1 x 10⁻⁴ mbar) with solenoid valves and Pirani sensor, as well as a piezo resistive pressure sensor 0-30 bar (4-20 ma) to verify whether the cooling circuit under test is already filled or evacuated

Metering device

- The **KION C** uses the **GDC TECHNOLOGY**, the uncontested Galileo **Dosing Cylinder** metering device granting you the most accurate dose, long term reliability, while maintaining the highest safety standards.

Filler gun "COBRA"

- Protective shell of plastic/ thermosetting resin
- Ergonomic handle
- Key-pad with START/EXIT buttons to start and stop the working cycle.
- All solenoid valves are located inside the protective shell that prevents any kind of damage caused by impact with the ground.
- The Protective shell can be easily disassembly to manage any maintenance operation.
- **Optimized dead volume inside the manifold injector.**
- **Zero gas release upon disconnection.**

Pneumatic valve for the vacuum, solenoid valve for the refrigerant, solenoid valve for the recovery line, pressure sensor 40bar full scale, and Led Indicator.



Main programmable process phases

- ✓ Auto-lock Hansen quick coupler
- ✓ Verify compressed air
- ✓ Filling gun leak test and pre-evacuation
- ✓ Pre-charge unit test
- ✓ Pre-evacuation
- ✓ Vacuum Rise Test
- ✓ Check pressure of dosing system
- ✓ Compression
- ✓ Refrigerant filling with clog test
- ✓ Discharge gas injector (zero gas release guarantee)
- ✓ Auto unlock Hansen quick coupler

*COMBI CYCLE used for simultaneous evacuation to manage two different cooling circuits with one working cycle.

Software features

Two different privileged log-in levels with password:

- 1) Operator: working cycle access;
- 2) Maintenance/production/quality managers: diagnostics and programming access

Refrigerants programming

You can set new refrigerants with a density in a range of 0-50 °C.

Language programming

You can choose your language using the program that includes: Italian, English, Chinese, Spanish, Portuguese and Russian. Other languages available upon request.

Serial Communication

You can choose the communication speed of the serial ports COM1 and COM2;

Display calibration values

All calibrations parameters can be displayed

Serial ports and interfaces

- ✓ COM1: serial port RS232 for barcode
- ✓ COM2: serial port RS232 for printer
- ✓ COM3: serial port RS485
- ✓ **Ethernet interface for software GEDA* (Galileo Equipment Data Acquisition) and/or data report to the PC.**
- ✓ USB port for mass storage connection (only for maintenance service)

GEDA management software

*The **KION C** comes completely ready for integration with the **GEDA** system for data acquisition, statistics, remote programming, as well as external supervision of the line:

- Cycle reports sent directly from the machine to your computer (always updated) in real time;
- Possibility to program the machine from the computer and vice versa;
- Working cycle start inhibition;
- Search by bar code reader, date and time or by model of machine;
- Production/maintenance/quality queries (alarm, cycles, failed pieces, passed pieces etc...);
- Possibility to print all information and report displayed;
- Possibility to export the cycle report to other programs like Office Excel;
- SQL interface;

Available models and accessories

Models

No. Injectors

No. Dosing systems

KION C 11	1	1
KION C 22	2	2

Data sheets

No. filling injectors	1 ÷ 2	
Length filling hose	3.5 m (others upon request)	
No. Programmable cycles	200 (more upon request)	
Connections	¼"+ 3/8" Hansen™ female quick coupler, ¼ PCU 62 Series, ¼"+ 3/8" NITTO SP Cupla Type A	
No. Dosing systems	1 ÷ 2	
Metering device	Volumetric dosing cylinder with piston single effect	
No. Programmable bar codes	1000 (more upon request)	
Units of measurement:		
Weight	g, oz	
Vacuum	Pa, µHg, mbar	
Pressure	kPa, psi, bar	
Temperature	°C, °F	
Vacuum pump	Double stage, 28 m³/h ATEX (others upon request)	
Final vacuum	<1x10⁻² Pa (1x10⁻⁴ mbar)	
Dimensions (HxLxW)	1410x700x800 mm	
Weight	292 kg (model C22)	
Working temperature	0 ÷ +50 °C	
Electric power supply	Δ 200 ÷ 230 / Y 380 ÷ 415 V 50 Hz 3 Ph Δ 200 ÷ 230 / Y 460 V 60 Hz 3 Ph (others upon request)	
Power consumption	900 W	
Compressed air	600 ÷ 800 kPa (6÷8 bar) The air must be filtered and dehumidified 20µ	
Noise level	< 70 dB (A)	
Refrigerants	HC, CFC, HCFC, HFC, and flammable blends	
Refrigerants supply pressures	1000 ÷ 2000 kPa (10 ÷ 20 bar) Max working pressure 3000 kPa (30 bar)	
Programmable dose	10.0 ÷ 99999.9 g	
Accuracy HC (<100 g)	±0.5 g (@ 25 bar refrigerant)	
Accuracy HC (>100 g)	±0.5 % (@ 25 bar refrigerant)	
Accuracy HFC (<200g)	±1.0 g (@ 25 bar refrigerant)	
Accuracy HFC (>200g)	±0.5 % (@ 25 bar refrigerant)	
Maximum charging speed	Up to 70 g/s (CFC, HCFC, HFC) Up to 40 g/s (HC)	

**data subject to change*

In compliance with:

(2006/42/CE) (Directive on Machinery)

(2006/95/CE) (Low Voltage Directive)

(2004/108/CE) (Directive on Electromagnetic Compatibility)

(94/9/CE) (Atex directive)

Upgrade accessories list:

- Hand-held bar code laser reader (cable or wireless)
- Overhead filler kit
- Kit 3/8" connection
- 5 meters injector hose
- Magnetic led light for electrical cabinet



This charging system can work with flammable gases only if it is interfaced with the gas detector system "model CERBERUS" and the ventilation system "model WIND".