Base Load Power Hub (BLPH)

AIR RELEASE VALVES

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1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

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Sign	Date
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INSTALLATION, OPERATION AND MAINTENANCE MANUAL FOR AUTOMATIC AIR VALVE



This document has the purpose of assisting the personnel in charge of the installation, use, maintenance and repair of the air release/vacuum valve.
It is therefore recommended to read it before performing any work on the aforesaid valve.

WARNING

The valve cannot be used for pressures (working and/or transient pressures) and temperatures outside the design range and/or for fluids other than the ones they have initially been designed for.

PACKAGING AND WAREHOUSING

Unless otherwise specified, the standard ERREDI packaging is suitable for protecting the valves during shipment in closed trucks and/or containers.
Furthemore, it fully protects the equipment at the site, when stored in roofed warehouses for short periods of time running from consigment to the putting commission.
Special precautions should be adopted if the valves are to be kept inactive and exposed to atmospheric agents for long period of time.
The valves should not be exposed to direct sunlight or placed close to heat sources and in excessively dry and hot environmental conditions.
In any case, in order to prevent undue stress on the seal, the floater of the valve should be kept in any position other than fully closed.
In case of long warehousing periods, it is recommended to spred the seal ring with a protective product that does not attack the rubber chemically (Vaseline orsuitable powders) in order to prevent cracks and or breakage due to the “ageing” of the seal.

HANDLING

The valves should be handled with the utmost care.
They should be moved using lifting equipment suitable for the weight of the valves and using the special eyebolts (if any) or the holes in the flanges or in the stiffening ribs.

INSTALLATION

The air valves should always be installed in a vertical-upright position.

An on /off maintenance valve, fitted between the air valve and the transmission (pipeline) system is recommended for maintenance purpose.

OPERATION

The Air Valves, depending from the type, can work in different conditions.

Combined Vacuum Air release valve:

a) Allows large volume of air to escape to the exhaust port when the transmission system is being filled on start up and shall close waterthight when the liquid floods the valve.
   During the standard exercise, by an usefull internal pressure, the floater shall remain closed regardless of the water presence in the valve.

b) When the transmission system is being drained and/or the pressure value decreases under the room value during the transient phenomena, the same floater (without pin) shall open and admit large volumes of air through the exhaust port into the transmission system to avoid vacuum and to prevent column separation.

c) when under pressure during the standard operating condition, the “secondary” floater (with pin) shall release the air which had been dissolved in the water.

MAINTENANCE

INSPECTIONS

The air valve is automatic in operation and requires little or no maintenance.

However it is recommended to carry out the following inspections and check.

A) Visual examination for external leakage (monthly)
Before to carry out the inspection, it required to dry completely the wetted external surface.
The inspection should include a visual examination for leakage at the valve body and on pipe connection.

B) Check of Painting (monthly)
Visual examination of the external surface to identify the presence of possible defect (see the paragraph below related to the Painting Repair).

C) Visual examination from main seal leakage (semi-annual)
For precaution, we recommended a semi-annual visual inspection for leakage at the main seal and to carry out a cleaning operation of any environmental debris accumulated around the mesh and attached to the valve seat (if any).

To do it shall perform the following steps:

1) Shut off the isolation valve on the inlet pipe
2) Loosen bolts to remove the valve cover; never remove the bolts and nuts completely while the valve is under pressure
3) Inspect exhaust port on top. If any foreign matter or dirty is preventing ball floater from seating properly against the seat. Clean as necessary
4) Check the main seal status; if a new one is required, refer to the next chapter
5) Assembly the valve cover (and the mesh) by tightening the bolts and nuts diagonally opposite each other in rotation
6) Perform a seat test by slowly filling the body by opening the inlet pipe isolation valve
7) If there is not leakage, you can fully open the isolation valve.

WELDING REPAIR (IF REQUESTED by the customer)

If there is same leakage from the valve body, you can try to stop it by carring out a welding repair.

It shall been performed conforming the ASME VIII Div. 1 and ASME IX indications and then checked on 100% basis by non destructive examination according to the following indication:

- Ultrasonic Test for butt welding in according with ASME V;

- Liquid Penetrant or Magnetic Particles examination for fillet welding in according with ASME V.

Obviously you shall take care about the compatibility between the valve material and the used weld materials.
Perform a seat test by slowly filling the body by opening the inlet pipe isolation valve.
If there is not leakage, you can fully open the isolation valve.

PAINTING REPAIR

After a visual inspection of the external surface, if there are slight defects, you can try to proceed to the painting repair performing the following steps:

1) remove the damaged surface portion in situ and restore the required thickness in according to the painting procedure.

If the retouch is not enough due to the more consistent damaged surface, you can try to proceed to the painting repair performing the following steps:

1) Shut off the isolation valve on the inlet pipe
2) Loosen bolts to remove the valve; never remove the bolts and nuts completely while the valve is under pressure
3) Take the valve to the workshop to repair the painting where necessary in according to the painting procedure, remove the damaged surface portion and restore the required thickness
4) Take back the valve where is installed
5) Assembly the valve with the flange connection pipe and open the isolation valve.

TIGHTNESS REPAIR (MAIN SEAL)

If a malfunction of the valve is evident by seepage of media through the exhaust port and/or a new main seal required after a check of it (see previous chapter), the following steps need to be performed:

1) Shut off the upstream isolation valve on the inlet pipe
2) Remove the valve cover (with the mesh)
3) Loosen bolts of flange seal (never remove the bolts completely while the valve is under pressure)
4) Remove the flange, the flange seat and the main seal
5) Check seal for damage and replace if necessary

Lift out ball floater and check for damage and/or bruises; replace it if necessary

1) Visual inspect the valve body and remove any internal debris from inside the body and clean if necessary
2) Then, after fit new flange seals, assembly the valve in reverse mode
3) Perform a seat test by slowly filling the body by opening the inlet pipe isolation valve
4) If there is not leakage, you can fully open the isolation valve.

NAMEPLATE INFORMATION

Here below it is indicated the various mark meaning stamped on the sample nameplate attached to the body of the Air Valve and on the reference drawing.

DESCRIPTION

SIZE

FLANGE RATING

JOB NUMBER

DATE

TAG NUMBER

VALVE LIST:

ID	Tag
80021	SP-0043
80021	SP-0044



Note:

CLAMPING TORQUE

COLUMN 1) Material according to ASTM A193 B7 / ASTM A193 B7M.
COLUMN 2) Material according to ASTM A193 B8 / ASTM A193 B8M.

ISO (R262)				*ANSI (B 1.1)*			
D x pitch (mm)	Clamping Torque (Nm)			D x Filet (inch)	Clamping Torque (Nm)		
	1	*2*			*1*	*2*	
M6x1	11	6		1/4"UNC	12	6	
M8x1.25	26	13		5/16"UNC	24	13	
M10x1.5	52	27		3/8"UNC	43	23	
M12x1.75	88	46		1/2"UNC	103	54	
M14x2	140	74		9/16"UNC	148	78	
M16x2	213	112		5/8"UNC	199	105	
M18x2.5	294	155		3/4"UNC	352	185	
M20x2.5	415	218		7/8"UNC	554	292	
M22x2.5	552	291		1"UNC	850	447	
M24x3	718	378		1.1/8"UN	1205	634	
M27x3	1050	553		1.1/4"UN	1697	893	
M30x3.5	1426	750		1.3/8 UN	2227	1172	