Ver.	Document	Issue date	Made by	Approved by
02	RPG-H08-P04-MA-IOM	2022.06.16	Turid Johnsen	Bente Ottestad

RPG-H08

RPG-H94 /RPG-H08

(Part of RPG-H-Series)

Regulator Pressure Gas

Installation, operation and maintenance manual

OBS TECHNOLOGY

REVISIONS

Rev.	Date/references	Changes
00	01.08.2016	First issue
01	OBS-P12-210922	Added figures and service instructions
02	OBS-P12-220610	Change of article no SSK

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OBS TECHNOLOGY

1 INTRODUCTION RPG-H08

The HPR -08 regulator is a pressure reducer valve for air or nitrogen, specially designed to pressurize water filled pressure vessels that are used for water mist systems. The first design of this regulator was called HPR-94 and was released in 1994.

The regulator allows a quick opening of the HP supply without causing downstream pressure peaks that could harm the water filled pressure vessel. Furthermore, the regulator can provide a high flow rate for a long time without having functional problems due to freezing, provided the water content in the gas supply complies with normal standards.

1.1 TECHNICAL SPECIFICATIONS:

Supply pressure:	20 - 300 barg
Outlet pressure ranges:	1-9 barg, 4-18 barg (several settings available upon customers request)
Nominal flow rate:	0 – 4.5 Nm^3/minute at 12 barg
Material in valve housing:	22CrDuplex (other materials might be selected upon request)

The RPG-H08 is specially designed to avoid freezing problems / ice formation at low temperatures.

Figure 1: RPG-H08

2 INSTALLATION AND ADJUSTMENTS

The function of the RPG-H-series is virtually unaffected by its orientation. These regulators are applicable in all kinds of system where a drop pressure is needed. The RPG-H-series is known for their accurate LP deliverance and stabile flow.

IMPORTANT NOTICE:

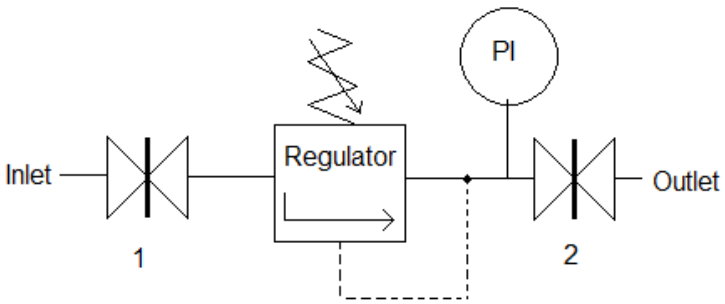
The RPG-H series are manufactured to high precision and with tight tolerances. Hence, the cleanliness of connected tubing, fittings, and other auxiliary equipment as well as the gas is of utmost importance to the function and reliability of the regulator. Ensure that all connected units and tubing is properly cleaned and that the gas is filtered and verified clean before it is set in operation.

CAUTION:

The RPG-H08 regulators have high flow capacity. The LP gauge may be destroyed if regulator outlet is connected to a small, rigid volume upon a quick opening of HP supply.

OBS RPG-08 is a high performance servo controlled pressure reducer valve designed to provide a stabilized LP outlet pressure of gas delivered from a HP gas reservoir (max 300 barg). The LP outlet pressure is adjustable within ±2 bar of the pre-set level.

The critical part of operating a gas regulator is the startup sequence due to possible leakages caused by contamination or malfunction.

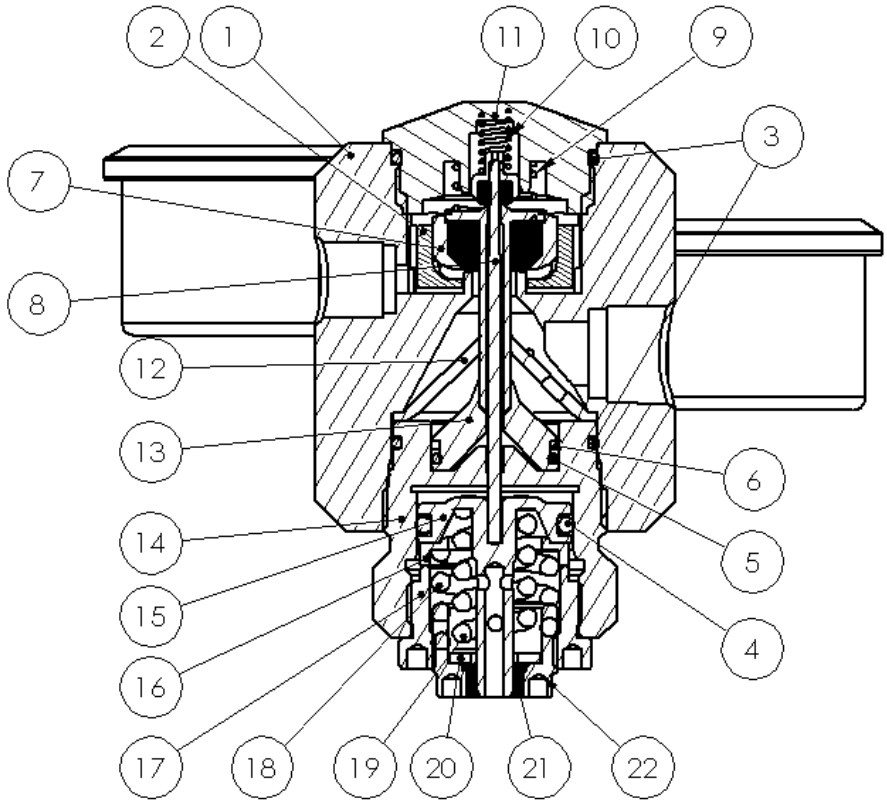


1. Start with closed valve 1 and check that regulator is fully connected at inlet/outlet ports.
2. Leave the Valve 2 with a small opening.
3. Carefully open valve 1 and verify that pressure is regulated on the PI.
4. Close valve 2 and open valve 1 fully.
5. With valve 1 fully open, the regulator will stabilize at set pressure.
6. The regulator is now set and will keep the pressure at the set pressure when valve 2 is open while supply is sufficient.

3 OPERATION

The regulators are preset by OBS, upon customers requested pressure settings.

All pressure settings of the regulator must be performed by qualified personnel. Any pressure adjustment not performed, or executed by qualified personnel, may void manufacturer warranty and/or reduce system integrity and/or lead to damage of the system.



The only adjustment after installation available for this regulator is the LP outlet pressure, which is defined by the preset tension of the springs. The adjustment screw (pos. 22) in Figure 1 must be turned clockwise to increase the tension of the springs (pos.18, 19) and thereby increase the LP outlet pressure. Adjust spring tension until correct outlet pressure is obtained. One full turn corresponds to approximately 1 barg pressure change. When decreasing outlet pressure, make sure that the evacuation gas can be released.

4 TROUBLE SHOOTING

Symptom / problem	Probable cause	Action
Regulators show unstable regulating characteristic	Contamination in regulator. Pilot Valve or Piston not moving properly.	Clean and inspect inside surface
LP outlet pressure is decreased/increased from pre-settings.	Spring is out of pre-settings, or out of order	Visually inspect spring, if damaged replace and preset adjustment nut to set pressure
Regulator leakage	Main-piston and/or pilot issue -Pilot length, Pilot Membrane damaged -Membrane damaged or not in position	Visually inspect Main piston and Pilot -Clean and inspect -Replace if damaged

If above actions don't fix the problem or for any other issues, the regulator should be returned to vendor for service/refurbishment.

5 MAINTENANCE

We recommended that each RPG-H08 unit that are in operational use should be sent to OBS facilities for maintenance every fifth year.

The service will include the following steps:

Service tasks	Internal procedure
Functional Testing in rig prior to disassembly	RPG-H08-P06-KC-000164
Maintenance incl. complete disassembly, cleaning and inspection of all parts, replacement of all O-rings.	OBS-P06-KA-000190
Re-Assembly	RPG-H08-P06-KC-000186
Final test RPG-H08 (functional testing in the test rig)	RPG-H08-P06-KC-000164
Fill in Service Report	OBS-P06-KA-000190

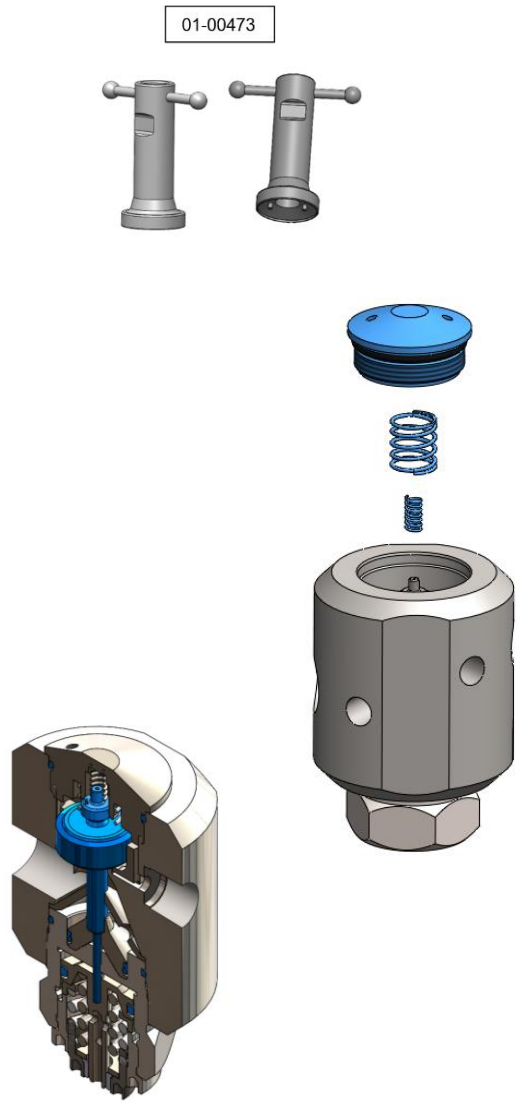
On suspicion of malfunction or leakage: immediately contact OBS Nova AS for overhaul of the regulator.

Mail contact: post@obstechnology.no / Phone: +47 33 38 37 99

OBS have qualified offshore personnel and is able to offer service on-site if necessary. OBS can also offer a practical/technical course to enable technician to perform overhaul on the installation site.

6 SERVICE RPG-H-SERIES

6.1 PROCEDURE FOR INSPECTION AND CHANGE OF MAIN VALVE AND PILOT



- The system must be without pressure, and all valves upstream/downstream to the regulator must be closed
- Make sure to follow local procedures if necessary
- Remove cap with special tool 01-00473, or an adjustable pin-type face wrench

- Remove Spring
- Inspect O-ring at cap, replace if damaged.
- Pull out Pilot, rinse, inspect and replace if damaged.
- Pull out Main Valve Assembly, rinse, inspect and replace if seat is damaged
- Positioning the new Main Valve Assembly
- Insert the new Pilot into the Membrane
- Insert Spring
- Assemble the Cap into Pressure Housing, make sure the Spring is in position if friction reassembles for inspection.
- Lubricate threads with Molykote DX paste
- Lubricate all O-rings with Molykote 111

6.2 SPARE PART LIST

Q	PN: 60-00067	Rep Kit RPG-H08	
1	01-00456	Pilot Valve	Assembly
1	01-00458	Main Valve	Assembly
1	24-00035	SSK O-ring RPG-H08	

Q	PN: 24-00035	Soft Seal Kit RPG-H08	
1	20B01710	O-ring	NBR 70 Shore
1	20E02029	O-ring	NBR 70 Shore
2	21C02987	O-ring	NBR 90 Shore
1	15-00276	Support ring	PET

Q	Gauge set for RPG-H08	
1	PN: 60-00051	Gauge 0-400 w/disc
1	PN: 60-00052	Gauge 0-25 w/disc

Q	PN: 60-00050	Tool set for RPG-H08	
1	01-00471	Tool for RPG H08 #1	Assembly
1	01-00472	Tool for RPG H08 #2	Assembly
1	01-00473	Tool for RPG H08 #3	Assembly