

## EU TYPE EXAMINATION CERTIFICATE-PRODUCTION TYPE

This is to certify that **LRQA Inspection Iberia, S.A.** Notified Body for Pressure Equipment Directive 2014/68/UE, did (in accordance with Module B of the Directive) undertake a Type Examination on the stated pressure equipment to ensure its conformity with the requirements of the Directive which apply to it. The equipment identified below was shown to comply.

This certificate is issued to:

APPLICANT: Refrigeration Solutions France (Profroid)  
Aubagne (13), France

PRODUCT DESCRIPTION: Assembly (Article 2 para. 6)

PRODUCT TYPE: Refrigerating System "SIROCCO/MISTRAL/HEATCO2OL C" :  
Config. "MISTRAL"  
Config. "CRYSTAL"  
Config. "SIROCCO"  
Config. "MISTRAL S...\*"  
Config. "CRYSTAL S..."  
Config. "EQUIP"

Refrigerant: CO2

The attached Schedule details the content of the Technical Documentation and Specified Standards and shall form a part of this certificate.

**"This Certificate is not valid for pressure equipment, the design, ratings or operational parameters of which have been varied from the specimen tested. The manufacturer shall notify LRQA Inspection Iberia, S.A. of any modification or changes to the equipment in order to maintain a valid certificate."**

"This certificate is valid for ten years from the date of issue."

**Certificate No: 0094/PED/LYO/240076 ENG**

Original Approval: 19 June 2024

Current Certificate: 19 June 2024

Certificate Expiry: 19 June 2034

LRQA Inspection Iberia, S.A. Notified Body 0094

CARRE Mathieu / LRQA inspection Iberia



## CERTIFICATE SCHEDULE 0094/PED/LYO/240076 ENG

Equipment data:

Product Description: Assembly (Article 2 para. 6)  
Product Type: Refrigerating System "SIROCCO/MISTRAL/HEATCO2OL C" :

Config. "MISTRAL"  
Config. "CRYSTAL"  
Config. "SIROCCO"  
Config. "MISTRAL S...\*"  
Config. "CRYSTAL S..."  
Config. "EQUIP"

Refrigerant: CO2

Maximum Design Pressure/Temperatures:

	CO2				OIL	
	LP	MP	HP	Réservoir	Huile	Eau/ Glycolée
PS MAX (bars)	80	80	130	80	80	10
TS MAX (°C)	+43	+80	+150	+45	+80	+80
TS MIN (°C)	-50	-15	-10	-10	-10	-40

Assembly components:

1. Config. SIROCCO (P&ID SP-P5-0013):
  - 3 (tree) LT Compressors maxi, No PED.
  - 8 (eight) MT Compressors maxi, No PED.
  - **1 (one) Oil Separator, Cat. II~IV.**
  - **2 (two) Liquid Receivers, Cat. I~IV.**
  - **1 (one) LP Suction Receiver, Cat. I~IV**
  - **1 (one) MP Suction Receiver, Cat. II~IV**
  - **1 (one) Desuperheater, Cat. II~IV**
  - **4 (four) Heat recovery exchanger, Cat. II~IV**
  - **3 (three) Subcoolers, Cat. II~IV**
  - **4 (four) filters, Cat. II**
  - **1 (one) Gas cooler Cat I**
  - **2 (two) Chillers, Cat. II~IV**
  - Piping and accessories, Cat. I maxi.

Boundaries:

- Subcoolers water connections
- Heat recovery water connections
- "LT SUCTION" LP inlet connection
- "LT SUCTION H" LP inlet connection
- "HT SUCTION" MP inlet connection



LRQA Inspection Iberia, S.A. is a company registered in the R. M. de Madrid, in Volume 5218 general, 4358, of Section Sec. 3.ª of the Companies Book, folio 133 sheet nº 41397, inscription. 1.ª C.I.F. - A28591287 - Registered office C/Princesa 29, 1ª. 28008 Madrid. A subsidiary of LRQA Group Limited.

LRQA Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'LRQA'. LRQA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant LRQA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

## CERTIFICATE SCHEDULE 0094/PED/LYO/240076 ENG

2. Config. CRYSTAL (P&ID SP-P5-0014):
- 3 (tree) LT Compressors maxi, No PED.
  - 8 (eight) MT Compressors maxi, No PED.
  - **1 (one) Oil Separator, Cat. II~IV.**
  - **2 (two) Liquid Receivers, Cat. I~IV.**
  - **1 (one) LP Suction Receiver, Cat. I~IV**
  - **1 (one) MP Suction Receiver, Cat. II~IV**
  - **1 (one) Desuperheater, Cat. II~IV**
  - **4 (four) Heat recovery exchanger, Cat. II~IV**
  - **3 (three) Subcoolers, Cat. II~IV**
  - **4 (four) filters, Cat. II**
  - **1 (one) Gas cooler Cat I**
  - **1 (one) chiller, Art. 4.3**
  - Piping and accessories, Cat. I maxi.

Boundaries:

- Subcoolers water connections
- Heat recovery water connections
- "LT SUCTION" LP inlet connection
- "LT SUCTION H" LP inlet connection

3. Config. MISTRAL (P&ID SP-P5-0015):
- 3 (three) LT Compressors maxi, No PED.
  - **1 (one) Oil Separator, Cat. II~IV.**
  - **2 (two) Liquid Receivers, Cat. I~IV.**
  - **1 (one) MP Suction Receiver, Cat. II~IV**
  - **4 (four) Heat recovery exchanger, Cat. II~IV**
  - **3 (three) Subcoolers, Cat. II~IV**
  - **2 (two) Filters, Cat. II**
  - **1 (one) Gas cooler, Cat I**
  - 1 (one) Chiller, Art. 4.3
  - Piping and accessories, Cat. I maxi.

Boundaries:

- Subcoolers water connections
- Heat recovery water connections
- "MT SUCTION" MP inlet connection

4. Config. MISTRAL S (P&ID SP-P5-0016):
- 3 (eight) MT Compressors maxi, No PED.
  - **1 (one) Liquid Receiver, Cat. I~IV.**
  - **2 (two) Heat recovery exchanger, Cat. II~IV**



LRQA Inspection Iberia, S.A. is a company registered in the R. M. de Madrid, in Volume 5218 general, 4358, of Section Sec. 3.ª of the Companies Book, folio 133 sheet nº 41397, inscription. 1.ª C.I.F. - A28591287 - Registered office C/Princesa 29, 1ª. 28008 Madrid. A subsidiary of LRQA Group Limited.

LRQA Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'LRQA'. LRQA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant LRQA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

## CERTIFICATE SCHEDULE 0094/PED/LYO/240076 ENG

- **1 (one) Subcoolers, Cat. II~IV**
- **1 (one) Gas cooler, Cat I**
  
- Piping and accessories, Cat. I maxi.

### Boundaries:

- Subcooler water connections
- Heat recovery water connections
  
- 6. Config. CRYSTAL S (P&ID SP-P5-0017):
- 3 (three) MT Compressors maxi, No PED.
- 4 (four) LT Compressors maxi, No PED.
- **1 (one) Desuperheater Cat. II~IV**
- **1 (one) Liquid Receiver, Cat. I~IV.**
- **2 (two) Heat recovery exchanger, Cat. II~IV**
- **1 (one) Subcoolers, Cat. II~IV**
- **1 (one) Gas cooler, Cat I**
  
- Piping and accessories, Cat. I maxi.

### Boundaries:

- Subcooler water connections
- Heat recovery water connections
- "FROM LS1" oil inlet
- "LT SUCTION" LP inlet
  
- 7. Config. EQUIPT (P&ID SP-P5-0019):
- **2 (two) Heat recovery exchanger, Cat. II~IV**
- **3 (three) Subcoolers, Cat. II~IV**
  
- Piping and accessories, Cat. I maxi.

### Boundaries:

- Subcooler water connections
- Subcooler MP/LP connections
- Heat recovery water connections
- Heat recovery HP connections

Safety devices:



LRQA Inspection Iberia, S.A. is a company registered in the R. M. de Madrid, in Volume 5218 general, 4358, of Section Sec. 3.ª of the Companies Book, folio 133 sheet nº 41397, inscription. 1.ª C.I.F. - A28591287 - Registered office C/Princesa 29, 1ª. 28008 Madrid. A subsidiary of LRQA Group Limited.

LRQA Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'LRQA'. LRQA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant LRQA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

## CERTIFICATE SCHEDULE 0094/PED/LYO/240076 ENG

Deviation (and/or causes)	Protection (PED safety device(s) description)	Setting / Capacity / Action(s) (Safety device(s) characteristics)	Device(s) Category
<b>Configs. "FLEXICO<sub>2</sub>OL Bs6" and "COMBICO<sub>2</sub>OL / COMPACO<sub>2</sub>OL Bs6"</b>			
Overpressure on the Assembly induced by the Compressors 1~5	Pressure Switches item 100	Required: <b>setting value: cut-off 0.9 x PS HP CO<sub>2</sub> side</b> , SIL2, action sequence: shutdown connected compressor	IV
Overpressure on Liquid Receiver due to trapped refrigerant liquid exposed to extreme hot ambient temperature and fluid expansion.	Pressure Safety Valve item 33 installed on Liquid Receiver	Required: <b>setting pressure: PS HP CO<sub>2</sub> side</b> , 10% back pressure max	IV
Overpressure on Suction Receiver (BACL) due to trapped refrigerant liquid exposed to extreme hot ambient temperature.	Pressure Safety Valve item 31 installed on Suction Receiver	Required: <b>setting pressure: PS LP CO<sub>2</sub> side</b> , 10% back pressure max	IV
Overpressure on Oil Separator and Oil Receiver due to trapped refrigerant liquid exposed to extreme hot ambient temperature.	Pressure Safety Valve item 32 installed on Suction Receiver	Required: <b>setting pressure: PS Oil</b> , 10% back pressure max	IV
Overpressure on the Assembly induced by the Compressors 1~5	Pressure Switches item 34	Required: <b>setting value: cut-off 0.9 x PS HP CO<sub>2</sub> side</b> , SIL2, action sequence: shutdown connected compressor	IV
Overpressure on Subcooler SLHE due to trapped refrigerant liquid exposed to extreme hot ambient temperature.	Pressure Safety Valve item 35 installed on Subcooler SLHE	Required: <b>setting pressure: PS LP HFC side</b> , 10% back pressure max	IV
<b>Config. "R�servoir pomp� Bs6"</b>			
Overpressure on Liquid Receiver due to trapped refrigerant liquid exposed to extreme hot ambient temperature and fluid expansion.	Pressure Safety Valve item 33 installed on Liquid Receiver	Required: <b>setting pressure: PS HP CO<sub>2</sub> side</b> , 10% back pressure max	IV
Overpressure on Cascade heat exchanger due to trapped refrigerant liquid exposed to extreme hot ambient temperature and fluid expansion.	Pressure Safety Valve item 35 installed on Liquid Receiver	Required: <b>setting pressure: PS LP HFC side</b> , 10% back pressure max	IV
*Refer to document SW052 for each safety valve minimum required discharge capacity in function of refrigerant and equipment it protects.			

The undermentioned documents have been reviewed for compliance with the Pressure Equipment Directive 2014/68/EU and following Design Code(s):

EN378-2: 2016

### Technical File Contents

Title	Document Number	Rev	Date
P&ID SIROCCO	SP-P5-0013	0	14/06/2024
P&ID CRYSTAL	SP-P5-0014	0	14/06/2024
P&ID MISTRAL	SP-P5-0015	0	14/06/2024
P&ID MISTRAL S	SP-P5-0016	0	14/06/2024
P&ID CRYSTAL S	SP-P5-0017	C	14/06/2024
P&ID CRYSTAL S	SP-P5-0019	0	14/06/2024
CE NAMEPLATE DRAWING	MPS-P5-001	-	14/06/2024
DOSSIER FABRICANT SIROCCO/MISTRAL/HEATCO <sub>2</sub> OL C	DF-P5-0008	4	14/06/2024



LRQA Inspection Iberia, S.A. is a company registered in the R. M. de Madrid, in Volume 5218 general, 4358, of Section Sec. 3.ª of the Companies Book, folio 133 sheet nº 41397, inscription. 1.ª C.I.F. - A28591287 - Registered office C/Princesa 29, 1ª. 28008 Madrid. A subsidiary of LRQA Group Limited.

LRQA Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as "LRQA". LRQA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant LRQA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

## CERTIFICATE SCHEDULE 0094/PED/LYO/240076 ENG

Title	Document Number	Rev	Date
Liste des composants critiques suivant Annexe I de la directive des équipements sous pression 2014/68/UE Directive Machine 2006/42/CE annexe I	LCC-P5-0002	07_03_2024	14/06/2024
CE NAMEPLATE DRAWING	MPS-P5-001	5	14/06/2024
NOTICE D'INSTRUCTIONS Originale	IOM_Cent_CRYSTAL_MIST RAL_SIROCCO FR_2024_06_20	-	14/06/2024
Evaluation et reduction des risques suivant Annexe I de la directive des équipements sous pression 2014/68/UE	ADR-P5-001	11_03_2024	14/06/2024
RAPEX Robinets bloqués 240403	-	-	14/06/2024
Rapport de situation interne	ESS-P5-0001	7	14/06/2024
Rapport de situation interne	SEN378-P5-0001	9	14/06/2024
Evaluation et réduction des risques suivant-Détails de EN378-2 - Art.6.2.6.2	SEN378-P5-0009	13_11_2023	14/06/2024
Evaluation et réduction des risques suivant Annexe I de la directive des équipements sous pression 2014/68/UE	ADR-P5-0001	11/03/2024	14/06/2024
Capacités minimales de décharge requises pour les récipients	SW 052 "RECIPIENTS TRANSCRITIQUE"	20/03/2024	14/06/2024
Capacités minimales de décharge requises pour les récipients	SW 052 "RECIPIENTS TRANSCRITQUES MULTI"	20/03/2024	14/06/2024
Capacités minimales de décharge requises pour les récipients	SW 052 "ECHANGEURS TRANSCRITIQUE"	20/03/2024	14/06/2024

### LRQA Reports

Title	Document Number	Date
Design Appraisal Document	PRJ11100429247-1/Btrans1 Issue 02	14/06/2024
Visit Report	PRJ11100512758-1/VR_B_Btrans1 Issue 01	18/06/2024

Schedule Issue: Issue 01  
Date of Schedule Issue: 19 June 2024  
Notified Body 0094

CARRE Mathieu / LRQA inspection Iberia



LRQA Inspection Iberia, S.A. is a company registered in the R. M. de Madrid, in Volume 5218 general, 4358, of Section Sec. 3.ª of the Companies Book, folio 133 sheet nº 41397, inscription. 1.ª C.I.F. - A28591287 - Registered office C/Princesa 29, 1ª. 28008 Madrid. A subsidiary of LRQA Group Limited.

LRQA Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'LRQA'. LRQA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant LRQA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.