



MARINE DIVISION

Certificate number: 27179/A0 BV

File number: ACM 145/2559/01

Product code: 2204I

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

### HABONIM Industrial Valves & Actuators

Kfar Hanassi - ISRAEL

*for the type of product*

### BALL VALVES

Gas valve Unit (GVU) DN40 & DN80

#### Requirements:

- Bureau Veritas Rules for the Classification of Steel Ships
- Bureau Veritas Rules for the Classification of Offshore Units
- NR 481 DT R02 E
- IGC

*This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 12 Jun 2017**

**For BUREAU VERITAS,**

At BV PIRAEUS, on 12 Jun 2012,

Dimitris DIMITROPOULOS



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION

Gas valve Unit (GVU) DN40 & DN80: Packaged, automatic 1/4 turn 5 ball valve unit actuated with Compact II spring return pneumatic actuator

Product consists of manual stop valve and a gas utilisation unit:

- Full bore floating ball valve EN1092 flanged series 77/78
- Automated double block and bleed 3 piece types 47 multi valve assembly
- 4 piston spring return\double action pneumatic actuator

#### 1.1 GVU block (DN40 size)

GVU block includes vent valves (V02 and V04), block valves (V03 and V05) and inerting valve (V07). All valves are with own actuators.

The block connects venting lines from V02 and V04 to one vent line, separate venting line possibility by removing block. Block valves (V03 and V05) and the vent valves (V02 and V04) are equipped with two inductive limit switches that indicate if block valves are open or closed.

Block is made in carbon steel and need to withstand 10 bar(g), operating pressure.

On main gas line inlet connection to block is DN 50 otherwise block "pipe" between valves and block outlet connection is DN 40.

#### 1.2 GVU block (DN80 size)

The GVU block is a machined bar stock that includes vent valves (V02, V04), block valves (V03, V05) and inerting valve (V07). All valves are with own actuators.

In the valve block between block valves V03 and V05 there is a 1/2"-NPT threaded connection for pressure transmitter.

The valve block connects venting lines V02 and V04 to a common vent outlet, size DN32.

Valve block is made in carbon steel and be capable of withstanding 10 bar(g), operating pressure. Main port connection size is DN80 with O-ring sealing grooves at diameter 101mm in main flanges

#### 1.3 Components Rating and Material:

<b>Manual Shut off Valve (V01)</b>	
Media:	Natural Gas
Valve internal parts:	Stainless steel
Valve body:	Carbon steel
Temperature range of housing:	-5 to +60 °
Max. Operating pressure:	15 bar(g)
ATEX class:	Hazardous zone 1
PN:	16
Control type:	Manual with fugitive emission extension
DN:	40 / 80
Connection:	Flanged
<b>Main shut off valves (V03 &amp; V05)</b>	
Media:	Natural gas
Valve internal parts:	Stainless steel
Valve body:	Carbon steel
Temperature range of housing:	-5 to +60 °C
Max. Operating pressure:	10 bar(g)
ATEX class:	Hazardous zone 1
PN:	16
Tagging:	V03: Block valve
Tagging:	V05: Block valve
Control type:	Remote controlled (pneumatic)
Pneumatic air supply pressure for actuator:	6 bar
DN:	40 / 80
Connection:	Flange
Fail mode:	Spring to close
Limit switch:	Limit switches for open and close position

<b>Venting valves (V02, V04)</b>	
Media:	Natural gas
Valve internal parts:	Stainless steel
Valve body	Carbon steel
Temperature range of housing:	-5 to +60 °C
Max. Operating pressure:	10 bar(g)
ATEX class:	Hazardous zone 1
PN	16
Tagging:	V02: Vent valve
Tagging:	V04: Vent valve
Control type:	Remote controlled (pneumatic)
Pneumatic air supply pressure for actuator:	6 bar
DN:	15 / 32
Connection:	Threaded (Rp 1/2")
Fail mode:	spring to open
Limit switch:	Limit switches for open and close position
<b>Inerting valve (V07)</b>	
Media:	Nitrogen
Valve internal parts:	Stainless steel
Valve body:	Carbon steel
Temperature range of housing:	-5 to +60 °
Max. Operating pressure:	15 bar(g)
ATEX class:	Hazardous zone 1
PN:	16
Tagging:	V07 : Inert valve
Control type:	Remote controlled (pneumatic)
Pneumatic air supply pressure for actuator:	6 bar
DN:	20 / 25
Connection:	Threaded (Rp 3/4")
Limit switch:	Limit switches for open and close position

## 2. DOCUMENTS AND DRAWINGS

### - Drawings

Description	Drawing N°
1 1/2" - 2" A78P SER. VALVES BS EN 1092 FLANGED	15-40-a77p-a78p-006600
3" - 4" A77P SER. VALVES BS EN 1092 FLANGED	
DN40-DN100 AF47P series multi valve assembly double block and bleed for gas drive engines BS EN 1092 FLANGED + THREADED VENT & PURGING PORTS	15-40af47p-ff66pg-pn16
DN40-DN100 AF47P series multi valve assembly double block and bleed for gas drive engines BS EN 1092 FLANGED + THREADED VENT & PURGING PORTS	15-40af47p-ff66pg-pn16-wart-d1
DN 40-100 AF47P series multi valve assembly double block and bleed for gas drive engines BS EN 1092 flanged + threaded vent & purge ports	15-40af47p-ff66pg-pn16-wart-dnv
DN 40 AF78P SER F4 fire safe Valve with 150mm fugitive emission & 150mm MCU Cast	15-af78p-4466pg-pn16f4femcu6cst
DN 80 AF78P SER F4 fire safe carbon steel Valve with 200mm fugitive emission & 200mm extension + locking device	30-af78p-4466pg-pn16-f4-fe-mcu8
1 1/2" Manifold & 2x1/2" valves & 3/4" valve with 2xC30-sr actuator x C20-sr actuator	p15af47p-ff66pg-pn16-wart-df20
3" Manifold & 3x1 1/4" valves with 2xC30-sr actuator	p30af47p-ff66pg-pn16-wart-df50

### - Specifications & Technical data sheet :

Description
- AF77P-AF78P Technical Data Sheet BV
- Compact C15-C75 Technical Data Sheet
- Cover Letter 26.10.2011 Habonim BV
- CATACTB-360M
- GVV Double Block and Bleed Technical Data Sheet BV
- P15AF47P - DF20 Technical Data Sheet
- P15AF78P - DF20 V01 Technical Data Sheet
- P30AF77P - DF50 V01 Technical Data Sheet
- P30AF47P - DF50 Technical Data Sheet

No departure from the above documents and drawings shall be made without the prior consent of Bureau Veritas. The manufacturer must inform Bureau Veritas of any modification or changes to these documents and drawings.

### **3. TEST REPORTS**

- Intermediate survey BV reports 47LPR11-1 TO 14
- Shell test, Pneumatic test and seat test N° CCF19122011 00000 to CCF19122011 00005
- Conclusion of FAT and Training DF50 Signed
- Vibration test by Lab Test Summary - DF50
- Functional Safety Certificate by SIL certification
- Valve Test Report DF50 - Dry Heat Test
- Valve Test Report DF50 - Low Temperature Test

### **4. APPLICATION / LIMITATION**

4.1 The Gas Valve unit belong to Class I according to the relevant Bureau Veritas requirement and may be used in the fuel gas supply system for Dual/Gas Fuel Engines

4.2 The scope of the appraisal made by Bureau Veritas to issue this certificate is strictly restricted to the relevant requirements stated on the front page of this certificate. Other requirements like Ship's Flag Administration Regulations and/or Classification Societies Rules, typically for electrical equipment including control, safety devices and cables are excluded from the scope of this certificate.

4.3 An operating test after installation is to be conducted to ensure that all of the components have been properly installed and that all parts of Gas Valve unit, including controls and safety devices, are in satisfactory operating condition.

4.4 All electrical equipment including control, safety devices, cables required to be type approved, and are to be in conformity with the applicable Society's Rules and suitable for use in hazardous zone 1.

4.5 The mounting and general maintenance of Gas Valve unit are to be in accordance with manufacturer's instructions and recommendations as well as the Rules and Regulations applicable to each particular ship.

### **5. PRODUCTION SURVEY REQUIREMENTS**

5.1 The products are to be manufactured, examined and tested by the manufacturer in accordance with the approved type described in this certificate and Bureau Veritas Rules and Regulations stated on the front page of this certificate. Arrangements shall be made for a Society's Surveyor to attend the relevant tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme (BV Mode I) has been agreed. Relevant Bureau Veritas certificate will be issued after satisfactory completion of the procedure.

5.2 The manufacturer has declared to Bureau Veritas that the products detailed in this certificate are manufactured at the production site stated on the front page of this certificate.

5.3 Bureau Veritas Certificate is required for materials of valve housings of class I (DN $\geq$ 50). Materials of valve housings of class I (DN $<$ 50) and for other parts are to be with Work's certificates.

5.4 Each Gas Valve unit is to be tested by the manufacturer at a hydrostatic pressure not less than 1.5 times the design pressure.

### **6. MARKING OF PRODUCT**

Each Gas Valve unit shall be permanently marked including:

- Manufacturer's name or logo
- Type designation
- Date of manufacture
- Society's brand as relevant

### **7. OTHERS**

This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that the manufacturer will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the products and of the conditions of this approval.

\*\*\* END OF CERTIFICATE \*\*\*