

Liquid Level Sight Glass

Product Bulletin DN 65-00

Type: SG1-DN (Standard or Saddle Mount)

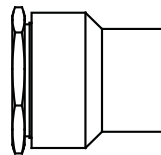
Length: 52 mm or 102 mm (2" or 4")

Design Pressure Rating: 31 bar (450 psig)

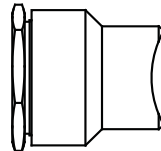


Purpose:

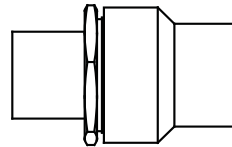
The Refrigerating Specialties liquid level sight glass SG1 provides a clear indication of liquid levels in industrial and commercial refrigeration systems.



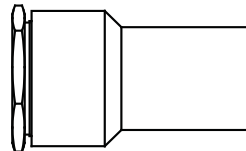
52 mm or 102 mm (2" or 4")
STANDARD SIGHT GLASS



52 mm or 102 mm (2" or 4")
SADDLE MOUNT SIGHT GLASS



SIGHT GLASS WITH FROST SHIELD



102 mm x 60.33 mm (4" X 2 $\frac{3}{8}$ ")
STANDARD SIGHT GLASS

Contact Information: Product Features:

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- Suitable for Ammonia, R-22, R-507, R-134a, and other common refrigerants
- Suitable for ASME Applications
- Min fluid temperature -50C (-60F)
- Max fluid temperature 115C (240F)
- Reflex lens
- Frost shield available
- Complies with Pressure Equipment Directive 97/23/EC

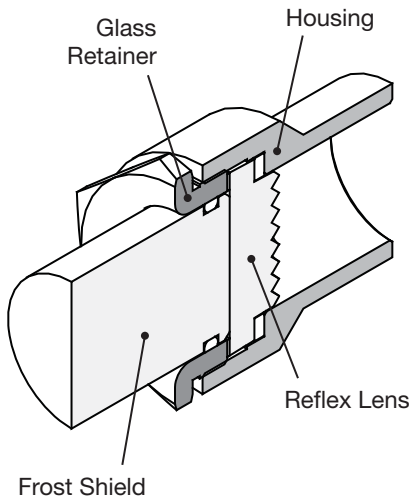


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Description

As the refrigerant liquid level rises in the viewing area of the reflex lens, the color of the lens will turn dark. As the level decreases the color of the lens lightens.

The housing is made from ASME SA519 and meets material requirements of ASME for direct welding to vessel. The reflex lens is made from a clear boro-silicon tempered glass rated for refrigerant use.



SG1-DN Cross Section (2" Shown with Frost Shield)

Installation

Planning for the installation of sight glasses should consider the immediate needs of unobstructed access to the lens. The potential for interference with material and components yet to be installed such as insulation, electrical equipment and structural additions for maintenance access or equipment protection needs to be considered. Finally, the completed overall construction should be arranged to preclude the potential for contracting moving machinery, material handling equipment, and other similar equipment.

Remove the glass retainer (#3), reflex lens (#5), and gaskets (#4 and #6) before welding. Welding procedures for all steel pipe and fittings need to conform to all requirements of the ASME

IX, VIII, API, and other pressure pipe welding standards.

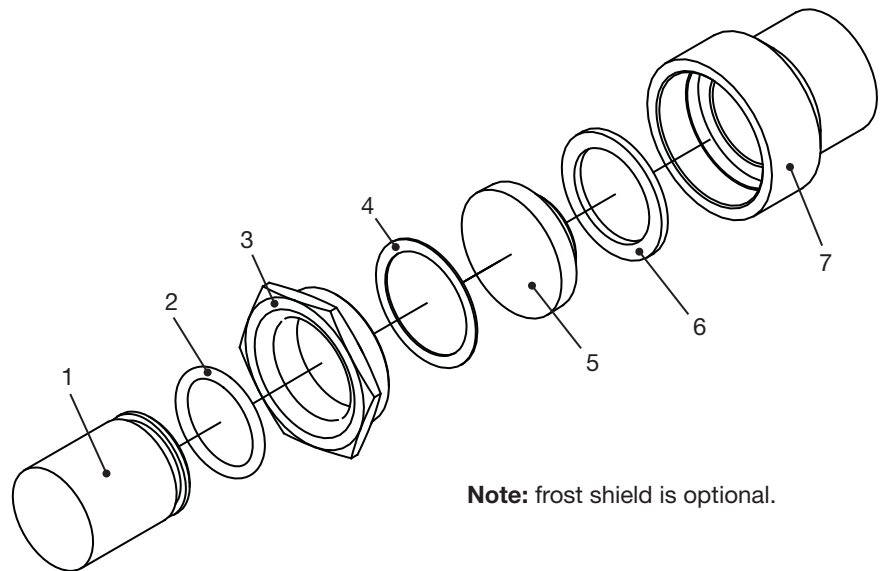
To prevent distortion of the housing (#7) and protect threads from welding sparks and damage, leave the glass retainer (less the reflex lens and gaskets) in the housing during welding. After welding, remove the glass retainer and insert all the parts in the correct order shown in the SG1 explosion view. Lubricate threads and screw the glass retainer into the housing and tighten

using the recommended torque shown in the SG1 torque specification table.

Refrigerating Specialties recommends against the use of compressed air for leak testing. While many successful installations have employed compressed air, the effects of moisture and oxygen, both short and long term, on system interior condition, integrity and performance is too significant to make it preferable to a dry nitrogen test. It has been established by inves-

Item No.	Description	Material	Qty
1	Lens, Frost Shield Clear	Clear Acrylic	1
2	O-Ring, 1.359 ID x .139 DIA	Neoprene	1
3	Retainer, Glass	Hex Steel 1215	1
4	Gasket, Fiber 1.625 ID x 2.00 OD 0.031 DIA	Vulcanized Fiber	1
5	Lens, Reflex	Silicate Tempered Glass	1
6	Gasket 1.50 ID x 2.00 OD 0.125 DIA	Neoprene	1
7	Housing, Sight Glass	1026 CD ASTM A519	1

SG1-DN Parts List



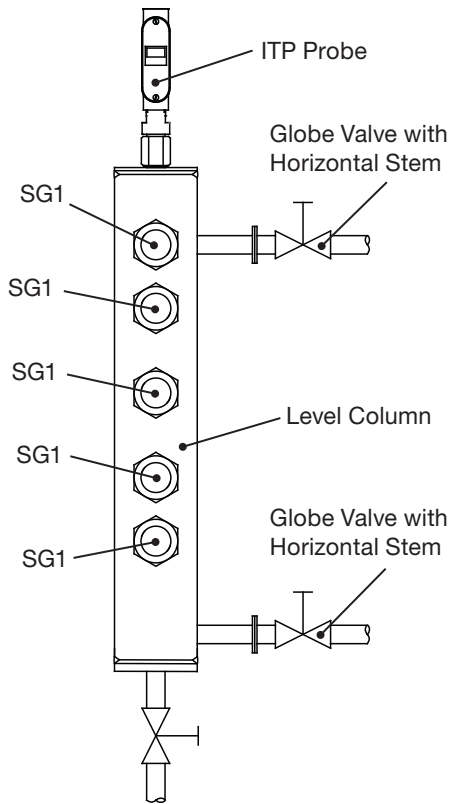
SG1-DN Exploded Parts View (2" Shown with Frost Shield)

Item No.	Kit Description	Kit
1, 2	Shield Lens, Clear Frost (2" or 4")	206527
3 - 6	Lens, Reflex (2" or 4")	206530

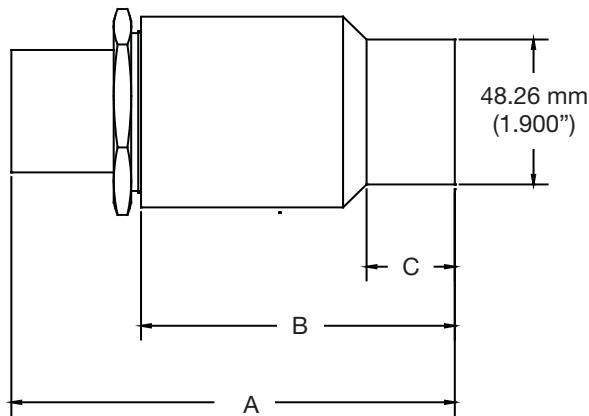
SG1-DN Repair Kits

tigation of failure modes that certain chemicals will infiltrate the disruptions in a chilled weld and reside there, setting up corrosion products. Oxygen entrapped in such notch sites, combined with the presence of ammonia, will promote stress corrosion cracking in a relatively short period. R/S recommends that leak testing be applied with dry nitrogen and that the elevated pressure be reduced to near atmospheric only shortly before the evacuation process is started.

Test for leaks before inserting the optional frost shield. To install frost shield, lightly coat the frost shield o-ring (#2), with refrigerant oil. Place a piece of fine tag wire across the front of the lens. This allows air to escape from between frost shield and assembly. Slowly withdraw wire once frost shield is fully inserted into assembly.



SG1-DN Installed in Standpipe Diagram



Length	Dimension		
	A	B	C
2"	103.1 mm (4.057")	50.8 mm (2.0")	28.6 mm (1.125")
4"	143.6 mm (5.653")	101.6 mm (4.0")	28.6 mm (1.125")
4" x 2-3/8"	143.6 mm (5.653")	101.6 mm (4.0")	60.3 mm (2.375")

SG1-DN Dimensions (Applies to Standard and Saddle Mount)

Location	Description (SAE)	Torque
Retainer, Glass	60.325 mm (2-3/8")	40.7 Nm (30 ft-lbs)

SG1-DN Torque Specification Table

Safe Operation (See Bulletin RSBCV)

People doing any work on a refrigeration system must be qualified and completely familiar with the system and the Refrigerating Specialties Division valves involved, or all other precautions will be meaningless. This includes reading and understanding pertinent Refrigerating Specialties Division Product Bulletins and Safety Bulletin RSB prior to installation or servicing work.

Where cold refrigerant liquid lines are used, it is necessary that certain precautions be taken to avoid damage which could result from liquid expansion. Temperature increase in a piping section full of solid liquid will cause high pressure due to the expanding liquid which can possibly rupture a gasket, pipe or valve. All hand valves isolating such sections should be marked, warning against accidental closing, and must not be closed until the liquid is removed. Check valves must never be installed upstream of solenoid valves, or regulators with electric shut-off, nor should hand valves upstream of solenoid valves or downstream of check valves be closed until the liquid has been removed.

It is advisable to properly install relief devices in any section where liquid expansion could take place. Avoid all piping or control arrangements which might produce thermal or pressure shock.

For the protection of people and products, all refrigerant must be removed from the section to be worked on before a valve, strainer, or other device is opened or removed. Flanges with ODS connections are not suitable for ammonia service.

Warranty

All Refrigerating Specialties products are under warranty against defects in workmanship and materials for a period of one year from date of shipment from factory. This warranty is in force only when products are properly installed, field assembled, maintained, and operated in use and service as specifically stated in Refrigerating Specialties Catalogs or Bulletins for normal refrigeration applications, unless otherwise approved in writing by the Refrigerating Specialties Division. Defective products, or parts thereof returned to the factory with transportation charges prepaid and found to be

defective by factory inspection, will be replaced or repaired at Refrigerating Specialties option, free of charge, F.O.B. factory. Warranty does not cover products which have been altered, or repaired in the field, damaged in transit, or have suffered accidents, misuse, or abuse. Products disabled by dirt or other foreign substances will not be considered defective.

The express warranty set forth above constitutes the only warranty applicable to Refrigerating Specialties products, and is in lieu of all other warranties, expressed or implied, written including any warranty of merchantability, or fitness for a particular purpose. In no event is Refrigerating Specialties responsible for any consequential damages of any nature whatsoever. No employee, agent, dealer or other person is authorized to give any warranties on behalf of Refrigerating Specialties, nor to assume, for Refrigerating Specialties, any other liability in connection with any of its products.

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