Base Load Power Hub (BLPH)

TECHNICAL DATASHEET for SDV/BDV and Tight Shut-Off XV Valves

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00	27/12/2024	Issue for Review (IFR)	J. Gardone	D. Barcella	L. Mora
Rev.	Date	Description	Prepared	Reviewed	Approved

GENERAL	1	Tag Number	Location				25-BDV-005		25
	2	Service					HYDROGEN STORAGE TANK V-25001A DEPRESS.		
	3	P&ID Number	Area Classification				123A90-DDL-PR-PID-80015		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number					4"-HY-142-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet			4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation				ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid					HYDROGEN		
	8	Fluid State	Phase				GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]		-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]		40		
	11	Operating Temperature Norm/Min/Max			[°C]		AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]		-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]		40		
	14								
	15								
	16	Speed of	Design				Close :	12 sec	Open : 4 sec
	17	Operation (seconds)	Actual				Close :	0.3 minimum	Open : -
	18								
	19								
VALVE BODY	20	Body Type					BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form				4"		FULL BORE
	22	Body Material	Bonnet Type				ASTM A182 F316/316L		N.A.
	23	Connections	Rating				FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material				RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation				Graphite		N.A.
	26	Bolting					A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat		A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class					Table 5 API 598		
	29	Fire Safe					API 6FA		
ACTUATOR	30	Manufacturer	Type				Rotork		Spring Return
	31	Model No.	Size				CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form				Horizontal		Cylinder
	33	Ingress Protection	Certification				IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design		4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure				OPEN		OPEN
	36	Fireproofing					NOT APPLICABLE		
	37	Solenoid Valve					25-BDY-005 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open				25-ZSL-005 - Soldo SQN120E-20X23L7		25-ZSH-005 - Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)					NOT REQUIRED		
	40	Air Set	Handwheel				4 barg		NOT REQUIRED
	41	Mounting Position					HORIZONTAL		
	42	Partial Stroke Test Facility					NOT REQUIRED		
	43	Control Type					-		
	44	Electrical Connection	Electrical Class				M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code				-	-	-
	46	No of Strokes Per Capacity					-		
	47	Safety Valve	Model				-		-
	48	Check Valve	Mounting				-		-
PURCHASE	49	Manufacturer					FLUITEK		
	50	Model					FB2		
	51	Purchase Order Number					1724000204		

GENERAL	1	Tag Number	Location			25-BDV-007	25
	2	Service				HYDROGEN STORAGE TANK V-25001B DEPRESS.	
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80016	Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				4"-HY-167-03HSS-N	
	5	Line Size and Schedule	Inlet	Outlet		4" / 3.05 mm	4" / 3.05 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L	NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid				HYDROGEN	
	8	Fluid State	Phase			GAS	GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5 / 30
	10	Design Pressure	Full Vacuum		[barg]	40	
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	- / -
	12	Design Temperature	Minimum	Maxi	[°C]	-29	80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40	
	14						
	15						
	16	Speed of	Design			Close : 12 sec	Open : 4 sec
	17	Operation (seconds)	Actual			Close : 0.3 minimum	Open : -
	18						
	19						
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)	
	21	Body Size	Body Form			4"	FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L	N.A.
	23	Connections	Rating			FLANGED ASME B16.5	#300
	24	Flange Finish	Gasket Material			RF	VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite	N.A.
	26	Bolting				A193 B8M / A194 Gr. 8M	
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718 / RPTFE
	28	Leakage Class				Table 5 API 598	
	29	Fire Safe				API 6FA	
ACTUATOR	30	Manufacturer	Type			Rotork	Spring Return
	31	Model No.	Size			CP/S	055-250A/CA
	32	Actuator Orientation	Actuator Form			Horizontal	Cylinder
	33	Ingress Protection	Certification			IP-66	II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg / 11 barg
	35	Action on Air Failure	Action on Power Failure			OPEN	OPEN
	36	Fireproofing				NOT APPLICABLE	
	37	Solenoid Valve				25-BDY-007 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid	
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-007- Soldo SQN120E-20X23L7	25-ZSH-005- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED	
	40	Air Set	Handwheel			4 barg	NOT REQUIRED
	41	Mounting Position				HORIZONTAL	
	42	Partial Stroke Test Facility				NOT REQUIRED	
	43	Control Type				-	
	44	Electrical Connection	Electrical Class			M20	H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	- / -
	46	No of Strokes Per Capacity				-	
	47	Safety Valve	Model			-	-
	48	Check Valve	Mounting			-	-
PURCHASE	49	Manufacturer				FLUITEK	
	50	Model				FB2	
	51	Purchase Order Number				1724000204	

GENERAL	1	Tag Number	Location			25-BDV-010		25
	2	Service				HYDROGEN STORAGE TANK V-25001C DEPRESS.		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80017		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				4"-HY-171-03HSS-N		
	5	Line Size and Schedule	Inlet		Outlet	4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close : 12 sec		Open : 4 sec
	17	Operation (seconds)	Actual			Close : 0.3 minimum		Open : -
	18							
	19							
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form			4"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite		N.A.
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				Table 5 API 598		
	29	Fire Safe				API 6FA		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-BDY-010 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-010- Soldo SQN120E-20X23L7		25-ZSH-010- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB2		
	51	Purchase Order Number				1724000204		

GENERAL	1	Tag Number		Location			25-XV-008		25
	2	Service					HYDROGEN STORAGE TANK V-25001B INLET		
	3	P&ID Number		Area Classification			123A90-DDL-PR-PID-80016		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number					1"-HY-016-03HSS-N		
	5	Line Size and Schedule		Inlet		Outlet	1" / 3.38 mm		1" / 3.38 mm
	6	Line Material		Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid					HYDROGEN		
	8	Fluid State		Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max				[barg]	-	7.5	30
	10	Design Pressure		Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max				[°C]	-	5	65
	12	Design Temperature		Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size				[bar]	40		
	14								
	15								
	16	Speed of		Design			Close : 1 sec		Open : 3 sec
	17	Operation (seconds)		Actual			Close : 0.3 minimum		Open : -
	18								
	19								
VALVE BODY	20	Body Type					BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)		
	21	Body Size		Body Form			1"		FULL BORE
	22	Body Material		Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections		Rating			FLANGED ASME B16.5		#300
	24	Flange Finish		Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing		Lubrication & Isolation			Graphite		N.A.
	26	Bolting					A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat		A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class					(1, 3) TSO		
	29	Fire Safe					API 6FA		
ACTUATOR	30	Manufacturer		Type			Rotork		Spring Return
	31	Model No.		Size			CP/S		035-100A/BA
	32	Actuator Orientation		Actuator Form			Horizontal		Cylinder
	33	Ingress Protection		Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply		Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure		Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing					NOT APPLICABLE		
	37	Solenoid Valve					25-XY-008 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed		Limit Switch Open			25-ZSL-008- Soldo SQN120E-20X23L7		25-ZSH-008- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)					NOT REQUIRED		
	40	Air Set		Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position					HORIZONTAL		
	42	Partial Stroke Test Facility					NOT REQUIRED		
	43	Control Type					-		
	44	Electrical Connection		Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity		Fabrication Code			-	-	-
	46	No of Strokes Per Capacity					-		
	47	Safety Valve		Model			-		-
	48	Check Valve		Mounting			-		-
PURCHASE	49	Manufacturer					FLUITEK		
	50	Model					FB2		
	51	Purchase Order Number					1724000204		

GENERAL	1	Tag Number	Location			25-BDV-013		25
	2	Service				HYDROGEN STORAGE TANK V-25001D DEPRESS.		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80018		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				4"-HY-175-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close :	12 sec	Open : 4 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form			4"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite		N.A.
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				Table 5 API 598		
	29	Fire Safe				API 6FA		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-BDY-013 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-013- Soldo SQN120E-20X23L7		25-ZSH-013- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB2		
	51	Purchase Order Number				1724000204		

GENERAL	1	Tag Number	Location				25-BDV-016		25
	2	Service					HYDROGEN STORAGE TANK V-25001E DEPRESS.		
	3	P&ID Number	Area Classification				123A90-DDL-PR-PID-80019		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number					4"-HY-180-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet			4" / 3.05 mm		4" / 3.05 mm
	6	Line Material	Line Insulation				ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid					HYDROGEN		
	8	Fluid State	Phase				GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]		-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]		40		
	11	Operating Temperature Norm/Min/Max			[°C]		AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]		-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]		40		
	14								
	15								
	16	Speed of	Design				Close : 12 sec		Open : 4 sec
	17	Operation (seconds)	Actual				Close : 0.3 minimum		Open : -
	18								
	19								
VALVE BODY	20	Body Type					BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)		
	21	Body Size	Body Form				4"		FULL BORE
	22	Body Material	Bonnet Type				ASTM A182 F316/316L		N.A.
	23	Connections	Rating				FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material				RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation				Graphite		N.A.
	26	Bolting					A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat		A182 F316/316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class					Table 5 API 598		
	29	Fire Safe					API 6FA		
ACTUATOR	30	Manufacturer	Type				Rotork		Spring Return
	31	Model No.	Size				CP/S		055-250A/CA
	32	Actuator Orientation	Actuator Form				Horizontal		Cylinder
	33	Ingress Protection	Certification				IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design		4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure				OPEN		OPEN
	36	Fireproofing					NOT APPLICABLE		
	37	Solenoid Valve					25-BDY-016 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open				25-ZSL-016- Soldo SQN120E-20X23L7		25-ZSH-016- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)					NOT REQUIRED		
	40	Air Set	Handwheel				4 barg		NOT REQUIRED
	41	Mounting Position					HORIZONTAL		
	42	Partial Stroke Test Facility					NOT REQUIRED		
	43	Control Type					-		
	44	Electrical Connection	Electrical Class				M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code				-	-	-
	46	No of Strokes Per Capacity					-		
	47	Safety Valve	Model				-		-
	48	Check Valve	Mounting				-		-
PURCHASE	49	Manufacturer					FLUITEK		
	50	Model					FB2		
	51	Purchase Order Number					1724000204		

GENERAL	1	Tag Number	Location			25-BDV-019		25	
	2	Service				HYDROGEN STORAGE TANK V-25001F DEPRESS.			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80020		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				4"-HY-184-03HSS-N			
	5	Line Size and Schedule	Inlet		Outlet	4" / 3.05 mm		4" / 3.05 mm	
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)	
PROCESS DATA	7	Fluid				HYDROGEN			
	8	Fluid State	Phase			GAS		GAS	
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30	
	10	Design Pressure	Full Vacuum		[barg]	40			
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-	
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80	
	13	Max. Diff. Pressure for Actuator Size			[bar]	40			
	14								
	15								
	16	Speed of	Design			Close :	12 sec	Open :	4 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BA03C01RFH)			
	21	Body Size	Body Form			4"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#300	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B8M / A194 Gr. 8M			
	27	Trim Material	Ball	Stem	Seat	A182 F316/316L	API 6A CRA UNS N07718	RPTFE	
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		055-250A/CA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg	
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				25-BDY-019 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-019- Soldo SQN120E-20X23L7		25-ZSH-019- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL			
	42	Partial Stroke Test Facility				NOT REQUIRED			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	-
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number	Location			25-BDV-022		25	
	2	Service				HYDROGEN TO FUEL CELL PACKAGE DEPRESS.			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80014		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1"-HY-144-03HSS-N			
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)	
PROCESS DATA	7	Fluid				HYDROGEN			
	8	Fluid State	Phase			GAS		GAS	
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30	
	10	Design Pressure	Full Vacuum		[barg]	40			
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-	
	12	Design Temperature	Minimum	Max	[°C]	-29		80	
	13	Max. Diff. Pressure for Actuator Size			[bar]	40			
	14								
	15								
	16	Speed of	Design			Close :	3 sec	Open :	1 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)			
	21	Body Size	Body Form			1"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#300	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B8M / A194 Gr. 8M			
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE	
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg	
	35	Action on Air Failure	Action on Power Failure			OPEN		OPEN	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				25-BDY-022 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-022- Soldo SQN120E-20X23L7		25-ZSH-022- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL			
	42	Partial Stroke Test Facility				NOT REQUIRED			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number		Location			25-SDV-001		25
	2	Service					HYDROGEN TO STORAGE TANKS		
	3	P&ID Number		Area Classification			123A90-DDL-PR-PID-80013		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number					1"-HY-007-03HSS-N		
	5	Line Size and Schedule		Inlet		Outlet	1" / 3.38 mm		1" / 3.38 mm
	6	Line Material		Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid					HYDROGEN		
	8	Fluid State		Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max				[barg]	-	7.5	30
	10	Design Pressure		Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max				[°C]	-	5	65
	12	Design Temperature		Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size				[bar]	40		
	14								
	15								
	16	Speed of		Design			Close : 1 sec		Open : 3 sec
	17	Operation (seconds)		Actual			Close : 0.3 minimum		Open : -
	18								
	19								
VALVE BODY	20	Body Type					BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)		
	21	Body Size		Body Form			1"		FULL BORE
	22	Body Material		Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections		Rating			FLANGED ASME B16.5		#300
	24	Flange Finish		Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing		Lubrication & Isolation			Graphite		N.A.
	26	Bolting					A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat		A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class					Table 5 API 598		
	29	Fire Safe					API 6FA		
ACTUATOR	30	Manufacturer		Type			Rotork		Spring Return
	31	Model No.		Size			CP/S		035-100A/AA
	32	Actuator Orientation		Actuator Form			Horizontal		Cylinder
	33	Ingress Protection		Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply		Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure		Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing					NOT APPLICABLE		
	37	Solenoid Valve					25-SDY-001 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed		Limit Switch Open			25-ZSL-001- Soldo SQN120E-20X23L7		25-ZSH-001- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)					NOT REQUIRED		
	40	Air Set		Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position					HORIZONTAL		
	42	Partial Stroke Test Facility					NOT REQUIRED		
	43	Control Type					-		
	44	Electrical Connection		Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity		Fabrication Code			-	-	-
	46	No of Strokes Per Capacity					-		
	47	Safety Valve		Model			-		-
	48	Check Valve		Mounting			-		-
PURCHASE	49	Manufacturer					FLUITEK		
	50	Model					FB2		
	51	Purchase Order Number					1724000204		

GENERAL	1	Tag Number	Location				25-SDV-023		25
	2	Service					HYDROGEN TO FUEL CELL PACKAGE		
	3	P&ID Number	Area Classification				123A90-DDL-PR-PID-80014		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number					1-1/2"-HY-148-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet			1-1/2" / 3.68 mm		1-1/2" / 3.68 mm
	6	Line Material	Line Insulation				ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid					HYDROGEN		
	8	Fluid State	Phase				GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]		-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]		40		
	11	Operating Temperature Norm/Min/Max			[°C]		AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]		-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]		40		
	14								
	15								
	16	Speed of	Design				Close :	1.5 sec	Open : 4.5 sec
	17	Operation (seconds)	Actual				Close :	0.3 minimum	Open : -
	18								
	19								
VALVE BODY	20	Body Type					BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)		
	21	Body Size	Body Form				1-1/2"		FULL BORE
	22	Body Material	Bonnet Type				ASTM A182 F316/316L		N.A.
	23	Connections	Rating				FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material				RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation				Graphite		N.A.
	26	Bolting					A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat		A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class					Table 5 API 598		
	29	Fire Safe					API 6FA		
ACTUATOR	30	Manufacturer	Type				Rotork		Spring Return
	31	Model No.	Size				CP/S		035-130A/CA
	32	Actuator Orientation	Actuator Form				Horizontal		Cylinder
	33	Ingress Protection	Certification				IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design		4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure				CLOSE		CLOSE
	36	Fireproofing					NOT APPLICABLE		
	37	Solenoid Valve					25-SDY-004 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open				25-ZSL-023- Soldo SQN120E-20X23L7		25-ZSH-023- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)					NOT REQUIRED		
	40	Air Set	Handwheel				4 barg		NOT REQUIRED
	41	Mounting Position					HORIZONTAL		
	42	Partial Stroke Test Facility					NOT REQUIRED		
	43	Control Type					-		
	44	Electrical Connection	Electrical Class				M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code				-	-	-
	46	No of Strokes Per Capacity					-		
	47	Safety Valve	Model				-		-
	48	Check Valve	Mounting				-		-
PURCHASE	49	Manufacturer					FLUITEK		
	50	Model					FB2		
	51	Purchase Order Number					1724000204		

GENERAL	1	Tag Number	Location			64-SDV-001		64	
	2	Service				NITROGEN TO H2 STORAGE VESSELS INLET			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80027		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1"-N-128-03HSS-N			
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)	
PROCESS DATA	7	Fluid				NITROGEN GAS			
	8	Fluid State	Phase			GAS		GAS	
	9	Operating Pressure Norm/Min/Max			[barg]	6	-	-	
	10	Design Pressure	Full Vacuum		[barg]	10			
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-	
	12	Design Temperature	Minimum	Maxi	[°C]	-46		80	
	13	Max. Diff. Pressure for Actuator Size			[bar]	10			
	14								
	15								
	16	Speed of	Design			Close :	1 sec	Open :	3 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFHS)			
	21	Body Size	Body Form			1"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#300	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B8M / A194 Gr. 8M			
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE	
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-080A/AA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg	
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				64-SDY-001 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			64-ZSL-001- Soldo SQN120E-20X23L7		64-ZSH-001- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL			
	42	Partial Stroke Test Facility				NOT REQUIRED			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	-
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number	Location			25-XV-021		25
	2	Service				HYDROGEN STORAGE TANK V-25001F OUTLET		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80020		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-HY-136-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close :	1 sec	Open : 3 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)		
	21	Body Size	Body Form			1"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite		N.A.
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				Table 5 API 598		
	29	Fire Safe				API 6FA		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-XY-021- FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-021- Soldo SQN120E-20X23L7		25-ZSH-021- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB2		
	51	Purchase Order Number				1724000204		

GENERAL	1	Tag Number	Location			25-XV-004		25
	2	Service				HYDROGEN STORAGE TANK V-25001A INLET		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80015		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-HY-015-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	-	5	65
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close : 1 sec		Open : 3 sec
	17	Operation (seconds)	Actual			Close : 0.3 minimum		Open : -
	18							
	19							
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)		
	21	Body Size	Body Form			1"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite		N.A.
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				Table 5 API 598		
	29	Fire Safe				API 6FA		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-XY-004 -FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-004- Soldo SQN120E-20X23L7		25-ZSH-004- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB2		
	51	Purchase Order Number				1724000204		

GENERAL	1	Tag Number	Location			25-XV-006		25
	2	Service				HYDROGEN STORAGE TANK V-25001A OUTLET		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80015		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-HY-026-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close : 1 sec		Open : 3 sec
	17	Operation (seconds)	Actual			Close : 0.3 minimum		Open : -
	18							
	19							
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)		
	21	Body Size	Body Form			1"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite		N.A.
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				Table 5 API 598		
	29	Fire Safe				API 6FA		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-XY-006- FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-006- Soldo SQN120E-20X23L7		25-ZSH-006- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB2		
	51	Purchase Order Number				1724000204		

GENERAL	1	Tag Number		Location			25-XV-009		25
	2	Service					HYDROGEN STORAGE TANK V-25001B OUTLET		
	3	P&ID Number		Area Classification			123A90-DDL-PR-PID-80016		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number					1"-HY-132-03HSS-N		
	5	Line Size and Schedule		Inlet		Outlet	1" / 3.38 mm		1" / 3.38 mm
	6	Line Material		Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid					HYDROGEN		
	8	Fluid State		Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max				[barg]	-	7.5	30
	10	Design Pressure		Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max				[°C]	AMB	-	-
	12	Design Temperature		Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size				[bar]	40		
	14								
	15								
	16	Speed of		Design			Close : 1 sec		Open : 3 sec
	17	Operation (seconds)		Actual			Close : 0.3 minimum		Open : -
	18								
	19								
VALVE BODY	20	Body Type					BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)		
	21	Body Size		Body Form			1"		FULL BORE
	22	Body Material		Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections		Rating			FLANGED ASME B16.5		#300
	24	Flange Finish		Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing		Lubrication & Isolation			Graphite		N.A.
	26	Bolting					A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat		A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class					Table 5 API 598		
	29	Fire Safe					API 6FA		
ACTUATOR	30	Manufacturer		Type			Rotork		Spring Return
	31	Model No.		Size			CP/S		035-100A/BA
	32	Actuator Orientation		Actuator Form			Horizontal		Cylinder
	33	Ingress Protection		Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply		Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure		Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing					NOT APPLICABLE		
	37	Solenoid Valve					25-XY-009- FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed		Limit Switch Open			25-ZSL-009- Soldo SQN120E-20X23L7		25-ZSH-009- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)					NOT REQUIRED		
	40	Air Set		Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position					HORIZONTAL		
	42	Partial Stroke Test Facility					NOT REQUIRED		
	43	Control Type					-		
	44	Electrical Connection		Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity		Fabrication Code			-	-	-
	46	No of Strokes Per Capacity					-		
	47	Safety Valve		Model			-		-
	48	Check Valve		Mounting			-		-
PURCHASE	49	Manufacturer					FLUITEK		
	50	Model					FB2		
	51	Purchase Order Number					1724000204		

GENERAL	1	Tag Number	Location			25-XV-024		25	
	2	Service				HYDROGEN TO STORAGE TANKS DEPRESS.			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80013		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1"-HY-143-03HSS-N			
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)	
PROCESS DATA	7	Fluid				HYDROGEN			
	8	Fluid State	Phase			GAS		GAS	
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30	
	10	Design Pressure	Full Vacuum		[barg]	40			
	11	Operating Temperature Norm/Min/Max			[°C]	-	5	65	
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80	
	13	Max. Diff. Pressure for Actuator Size			[bar]	40			
	14								
	15								
	16	Speed of	Design			Close :	1 sec	Open :	3 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)			
	21	Body Size	Body Form			1"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#300	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B8M / A194 Gr. 8M			
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE	
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg	
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				25-XY-024- FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-024- Soldo SQN120E-20X23L7		25-ZSH-024- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL			
	42	Partial Stroke Test Facility				NOT REQUIRED			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-	
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number	Location			25-XV-011		25
	2	Service				HYDROGEN STORAGE TANK V-25001C INLET		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80017		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-HY-017-03HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30
	10	Design Pressure	Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max			[°C]	-	5	65
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size			[bar]	40		
	14							
	15							
	16	Speed of	Design			Close :	1 sec	Open : 3 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)		
	21	Body Size	Body Form			1"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite		N.A.
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				Table 5 API 598		
	29	Fire Safe				API 6FA		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				25-XY-011 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-011- Soldo SQN120E-20X23L7		25-ZSH-011- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB2		
	51	Purchase Order Number				1724000204		

GENERAL	1	Tag Number	Location			25-XV-012		25	
	2	Service				HYDROGEN STORAGE TANK V-25001C OUTLET			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80017		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1"-HY-133-03HSS-N			
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)	
PROCESS DATA	7	Fluid				HYDROGEN			
	8	Fluid State	Phase			GAS		GAS	
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30	
	10	Design Pressure	Full Vacuum		[barg]	40			
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-	
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80	
	13	Max. Diff. Pressure for Actuator Size			[bar]	40			
	14								
	15								
	16	Speed of	Design			Close :	1 sec	Open :	3 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)			
	21	Body Size	Body Form			1"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#300	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B8M / A194 Gr. 8M			
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE	
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg	
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				25-XY-012- FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-012- Soldo SQN120E-20X23L7		25-ZSH-012- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL			
	42	Partial Stroke Test Facility				NOT REQUIRED			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	-
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number	Location			25-XV-014		25	
	2	Service				HYDROGEN STORAGE TANK V-25001D INLET			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80018		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1"-HY-018-03HSS-N			
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)	
PROCESS DATA	7	Fluid				HYDROGEN			
	8	Fluid State	Phase			GAS		GAS	
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30	
	10	Design Pressure	Full Vacuum		[barg]	40			
	11	Operating Temperature Norm/Min/Max			[°C]	-	5	65	
	12	Design Temperature	Minimum	Max	[°C]	-29		80	
	13	Max. Diff. Pressure for Actuator Size			[bar]	40			
	14								
	15								
	16	Speed of	Design			Close :	1 sec	Open :	3 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)			
	21	Body Size	Body Form			1"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#300	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B8M / A194 Gr. 8M			
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718		RPTFE
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg		11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				25-XY-014-FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-014- Soldo SQN120E-20X23L7		25-ZSH-014- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL			
	42	Partial Stroke Test Facility				NOT REQUIRED			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	-
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number		Location			25-XV-015		25
	2	Service					HYDROGEN STORAGE TANK V-25001D OUTLET		
	3	P&ID Number		Area Classification			123A90-DDL-PR-PID-80018		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number					1"-HY-134-03HSS-N		
	5	Line Size and Schedule		Inlet		Outlet	1" / 3.38 mm		1" / 3.38 mm
	6	Line Material		Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid					HYDROGEN		
	8	Fluid State		Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max				[barg]	-	7.5	30
	10	Design Pressure		Full Vacuum		[barg]	40		
	11	Operating Temperature Norm/Min/Max				[°C]	AMB	-	-
	12	Design Temperature		Minimum	Maxi	[°C]	-29		80
	13	Max. Diff. Pressure for Actuator Size				[bar]	40		
	14								
	15								
	16	Speed of		Design			Close : 1 sec		Open : 3 sec
	17	Operation (seconds)		Actual			Close : 0.3 minimum		Open : -
	18								
	19								
VALVE BODY	20	Body Type					BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)		
	21	Body Size		Body Form			1"		FULL BORE
	22	Body Material		Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections		Rating			FLANGED ASME B16.5		#300
	24	Flange Finish		Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing		Lubrication & Isolation			Graphite		N.A.
	26	Bolting					A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat		A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class					Table 5 API 598		
	29	Fire Safe					API 6FA		
ACTUATOR	30	Manufacturer		Type			Rotork		Spring Return
	31	Model No.		Size			CP/S		035-100A/BA
	32	Actuator Orientation		Actuator Form			Horizontal		Cylinder
	33	Ingress Protection		Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply		Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure		Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing					NOT APPLICABLE		
	37	Solenoid Valve					25-XY-015 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed		Limit Switch Open			25-ZSL-015- Soldo SQN120E-20X23L7		25-ZSH-015- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)					NOT REQUIRED		
	40	Air Set		Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position					HORIZONTAL		
	42	Partial Stroke Test Facility					NOT REQUIRED		
	43	Control Type					-		
	44	Electrical Connection		Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity		Fabrication Code			-	-	-
	46	No of Strokes Per Capacity					-		
	47	Safety Valve		Model			-		-
	48	Check Valve		Mounting			-		-
PURCHASE	49	Manufacturer					FLUITEK		
	50	Model					FB2		
	51	Purchase Order Number					1724000204		

GENERAL	1	Tag Number	Location			25-XV-017		25	
	2	Service				HYDROGEN STORAGE TANK V-25001E INLET			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80019		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1"-HY-019-03HSS-N			
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)	
PROCESS DATA	7	Fluid				HYDROGEN			
	8	Fluid State	Phase			GAS		GAS	
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30	
	10	Design Pressure	Full Vacuum		[barg]	40			
	11	Operating Temperature Norm/Min/Max			[°C]	-	5	65	
	12	Design Temperature	Minimum	Max	[°C]	-29		80	
	13	Max. Diff. Pressure for Actuator Size			[bar]	40			
	14								
	15								
	16	Speed of	Design			Close :	1 sec	Open :	3 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)			
	21	Body Size	Body Form			1"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#300	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B8M / A194 Gr. 8M			
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE	
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg	
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				25-XY-017 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-017- Soldo SQN120E-20X23L7		25-ZSH-017- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL			
	42	Partial Stroke Test Facility				NOT REQUIRED			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	-
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number	Location			25-XV-018		25	
	2	Service				HYDROGEN STORAGE TANK V-25001E OUTLET			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80019		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1"-HY-135-03HSS-N			
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)	
PROCESS DATA	7	Fluid				HYDROGEN			
	8	Fluid State	Phase			GAS		GAS	
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5	30	
	10	Design Pressure	Full Vacuum		[barg]	40			
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-	
	12	Design Temperature	Minimum	Maxi	[°C]	-29		80	
	13	Max. Diff. Pressure for Actuator Size			[bar]	40			
	14								
	15								
	16	Speed of	Design			Close :	1 sec	Open :	3 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)			
	21	Body Size	Body Form			1"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#300	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B8M / A194 Gr. 8M			
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE	
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg	
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				25-XY-018 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-018- Soldo SQN120E-20X23L7		25-ZSH-018- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL			
	42	Partial Stroke Test Facility				NOT REQUIRED			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	-
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number	Location			25-XV-020		25	
	2	Service				HYDROGEN STORAGE TANK V-25001F INLET			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80020		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1"-HY-020-03HSS-N			
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm	
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)	
PROCESS DATA	7	Fluid				HYDROGEN			
	8	Fluid State	Phase			GAS		GAS	
	9	Operating Pressure Norm/Min/Max			[barg]	-	7.5		30
	10	Design Pressure	Full Vacuum		[barg]	40			
	11	Operating Temperature Norm/Min/Max			[°C]	-	5		65
	12	Design Temperature	Minimum	Max	[°C]	-29		80	
	13	Max. Diff. Pressure for Actuator Size			[bar]	40			
	14								
	15								
	16	Speed of	Design			Close :	1 sec	Open :	3 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS03C01RFH)			
	21	Body Size	Body Form			1"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#300	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B8M / A194 Gr. 8M			
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718		RPTFE
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg		11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				25-XY-020- FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			25-ZSL-020- Soldo SQN120E-20X23L7		25-ZSH-020- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL			
	42	Partial Stroke Test Facility				NOT REQUIRED			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	-
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number	Location			50-XV-001		50	
	2	Service				SEA WATER P-50001A DISCHARGE			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1-1/2"-SWS-031-01SD-E			
	5	Line Size and Schedule	Inlet	Outlet		1-1/2" / 3.68 mm		1-1/2" / 3.68 mm	
	6	Line Material	Line Insulation			ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED	
PROCESS DATA	7	Fluid				SEA WATER SUPPLY			
	8	Fluid State	Phase			LIQUID		LIQUID	
	9	Operating Pressure Norm/Min/Max			[barg]	15	-	-	
	10	Design Pressure	Full Vacuum		[barg]	17.7			
	11	Operating Temperature Norm/Min/Max			[°C]	22	-	-	
	12	Design Temperature	Minimum	Maxi	[°C]	-29		100	
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7			
	14								
	15								
	16	Speed of	Design			Close :	1.5 sec	Open :	4.5 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)			
	21	Body Size	Body Form			1-1/2"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F53		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#150	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG			
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE	
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg	
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				50-XY-001- FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-001- Soldo SQN120E-20X23L7		50-ZSH-001- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL / VERTICAL			
	42	Partial Stroke Test Facility				-			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	-
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			

GENERAL	1	Tag Number	Location			50-XV-002		50
	2	Service				SEA WATER P-50001A INLET		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-SWS-146-01SD-E		
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State	Phase			LIQUID		LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	-	ATM	15
	10	Design Pressure	Full Vacuum		[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	-	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of	Design			Close : 1 sec		Open : 3 sec
	17	Operation (seconds)	Actual			Close : 0.3 minimum		Open : -
	18							
	19							
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size	Body Form			1"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F53		N.A.
	23	Connections	Rating			FLANGED ASME B16.5		#150
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite		N.A.
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				Table 5 API 598		
	29	Fire Safe				API 6FA		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-002 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-002- Soldo SQN120E-20X23L7		50-ZSH-002- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB2		
	51	Purchase Order Number				1724000204		

GENERAL	1	Tag Number		Location			50-XV-003		50
	2	Service					SEA WATER P-50001B DISCHARGE		
	3	P&ID Number		Area Classification			123A90-DDL-PR-PID-80021		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number					1-1/2"-SWS-033-01SD-E		
	5	Line Size and Schedule		Inlet		Outlet	1-1/2" / 3.68 mm		1-1/2" / 3.68 mm
	6	Line Material		Line Insulation			ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED
PROCESS DATA	7	Fluid					SEA WATER SUPPLY		
	8	Fluid State		Phase			LIQUID		LIQUID
	9	Operating Pressure Norm/Min/Max				[barg]	15	-	-
	10	Design Pressure		Full Vacuum		[barg]	17.7		
	11	Operating Temperature Norm/Min/Max				[°C]	22	-	-
	12	Design Temperature		Minimum	Maxi	[°C]	-29		100
	13	Max. Diff. Pressure for Actuator Size				[bar]	17.7		
	14								
	15								
	16	Speed of		Design			Close :	1.5 sec	Open : 4.5 sec
	17	Operation (seconds)		Actual			Close :	0.3 minimum	Open : -
	18								
	19								
VALVE BODY	20	Body Type					BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size		Body Form			1-1/2"		FULL BORE
	22	Body Material		Bonnet Type			ASTM A182 F53		N.A.
	23	Connections		Rating			FLANGED ASME B16.5		#150
	24	Flange Finish		Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing		Lubrication & Isolation			Graphite		N.A.
	26	Bolting					A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat		ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class					Table 5 API 598		
	29	Fire Safe					API 6FA		
ACTUATOR	30	Manufacturer		Type			Rotork		Spring Return
	31	Model No.		Size			CP/S		035-100A/BA
	32	Actuator Orientation		Actuator Form			Horizontal		Cylinder
	33	Ingress Protection		Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply		Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure		Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing					NOT APPLICABLE		
	37	Solenoid Valve					50-XY-003 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed		Limit Switch Open			50-ZSL-003- Soldo SQN120E-20X23L7		50-ZSH-003- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)					NOT REQUIRED		
	40	Air Set		Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position					HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility					-		
	43	Control Type					-		
	44	Electrical Connection		Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity		Fabrication Code			-	-	-
	46	No of Strokes Per Capacity					-		
	47	Safety Valve		Model			-		-
	48	Check Valve		Mounting			-		-
PURCHASE	49	Manufacturer					FLUITEK		
	50	Model					FB2		
	51	Purchase Order Number					1724000204		

GENERAL	1	Tag Number	Location			50-XV-004		50
	2	Service				SEA WATER P-50001B INLET		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-SWS-147-01SD-E		
	5	Line Size and Schedule	Inlet		Outlet	1" / 3.38 mm		1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State	Phase			LIQUID		LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	-	ATM	15
	10	Design Pressure	Full Vacuum		[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	-	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of	Design			Close : 1 sec		Open : 3 sec
	17	Operation (seconds)	Actual			Close : 0.3 minimum		Open : -
	18							
	19							
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size	Body Form			1"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F53		N.A.
	23	Connections	Rating			FLANGED ASME B16.5		#150
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite		N.A.
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				Table 5 API 598		
	29	Fire Safe				API 6FA		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-004 -FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-004- Soldo SQN120E-20X23L7		50-ZSH-004- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB2		
	51	Purchase Order Number				1724000204		

GENERAL	1	Tag Number	Location			80-XV-001		80
	2	Service				HYDROGEN TO FUEL CELL PACKAGE VENTED		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80012		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-HY-163-01HSS-N		
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A312/TP316/316L		NOT INSUL. (PAINTED)
PROCESS DATA	7	Fluid				HYDROGEN		
	8	Fluid State	Phase			GAS		GAS
	9	Operating Pressure Norm/Min/Max			[barg]	-	3.5	6.5
	10	Design Pressure	Full Vacuum		[barg]	10		
	11	Operating Temperature Norm/Min/Max			[°C]	AMB	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		100
	13	Max. Diff. Pressure for Actuator Size			[bar]	10		
	14							
	15							
	16	Speed of	Design			Close : 1 sec		Open : 3 sec
	17	Operation (seconds)	Actual			Close : 0.3 minimum		Open : -
	18							
	19							
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01C01RFH)		
	21	Body Size	Body Form			1"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F316/316L		N.A.
	23	Connections	Rating			FLANGED ASME B16.5		#300
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE
	25	Packing	Lubrication & Isolation			Graphite		N.A.
	26	Bolting				A193 B8M / A194 Gr. 8M		
	27	Trim Material	Ball	Stem	Seat	A182 F316 / 316L	API 6A CRA UNS N07718	RPTFE
	28	Leakage Class				Table 5 API 598		
	29	Fire Safe				API 6FA		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		035-080A/AA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				80-XY-021 - FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid		
	38	Limit Switch Closed	Limit Switch Open			80-ZSL-021- Soldo SQN120E-20X23L7		80-ZSH-021- Soldo SQN120E-20X23L7
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			4 barg		NOT REQUIRED
	41	Mounting Position				HORIZONTAL		
	42	Partial Stroke Test Facility				NOT REQUIRED		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB2		
	51	Purchase Order Number				1724000204		

GENERAL	1	Tag Number	Location			50-XV-005		50	
	2	Service				SEA WATER P-50001A DISCHARGE			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021		Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1-1/2"-SWS-031-01SD-E			
	5	Line Size and Schedule	Inlet	Outlet		1-1/2" / 3.68 mm		1-1/2" / 3.68 mm	
	6	Line Material	Line Insulation			ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED	
PROCESS DATA	7	Fluid				SEA WATER SUPPLY			
	8	Fluid State	Phase			LIQUID		LIQUID	
	9	Operating Pressure Norm/Min/Max			[barg]	15	-	-	
	10	Design Pressure	Full Vacuum		[barg]	17.7			
	11	Operating Temperature Norm/Min/Max			[°C]	22	-	-	
	12	Design Temperature	Minimum	Maxi	[°C]	-29		100	
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7			
	14								
	15								
	16	Speed of	Design			Close :	1.5 sec	Open :	4.5 sec
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open :	-
	18								
	19								
VALVE BODY	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)			
	21	Body Size	Body Form			1-1/2"		FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F53		N.A.	
	23	Connections	Rating			FLANGED ASME B16.5		#150	
	24	Flange Finish	Gasket Material			RF		VITON GLT AED+GRAPHITE	
	25	Packing	Lubrication & Isolation			Graphite		N.A.	
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG			
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE	
	28	Leakage Class				Table 5 API 598			
	29	Fire Safe				API 6FA			
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return	
	31	Model No.	Size			CP/S		035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder	
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg	
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE	
	36	Fireproofing				NOT APPLICABLE			
	37	Solenoid Valve				50-XY-001- FP06P-S1-04-32-NU-V-77A-24D-57 Bifold solenoid			
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-001- Soldo SQN120E-20X23L7		50-ZSH-001- Soldo SQN120E-20X23L7	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED			
	40	Air Set	Handwheel			4 barg		NOT REQUIRED	
	41	Mounting Position				HORIZONTAL / VERTICAL			
	42	Partial Stroke Test Facility				-			
	43	Control Type				-			
	44	Electrical Connection	Electrical Class			M20		H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-		-	-
	46	No of Strokes Per Capacity				-			
	47	Safety Valve	Model			-		-	
	48	Check Valve	Mounting			-		-	
PURCHASE	49	Manufacturer				FLUITEK			
	50	Model				FB2			
	51	Purchase Order Number				1724000204			