Certificate of Conformity

Certificate Nº CoC-2880-287-25158

Manufacturer	Shandong Yongan Heli Special Equipment Co., Ltd.
Address	Northeast Junction of Huaihailu and Gongyejiulu, Junan County, Linyi City, Shandong Province
Country	P.R. China

Manufacturer's Mark

Regulation[s]	TPED 2010/35/EU, ADR 2025
Design Specification	ISO 9809-1:2019

Inspection Body [Xa]	Arrowhead Industrial Services (EU), Lda
Address	Aveiro Business Center. Rua da Igreja 79. N. Sra. de Fátima, 3810-744 Aveiro. Portugal
Identification Number	2880
Inspector's Mark	
Type Approval Nº	TAC-2880-287-2322
Cylinder Type	Refillable seamless steel gas cylinders
Drawing Nº	ISO267-Mn-00-5.9
Revision:	0
Batch Inspection Report Nº['s]	BIR-2880-287-K25045

Total Quantity Accepted 80 units

See "Batch Inspection Report" for detailed Serial No.'s.

Customer	/
Address	/
Country	/

The undersigned hereby declare that the Conformity Assessment Requirements of the above referenced Regulations have been carried out satisfactorily and that the cylinders accepted conform to the Design Specifications. Test reports are supplied separately.

General Remarks

SYAH-PIR-AIS-2538 Item 1. Approved marking drawing ISO267-Mn-00-5.9-M17.

Representative of Manufacturer	Chuanlei Zhang	**Signature**	
Date of Signature	26 May 2025		

Approved by

Beatriz Campos

Certifying Inspector

Arrowhead Industrial Services (EU), Lda

Notified Body Identification Number: **2880**

Signature

Digitally signed by Beatriz Campos
DN: cn=Beatriz Campos, ou=Arrowhead Industrial Services, email=certificates@arrowheadis.com, c=GB
Date: 2025.05.28 14:46:43 +01'00'

Batch Inspection Report

Report No.: 2880-287-BIR-K25045

Client: SYAH-287 **Drawing No.:** ISO267-Mn-00-5.9 **Revision:** 0

Specification: ISO 9809-1:2019 **Batch No.:** K25045 **No. of cylinders accepted:** 80

Serial No. from K25045001 **to** K25045082 **excluding** K25045005, 010

Certificate of Conformity No.: CoC-2880-287-25158

Nominal dimensions

Water capacity: 67.5 L Length: 1460 mm O. diameter: 267 mm Min. thickness: 5.9 mm

Working pressure: 150 bar Test pressure: 250 bar

Material Supplier: Hengyang Valin Steeltube **Heat treatment** WFP/R-02-26

Material Cert.: 25 401238/401502/401700/401349/307199 Type: 37Mn

Heat treat No.: 25301275 Cast Code: 625020168

Report No.:	2025/4/27
Satisfied (Y/N)	Y

Hardness test report No.: WFP/R-02-06 dated 28 Apr 2025

Specified hardness range			Actual hardness range		
185	-	330	201	-	311

Visual inspection report No.: WFP/R-02-11 dated 28 Apr 2025

Dimensional inspection report No.: WFP/R-02-18 dated 28 Apr 2025

Hydraulic test report No.: WFP/R-02-19 dated 28 Apr 2025 **Hydraulic test method:** VE Int

Thread Inspection report No.: WFP/R-02-07 dated 28 Apr 2025 **Leak test report No.:** WFP/R-02-21 dated 29 Apr 2025

Base check report No.: WFP/R-03-07 dated 28 Apr 2025 **Marking check report No.:** WFP/R-02-11 dated 28 Apr 2025

Tensile test report No.: WFP/R-03-05 dated 28 Apr 2025

Specimen No.	Direction	Temp. (°C)	Width(mm)	Thickness(mm)	Gauge L.(mm)	.2% Yield(MPa)	Tensile(MPa)	Elongation A%
045-1	Longitudinal	/	19.9	6.4	65.0	695	810	18.0
					Min. values	660	780	14.0

Bend test report No.: NA

Specimen No.	Width, w, mm	Thickness, tm, mm	Value of n	Former D., Df, mm	Support dis., mm	Angle of Bend
/	/	/	/	/	/	/

Impact test report No.: WFP/R-03-05 dated 28 Apr 2025

Specimen No.	Direction	Type	Temp. (°C)	Width(mm)	Impact value (J/cm^2)			Aver. (J/cm^2)
045-2, -3, -4	Transverse	ISO-V	-50	6.3/6.3/6.4	123	131	113	122
				Min. values	28			35

Hydraulic burst report No.: WFP/R-03-06 dated 28 Apr 2025

Serial No.	Yield pressure (bar)	Burst pressure (bar)	No. of pieces	Fracture location	Min. burst (bar)
010	403	456.0	1	cylindrical portion	400

No.	Specifications	Requirements
1	ISO 9809-1:2019/ 10.1.2	Ascertain that the **type approval** certificate, as indicated above, has been obtained and that the cylinders conform to it.
2	ISO 9809-1:2019/ 10.1.1, 10.1.2	Check the certificates stating the **cast analysis** of the steel supplied for the manufacture of the cylinders. The steel of all cylinders shall comply with the material requirements of clause 6 and the approved drawing.
3	ISO 9809-1:2019/ 10.1.1, 10.1.2	Check evidence that appropriate **heat treatment** has been performed.
4	ISO 9809-1:2019/ 10.1.1	**Ultrasonic examination**. Verify lot numbers and serial numbers are correct. Verify equipment has been calibrated correctly in accordance with the requirements of Annex B. Sign and date ultrasonic examination data sheets. Ensure manufacturer has signed sheets first. All cylinders represented in the Certificate of Conformity have been examined in accordance with the requirements of Annex B and comply with the pass criteria for defects and minimum wall thickness shown on the approved drawing.

Batch Inspection Report

Report No.: 2880-287-BIR-K25045

No.	Specifications	Requirements
5	ISO 9809-1:2019/ 10.1.1, 10.1.2	The **serial numbers** of cylinders/liners were checked and recorded correctly in the Certificate of Conformity. Any rejected serial numbers were correctly documented.
6	ISO 9809-1:2019/ 10.1.1	The **threads** on at least 10% of the cylinders/liners represented in the Certificate of Conformity are in compliance with the approved drawing.
7	ISO 9809-1:2019/ 10.1.2+Annex A	**Visually inspect** a minimum of 10% of each lot for internal and external defects. If an unacceptable defect is found (for examples see Annex A), 100% of the cylinders shall be visually inspected. All the cylinders represented in the Certificate of Conformity meet the requirements of clauses 7.7, 7.8 and 8.2 to 8.9.
8	ISO 9809-1:2019/ 10.1.2 a); 10.4	Select and witness **hydraulic burst test** on one cylinder from each lot (bearing representative stamp markings). The cylinder has been tested in accordance with the requirements of clause 10.4 and complies with the pass criteria of this test. Attach record of pressure/time curve identifying, lot number, heat code and serial number if available.
9	ISO 9809-1:2019/10.1.2 b)	A **base check** has been carried out for cylinders made from continuously cast billet material in accordance with 9.2.3.
10	ISO 9809-1:2019/ 10.1.2 b); 10.2, 10.3, 9.2.4	Witness **tensile and impact tests** and the results satisfy the approved design requirements.
11	ISO 9809-1:2019/ 10.1.2 b); 11.3	Verify **hardness testing** has been completed on each liner in accordance with Clause 11.3 and the results were in compliance with specification.
12	ISO 9809-1:2019/ 11.2	All cylinders with serial numbers referenced in the Certificate of Conformity have been **hydraulic proof pressure tested or Volumetric expansion tested** and comply with the test pressure on the approved drawing and the pass criteria.
13	ISO 9809-1:2019/ 11.4	**Leak test** has been witnessed on all cylinders with serial numbers referenced in the Certificate of Conformity and don't leak.
14	ISO 9809-1:2019/ 11.5	The manufacturer shall verify that the **water capacity** conforms to the design drawing.
15	ISO 9809-1:2019/ 13	Verify that **stamp markings** are correct on all cylinders represented in the Certificate of Conformity and that they comply with the approved stamping drawing.

Note: See extra test reports for type approval batch.

I, the undersigned, hereby declare that I have verified that cylinders identified by the serial numbers above are in compliance with the production requirements of the specifications listed above.

Inspector: _____ Date: 26 May 2025

Baoxiang Zhang

On behalf of Arrowhead Industrial Services (EU), Lda

Design type approval and certificate of compliance records shall be retained by the manufacturer for not less than 20 years.