

# Rotalock Sight Glasses

Sight Glasses are used throughout the refrigeration and air-conditioning industry as an easy means of visually checking the levels of liquid refrigerant and compressor oil in a system. Typically located on liquid receivers, suction accumulators, surge drums, liquid level columns and oil management systems, sight glasses provide a quick and easy means of determining the operating status of the system and its liquid levels.

Henry Tech is excited to announce the newest addition to their ever expanding range: Rotalock Sight Glasses.

In what will prove to be another step forward in the area of monitoring and serviceability for the industry, Heldon offer the convenience of a Sight Glass with the superior seal tight locking joint of a rotalock fitting.

A industry favourite, the rotalock utilises a connection that consists of both a male & female component, that when joined compress a sacrificial Teflon washer. By compressing this Teflon washer, a seal is created that can maintain its integrity regardless of large changes in temperature and constant system vibration.



## Manufacturing Standards

Manufactured in accordance with AS/NZS 1677.2

## Features

- A nickel plated steel body with a range of fused glass viewing lenses ensure excellent visibility for the operator.
- Sight Glass available with either 1 1/4" or 2 1/4" Rotalock nut. Combined with a dedicated Teflon washer, this assembly provides a superior seal tight locking joint.
- Simple 3 piece design incorporates a locking nut, glass lens assembly and "Quad-Ring" Teflon washer.
- Four different styles available: Clear lens/Dimple lens/Frost Shield/Clear lens with Ball Float (on 1 1/4" only).
- The Rotalock Sight Glass range is suitable for all fluorinated refrigerants and their oils.

## Benefits

- Nickel plating for outstanding corrosion resistance. Rugged fused glass can withstand the toughest conditions. Choose the lens to best suit your application.
- Rotalock fittings provides enhanced sealing capability and less chance of leakage. Rugged UNF thread ensures the nut hangs on tight.
- Easy installation with no special tooling required.
- A glass lens option to suit every need that is supplied ready for installation.
- The Rotalock Sight Glass is perfectly suited for use in today's industry.

## Installation

When installing a Rotalock Sight Glass please observe the following precautions:

- The Rotalock Sight Glass is best positioned in an accessible location away from possible traffic and harm.
- A compatible male threaded spigot is required to be in place on the refrigeration plant.
- The refrigeration system must be pumped down or all refrigerant recovered before installation is to occur. If sight glasses are to be installed as part of an oil management system, oil must be isolated and equipment free of pressure before commencing work.
- Carefully remove assembly from packaging.
- Visually check parts before installation, for any signs of apparent damage.
- Make sure parts are clean and free of debris.
- Carefully fit new Quad-Ring Teflon washer into the rotalock spigots face groove. Lubricate the Teflon washer with clean refrigeration oil.
- Assemble sight glass and thread on rotalock nut finger tight. Tension to the recommended torque setting specified. Note that over-tensioning a Rotalock Sight Glass can result in fracturing the glass lens and so void warranty.
- Before putting into service, thoroughly leak test the complete assembly under pressure.

## Caution

Only competent, trained refrigeration mechanics should install or service Rotalock Sight Glasses. The stated pressure and temperature limits should never be exceeded. Sight Glass lenses should be inspected routinely and replaced if damaged. Escaping refrigerant is hazardous to both the environment and to your health, installed as part of an oil management system, oil must be isolated and equipment free of pressure before commencing work.

Carefully remove assembly from packaging.

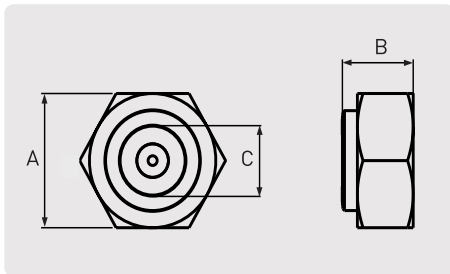
## Specifications

Operating temperature range of -40oC to 85oC  
Safe Working Pressure: 5,200 kPa  
Burst Test Pressure: 26 MPa

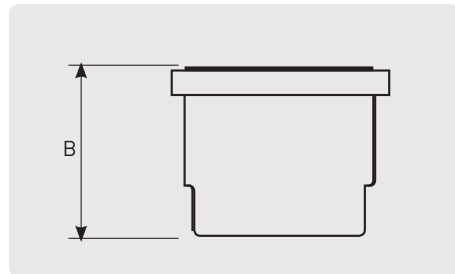
Dimensions and Capacities

Part No.	Description	Rotalock Connect.	Dimensions (mm)					Weight (kg)
			Nut Size A	Lens Size B	Lens Dia. C	E	D	
647-2020-1	R/L Sight Glass - Dimpled	1 1/4" - 12 UNF	35	11	19	20	16	0.072
647-2020-2	R/L Sight Glass - with Ball Float	1 1/4" - 12 UNF	35	20	19	20	16	0.086
647-2020-3	R/L Sight Glass - Flat	1 1/4" - 12 UNF	35	11	19	29	16	0.072
647-2020-4	R/L Sight Glass - Frost Shield	1 1/4" - 12 UNF	35	25	17	35	16	0.135
647-3636-1	R/L Sight Glass -Frost Shield	2 1/4" - 12 UNF	65	31	38	46	25	0.454
647-3636-2	R/L Sight Glass - Dimpled	2 1/4" - 12 UNF	65	21	38	37	25	0.401

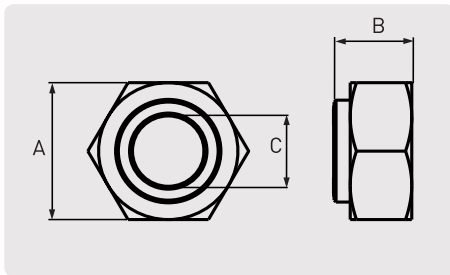
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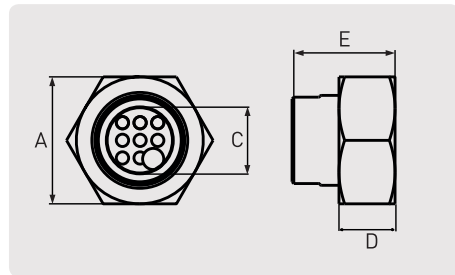
Sight Glass Frost Shield



647-2020-3



647-2020-2



**Part Number Structure and Nomenclature**

To demonstrate Henry Tech’s nomenclature, a typical part number would read #647-2020-1. The following table will explain further:

Nomenclature			
Series Number	Glass Body Size	Rotalock Connection Size	Glass Type
i.e. 647-XXXX-X	i.e 647-20XX-X	i.e 647-XX20-X	i.e 647 - XX20-1 or 2 or 3 or 4
	i.e 647-36XX-X	i.e 647-XX36-X	i.e 647 - XX36-1 or 2
647 = Rotalock Sight Glass	20 = 1 1/4" OD Body	20 = 1 1/4" - 12 UNF	20-1 = Bulls eye with frost shield
	36 = 2 1/4" OD Body	36 = 2 1/4" - 12 UNF	20-2 = Plain with Ball Float
			20-3 = Plain
			20-4 = Plain with frost shield
			36-1 = Plain
			36-2 = Bulls eye

Quad Ring Teflon Washer	
Part No.	Size
800-26XX-20	1 1/4" Sight Glass
800-26XX-36	2 1/4" Sight Glass

**Henry Tech Recommended Rotalock Sight Glass Torque Settings**

Rotalock Stub Size	Torque Setting (N.m)
Rotalock 1 1/4" - 12 UNF	120-135
Rotalock 2 1/4" - 12 UNF	165-190

Please note that all torque settings must be adhered to as over tensing the nut could result in fracturing the glass lens.

# Sight Glasses

## Introduction

Ideal for the visual inspection of liquid refrigerant or oil levels, Heldon now offer a complete range of plated steel bodies, MNPT threaded, Sight Glasses with built-in fused lense. Suitable for a wide variety of pressure vessel applications, these sturdy items are suited for most refrigerants and oils.

## Applications

Sight glasses are used in refrigeration and air conditioning systems for both liquid refrigerant and oil applications.

The SG-12 series sight glasses are suitable for HCFC and HFC refrigerants, along with their associated oils.

The SG -10 and SG -11 series sight glasses are suitable for HCFC, FC and ammonia refrigerants, along with their oils.



## Manufacturing Standards

Manufactured to UL207

## Features

- Three sight glass lens options - Reflex, Clear and Clear with float ball.
- Hermetically sealed fused glass construction.
- Plated Steel body.

## Benefits

- Provides flexibility of application.
- Avoids potential leakage path.
- Corrosion resistant.

## Technical Specifications

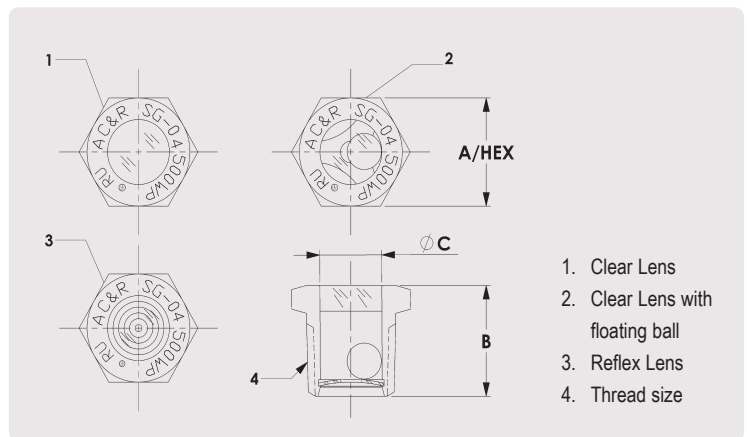
Safe Working Pressure = 3,450 kPa

SG-10 and SG-11 Series:

Allowable Operating Temperature = -40°C to 160°C

SG-12 Series:

Allowable Operating Temperature= -40°C to 90°C



Part No.			Thread Size NPT	Dimensions (mm)			Weight (kg)
Clear	Reflex	Clear W/Ball		A Hex	Length B	Dim. C	
SG-1004	SG-1104	SG-1204	1/2	23.9	24.3	14.3	0.03
SG-1006	SG-1106	SG-1206	3/4	28.4	26.9	19.1	0.06
SG-1008	SG-1108	SG-1208	1	35.1	33.6	23.8	0.12
SG-1010	SG-1110	SG-1210	1 1/4	44.5	35	30.2	0.20
SG-1012	SG-1112	SG-1212	1 1/2	50.8	35.9	33.4	0.29
SG-1016	SG-1116	SG-1216	2	63.5	36.1	41.4	0.46

SG-12 series is not suitable for use with ammonia

CAUTION: Overtightening should be avoided to prevent sight glass cracking

# Liquid Indicator

Liquid Indicators are ideal for the visual inspection of refrigerant or oil levels. Henry Tech offer a new range of plated steel and ductile iron liquid indicators suitable for use with ammonia. Perfect for a wide variety of applications including pressure vessels.

### LI-50 series

The LI-50 series incorporating a Bulls-Eye with reflex lens. These pieces have the ability to indicate the actual level of a liquid without requiring the installation of a second indicator for light admission. Their reflex lens configuration appears dark in the presence of liquid and light when liquid is absent.

Also, to properly view systems internal liquid levels under frosting conditions or when insulation material is present, a Frost Shield option is available. Easily press fitted in front of the Bulls-Eye, this clear perspex cylinder aids clarity of vision for the operator.

### LI48 series

The LI48 series is an inline Liquid Indicator featuring double port glass viewing windows. Constructed from plated ductile iron and steel these pieces are recommended for use as a sight glass for oil, gas or liquid ammonia.



LI-50 series



LI48 series

### Manufacturing Standards

Manufactured to accepted International Boiler and Pressure Vessel Codes.

Maximum Working Pressure: 3,450 kPa (LI-50 series)  
3,510 kPa (LI48 series)

Allowable Operating Temperature: -40°C to 121°C (LI-50 series)  
-29°C to 121°C (LI-48 series)

### Features (LI-50 series)

1. Bulls-Eye with reflex lens.
2. Removable top of hermetically sealed fused glass construction.
3. Plated steel construction; weld type housing ASME SA36 (ASTM A36)
4. Frost Shield option available.

### Benefits

1. Provides clear view of systems internal liquid levels.
2. Avoids potential leakage path.
3. The housing is designed to be permanently welded into the pressure vessel.
4. Allows clear viewing of liquid levels under frosting conditions or when insulation material is present.

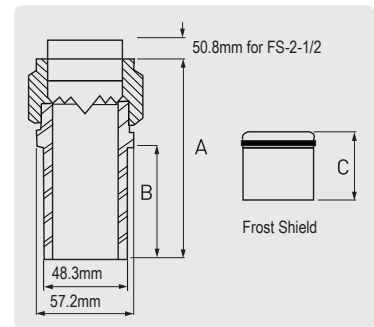
### Features (LI48 series)

1. Double Port glass viewing windows.
2. Plated ductile iron and steel construction.
3. Fused glass viewing windows.

### Benefits

1. Easy visual inspection.
2. Designed for long life.
3. Avoids potential leak paths.

Part No.	Item	Size & Type Connection	Dimensions (mm)		Weight (kg)
			A	B	
LI-50-2W	Reflex Lens	Weld	69.9	19.1	0.68
LI-50-4W	Reflex Lens	Weld	114.3	63.5	0.91
Part No.	Item		Use to Temperature	Dimension C (mm)	
FS-2-1/2	Frost Shield		-29°C	63.5	0.11



Part No.	Connection Size (Inch)	Dimensions (mm)			
		A	B	C	D
LI48A-1/2	1/2 FNPT	76.2	38.1	95.3	47.8
LI48A-3/4	3/4 FNPT	76.2	38.1	95.3	47.8
LI48A-1	1 FNPT	76.2	38.1	95.3	47.8

