Table 4-1: Description of the valves which must be installed in the iCER system

	Row #	Code	Properties	Back pressure valve	Shut-off valve	Flow regulating valve
Medium	1	-	Valve function	Back pressure control	iCER shut off	Shut off/control
	2	I	Fluid	Exhaust gas (max. 0.5% m/m sulphur in fuel)	Exhaust gas (max. 0.5% m/m sulphur in fuel)	Exhaust gas (max. 0.1% m/m sulphur in fuel)
	3	S	Minimum design temperature [°C]	380		max. 160 continuously 380 for up to 10 minutes in case of failure
	4	I	Operating differential pressure [bar(g)]	0.08	0.12	0.12
	5	S	Maximum differential pressure which the valve must withstand [bar(g)]	1.0	1.0	0.5
Valve specifications	6	R	Valve type	Butterfly valve, single or double disc		
	7	S	Valve body size	Engine power-related / iCER specific, considering the total system back pressure The WinGD iCER layout tool supports the correct selection		
	8	R	End connections	Wafer or flange		
	9	R	Body material	Stainless steel: Fulfilling class rules applicable to pressure class and leakage class criteria		
	10	R	Disc material			
	11	R	Shaft material			
	12	S	Minimum leakage class according to EN 60534-4/ANSI-FCI 70-2	Not applicable. The valve is always open.	Class II (see 4.11.2)	Class II (see 4.11.2)
	13	S	Local position indication	Yes		
	14	R	Actuator	Double acting (alternatively, single acting)		
	15	S	Fail safe	Yes		
	16	S	Manual override option	Yes: Hand wheel (After selecting manual override)		
	17	S	Travel	The minimum position must be fixed during commissioning: Full closing is **not** allowed maximum 90° opening	0 – 90 degrees	0 – 90 degrees
	18	S	Minimum valve body pressure	1.0 bar(g)	1.0 bar(g)	1.0 bar(g)
	19	S	Minimum counter flange pressure class	PN 2.5	PN 2.5	PN 2.5
	20	E	Bore pattern of flanges according to EN 1092-1 based on minimum PN class			

Codes:	Description
I	= Information
E	= Example
R	= Recommendation
S	= Specifications which must be followed

	Row #	Code	Properties	Back pressure valve	Shut-off valve	Flow regulating valve
Actuator	21	R	Type	Pneumatic (The air consumption is marginal and does not need to be added to the compressor sizing)		
	22	R	Minimum / maximum supply pressure [bar(g)]	5.5 – 6.9		
	23	S	Maximum stroking time	20 s	20 s	20 s (open) / 10 s (close)
	24	S	Fail position	Open	Close	Close
	25	R	Air filter regulator with automatic drain	Yes		
Fail safe description and accessories	26	S	Fail system description	If electric and/or pneumatic supply is missing, valve must move to fail safe position (see electro-pneumatical drawings as provided by WinGD)		
	27	S	Fail system (only for double-acting actuators). Drawings available upon request.	PTAA015284	PTAA015284 or as alternative PTAA015335	PTAA015334
Air tank (only for double-acting actuators)	28	R	Air tank size	Designed for minimum two full strokes		
	29	R	Air tank minimum / maximum supply pressure [bar(g)]	5.5 – 6.9		
	30	R	Mounting strap	Yes		
	31	R	Safety valve G1/4"			
	32	R	Non-return valve on inlet			
	33	R	Ball valve for water drain			
	34	R	Pressure gauge 1/4" 0-10 bar			
	35	R	Manual override pressure release valve (shortcut valve)			
Positioner electrical connection and equipment	36	R	Positioner location	Directly mounted on actuator (alternatively, remote location)		
	37	S	Control signal	4 – 20 mA Direct	0/24 V on/off	4 – 20 mA Direct and 0/24 V on/off (fast closing/fast opening)
	38	S	Feedback signal	4 – 20 mA		
	39	E	Manufacturer	ABB		
	40	E	Positioner model	EDP300		
	41	S	Limit switch	Yes (inductive recommended)		
	42	S	Positioning accuracy	≤ 0.45 degrees	Not applicable	≤ 0.45 degrees
	43	S	Angle detection	Yes (contact free – inductive recommended)		
	44	R	Marine approved	Yes		
	45	I	Explosion-proof design	No		
	46	R	Valve components completely assembled, commissioned and ready to install	Yes (position switch for closed condition must be set during sea trial)		

Codes:	Description
I	= Information
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R	= Recommendation
S	= Specifications which must be followed

Special class requirements regarding design temperature, position indicator arrangement, manual override, and emergency operation options must be followed.