

Manufacturer: Sinoma

Jiujiang City, Jiangxi Province, China

Country of origin: China

Drawing: DOT-232-30T58-2900PSI

Serial no.: _____

Date of manufacture: _____

Importer/supplier:

Tel. _____ E-mail: _____



PASSPORT

1. BASIC INFORMATION ABOUT THE PRODUCT

Product name: Seamless steel cylinders for liquefied and compressed gases

Product designation: Transportation, storage, and usage of actuating medium – gases group 1 and 2, which are not self-ignitionable, oxidizable, inflammable, explosive, toxic, and highly toxic gases, liquids and vapors in a single-phase state, as well as their mixtures, in accordance with Customs union Technical regulations CU TR 032/2013 “About safety of equipment operating under excessive pressure”.

2. BASIC TECHNICAL SPECIFICATIONS

Working pressure, PSI	2900	Test pressure, PSI	4833
Water capacity, L	40	Weight, kg	55
Outer diameter, mm	232 ±1%	Length, mm	1415 ±20
Minimal wall thickness, mm	7,0	Bottom shape	Concave
Thread	25E	Type of heat treating	Quenching & tempering
Port seal	yes	Maximum quantity of fillings	12000
Design standard	DOT3AA	Material	37Mn

Ambient temperature during operation: -50 C to + 65 C

Periodicity of test operations: according to national requirements of the country of operation, but not less than once in 10 years

Estimated service life: 40 years with positive results of the test operations

3. CONTENTS OF SUPPLY

Item No.	Name	Quantity

4. REQUIREMENTS TO TRANSPORTATION AND STORAGE

Transportation of cylinders filled with gas must be carried out in accordance with the rules for the carriage of goods operating on each mode of transport.

Filled cylinders should be stored in an upright position. To prevent falling, cylinders Cylinders can be stored both in special rooms and outdoors, in the latter case it should be protected from atmospheric precipitation and sunlight. Warehouse storage in one room of cylinders with oxygen and combustible gases is prohibited.

5. REQUIREMENTS TO INSTALLATION

Filled cylinders must be installed in accordance with the national requirements of the country of operation.

6. REQUIREMENTS TO OPERATION

Cylinders are designed for storage, transportation and use of compressed and liquefied gases under high pressure.

Cylinders can only be filled by an authorized specialized company in accordance with the requirements of the “National industrial safety regulations for hazardous production facilities that use equipment operating under excessive pressure”.

Cylinders must be filled only with the gas for which it is designed in accordance with this passport, as well as the distinctive coloring and identification marking, which is carried out in accordance with Annex 3 of CU TR 032/2013. **It is forbidden to fill the cylinder with the expired service life and / or with the expired date of the periodical testing.**

Cylinders are equipped with valves or a fitting designed for the appropriate operating pressure and intended for the proper gas, with a thread seal. Cylinders are equipped with a neck ring, on which caps are tightened during transportation and storage of cylinders to prevent damages to valves in case of cylinders falling. For the same purposes, a non-removable protective caps can be mounted on cylinders, which do not impede access to valves. Cylinders can be equipped with rubber rings to prevent damage cylinders' body during transportation. It is necessary to exclude the possibility of falling, damage to cylinders and its components.

Repair and periodical testing of cylinders must be carried out by an authorized specialized company. It is forbidden to make any changes to the design and marking of cylinders

It is forbidden to operate cylinders in an unsatisfactory state and with negative results of the periodic testing.

The maximum working pressure of cylinders is indicated in the marking and the passports of cylinders. Cylinders filled with gas are allowed to operate at an ambient temperature of -50 ° C to + 65 ° C.

It is necessary to protect cylinders from prolonged exposure to atmospheric precipitation and direct sunlight, keep away from sources of heat and flame. Store, transport and use cylinders in conditions of sufficient ventilation. Exclude contamination and the presence of lubricants on cylinders and its components.

Cylinders to be disposed must be rendered unusable – a hole 10-15 mm in diameter must be drilled or neck threads must be cut at least 8 threads. Notes about withdrawal from service with indications of the causes are made in cylinders' passports.

The manufacturer does not bear any responsibility for any damage or damage caused by non-compliance with the transportation, storage, installation and operation requirements specified in this passport.

7. WARRANTY

Warranty period of operation and storage is 1 year from the date of manufacture. The period is valid if the requirements for transportation, storage, installation and operation specified in this passport are complied.

8. CERTIFICATE OF ACCEPTANCE

Cylinder No. _____ was manufactured and adopted in accordance with drawing No. DOT-232-30T58-2900PSI and the design standard DOT3AA and was declared usable.

Representative of the manufacturer

SINOMA

seal, signature

date

9. PERIODIC TESTING

Periodic testing of cylinders is made according to the national requirements of the country of operation, but not less than once in 10 years.

Date	Results	Date of next testing	Failure cause	Company carried out the testing, signature of the person in charge

10. DRAWING

		<table border="1"> <thead> <tr> <th>THREADS SPEC.</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>PZ27.8</td> <td>GB8335</td> </tr> <tr> <td>1"-14</td> <td>BS341</td> </tr> <tr> <td>W28.8-1/14</td> <td>DIN.477</td> </tr> <tr> <td>3/4"-14-NGT</td> <td>CGA V-1</td> </tr> <tr> <td>1 1/8-12 UNF-2B</td> <td>ANSI B1.1</td> </tr> <tr> <td>25E</td> <td>EN629</td> </tr> </tbody> </table>	THREADS SPEC.	STANDARD	PZ27.8	GB8335	1"-14	BS341	W28.8-1/14	DIN.477	3/4"-14-NGT	CGA V-1	1 1/8-12 UNF-2B	ANSI B1.1	25E	EN629	Marking																						
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1. Application standard: CFR 49 title 178.37. 2. Service conditions: -DOT rated service pressure:200 bar(2900 psi) -Hydraulic test pressure:333 bar(4833 psi) 3. Material: Mn-Steel, Fully killed and made to fine grain practice by basic oxygen or electric furnace process Chemical Composition(%) <table border="1"> <thead> <tr> <th>37Mn</th> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> </tr> </thead> <tbody> <tr> <td>Min.</td> <td>0.34</td> <td>0.10</td> <td>1.35</td> <td>—</td> <td>—</td> </tr> <tr> <td>Max.</td> <td>0.40</td> <td>0.30</td> <td>1.65</td> <td>0.020</td> <td>0.020</td> </tr> </tbody> </table> 4. Manufacture: Spun-tube cylinder 5. Cylinder leakage test: The cylinder needs to be done air-tightness test, Test pressure is 200 bar, holding 60s, not leak is qualified. 6. Heat Treatment: Quenching and Tempering <table border="1"> <thead> <tr> <th colspan="2">Quench</th> <th colspan="2">Quench contents</th> <th colspan="2">Temper</th> </tr> <tr> <th>Temperature</th> <th>Time</th> <th>Water+</th> <th>Temperature</th> <th>Time</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>850±20°C</td> <td>45min</td> <td>Additive</td> <td>645±20°C</td> <td>60min</td> <td></td> </tr> </tbody> </table>		37Mn	C	Si	Mn	P	S	Min.	0.34	0.10	1.35	—	—	Max.	0.40	0.30	1.65	0.020	0.020	Quench		Quench contents		Temper		Temperature	Time	Water+	Temperature	Time	Time	850±20°C	45min	Additive	645±20°C	60min		7. Mechanical Properties: (at room temperature) -Tensile (R_g): ≥720MPa(104400psi) -Yield (R_e): ≥540MPa(78300psi) -Elong (A): ≥20% on 2" G.L. for DOT -Flattening test: Flatten to 6×t without cracks 8. MT flaw detection: Each cyld. per DOT-3AA 9. Cylinder hydraulic test -carry out hydraulic test with test pressure of 333bar and cylinder should be found no distortion or leadage, the ratio of permanent volumetric expansion ≤10%. 8. D. O. T. Wall Stress Calculations: $S = P(1.3D^2 + 0.4d^2) / (D^2 - d^2)$ S=Maximum wall stress, psi P=Test pressure, psi D=Outside diameter, inch d=Inside diameter, inch R_g=The minimum tensile strength, psi $s = \frac{4833[1.3(9.134)^2 + 0.4(8.585)^2]}{(9.134)^2 - (8.585)^2}$ $s = 68655 \text{ psi} < 70000 \text{ psi}$ Thus the minimum wall thickness will be: $t(\text{min}) = 1/2(D-d) = 1/2(9.134 - 8.585)$ $= 0.274 \text{ inch}$ 0.67R_g = 104400psi × 0.67 = 69948psi S = 68655psi < 69948psi < 70000psi	
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Sinoma Science & Technology (Jiujiang) CO., Ltd		DRAWN: Wang Jie CHECKED: Ou Xin Gang APPROVED: Ye Lianbiao		DESCRIPTION: DOT 3AA 2900 PART NO.: DWG NO.: SZM2326		SCALE: DATE: 2017.3.3 ISSUE:																																	