



## **Logic S Futura: the 5-star semi-automatic AC system**

(7 October 2009): "S Futura" is the latest development in ISC Systems-branded equipment for the maintenance and diagnostics of car air conditioning (AC) systems. Beginning in 2008, the company has been enhancing its range of products, all hallmarked with the high level of quality and innovative thinking that ISC customers have come to expect.

This latest launch covers all ranges, from manual equipment to the most advanced, automatic units, all of which feature a single common denominator: a product design that ensures that every machine provides the highest level of performance reliability available on the market today.

This same approach can be seen with the introduction of the new Logic S Futura, a semi-automatic unit that Systems introduced in 2008 and that won immediate market success as a result of its excellent price-performance ratio. In fact, the purchase cost of Logic S Futura is recouped within the first season of use, offering a cost effective solution for those sensitive to price - without foregoing quality.

Like the rest of the ISC Systems-branded products, Logic S Futura offers a unique design that focuses special attention towards all components that impact the product's performance. The entire line was designed, constructed and tested to deliver reliability, efficacy and maximum efficiency while operating.

Systems thoroughly tests the functions of all its service stations before they leave the factory. Additional tests are also performed by dedicated software installed onto the machine's memory. These additional checks confirm the proper functions of the electrical and pneumatic systems.

**For further information:**

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The electrical tests verify the quality and reliability of the electrical components fitted in the unit (safety system operation, cabling, solenoid valves and motor operation, transducer calibration, etc.). The pneumatic tests check the system's gas impermeability, ensuring that there are no leaks. ISC Systems places particular importance to the latter operation, and in fact these tests are run in two regimes, under pressure and in vacuum conditions. In both cases, the maintenance of the respective pressure over time is recorded.

Like all other Systems' products, Logic S Futura is certified in compliance with Pressure Equipment Directive (PED) standards for pressurized equipment and plant (category 2), and also in compliance with the Machinery Directive, the Low Voltage Directive, and the Electromagnetic Compatibility Directive.

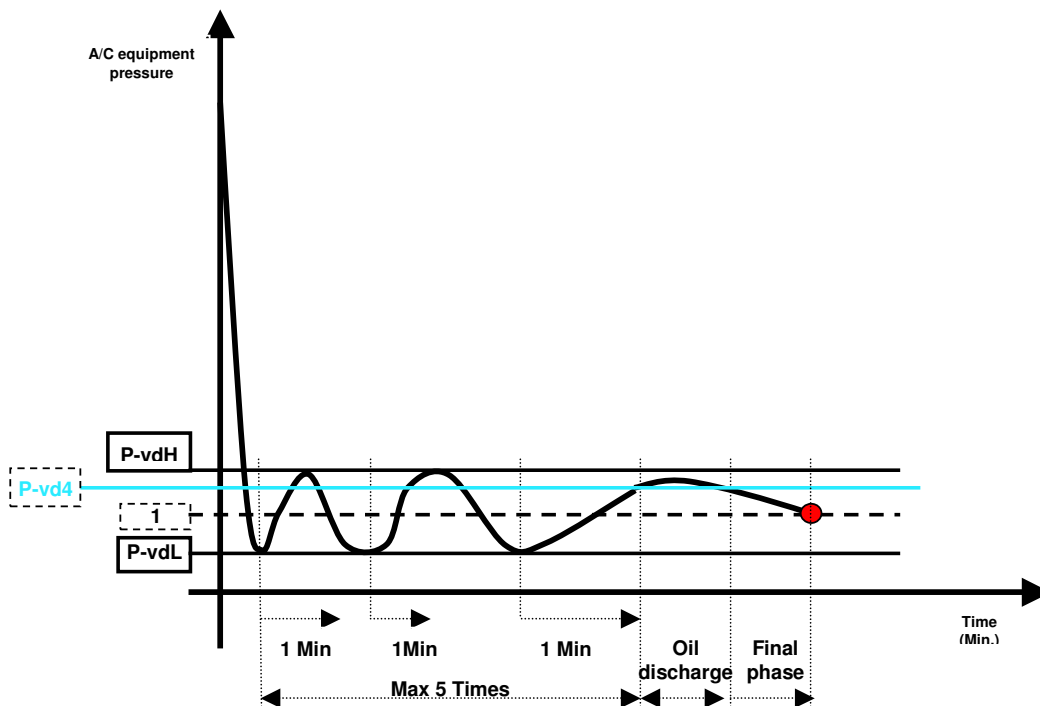
End

Described below are some of the key features that add real value, functionality and benefit to Logic S Futura users.

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The **recovery phase** – totally automatic in operation – enables the AC system to be drained in its entirety, without any dispersion of refrigerant liquid into the environment, thus protecting operator health and complying with environmental legislation. The precision of this function is critical for the correct maintenance of an AC plant. ISC Systems, working in cooperation with prestigious universities and research institutes, ensures Logic S Futura offers the maximum efficacy available today.



## DIAGRAM of the recovery phase

When the AC unit reaches the pressure shown at parameter  $P\text{-vdL}$ , the compressor stops, and a pause time of one minute begins. During this minute, if the pressure increases to parameter  $P\text{-vdH}$ , the compressor starts again and recovers refrigerant until the pressure has dropped back down to parameter  $P\text{-vdL}$ . This process can be repeated up to 5 times. If the pressure does not rise to  $P\text{-vdH}$  during the one minute, the unit begins to drain the oil.

After having drained the oil, the unit performs a final stage of recovery, to guarantee that pressure is below parameter  $P\text{-vdH}$  when the vacuum pump is activated in the next stage.

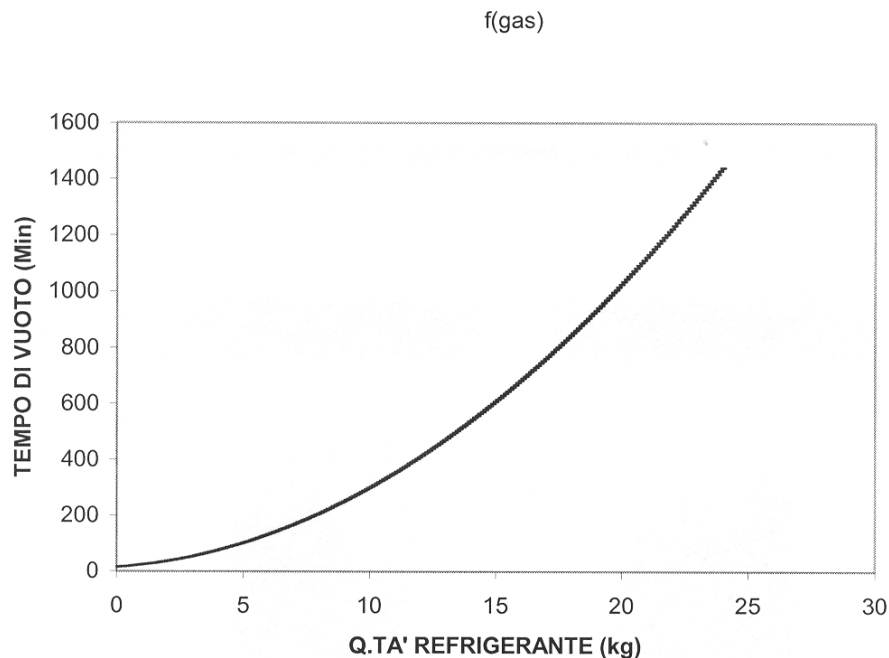
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The **vacuum phase – leak test** procedure is the stage at which the unit introduces a vacuum into the AC plant, removing any incondensable gases and contaminant residues.

Through a propriety technology designed specifically by Systems and applied to the entire Future series, Logic S Futura delivers an efficiency far better than most competing units. The vacuum phase duration in the Logic S Futura unit is calculated by means of a quadric equation, which establishes the optimum duration of the operation according to the expected recharge amount. The advantage of an approach based on continuous values is the exact determination of the necessary times, and the fact that the unit can deal with any recharge amount, even when this is outside normal ranges and not generally included in traditional weight/time tables. This prevents problems caused by errors in calculation that an operator could make when performing the operation using individualized parameters. The Logic S Futura performs a number of tests during this phase, monitoring the level of vacuum attained within the AC plant, to further ensure the accuracy of the vacuum phase.

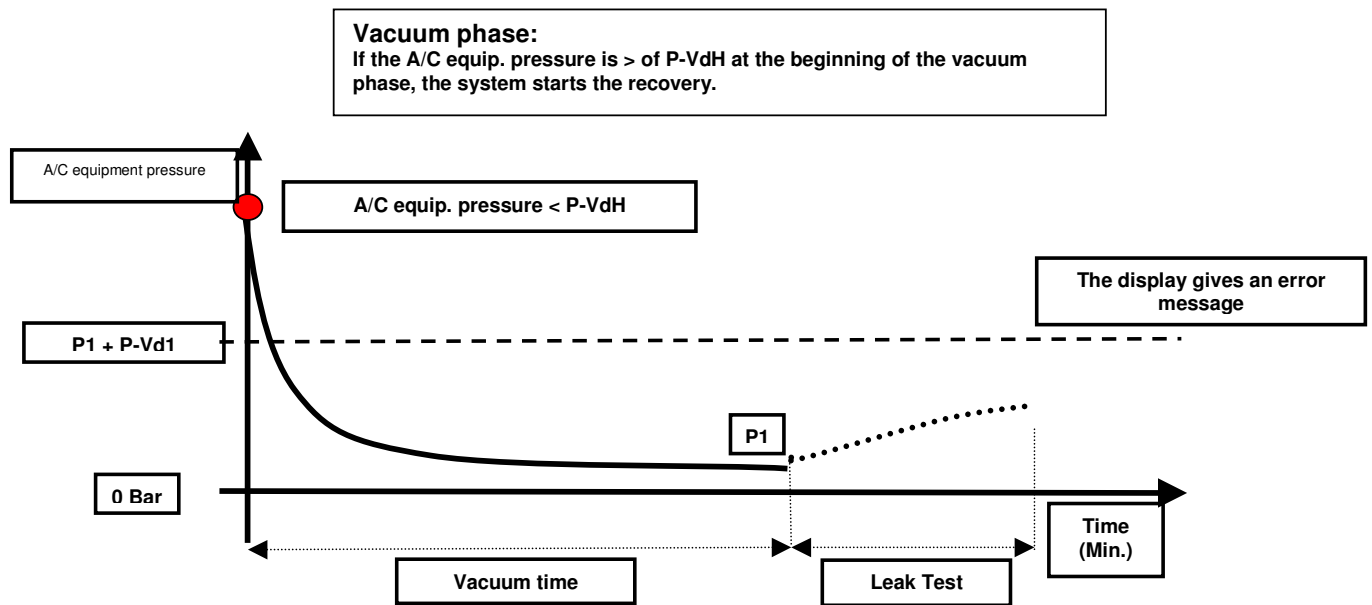
## DIAGRAM of vacuum calculation



These tests – that prepare for the **leaks test** itself – are calibrated according to the discharge phase previously performed by the equipment and to the actual pressure values recorded.

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## DIAGRAM of vacuum + leak test

The **assisted recharge** phase enables the operator to recharge the unit. In the case of any problem in completing the recharge process, Logic S Futura provides the instructions necessary to complete the operation using the LP (low pressure) option, utilizing the car's compressor to take in the refrigerant, without having to use the heating belt.

Logic S Futura is also fitted with a system that introduces a correction parameter for tube length. Even when the tube length used is greater than standard dimensions, as a result of the maintenance operatives' needs and conditions, the unit can still operate at optimum levels by means of performance calibration. This operation is implemented directly by the operator, using the corresponding password.

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**Luvata's Heat Transfer Solutions Division** is the leading global manufacturer of finned pack heat exchangers, playing a prominent role in the design and production of air units for the refrigeration and air conditioning sectors as well as AC refilling and maintenance equipment for the automotive industry. With a prominent presence in America, Europe and Asia and plans for further expansion in emerging markets, Heat Transfer Solutions Division is the reliable business partner for HVAC&R players worldwide.

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