CERTIFICATO DI CONFORMITA' 合格證書

CERTIFICATE OF CONFORMITY

Secondo il Modulo F della direttiva attrezzature a pressione 2014/68/EU

as per Module F of pressure equipment directive 2014/68/EU

N° CE-1370-PED-F-FAB 131-22-ITA 證書號碼

Bureau Veritas Italia SpA, agendo all'interno dello scopo della sua notifica (numero dell'organismo notificato 1370) , per il modulo F in accordo all'allegato III della direttiva « Attrezzature a Pressione » N° 2014/68/UE, certifica che gli esami e le prove sono stati eseguiti sull'attrezzatura/insieme identificata/o sotto, con risultati positivi.

Bureau Veritas Italia SpA, acting within the scope of its notification (Notified Body number 1370) for module F according to annex III of the Pressure Equipment Directive 2014/68/EU, certifies that examination and the tests have been carried out on the equipment/assembly below identified, with satisfactory result.

Fabbricante (Nome) */ Manufacturer (Name):*	FABER INDUSTRIE S.p.A
Indirizzo */ Address:*	Via dell'Industria, 64 33043, CIVIDALE DEL FRIULI, Italy
Rappresentante Autorizzato (Nome) */ Authorised representative (Name):*	N.A.
Indirizzo */ Address:*	N.A.

Attrezzatura/Insieme / *EQUIPMENT/ASSEMBLY*

Componente */ Item:*	pressure vessel. Batch No. 22/5131
Descrizione dell'attrezzatura/insieme */ Equipment/Assembly description:*	120 off 50 liters Fibre Reinforced Steel cylinders, forming from tube, according to drawing No. PED-262-1500-755/T/2B/CARB rev.0

MARCHI / *INFORMATION*

120支50公升纖維強化鋼瓶，依圖紙. . . 製造

Identificazione del fabbricante: *Trading Name - Mark*	FABER

Marchio */ Marking:* CE 1370 (Numero dell'organismo notificato di */ Notified body number:* Bureau Veritas Italia SpA)

Anno di fabbricazione *Year of manufacture (and month whereas requested by applied standard)*	2022 /03
Numero di serie */ Serial number:* 序號範圍	from 22/5131/001 to 22/5131/122 [excluded cylinder(s) : none]

Fatto a *Made at*	Il (gg/mm/aaaa) *On (dd/mm/yyyy)*	Approvato e Registrato in *Approved and Recorded in*	Firmato da *Signed by*	Firma autorizzata dall'Organismo Notificato N 1370 *Signature Authorized by Notified Body No 1370*
PADUA	20/05/2022	Italy	ANDREA GHERSINI	Andrea Ghersini

Codice di Registrazione */ Registration Code :* 2022/001193/CE-1370-PED

BUREAU VERITAS ITALIA Notified Body no. 1370

PED - F - Rev. 06/2016 F

N° CE-1370-PED-F-FAB 131-22-ITA

Nell'esecuzione dell'attività finalizzata all'emissione del presente certificato, è stato preso come riferimento il dossier tecnico del fabbricante di seguito indicato: *For the activity carried out for the issuance of the present certificate, the following manufacturer's technical book was taken as reference*	testing certificate of production batch No. 22/5131, with mechanical and NDT test results 生產批次號22/5131測試證書，包括機械測試和非破壞測試結果
Esistenza di un allegato al certificato : *Existence of an annex to the certificate*	none.

Certificato di esame CE del tipo o della progettazione n° *EC type or design-examination certificate n°*	CE-1370-PED-B-FAB 019-12-ITA

Emesso da */ Issued by:*	Bureau Veritas Italy, (NoBo. 1370)
Valido fino a (gg/mm/aaaa) */ Valid until (dd/mm/yyyy):*	16/07/2022

Limiti essenziali massimi / minimi ammissibili */ Essential minimum/maximum allowable limits:*	
-	PS(bar) = 1000 bar @15°C
	TS(°C) = -40° / +65°

PROVE EFFETTUATE DAL FABBRICANTE ***/ TESTS CARRIED OUT BY MANUFACTURER*** 自爆試驗，水壓試驗

Elenco delle prove */ List of tests:*	External/Internal visual exam.; autofrattage test; hydraulic test; mech. tests (on cylinder No.22/5131/121); cycling & burst test (on cyl. No.22/5131/122)
Osservazioni - allegati */ Remarks - enclosures:*	none

INFORMAZIONI SUPPLEMENTARI (se applicabile) ***/ FURTHER INFORMATION (where applicable)***

- volume V degli apparecchi a pressione (L): *volume V of the pressure equipment/assembly (L)*	50.0 Liters
- dimensione nominale della tubazione DN: *nominal size for piping DN*	N.A.
- pressione di prova PT applicata (bar) e data: *test pressure PT applied (bar) and date*	1500 bar performed by water, on 31st March 2022
- pressione di taratura del dispositivo di sicurezza (bar): *safety device set pressure (bar)*	N.A.
- potenza dell'attrezzatura a pressione/insieme (kW): *output of the pressure equipment/assembly (kW)*	N.A.
- tensione di alimentazione (volts): *supply voltage (volts)*	N.A.
- utilizzo previsto: *intended use*	Hydrogen storage accumulator
- rapporto di riempimento (kg/L): *filling ratio (kg/L)*	N.A.
- massa di riempimento massima (kg): *maximum filling mass (kg)*	N.A.
- tara (kg): *tare mass (kg)*	tare for each cylinder is indicated on the manufacturer's list
- gruppo dei fluidi (sostanze e miscele): *fluids group (substances and mixtures)*	group 1 (gas)
- altri informazioni: *other information*	see operating instructions of cylinders.
Natura ed ubicazione della marcatura dell'attrezzatura/insieme: *Nature and location of the affixing of the marking of the equipment/assembly*	mandatory markings on cylinders shoulder. Other eventual markings, on opposite side.

PED - F - Rev. 06/2016 F

合格聲明　　根據歐盟指令2014/68/EU符合性聲明

Faber CYLINDERS	**CONFORMITY DECLARATION** (according to European Directive 2014/68/EU) ***DICHIARAZIONE DI CONFORMITA'*** *(ai sensi della Direttiva Europea 2014/68/EU)*	**PAG. 1 OF 1**

The Company Faber Industrie s.p.a. – Via dell'Industria, 64 - XI Zona Industriale Cividale del Friuli (UD) – ITALY,
La società Faber Industrie s.p.a. – con sede in Via dell'Industria, 64 - XI Zona Industriale Cividale del Friuli (UD) – ITALIA,

DECLARES
DICHIARA

that the manufactured pressure equipment:
che l'attrezzatura a pressione costruita:

Definition: **GAS CYLINDER**
Definizione: BOMBOLA PER GAS

Drawing N°: **PED-262-1500-755/T/2B/CARB REV.0**
N° disegno:

Water capacity V **50** litre/ *litri*
Capacità

Min. e max. allowable temperatures: **-40 ÷ +65 °C**
Temperatura min. e max. ammissibili:

Operating fluid: **GROUP 1**
Fluido contenuto:

Max. allowable pressure: **1000** bar
Pressione max. ammissibile:

Manufacturer N°/ *N° di fabbrica*

No. of cylinders / *numero di bombole*

from/ *dal* **22/5131/001** to/ *al* **22/5131/122**

120

符合指令PED 2014/68/EU的要求

MEETS THE REQUIREMENTS OF DIRECTIVE PED 2014/68/EU
E' CONFORME AI REQUISITI DELLA DIRETTIVA PED 2014/68/EU

1. Conformity assessment procedures used: Module **B+F** (Category **IV**)
   (Module B in compliance with Annex II and III of Directive 97/23/CE
   Module F in compliance with Annex II and III of Directive 2014/68/EU)
   Procedura/e di valutazione di conformità utilizzata: Modulo ***B+F*** *(Categoria* ***IV*** *)*
   (Modulo B in accordo agli allegati II e III della Direttiva 97/23/CE
   Modulo F in accordo agli allegati II e III della Direttiva 2014/68/EU)
2. Notified Body charged of the conformity assessment: N° **1370** **BUREAU VERITAS ITALIA**
   Organismo Notificato incaricato della valutazione di conformità: N°
3. Registration number of "CE Type Examination Certificate": **CE-1370-PED-B-FAB019-12-ITA**
   Estremi dell' "Attestato dell'esame CE del tipo":
4. Not harmonized standards applied to designing and manufacture: **EN 12257**
   Norme non armonizzate applicate alla progettazione ed alla costruzione:
5. Harmonized standards applied to designing and manufacture: **None**
   Norme armonizzate applicate alla progettazione ed alla costruzione: ***Nessuna***
6. Others European Directives applied to the equipment: **None**
   Eventuali altre Direttive europee applicate all'attrezzatura: ***Nessuna***
7. Registration number of Conformity Certificate issued by the Notified Body charged of assessment procedure "Module F": **CE-1370-PED-F-FAB 131-22-ITA**
   Estremi dell'Attestato di Conformità rilasciato dall'Organismo Notificato incaricato della procedura di valutazione "Modulo F":

It is declared that the equipment has been hydraulic tested with favourable result at the pressure of: (PT) **1500** bar, it is marked CE 1370 and with identification data and the working parameters upside reported.
Dichiara inoltre che l'attrezzatura è stata sottoposta con esito favorevole a prova di pressione idraulica di : (PT) ***1500*** *bar, che è stata marcata CE 1370 e con i dati identificativi e le caratteristiche di esercizio sopra riportati.*

The assembly must be subjected to a global conformity assessment procedure described in the directive PED 2014/68/EU.
L'insieme deve essere sottoposto ad una procedura globale di valutazione di conformità così come previsto dalla direttiva PED 2014/68/EU.

Cividale del Friuli 20/05/2022

Faber Industrie S.p.A.

Faber CYLINDERS

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Faber CYLINDERS	PRODUCTION TESTING CERTIFICATE OF COMPOSITE CYLINDERS	PAG. 1 OF 7

Manufacturer: **FABER INDUSTRIE SPA - CIVIDALE DEL FRIULI - UDINE- ITALY**

Inspection: **BUREAU VERITAS** Specification: **EN 12257(PED)**

Manufacturer Serial No(s) from: **22/5131/001** to **22/5131/122**

Gas: **GROUP 1**

Type of cylinder: **Seamless, hoop wrapped composite cylinders**
Design life: **Non-limited**
Total cylinders: **120**

Maximum allowable working pressure **1000** bar
Working temperature: **-40° ÷ +65° C**

Nominal data

Drawing number	Test pressure (bar)	Min. design liner wall thickness (mm)	Minimum composite design thickness (mm)	Nominal diameter (mm)	Nominal length without valve (mm)	Nominal water capacity (l)	Nominal weight (Kg)
PED-262-1500-755/T/2B/CARB REV.0	**1500**	**19.50**	**8.0**	**262**	**1800**	**50**	**228.0**

We hereby certify that the cylinders of the batch no. **22/5131** comply with the following requirements:
Neck thread : **G 3/4 ISO 228-1 2000 - G 3/4 ISO 228-1 2000**
Identification marks stamped on cylinders shoulder according to drawing: **PPED019 2**

Minimum liner cylindrical shell thickness:
The wall thickness of all cylinders has been measured and found to be not less than : **19.50** mm

Minimum composite design thickness:
The minimum thickness of the composite has been measured and found to be not less than : **8.0** mm

Hardness range:
All cylinders have been controlled within the following hardness values: Min **262** HB, Max **290** HB

Heat treatment:
All cylinders have been heat treated at the following temperatures:
Liquid quench: 900 °C ± 20 °C Temper at: 600 °C ± 30 °C

Note:
The cylinders listed in the present certificate are designed for a non-limited life.
For their use with Compressed Gases and Liquefied Gases these cylinders are to be tested and inspected with the periodicity described

Date: **20/05/2022**	For and on behalf of the manufacturer: Faber CYLINDERS	For and on behalf of R.I.N.A. BUREAU VERITAS ITALY WITNESSED NOTED REVIEWED SURVEYOR E. BULFON DATE

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Faber CYLINDERS	PRODUCTION TESTING CERTIFICATE OF COMPOSITE CYLINDERS	PAG. 2 OF 7

Chemical analysis:

Material: **34CRMO4**

The cylinders of the batch no. **22/5131** have been manufactured from the following cast(s) of steel:

Cast Numb.	Code (*)	C (%)	Si (%)	Mn (%)	P (%)	S (%)	Cr (%)	Mo (%)	S+P (%)
289386	S41	0.34	0.23	0.86	0.012	0.003	1.08	0.22	0.015

(*)marked on outer bottom surface

MECHANICAL TESTS:

Cylinder Serial no.	Code (*)	Test piece dimension (mm)	Yield strength (MPa)	Tensile strength (MPa)	Elongation (%)	Impact test -50°C			Bend test 180° without cracking
						Direction	Individual (J/cm²)	Mean (J/cm²)	
22/5131/121	S41	10 x 23.1	835	940	21.9	TRASV	109 110 111	110	SATISF.
Minimum values specified			755	850	16		50	50	

COMPOSITE MECHANICAL PROPERTIES :

	Type	Manufacturer	Batch No.	Faber code	Tensile Strength (MPa)	Interlaminar Shear Strength (MPa)
FIBER	CARBON FIBER T700SC-24000-50C	SOFICAR	F3122B4	C6W	2429	NA
RESIN	EPOXY RESIN LY 3585 CH ARALDITE	HUNTSMAN	AAK1059600	EDV		
HARDENER	HARDENER ARADUR 3486	HUNTSMAN	AAK0684800	HFW		
			Minimun Specified Values		2200	NA

CYCLING AND BURST TESTS:

Cylinder serial no.	Cycling test range pressure (bar)	Number of pressurizations (Cycles)	Result of burst test (bar) ≥ 2555
22/5131/122	20 ÷ 1500	12000	NA
22/5131/122	NA	NA	3024

For and on behalf of the manufacturer:	For and on behalf of A.I.A.
Faber CYLINDERS	BUREAU VERITAS ITALY WITNESSED ~~NOTED~~ REVIEWED SURVEYOR E. BULFON DATE

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Faber CYLINDERS	ULTRASONIC TEST CERTIFICATE	PAG. 3 OF 7

TESTING OBJECT:

CYLINDER ACCORDING TO DRAWING: **PED-262-1500-755/T/2B/CARB REV.0**
OUTSIDE DIAMETER: **262** mm WATER CAPACITY: **50** l
MIN. WALL THICKNESS: **19.5** mm NOMINAL LENGTH: **1800** mm
FROM CYLINDER SERIAL No. : **22/5131/001** to **22/5131/122**

TEST TECHNICAL DATA:

EXAMINATION STANDARD: **EN 1964-1**
INSPECTED PART: **CYLINDRICAL WALL**
EXTENTION OF EXAMINATION: **100 %**
FABRICATION STAGE: **AFTER HEAT TREATMENT (QUENCHING AND TEMPERING), SHOT BLASTING AND BEFORE PRESSURE TESTING**
PROBES: **LONGITUDINAL,TRANSVERSAL AND THICKNESS**
COUPLANT: **EMULSIFIED WATER**
SCANNING DIRECTION: **CIRCUMFERENTIAL, AXIAL AND RADIAL DIRECTIONS**
REFERENCE REFLECTOR: **CALIBRATION CYLINDER ACCORDING TO EN 1964-1**

EXAMINATION RESULTS:

ALL CYLINDERS HAVE BEEN CHECKED GIVING SATISFACTORY RESULTS.

For and on behalf of the manufacturer:	For and on behalf of A.I.A.
Faber CYLINDERS	BUREAU VERITAS ITALY WITNESSED NOTED REVIEWED SURVEYOR E. BULFON DATE

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Faber CYLINDERS

RECORD OF HYDROSTATIC TESTS ON COMPOSITE CYLINDERS

LOT No. **22/5131** NUMBER OF CYLINDERS: **120** TEST DATE: **03/2022**

ACCORDING TO DWG. **PED-262-1500-755/T/2B/CARB REV.0**

MAXIMUM ALLOWABLE WORKING PRESSURE: **1000** (bar)

TEST PRESSURE: **1500** (bar) AUTOFRATTAGE PRESSURE: **2100** (bar)

CYLINDER SIZE : OUTSIDE DIAMETER (mm) **262** LENGTH(mm) **1800** WATER CAPACITY: **50** l

REMARKS: M = Mechanical Tests, B = Burst Tests, P = Prototype Tests, S = Cylinder Discarded, C = Cycling Test, C+B = Cycling + Burst Test.

FITTINGS : "CO" = Collar

CYLINDER SERIAL No.	CUSTOMER NUMBER	HEAT CODE AND NUMBER	US TEST	AUTOFRATTAGE PRESSURE TEST	PROOF PRESSURE TEST	MASS (Kg)	TARE (Kg)	REMARKS
22/5131/001		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/002		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/003		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/004		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/005		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/006		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/007		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/008		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/009		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/010		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/011		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/012		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/013		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/014		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/015		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/016		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/017		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/018		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/019		S41 289386	PASSED	PASSED	PASSED	232		
22/5131/020		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/021		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/022		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/023		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/024		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/025		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/026		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/027		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/028		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/029		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/030		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/031		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/032		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/033		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/034		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/035		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/036		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/037		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/038		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/039		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/040		S41 289386	PASSED	PASSED	PASSED	230		

Manufacturer stamp and signature: Faber CYLINDERS

For and on behalf of the Independent Inspector Authority:

BUREAU VERITAS ITALY
WITNESSED NOTED REVIEWED
SURVEYOR E. BULFON
DATE

Faber® CYLINDERS

RECORD OF HYDROSTATIC TESTS ON COMPOSITE CYLINDERS

LOT No. **22/5131** NUMBER OF CYLINDERS: **120** TEST DATE: **03/2022**

ACCORDING TO DWG. **PED-262-1500-755/T/2B/CARB REV.0**

MAXIMUM ALLOWABLE WORKING PRESSURE: **1000** (bar)

TEST PRESSURE: **1500** (bar) AUTOFRATTAGE PRESSURE: **2100** (bar)

CYLINDER SIZE : OUTSIDE DIAMETER (mm) **262** LENGTH(mm) **1800** WATER CAPACITY: **50** l

REMARKS: M = Mechanical Tests, B = Burst Tests, P = Prototype Tests, S = Cylinder Discarded, C = Cycling Test, C+B = Cycling + Burst Test.

FITTINGS : "CO" = Collar

CYLINDER SERIAL No.	CUSTOMER NUMBER	HEAT CODE AND NUMBER	US TEST	AUTOFRATTAGE PRESSURE TEST	PROOF PRESSURE TEST	MASS (Kg)	TARE (Kg)	REMARKS
22/5131/041		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/042		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/043		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/044		S41 289386	PASSED	PASSED	PASSED	228		
22/5131/045		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/046		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/047		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/048		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/049		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/050		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/051		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/052		S41 289386	PASSED	PASSED	PASSED	232		
22/5131/053		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/054		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/055		S41 289386	PASSED	PASSED	PASSED	228		
22/5131/056		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/057		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/058		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/059		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/060		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/061		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/062		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/063		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/064		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/065		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/066		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/067		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/068		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/069		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/070		S41 289386	PASSED	PASSED	PASSED	224		
22/5131/071		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/072		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/073		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/074		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/075		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/076		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/077		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/078		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/079		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/080		S41 289386	PASSED	PASSED	PASSED	230		

Manufacturer stamp and signature: Faber® CYLINDERS

For and on behalf of the Independent Inspector Authority:

BUREAU VERITAS
WITNESSED NOTED REVIEWED
SURVEYOR E. BULFON
DATE

172761

Faber® CYLINDERS

RECORD OF HYDROSTATIC TESTS ON COMPOSITE CYLINDERS

LOT No. **22/5131** NUMBER OF CYLINDERS: **120** TEST DATE: **03/2022**

ACCORDING TO DWG. **PED-262-1500-755/T/2B/CARB REV.0**

MAXIMUM ALLOWABLE WORKING PRESSURE: **1000** (bar)

TEST PRESSURE: **1500** (bar) AUTOFRATTAGE PRESSURE: **2100** (bar)

CYLINDER SIZE : OUTSIDE DIAMETER (mm) **262** LENGTH(mm) **1800** WATER CAPACITY: **50** l

REMARKS: M = Mechanical Tests, B = Burst Tests, P = Prototype Tests, S = Cylinder Discarded, C = Cycling Test, C+B = Cycling + Burst Test.

FITTINGS : "CO" = Collar

CYLINDER SERIAL No.	CUSTOMER NUMBER	HEAT CODE AND NUMBER	US TEST	AUTOFRATTAGE PRESSURE TEST	PROOF PRESSURE TEST	MASS (Kg)	TARE (Kg)	REMARKS
22/5131/081		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/082		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/083		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/084		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/085		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/086		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/087		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/088		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/089		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/090		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/091		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/092		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/093		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/094		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/095		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/096		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/097		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/098		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/099		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/100		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/101		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/102		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/103		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/104		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/105		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/106		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/107		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/108		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/109		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/110		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/111		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/112		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/113		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/114		S41 289386	PASSED	PASSED	PASSED	231		
22/5131/115		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/116		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/117		S41 289386	PASSED	PASSED	PASSED	230		
22/5131/118		S41 289386	PASSED	PASSED	PASSED	229		
22/5131/119		S41 289386	PASSED	PASSED	PASSED	228		
22/5131/120		S41 289386	PASSED	PASSED	PASSED	224		

Manufacturer stamp and signature: Faber® CYLINDERS

For and on behalf of the Independent Inspection Authority:

BUREAU VERITAS
WITNESSED NOTED REVIEWED
SURVEYOR E. BULFON
DATE

172761

1. La bombola è costituita solamente dal liner metallico e dal rivestimento esterno in materiale composito.
   The cylinder consists of the metallic liner and the composite overwrap.
2. La bombola deve essere utilizzata solo da personale addestrato ed esperto.
   The cylinder shall be utilized by trained and expert personnel.
3. I limiti ammissibili di PS e TS sono marcati sulla bombola.
   The allowable limits of PS and TS are marked on the cylinder
4. La bombola non deve essere sottoposta a pressioni o temperature eccedenti PS, TS. Qualora si preveda che i limiti ammissibili possano essere superati, l'assemblatore finale deve dotare la bombola di adeguati dispositivi di sicurezza.
   The cylinder shall not be subjected to pressures and temperatures exceeding PS, TS. Where it is foreseeable the allowable limits could be exceeded, the final assembler shall equip the cylinder with safety devices
5. La bombola non deve essere sottoposta a saldatura, foratura o altre lavorazioni che pregiudichino l'integrità strutturale.
   The cylinder shall not be subjected to welding, drilling or other machining that jeopardy the structural integrity.
6. Le prescrizioni delle norme e regolamenti nazionali devono essere rispettate. E' responsabilità del proprietario far eseguire le ispezioni periodiche con le modalità e gli intervalli temporali in esse riportati. Si raccomanda di sottoporre almeno una volta ogni 5 anni la bombola ad un controllo visivo interno ed esterno da personale competente.
   The requirements of national standards and regulations shall be respected. The owner is responsible to submit the cylinder to periodic inspections with the methods and time intervals according to national standards and regulations. It is recommended to submit the cylinder at least a time in 5 years to a visual (internal and external) inspection by a competent person.
7. La bombola è progettata per contenere idrogeno e non può essere utilizzata con altri fluidi, corrosivi, erosivi, instabi.
   The cylinder is designed to contain hydrogen, it can not be used for other fluids, corrosive, erosive, unstable.
8. L'installazione deve garantire la protezione da urti esterni, intemperie, fonti di calore, aggressioni chimiche ed esposizione diretta alla luce del sole. In ogni caso vanno tenute in opportuna considerazione eventuali sollecitazioni non eliminabili dovute a incendio, vento, terremoti, traffico e etc.
   La bombola può essere utilizzata in posizione verticale o orizzontale. La massima pressione di contatto sulla superficie composita non deve essere superiore a 30 N/cm2. Il sistema di supporto deve tenere in considerazione gli allungamenti circonferenziali e assiali nella misura dello 0.4%del diametro e dello 0.2% della lunghezza. Prevedere l'interposizione di una fascia di gomma per prevenire lo strisciamento e l'accumulo di umidità
   The installation shall guarantee the protection from external hits, bad whether, heat sources, chemical aggressions and direct sun light exposition. Non eliminable stresses due to fire, wind, earthquakes, traffic and etc., must be held in opportune consideration. The cylinder shall be utilized in vertical or horizontal position. The maximum contact pressure on the composite surface shall be limited to 30 N/cm2.The support system shall take in consideration the hoop and axial elongation in the measure of 0.4% of diameter and 0.2% of length. Foresee the interposition of a rubber band to prevent friction and humidity accumulation.
9. Le prove di qualifica richiedono che la bombola si sottoposta a 12000 cicli di pressione tra 1500 bar (1.5 PS) e non superiori a 30 bar usando un liquido non corrosivo (acqua). Per la definizione dei cicli di servizio ammissibili con idrogeno si devono prendere in considerazione opportuni coefficienti di riduzione per tener conto dei cicli di pressione reale e dalla natura del gas.
   The qualification tests require the cylinder to be pressure cycled to 12000 cycles between 1500 bar (1.5 PS) and not higher than 30 bar using a non corrosive liquid (water). For the definition of the allowable service cycles with Hydrogen, the actual pressure amplitude and the appropriate reduction coefficient shall be applied so as to reflect the operating conditions and the nature of the gas.
10. Quando alla bombola vengono montati gli "Accessori" come definiti dall' Art. 2 e 4 della direttiva PED 2014/68/EU la valutazione di conformità alla direttiva dell'assieme: "Bombola e Accessori" viene demandata all'assemblatore finale.
    When the "Accessories" as defined in Art. 2 4 of directive PED 2014/68/EU will be mounted to the cylinder the conformity assessment of the assembly: "Cylinder Accessories" is demanded to final assembler.ler.
11. La bombola è progettata per vita non-limitata (come definito dalla EN 12257). Per rimanere in servizio oltre 15 anni si raccomanda una riqualifica della bombola.
    Non mettere in servizio la bombola se presenta segni di fiamma, urto, corrosione, abrasione o fessurazione
    The cylinder is designed for non-limited life (as defined by EN 12257). In order to remain in service beyond 15 years, re-qualification of the cylinder is recommended
    Do not put on service the cylinder if it shows marks of flame, impact, corrosion, abrasion or flaw.