

## Reciprocating compressors: approval of use with R407H

After some preliminary tests with the refrigerant R407H, we declare here that Frascold approves the installation of its standard Reciprocating Compressors operating with refrigerant R407H.

### • Compatibility

We experienced no problem during all test with the materials used in a standard compressor and with the oils commonly used (POE 32 cSt and POE 68 cSt).

Given the fact that R407H have the same molecular elements (with different %) used for other refrigerants, no further test are needed in this sense.

### • General limits of usage

**Discharge temperature:** Maximum discharge temperature without extra cooling: 120°C

When, in certain working conditions, discharge temperature reaches 120°C we suggest to limit suction superheating.

When this is not sufficient, in order to improve the heat exchange of compressor's heads and reduce discharge temperature, it is necessary to install/use an head fan motor or, in case the compressor can be ventilated by condenser's fan motors, to keep condenser's fans ON when compressor is ON.

In case, even with head fan motor, the temperature exceed 130°C, it is necessary to install/use a liquid injection device (Frascold accessory: FLI).

**Maximum Pressures:** Maximum operating discharge pressure is 30 Bar, for R407H this corresponds to 67,8°C. For "safety" reasons Frascold suggest not to overcome 60°C condensing temperature, for special application extensions can be considered (contact Frascold Technical Dept.). Maximum operating suction pressure is 6,3 Bar corresponding to 12,5°C evaporating temperature. Maximum standstill pressure on suction side 20,5 Bar.

### • Application Envelope

Test to define application envelope for each compressor are not done yet.

As general limits, according to tested data, we give here the following Envelope (according to EN12900):

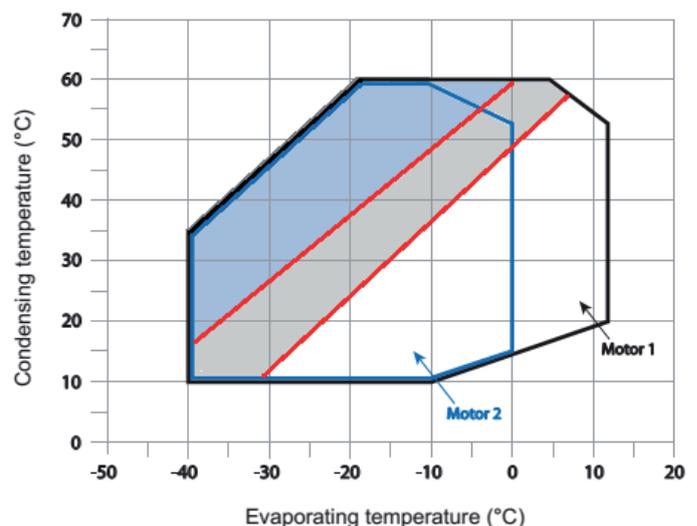


Discharge temperature >140°C  
FLI required (with 20°C suction temperature)



Discharge temperature >120°C  
Head cooling fan required (with 20°C suction temperature)

**R407H - Motor 1-2**





FRASCOLD Spa

Headquarters

Via Barbara Melzi 105 - 20027 Rescaldina (MI) Italy  
phone +39-0331-7422.01 fax +39-0331-576102  
<http://www.frascold.it> e-mail: [frascold@frascold.it](mailto:frascold@frascold.it)

FRASCOLD INDIA

Office and Warehouse

<http://www.frascold.it>  
e-mail: [frascold@frascold.it](mailto:frascold@frascold.it)

FRASCOLD SHANGHAI

Office and Warehouse

<http://www.frascold.it>  
e-mail: [frascold.china@frascold.net](mailto:frascold.china@frascold.net)

FRASCOLD USA

Office and Warehouse

<http://www.frascoldusa.com>  
e-mail: [kristian@frascoldusa.com](mailto:kristian@frascoldusa.com)

