REVISIONS

Rev.	Ref	Changes
00	IFI	First issue 25th of February 2015
01	IFI	Updated, new product designation (from HC4 to RPG-HC4) and template
02	IFI	Extended range and added chapter 4 for Evacuating Gas
03	IFI	Maintenance period corrected
04	IFI	Added instruction to use transport box in chapter 3. Maintenance
05	OBS-P12-201105	Added change of Pilot Valve every service
06	OBS-P12-220809	Revised chapter 4 regarding use of transport box for RPG-HC4

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OBS TECHNOLOGY

1 GENERAL INFORMATION

The RPG-HC4 is a high-capacity pressure reducer valve for air or nitrogen, designed to comply with the following conditions;

- Supply pressure: 50 – 225 barg
- Outlet pressure: 2 – 14 barg
- Max. flow rate: 4 Nm^3 per second at min 180 barg supply

The RPG-HC4 is specially designed to provide a well stabilized driving force for water stored inside a hydrophore tank, and thereby enable immediate supply of fire water. The concept is called Active Hydrophore System (AHS). The AHS sense sudden decrease in water pressure and immediately begins to discharge water from the hydrophore tank into the firewater ring main, such that a positive pressure is maintained at the top of the risers.

The RPG-HC4 main components are produced in Titanium (gr. 5 in inlet valve and gr. 2 in pressure housing and seawater exposed parts). The main springs are in stainless steel or nickel alloy (Hastelloy).

RPG-HC4 regulators are designed to comply with the following requirements:

- The RPG-HC4 units shall be able to provide a flow rate more than 2.3 Nm3 per second when gas supply pressure is 80 bar or more.
- In an AHS, RPG-HC4 regulators are coupled in parallel. These regulators must at any time co-operate without causing pressure pulses or oscillations.
- The RPG-HC4 units must be able to sustain the pre-set pressure in the hydrophore tank even if very quick changes in gas delivery are required.

Figure 1: RPG-HC4

OBS TECHNOLOGY

2 INSTALLATION

The RPG-HC4 regulators are arranged on top of a hydrophore tank by means of flanges that are connected to pipes that directs incoming gas into the upper part of the tank. The gas is supplied to each RPG-HC4 regulator by means of fittings with 1" NPT threads.

Importance notice regarding operational use:

Due to the fact that these regulators have extreme capacity, the downstream pipe run for each RPG-HC4 connection must never be blocked.

The regulator shall be put in operation by slow opening of the shut-off valves that are connected upstream each RPG-HC4.

Optimal function of the RPG-HC4 is obtained when the downstream pressure is higher or equal to pre-set level. The regulator is then in the closed position. If pressure in the AHS drops below set pressure, the regulator will respond almost instantly and open for air supply to sustain the set pressure.

It shall not be necessary to change the terms of RPG-HC4 during operation. When something indicates that RPG-HC4 has a malfunction, contact OBS Technology AS for service.

3 MAINTENANCE

No maintenance performed at site. We recommended that each RPG-HC4 unit that are in operational use should be sent to OBS Technology AS for maintenance first time after 18 months, then every third year.

NB! Use the original aluminum box for transport to prevent damage to the o-ring against the flange.

NB! Adjustments on the RPG-HC4 should be done at OBS's premises. Special test facilities are required to do adjustments and verify proper function. Tampering by un-authorized personnel can cause hazardous flow conditions that can harm the firewater system as well as personnel.

The service will include the following steps:

Service tasks	Internal procedure
Testing in rig prior to disassembly	RPG-HC4-P06-MK-000191
Maintenance incl. complete disassembly, cleaning and inspection of all parts, replacement of all O-rings and Pilot Valve (art.no01-00378).	RPG-HC4-P06-MK-000191 OBS-P06-KA-000157
Re-Assembly	OBS-P06-KM-000159
Final test RPG-HC4 (functional testing in the test rig)	RPG-HC4-P06-KC-000191
Fill in Service Report	WOXXXX-HC4-P04-RB

4 STORING, PACKING AND TRANSPORT

The sealings are well protected inside the regulator when stored correctly.

The regulator can be stored on shelf up to 5 years after delivery/previous maintenance, without any deterioration of the sealings.

Use the original aluminum box with inner wooden casing for transport to prevent damage to the o-ring against the flange.

Figure 2: Transport box for RPG-HC4