Nitrogen cylinder 84L

P/N: SNS-84-200 / SNS-84-280 / SNS-84-300

DT-SNS-84E Rev 1.1
Effective: July 2019

FEATURES

- ***Cylinder and valve complied with KGS/ TPED/EN ISO 9809-1 standard.***
- ***Cylinder valve integrated with discharge pressure regulator at 60 bar - 80 bar.***
- ***Option pressure gauge with contact.***
- ***Working pressure 200 bar / 280 bar /300 bar***

DESCRIPTION

The SNS IG-100 nitrogen cylinder 84L stores compress Nitrogen to 200 bar / 280 bar / 300 bar at 21°C. The cylinders has capacity of 84L are fitted with cylinder valve which intergrated with discharge pressure regulator to keep the discharge pressure from 60 to 80 bar without separete pressure regulator needed.

The cylinder valves are equipped with standard pressure gauge as default and pressure gauge with contact as an option depending on system requirement. In addition to providing a means to determine agent pressure in the cylinder, the optional pressure gauge with contact provides for automatic supervision of significant drop in cylinder pressure.

The cylinder valves are also equipped with rupture disc-fitted safety plug that protects the cylinder assembly from possible excessive build-up of agent pressure when exposed to high temperature.

Nitrogen agent is naturally occurring and present in the atmosphere. Nitrogen is safe for use in occupied spaces and poses no threat to the environment.

SNS IG-100 Nitrogen cylinders are available in three different working pressure ranges

Table 1. Cylinder capacity

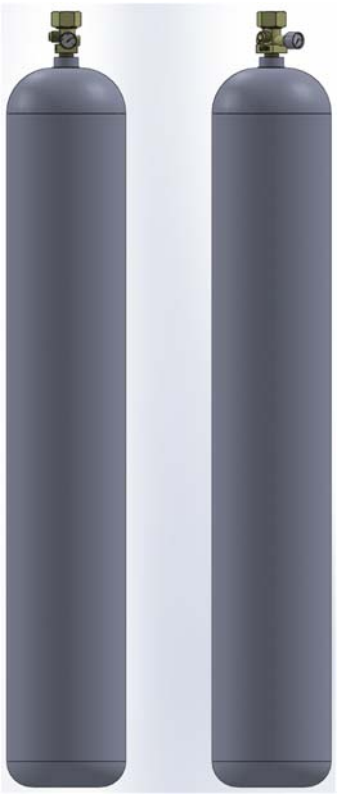
Filled Pressure	Volume (l)	N2 agent (m3)	N2 agent (kg)
200 bar	84L	17.4	20.2
280 bar		20.7	24.0
300 bar		22.1	25.7

Table 2. Nitrogen cylinder fire suppression typical volume (TCVN7161-13 / ISO 14520-13)

Filled Pressure	Class B 43.7%	Class A 40.4%	Higher Class A 41.5%
200 bar	30.2 m3	33.6 m3	32.4 m3
280 bar	36.0 m3	40.1 m3	38.6 m3
300 bar	38.3 m3	42.7 m3	41.1 m3

Nitrogen is stored as a gas; the cylinders have no dip tube and can be mounted in either the vertical or horizontal position.

The cylinder valve, required for all system cylinders, allows for connection of the cylinders into the system also release the N2 gas for suppression when actuated. The cylinder



valve provides connections for pneumatic release of the cylinder contents by pressure from pilot cylinder. The discharge outlet, connected by a discharge hose with check valve to cylinder manifold then the distribution piping.

DISCHARGE PRESSURE REGULATOR

The SNS IG-100 cylinder has equipped with cylinder valve has discharge pressure regulation from 60 bar to 80 bar is standard for all cylinders.

OPERATION

The SNS IG-100 cylinder discharges when get pressure from pilot cylinder to actuation port on cylinder valve causing the cylinder valve to open.

The nitrogen cylinder operated by pilot pressure from N2 pilot cylinder 5.1L (P/N STV-P5L) or thought 40L pilot cylinder (P/N SNS-P40L) and three ways control valve (P/N SNS-3WV).

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INSTALLATION

The container is installed in a vertical or horizontal position. N2 cylinder connect to cylinder manifold by DN20 flexible discharge hose included with check valve (P/N SNS-FC20), the pilot actuation line between cylinder using flexible discharge hose DN8 (P/N SNS-FA300/SNS-FA600/SNS-FA900)

The container is secured in place by two set of cylinder clamp (P/N SNS-CC-84), which must be fixed to a solid wall or strut assembly.

ORDERING INFORMATION

The part number for ordering the nitrogen 84L cylinder with accessories as below table:

Part number	Description
SNS-84-200	N2 cylinder 84L / 200 bar cylinder valve included with pressure regulator from 60 bar to 80 bar.
SNS-84-280	N2 cylinder 84L / 280 bar cylinder valve included with pressure regulator from 60 bar to 80 bar.
SNS-84-300	N2 cylinder 84L / 300 bar cylinder valve included with pressure regulator from 60 bar to 80 bar.
SNS-PG400	Standard pressure gauge for nitrogen cylinder
SNS-FC20	Flexible discharge hose DN20, included check valve (for N2 cylinder)
SNS-FA300	Flexible actuation hose DN8 - 300mm
SNS-FA600	Flexible actuation hose DN8 - 600mm
SNS-FA900	Flexible actuation hose DN8 - 900mm
STV-P5L	Actuator cabinet 5.1L (included pilot cylinder, solenoid valve, discharge pressure switch)
SNS-P40L	Pilot cylinder N2 40L / 95 bar included cylinder valve
SNS-CC-84	Cylinder clamp for N2 cylinder 84L (02 sets for each cylinder)
SNS-PG200S	Pressure gauge with switch for nitrogen cylinder 200 bar (option)
SNS-PG300S	Pressure gauge with switch for nitrogen cylinder 280 bar/ 300 bar (option)

INSPECTION AND MAINTENANCE

According to ISO/TCVN standards, the following inspection and/or maintenance procedure must be scheduled as listed below and performed upon the occurrence of any event which might affect the reliability of the system.

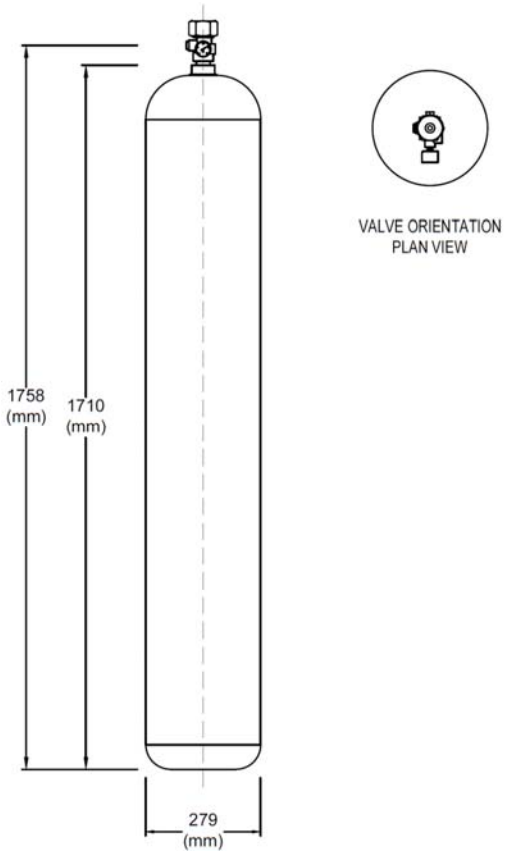
SEMI-ANNUAL INSPECTION

1. Check the pressure gauges of each agent storage container. If the pressure gauge indicates a loss in pressure more than 5%, then it shall be recharged or replaced. Pressure varies with temperature, and this must be taken into account when checking the pressure gauge.

2. Check all components, including supporting hardware, and tighten, repair or replace as required.

3. Replace any component if at all in doubt of its ability to perform properly.

4. Inspect all piping, fittings and nozzles for looseness, dirt or other damage. All outlet piping must be clean and free of dirt, chips, fillings and other foreign material that may cause the system to become inoperative or ineffective at the time of discharge



ANNUAL INSPECTION

At least annually, or more frequently as required by the authority, all systems shall be thoroughly inspected and tested for proper operation by competent personnel.

Container

Containers shall be subjected to periodical tests as required by the relevant national standard.

Hose

All system hoses shall be examined annually for damage. If visual examination shows any defect, the hose shall be replaced.

Enclosures

At least every 12 months it shall be determined whether boundary penetration or other changes to the protected enclosure have occurred that could affect leakage and extinguishant performance. If this cannot be visually determined, it shall be positively established by repeating the test for enclosure integrity in accordance with ISO14520 /TCVN7161-1 annex E.

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SPECIFICATION

Part number	SNS-84-200 / SNS-84-280 / SNS-84-300
Fill range	As table 1 above
Height	1710mm (±10mm)
Diameter	279mm
Internal volume	84L
Empty weight (± 10%)	120 kg
Cylinder material	34 CrMo4
Cylinder working pressure	200 bar / 280 bar / 300 bar
Cylinder tested pressure	451 bar
Cylinder specification	KGS/ TPED/EN ISO9809-1
Cylinder valve material	Copper alloy C3771BE
Cylinder valve tested pressure	495 bar
Safety Disc Bursting range	387-396 bar
Regulated discharge pressure	60 bar đến 80 bar
Operation temperature range	-20 to 50 deg. C
Max piping elevated height	50m (*)
Max piping length	216m (*)
Working temperature range	-20^0C to 50^0C

(*) Piping elevated and system piping length shall be verified by manufacturer hydraulic calculation software.

The SNS IG-100 system are designed and manufactured under license from S-TEC SYSTEM (Trademark AnyFire(IG-100)^{TM}), address at 82, Sangdeok-ro, Jiksan-eup, Seobuk-Gu, Chaonan-si, Chungnam 31038, KOREA. The hydraulic calculation software use AnyFire(IG-100)^{TM} logo.

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