

**TECHNICAL REQUIREMENTS FOR MOTOR OPERATED VENTILATION VALVES**  
**(AOQCV)**

1. **Scope.** The statement of requirements covers design, manufacturing, testing and commissioning of AOQCV valves on board.

2. **Technical Requirement of AOQCV.** The (AOQC) Electrical Actuator Operated Valve is required to maintain the gas tight integrity of the Citadel Zone during the completely closed down condition against NBC attack. (AOQC) Electrical Actuator Operated Valve in closed down condition must build up Citadel pressure to this limit & it must sustain this pressure without any loss in pressure and shall be remotely controlled. The valve shall be pre-wired up to junction box suitably protected and shall be provided with cable glands for external cable connections. Motor operated valve shall be provided with local as well as remote control panel. Electrical signals are required for interface to IPMS. The Valve should be rated for 380/415V, 3Phase, 50Hz Power supply.

- (a) The AOQCV valves are of Butterfly Valves types & are used for positive isolation of watertight zones.
- (b) The valves are used for maintaining gas & watertight integrity of ships.
- (c) The valves are fitted on ventilation trunks piercing the decks of ship.
- (d) The Butterfly valves are of wafer type.
- (e) All valves are to be vibration & shock proof.
- (f) All Cv & Torque values are to be provided

3. **Valve Construction.**

- (a) The valves are to be designed as per NES 375.
- (b) All valves are to be capable of withstanding shock NSS Grade "II".
- (c) The Material, Constructional & Testing requirement of valves shall conform to the Codes / Standards specified in the valve data sheet.
- (d) Stops shall be provided to ensure positive alignment of the valves with the ports.
- (e) All valves are to be designed in such a way that the pressure drop across the valves is minimum.
- (f) Valve **OPEN & CLOSED** indicator shall be provided.
- (g) All valves shall be field serviceable.
- (h) Raw materials used for manufacturing of valves shall be new, clean & free from rust, pits defects.
- (j) All valves are to be designed to offer minimum resistance to flow when in open position. Care is to be taken to avoid complications in casting, deep webbing or sudden change in section.
- (i) **Noise Requirement.** The measurement & acceptance criteria is to be as per type 2 of the "MIL-STD-740-2".

4. **Functional Aspects.**

- (a) The valve is required to be totally air tight. After the tight closing of the damper blade/flap, there should not be any leakage of air against a pressure of 150 MM/WG from either side of the valve.
- (b) The valve should allow unrestricted airflow in open condition without causing turbulence.
- (c) The valves should be operable remotely through IPMS and should open/ close in less than 15 seconds.
- (d) In case of electrical failure, a lever is to be provided for emergency manual operation for these valves.

**VALVE DATA SHEET**

1						<b>GENERAL SPECIFICATION</b>					
1.1	TYPE			1.6	FACE TO FACE DIST.		BS 5155				
1.2	SERVICE	VENTILATION		1.7	VALVE OPERATION		ELECTRICAL ACTUATED				
1.3	PRESSURE RATING	a) Bubble tight from 200 mm W.G. Vacuum to 0.414 Bar pressure b) Water tight to 0.690 Bar c) Body test pressure 2.0 bar		1.8	BORE		FULL				
1.4	OP.TEMPERATURE.	-10 °C to 85 °C		1.9	TYPE		WAFER TYPE				
1.5	VALVE REF. DOC.	NES 375									
2						<b>MATERIAL SPECIFICATION</b>					
	PART		MATERIAL		SPECIFICATION						
2.1	BODY		ALUMINIUM ALLOY		BS 1490 – LM6, LM25 TF /NES 360						
2.2	DISC		ALUMINIUM ALLOY		BS 1490 – LM6, LM25 TF/NES 360						
2.3	SHAFT		ALUMINIUM ALLOY		BS 970 431 S 29 OR 302 S 25/NES 360						
2.4	CLAMP RING		ALUMINIUM ALLOY		BS 1490 – LM6, LM25 TF/NES 360						
2.5	METAL SEAT		ALUMINIUM ALLOY		BS 1490 – LM6, LM25 TF/NES 360						
2.6	SOFT SEAT		PTFE								
2.7	DISC PIN		STAINLESS STEEL		AISI 316						
2.8	SPRING		STAINLESS STEEL		AISI 316						
2.8	BODY GASKET		ASBESTOS FREE		BS 7531						
2.9	BEARING		PHOSPHORE BRONZE		BS 2874 PB -102						
2.10	SEAL		PTFE								
2.11	BOLT		ALLOY STEEL		BS 3692 GR 8.8 DULY GALVANIZED						
2.12	NUT		ALLOY STEEL		BS 3692 GR 8.8 DULY GALVANIZED						
2.13	HANDLE		FORGED STEEL (GALVANIZED)		BS 970						
3						<b>STATUTORY REQUIREMENTS</b>					
3.1	PAINTING/ SURFACE TREATMENT			SMOOTH SURFACE							
3.2	TESTING HYDROSTATIC			AS PER BS 6755 PART I							
3.3	HYDROSTATIC TEST PRESSURE			BODY - 2 BAR SEAT : 1.5 BAR							
3.4	NOISE TEST			MIL -STD-740-2							
3.5	INSPECTION			DQA/THIRD PARTY (IACS)							