Base Load Power Hub (BLPH)

DS - Manual Valves

Document Number: 123A90-DDL-PP-DS-70003

Document Class: 2

02	17/11/2023	Approved for Construction (AFC)	R.Blyth	C.Bortolin	D.Lo Sterzo
01	20/10/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
00	15/09/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
Rev.	Date	Description	Prepared	Reviewed	Approved

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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ISSUE FOR REVIEW (IFR)
02	APPROVED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	
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3.	
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Base Load Power Hub (BLPH)

APPENDIX 1 - BALL VALVES

Document Number: 123A90-DDL-PP-DS-70003

Document Class: 2

02	17/11/2023	Approved for Construction (AFC)	RBL	CBO	LDO
01	20/10/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
00	15/09/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
Rev.	Date	Description	Prepared	Reviewed	Approved

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4	01CS BA01B01RF	X	X	X					
5	01CS BC01B01RF	X	X	X					
6	01CS BS01B01RF	X	X	X					
7	01CS BS01B01RFS	-	X	X					
8	01SS BA01C01RF	X	X	X					
9	01SS BC01C01RF	X	X	X					
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12	01HSS BA01C01RFH	X	X	X					
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17	01SD BC01F01RF	X	X	X					
18	01SD BS01F01RF	X	X	X					
19	01SD BS01F01RFS	-	X	X					
20	03HSS BA01C01RFH	X	X	X					
21	01HSS BC03C01RFH	X	X	X					
22	01HSS BS03C01RFH	X	X	X					
23	01HSS BS03C01RFHS	-	X	X					
24	01CP BA01P01KT	-	X	X					
25	01CP BA01P01KN	-	X	X					
26	01HSS BA01C01RFHS	-	-	X					
27									
28									
29									

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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ISSUE FOR REVIEW (IFR)
02	APPROVED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	Operating temperatures to be defined for all remaining VDS
2.	Resolved and closed - methanol not reported and will not be used for commissioning
3.	Resolved and closed - Definition of coating system
4.	

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VALVE TYPE: BALL

DATA SHEET: BA01B01RF

PIPING CLASS: 01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Temperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	6	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	5	**Max:**	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2 or A352 LCC
BALL:	13% Cr c/w ENP
STEM:	13% Cr
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

BY-PASS:		**DRAINS / VENTS:**	X
ANTI-STATIC:	X	**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantee the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

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VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BC01B01RF	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Temperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Reduced Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	6	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2 or A352 LCC
BALL:	13% Cr c/w ENP
STEM:	13% Cr
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantee the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	DS - Manual Valves	Sh. 6 of 26 Date: 17/11/2023 Rev. 02

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BS01B01RF	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Temperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	6	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	5	**Max:**	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2 or A352 LCC
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

BY-PASS:		**DRAINS / VENTS:**	X
ANTI-STATIC:	X	**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantee the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BS01B01RFS	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Temperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	6	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 3, 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2 or A352 LCC
BALL:	13% Cr c/w ENP
STEM:	13% Cr
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantee the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	All SB (single block and bleed) to be with bleed valve 1/2" NPT to the main valve body. Bleed needle valve to be with identical materials of construction including trim c/w HF and pressure rating as the main valve.
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BA01C01RF	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	11	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316 or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BC01C01RF	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Reduced Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	11	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316 or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BS01C01RF	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	11	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316 or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BS01C01RFS	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	11	**Max:**	16,2
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	HOLD	**Max:**	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 3, 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316 or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		**DRAINS / VENTS:**	X
ANTI-STATIC:	X	**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	All SB (single block and bleed) to be with bleed valve 1/2" NPT to the main valve body. Bleed needle valve to be with identical materials of construction including trim c/w HF and pressure rating as the main valve.
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BA01C01RFH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 8"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	10	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 8, 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Trunnion mmt DN 8" and above
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BC01C01RFH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 8"
BORE (FB / RB):	Reduced Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	10	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	HOLD	**Max:**	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 8, 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		**DRAINS / VENTS:**	X
ANTI-STATIC:	X	**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Trunnion mmt DN 8" and above
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BS01C01RFH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	10	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BS01C01RFHS	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	10	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	HOLD	**Max:**	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 3)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

BY-PASS:		**DRAINS / VENTS:**	X	
ANTI-STATIC:	X	**LOCKING DEVICE:**	X	
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X	(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	All SB (single block and bleed) to be with bleed valve 1/2" NPT to the main valve body. Bleed needle valve to be with identical materials of construction including trim c/w HF and pressure rating as the main valve.
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BA01F01RF	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	17,7	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	HOLD	**Max:**	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F53/F55 or ASTM A995 5A/6A
BALL:	25% Cr SDPLX
STEM:	25% Cr SDPLX
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

BY-PASS:		**DRAINS / VENTS:**	X
ANTI-STATIC:	X	**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 6, 10)

NOTE 1:	N/A
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	Graphite is not acceptable for seawater service
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BC01F01RF	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Reduced Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	17,7	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	HOLD	**Max:**	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 8, 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F53/F55 or ASTM A995 5A/6A
BALL:	25% Cr SDPLX
STEM:	25% Cr SDPLX
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

BY-PASS:		**DRAINS / VENTS:**	X
ANTI-STATIC:	X	**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 6, 10)

NOTE 1:	N/A
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	Graphite is not acceptable for seawater service
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BS01F01RF	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F53/F55 or ASTM A995 5A/6A
BALL:	25% Cr SDPLX
STEM:	25% Cr SDPLX
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 6, 10)

NOTE 1:	N/A
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	Graphite is not acceptable for seawater service
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BS01F01RFS	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	17,7	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	HOLD	**Max:**	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F53/F55 or ASTM A995 5A/6A
BALL:	25% Cr SDPLX
STEM:	25% Cr SDPLX
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

BY-PASS:		**DRAINS / VENTS:**	X
ANTI-STATIC:	X	**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 6, 10)

NOTE 1:	N/A
NOTE 2:	-
NOTE 3:	All SB (single block and bleed) to be with bleed valve 1/2" NPT to the main valve body. Bleed needle valve to be with identical materials of construction including trim c/w HF and pressure rating as the main valve.
NOTE 4:	-
NOTE 5:	-
NOTE 6:	Graphite is not acceptable for seawater service
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE: BALL

DATA SHEET: BA03C01RFH

PIPING CLASS: 03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	40	**Max:**	40
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	80
OPERATING TEMPERATURE: *[°C]*	**Min:**	5	**Max:**	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 3)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 8, 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		**DRAINS / VENTS:**	X	(API 6FA/BS6755 PT2)
ANTI-STATIC:	X	**LOCKING DEVICE:**	X	
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X	

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Trunnion mmt DN 8" and above
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BC03C01RFH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Reduced Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 3)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 8, 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Trunnion mmt DN 8" and above
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BS03C01RFH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 3)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE: BALL

DATA SHEET: BS03C01RFHS

PIPING CLASS: 03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	40	**Max:**	40
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	80
OPERATING TEMPERATURE: *[°C]*	**Min:**	5	**Max:**	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 3)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		**DRAINS / VENTS:**	X
ANTI-STATIC:	X	**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	All SB (single block and bleed) to be with bleed valve 1/2" NPT to the main valve body. Bleed needle valve to be with identical materials of construction including trim c/w HF and pressure rating as the main valve.
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BA01P01KT	01CP

PIPING CLASS

LINE MATERIAL CLASS:	CPVC
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	10Bar
SIZE RANGE:	3/4" - 2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	N/A

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	5,5	Max:	5,5
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	AMB
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Chemical Injection (CI)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	Manu Std
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 12)
OPERATOR:	Lever
END CONNECTION:	socket both ends
FACING:	RF
FACE-TO-FACE:	Manu. Std
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM D 4101
BALL:	ASTM D 4101
STEM:	ASTM D 4101
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	N/A
SPRINGS:	N/A

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Elastomer
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	-
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BA01P01KN	01CP

PIPING CLASS

LINE MATERIAL CLASS:	CPVC
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	10Bar
SIZE RANGE:	3/4" - 2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	N/A

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	5,5	Max:	5,5
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	AMB
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Chemical Injection (CI)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8)

STANDARD:	Manu Std
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 12)
OPERATOR:	Lever
END CONNECTION:	socket end x NPT (2)
FACING:	RF
FACE-TO-FACE:	Manu. Std
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM D 4101
BALL:	ASTM D 4101
STEM:	ASTM D 4101
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	N/A
SPRINGS:	N/A

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Elastomer
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	-
NOTE 2:	For instrument connections
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
BALL	BA01C01RFHS	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 8"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	10	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 3)

STANDARD:	API 6D
METAL-TO-METAL:	Soft Seated
DESIGN:	Floating Ball (note 8, 11, 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	API 6D / ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	All SB (single block and bleed) to be with bleed valve 1/2" NPT to the main valve body. Bleed needle valve to be with identical materials of construction including trim c/w HF and pressure rating as the main valve.
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Trunnion mmt DN 8" and above
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	For SDV and XV actuated ball valves floating design shall apply
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

Base Load Power Hub (BLPH)

APPENDIX 2 - MONOFLANGE VALVES

Document Number: 123A90-DDL-PP-DS-70003

Document Class: 2

02	17/11/2023	Approved for Construction (AFC)	RBL	CBO	LDO
01	20/10/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
00	15/09/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
Rev.	Date	Description	Prepared	Reviewed	Approved

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SH.	DESCRIPTION	REVISIONS							
		00	01	02					
1	Cover	X	X	X					
2	Table of Contents	X	X	X					
3	Revision / Change Log	X	X	X					
4	01CS MS01B02Y	X	X	X					
5	01SS MS01C02Y	X	X	X					
6	01HSS MS01C02YH	X	X	X					
7	01SD MS01F02Y	X	X	X					
8	03HSS MD02C02YH	X	X	X					

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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ISSUE FOR REVIEW (IFR)
02	APPROVED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	Operating temperatures to be defined for all remaining VDS
2.	Resolved and closed - methanol not reported and will not be used for commissioning
3.	Resolved and closed - definition of coating system
4.	

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VALVE TYPE:	DATA SHEET:	PIPING CLASS:
MONOFLANGE	MS01B02Y	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Temperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	Piping DN 1/2" - 3/4"
BORE (FB / RB):	-
INTERNAL BORE:	1/2" 12.7mm min
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	6	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	5	**Max:**	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 8, 12)

STANDARD:	EEMUA 182
METAL-TO-METAL:	Needle valve for primary and bleed
DESIGN:	Integral forged manifold
OPERATOR:	Handwheel (11)
END CONNECTION:	Piping 1/2" - 3/4" x 1/2" NPTF c/w plug
FACING:	RF
FACE-TO-FACE:	Manu STD
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2
NEEDLE:	13% Cr c/w HF
STEM:	13% Cr
SEAT:	HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	N/A

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
NEEDLE PACKING	Graphite (note 10)

BY-PASS:		**DRAINS / VENTS:**	
ANTI-STATIC:		**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:	X	**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantie the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	180° orientation between handwheels
NOTE 12:	OS&Y, single block and bleed
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

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VALVE TYPE:	DATA SHEET:	PIPING CLASS:
MONOFLANGE	MS01C02Y	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	Piping DN 1/2" - 3/4"
BORE (FB / RB):	-
INTERNAL BORE:	1/2" 12.7mm min
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	11	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 12)

STANDARD:	EEMUA 182
METAL-TO-METAL:	Needle valve for primary and bleed
DESIGN:	Integral forged manifold
OPERATOR:	Handwheel (11)
END CONNECTION:	Piping 1/2" - 3/4" x 1/2" NPTF c/w plug
FACING:	RF
FACE-TO-FACE:	Manu STD
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
NEEDLE:	316SS
STEM:	316SS
SEAT:	HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	N/A

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
NEEDLE PACKING	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	180° orientation between handwheels
NOTE 12:	OS&Y, single block and bleed
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
MONOFLANGE	MS01C02YH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	Piping DN 1/2" - 3/4"
BORE (FB / RB):	-
INTERNAL BORE:	1/2" 12.7mm min
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	10	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 6, 12)

STANDARD:	EEMUA 182
METAL-TO-METAL:	Needle valve for primary and bleed
DESIGN:	Integral forged manifold
OPERATOR:	Handwheel (11)
END CONNECTION:	Piping 1/2" - 3/4" x 1/2" NPTF c/w plug
FACING:	RF
FACE-TO-FACE:	Manu STD
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
NEEDLE:	316SS
STEM:	316SS
SEAT:	HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	N/A

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
NEEDLE PACKING	Graphite (note 10)

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	180° orientation between handwheels
NOTE 12:	OS&Y, single block and bleed
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
MONOFLANGE	MS01F02Y	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	Piping DN 1/2" - 3/4"
BORE (FB / RB):	-
INTERNAL BORE:	1/2" 12.7mm min
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 12)

STANDARD:	EEMUA 182
METAL-TO-METAL:	Needle valve for primary and bleed
DESIGN:	Integral forged manifold
OPERATOR:	Handwheel (11)
END CONNECTION:	Piping 1/2" - 3/4" x 1/2" NPTF c/w plug
FACING:	RF
FACE-TO-FACE:	Manu STD
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F53/F55
NEEDLE:	25% Cr SDPLX
STEM:	25% Cr SDPLX
SEAT:	HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	N/A

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:	X	
ANTI-BLOW-OUT:	X	FIRE SAFE:	X	(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
NEEDLE PACKING	Graphite (note 6, 10)

NOTE 1:	N/A
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	Graphite is not acceptable for seawater service
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Stem extension shall be provided min. 100mm in length
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	180° orientation between handwheels
NOTE 12:	OS&Y, single block and bleed
NOTE 13:	Materials shall satisfy PED Conformance (PED 97/23/EC). Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
MONOFLANGE	MD03C02YH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	Piping DN 1/2" - 3/4"
BORE (FB / RB):	-
INTERNAL BORE:	1/2" 12.7mm min
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 6, 12)

STANDARD:	EEMUA 182
METAL-TO-METAL:	Needle valve for primary and bleed
DESIGN:	Integral forged manifold
OPERATOR:	Handwheel (11)
END CONNECTION:	Piping 1/2" - 3/4" x 1/2" NPTF c/w plug
FACING:	RF
FACE-TO-FACE:	Manu STD
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
NEEDLE:	316SS
STEM:	316SS
SEAT:	HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	N/A

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
NEEDLE PACKING	Graphite (note 10)

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:	X	
ANTI-BLOW-OUT:	X	FIRE SAFE:	X	(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	180° orientation between handwheels
NOTE 12:	OS&Y, Double block and bleed
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

Base Load Power Hub (BLPH)

APPENDIX 3 - DOUBLE BLOCK AND BLEED VALVES

Document Number: 123A90-DDL-PP-DS-70003

Document Class: 2

02	17/11/2023	Approved for Construction	RBL	CBO	LDO
01	20/10/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
00	15/09/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
Rev.	Date	Description	Prepared	Reviewed	Approved

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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ISSUE FOR REVIEW (IFR)
02	APPROVED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	Resolved and closed - Operating temperatures have been defined
2.	Resolved and closed - methanol not reported and will not be used for commissioning
3.	Resolved and closed - definition of coating system
4.	

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VALVE TYPE:	DATA SHEET:	PIPING CLASS:
DOUBLE BLOCK & BLEED	DA03C01RFH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	1" - 4"
BORE (FB / RB):	Full Bore API 6D
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	No
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (Note 6)

STANDARD:	API 6D & Manu STD
METAL-TO-METAL:	Soft Seated
DESIGN:	Trunnion mmt (note 12)
OPERATOR:	Lever
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	Manu. STD
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
BALL:	316SS
STEM:	316SS
SEAT:	PTFE
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Metallic or Elastomer
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	-
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	All DB (double block and bleed) to be with bleed valve 1/2" NPT to the main valve body. Bleed needle valve to be with identical materials of construction including trim c/w HF and pressure rating as the main valve.
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Not required in case of metallic primary seal
NOTE 11:	Bleed needle valve to be with identical materials of construction as the main valve and trim c/w HF
NOTE 12:	Split Body construction, two balls in one body complete with bleed needle valve 1/2" NPT to the main valve body.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

Base Load Power Hub (BLPH)

APPENDIX 4 - GATE VALVES

Document Number: 123A90-DDL-PP-DS-70003

Document Class: 2

02	17/11/2023	Approved for Construction (AFC)	RBL	CBO	LDO
01	20/10/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
00	15/09/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
Rev.	Date	Description	Prepared	Reviewed	Approved

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4	01CS GS01A02RF	X	X	X					
5	01CS GA01A02RF	X	X	X					
6	01SS GS01C02RF	X	X	X					
7	01SS GA01C02RF	X	X	X					
8	01HSS GS01C02RFH	X	X	X					
9	01HSS GA01C02RFH	X	X	X					
10	01SD GS01F02RF	X	X	X					
11	01SD GA01F02RF	X	X	X					
12	03HSS GS03C02RFH	X	X	X					
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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ISSUE FOR REVIEW (IFR)
02	APPROVED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	Operating temperatures to be defined
2.	Resolved and closed - methanol not reported and will not be used for commissioning
3.	Resolved and closed - definition of coating system
4.	

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VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GS01A02RF	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Temperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	17,7	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	HOLD	**Max:**	HOLD
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet (note 8)
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2
WEDGE	13% Cr. c/w HF
STEM:	13% Cr
SEAT:	13% Cr. c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
BACKSEAT	13% Cr. c/w HF

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		**DRAINS / VENTS:**	
ANTI-STATIC:		**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:		**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantie the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Renewable seat, flexible wedge
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

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VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GA01A02RF	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Temperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 600
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet (note 8)
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A352 LCC
WEDGE	13% Cr. c/w HF
STEM:	13% Cr
SEAT:	13% Cr. c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
BACKSEAT	13% Cr. c/w HF

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantie the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Renewable seat, flexible wedge
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GS01C02RF	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	16,2	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet, Flexible Wedge
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
WEDGE	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GA01C02RF	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	16,2	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 600
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet, Flexible Wedge
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A351 Gr CF8M
BALL:	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer AED
STATIC SEAL:	Metallic or Elastomer AED
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GS01C02RFH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet, Flexible Wedge
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
WEDGE	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:	X	
ANTI-BLOW-OUT:		FIRE SAFE:	X	(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GA01C02RFH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 8"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 600
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet, Flexible Wedge
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A351 Gr CF8M
BALL:	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer AED
STATIC SEAL:	Metallic or Elastomer AED
INSERT:	N/A
BACK-UP:	Graphite (note 10)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GS01F02RF	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet (note 8)
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F53/F55
WEDGE	25% Cr SDPLX HF
STEM:	25% Cr SDPLX
SEAT:	25% Cr SDPLX HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
BACKSEAT	25% Cr SDPLX HF

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:	X	
ANTI-BLOW-OUT:		FIRE SAFE:	X	(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Renewable seat, flexible wedge
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GA01F02RF	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 600
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet (note 8)
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A995 5A/6A
BALL:	25% Cr SDPLX c/w HF
STEM:	25% Cr SDPLX
SEAT:	25% Cr SDPLX c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
BACKSEAT	25% Cr SDPLX c/w HF

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Renewable seat, flexible wedge
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GS03C02RFH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet, Flexible Wedge
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
WEDGE	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:	X	
ANTI-BLOW-OUT:		FIRE SAFE:	X	(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	DS - Manual Valves	Sh. 13 of 13 Date: 17/11/2023 Rev. 02

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GATE	GA03C02RFH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 600
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet, Flexible Wedge
OPERATOR:	Handwheel
END CONNECTION:	FLG ASME B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A351 Gr CF8M
WEDGE	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:	X	
ANTI-BLOW-OUT:		FIRE SAFE:	X	(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

Base Load Power Hub (BLPH)

APPENDIX 5 - GLOBE VALVES

Document Number: 123A90-DDL-PP-DS-70003

Document Class: 2

02	17/11/2023	Approved for Construction (AFC)	RBL	CBO	LDO
01	20/10/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
00	15/09/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
Rev.	Date	Description	Prepared	Reviewed	Approved

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SH.	DESCRIPTION	REVISIONS							
		00	01	02					
1	Cover	X	X	X					
2	Table of Contents	X	X	X					
3	Revision / Change Log	X	X	X					
4	01CS HS01A02RF	X	X	X					
5	01CS HT01A02RF	X	X	X					
6	01SS HS01C02RF	X	X	X					
7	01SS HT01C02RF	X	X	X					
8	01HSS HS01C02RFH	X	X	X					
9	01HSS HT01C02RFH	X	X	X					
10	01SD HS01F02RF	X	X	X					
11	01SD HT01F02RF	X	X	X					
12	03HSS HS03C02RFH	X	X	X					
13	03HSS HT03C02RFH	X	X	X					
14	01CS NT01B02RF	-	X	X					
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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ISSUE FOR REVIEW (IFR)
02	APPROVED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	Operating temperatures to be defined for all remaining VDS
2.	Resolved and closed - methanol not reported and will not be used for commissioning
3.	Resolved and closed - Cv (SUPPLIER to confirm) and Dp 5.5Bar
4.	

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VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HS01A02RF	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Termperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	6	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	5	**Max:**	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 4)

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet (note 8)
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5732
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2
DISC:	13% Cr. c/w HF
STEM:	13% Cr
SEAT:	13% Cr. c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H
BACKSEAT	13% Cr. c/w HF

BY-PASS:		**DRAINS / VENTS:**	
ANTI-STATIC:		**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:		**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantie the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	Stem extension shall be provided min. 100mm in length
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Renewable Seat
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	DS - Manual Valves	Sh. 5 of 15 Date: 17/11/2023 Rev. 02

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HT01A02RF	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Termperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	6	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 4)

STANDARD:	BS 1873
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2
DISC:	13% Cr. c/w HF
STEM:	13% Cr
SEAT:	13% Cr. c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H
BACKSEAT	13% Cr. c/w HF

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantie the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	
NOTE 4:	Stem extension shall be provided min. 100mm in length
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	Renewable Seat
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HS01C02RF	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	11	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 4)

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5732
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
DISC:	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat c/w HF

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	
NOTE 4:	Stem extension shall be provided min. 100mm in length
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HT01C02RF	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 8"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	11	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 4)

STANDARD:	BS 1873
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A351 Gr CF8M
DISC:	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat c/w HF

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	
NOTE 4:	Stem extension shall be provided min. 100mm in length
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HS01C02RFH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	No
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	10	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5732
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
DISC:	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat c/w HF

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:	X	
ANTI-BLOW-OUT:		FIRE SAFE:	X	(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HT01C02RFH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	No
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	10	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	BS 1873
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A351 Gr CF8M
DISC:	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat c/w HF

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HS01F02RF	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 4)

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5732
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F53/F55
DISC:	25% Cr SDPLX c/w HF
STEM:	25% Cr SDPLX
SEAT:	25% Cr SDPLX c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H
BACKSEAT	25% Cr SDPLX c/w HF

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	
NOTE 4:	Stem extension shall be provided min. 100mm in length
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings. Graphite is not acceptable for seawater service
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HT01F02RF	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 4)

STANDARD:	BS 1873
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A995 5A/6A
DISC:	25% Cr SDPLX c/w HF
STEM:	25% Cr SDPLX
SEAT:	25% Cr SDPLX c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H
BACKSEAT	25% Cr SDPLX c/w HF

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	Stem extension shall be provided min. 100mm in length
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings. Graphite is not acceptable for seawater service
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HS03C02RFH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	No
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5732
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
DISC:	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat c/w HF

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:	X	
ANTI-BLOW-OUT:		FIRE SAFE:	X	(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HT03C02RFH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	No
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	BS 1873
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 5, 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
DISC:	316SS c/w HF
STEM:	316SS
SEAT:	Integral Seat c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
BACKSEAT	Integral Backseat c/w HF

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	X
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	
NOTE 4:	-
NOTE 5:	Nitronic 50/60 material is the only acceptable stem material if 316SS is not acceptable for mechanical strength
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
NEEDLE	NT01B02RF	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Termperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	6	**Max:**	17,7
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	100
OPERATING TEMPERATURE: *[°C]*	**Min:**	5	**Max:**	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 4)

STANDARD:	In general accordance BS 1873/ANSI B16.34
METAL-TO-METAL:	Yes, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ASME B16.10
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

BY-PASS:		**DRAINS / VENTS:**	
ANTI-STATIC:		**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:		**FIRE SAFE:**	X

(API 6FA/BS6755 PT2)

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2
Needle:	13% Cr. c/w HF
STEM:	13% Cr
SEAT:	13% Cr. c/w HF
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H
BACKSEAT	13% Cr. c/w HF

SEALS

DYNAMIC SEAL:	Graphite (note 10)
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	As a minimum Cv (SUPPLIER to confirm) and Dp 5.5Bar values across the valve's internal sealing needle/seat shall be guaranteed
NOTE 4:	Stem extension shall be provided min. 100mm in length
NOTE 5:	-
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	Graphite stem packing rings
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	DS - Manual Valves	Sh. 15 of 15 Date: 17/11/2023 Rev. 02

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
GLOBE	HS01P01KT	01CP

PIPING CLASS

LINE MATERIAL CLASS:	CPVC
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	10Bar
SIZE RANGE:	1/2" - 2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	0

PROCESS

DESIGN PRESSURE: *[Barg]*	**Min:**	5,5	**Max:**	5,5
DESIGN TEMPERATURE: *[°C]*	**Min:**	-	**Max:**	AMB
OPERATING TEMPERATURE: *[°C]*	**Min:**	HOLD	**Max:**	HOLD
MAIN FLUIDS:	Chemical Injection (CI)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (note 4)

STANDARD:	Manu Std
METAL-TO-METAL:	No, Rising Stem
DESIGN:	OS&Y, Bolted Bonnet
OPERATOR:	Handwheel
END CONNECTION:	socket both ends
FACING:	-
FACE-TO-FACE:	Manu. Std
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 6, 9)

BODY / BONNET:	ASTM D 4101
DISC:	ASTM D 4101
STEM:	ASTM D 4101
SEAT:	ASTM D 4101
OVERLAY:	N/A
BOLTING:	N/A
BACKSEAT	N/A

BY-PASS:		**DRAINS / VENTS:**	
ANTI-STATIC:		**LOCKING DEVICE:**	X
ANTI-BLOW-OUT:		**FIRE SAFE:**	

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	Elastomer
STATIC SEAL:	Elastomer
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	-
NOTE 2:	-
NOTE 3:	-
NOTE 4:	Stem extension shall be provided min. 100mm in length
NOTE 5:	-
NOTE 6:	Hastalloy C-276 is the only alternative material for valve body/bonnet and trim materials. Hastalloy C-276 has been specified for control valves 55-FV-001, 50-FV-001/2
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	Split Body construction.
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

Base Load Power Hub (BLPH)

APPENDIX 6 - CHECK VALVES

Document Number: 123A90-DDL-PP-DS-70003

Document Class: 2

02	17/11/2023	Approved for Construction (AFC)	RBL	CBO	LDO
01	20/10/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
00	15/09/2023	Issue for Review (IFR)	R.Blyth	C.Bortolin	M.Dossena
Rev.	Date	Description	Prepared	Reviewed	Approved

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SH.	DESCRIPTION	REVISIONS							
		00	01	02					
1	Cover	X	X	X					
2	Table of Contents	X	X	X					
3	Revision / Change Log	X	X	X					
4	01CS CH01B02RF	X	X	X					
5	01CS CW01B02RF	X	X	X					
6	01SS CH01C02RF	X	X	X					
7	01SS CW01C02RF	X	X	X					
8	01HSS CH01C02RFH	X	X	X					
9	01HSS CW01C02RFH	X	X	X					
10	01SD CH01F02RF	X	X	X					
11	01SD CW01F02RF	X	X	X					
12	03HSS CH03C02RFH	X	X	X					
13	03HSS CW03C02RFH	X	X	X					
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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ISSUE FOR REVIEW (IFR)
02	APPROVED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	Operating temperatures to be defined for all remaining VDS
2.	Resolved and closed - methanol not reported and will not be used for commissioning
3.	Resolved and closed - definition of coating system
4.	

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VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK PISTON LIFT	CH01B02RF	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Temperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	6	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	N/A
DESIGN:	Bolted Bonnet, Horizontal PSTN lift ball
OPERATOR:	N/A
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2
BALL:	13% Cr
PISTON:	13% Cr c/w HF
SEAT:	13% Cr c/w HF (note 5)
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantie the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Guided piston / Spring return
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	DS - Manual Valves	Sh. 5 of 14 Date: 17/11/2023 Rev. 02

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK DUAL PLATE	CW01B02RF	01CS

PIPING CLASS

LINE MATERIAL CLASS:	Low Temperature Carbon Steel
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	Yes
COATING SYSTEM:	1

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	6	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	70
MAIN FLUIDS:	Nitrogen Gas (N), Atmospheric Vent (AV), Concentrated Brine (CB), Deionised Water (DI), Demineralized Water (DM), Sea Water Return (SWR), Waste Water (WW)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 594
METAL-TO-METAL:	N/A (note 5)
DESIGN:	Wafer Type
OPERATOR:	Spring to Close
END CONNECTION:	Wafer RF B16.5
FACING:	RF
FACE-TO-FACE:	API 594
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A350 LF2 or A352 Gr LCC
SEAT:	13% Cr c/w HF
PLATE:	13% Cr c/w HF
HINGE PIN:	13% Cr
OVERLAY:	N/A
BOLTING:	N/A
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	N/A
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	Valve to have a minimum of 3.0 mm corrosion allowance built into the body wall thickness. Supplier will guarantie the valve functionality in the corroded condition
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Integral Seat
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK PISTON LIFT	CH01C02RF	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	11	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	N/A
DESIGN:	Bolted Bonnet, Horizontal PSTN lift ball
OPERATOR:	N/A
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
BALL:	316SS
PISTON:	316ss c/w HF
SEAT:	316SS c/w HF (note 5)
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Guided piston / Spring return
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK DUAL PLATE	CW01C02RF	01SS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	6A (non-insulated), 6C (insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	11	Max:	16,2
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Demineralized Water (DM), Instrument Air (IA)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 594
METAL-TO-METAL:	N/A (note 5)
DESIGN:	Wafer Type
OPERATOR:	Spring to Close
END CONNECTION:	Wafer RF B16.5
FACING:	RF
FACE-TO-FACE:	API 594
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316 or ASTM A351 Gr CF8M
SEAT:	316SS c/w HF
PLATE:	316SS c/w HF
HINGE PIN:	316SS
OVERLAY:	N/A
BOLTING:	N/A
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	X
ANTI-STATIC:	X	LOCKING DEVICE:	X
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	N/A
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Integral Seat
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK PISTON LIFT	CH01C02RFH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	10	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	N/A
DESIGN:	Bolted Bonnet, Horizontal PSTN lift ball
OPERATOR:	N/A
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
BALL:	316SS
PISTON:	316ss c/w HF
SEAT:	316SS c/w HF (note 5)
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:		
ANTI-BLOW-OUT:		FIRE SAFE:	X	(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Guided piston / Spring return
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK DUAL PLATE	CW01C02RFH	01HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 8"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	10	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Hydrogen (HY), LP Vent (VL), Nitrogen (N)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 594
METAL-TO-METAL:	N/A (note 5)
DESIGN:	Wafer Type
OPERATOR:	Spring to Close
END CONNECTION:	Wafer RF B16.5
FACING:	RF
FACE-TO-FACE:	API 594
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
SEAT:	316SS c/w HF
PLATE:	316SS c/w HF
HINGE PIN:	316SS
OVERLAY:	N/A
BOLTING:	N/A
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	N/A
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Integral Seat
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK PISTON LIFT	CH01F02RF	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	N/A
DESIGN:	Bolted Bonnet, Horizontal PSTN lift ball
OPERATOR:	N/A
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F53/F55
BALL:	25% CR SDPLX
PISTON:	25% CR SDPLX c/w HF
SEAT:	25% CR SDPLX c/w HF (note 5)
OVERLAY:	N/A
BOLTING:	ASTM A193 B7/A194 2H + HDG ISO 10684
SPRINGS:	UNS R30003

SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Guided piston / Spring return
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK DUAL PLATE	CW01F02RF	01SD

PIPING CLASS

LINE MATERIAL CLASS:	Super Duplex
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	150#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Reduced Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	Bare

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	17,7	Max:	17,7
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	100
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Sea Water Return (SWR), Sea Water Supply (SWS)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	API 594
METAL-TO-METAL:	N/A (note 5)
DESIGN:	Wafer Type
OPERATOR:	Spring to Close
END CONNECTION:	Wafer RF B16.5
FACING:	RF
FACE-TO-FACE:	API 594
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F53/F55 or ASTM A995 5A/6A
SEAT:	25% Cr SDPLX HF
PLATE:	25% Cr SDPLX HF
HINGE PIN:	25% Cr SDPLX
OVERLAY:	N/A
BOLTING:	N/A
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	
ANTI-BLOW-OUT:	X	FIRE SAFE:	X

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SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	N/A
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Integral Seat
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	Materials shall satisfy PED Conformance 2014/68/EU. Impact test will be performed at min. piping class design temperature.
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK PISTON LIFT	CH03C02RFH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	1/2" - 1 1/2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	3
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION

STANDARD:	EN ISO 15761
METAL-TO-METAL:	N/A
DESIGN:	Bolted Bonnet, Horizontal PSTN lift ball
OPERATOR:	N/A
END CONNECTION:	FLG B16.5
FACING:	RF
FACE-TO-FACE:	ISO 5752
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L
BALL:	316SS
PISTON:	316ss c/w HF
SEAT:	316SS c/w HF (note 5)
OVERLAY:	N/A
BOLTING:	ASTM A193 Gr B8M / A194 Gr 8M
SPRINGS:	UNS R30003

SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	SW gasket/Manu. STD
INSERT:	N/A
BACK-UP:	N/A

BY-PASS:		DRAINS / VENTS:		
ANTI-STATIC:		LOCKING DEVICE:		
ANTI-BLOW-OUT:		FIRE SAFE:	X	(API 6FA/BS6755 PT2)

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Guided piston / Spring return
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	N/A

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK DUAL PLATE	CW03C02RFH	03HSS

PIPING CLASS

LINE MATERIAL CLASS:	Stainless Steel 316/316L
SERVICE CLASS:	-
LINE PRESSURE RATING:	300#
VALVE PRESSURE RATING:	300#
SIZE RANGE:	2" - 4"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	N/A
COATING SYSTEM:	6A (non-insulated)

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	40	Max:	40
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	80
OPERATING TEMPERATURE: *[°C]*	Min:	5	Max:	65
MAIN FLUIDS:	Hydrogen (HY)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (Note 7)

STANDARD:	API 594
METAL-TO-METAL:	N/A (note 5)
DESIGN:	Wafer Type
OPERATOR:	Spring to Close
END CONNECTION:	Wafer RF B16.5
FACING:	RF
FACE-TO-FACE:	API 594
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM A182 Gr F316/F316L or ASTM A351 Gr CF8M
SEAT:	316SS c/w HF
PLATE:	316SS c/w HF
HINGE PIN:	316SS
OVERLAY:	N/A
BOLTING:	N/A
SPRINGS:	UNS R30003

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	
ANTI-BLOW-OUT:		FIRE SAFE:	X

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SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	N/A
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	N/A
NOTE 2:	External painting shall be in accordance with Coating and Painting Specification 123A90-DDL-MAT-SP-60006
NOTE 3:	-
NOTE 4:	-
NOTE 5:	-
NOTE 6:	Fugitive Emissions in accordance with ISO 15848-1 Cl B and ISO 15848-2.
NOTE 7:	Integral Seat
NOTE 8:	Materials to comply with specified ASTM standards
NOTE 9:	-
NOTE 10:	Refer to project valve specification and piping material class
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing to be completed with helium as the media.
NOTE 15:	-

VALVE TYPE:	DATA SHEET:	PIPING CLASS:
CHECK PISTON LIFT	CH01P01KT	01CP

PIPING CLASS

LINE MATERIAL CLASS:	CPVC
SERVICE CLASS:	-
LINE PRESSURE RATING:	150#
VALVE PRESSURE RATING:	10Bar
SIZE RANGE:	1" - 2"
BORE (FB / RB):	Full Bore
INTERNAL BORE:	-
CORROSION ALLOWANCE:	0
INSULATION:	Yes
COATING SYSTEM:	N/A

PROCESS

DESIGN PRESSURE: *[Barg]*	Min:	5,5	Max:	5,5
DESIGN TEMPERATURE: *[°C]*	Min:	-	Max:	AMB
OPERATING TEMPERATURE: *[°C]*	Min:	HOLD	Max:	HOLD
MAIN FLUIDS:	Chemical Injection (CI)			
METHANOL MAX CONTENT:	N/A including for commissioning			
CO2 MAX CONTENT:	N/A			
SOLID PARTICLE IN FLUIDS:	None			

CONSTRUCTION (Note 7)

STANDARD:	Man. Std
METAL-TO-METAL:	N/A
DESIGN:	Horizontal PSTN lift
OPERATOR:	N/A
END CONNECTION:	-
FACING:	RF
FACE-TO-FACE:	Man. Std
SUPPORTS:	N/A
LIFTING LUGS:	N/A
SEALANT INJECTIONS:	N/A

MATERIALS (note 9)

BODY / BONNET:	ASTM D 4101
BALL:	N/A
PISTON:	ASTM D 4101
SEAT:	ASTM D 4101
OVERLAY:	N/A
BOLTING:	N/A
SPRINGS:	N/A

BY-PASS:		DRAINS / VENTS:	
ANTI-STATIC:		LOCKING DEVICE:	
ANTI-BLOW-OUT:		FIRE SAFE:	X

(API 6FA/BS6755 PT2)

SEALS

DYNAMIC SEAL:	N/A
STATIC SEAL:	N/A
INSERT:	N/A
BACK-UP:	N/A

NOTE 1:	-
NOTE 2:	-
NOTE 3:	-
NOTE 4:	-
NOTE 5:	Guided piston
NOTE 6:	-
NOTE 7:	Materials to comply with specified ASTM standards
NOTE 8:	-
NOTE 9:	Refer to project valve specification and piping material class
NOTE 10:	-
NOTE 11:	-
NOTE 12:	-
NOTE 13:	-
NOTE 14:	Valve shall be in accordance with 123A90-DDL-PP-SP-70030 TSS - Manual Valves and Strainers including pressure testing
NOTE 15:	-