

# IANUS M22

DUAL EVACUATION & REFRIGERANT CHARGING  
EQUIPMENT FOR FLAMMABLE & NON FLAMMABLE  
GASES



**DUAL TOUCH SCREENS**



**GALILEO TP PROCESS EQUIPMENT S.r.l.**

Via del Pantano 73 – 50018 Scandicci (Firenze) Italia – Tel. (+39) 055 7221358 – Fax (+39) 055 722225 –  
Web site [www.galileotp.com](http://www.galileotp.com) – E-mail [info@galileotp.com](mailto:info@galileotp.com)



# Introduction

The machine **IANUS M22** has been designed for working simultaneously in two different workstations with flammable and non flammable gases for any kind of cooling unit (refrigerators, deep freezers, air conditioners etc...) **performing evacuation, leak test and refrigerant charge**. This system was born to meet the needs of high/very high production rates that require a very accurate big refrigerant dose. Thanks to the mass flow meter technology and Galileo ATEX controls, **IANUS M22 is particularly indicated for large charges of flammable gases (R290, R32, R600) at a very high cadence**. The **IANUS M22 can charge any kinds of HC, CFC, HCFC, HFC and new flammable blends like R32**

## Technical features

### Embedded control system

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

**Two separate PC to allow a full simultaneity as two individual machines.**

### User interface

**Two separate color touch screens LCD 7"** high brightness and designed for industrial environment with extreme temperatures and high humidity. *Durable, dirt-resistant and very responsive*. **The two touch screens will be mounted on the sides or on the front part of the top cabinet. (instead of the single touch screen 15" standard for non dual machines, see the above picture)**

### Vacuum line

**TWO SEPARATE VACUUM LINES.** The **IANUS M22** is equipped with a two D28 m3/h ATEX double stage rotary vacuum pumps, capable to reach a final vacuum of  $1 \times 10^{-2}$  Pa ( $1 \times 10^{-4}$  mbar) with solenoid valves and Pirani sensors, as well as a piezoresistive pressure sensors 0-30 bar (4-20 ma) to verify whether the cooling circuit under test is already filled or evacuated

### Metering device

Two Real-time control Mass flow meters with a piezoresistive pressure sensor for HC, CFC, HCFC, HFC and new flammable blends like R32 with ATEX controls to give you the fastest speed at the most safety conditions.

### Filler guns "COBRA HS"

Protective shell of plastic/ thermosetting resin with ergonomic handle and a key-pad with START/EXIT buttons to start and stop the working cycle.

All solenoid valves will be located inside the protective shell that prevents any kind of collisions and falls to 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.**

**Led Indicator**



# Main programmable process phases

Each operator, by the means of the two touch screens will be able to program two different working cycles, one for each filler, and let them run separately or simultaneously.

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

## 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 set your own language, the program includes: Italian, English, Chinese, Spanish, Portuguese and Russian. Others 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 **IANUS M22** comes with a complete integration with the **GEDA** system for data acquisition and 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
IANUS M 22	2	2

## Data sheets

No. filling injectors	<b>2</b>
Length filling hose	<b>5 m (others upon request)</b>
No. Programmable cycles	<b>200 (more upon request)</b>
Connections	<b>¼"+ 3/8" Hansen™ female quick coupler, ¼ PCU 62 Series, ¼"+ 3/8" NITTO SP Cupla Type A</b>
No. Dosing systems	<b>2</b>
Metering device	<b>Mass-flow meter</b>
No. Programmable bar codes	<b>1000 (more upon request)</b>
Units of measurement:	
Weight	<b>g, oz</b>
Vacuum	<b>Pa, µHg, mbar</b>
Pression	<b>kPa, psi, bar</b>
Temperature	<b>°C, °F</b>

Vacuum pumps	<b>Two double stage, 28 m<sup>3</sup>/h ATEX (others upon request)</b>	
Final vacuum	<b>&lt;1x10<sup>-2</sup> Pa (1x10<sup>-4</sup> mbar)</b>	
Dimensions (HxLxW)	<b>1410x1000x800 mm</b>	
Weight	<b>290 kg</b>	
Working temperature	<b>0 ÷ +50 °C</b>	
Electric power supply	<b>Δ 200 ÷ 230 / Y 380 ÷ 415 V</b>	<b>50 Hz 3 Ph</b>
	<b>Δ 200 ÷ 230 / Y 460 V</b>	<b>60 Hz 3 Ph</b>
	<b>(others upon request)</b>	
Power consumption	<b>900 W</b>	
Compressed air	<b>600 ÷ 800 kPa (6÷8 bar)</b>	
	<b>The air must be filtered and dehumidified 20μ</b>	
Noise level	<b>&lt; 70 dB (A)</b>	
Refrigerants	<b>R32, R290, R600, all CFC, HCFC, HFC, and new blends</b>	
Refrigerants supply pressures	<b>1000÷2500 kPa (10÷25 bar)</b>	
	<b>Max working pressure 3000 kPa (30 bar)</b>	
Programmable dose	<b>10.0 ÷ 99999.9 g</b>	
Accuracy HC (<100 g)	<b>±0.5 g (@ 25 bar refrigerant)</b>	
Accuracy HC (>100 g)	<b>±0.5 % (@ 25 bar refrigerant )</b>	
Accuracy HFC (<200g)	<b>±1.0 g (@ 25 bar refrigerant)</b>	
Accuracy HFC (>200g)	<b>±0.5 % (@ 25 bar refrigerant )</b>	
Maximum charging speed	<b>Up to 130 g/s (CFC, HCFC, HFC)</b>	
	<b>Up to 90 g/s (HC/R32)</b>	

*\*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)
- Over head filler kit
- Kit 3/8" connection
- High speed Kit
- 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".**