PRE-BID CLARIFICATION#01 AGAINST T.E#PROC-FB/CB/P&P-4747/2020

This is with reference to subject tender enquiry, please be noted following clarifications:

SR#	BIDDER QUERY	OGDCL RESPONSE
1	Please refer to the above noted tender for the supply of Valves and draw your attention towards Clause 2 that OEM manufacturers must have experience of 20 years. For a healthy competition, please reduce this condition to 5 years which is enough for a manufacturers to prove its credibility.	OGDCL SOR can't be changed. Please submit the bid as per SOR requirement.
2	1- As per API 6D/B.S. 5351 standard, the size of reduced bore has only 6"×4" size. 2 For item 6,11,21, pls kindly confirm the Bore Type of Ball Valve is Reduced Bore or Full Bore. The description of Page 1-2 request Full Bore, but attached details of Page 3-4 request Reduced Bore. Pls kindly confirm the Bore Type.	With reference to the Tender PROC-FB/CB/P&P-4747/2020, all the potential bidders may consider the details attached to the SOR (i-e Page No 3 & 4) for submission of bids, also Valve Datasheets are attached if something found missing. 1. Item No 1 of SOR should read as 6"x 4" instead of 6"x 5". 2. For item no 6, 11,21 of SOR follow detail attached at page No 3 & 4. 3. The forged valve seat is not integral. If there still exists any ambiguity in the SOR and attached details, the specs provided in the attached details should be considered as final. Further, it is suggested to all the potential bidders to refer the Valve Data Sheets (attached) against the valve specification codes like A2RRL, D2RRC, etc. The valve specification codes are given in the details attached to the SOR. The serial no. of each item of the SOR is referred against the serial nos of the details attached to SOR. Datasheets contain all the technical details required by the suppliers and it is a standard document to refer to during the entire process of supply.

NOTE: All other terms & conditions remain unchanged.

VALVE TYPE NOTES: GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 1501b 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BIS. 5146 ENO CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" 10 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND IN THIS DOCUMENT 0.S. & Y. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM - FLEXIBLE WEDGE RENEWABLE SEATS IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% MPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 B. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL CARBON STEEL : CAST - ASTM AZ16 GR.WCB TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 13% CHROME (A182 GR.F6 OR AISI 410.416) 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED VALVE OPERATOR 2" TO 14" HANDWHEEL POSITIONS 16" TO 24" BEVEL GEAR (WEATHERPROOF TYPE) GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL.) **BOLTING** STUDBOLTS : ASTH A193 GR B7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 2H CADMUM PLATED TEMP, LIMITATIONS -29°C (-20°F) TO 350°C (650°F) SERVICE CONDITIONS AAZ ΑG J.W. 1101.23 CLOUGH 583

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SP-00-L-0001

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHELT No.

DS-00-L-0001

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NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH 16.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 1501b 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END_CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" TO 24" SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLANO IN THIS DOCUMENT 0.S. & Y. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM : FLEXIBLE WEDGE RENEWABLE SEATS IN ADDITION THE FOLLOWING INSPECTION IS REDUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% MPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL CARBON STEEL LOW TEMP : CAST - ASTM A352 GR LCB TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAINLESS STEEL TYPE 316 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED VALVE OPERATOR 2" TO 14" HANDWHEEL POSITIONS 16" TO 24" BEVEL GEAR (WEATHERPROOF TYPE) GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL.) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMUM PLATED (/W NUTS : ASTM A194 GR # CADMIUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS AB2 583 CLOUGH DHOOAK GAS PROJECT Engineering Group (0) DE & GAS DEVELOPMENT CORPORATION A1RRL VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001

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REY BY DATE

VALVE TAG No.

DATA SHEET No.

DS-00-L-0002

NOTES: 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-SS. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE 100% LPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE DRDFR. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS

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	VALVE TYPE	GATE
	VALVE STANDARD	8.S. 1414 OR API 600
	PRESSURE CLASS	ANSI 1501b
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
	SIZE RANGE	2- 10 24-
)	CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y.
		TRIM : FLEXIBLE WEDGE RENEWABLE SEATS
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7	BODY MATERIAL	STAINLESS STEEL TO ASTM A-351 CFBM
	TRIM	STAINLESS STEEL TYPE 316 HARD FACED SEATS
	VALVE OPERATOR	2" TO 14" HANDWHEEL 16" TO 24" BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	REINFORCED GRAPHITED ASBESTOS
	BONNET GASKET	SPIRAL WOUND IS. STL. TYPE 316)
	BOLTING	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED (/W NUTS: ASTM A194 GR 4 CADMIUM PLATED
	TEMP, LIMITATIONS	-100°C (-150°F) TO 350°C (650°F)
	SERVICE CONDITIONS	AC

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	3 UM.	12/3/93 ISSUED FOR CONSTRUCTION	41471	App for Construction	DATA SHEET No.	VALVE TAG No. REV.
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NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN S0049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 150th 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. S146 END CONNECTIONS FLANGED TO ANSI 816.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 SIZE RANGE S. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" TO 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE-WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO | CONSTRUCTION BODY : BOLTED BONNET & GLAND, EXTENDED BONNET & STEM. IN THIS DOCUMENT 0.5. & Y. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM : FLEXIBLE WEDGE RENEWABLE SEATS IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% LPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 B. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION | BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CF8M TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAINLESS STEEL TYPE 316 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED VALVE OPERATOR 2" TO 14" HANDWHEEL **POSITIONS** 16" TO 24" BEVEL GEAR (WEATHERPROOF TYPE) 11. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF GLAND PACKING REINFORCED GRAPHITED ASBESTOS OR PTFE THE PRESSURE CLASS AND TEMPERATURES SHOWN. BONNET GASKET SPIRAL WOUND (S. STL. TYPE 316) BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMIUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS AC DWH 9/3/93 ља ња. 583 CLOUGH DHODAK GAS PROJECT OL & GAS DEVELOPMENT CORPORATION Engineering Group 411 AIRRU VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION Project Engineer 7/5 SHT, 1 0F 1 SP-00-L-0001

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VALVE TAG No.

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NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED: MANUFACTURER'S CERTIFICATE OF COMPLIANCE. VALVE STANDARD B.S. 5154 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS PN.25 SERIES B. 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM END CONNECTIONS THREADED API THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO SIZE RANGE 1/2" TO 2" IN THIS DOCUMENT 4. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. CONSTRUCTION BODY : UNION BONNET IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION. RISING STEM 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 TRIM : SOLID WEDGE 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED BODY MATERIAL POSITIONS BRONZE TO B.S. 1400 LG2 TRIM BRONZE TO B.S. 1400 LG2 VALVE OPERATOR HANDWHEEL GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS -9°C (15°F) TO 100°C (200°F) SERVICE CONDITIONS

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	Supervisor (S)	VALVE DATA SHEE	T FOR				
	Designed Land	PIPING MATERIAL S	SPECIFIC	ATION			_
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NOTES:	VALVE TYPE	GATE
1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS	VALVE STANDARD	B.S. 1414 OR API 600
2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH 16.3 TO 12.5 MICRO METRE) ROUGHNESS	PRESSURE (LASS	ANSI 300Ib
3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146	END CONNECTIONS	
4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080		FLANGED TO ANSI B16.5 RF
5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO	SIZE RANGE CONSTRUCTION	2" TO 24" BODY : BOLTED BONNET & GLAND
IN THIS DOCUMENT		O.S. & Y.
6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-SS. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% MPI		TRIM: FLEXIBLE WEDGE RENEWABLE SEATS
7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25		
8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.	BODY MATERIAL	CARBON STEEL : CAST - ASTM A216 GR.WCB
9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.	IRIM	13% CHROME (A182 GR.F6 OR AISI 410.416) HARD FACEO SEATS
10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS	VALVE OPERATOR	2" TO 16" HANDWHEEL 16" TO 24" BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	RENFORCED GRAPHITED ASBESTOS
	BONNET GASKET	SPIRAL WOUND (S. STL.)
	BOLTING	STUDBOLTS: ASTM A193 GR B7 CADMIUM PLATED C/W NUTS: ASTM A194 GR 2H CADMUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	SA2
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g	Checked Supervisor	Engineering Group BIRRC OR & L CAS DEVILOPMENT COMPONATION VALVE DATA SHEET FOR
M. M	Designed Speed	PIPING MATERIAL SPECIFICATION SP-00-L-0001
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VALVE TYPE NOTES: GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD 8.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH 16.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 300lb 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" TO 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND IN THIS DOCUMENT O.S. & Y. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM : FLEXIBLE WEDGE IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. RENEWABLE SEATS SIZES 12" AND ABOVE, 100% MPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL CARBON STEEL LOW TEMP : CAST - ASTM A352 GR LCB TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAINLESS STEEL TYPE 316 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWFLD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED VALVE OPERATOR 2" TO 14" HANDWHEEL POSITIONS 16" TO 24" BEVEL GEAR (WEATHERPROOF TYPE) GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL.) BOLTING STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS J.W. 17.01.93 CLOUGH DHOOM GAS PROJECT DL & GAS DEVELOPHENT CORPORATION Engineering Group BIRRL VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001 SHT. 1 OF 1

I.W. 12/3/93 ISSUED FOR CONSTRUCTION

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VALVE TAG No.

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DATA SHEET No.

DS-00-L-0011

NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 3001b 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI 816.10 OR 8.S. 2080 SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" 10 24" ** SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN- APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND IN THIS DOCUMENT 0.S. & Y. TRIM : FLEXIBLE WEDGE 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. RENEWABLE SEATS IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% LPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CFBM TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAINLESS STEEL TYPE 316 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. VALVE OPERATOR 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED 2" TO 14" HANDWHEEL 16" TO 24" BEVEL GEAR IWEATHERPROOF TYPE) POSITIONS GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL. TYPE 316) **BOLTING** STUDBOLTS : ASTM A320, GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMIUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS J.W. 12.01.93 CLOUGH 583 DHODAK GAS PROJECT Traced Engineering Group DE & GAS DEVELOPMENT CORPORATION BIRRS VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION 94T 1 0F 1 SP-00-L-0001 DATA SHEET No. VALVE TAG No. App for Construction

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DS-00-L-0012

NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 300th 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" 10 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND, EXTENDED BONNET AND STEM IN THIS DOCUMENT 0.S. & Y. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-SS. TRIM : FLEXIBLE WEDGE RENEWABLE SEATS IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% LPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-2S B. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CFBM TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAINLESS STEEL TYPE 316 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED VALVE OPERATOR 2" TO 16" HANDWHEEL POSITIONS 16" TO 24" BEVEL GEAR IWEATHERPROOF TYPE) 11. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF GLAND PACKING REINFORCED GRAPHITED ASBESTOS OR PTFE THE PRESSURE CLASS AND TEMPERATURES SHOWN. BONNET GASKET SPIRAL WOUND (S. STL. TYPE 316) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTH A194 GR 4 CADMIUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS DWH 9/3/93 583 CLOUGH DHODAK GAS PROJECT

DWH 12/3/93 ISSUED FOR CONSTRUCTION

DESCRIPTION

REV BY DATE

OL & GAS DEVELOPHENT COMPONATION

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VALVE TAG No.

BIRRU

Engineering Group

SP-00-L-0001

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0013

BIRRU

NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 800Ib 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM END CONNECTIONS S/WELD x THREADED TO ANSI B16.11 THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO SIZE RANGE 1/2" TO 1 1/2" IN THIS DOCUMENT 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. CONSTRUCTION IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION BODY : BOLTED BONNET & GLAND 0.S. & Y. 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 TRIM : SOLID WEDGE RENEWABLE SEATS 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED BODY MATERIAL POSITIONS CARBON STEEL : FORGED - ASTM A105 NORMALISED 8. FOR FERRITIC STEELS INTENDED FOR WELDING. THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM TRIM DISC. STEM & SEAT RINGS 13% CHROME HARD FACED SEATS THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA VALVE OPERATOR HANDWHEEL CE = C + MN/6 + 0.04GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL.) BOLTING STUDBOLTS: ASTM A193 GR B7 CADMUM PLATED C/W NUTS : ASTM A194 GR 2H CADMIUM PLATED TEMP. LIMITATIONS -29°C (-20°F) TO 350°C (650°F) SERVICE CONDITIONS AAZ BA2 DA2 DA3 J.W. 12.01.93 CLOUGH 583 (A) No. DHODAK GAS PROJECT

0 J.W. 12/3/93 ISSUED FOR CONSTRUCTION

DESCRIPTION

REV BY DATE

DL & GAS DEVELOPMENT CORPORATION

SHT, 1 0F 1

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VALVE TAG No.

DIHRC

Engineering Group

SP-00-L-0001

App for Construction

CKO

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0020

DIHRO

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- S. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS
- 8. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM

THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA:

(E = C + MN/6 + 0.04)

	VALVE TYPE	GATE	
	VALVE STANDARO	B.S. 5352 OR API 602	
	PRESSURE (LASS	ANSI 8001b	
	END CONNECTIONS	S/WELD x THREADED TO ANSI B16.11	
0	SIZE RANGE	1/2" T0 1 1/2"	,
	CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y.	
N		TRM: SOLID WEDGE RENEWABLE SEATS	
	BODY MATERIAL	CARBON STEEL LOW TEMP: FORGED - ASTM A350 GR LF2	
	TRIM	DISC, STEM & SEAT RINGS 316 STAINLESS STEEL HARD FACED SEATS	
	VALVE OPERATOR	HANDWHEEL	
	GLAND PACKING	RENFORCED GRAPHITED ASBESTOS	
	BONNET GASKET	SPIRAL WOUND (S. STL.)	
	BOLTING .	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS: ASTM A194 GR & CADMIUM PLATED	
	TEMP. LIMITATIONS	-46°C (-50°F) TO 200°C (400°F)	
	SERVICE CONDITIONS	AB2 BB2 DB2	
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VISIONS						Supervisor Designed JLK	VALVE DATA SHEI PIPING MATERIAL		ATION	_	
2	-				_	Project Engineer	SP-00-L-0001	-, -, -, -,		SH7. 1 OF 1	
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	REV	BT DATE	DESCRIPTION	CKD	Jan .	Client Appreved	DS-00-L-	0021		01HRL	0

NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 800lb 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM END CONNECTIONS S/WELD x THREADED TO ANSI B16.11 THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO SIZE RANGE 1/2" TO 1 1/2" IN THIS DOCUMENT 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. CONSTRUCTION BODY : BOLTED BONNET & GLAND IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION 0.S. & Y. 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 TRIM : SOLID WEDGE RENEWABLE SEATS 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY DPEN OR CLOSED BODY MATERIAL POSITIONS STAINLESS STEEL TO ASTM A-182 GR 316 TRIM STAINLESS STEEL TYPE 316 TRIM STELLITE FACED SEATS VALVE OPERATOR HANDWHEEL GLAND PACKING RENFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL. TYPE 316) BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS AC BC

D IW. 12/3/93 ICSUED FOR CONSTRUCTION

DESCRIPTION

REV BY DATE

J.W. 12.01.93

Project Engineer De

Teared

CLOUGH

Engineering Group

SP-00-L-0001

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0022

DHODAK CAS PROJECT

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SHT. 1 0F 1

VALVE TAG No.

D1HRS

CAR No.

DIHRS

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-SS. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS
- 8. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF THE PRESSURE CLASS AND TEMPERATURES SHOWN.

	VALVE TYPE	GATE
	VALVE STANDARD	B.S. 5352 OR API 602
	PRESSURE CLASS	ANSI 8001b
	END CONNECTIONS	S/WELD x THREADED TO ANSI B16.11
0	SIZE RANGE	1/2" TO 1 1/2"
	CONSTRUCTION	BODY : BOLTED BONNET & GLAND, EXTENDED BONNET AND STEM, O.S. & Y.
N		TRIM : SOLID WEDGE RENEWABLE SEATS
	BODY MATERIAL	STANLESS STEEL TO ASTM A-182 GR 316
	TRIM	STAINLESS STEEL TYPE 316 TRIM STELLITE FACED SEATS
	VALVE OPERATOR	HANOWHEEL
	GLAND PACKING	REINFORCED GRAPHITED ASBESTOS OR PTFE
	BONNET GASKET	SPIRAL WOUND (S. STL. TYPE 316)
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR (ADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 350°C (650°F)
	SERVICE CONDITIONS	AC BC DC

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		Traced	CLOUGH 583 COM	GAS PROÆCT
		Cherched 4	Engineering Group DIHRU 00 a	GAS DEVELOPMENT CORPORATION
\$		Supervisor A	VALVE DATA SHEET FOR	
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ă		Project Engineer	SP-00-L-0001	SHT, 1 OF 1
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PEV BY DATE DESCRIPTION	CKD P	Cilent Approved	DS-00-L-0029	D1HRU 0

VALVE TYPE NOTES: GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH 16.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 600lb 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN DN THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" TO 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIDR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO | CONSTRUCTION BODY : BOLTED BONNET & GLAND IN THIS DOCUMENT 0.S. & Y. TRM : FLEXIBLE WEDGE 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. RENEWABLE SEATS IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL CARBON STEEL : CAST - ASTM A216GR WCB TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM 13% CHROME (A182 GR F6 OR AIS! 410.416) 9. THE WELDING OF FLANGES DNTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. VALVE OPERATOR 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED 2" TO 14" HANDWHEEL 16" TO 24" BEVEL GEAR IWEATHERPROOF TYPE) POSITIONS GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL.) DR SOFT IRON OVAL RING JOINT **BOLTING** STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS : ASTM A194 GR 2H CADMUM PLATED TEMP. LIMITATIONS -29°C (-20°F) TO 350°C (650°F) SERVICE CONDITIONS DA2 DAB J.W. 12.01.93 CLOUGH 583 DHODAK GAS PROJECT OR & GAS DEVELOPMENT CORPORATION Engineering Group DIRRO VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SHT. 1 0F 1 SP-00-L-0001

IN 12/3/93 SSUED FOR CONSTRUCTION

DESCRIPTION

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BY DATE

VALVE TAG No.

DIRRC

DATA SHEET No.

DS-00-L-0023

NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 6001b 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" TO 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND IN THIS DOCUMENT 0.S. & Y. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM : FLEXIBLE WEDGE RENEWABLE SEATS IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL CARBON STEEL LOW TEMP. : CAST - ASTM A352 GR LCB TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. STAINLESS STEEL TYPE 316 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED VALVE OPERATOR 2" TO 14" HANDWHEEL POSITIONS 16" TO 24" BEVEL GEAR (WEATHERPROOF TYPE) GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND TO (S. STL.) OR SOFT IRON OVAL RING JOINT **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR4 CADMIUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS DB2 J.W. 12.61.93 583 CLOUGH

EW. 12/3/93 ISSUED FOR CONSTRUCTION

DESCRIPTION

REV BY DATE

DHODAK GAS PROJECT

OIL & GAS DEVELOPHENT CORPORATION

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VALVE TAG No.

D1RRL

Engineering Group

SP-00-L-0001

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

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VALVE TYPE NOTES: GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 600Lb 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" TO 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND IN THIS DOCUMENT 0.S. & Y. TRIM : FLEXIBLE WEDGE 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. RENEWABLE SEATS IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 B. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CF8M TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAINLESS STEEL TYPE 316 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. VALVE OPERATOR 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED 2" TO 14" HANDWHEEL 16" TO 24" BEVEL GEAR (WEATHERPROOF TYPE) POSITIONS GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL. TYPE 316) OR STAINLESS STEEL TYPE 316 RING JOINT **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR CADMIUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS

J.W. 12/3/93 ISSUED FOR CONSTRUCTION

DESCRIPTION

REV BY DATE

J.W. 12.01.93	CLOUGH	Job No. Project	DHODAK GAS PROJECT	
and	Engineering Group	DIRRS	OL & GAS DEVELOPMENT COMPONÁTION	1
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NOTES: VALVE TYPE GATE 1. CERTIFICATES REDUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE (LASS ANSI 600ID 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" 10 24" SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR. WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND, EXTENDED BONNET AND STEM. IN THIS DOCUMENT 0.S. & Y. ALL VALVE (ASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM : FLEXIBLE WEDGE RENEWABLE SEATS IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL STAMLESS STEEL TO ASTM A-351 CF8M TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAPLESS STEEL TYPE 316 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED VALVE OPERATOR 2" TO 14" HANDWHEEL POSITIONS 16" TO 24" BEVEL GEAR (WEATHERPROOF TYPE) 11. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF GLAND PACKING REINFORCED GRAPHITED ASBESTOS OR PIFE THE PRESSURE CLASS AND TEMPERATURES SHOWN. BONNET GASKET SPIRAL WOUND (S. STL. TYPE 316) OR STAINLESS STEEL TYPE 316 RING JOINT **BOLTING** STUDBOLTS - ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMIUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C 1650°F) SERVICE CONDITIONS DWH 1/3/93 CLOUGH 583 DHOOME GAS PROJECT Engineering Group OL & GAS DEVELOPMENT CORPORATION

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VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SWITT NA

DS-00-L-0031

SP-00-L-0001

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIDR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- S. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS
- 8. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM

THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA :

CE = C + MN/6 + 0.04

	VALVE TYPE	GATE		
	VALVE STANDARD	B.S. 5352 OR API 602		-
	PRESSURE (LASS	ANSI 800Ib		
	END CONNECTIONS	SOCKET WELD TO ANSI BW.11		
0	SIZE RANGE	1/2" TO 1 1/2"		
	CONSTRUCTION			
	CONSTRUCTION	BODY: BOLTED BONNET & GLAND O.S. & Y.		
N		TRIM: SOLID WEDGE RENEWABLE SEATS		
	BODY MATERIAL	CARBON STEEL : FORGED - ASTM A105 NORMALISED		
	TRIM	DISC, STEM & SEAT RINGS 13% CHROME HARD FACED SEATS		
	VALVE OPERATOR	HANDWHEEL		
	GLAND PACKING	REINFORCED GRAPHITED ASBESTOS		
	BONNET GASKET	SPIRAL WOUND (S. STL.)		
	BOLTING	STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2H (SF) (ADMIUM PLATED		
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)		
	SERVICE CONDITIONS	AA2 BA2 DA2 DA3		
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	≀□					Supervisor (3)	YALYE DATA SHEET FUR	
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1	6		.w. 12/3/9	ISSUED FOR CONSTRUCTION	4221	App for Construction	DATA SHEET No.	VALVE TAG No. REV.
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VALVE TYPE NOTES: GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 8001b 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM END CONNECTIONS SOCKET WELD TO ANSI B16.11 THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO SIZE RANGE 1/2" TO 1 1/2" IN THIS DOCUMENT 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. CONSTRUCTION BODY : BOLTED BONNET & GLAND IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION 0.S. & Y. 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 TRIM : SOLID WEDGE RENEWABLE SEATS 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED BODY MATERIAL POSITIONS CARBON STEEL LOW TEMP: FORGED - ASTM A350 GR LF2 8. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM TRIM DISC. STEM & SEAT RINGS 316 STAINLESS STEEL HARD FACED SEATS THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA : VALVE OPERATOR HANDWHEEL [E = [+ MN/6 + 0.04]GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL.) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS AB2 BB2 DB2

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1	REV	BY	DATE	DESCRIPTION	CKD	14	Client Appreved	DS-00-L-0027 01ZRL 0

NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN S0049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 800Ib 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM END (DNNECTIONS SOCKET WELD TO ANSI 816.11 THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO SIZE RANGE 1/2" 10 1 1/2" IN THIS DOCUMENT 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. CONSTRUCTION IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION BODY : BOLTED BONNET & GLAND 0.S. & Y. S. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 TRIM : SOLID WEDGE 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED BODY MATERIAL POSITIONS STAINLESS STEEL TO ASTM A-182 GR 316 TRIM STAINLESS STEEL TYPE 316 TRIM STELLITE FACED SEATS VALVE DPERATOR HANDWHEEL GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL. TYPE 316) **BOLTING** STUDBOLTS : ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMIUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS AC BC DC J.W. 12.01.93 583 CLOUGH DHODAK CAS PROJECT CAD No. Engineering Group OL & GAS DEVELOPMENT CORPORATION DIZRS VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

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DATA SHELT No.

DS-00-L-0028

VALVE TAG No.

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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS_OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS
- 8. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF THE PRESSURE CLASS AND TEMPERATURES SHOWN.

	VALVE TYPE	GATE
	VALVE STANDARO	B.S. 5352 OR API 602
	PRESSURE (LASS	ANSI 800lb
	END CONNECTIONS	SOCKET WELD TO ANSI B16.11
0	SIZE RANGE	V2" T0 1 V2"
	CONSTRUCTION	BODY : BOLTED BONNET & GLAND, EXTENDED BONNET AND STEM, 0.5. & Y.
N		TRIM : SOLID WEDGE
'		
	BODY MATERIAL	STAINLESS STEEL TO ASTM A-182 GR 316
	TRIM	STAINLESS STEEL TYPE 316 TRIM STELLITE FACED SEATS
	VALVE OPERATOR	HANDWAEEL
	GLAND PACKING	RENFORCED GRAPHITED ASBESTOS OR PTFE
	BONNET GASKET	SPIRAL WOUND (S. STL. TYPE 316)
	BOLTING	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS: ASTM A194 GR & CADMIUM PLATEO
	TEMP. LIMITATIONS	-100°C (-150°F) TO 350°C (650°F)
	SERVICE CONDITIONS	AC BC OC

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	REV	87	DATE	DESCRIPTION	CKD	AP	Client Appreved	DS-00-L-0030	DIZRU 0

NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 9001b 3. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 END CONNECTIONS 4. MATERIALS SHALL BE EMPLOYED DNLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE FLANGED TO ANSI B16.5 RTJ SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM SIZE RANGE 3" TO 24" THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT CONSTRUCTION BODY : BOLTED BONNET & GLAND 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-5S. 0.S. & Y. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. TRIM : FLEXIBLE WEDGE ALL SIZES 100% MPI RENEWABLE SEATS 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL DENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. BODY MATERIAL CARBON STEEL : CAST - ASTM A216 GR WCB 8. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. TRIM 13% CHROME (A182 GR F6 OR AISI 410.416) HARD FACED SEATS 9. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS. VALVE OPERATOR 3" TO 6" HANDWHEEL B" TO 24" BEVEL GEAR (WEATHERPROOF TYPE) GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SOFT IRON OVAL RING JOINT **BOLTING** STUDBOLTS: ASTM A193 GR B7 CADMIUM PLATED C/W NUTS: ASTM A194 GR 2M CADMUM PLATED TEMP. LIMITATIONS -29°C (-20°F) TO 350°C (650°F) SERVICE CONDITIONS EA2 EA3 EA4 583 CLOUGH DHOOME GAS PROJECT Engineering Group OR & GAS DEVELOPMENT CORPORATION EIJRC

J.W. 12/3/93 ISSUED FOR CONSTRUCTION

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VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0033

SP-00-L-0001

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS
- 8. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM

THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA :

CE = C + MN/6 + 0.04

		<u> </u>	
	VALVE TYPE	GATE	
	VALVE STANDARD	B.S. 5352 OR API 602	
Ē	PRESSURE CLASS	ANSI 1500Ib	
	END CONNECTIONS	S/WELD x THREADED TO ANSI B16.11	
0	SIZE RANGE	1/2" TO 1 1/2"	
	CONSTRUCTION	BODY : BOLTED BONNET & GLAND 0.S. & Y.	
ON S		TRIM: SOLID WEDGE RENEWABLE SEATS	
			-
	BODY MATERIAL	CARBON STEEL : FORGED - ASTM A105 NORMALISED	
	TRIM	DISC, STEM & SEAT RINGS 13% (HROME HARD FACED SEATS	
	VALVE OPERATOR	HANOWHEEL	
	GLAND PACKING	RENFORCED GRAPHIED ASSESTOS	
	BONNET GASKET	SPIRAL WOUND (S. STL) OR SOFT IRON RING JOINT	
	BOLTING	STUDBOLTS: ASTM A193 GR 87 CADMIUM PLATED C/W NUTS: ASTM A194 GR 2H CADMIUM PLATED	
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)	
	SERVICE CONDITIONS	EA2 EA3 EA4 FA2 FA3	
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- 1. CERTIFICATES REQUIRED TO OIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS

VALVE TYPE	GATE
VALVE STANDARD	B.S. 5352 OR API 602
PRESSURE CLASS	ANSI 1500Ib
END CONNECTIONS	S/WELD x THREADED TO ANSI B16.11
SIZE RANGE	1/2" TO,1 1/2"
CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y.
	TRM : SOLID WEDGE
BODY MATERIAL	STAINLESS STEEL TO ASTH A-182 GR 316
TRIM	STAINLESS STEEL TYPE 316 TRIM STELLITE FACED SEATS
VALVE OPERATOR	HANDW7ÆEL
GLAND PACKING	RENFORCED GRAPHITED ASBESTOS
BONNET GASKET	SPIRAL WOUND (S. STL. TYPE 316) DR STAINLESS STEEL TYPE 316 RING JOINT
BOLTING	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED (/W NUTS: ASTM A194 GR 4 CADMIUM PLATED
TEMP. LIMITATIONS	-100°C (-150°F) TO 350°C (650°F)
SERVICE CONDITIONS	FC
	PRESSURE CLASS END CONNECTIONS SIZE RANGE CONSTRUCTION BODY MATERIAL TRIM VALVE OPERATOR GLAND PACKING BONNET GASKET BOLTING TEMP. LIMITATIONS

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NOTES: POSITIONS

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080
- 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI
- 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 8. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 9. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS

		<u> </u>
	VALVE TYPE	GATE
	VALVE STANDARD	B.S. 1414 OR API 600
	PRESSURE CLASS	ANSI 1500Ib
:	END CONNECTIONS	FLANGED TO ANSI B16.5 RTJ
	SIZE RANGE	2- 10 24-
0		
	CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y.
		TRIM : FLEXIBLE WEDGE RENEWABLE SEATS
N		
	<u> </u>	
	BODY MATERIAL	CARBON STEEL : CAST - ASTM A216 GR WC8
	<u> </u>	
	TRIM	13% CHROME (A182 GR F6 OR AISI 410.416)
		HARD FACED SEATS
	VALVE OPERATOR	70 TO (W 11110) (1177)
		2" TO 6" HANDWHEEL 8" TO 24" BEYEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	RENFORCED GRAPHITED ASBESTOS
		METH ONCED CHAPTINED NODESTOS
	BONNET GASKET	SOFT IRON GYAL RING JOINT
	DOME TO BRISKET	2011 IKON GAST KING JOIN!
	BOLTING	
	<u>550,11176</u>	STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2H CAOMUM PLATED
	TEMP. LIMITATIONS	
	TEAT. CHILIATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	EA2 ≤ 2"
		EA3 € 2" EA4 € 2"
		FA2
		FA3
		1
		1

							Drawn J.W. 12.01,93	CLOUGH	583		GAS PROÆCT	
							Checked Lane	Engineering Group	FIJRC	(1) a :	GAS DEVELOPMENT (ORPORATION
8			1				Supervisor /	VALVE DATA SHE	ET FOR			
85		1					Designed SLK	PIPING MATERIAL	SPECIFIC	ATION	-	
×							Project Engineer	SP-00-L-0001			SHT. 1 OF 1	
	5	J.W.	12/3/03 ISSUED FO	CONSTRUCTION	614		App for Construction	DATA SHEET No.			VALVE TAG No.	REV.
	REV	BY	BATE	DESCRIPTION	CKD	160	Client Approved	DS-00-L-	0042		F1JRC	0

NOTES: VALVE TYPE GATE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1414 OR API 600 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE (LASS ANSI 15001b 3. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 END CONNECTIONS FLANGED TO ANSI B16.5 RTJ 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIDR WRITTEN APPROVAL FROM SIZE RANGE 2" TO 12" THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT CONSTRUCTION BODY : BOLTED BONNET & GLAND 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. 0.S. & Y. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. TRIM : FLEXIBLE WEDGE ALL SIZES 100% LPI RENEWABLE SEATS 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS BODY MATERIAL AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. STAINLESS STEEL TO ASTM A-351 CF8M 8. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. TRIM STAINLESS STEEL TYPE 316 TRIM STELLITE FACED SEATS 9. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS VALVE DPERATOR 2" TO 6" HANDWHEEL B" TO 12" BEVEL GEAR (WEATHERPROOF TYPE) GLAND PACKING REINFORCED GRAPHITED ASBESTOS **BONNET GASKET** STAINLESS STEEL TYPE 316 RING JOINT BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 (ADMIUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS FC J.W. 12.01.93 **CLOUGH** 583 DHODAK GAS PROJECT Traced Engineering Group OR & GAS DEVELOPHENT CORPORATION

I.W. 12/3/93 ISSUED FOR CONSTRUCTION

REV BY DATE

F1JRS

VALVE DATA SHEET FOR

DATA SHEET No.

SP-00-L-0001

PIPING MATERIAL SPECIFICATION

DS-00-L-0043

Designed

App for Construction

Project Empirer 197

NOTES: 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICA SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FRO THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED IN THIS DOCUMENT 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICA TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTE AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS

I.W. 12/3/93/SSUSB FOR CONSTRUCTION

REV BY DATE

	VALVE_TYPE	GATE								
	VALVE STANDARD	8.S. 5352 OR API 602								
ABLE	PRESSURE CLASS	ANSI 1500/b								
ROM D	END CONNECTIONS	THREADED TO ANSI B16.11								
EO TO	SIZE RANGE	1/2" TO 1 1/2"								
	CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y.								
ATION TERS		TRIM : SOLID WEDGE								
ILKS		•								
	BODY MATERIAL	STAPLESS STEEL TO ASTM A-182 GR 316								
	TRIM	STAMLESS STEEL TYPE 316 TRIM STELLITE FACED SEATS								
	VALVE OPERATOR	HANDWHEEL								
	GLAND PACKING	REINFORCED GRAPHITED ASBESTOS								
	BONNET GASKET	SPIRAL WOUND (S. STL. TYPE 316) OR STAINLESS STEEL TYPE 316 RING JOINT								
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR A (ADMIUM PLATED								
	TEMP. LIMITATIONS	-100°C (-150°F) TO 350°C (650°F)								
	SERVICE CONDITIONS	FCT - FOR CHEMICAL INJECTION TUBING ONLY								
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	Drawn J.W. 12.01.93	CLOUGH 583 Project DECOAR CAS PROJECT								
	Traced									
	Checked Supervisor (B)	Engineering Group FISRS ON B GAS DEVILOPMENT COMPORATION VALVE DATA SHEET FOR								
	Designed 25	PIPING MATERIAL SPECIFICATION								
	Project Engineer	▼ SP-00-L-0001 SHT. 1 0 1								
	App for Construction	DATA SHEET NO. VALVE TAG No. PEV.								

DS-00-L-0044

F1SRS

- 1. CERTIFICATES REQUIRED TO DIN S0049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS
- 8. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE (ARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM

THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA:

(E = C . MN/6 . 0.04

	VALVE TYPE	GATE
	VALVE STANDARD	8.S. 5352 OR API 602
Ε	PRESSURE CLASS	ANSI 1500Ib
1	END CONNECTIONS	SOCKET WELD TO ANSI B16.11
Τ0	SIZE RANGE	1/2" TO 1 1/2"
ION	CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y. TRIM : SOLID WEDGE RENEWABLE SEATS
S		•
	BODY MATERIAL	·
	BOUT HATERIAL	CARBON STEEL : FORGED - ASTM AND NORMALISED
	TRIM	DISC, STEM & SEAT RINGS 13% CHROME HARD FACED SEATS
	VALVE OPERATOR	HANDWÆEL
	GLAND PACKING	REINFORCED GRAPHITED ASBESTOS
	BONNET GASKET	SPIRAL WOUND (S. STL.) SOFT IRON RING JOINT
	BOLTING	STUDBOLTS: ASTH A193 GR 87 (ADMIUM PLATED (/W NUTS: ASTH A194 GR 2H (SF) CADMIUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	EA2 EA3 EA4 FA2 FA3
		<u> </u>
	Drewn J.W. 12.01.93	AT ATTAY
	Traced	CLOUGH 583 DOOM CAS PROJECT

Drawn J.W. 12.01.9)

Traces

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DOOM CAS PROACT

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Engineering Group

F1ZRC

VALVE DATA SHEET FOR

PPING MATERIAL SPECIFICATION

SP-00-L-0001

SP-00-L-0001

SP-00-L-0045

F1ZRC

VALVE TAG No.

PV NAVE TAG No.

PLANTERIAL SPECIFICATION

SP-00-L-0045

F1ZRC

ONLY TAG No.

PLANTERIAL SPECIFICATION

SP-00-L-0045

NOTES: 1, CERTIFICATES REQUIRED TO DIN S0049.3.1.b FOR ALL PRESSURE CONTAINING PARTS 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED IN THIS DOCUMENT 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-5S. IN ADDITION TO MANUFACTURER'S STANDARO INSPECTION 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICAT TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTER AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS

	VALVE TYPE	GATE
	VALVE STANDARD	B.S. 5352 OR API 602
BLE	PRESSURE (LASS	ANSI 1500lb
0M	END CONNECTIONS	SOCKET WELD TO ANSI B16.11
0 10	SIZE RANGE	1/2" TO 1 1/2"
	CONSTRUCTION	BOOY : BOLTED BONNET & GLAND O.S. & Y.
TION		TRIM : SOLID WEDGE
	BODY MATERIAL	STAINLESS STEEL TO ASTH A-182 GR 316
	TRIM	STAMLESS STEEL TYPE 316 TRIM STELLITE FACED SEATS
	VALVE OPERATOR	HANDWHEEL
	GLAND PACKING	RENFORCED GRAPHIED ASSESTOS
	BONNET GASKET	SPIRAL WOUND (S. STL. TYPE 316) OR STAINLESS STEEL TYPE 316 RING JOINT
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR # CADMIUM PLATED

-100°C (-150°F) TO 350°C (650°F)

CLOUGH

Engineering Group

SP-00-L-0001

DATA SHEET No.

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	ç	1.9.	12/3/93 ISSUED FOR CONSTRUCTION	4421	App for (enstruction
į	REY	BT	DESCRIPTION	CXD For	Client Appreved

TEMP. LIMITATIONS

SERVICE CONDITIONS

583 VALVE DATA SHEET FOR

DHODAK GAS PROJECT DE & GAS DEVELOPMENT COMPONATION

PIPING MATERIAL SPECIFICATION 941, 1 OF 1 DS-00-L-0046 FIZRS

NOTES: 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 12" TO 4" - SHORT PATTERN, 6" TO 24" - LONG PATTERN) 3. VALVES TO BE FIRESAFE TO B.S. 6755 4. CONTACT FACES OF FLANGES TO BE 250_TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABL SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED IN THIS DOCUMENT 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% MPI 7. FACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTER AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION

	FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
10	. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE
	ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE
	SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY
	TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED
	DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK
	AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED
	BY THE CHIEF PIPING ENGINEER.

- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH 'OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - FULL BORE
	VALVE STANDARD	B.S. 5351 OR API 6D
	PRESSURE CLASS	ANSI 1501b
	END CONNECTIONS	FLANGED TO AMSI B16.5 RF
LE	SIZE RANGE	FACE TO FACE DIMEMSIONS, 2" TO 4", SHORT PATTERN 6" TO 24"LONG PATTERN
M 10	CONSTRUCTION	BODY : BOLTED FULL BORE
		TRIM: 2" TO 8": FLOATING BALL OR TRUNNION MOUNTED TRUNNION MOUNTED.
		: ANTI STATK, BLOW- DUT PROOF STEM : FIRE SAFE TO B.S. 6755/API.607/API 6FA
10N	BODY MATERIAL	(ARBON STEEL : FORGEO - ASTM A105 OR (AST - ASTM A216 GR.WCB
₹S	TRIM	BALL, STEM, SEAT HOLDER AND TRUNNION ; S.STEEL, TYPE 316 OR C.STEEL WITH 0.003" ENP. SEATS - NYLON OR REINFORCEO PTFE
₹.	VALVE OPERATOR	2" TO 8" - LEVER 10" TO 24" BEYEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A193 GR B7 CADMIUM PLATED C/W NUTS: ASTM A194 GR 2M CADMIUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)
	SERVICE CONDITIONS	
		AA? AG

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	П		HH	12/3/9	ISSUED FOR CONSTRUCTION	45	47		for Construction	DATA SHEET No. YALVE TAG No. REV.	
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NOTES: 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 4" - SHORT PATTERN, 6" TO 24" - LONG PATTERN) 3. VALVES TO BE FIRESAFE TO B.S. 6755 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICA SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FR THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN ND WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERREI IN THIS DOCUMENT 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI 816:34 SECTION 8. SIZES 12" AND ABOVE, 100% MPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICA TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTI AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATIO FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDI 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER. 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH . CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

	VALVE	TYPE		BALL - FULL BO	ŔĔ						
	VALVE	STANDAR	D	B.S. 5351 OR AF	1 6D-						
	PRESS	URE (LASS		ANSI 1501b							
	END (ONNECTIONS	5	FLANGED TO AN	SI B16.5 RF						
	SIZE F	RANGE		FACE TO FACE (2" TO 4", SHO 6" TO 24", LO	RT PATTERN						
ABLE ROM	CONST	RUCTION		BODY : BOLTED FULL BO							
ED TO				TRM : 2" TO 8"	; FLOATING B. ; TRUNNION H		NUNNION MOUNT	ITED			
					TATIC, BLOW- AFE TO B.S. 6						
	BODY	MATERIAL		CARBON STEEL			STM A350 G ASTM A352 (-			
TERS	TRIM			BALL, STEM, SEA S.STEEL, TYPE SEATS - NYLON	316 OR ASTM	A3SO GR L		003" ENP.			
ION DER.	VALVE OPERATOR			2" TO 8" - LEVER 10" TO 24" BEVEL GEAR (WEATHERPROOF TYPE)							
	GLAND PACKING			MANUFACTURER'S STANDARD							
	BONNET GASKET			MANUFACTURER'S STANDARD							
	BOLTII	<u>NG</u>		STUDBOLTS : A							
	TEMP.	LIMITATION	<u> 15</u>	-46°C (-50°F) T	0 150°C (300°F	9					
	SERVI	CE CONDITIO	<u> 2NC</u>	AB2							
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	1	Drawa 17	M 11.01.93	43.6		Job Ma.	Project				
		Intel	11 1(019)	CLOU	GH	583	D-COOAK	GAS PROÆCT			
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SQUARE STEM HEADS ARE NOT ACCEPTABLE. 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENEO AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY, REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.

JIH 12/3/93 ISSUED FOR CONSTRUCTION

REY BY DATE

13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY DPEN OR CLOSED POSITIONS.

NOTES: VALVE TYPE BALL - REDUCED BORE VALVE STANDARD MANUFACTURES STD 1. CERTIFICATES REQUIRED MANUFACTURER'S CERRTIFICATE OF COMPLIANCE PRESSURE CLASS 125 LB CWP 2. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS. END CONNECTIONS FLANGED TO ANSI B.16.5 FLAT FACED SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION SIZE RANGE TO MEET THE REQUIREMENTS OF THE LATEST ISSUE OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT. CONSTRUCTION BODY : UNION OR FLANGED 3. EACH VALVE SHALL BE MARKED IN ACCORDANCE WITH MSS-SP-25. TRIM : FLOATING BALL 4. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL PTFE SEAT TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER EPDM/VITON 'O' RING SEALS AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND SECURELY ATTACHED TO THE VALVE WITH STAINLESS STEEL WIRE. BODY MATERIAL PVC TYPE 1 GRADE 1 (ASTM D.1784) TRIM PVC TYPE 1 GRADE 1 (ASTM D.1784) VALVE OPERATOR LEVER OR 'T' BAR WRENCH GLAND PACKING NONE BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS 32°F (0°C) TO 110°F (43°C) SERVICE CONDITIONS 583 CLOUGH DHODAK GAS PROJECT OL & GAS DEVELOPMENT CORPORATION Engineering Group AZFRP VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001 TH 123/93 - 45 FOR THE THE TON DATA SHEET No.

REV BY DATE

DESCRIPTION

A2FRP

DS-00-L-0058

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 4" SHORT PATTERN. 6" TO 24" LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4.-CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH
 (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% LPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES.

 THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - FULL BORE
ı	VALVE STANDARD	8.S. 5351 OR API 6D
	PRESSURE (LASS	ANSI 1501b
	END CONNECTIONS	FLANGED TO ANSI BI6.5 RF
	SIŽĒ RANGE	FACE TO FACE DIMENSIONS 2" TO 4". SHORT PATTERN 6" TO 24". LONG PATTERN
_	CONSTRUCTION	BODY : BOLTED FULL BORE
0		TRIM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" > ; TRUNNON MOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM
		: FIRE SAFE TO B.S. 6755/API.607/API 6FA
	BODY MATERIAL	STANLESS STEEL TO ASTM A-351 (FBM
N	TRIM	BALL, STEM, SEAT HOLDER AND TRUNNION AND TRIM S.STEEL, TYPE 316 SEATS - RENFORCED PTFE
	VALVE OPERATOR	2" TO 8" - LEYER 10" TO 24" BEYEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS: ASTM A194 GR 4 CADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	AC

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				Supervisor (97)	VALVE DATA SHEET FOR	
				Designed LLK	PIPING MATERIAL SPECIFICATION	
				Project Engineer	/SP-00-L-0001	SHT, 1 OF 1
0	JIN	12/3/07 ISSUED FOR CONSTRUCTION	HKZ	App for Construction	DATA SHEET No.	VALVE TAG No. REV.
REY	81	DATE DESCRIPTION	(KD Z	Client Approved	DS-00-L-0052	A2RFS 0

NOTES: IN THIS DOCUMENT

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 4" - SHORT PATTERN, 6" TO 24" - LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES-TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% LPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH . CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS

14. THESE VALVES TO BE	SUITABLE FOR OPERATION
IN CRYOGENIC SERVICE	TO THE LIMITS OF THE
PRESSURE CLASS AND	TEMPERATURES SHOWN.

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	VALVE TYPE	BALL - FULL BORE
	VALVE STANDARD	B.S. 5351 OR API 6D
	PRESSURE (LASS	ANSI 1501b
	END CONNECTIONS	FLANGED TO ANSI B16.S RF
	SIZE RANGE	FACE TO FACE DIMENSIONS 2" TO 4". SHORT PATTERN 6" TO 24". LONG PATTERN
	CONSTRUCTION	BODY : BOLTED, EXTENDED BONNET & STEM, FULL BORE
0		TRIM : 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" : TRUNNION HOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM
		: FIRE SAFE TO B.S. 6755/APL607/API 6FA
	BODY MATERIAL	STAINLESS STEEL TO ASTH A-351 (F8H
N		
	TRIM	BALL,STEM, SEAT HOLDER AND TRUNNION AND TRIM S.STEEL, TYPE 316 SEATS - REINFORCED PTFE
	VALVE OPERATOR	2" TO 8" - LEVER 10" TO 24" BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 4 (ADMIUM PLATED
	TEMP, LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	AC

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 6" FOR - SHORT PATTERN. 8" TO 24" - LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH
 (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE. 100% MPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES.

 THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY, REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - REDUCED BORE
	VALVE STANDARD	B.S. 5351 OR API 6D
	PRESSURE (LASS	ANSI 1501b
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
	SIZE RANGE -	FACE TO FACE DIMENSIONS """
.ε		2" TO 6". SHORT PATTERN ANSI B16.10 8" TO 24". LONG PATTERN ANSI B16.10
1 TO	CONSTRUCTION	BODY : BOLTED REDUCED BORE
10		TRIM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" > ; TRUNNION MOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM
		: FIRE SAFE TD B.S. 6755/API.607/API 6FA
ON	BODY MATERIAL	CARBON STEEL : FORGED - ASTM A105 OR CAST - ASTM A216 GR W(B
S	TRIM	BALL, STEM, SEAT HOLDER AND TRUNNION S.STEEL, TYPE 316 OR C.STEEL WITH 0.003" ENP SEATS - NYLON OR REINFORCED PIFE
•	VALVE OPERATOR	2" TO 8" - LEVER 10" TO 24" BEVEL GEAR IWEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	80LTING	STUDBOLTS: ASTM A193 GR B7 CADMIUM PLATED C/W NUTS: ASTM A194 GR 2H CADMIUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)
	SERVICE CONDITIONS	
		AA2
		AG

								Drawn JTM 11,01,93 Traced Checked Code	City City (See City)	GAS PROJECT B GAS DEVELOPHENT CORPORATION
1	[Designed ACK	VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION	
1	-			i i				Preject Engineer	✓ SP-00-L-0001	SHT, 1 OF 1
	6		JIM	12/3/93	ISSUED FOR CONSTRUCTION	410		App for Construction	DATA SPEET No.	VALVE TAG No. REV.
		MEV	BY	DATE	DESCRIPTION	CKD	1.96	Client Approved	DS-00-L-0053	A2RRC 0

NOTES: IN THIS DOCUMENT

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 6" FOR - SHORT PATTERN, 8" TO 24" - LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH " (6.3 TD 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% MPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED, DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH . CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE.
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- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - REDUCED BORE
	VALVE STANDARD	B.S. 5351 OR API 60
	PRESSURE (LASS	ANSI 1501b
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
Ε	SIZE RANGE	FACE TO FACE DIMENSIONS 2" TO 6". SHORT PATTERN ANSI B16.10 8" TO 24", LONG PATTERN ANSI B16.10
t o	CONSTRUCTION	BODY : BOLTED REDUCED BORE
,,,		TRIM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" > ; TRUNNION MOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM : FIRE SAFE TO B.S. 6755/API.607/API 6FA
ON	BODY MATERIAL	CARBON STEEL LOW TEMP: FORGED - ASTM A350 GR. LF2. OR CAST - ASTM A352 GR. LCB.
S	TRIM	BALL,STEM, SEAT HOLDER AND TRUNNION S.STEEL, TYPE 316 ASTM A350 GR LF2 ELECTROLESS MICKEL PLATED, 0.003" SEATS - NYLON OR REINFORCED PTFE
•	VALVE OPERATOR	2" TO 8" - LEVER 10" TO 24" BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR44 (ADMIUM PLATED
	TEMP. LIMITATIONS	-46°C (-50°F) TO 150°C (300°F)
	SERVICE CONDITIONS	AB2

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\$4054		Supervisor (D) Designed JLK	PIPING MATERIAL SPECIFICATION	
E		Preject Engineer App for Construction	SP-00-L-0001	- SHT, 1 OF 1
0 JIH 12/3/3 ISSUED FOR CONSTRUCTION REV BY DATE DESCRIPTION	CKD /	p Client Approved	DS-00-L-0054	AZRRL 0

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 6" FOR SHORT PATTERN, 8" TO 24" LONG PATTERN)
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- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
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- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH'OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES.

 THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - REDUCED BORE
	VALVE STANDARD	B.S. 5351 OR API 6D
	PRESSURE (LASS	ANSI 1501b
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
Ε	SIZE RANGE	FACE TO FACE DIMENSIONS 2" TO 6". SHORT PATTERN ANSI B16.10 8" TO 24". LONG PATTERN ANSI B16.10
o	CONSTRUCTION	BODY : BOLTED REDUCED BORE
		TRIM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" > : TRUNNION MOUNTED.
	•	: ANTI STATK, BLOW- OUT PROOF STEM : FIRE SAFE TO B.S. 6755/APL607/API 6FA
	BODY MATERIAL	STANLESS STEEL TO ASTM A-351 CF8M
אכ		
•	IRIM	BALL, STEM, SEAT HOLDER, TRUNNION AND TRIM. S.STEEL, TYPE 316 SEATS - REINFORCED PTFE
	VALVE OPERATOR	2" TO 8" - LEYER 10" TO 24" BEYEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED [/W NUTS: ASTM A194 GR 4 CADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	
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BALL - DEDUCED DOOR

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VALVE TYPE

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 6" FOR - SHORT PATTERN, 8" TO 24" - LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% LPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH . CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED
- 14. THESE VALVES TO BE SUITABLE FOR OPERATION | IN CRYOGENIC SERVICE TO THE LIMITS OF THE PRESSURE CLASS AND TEMPERATURES SHOWN.

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	VALVE TYPE	BALL - REDUCED BORE
	VALVE STANDARD	B.S. 5351 OR API 60
	PRESSURE (LASS	ANSI 1501b
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
	SIZE RANGE	FACE TO FACE DIMENSIONS 2" TO 6", SHORT PATTERN ANSI B16.10 8" TO 24", LONG PATTERN ANSI B16.10
	CONSTRUCTION	BODY : BOLTED, EXTENDED BONNET AND STEM, REDUCED BORE
0		TRIM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" > ; TRUNNION MOUNTED.
		: ANTE STATIC, BLOW- OUT PROOF STEM
		: FIRE SAFE TO B.S. 6755/API.607/API 6FA
N	BODY MATERIAL	STAINLESS STEEL TO ASTM A-351 CF8M
	TRIM	BALL, STEM, SEAT HOLDER, TRUNNION AND TRIM. S.STEEL, TYPE 316 SEATS - REINFORCED PTFE
	VALVE OPERATOR	2" TO 8" - LEVER 10" TO 24" BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUOBOLTS: ASTM A320 GR L7 (ADMIUM PLATED (/W NUTS: ASTM A94 GR 4 (ADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	AC

NOTES: VALVE TYPE BALL - REDUCED BORE VALVE STANDARD MANUFACTURER'S STD 1. CERTIFICATES REQUIRED MANUFACTURER'S CERTIFICATE OF COMPLIANCE PRESSURE CLASS 125 LB CWP 2. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS. END CONNECTIONS SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL SOCKET WELD FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY-DIMINISH THE VENDORS OBLIGATION SIZE RANGE 1/2" TO 3" TO MEET THE REQUIREMENTS OF THE LATEST ISSUE OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT. CONSTRUCTION BODY : UNION BODY 3. EACH VALVE SHALL BE MARKED IN ACCORDANCE WITH MSS-SP-25. 4. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL TRIM : FLOATING BALL TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER PTFE SEAT EPDM/VITON 'O' RING SEALS AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND SECURELY ATTACHED TO THE VALVE WITH STAINLESS STEEL WIRE. BODY MATERIAL PVC TYPE 1 GRADE 1 (ASTM D.1784) TRIM PVC TYPE 1 GRADE 1 (ASTM D.1784) VALVE OPERATOR LEVER OR 'T' BAR WRENCH GLAND PACKING NONE BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS 32°F (0°C) TO 110°F (43°C) SERVICE CONDITIONS JTM 112,93 CLOUGH DHODAK GAS PROJECT DE & GAS DEVELOPMENT CORPORATION Engineering Group AZZRP VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION 9HT, 1 0F 1 SP-00-L-0001 DATA SHEET No. VALVE TAG No. PEV.

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DESCRIPTION

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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 6" FOR SHORT PATTERN. 8" TO 24" LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH
 (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE. 100% MPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGEO VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE DRDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS OESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - FULL BORE
	VALVE STANDARD	B.S. 5351 OR API 6D
	PRESSURE (LASS	ANSI 300Ib
	END (DNNECTIONS	FLANGED TO ANSI B16.5 RF
	SIZE RANGE	2" 10 24"
	CONSTRUCTION	BODY : BOLTED FULL BORE
0		TRIM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" > : TRUNNION MOUNTED.
		: ANTI STATK, BLOW- OUT PROOF STEM : FIRE SAFE TD B.S. 6755/API.607/API 6FA
N	BODY MATERIAL	CARBON STEEL : FORGED - ASTM A105. OR CAST - ASTM A216 GR WCB
	TRIM	BALL,STEM, SEAT HOLDER AND TRUNNION; S.STEEL, TYPE 316 OR C.STEEL WITH 0.003" ENP SEATS - NYLON OR REINFORCED PTFE
	VALVE DPERATOR	2" TO 8" - LEVER 10" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS : ASTM A193 GR B7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 2H CADMIUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)
	SERVICE CONDITIONS	BAZ

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VALVE TYPE NOTES: BALL - FULL BORE 1. CERTIFICATES REQUIRED TO OIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD 8.S. 53S1 OR API 6D 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 PRESSURE CLASS (2" TO 6" FOR - SHORT PATTERN. 8" TO 24" - LONG PATTERN) ANSI 3001b 3. VALVES TO BE FIRESAFE TO B.S. 6755 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH SIZE RANGE (6.3 TO 12.5 MICRO METRE) ROUGHNESS 2" 10 24" 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM CONSTRUCTION BODY : BOLTED THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO FULL BORE MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO TRIM : 2" TO 8": FLOATING BALL OR TRUNNION MOUNTED IN THIS DOCUMENT 10" > : TRUNNION MOUNTED. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. : ANTI STATIC, BLOW- OUT PROOF STEM IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. : FIRE SAFE TO B.S. 6755/API.607/API 6FA SIZES 12" AND ABOVE, 100% MPI BODY MATERIAL 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 CARBON STEEL LOW TEMP : FORGED - ASTM A350 GR LF2 OR CAST - ASTM A352 GR LCB 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS BALL STEM, SEAT HOLDER AND TRUNNION: TRIM S.STEEL, TYPE 316 OR ASTM A350 GR LF2 ELECTROLESS NICKEL PLATED, 0.003 AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. SEATS - NYLON OR REINFORCED PTFE 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION VALVE OPERATOR 2" TO 8" - LEVER FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE) 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE GLAND PACKING MANUFACTURER'S STANDARD SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED BONNET GASKET MANUFACTURER'S STANDARD DEVICE.TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER. BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR (ADMIUM PLATED 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH . CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE TEMP. LIMITATIONS -46°C (-50°F) TO 150°C (300°F) BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE. SERVICE CONDITIONS 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY BB2 CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BDDY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE. 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

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DESCRIPTION

REV BY DATE

JTH 11,01,93

Traced

Project Engineer

App for Construction

CLOUGH

Engineering Group

SP-00-L-0001

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0061

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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 6" FDR SHORT PATTERN, 8" TO 24" LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH --(6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE. 100% LPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- B. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE DRDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY DPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - FULL BORE
	VALVE STANDARD	B.S. 5351 OR API 6D
	PRESSURE (LASS	ANSI 300Ib
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
	SIZE RANGE	2" TO 24"
	CONSTRUCTION	BODY : BOLTED FULL BORE
0		TRM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" > : TRUNNION MOUNTED.
		: ANTI STATM, BLOW- OUT PROOF STEM : FIRE SAFE TO B.S. 6755/API.607/API 6FA
N	BODY MATERIAL	STAPLESS STEEL TO ASTM A- 351 (FBM
14	TRIM	BALL, STEM, SEAT HOLDER TRUNNION & TRIM S.STEEL, TYPE 316 - SEATS - REINFORCED PTFE
	VALVE OPERATOR	2" TO 8" - LEYER 10" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 4 CADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	ВС

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8					Supervisor (EV)	VALVE DATA SHEET FOR	
ŝ					Designed 4LK	PIPING MATERIAL SPECIFICATION	
ê					Project Engineer	SP-00-L-0001	SHT, 1 OF 1
١.	:	IN 12/3/02	could for some reaction	44	App for Construction	DATA SHEET No.	VALVE TAG No. REV.
:	REV	BY DATE	DESCRIPTION	CKD /KF	Client Approved	DS-00-L-0062	B2RFS 0

NOTES: VALVE TYPE BALL - FULL BORE 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5351 OR APL 60 2. FACE TO FACE DIMENSIONS SHALL CONFORM TD ANSI B16.10 OR B.S.2080 PRESSURE CLASS 12" TO 6" FOR - SHORT PATTERN, 8" TO 24" - LONG PATTERN) ANSI 3001b 3. VALVES TO BE FIRESAFE TO B.S. 6755 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH SIZE RANGE (6.3 TO 12.5 MICRO METRE) ROUGHNESS 2" 10 24" 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM CONSTRUCTION BODY : BOLTED, EXTENDED BONNET AND STEM. THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO FULL BORE MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO TRM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED IN THIS DOCUMENT 10" > ; TRUNNION MOUNTED. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. : ANTI STATIC, BLOW- OUT PROOF STEM IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. : FIRE SAFE TO B.S. 6755/APL607/API 6FA SIZES 12" AND ABOVE, 100% LPI BODY MATERIAL 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-2S STAPLESS STEEL TO ASTM A- 351 CF8M 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BALL STEM, SEAT HOLDER TRUNNION & TRIM TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS TRIM S.STEEL, TYPE 316 AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. SEATS - REINFORCED PIFE 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION VALVE OPERATOR 2" TO 8" - LEVER FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE) 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE GLAND PACKING MANUFACTURER'S STANDARD SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED BONNET GASKET MANUFACTURER'S STANDARD DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED **BOLTING** BY THE CHIEF PIPING ENGINEER. STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMIUM PLATED 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH, CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE TEMP. LIMITATIONS -100°C (-150°F) TO 150°C (300°F) BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE. SERVICE CONDITIONS 12. WRENCH, OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY BC CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE. 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS. DWH 1/3/93 14. THESE VALVES TO BE SUITABLE FOR OPERATION CLOUGH 583 DHOOAK GAS PROJECT IN CRYOGENIC SERVICE TO THE LIMITS OF THE Engineering Group (1) DE & GAS DEVELOPHENT CORPORATION B2RFU PRESSURE CLASS AND TEMPERATURES SHOWN. VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION 9HT, 1 0F f SP-00-L-0001 SIL DATA SHEET No. VALVE TAG He. R[V. DWH 12/3/93 ISSUED FOR CONSTRUCTION

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REV BY DATE

DESCRIPTION

B2RFU

DS-00-L-0066

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 6" FOR SHORT PATTERN, 8" TO 24" LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TD 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE. 100% MPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION
 TAG WHICH IS TO BE STAMPED OR ENGRAVEO WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS
 AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE, CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH'OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES.

 THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED OPEN IN THE FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - REDUTED BORE
	VALVE STANDARD	B.S. 5351 DR API 6D
	PRESSURE (LASS	ANSI 30016
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
E	SIZE RANGE	2" 10 24"
I I	CONSTRUCTION	BODY : BOLTED REDUCED BORE
יטי		TRM: 2" TC 8": FLOATING BALL OR TRUNNION MOUNTED 10" > : TRUNNON MOUNTED.
		ANTI STATIC, BLOW- OUT PROOF STEM
		FIRE SAFE TO B.S. 6755/APL507/API 6FA
	BOOY MATERIAL	CARBON STEEL . FORGED - ASTM A105.
0N		DR CAST - ASTM AZ% GR W(B
5	TRIM	BALLSTEM, SEAT HOLDER AND TRUNNON; S.STEEL, TYPE 316 OR C.STEEL WITH 1.003" ENP SEATS - NYLON OR REINFORCED PTFE
	VALVE OPERATOR	2" TO 8" - LEVER 10" TO 24"- BEVEL GEAR (WEATHERPFOOF TYPE)
	GLAND PACKING	MANUFACTUPER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS ASTM A193 GR B7 CADMUM PLATED C/W NUTS ASTM A194 GR 2H CADMUM PLATED
-	TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)
	SERVICE CONDITIONS	
		BAZ
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1 :		Traced		A CAS PROACT
		Checked	Engineering Group BZRRC	8 GAS DEVELOPMENT CORPORATION
		Supervisor	VALVE DATA SHEET FOR	
		Designed	PIPING MATERIAL SPECIFICATION	
• • •	1 1	Project (Agreer OFE	SP-00-1-0001	SHT, 1 OF 1
1	Luc /	App for Construction	DATA SHELT No.	VALVE TAG No. PEV.
REV ST DATE DESCRIPTION	CKD APP	Client Approved	DS-00-L-0063	B2RRC 0

- 1. CERTIFICATES REQUIRED TO DIN \$0049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 6" FOR SHORT PATTERN, 8" TO 24" LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH
 (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% MPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MDVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

VALVE TYPE	BALL - REDUCED BORE
VALVE STANDARD	8.S. 5351 OR API 6D
PRESSURE CLASS	ANSI 300Ib
END CONNECTIONS	FLANGED TO ANSI 816.5 RF
SIZE RANGE	2- 10 24-
CONSTRUCTION	BODY : BOLTED REDUCED BORE
	TRM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" . : TRUNMION MOUNTED.
	: ANTI STATIC, BLOW- OUT PROOF STEM
	: FIRE SAFE TO B.S. 6755/API.607/API 6FA
BODY MATERIAL	LOW TEMP CARBON STEEL : FORGED - ASTM A350 GR LF2
	OR CAST - ASTH A352 GR LCB
TRIM	BALL, STEM, SEAT HOLDER AND TRUNNION; S.STEEL, TYPE 316 OR ASTM A350 GR LF2 WITH 0.003" ENP SEATS - NYLON OR REINFORCED PTFE
VALVE OPERATOR	2" TO 8" - LEVER 10" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)
GLAND PACKING	MANUFACTURER'S STANDARD
BONNET GASKET	MANUFACTURER'S STANDARD
BOLTING	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED (/W NUTS: ASTM A194 GR # CADMUM PLATED
TEMP, LIMITATIONS	-46°C (-50°F) TO 150°C (300°F)
SERVICE CONDITIONS	
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	YALVE STANDARD PRESSURE CLASS END CONNECTIONS SIZE RANGE CONSTRUCTION BODY MATERIAL TRIM VALVE OPERATOR GLAND PACKING BONNET GASKET BOLTING TEMP. LIMITATIONS

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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 (2" TO 6" FOR SHORT PATTERN. 8" TO 24" LONG PATTERN)
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH
 (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55.
 IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8.
 SIZES 12" AND ABOVE 100% LPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATEO VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES.

 THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - REDUCED BORE
	VALVE STANDARD	8.S. 5351 DR AP1 6D
	PRESSURE (LASS	ANSI 300lb
	END CONNECTIONS	FLANGED TO ANSI BI6.5 RF
	SIZE RANGE	2" TO 24"
	CONSTRUCTION	BODY : BOLTED REDUCED BORE
,		TRIM : 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" > ; TRUNNION MOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM
		: FIRE SAFE TO B.S. 6755/API.607/API 6FA
	BODY MATERIAL	STAINLESS STEEL TO ASTH A-351 (FBH
N		
	TRIM	BALL,STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 SEATS - REINFORCED PIFE
	VALVE OPERATOR	2" TO 8" - LEYER 10" TO 24"- BEYEL GEAR (WEATHERPROOF TYPE)
	GLAND PA(KING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS : ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR4 (ADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	
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NOTES: 12" TO 6" FOR - SHORT PATTERN. 8" TO 24" - LONG PATTERN)

1.	CERTIFICATES	REQUIRED TO	DIN 50049.3.1.b	FOR ALL	PRESSURE	CONTAINING PARTS
2.	FACE TO FAC	E DIMENSIONS	SHALL CONFORM	1 TO ANS	B16.10 OR	B.S.2080

- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-S5. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE 100% LPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE DRDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY is. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH . CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH, OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS.

14. THESE VALVES TO BE	SUITABLE FOR OPERATION
IN CRYOGENIC SERVICE	TO THE LIMITS OF THE
PRESSURE CLASS AND	TEMPERATURES SHOWN.

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ş							Supervisor	VALVE DATA SHEET FOR	
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	VALVE TYPE	BALL - REDUCED BORE
	VALVE STANDARD	B.S. 53S1 OR API 6D
	PRESSURE (LASS	ANSI 3001b
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
	SIZE RANGE	2" 10 24"
0	CONSTRUCTION	BODY : BOLTED, EXTENDED BONNET AND STEM, REDUCED BORE
U		TRIM: 2" TO 8"; FLOATING BALL OR TRUNNION MOUNTED 10" > ; TRUNNION MOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM
	•	FIRE SAFE TO B.S. 6755/API.607/API 6FA
	BODY MATERIAL	STAINLESS STEEL TO ASTM A-351 CF8M
NC		
5	<u>TRIM</u>	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S. STEEL, TYPE 316 SEATS - RENFORCED PIFE
	VALVE OPERATOR	2" TO 8" - LEVER 10" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 4 (ADMIUM PLATED
	TEMP. LIMITATIONS	-100°C {-150°F} TO 150°C (300°F)
	SERVICE CONDITIONS	ВС

NOTES: IN THIS DOCUMENT ALL SIZES 100% MPI

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8.
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING FACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNIFSS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY (AVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED, DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH . CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH: OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - FULL BORE
	VALVE STANDARD	B.S. 5351 OR API 60
	PRESSURE CLASS	ANSI 600Ib
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
. E	SIZE RANGE	2- 10 24-
0	CONSTRUCTION	BODY : BOLTED OR SOLID FULL BORE
		TRM: 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24"; TRUNNION MOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM : FIRE SAFE TO B.S. 6755/APL607/API 6FA
אכ	BODY MATERIAL	CARBON STEEL : FORGED - ASTM AWS, OR CAST - ASTM AZ16 GR W(B
5	TRIM	BALL,STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 OR C. STEEL WITH 0.003" ENP. SEATS - NYLON OR REINFORCED PTFE
	VALVE OPERATOR	2" TO 4" - LEVER 6" TO 24" - BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2H CADMUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)
	SERVICE CONDITIONS	
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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-2S
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY (AVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES.

 THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - FULL BORE
	VALVE STANDARD	B.S. 5351 OR API 6D
	PRESSURE (LASS	ANSI 600Ib
	END CONNECTIONS	FLANGED TO ANSI BIG.5 RF
.	SIZE RANGE	2" 10 24"
	CONSTRUCTION	BODY : BOLTED FULL BORE
		TRIM: 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24"; TRUNNION MOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM
		: FIRE SAFE TO Q.S. 6755/API.607/API 6FA
ON .	BODY MATERIAL	CARBON STEEL LOW TEMP: FORGED - ASTM A350 GR LF2. OR CAST - ASTM A352 GR LCB
•	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 OR ASTM A350 GR LF2 WITH 0.003" ENP. SEATS - NYLON OR REINFORCED PTFE
	VALVE OPERATOR	2" TD 4" - LEVER 6" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)
		water transfer town to ay
	GLAND PACKING	MANUFACTURER'S STANDARD
	GLAND PACKING BONNET GASKET	
		MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD MANUFACTURER'S STANDARD . STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED
	BONNET GASKET BOLTING	MANUFACTURER'S STANDARD MANUFACTURER'S STANDARD STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS: ASTM A194 GR # (ADMIUM PLATED

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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

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- 12. WRENCH' OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - FULL BORE
	VALVE STANDARD	B.S. 5351 OR API 6D
	PRESSURE (LASS	ANSI 600Ib
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
	SIZE RANGE	2- 10 24-
0	CONSTRUCTION	BODY : BOLTED FULL BORE
		TRM: 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24"; TRUNNION MOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM
		: FIRE SAFE TO B.S. 6755/API.607/API 6FA
N	BODY MATERIAL	STAINLESS STEEL TO ASTM A-351 CF8M
	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 SEATS - REINFORCED PTFE
	VALVE OPERATOR	2" TO 4" - LEVER 6" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD .
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED (/W NUTS: ASTM A194 GR 4 (ADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	DC

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VALVE TYPE

NOTES: 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080 3. VALVES TO BE FIRESAFE TO B.S. 6755 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS ... 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED IN THIS DOCUMENT ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICAT TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTER AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER. 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH . CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE. 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR

NOT ACCEPTABLE.

14. THESE VALVES TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS-OF THE PRESSURE CLASS AND TEMPERATURES SHOWN.

SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE

13. ALL VALVES TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

OWN 12/3/93 ISSUED FOR CONSTRUCTION

DESCRIPTION

CKD

REY BY DATE

	VALVE TYPE	BALL - FULL BORE			
	VALVE STANDARD	8.S. 5351 OR AP1 6D			
	PRESSURE CLASS	ANSI 600Ib			
	END CONNECTIONS	FLANGED TO ANSI BI6.5 RF			
BLE	SIZE RANGE -	2" TO 24"			
M TO	CONSTRUCTION	BODY : BOLTED, EXTENDED BONNET AND STEM, FULL BORE			
		TRIM : 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24"; TRUNNION MOUNTED.			
		: ANTI STATK, BLOW- OUT PROOF STEM : FIRE SAFE TO B.S. 6755/API.607/API 6FA			
TION	BODY MATERIAL	STAINLESS STEEL TO ASTM A-351 (F8M			
RS I	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 SEATS - REMFORCED PIFE			
R.	VALVE DPERATOR	2" TO 4" - LEVER 6" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)			
	GLAND PACKING	MANUFACTURER'S STANDARD			
	BONNET GASKET	MANUFACTURER'S STANDARD			
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR (ADMIUM PLATED			
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)			
	SERVICE CONDITIONS	DC			
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DATA SHEET No.

DS-00-L-0077

VALVE TAG No.

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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI 816,10 OR 8.5.2080
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TD 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-2S
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH-OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - REDUCED BORE	
	VALVE STANDARD	B.S. 5351 OR API 6D	
	PRESSURE (LASS	ANSI_600Ib	_
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF	
Ξ	SIZE RANGE	2" 10 24"	
ō	CONSTRUCTION	BDDY : BOLTED REDUCED BORE	
		TRIM: 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24"; TRUNNION MOUNTED.	
		: ANTI STATIC, BLOW- DUT PROOF STEM	
		: FIRE SAFE TO B.S. 6755/API.607/API 6FA	
)N	BODY MATERIAL	CARBON STEEL: FORGED - ASTM A105 OR CAST - ASTM A216 GR WCB	
	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 OR C. STEEL WITH 0.003" ENP. SEATS - NYLON OR REINFORCED PTFE	
	VALVE OPERATOR	2" TO 4" - LEVER 6" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)	
	GLAND PACKING	MANUFACTURER'S STANDARD	
	BONNET GASKET	MANUFACTURER'S STANDARD	,
	BOLTING	STUDBOLTS : ASTM A193 GR B7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 2H CADMIUM PLATED	
	TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)	
	SERVICE CONDITIONS		
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VALVE TYPE

NOTES: VALVE TYPE BALL - REDUCED BORE 1. CERTIFICATES REQUIRED TO OIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARO B.S. 5351 OR API 6D 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR 8.5.2080 PRESSURE CLASS ANSI 6001b 3. VALVES TO BE FIRESAFE TO B.S. 6755 END CONNECTIONS FLANGED TO ANSI BI6.5 RF 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH 16.3 TO 12.5 MICRO METRE) ROUGHNESS SIZE RANGE 2" 10 24" 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM CONSTRUCTION THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENOORS OBLIGATION TO BODY : BOLTED REDUCED BORE MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT TRIM: 2": FLOATING BALL OR TRUNNION MOUNTED 3"- 24": TRUNNION MOUNTEO. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. : ANTI STATIC, BLOW- OUT PROOF STEM IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI : FIRE SAFE TO B.S. 6755/API.607/API 6FA 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 BODY MATERIAL L. TEMP CARBON STEEL : FORGED - ASTM A350 GR LF2. 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION DR CAST - ASIM A352 GR LCB TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 OR ASTM A350 GR LF2 WITH 0.003" ENP. 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION SEATS - NYLON OR REINFORCED PTFE FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. VALVE OPERATOR 2" TO 4" - LEVER 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE 6" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE) ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE GLANO PACKING SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. MANUFACTURER'S STANDARD ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED BONNET GASKET DEVICE.TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK MANUFACTURER'S STANDARD AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER. BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING (/W NUTS : ASTM A194 GR 4 CADMUM PLATED THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE TEMP. LIMITATIONS BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A -46°C (-50°F) TO 150°C (300°F) MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE. SERVICE CONDITIONS 12. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY DBZ CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE. 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS. JTM 11.01.93 CLOUGH 583

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VALVE TAG No.

D2RRL

CAD No.

D2RRL

Engineering Group

SP-00-L-0001

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0075

NOTES: IN THIS DOCUMENT

1	CERTIFICATES	RECHIRED	TΛ	DIN 50049	3 1 h FOR	A11	DDFCCHDF	CONTAINING PARTS	

- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE DRDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SDME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE, TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED, DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH . CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES. SQUARE STEM HEADS ARE NOT ACCEPTABLE.
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- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - REDUCED BORE	
	VALVE STANDARD	B.S. 5351 OR API 6D	
	PRESSURE CLASS	ANSI 600Ib	
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF	-
LE M	SIZE RANGE	2" 10 24"	
τo	CONSTRUCTION	BODY : BOLTED REDUCED BORE	
		TRIM: 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24", TRUNNION MOUNTED.	
		: ANTI STATIC, BLOW- OUT PROOF STEM	
		: FIRE SAFE TO B.S. 6755/API.607/API 6FA	
ION SS	BODY MATERIAL	STAINLESS STEEL TO ASTM A-351 CFBM	
₹.	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 SEATS - REINFORCED PTFE	
ι.	VALVE OPERATOR	2" TO 4" - LEVER 6" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)	
	GLAND PACKING	MANUFACTURER'S STANDARD	
	BONNET GASKET	MANUFACTURER'S STANDARO	
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR (ADMIUM PLATED	
	TEMP, LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)	
	SERVICE CONDITIONS		
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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 5, MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE (ASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI
- 7. FACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES DNTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE DRDER.
- 10. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 11. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 12. WRENCH, OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

14. THESE VA	ALVES TO BE	SUITABLE FOR	OPERATION
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PRESSUR	E CLASS AND	TEMPERATURE	SHOWN.

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	VALVE TYPE	BALL - REDUCED BORE
	VALVE STANDARD	8.5. 5351 OR API 60
	PRESSURE CLASS	ANSI 600lb
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
.E	SIZE RANGE	2- 10 24-
ΤO	CONSTRUCTION	BODY : BOLTED, EXTENDED BONNET AND STEM. REDUCED BORE
		TRM: 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24"; TRUNNION MOUNTED.
		: ANTI STATIC, BLOW- OUT PROOF STEM : FIRE SAFE TO B.S. 6755/API.607/API 6FA
ION S	BODY MATERIAL	STAINLESS STEEL TO ASTM A-351 CF8M
	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 SEATS - REINFORCED PTFE
•	VALVE DPERATOR	2" TO 4" - LEVER 6" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR.4 (ADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	DC

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- 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT-BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDAROS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT.
- ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55.
 IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8.
 ALL SIZES 100% MPI
- 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 8. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 9. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 10. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 11. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY, REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 12. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

VALVE TYPE	BALL - FULL BORE	
VALVE STANDARD	B.S. 5351 OR API 6D	
PRESSURE CLASS	ANSI 900Ib	
END CONNECTIONS	FLANGED TO ANSI B16.5 RTJ	
SIZE RANGE	3" 10 24"	
CONSTRUCTION	BODY : BOLTED FULL BORE	
	TRIM : 3"- 24"; TRUNNION MOUNTED.	
	: ANTI STATIC, BLOW- OUT PROOF STEM : FIRE SAFE TO B.S. 6755/APL607/APL6FA	
7000		
BODY MATERIAL	CARBON STEEL: FORGED - ASTM A105, OR CAST - ASTM A216 GR WCB	
TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 OR C. STEEL WITH 0.003" ENP. SEATS - NYLON OR REINFORCED PTFE	
VALVE OPERATOR	3" TO 4" - LEVER 6" TO 24"- BEVEL GEAR (WEATHERPROOF TYPE)	
GLAND PACKING	MANUFACTURER'S STANDARD	
BONNET_GASKET	MANUFACTURER'S STANDARD	
BOLTING	STUDBOLTS : ASTM A193 GR B7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 2M CADMIUM PLATED	
TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)	
SERVICE CONDITIONS		_
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 IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8.
 ALL SIZES 100% MPI
- 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
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- 12. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

	VALVE_TYPE	BALL - REDUCED BORE	
	VALVE STANDARD	B.S. 5351 OR API 6D .	
	PRESSURE (LASS	ANSI 9001b	-
	END CONNECTIONS	FLANGED TO ANSI B16.5 RTJ	
	SIZE RANGE		
0		3" 10 24"	
	CONSTRUCTION	BODY BOLIED PEDUCED BORE	
		TRIM 3 - 24 TRUNNION MOUNTED.	i
		ANTI STATIC BLOW- OUT PROOF STEM	
IN		FIRE SAFE TO B.S 6755/API 607/API 6FA	
	BODY MATERIAL	CAPBON STEEL FORGED - ASTM A105, OR CAST - ASTM A216 GR W(B	
	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TPIM S.STEEL, TYPE 316 OR C. STEEL WITH 0.003" ENP SEATS - NYLON OR PEINFORCED PTFE	
	VALVE OPERATOR	3" 10 4" - LEVER 6" 10 24" - BEVEL GEAR (WEATHERPROOF TYPE)	
	GLAND PACKING	MANUFACTURER'S STANDARD	
	BONNET GASKET	MANUFA(TURER'S STANDARD	
	BOLTING	STUDBOLTS ASTM A193 UP B7 (ADMIUM PLATED C/W NUTS ASTM A194 GR 2H CADMIUM PLATED	
	TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)	
	SERVICE CONDITIONS		
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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
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- 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 8. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 9. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 10. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 11. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LPADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 12. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

SIZE CONS BODY TRIM VALV BONN BOLT	TING AP. LIMITATIONS RVICE CONDITIONS	MANUFACTURER'S STANDARD MANUFACTURER'S STANDARD STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED (/W NUTS: ASTM A194 GR 2M (ADMIUM PLATED -29°C (-20°F) TO 150°C (300°F) EA2 ≤ 2° EA3 ≤ 2° EA4 ≤ 2° FA2 FA3 CLOUGH 583 Project D-COLAX GAS PROJECT	1
SIZE CONS BODY TRIM VALV BONN BOLT	TING AP. LIMITATIONS	HANUFACTURER'S STANDARD STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2H (ADMIUM PLATED -29°C (-20°F) TO 150°C (300°F) EA2 EA3 2° EA4 2°	
SIZE CONS BODY TRIM VALV BONN BOLT	TING AP. LIMITATIONS	HANUFACTURER'S STANDARD STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2H (ADMIUM PLATED -29°C (-20°F) TO 150°C (300°F) EA2 EA3 2°C	
SIZE CONS BODY TRIM VALV BONN BOLT	TING AP. LIMITATIONS	HANUFACTURER'S STANDARD STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2H (ADMIUM PLATED) -29°C (-20°F) TO 150°C (300°F) EA2 ≤ 2°	
SIZE CONS BODY TRIM VALV BONN BOLT	TING AP. LIMITATIONS	MANUFACTURER'S STANDARD STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED (/W NUTS: ASTM A194 GR 2M (ADMIUM PLATED -29°C (-20°F) TO 150°C (300°F)	
SIZE CONS BODY TRIM VALV BONN BOLT	TING AP. LIMITATIONS	MANUFACTURER'S STANDARD STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2M (ADMIUM PLATED	
SIZE CONS TRIM VALV GLAN BONN BOLT	.TINĠ	MANUFACTURER'S STANDARD STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED	
SIZE CONS BODY TRIM VALV GLAN BONN		MANUFACTURER'S STANDARD	
SIZE CONS TRIM VALV	NNET GASKET		
SIZE CONS BODY TRIM		HANDFACIUKER 5 STANDARU	
SIZE CONS BODY	AND PACKING	WARREST CHIREDIC CTANDADO	
SIZE CONS	LVE OPERATOR	2- TO 3 LEVER 4- TO 24- BEYEL GEAR (WEATHERPROOF TYPE)	
SIZE CONS	<u>M</u>	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 OR C. STEEL WITH 0.003" ENP. SEATS - NYLON OR REINFORCED PTFE	
SIZE CONS	OY MATERIAL	CARBON STEEL : FORGED - ASTM A105, OR CAST - ASTM A216 GR WCB	
END		: FIRE SAFE TO B.S. 6755/APL607/API 6FA	
END		3"- 24"; TRUNNION MOUNTED. : ANTI STATIK, BLOW- OUT PROOF STEM	
END		FULL BORE TRIM: 2": FLOATING BALL OR TRUNNION MOUNTED	
END	ISTRUCTION	BODY : BOLTED	
	E RANGE	2- 10 24-	
PRES	CONNECTIONS	FLANGED TO ANSI B16.5 RTJ	
	SSURE CLASS	ANSI 1500Ib	
VALV	LVE STANDARD	B.S. 53S1 OR API 60	
VALV	LVE TYPE	BALL - FULL BORE	

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ş		1				٦	Designed FLK	PIPING MATERIAL SPECIFICATION	
<u>ء</u> َ]	Project Engineer OTA	SP-00-L-0001 Str. 1 of 1	
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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080
- 3. VALVES TO BE FIRESAFE TO B.S. 6755

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- 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROMTHE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET. THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55.
 IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8.
 ALL SIZES 100% LPI
- 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS.

 AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 8. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 9. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 10. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 11. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 12. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - FULL BORE
	VALVE STANDARD	B.S. 5351 OR API 6D
	PRESSURE CLASS	ANSI 1500Ib
Ε	END CONNECTIONS	FLANGED TO ANSI B16.5 RTJ
ro	SIZE RANGE	2" TO 12"
	CONSTRUCTION	BODY : BOLTED FULL BORE
		TRIM: 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24"; TRUNNION MOUNTED.
ON		: ANTI STATIC, BLOW- OUT PROOF STEM : FIRE SAFE TO B.S. 6755/API.607/API 6FA
5	BODY MATERIAL	STAINLESS STEEL TO ASTM A-351 (F8M
	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 SEATS - REINFORCED PIFE
	VALVE OPERATOR	2" TO 3" - LEVER 4" TO 12"- BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED (/W NUTS: ASTM A194 GR4 CADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	FC

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¥					Supervisor	VALVE DATA SHEET FOR
8					Designed 22	PIPING MATERIAL SPECIFICATION
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		ЛМ	12/3/93 ISSUED FOR CONSTRUCTION.	MUE	App for Construction	DATA SHEET No. VALVE TAG NAL REV.
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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S.2080
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
- 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55.
 IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8.
 ALL SIZES 100% MPI
- 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 8. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 9. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY IE. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 10. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

 SQUARE STEM HEADS ARE NOT ACCEPTABLE.
- 11. WRENCH OPERATED VALVES ARE TO BE FITTED WITH STOPS AT THE FULLY OPENED AND FULLY CLOSED POSITIONS TO PREVENT THE BALL MOVING THROUGH MORE THAN 90 DEGREES. THESE STOPS MUST BE INTEGRAL WITH THE VALVE BODY. REMOVABLE STOPS AND/OR SPRING LOADED PINS WHICH DROP INTO HOLES AT THE OPEN OR CLOSED POSITION ARE NOT ACCEPTABLE.
- 12. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

								
	VALVE TYPE	BALL - REDUCED BORE						
	VALVE STANDARD	B.S. 5351 OR API 6D						
	PRESSURE CLASS	ANSI 15001b						
	END CONNECTIONS	FLANGED TO ANSI 816.5 RTJ						
۰.	SIZE RANGE	2- 10 24-						
	CONSTRUCTION	BODY : BOLTED REDUCED BORE						
		TRIM: 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24"; TRUNNION MOUNTED.						
		: ANTI STATIC, BLOW- OUT PROOF STEM						
N		: FIRE SAFE TO B.S. 6755/APL607/API 6FA						
	BODY MATERIAL	(ARBON STEEL : FORGED - ASTM A105, OR (AST - ASTM A216 GR W(B						
	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 OR C. STEEL WITH 0.003" ENP. SEATS - NYLON OR REINFORCED PTFE						
	VALVE OPERATOR	2" 10 3" - LEVER 4" 10 24"- BEVEL GEAR (WEATHERPROOF TYPE)						
	GLAND PACKING	MANUFACTURER'S STANDARD						
	BONNET GASKET	MANUFACTURER'S STANDARD						
	BOL TING	STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2M (ADMIUM PLATED						
	TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)						
	CEDVICE CONDITIONS							
	SERVICE CONDITIONS	EA2 ≤ 2"						
		EA3 ≤ 2"						
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ة	Ī			Project Engineer	SP-00-L-0001	. SHT. 1 DF 1
	Ī	o IN 143/93, ISSUED FOR CONSTRUCTION	14/	App for Construction	DATA SHEET No.	VALVE TAG No. REV.
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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080
- 3. VALVES TO BE FIRESAFE TO B.S. 6755
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- 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI
- 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 10. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 11. VALVE BODY SHALL BE DESIGNED TO WITHSTAND THE PRESSURE RELATIVE TO THE ANSI CLASS IN WHICH IT IS BEING USED. THE SELF-RELIEVING CHARACTERISTIC OF THE VALVE SHALL NOT BE TAKEN INTO ACCOUNT WHEN DESIGNING THE HYDRAULICS OF THE PIPING SYSTEM. ON NO ACCOUNT WILL THE ABILITY OF SOME BALL VALVES TO ENABLE THE BODY CAVITY TO BE VENTED WHILST THE LINE IS UNDER PRESSURE BE USED AS A BLOCK AND BLEED DEVICE. TWO VALVES WILL ALWAYS BE USED FOR SAFETY ie. CONVENTIONAL DOUBLE BLOCK AND BLEED. DEPARTURE FROM THIS DESIGN PHILOSOPHY SHALL ALWAYS BE APPROVED BY THE CHIEF PIPING ENGINEER.
- 12. WRENCH OPERATED VALVE STEM HEADS SHALL BE CIRCULAR WITH A KEY-WAY FOR ATTACHING THE WRENCH. CIRCULAR STEM HEADS WITH ONE OR TWO FLATS ARE ACCEPTABLE BUT IN EITHER CASE THE DESIGN MUST BE SUCH THAT THE WRENCH CANNOT BE INSTALLED IN A MANNER THAT ALLOWS THE BALL TO MOVE THROUGH MORE THAN 90 DEGREES.

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- 13. ALL VALVES ARE TO BE CAPABLE OF BEING LOCKED IN THE FULLY OPEN OR CLOSED POSITIONS.

	VALVE TYPE	BALL - REDUCED BORE
	VALVE STANDARD	B.S. 5351 OR API 60
	PRESSURE (LASS	ANSI 1500ib
:	END CONNECTIONS	FLANGED TO ANSI B16.5 RTJ
0	SIZE RANGE	2" 10 12"
	CONSTRUCTION	BODY : BOLTED REDUCED BORE
		TRIM: 2"; FLOATING BALL OR TRUNNION MOUNTED 3"- 24"; TRUNNION MOUNTED.
N		: ANTI STATK, BLOW- OUT PROOF STEM : FIRE SAFE TO B.S. 6755/APL607/API 6FA
	BODY MATERIAL	STAPLESS STEEL TO ASTM A-351 CF8M
	TRIM	BALL, STEM, SEAT HOLDER TRUNNION AND TRIM S.STEEL, TYPE 316 SEATS - REINFORCED PIFE
	VALVE OPERATOR	2" TO 3" - LEVER 4" TO 12"- BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	MANUFACTURER'S STANDARD
	BONNET GASKET	MANUFACTURER'S STANDARD
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED (/W NUTS: ASTM A194 GR 4 (ADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 150°C (300°F)
	SERVICE CONDITIONS	FC

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					Traced	CHOOLA (Link)	COAS PROJECT
		<u> </u>			Checked Supervisor	Engineering Group F2JRS a	& GAS DEVELOPHENT CORPORATION
3	-	-			Designed 22 K	VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION	
PE VIS		-			Project Engineer	SP-00-L-0001	SHT. 1 0F 1
	<u> </u>	/IH	12/3/93:SSUED FOR CONSTRUCTION.	41KZ	day for Construction	DATA SMEET No.	VALVE TAG No. REV.
	RE V	BY	DATE DESCRIPTION	CKO AF	Client Approved	DS-00-L-0093	F2JRS 0

VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1873 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 1501b 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" TO 8" SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND IN THIS DOCUMENT 0.S. & Y. TRIM : RENEWABLE PLUG TYPE DISC 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. RENEWABLE SEAT RING 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. BODY MATERIAL CARBON STEEL : CAST - ASTM A2% GR WCB 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. TRIM 13% CHROME (A182 GR F6 OR AISI 410, 416) 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED HARD FACED SEATS POSITIONS VALVE OPERATOR HANDWHEEL GLAND PACKING RENFORCED GRAPHITED ASSESTOS BONNET GASKET SPIRAL WOUND (S. STL.) BOLTING STUDBOLTS: ASTM A193 GR B7 (AOMIUM PLATED C/W NUTS : ASTM A194 GR 2H CADMIUM PLATED TEMP. LIMITATIONS -29°C (-20°F) TO 350°C (650°F) SERVICE CONDITIONS AA2 ΑG JIM 11.01.93 CLOUGH 583 DHOOME GAS PROJECT . CAD No. Engineering Group DE & GAS DEVELOPMENT COMPONATION ALRRO

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DESCRIPTION

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VALVE TAG No.

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VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0100

SP-00-L-0001

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VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD R.S. 1873 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH PRESSURE CLASS (6.3 TO 12.5 MICRO METRE) ROUGHNESS. ANSI 1501b 3. VALVES TO INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080. SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" 10 8" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO CONSTRUCTION BODY : BOLTED BONNET & GLAND MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO 0.S. & Y. IN THIS DOCUMENT. TRIM : RENEWABLE PLUG TYPE DISC 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. RENEWABLE SEAT RING 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS BODY MATERIAL CARBON STEEL LOW TEMP : CAST - ASTM A352 GR LCB AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. TRIM STAINLESS STEEL TYPE 316 HARD FACED SEATS 10. ALL VALVES 1" AND ABOVE ARE TO CAPABLE OF BEING LOCKED IN FULLY OPENED OR CLOSED POSITIONS. VALVE OPERATOR HANDWHEEL GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S. STL.) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED (/W NUTS : ASTM ATH GR 4 CADMUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS AB2 **CLOUGH** 583 (AD No. OL & GAS DEVELOPMENT CORPORATION Engineering Group AARRL

JTH 12/3/93 ISSUED FOR CONSTRUCTION.

DESCRIPTION

REV BY DATE

DHOOAK GAS PROJECT

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VALVE TAG MA

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VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHELT No.

DS-00-L-0101

SP-00-L-0001

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE_VALVE DATA SHEETS OR OTHER-APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55.
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS

П	WALVE TYPE	
	VALVE TYPE	GLOBE - STRAIGHT PATTERN
	VALVE STANDARD	B.S. 1873
	PRESSURE CLASS	ANSI 1501b
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
	SIZE RANGE -	2° TO 8°
0	CONSTRUCTION	BODY : BOLTED BONNET & GLAND 0.5. & Y.
		TRIM: RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING
N		
	BODY MATERIAL	STANLESS STEEL TO ASTM A-351 CF8M
	TRIM	STAINLESS STEEL TYPE 316 STELLITE FACED SEATS
	VALVE OPERATOR	HANDWHEEL
	GLAND PACKING	REINFORCED GRAPHITED ASBESTOS
	BONNET GASKET	SPIRAL WOUND (S.STL TYPE 316)
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED (/W NUTS: ASTM A194 GR4 (ADMIUM PLATEO
	TEMP. LIMITATIONS	-100°C (-150°F) TO 350°C (650°F)
	SERVICE CONDITIONS	
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REVISIONS		<u> </u>				Designed 42K
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DHODAK GAS PROJECT

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VALVE DATA SHEET FOR
PIPING MATERIAL SPECIFICATION
SP-00-L-0001

DATA SHEET HO.

DS-00-L-0102

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NOTES: VALVE TYPE GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1873 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 1501b 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI 816.10 OR 8.S. 2080 5:-MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" TO 8" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO | CONSTRUCTION BODY : BOLTED BONNET & GLAND, EXTENDED BONNET AND STEM IN THIS DOCUMENT 0.5. & Y. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM : RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% LPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CF8M TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION STAINLESS STEEL TYPE 316 STELLITE FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED VALVE OPERATOR HANDWHEEL POSITIONS 11. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF GLAND PACKING REINFORCED GRAPHITED ASBESTOS OR PTFE THE PRESSURE CLASS AND TEMPERATURES SHOWN. BONNET GASKET SPIRAL WOUND (S.STL TYPE 316) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMIUM PLATED TEMP, LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS AC

DWH 1/2/3/93 ISSUED FOR CONSTRUCTION

DESCRIPTION

CLOUGH Engineering Group	583 (AD No. ALRRU	Project DHOOAK (lient DHOOAK	GAS PROJECT GAS DEVELOPMENT CORPORATION
VALVE DATA SHEE	i		
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DATA SHEET No.			VALVE TAG Ma. : REV.
DS-00-L-	0104		A4RRU 0

OWH 9/3/93

VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED: MANUFACTURER'S CERTIFICATE OF COMPLIANCE. VALVE STANDARD B.S. 5154 2. VALVES TO INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS PN25 SERIES B 3. ALL VALVES 1" AND ABOVE ARE TO CAPABLE OF BEING LOCKED IN FULLY OPENED OR CLOSED POSITIONS END CONNECTIONS THREADED API 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE -RANGE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM 1/2" TO 2" THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY: UNION BONNET IN THIS DOCUMENT 5. CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 TRIM: METAL SEAT IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 B. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS BODY MATERIAL AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. BRONZE TO B.S.1400 LG2 TRIM BRONZE TO B.S. 1400 LG2 VALVE OPERATOR HANDWHEEL GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS -9°C (15°F) TO 100°C (200°F) SERVICE CONDITIONS AG CLOUGH DHODAK GAS PROJECT Engineering Group

ITH 123/73 ISSUED FOR CONSTRUCTION.

REV BY DATE

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VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0103

SP-00-L-0001

- 1. CERTIFICATES REQUIRED TO DIN S0049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55.
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SDCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY DPEN OR CLOSED POSITIONS

	VALVE TYPE	GLOBE - STRAIGHT PATTERN
	VALVE STANDARD	8.5. 1873
	PRESSURE CLASS	ANSI 300Ib
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
	SIZE RANGE	2" TO 8"
0	CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y.
		TRIM : RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING
N		•
	BODY MATERIAL	(ARBON STEEL : CAST - ASTM A216 GR W(B
	TRIM	13% CHROME (A182GR F6 OR AISI 410. 416) HARD FACED SEATS
	VALVE OPERATOR	HANDWHEEL
	GLAND PACKING	RENFORCED GRAPHITED ASSESTOS
	BONNET GASKET	SPIRAL WOUND (S.STL.)
	BOLTING	STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2H CADMUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	BAZ
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VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001

DS-00-L-0110

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Engineering Group

DATA SHEET No.

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VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1873 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 3001b 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" TO 8" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND IN THIS DOCUMENT 0.S. & Y. 6. ALL VALVE (ASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM : RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. BODY MATERIAL CARBON STEEL LOW TEMP : CAST - ASTM A3SZ GR LCB 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. TRIM STAINLESS STEEL TYPE 316 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED HARD FACED SEATS POSITIONS VALVE DPERATOR HANDWHEEL GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S.STL.) **BOLTING** STUDBOLTS : ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR4 CADMIUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS BB2 JTM 15.01.93 CLOUGH 583 DHODAK GAS PROJECT Engineering Group DE & GAS DEVELOPHENT (DRPORATION B4RRL VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION 9H7, 1 0F 1

ITH 123/93 ISSUED FOR CONSTRUCTION

DESCRIPTION

REV BY DATE

SP-00-L-0001

DATA SHEET No.

DS-00-L-0111

VALVE TAG No.

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NOTES: IN THIS DOCUMENT SIZES 12" AND ABOVE, 100% LPI POSITIONS

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS
- 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO
- 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8.
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.
- 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN DR CLOSED
- 11. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF THE PRESSURE CLASS AND TEMPERATURES SHOWN.

VALVE TYPE	GLOBE - STRAIGHT PATTERN
VALVE STANDARD	B.S. 1873
PRESSURE CLASS	ANSI 300Ib
END CONNECTIONS	FLANGED TO ANSI B16.5 RF
SIZE RANGE	2" TO 8"
CONSTRUCTION	BODY : BOLTED BONNET & GLAND, EXTENDED BONNET AND STEM, O.S. & Y.
	TRIM : RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING
BODY MATERIAL	STAMLESS STEEL TO ASTM A-351 CF8M
TRIM	STAINLESS STEEL TYPE 316 STELLITE FACED SEATS
VALVE OPERATOR	HANDWHEEL
GLAND PACKING	REINFORCED GRAPHITED ASBESTOS OR PIFE
BONNET GASKET	SPIRAL WOUND (S.STL. TYPE 316)
BOL TING	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED (/W NUTS: ASTM A194 GR (ADMIUM PLATED
TEMP. LIMITATIONS	-100°C (-750°F) TO 350°C (650°F)
SERVICE CONDITIONS	
	ВС
	PRESSURE CLASS END CONNECTIONS SIZE RANGE CONSTRUCTION BODY MATERIAL TRIM VALVE OPERATOR GLAND PACKING BONNET GASKET BOLTING TEMP. LIMITATIONS

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l۷				Supervisor (A)	VALVE DATA SHEET FOR
8				Designed 42	PIPING MATERIAL SPECIFICATION
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	REV	BY DATE DESCRIPTION	CKD \$	Client Approved	DS-00-L-0113 B4RRU 0

VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1873 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE (LASS ANSI 300lb 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" TO 8" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND 0.5. & Y. IN THIS DOCUMENT 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM : RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CF8M 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. TRIM STAINLESS STEEL TYPE 316 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED STELLITE FACED SEATS POSITIONS VALVE OPERATOR HANDWHEEL GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S.STL. TYPE 316) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED (/W NUTS : ASTM A194 GR 4 CADMUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS 38

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JTM 11.01.93

CLOUGH

Engineering Group

SP-00-L-0001

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHELT No.

DS-00-L-0112

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VALVE TAG MA

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NOTES: VALVE TYPE GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANS: 8001b 3. ALL VALVES 1" AND ABOVE ARE TO CAPABLE OF BEING LOCKED IN FULLY OPENED OR CLOSED POSITIONS END CONNECTIONS SOCKET WELD X THREADED TO ANSI B16.11 4. FOR FERRITIC STEELS INTENDED FOR WELDING . THE CARBON CONTENT SHALL BE 0.25% MAXIMUM SIZE RANGE AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM. 1/2" TO 1 1/2" THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA : CE = C + MN + 0.04 CONSTRUCTION BODY : BOLTED BONNET & GLAND 0.S. & Y. TRIM : PLUG TYPE DISC 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE RENEWABLE SEATS SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT BODY MATERIAL CARBON STEEL : FORGED + ASTM A105 NORMALISED 6. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION TRIM 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 DISC STEM & SEAT RINGS 316 ST. STEEL (OR AISI 410.416) HARD FACED SEATS 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION VALVE OPERATOR TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS HANDWHEEL AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S.STL.) **BOLTING** STUDBOLTS : ASTM A193 GR 87 CADMUM PLATED C/W HUTS : ASTM A194 GR 2H CADMIUM PLATED Δ TEMP. LIMITATIONS -29°C (-20°F) TO 200°C (400°F) SERVICE CONDITIONS AAZ BAZ DA2 EAG. JTM 1Let.73 CLOUGH 583 DHODAE GAS PROJECT Engineering Group OL & GAS DEVELOPMENT CORPORATION Checked GLK DAHRO Seperation SM VALVE DATA SHEET FOR Drawer GLK PIPING MATERIAL SPECIFICATION Project Engineer SHT. 1 OF 1 SP-00-L-0001 M-M-13 BOLING MATERIAL & TEMP. LIMITATIONS REVISED DATA SHELT No. VALVE TAG MA. OLK BY App for Construction BLJ JTM 10-43-13 ISSUED FOR CONSTRUCTION.

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DS-00-L-0120

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NOTES: VALVE TYPE GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 8001b 3. ALL VALVES 1" AND ABOVE ARE TO CAPABLE OF BEING LOCKED IN FULLY OPENED OR CLOSED POSITIONS END CONNECTIONS SOCKET WELD X THREADED TO ANSI 816.11 4. FOR FERRITIC STEELS INTENDED FOR WELDING. THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0,45% MAXIMUM. SIZE RANGE 1/2" TO 1 1/2" THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA CE = (+ MN + 0.04 CONSTRUCTION BODY : BOLTED BONNET & GLAND 6 0.5. & Y. TRIM : PLUG TYPE DISC 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE RENEWABLE SEATS SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT BODY MATERIAL CARBON STEEL LOW TEMP : FORGED - ASTM A350 GR LF? 6. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 DISC STEM & SEAT RINGS 316 ST. STEEL (OR AISI 410.416) HARD FACED SEATS B. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION VALVE OPERATOR TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS HANDWHEEL AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. GLAND PACKING REMFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S.STL.) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR4 (ADMUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS AB2 BB2 DB2 CLOUGH 583 DHOOME GAS PROJECT OL & GAS DEVELOPMENT CORPORATION Engineering Group D4HRL VALVE DATA SHEET FOR

ITH 12/3/93 ISSUED FOR CONSTRUCTION.

DESCRIPTION

REY BY DATE

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PIPING MATERIAL SPECIFICATION

DS-00-L-0121

DATA SHEET No.

SP-00-L-0001

NOTES: VALVE TYPE GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI BOOID 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS DR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM END CONNECTIONS SOCKET WELD X THREADED TO ANSI B16.11 THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO SIZE RANGE IN THIS DOCUMENT 1/2" TO 1 1/2" 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-SS. CONSTRUCTION IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION BODY : BOLTED BONNET & GLAND 0.S. & Y. 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 TRM : PLUG TYPE DISC RENEWABLE SEATS 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED BODY MATERIAL POSITIONS STAINLESS STEEL TO ASTM A-182 GR.316 TRIM STAINLESS STEEL TYPE 316 STELLITE FACED SEATS VALVE OPERATOR : HANDWHEEL GLAND PACKING RENFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S.STL. TYPE 316) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMUM PLATED TEMP. LIMITATIONS -100°((-150°F) TO 350°((650°F) SERVICE CONDITIONS AC ΒÇ DC JTM 11.01 93 CLOUGH DHOOME GAS PROJECT (AD Ha DE & GAS DEVELOPMENT (DEPORATION Engineering Group D4HRS

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VALVE TAG ML

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VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHELL No.

DS-00-L-0122

SP-00-L-0001

Project Engineer

App for Construction

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- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHDUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS
- 8. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF THE PRESSURE CLASS AND TEMPERATURES SHOWN.

	VALVE TYPE	GLOBE - STRAIGHT PATTERN
	VALVE STANDARD	B.S. 5352 OR API 602
Ę	PRESSURE_CLASS	ANSI 800Ib
1	END CONNECTIONS	SOCKET WELD X THREADED TO ANSI 816.11
ŦΟ	SIZE RANGE	1/2" 10 1 1/2"
	CONSTRUCTION	BODY : BOLTED BONNET & GLAND, EXTENDED BONNET AND STEM, O.S. & Y.
ION S		TRIM: PLUG TYPE DISC RENEWABLE SEATS
	BODY MATERIAL	STAINLESS STEEL TO ASTM A-182 GR.316
	<u>TRIM</u>	STAINLESS STEEL TYPE 316 STELLITE FACED SEATS
	VALVE DPERATOR	: HANDWHEEL
	GLAND PACKING	REINFORCED GRAPHIED ASBESTOS OR PTFE
	BONNET GASKET	SPIRAL WOUND (S.STL. TYPE 316)
	BOLTING	STUDBOLTS: ASTM A320 GR L7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR (ADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 350°C (650°F)
	SERVICE CONDITIONS	
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e							Supervisor (M)	VALVE DATA SHEET FOR	
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ş							Project Engineer Occi	SP-00-L-0001	SHT. 1 OF 1
1	0	DWH	12/3/93	KUTO FOR CONSTRUCTION	64		App for Construction	DATA SPEET No.	VALVE TAG No. REV.
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NOTES: 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI 7. FACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE DRDER.

10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED

POSITIONS

	VALVE TYPE	GLOBE - STRAKHT PATTERN
	VALVE STANDARD	B.S. 1973
	PRESSURE (LASS	ANSI 600lb
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
Ξ	SIZE RANGE	2" 10 6"
0	CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y.
		TRIM : RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING
) S	BODY MATERIAL	(ARBON STEEL': CAST - ASTM A216 GR WCB
	TRIM	13% CHROME (A182 GR F6 OR AISI 410, 416) HARD FACED SEATS
	VALVE OPERATOR	HANDWHEEL .
	GLAND PACKING	REINFORCED GRAPHITED ASBESTOS
	BONNET GASKET	SPIRAL WOUND (S.STL.) OR SOFT IRON RING JOINT
	BOLTING	STUDBOLTS : ASTM A193 GR B7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 2M CADMIUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	_
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VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1873 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH PRESSURE CLASS (6.3 TO 12.5 MICRO METRE) ROUGHNESS. ANSI 6001b 3. VALVES TO INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080. SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" 10 6" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO CONSTRUCTION BODY : BOLTED BONNET & GLAND MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO 0.S. & Y. IN THIS DOCUMENT. TRIM : RENEWABLE PLUG TYPE DISC 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. RENEWABLE SEAT RING IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI. 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 BODY MATERIAL CARBON STEEL LOW TEMP : CAST - ASTM A352 GR LCB 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAINLESS STEEL TYPE 316 HARD FACED SEATS 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR VALVE OPERATOR 2" TO 4" HANDWHEEL ON A PURCHASE ORDER. 6" BEVEL GEAR (WEATHERPROOF TYPE) 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPENED GLAND PACKING OR CLOSED POSITIONS. REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S.STL.) OR SOFT IRON RING JOINT BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR4 CADMUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS DB2 JIM 11.01.9) CLOUGH 583 DHODAK GAS PROJECT Engineering Group ON & GAS DEVELOPHENT CORPORATION m D4RRL VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001 947. 1 OF 1

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VALVE TAG No.

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DATA SHEET No.

DS-00-L-0124

App for Construction

VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO OIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1873 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH PRESSURE CLASS (6.3 TO 12.5 MICRO METRE) ROUGHNESS. ANSI 6001b 3. VALVES TO INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080. SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" 10 6" SPECIFICATION SHEFTS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO CONSTRUCTION BODY : BOLTED BONNET & GLAND MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO 0.S. & Y. IN THIS DOCUMENT. TRIM : RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI. 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CF8M 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAINLESS STEEL TYPE 316 STELLITE FACED SEATS 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR VALVE OPERATOR 2" TO 4" : HANDWHEEL ON A PURCHASE ORDER. 6" : BEVEL GEAR, WEATHERPROOF TYPE 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPENED GLAND PACKING RENFORCED GRAPHITED ASBESTOS OR CLOSED POSITIONS. BONNET GASKET SPIRAL WOUND (S.STL. TYPE 316) OR ST. STEEL, TYPE 316, RING JOINT BOL TING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR (ADMUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS DC JTM 11.01.93 CLOUGH 583 DHOOME GAS PROJECT D OL & GAS DEVELOPMENT CORPORATION Engineering Group D4RRS VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

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VALVE TAG No.

D4RRS

SP-00-L-0001

DATA SHELT No.

NOTES:

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1,6 FOR ALL PRESSURE CONTAINING PARTS
- 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS.
- 3. VALVES TO INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 4. FACE TO FACE DIMENSIONS SHALL CONFORM TD ANSI B16.10 OR B.S. 2080.
- 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIDR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT.
- ALL VALVE (ASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-5S.
 IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED WITH ANSI B16.34 SECTION 8.
 ALL SIZES 100% LPI.
- 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A
 SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR
 ON A PURCHASE ORDER.
- 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPENED OR CLOSED POSITIONS.
- 11. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF THE PRESSURE CLASS AND TEMPERATURES SHOWN.

	VALVE TYPE	GLOBE - STRAIGHT PATTERN
	VALVE STANDARD	B.S. 1873
	PRESSURE (LASS	ANSI 6001b
	END CONNECTIONS	FLANGED TO ANSI B16.5 RF
:	SIZE RANGE	2" 10 6"
0	CONSTRUCTION	BODY : BOLTED BONNET & GLAND, EXTENDED BONNET AND STEM, O.S. & Y.
		TRM: RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING
		·
N	BODY MATERIAL	STAMLESS STEEL TO ASTM A-351 CF8M
	TRIM	STAMLESS STEEL TYPE 316 STELLITE FACED SEATS
	VALVE OPERATOR	2" TO 4": HANDWHEEL 6": BEVEL GEAR, WEATHERPROOF TYPE
	GLAND PACKING	REINFORCED GRAPHITED ASBESTOS OR PIFE
	BONNET GASKET	SPRAL WOUND IS.STL. TYPE 316) OR ST. STEEL, TYPE 316, RING JOINT
	BOLTING	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED (/W NUTS: ASTM A194 GR4 CADMUM PLATED
	TEMP, LIMITATIONS	-100°C (-150°F) TO 350°C (650°F)
	SERVICE CONDITIONS	DC

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e l			Supervisor	VALVE DATA SHEET FOR	
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1. CERTIFICATES REQUIRED TO DIN S0049.3.1.6 FOR ALL PRESSU			VAL	VĘ S	TANDARD	B.S. 5352 OR	API 602		
Z. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WIT.			PRES	SUR	RE CLASS	ANSI 8001b			
 ALL VALVES 1" AND ABOVE ARE TO CAPABLE OF BEING LOC OR CLOSED POSITIONS 	LKCU IN FI	JEET OPENED	END	CON	NECTIONS	SOCKET WELD	TO ANSI R16 11		
 FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIM 		SHALL BE 0.25% MAXIMUM	SIZE	RAI	NGE		10 21131 010.11		
THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE		A : .	3.65	ICC	100	1/2" TO 1 1/2	•		-
CE = C + MN + 0.04			CONS	TRU	CTION	BODY : BOLTED		.ANO	
5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE N SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WA' MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE ST IN THIS DOCUMENT	WITHOUT	PRIOR WRITTEN APPROVAL FROM THE VENDORS OBLIGATION TO				TRIM : PLUG T RENEWA	YPE DISC BLE SEATS		
6. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORD IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION	DANCE WIT	H MSS-SP-5S	BODY	<u>r m/</u>	<u>ATERIAL</u>	CARBON STEEL	: FORGED - A	STM A105 NORMALISED	
7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDA	NCE WITH	MSS-SP-25	TRIM			DISC STEM & S		ST. STEEL (OR AISI 4	10.416)
B. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS T TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VAI AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VA	LVE TAG	NUMBER AND SIZE IN CHARACTERS	VAL	VE_C	PERATOR	HANDWHEEL			
			GLAN	ND P	PACKING	REINFORCED GR	APHITED ASBE	STOS	
			BONN	NET_	GASKET	SPIRAL WOUND	(S.STL.)		~~~
			BOLT	ING				B7 CADMUM PLATED 2H CADMIUM PLATED	<u>A</u>
			TEMP	P. LI	MITATIONS &	-29°C (-20°F)	70 200℃ (4007	F)	, , , , ,
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\\ \frac{\gamma}{\gamma} \rightarrow \rightarrow \frac{\gamma}{\gamma} \rightarrow \rightarrow \frac{\gamma}{\gamma} \rightarrow \qq	RN 64-16-53	BOLTING MATERIAL AND TEMP. LIMITATIONS REVISED	12007		brolect Eudineau DVI	SP-00-L	1A I EKIAL :	SPECIFICATION	SHT. 1 OF 1
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RY	BY DATE	DESCRIPTION	000	47	Sient Approved		DS-00-L-	0126	D4ZRC

VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 800Ib 3. ALL VALVES 1" AND ABOVE ARE TO CAPABLE OF BEING LOCKED IN FULLY OPENED OR CLOSED POSITIONS END CONNECTIONS SOCKET WELD TO ANSI B16.11 4. FOR FERRITIC STEELS INTENDED FOR WELDING. THE CARBON CONTENT SHALL BE 0.25% MAXIMUM SIZE RANGE AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM. 1/2" TO 1 1/2" THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA CONSTRUCTION (E = C + MN + 0.04 BODY : BOLTED BONNET & GLAND 0.S. & Y. TRIM : PLUG TYPE DISC 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR DTHER APPLICABLE RENEWABLE SEATS SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT BODY MATERIAL CARBON STEEL LOW TEMP : FORGED - ASTM A350 GR LF2 6. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION TRIM 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 DISC STEM & SEAT RINGS 316 ST. STEEL HARD FACED SEATS 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION VALVE OPERATOR TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS HANDWHEEL AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S.STL.) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMIUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS AB2 BB2 DB2 JTM 11.01.91 CLOUGH 583 DHODAK GAS PROJECT CAD No. Engineering Group (A) OL & GAS DEVELOPHENT CORPORATION DAZRL VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SH7. 1 0F 1 SP-00-L-0001 DATA SHEET No. VALVE TAG MAL

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VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 800Ib 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM END CONNECTIONS SOCKET WELD TO ANSI B16.11 THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO SIZE RANGE IN THIS DOCUMENT 1/2" TO 1 1/2" 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. CONSTRUCTION BODY : BOLTED BONNET & GLAND IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION 0.S. & Y. 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 TRIM : PLUG TYPE DISC RENEWABLE SEATS 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED BODY MATERIAL POSITIONS STAPLESS STEEL TO ASTM A-182 GR.316 TRIM STAILESS STEEL TYPE 316 STELLITE FACED SEATS VALVE OPERATOR : HANDWHEEL GLAND PACKING RENFORCED GRAPHITED ASBESTOS BONNET GASKET SPIRAL WOUND (S.STL. TYPE 316) **BOLTING** STUDBOLTS : ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR 4 CADMIUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS AC BC DC CLOUGH DHOOAK GAS PROJECT Engineering Group OR & GAS DEVELOPMENT COMPONATION D4ZRS

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VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0128

SP-00-L-0001

Project Engineer & Africa

App for Construction

VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 800Lb 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM END CONNECTIONS SOCKET WELD TO ANSI B16.11 THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES DE THE STANDARDS AND SPECIFICATIONS REFERRED TO SIZE RANGE 1/2" TO 1 1/2" IN THIS DOCUMENT 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH HSS-SP-55. CONSTRUCTION BODY : BOLTED BONNET & GLAND, EXTENDED BONNET AND STEM IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION 0.S. & Y. 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 TRPM : PLUG TYPE DISC RENEWABLE SEATS 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED BODY MATERIAL POSITIONS STAINLESS STEEL TO ASTM A-182 GR.316 8. THESE VALVES ARE TO BE SUITABLE FOR OPERATION IN CRYOGENIC SERVICE TO THE LIMITS OF THE PRESSURE CLASS AND TEMPERATURES SHOWN. TRIM STAINLESS STEEL TYPE 316 STELLITE FACED SEATS VALVE_OPERATOR : HANDWHEEL GLAND PACKING REINFORCED GRAPHITED ASBESTOS OR PTFE BONNET GASKET SPIRAL WOUND (S.STL. TYPE 316) **BOLTING** STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED (/W NUTS : ASTM A194 GR 4 (ADMUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS AC BC DC DWH 9/3/93 CLOUGH 583 DHODAK GAS PROJECT OL & GAS DEVELOPMENT COMPORATION Engineering Group D4ZRU

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VALVE TAG No.

D4ZRU

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0130

SP-00-L-0001

NOTES:	VALVE TYPE	GLOBE - STRAIGHT PATTERN
1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS	VALVE STANDARD	B.S. 1873
2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS	PRESSURE CLASS	ANSI 9001b
3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146		eval A0010
4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI 816.10 OR 8.S. 2080	END CONNECTIONS	FLANGED TO ANSI B16.5 RTJ
5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO	SIZE RANGE	3" 10 6"
MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT	CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y.
6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI		TRIM : RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING
7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25	.	
8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.	BODY MATERIAL	CARBON STEEL : CAST - ASTM A2% GR WCB
9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER.	TRIM	13% CHROME (A182 GR F6 OR AISI 410, 416) HARD FACED SEATS
10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS	VALVE OPERATOR	3" TO 4" HANDWHEEL
FUSITIONS		6" BEVEL GEAR (WEATHERPROOF TYPE)
	GLAND PACKING	REMFORCED GRAPHITED ASSESTOS
	BDNNET GASKET	SOFT IRON RING JOINT
	BOLTING	STUDBOLTS: ASTM A193 GR B7 CADMIUM PLATED C/W NUTS: ASTM A194 GR 2H CADMIUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	
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	Checked Control Supervisor	Engineering Group ELIRC OR & GAS DEVELOPMENT COMPONATION
3564	Designed LLK	VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION
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NOTES:

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS
- 8. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE (ARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM

THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA :

CE = C + MN/6 + 0.04

	VALVE TYPE	GLOBE - STRAIGHT PATTERN	
	VALVE STANDARD	B.S. 5352 OR API 602	-
	PRESSURE CLASS	ANSI 1500Ib	
	END CONNECTIONS	SOCKET WELD X THREADED TO ANSI \$16.11	
0	SIZE RANGE	1/2" TO 1 1/2"	
	<u>CONSTRUCTION</u>	BODY : BOLTED BONNET & GLAND O.S. & Y.	
N		TRIM: PLUG TYPE DISC RENEWABLE SEATS	
		•	
	BODY MATERIAL	CARBON STEEL : FORGED - ASTM A105 NORMALISED	
	TRIM	DISC, STEM & SEAT RINGS 13% CHROME (OR AISI 410.416) HARD FACED SEATS	
	VALVE OPERATOR	HANDWHEEL	_
	GLAND PACKING	RENFORCED GRAPHITED ASBESTOS	
	BONNET GASKET	SPIRAL WOUND (S. STL.) OR SDFT IRON RING JOINT	
	BOLTING	STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2H (SF) (ADMIUM PLATED	
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)	
	SERVICE CONDITIONS	EA2 EA3 EA4 FA2 FA3	
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						Traced	CLOUGH 583 DOOM GAS PROJECT
						Chicked days	Engineering Group (AL) No. (September 1) OR & GAS DEVILOPMENT (CORPORATION
æ	1			1 1		Supervisor //	VALVE DATA SHEET FOR
ANSION	1					Designed 4LK	PIPING MATERIAL SPECIFICATION -
2	1	İ				Project Engineer OT	SP-00-L-0001 SHT. 1 OF 1
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VALVE TYPE NOTES: GLOBE - STRAIGHT PATTERN 1. CERTIFICATES-REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1873 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 1500Ib 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI B16.5 RTJ 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" 10 6" SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND IN THIS DOCUMENT 0.S. & Y. 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM - RENEWABLE PLUG TYPE DISC RENEWABLE SEAT RING IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL CARBON STEEL : CAST - ASTM A216 GR WCB TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION 13% CHROME (A182 GR F6 OR AISI 410.416) HARD FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED VALVE OPERATOR 2" TO 4" HANDWHEEL POSITIONS 6" BEVEL GEAR (WEATHERPROOF TYPE) GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET SOFT IRON RING JOINT **BOLTING** STUDBOLTS : ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS : ASTM A194 GR 2H CADMIUM PLATED TEMP. LIMITATIONS -29°C (-20°F) TO 350°C (650°F) SERVICE CONDITIONS EA2 ≤ 2" EA3 € 2" EA4 € 2' FA2 FA3 J.W. 14.01.93 583 DHOOAK GAS PROJECT (A) OL & GAS DEVELOPHENT CORPORATION Engineering Group F4JRC VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001 SHT. 1 0F 1

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DESCRIPTION

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DATA SHEET No.

NOTES: VALVE TYPE GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 1873 2. CONTACT FACES OF FLANGES TO BE 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS PRESSURE CLASS ANSI 15001b 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 END CONNECTIONS FLANGED TO ANSI 816.5 RTJ 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO ANSI B16.10 OR B.S. 2080 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE 2" TO 6" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : BOLTED BONNET & GLAND 0.S. & Y. IN THIS DOCUMENT TRIM : RENEWABLE PLUG TYPE DISC 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-SS. RENEWABLE SEAT RING IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CF8M TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM STAINLESS STEEL TYPE 316 9. THE WELDING OF FLANGES ONTO SOCKET WELD OR BUTTWELD END VALVES TO MEET A SPECIFICATION STELLITE FACED SEATS FOR FLANGED VALVES IS NOT ACCEPTABLE UNLESS SPECIFICALLY CALLED FOR ON A PURCHASE ORDER. VALVE OPERATOR 10. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED 2" TO 4" HANDWHEEL POSITIONS 6" BEVEL GEAR (WEATHERPROOF TYPE) GLAND PACKING REINFORCED GRAPHITED ASBESTOS BONNET GASKET STANLESS STEEL TYPE 316 OVAL RING JOINT BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GRA CADMUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS FC CLOUGH 583 DHODAK GAS PROJECT Traced CAD No. Engineering Group () OIL & GAS DEVELOPMENT CORPORATION F4JRS VALVE DATA SHEET FOR

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VALVE TAG ML

F4JRS

PIPING MATERIAL SPECIFICATION

DS-00-L-0142

DATA SHEET No.

SP-00-L-0001

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NOTES:

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT
- 4. ALL VALVE FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION
- 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.
- 7. ALL VALVES 1" AND ABOVE ARE TO BE CAPABLE OF BEING LOCKED IN FULLY OPEN OR CLOSED POSITIONS
- 8. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM

THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA :

CE = .C . MN/6 . 0.04

	VALVE TYPE	GLOBE - STRAIGHT PATTERN
	VALVE STANDARD	B.S. 5352 OR API 602
	PRESSURE CLASS	ANSI 1500Ib
	END CONNECTIONS	SOCKET WELD TO ANSI B16.11
0	SIZE RANGE	1/2" TO 1 1/2"
	CONSTRUCTION	BODY : BOLTED BONNET & GLAND O.S. & Y.
N		TRIM : PLUG TYPE DISC RENEWABLE SEATS
	BODY MATERIAL	CARBON STEEL : FORGED - ASTM A10S NORMALISED
	TRIM	DISC, STEM \$ SEAT RINGS 13% (HROME (OR AISI 410.416) HARD FACED SEATS
	VALVE OPERATOR	HANDWHEEL
	GLAND PACKING	RENFORCED GRAPHITED ASBESTOS
	BONNET GASKET .	SPIRAL WOUND (S. STL.) OR SOFT IRON RING JOINT
	BOL TING	STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED (/W NUTS: ASTM A194 GR 2M (SF) (ADMIUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	EA2 EA3 EA4 FA2 FA3

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RE VISIONS	_		-				Supervisor (A) Designed 44 LK	VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION	
٤							Project Engineer ON	SP-00-L-0001 DATA SPEET No.	947. 1 OF 1
	9	ΙΨ	777	SISSUED FOR CONSTRUCTION	414	4	App for Construction Client Approved	DS-00-L-0143	FAZRC 0
	REY	BY	DATE	DESCRIPTION	(KD	_#PP	14114		F42RL 0

NOTES: VALVE TYPE GLOBE - STRAIGHT PATTERN 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S. 5352 OR API 602 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH B.S. 5146 PRESSURE CLASS ANSI 1500Ib 3. ALL VALVES 1" AND ABOVE ARE TO CAPABLE OF BEING LOCKED IN FULLY OPENED OR CLOSED POSITIONS END CONNECTIONS SOCKET WELD TO ANSI B16.11 4, MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SIZE RANGE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM 1/2" TO 1 1/2" THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION IN THIS DOCUMENT BODY : BOLTED BONNET & GLAND 0.S. & Y. 5. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 TRIM : RENEWABLE PLUG TYPE DISC IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION RENEWABLE SEAT RING 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS BODY MATERIAL AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. STAINLESS STEEL TO ASTM A-182 GR 316 TRIM STAINLESS STEEL TYPE 316 STELLITE FACED SEATS VALVE OPERATOR HANDWHEEL GLAND PACKING RENFORCED GRAPHITED ASSESTOS BONNET GASKET SPIRAL WOUND (5,STL. TYPE 316) OR STAINLESS STEEL TYPE 316 RING JOINT BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED (/W NUTS : ASTM A194 GR 4 (ADMIUM PLATED TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS FC J.W. 14.01.9) 583 CLOUGH DHOOAK GAS PROJECT Traced

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DE & GAS DEVELOPMENT CORPORATION

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VALVE TAG No.

F4ZRS

Engineering Group

SP-00-L-0001

Project Engineer

App for Construction

BJ#

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET HO.

DS-00-L-0144

F4ZRS

VALVE TYPE NOTES: CHECK (WAFER) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD API 594 2. CONTACT FACES OF FLANGES TO 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS. PRESSURE CLASS ANSI 1501b 3. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594 END CONNECTIONS TO SUIT ANSI B16.5 RF 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM SIZE RANGE THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO 2" TO 24" MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT. CONSTRUCTION BODY : WAFER TYPE 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. TRM : METAL TO METAL SEAT SIZES 12" AND ABOVE, 100% MPI. DUAL PLATE 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS BODY MATERIAL LOW TEMP CARBON STEEL: CAST ASTM A352 GR LCB AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM - ST. STEEL TYPE 316 OR 410 8. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS. 5146. TRIM DISCS - ASTM A352 GR LCB SPRING - INCONEL X VALVE OPERATOR NONE GLAND PACKING NONE **BONNET GASKET** NONE **BOLTING** NONE TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS AB2 JTM 11.01.93 583 CLOUGH DHODAK GAS PROJECT reced OR & GAS DEVELOPMENT CORPORATION Engineering Group A5RWL VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SHT. 1 0F 1 SP-00-L-0001

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VALVE TAG HA.

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REY.

DATA SHEET No.

VALVE TYPE NOTES: CHECK (WAFER) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD API 594 2. CONTACT FACES OF FLANGES TO 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS. PRESSURE CLASS ANSI 1501b 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. END CONNECTIONS TO SUIT ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594 SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" 10 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION BODY : WAFER TYPE IN THIS DOCUMENT. TRM: HETAL TO METAL SEAT 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. DUAL PLATE IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE 100% LPI. 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CF8M TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM - ST. STEEL TYPE 316 TRIM DISCS - ASTH A-351 CF8M SPRING - INCONEL X VALVE OPERATOR NONE GLAND PACKING NONE BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS AC JTM 11.01.93 CLOUGH DHODAK GAS PROJECT Engineering Group DE & GAS DEVELOPMENT CORPORATION A5RWS VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001

JTH 12/3/3 ISSUED FOR CONSTRUCTION

DESCRIPTION

PEV BY DATE

VALVE TAG No.

ASRWS

DATA SHEET No.

NOTES: VALVE TYPE CHECK (HORIZONTAL) 1. CERTIFICATES REQUIRED : MANUFACTURER'S CERTIFICATE OF COMPLIANCE. VALVE STANDARD B.S. 5154 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. PRESSURE CLASS PN.25 SERIES B. 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM END CONNECTIONS THREADED API THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO SIZE RANGE_ IN THIS DOCUMENT. 1/2" TO 2" 4. CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-SS. CONSTRUCTION BODY : SCREWED CAP IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-2S. TRIM : LIFT CHECK TYPE 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. BODY_MATERIAL BRONZE TO B.S.1400 LG? TRIM BRONZE TO B.S.1400 LG2 VALVE OPERATOR NONE GLAND PACKING NONE BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS -9°C (15°F) TO 100°C (200°F) SERVICE CONDITIONS AG JTH 1101.9) 583 CLOUGH DHOOM GAS PROJECT

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VALVE TAG MA

ASSLB

Engineering Group

SP-00-L-0001

Project Engineer The

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0152

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NOTES:	VALVE_TYPE	CHECK (WAFER)
1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS	VALVE STANDARD	API 59L
2. CONTACT FACES OF FLANGES TO 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS.	PRESSURE CLASS	ANSI 1501b
3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146.	END CONNECTIONS	TA CHIE LUCK BU E OC
4. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594.		TO SUIT ANSI B16.5 RF
5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO		2- 10 '24-
MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT.	CONSTRUCTION	BODY: WAFER TYPE
6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% MPI.		TRM: METAL TO METAL SEAT DUAL PLATE
7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25.		
8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS		CARBON STEEL : CAST ASTM - AZ% GR WCB
AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.	TRIM	TRM - ST. STEEL TYPE 316 OR 410 DISCS - ASTM A-216 GR WCB SPRING - INCONEL X
	VALVE OPERATOR	NONE
	GLAND PACKING	HONE
	BONNET GASKET	NONE
	BOLTING	NONE
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	AA2
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	Drawn JTM 11.01.	CLOUGH 583 DOOM GAS PROSECT
	Checked Superview (Bon)	Engineering Group ASRWC (1997) OL 2 GAS DEVELOPMENT COMPONATION VALVE DATA SHEET FOR
S	Designed LLK	PIPING MATERIAL SPECIFICATION
¥	Project Engineer	SP-00-L-0001 SHT. 1 OF 1 OATA SHEET No. VALVE TAG No. PEV.
o JIM 12373 ISSUED FOR CONSTRUCTION. REY BY 647E DESCRIPTION	CKD App Client Approved	DS-00-L-0153 A5RWC 0

NOTES: VALVE TYPE CHECK - BALL VALVE STANDARD MANUFACTURER'S STD 1. CERTIFICATES REQUIRED, MANUFACTURER'S CERTIFICATE OF COMPLIANCE PRESSURE_CLASS 125 LB CWP 2. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS. END CONNECTIONS SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL SOCKET WELD FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION SIZE RANGE 1/2" TO 3" TO MEET THE REQUIREMENTS OF THE LATEST ISSUE OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT. CONSTRUCTION 3. EACH VALVE SHALL BE MARKED IN ACCORDANCE WITH MSS-SP-25. BODY : UNION BODY 4. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL TRIM : EDPM/VITON 'D' RING SEALS TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND SECURELY ATTACHED TO THE VALVE WITH STAINLESS STEEL WIRE. BODY MATERIAL PVC TYPE 1, GRADE 1 (ASTH D.1784) TRIM PVC TYPE 1, GRADE 1 (ASTM 0.1784) VALVE OPERATOR NONE GLAND PACKING NONE **BONNET GASKET** NONE BOL TING NDNE TEMP. LIMITATIONS 32°F (0°C) TO 110°F (43°C) SERVICE CONDITIONS JTM 11291 583 CLOUGH DHODAK GAS PROJECT OL & GAS DEVELOPMENT CORPORATION Engineering Group A52BP VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001

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DESCRIPTION

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DATA SHEET He.

NOTES:	VALVE TYPE	CHECK (WAFER)
1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS		
2. CONTACT FACES OF FLANGES TO 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS.	VALVE STANDARD	API 594
3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146.	PRESSURE CLASS	ANSI 300Ib
	END CONNECTIONS	TO SUIT ANSI B16.5 RF
4. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594. 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE	SIZE RANGE	
SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM	Sie Million	2- 10 24-
THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT.	CONSTRUCTION	BODY : WAFER TYPE
 ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% MPI. 		TRIM: METAL TO METAL SEAT DUAL PLATE
7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25.	·	·
8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS	BODY MATERIAL	CARBON STEEL : CAST ASTM - AZW GR WCB
AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.	TRIM	TRM - ST. STEEL TYPE 316 OR 410.
		DISCS - ASTM A-216 GR WCB SPRING - INCONEL X
	VALVE OPERATOR	NONE
	GLAND PACKING	NONE .
	BONNET GASKET	NONE
	BOLTING	NONE
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	
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	Drawn JTM (1.01.7)	CLOUGH 583 Project D-DOM CAS PROJECT
	Checked Section	Engineering Group CAD No. BSRWC CHIEFT OFF OR A GAS OLVELOPMENT COMPORATION
ğ	Supervicer Designed LLK	VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION
NA NA NA NA NA NA NA NA NA NA NA NA NA N	Project Engineer ON	SP-00-L-0001 ST. 1 OF 1 Data Sect 160. SALVE 1AG No. REV.
o JIH 12/3/53 ISSUED FOR CONSTRUCTION. REV BY DATE DESCRIPTION	CKD KPP [Gent Approved	DS-00-L-0160 BSRWC 0

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NOTES: 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS 2. CONTACT FACES OF FLANGES TO 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS. 3. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594. 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABL SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED IN THIS DOCUMENT. 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-5S. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE 100% MPI. 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATI TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 8. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS. 5146.

	VALVE TYPE	CHECK (WAFER)
	VALVE STANDARD	API 594
	PRESSURE CLASS	ANSI 300lb
SLE	END CONNECTIONS	TO SUIT ANSI B16.5 RF
М. ТО	SIZE RANGE	2- 10 24-
	CONSTRUCTION	BODY : WAFER TYPE
		TRM: METAL TO METAL SEAT DUAL PLATE
NOI		
RS .	BODY MATERIAL	LOW TEMP CARBON STEEL : CAST ASTM A352 GR LCB
	TRIM	TRM - ST. STEEL TYPE 316 OR 410 DISCS - ASTM A352 GR LCB SPRING - INCONEL X
	VALVE OPERATOR	NONE
	GLAND PACKING	NONE .
	BONNET GASKET	NONE
	BOLTING	NONE
	TEMP. LIMITATIONS	-46°C (-50°F) TO 200°C (400°F)
	SERVICE CONDITIONS	

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REV BY DATE

CLOUGH Engineering Group

Project Engineer

583 BSRWL

DHOOME GAS PROJECT DE & GAS DEVELOPMENT CORPORATION

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001

DATA SHEET No.

SHT, 1 0F 1 YALVE TAG Me. REV. DS-00-L-0161 **BSRWL**

VALVE TYPE NOTES: CHECK (WAFER) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD API 594 2. CONTACT FACES OF FLANGES TO 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS. PRESSURE CLASS ANSI 300Ib 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. END CONNECTIONS TO SUIT ANSI B16.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594. SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" 10 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO | CONSTRUCTION BODY : WAFER TYPE IN THIS DOCUMENT. TRIM : METAL TO METAL SEAT 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. DUAL PLATE IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. SIZES 12" AND ABOVE, 100% LPI. 7, EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. BODY MATERIAL 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION STAINLESS STEEL TO ASTM A-351 CF8M TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM - ST. STEEL TYPE 316 TRIM DISCS - ASTM A-351 CF8M SPRING - INCONEL X VALVE OPERATOR NONE GLAND PACKING NONE BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS ВС 583 CLOUGH DHOOME GAS PROJECT Engineering Group B5RWS 41 VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

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VALVE TAG Me.

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SP-00-L-0001

DATA SHEET No.

NOTES:	VALVE TYPE	CHECK (WAFER)
1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS	VALVE STANDARD	API 594
2. CONTACT FACES OF FLANGES TO 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS.	PRESSURE CLASS	ANSI 6001b
3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146.	END CONNECTIONS	TA CHE ANGLOW COF
4. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594.	<u> </u>	TO SUIT ANSI B16.5 RF
5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE - SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO	SIZE RANGE CONSTRUCTION	2" TO 24" BODY : WAFER TYPE
IN THIS DOCUMENT.		
6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% MPI.		TRM: METAL TO METAL SEAT DUAL PLATE
7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25.		
8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS	BODY MATERIAL	CARBON STEEL : CAST ASTM - A216 GR WCB
AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.	TRIM	TRM - ST. STEEL TYPE 316 OR 410 DISCS - ASTM A-216 GR WCB SPRING - INCONEL X
	VALVE OPERATOR	NONE
	GLAND PACKING	NONE
	BONNET GASKET	NONE
•	BOLTING	NONE
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
1 •	SERVICE CONDITIONS	DA2
		DA3
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	Drawn JTM 11.01.93	CLOUGH 583 Project DHODAX GAS PROJECT
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8	Supervitor (5)	VALVE DATA SHEET FOR
· · · · · · · · · · · · · · · · · · ·	Project Engineer On	PIPING MATERIAL SPECIFICATION SP-00-L-0001
a - 12/3/7 ISSUED FOR CONSTRUCTION	ALEST App for Construction	DATA SPEET No. VALVE TAG No. REV.
PEV BY DATE DESCRIPTION	CKD A Client Appraved	DS-00-L-0170 D5RW(0

mUTES: VALVE TYPE CHECK (WAFER) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD API 594 2. CONTACT FACES OF FLANGES TO 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS. PRESSURE CLASS ANSI 600Ib 3. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594. END CONNECTIONS TO SUIT ANSI B16.5 RF 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM SIZE RANGE THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO 2" 10 24" MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT. CONSTRUCTION BODY : WAFER TYPE 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. TRIM : METAL TO METAL SEAT ALL SIZES 100% MPI. DUAL PLATE 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS BODY MATERIAL LOW TEMP CARBON STEEL : CAST ASTM A352 GR LCB AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. 8. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS. 5146. TRIM - ST. STEEL TYPE 316 OR 410 TRIM DISCS - ASTM A352 GR LCB SPRING - INCONEL X VALVE OPERATOR NONE GLAND PACKING NONE **BONNET GASKET** NONE **BOLTING** NONE TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS DB2 CLOUGH 583 DHODAK GAS PROJECT (AD No.

ITH 12/3/3 ISSUED FOR CONSTRUCTION.

DESCRIPTION

REY BY DATE

CAL & GAS DEVELOPMENT CORPORATION

SHT. 1 OF 1

VALVE TAG No.

D5RWL

Engineering Group

SP-00-L-0001

VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET HA.

DS-00-L-0171

D5RWL

VALVE TYPE NOTES: CHECK (WAFER) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD API 594 2. CONTACT FACES OF FLANGES TO 250 TO 500 MICRO INCH (6.3 TO 12.5 MICRO METRE) ROUGHNESS. PRESSURE CLASS ANSI 600th 3. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. END CONNECTIONS TO SUIT ANSI 816.5 RF 4. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594. SIZE RANGE 5. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE 2" TO 24" SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO CONSTRUCTION MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO BODY : WAFER TYPE IN THIS DOCUMENT. TRIM : METAL TO METAL SEAT 6. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. DUAL PLATE IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. ALL SIZES 100% LPI. 7. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. BODY MATERIAL 8. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION STAINLESS STEEL TO ASTH A-351 CFBM TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM - ST. STEEL TYPE 316 TRIM DISCS - ASTM A-351 CF8M SPRING - INCONEL X VALVE OPERATOR NONE GLAND PACKING NONE BONNET GASKET NONE BOLTING NONE TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS DC Drawn JTM 11.01.93 583 CLOUGH DHODAK GAS PROJECT OL & GAS DEVELOPMENT CORPORATION Engineering Group D5RWS VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SP-00-L-0001 SHT. 1 0F 1 DATA SHEET No. VALVE TAG Me.

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NOTES: 1. CERTIFICA 2. VALVES 3. FOR FERI

- 1. CERTIFICATES REDUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146.
- 3. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM.

THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA

- 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT.
- 5. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION.
- 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25.
- 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.

	VALVE TYPE	CHECK (HORIZONTAL)
	VALVE STANDARD	B.S.5352
	PRESSURE CLASS	ANSI 800Ib
	END CONNECTIONS	SOCKET WELD TO ANSI 816.11
	SIZE RANGE	1/2" TO 1 1/2"
	CONSTRUCTION	BODY : BOLTED COVER
0		TRIM: PISTON TYPE RENEWABLE SEATS
		· ·
	BODY MATERIAL	CARBON STEEL : FORGED ASTM A105 NORMALISED
N	TRIM	DISC, STEM & SEAT RINGS 13% CHROME HARD FACED SEATS
	VALVE OPERATOR	NONE
	GLAND PACKING	NONE
	BONNET GASKET	SPIRAL WOUND (S. STL.)
	BOL TING	STUDBOLTS: ASTM A193 GR B7 (ADMIUM PLATED C/W NUTS: ASTM A194 GR 2H (ADMIUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 350°C (650°F)
	SERVICE CONDITIONS	
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1	" -	<u> </u>	ITH 121	te fre	SSUED FOR CONSTRUCTION	 ZZK	9	Age for (enstruction	DATA SPEET No.	VALVE TAG No REV.
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VALVE TYPE NUTES: CHECK (HORIZONTAL) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S.5352 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. PRESSURE CLASS ANSI 800Ib 3. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM. END CONNECTIONS SOCKET WELD TO ANSI B16.11 THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA SIZE RANGE 1/2" TO 1 1/2" CE = C + MN + 0.04 CONSTRUCTION BOOY : BOLTED COVER 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM TRIM : PISTON TYPE THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO RENEWABLE SEATS MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT. 5. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION. BODY MATERIAL CARBON STEEL LOW TEMP : FORGED ASTM A350 GR LF2 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-2S. 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION DISC. STEM & SEAT RINGS 316 ST. STEEL TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS HARD FACED SEATS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. VALVE OPERATOR NONE GLAND PACKING NONE BONNET GASKET SPIRAL WOUND (S. STL.) BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR4 CADMIUM PLATED TEMP. LIMITATIONS -46°C (-50°F) TO 200°C (400°F) SERVICE CONDITIONS AB2 BB2 DB2 JTM 11.01.9) CLOUGH DE E GAS DEVELOPMENT CORPORATION Engineering Group D5ZPL 1

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DHOOAK GAS PROJECT

VALVE TAG No.

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VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

DATA SHEET No.

DS-00-L-0175

SP-00-L-0001

VALVE TYPE JTES: CHECK (HORIZONTAL) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.6 FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S.53S2 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. PRESSURE CLASS ANSI 8001b 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE END CONNECTIONS SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM SOCKET WELD TO ANSI B16.11 THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO SIZE RANGE MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO 1/2" TO 1 1/2"* IN THIS DOCUMENT. 4. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 CONSTRUCTION BODY : BOLTED COVER IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION. S. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. TRIM : PISTON TYPE RENEWABLE SEATS 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. BODY MATERIAL STAPLESS STEEL TO ASTM A-182 GR.316 STAINLESS STEEL TYPE 316 VALVE OPERATOR NONE GLAND PACKING NONE BONNET GASKET SPIRAL WOUND (S. STL. TYPE 316) BOLTING STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS : ASTM A194 GR4 CADMIUM PLATED TEMP, LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS AC 80 DC JTM 11.0171 CLOUGH 583 DHOOME GAS PROJECT DL & GAS DEVELOPMENT CORPORATION Engineering Group DSZPS VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SHT. 1 DF 1 SP-00-L-0001 DATA SHEET No. VALVE TAG No.

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DESCRIPTION

D5ZPS

NOTES: VALVE TYPE (HECK (WAFER) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD API 594 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. PRESSURE CLASS ANSI .900lb 3. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594. 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE END CONNECTIONS TO SUIT ANSI B16.5 RTJ SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM SIZE RANGE THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO 3" 10 24" MEET THE REQUIREMENTS OF THE L'ATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT. CONSTRUCTION BODY : WAFER TYPE 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-5S. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. TRIM : METAL TO METAL SEAT ALL SIZES 100% MPI. DUAL PLATE 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS BODY MATERIAL AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. CARBON STEEL : CAST ASTM - A216 GR WCB TRIM - ST. STEEL TYPE 316 OR 410 TRIM DISCS - ASTM A-216 GR WCB SPRING - INCONEL X VALVE OPERATOR NONE GLAND PACKING NONE BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS -29°C (-20°F) TO 350°C (650°F) SERVICE CONDITIONS EAZ EA3 **CLOUGH** DHODAK GAS PROJECT DE & GAS DEVELOPMENT CORPORATION Engineering Group ESJWC VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION SHT. 1 0F 1 SP-00-L-0001 VALVE TAG No.

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DS-00-L-0180

ESJWC

VALVE TYPE NOTES: CHECK (WAFER) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD API 594 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. PRESSURE CLASS ANSI 1500Ib 3. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594. END CONNECTIONS TO SUIT ANSI BI6.5 RTJ 4, MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR DTHER APPLICABLE SIZE RANGE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM ... 2" 10 24" THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO CONSTRUCTION IN THIS DOCUMENT. BODY : WAFER TYPE 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55. TRIM : METAL TO METAL SEAT IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED IN ACCORDANCE WITH ANSI B16.34 SECTION 8. DUAL PLATE ALL SIZES 100% MPI 6 EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION BODY MATERIAL TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS CARBON STEEL : CAST ASTM - A216 GR WCB AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM - ST.STEEL TYPE 316 OR 410 TRIM DISCS - ASTM A216 GR WCB SPRING - INCONEL X VALVE OPERATOR NONE GLAND PACKING NONE BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS -29°C (-20°F) TO 350°C (650°F) SERVICE CONDITIONS EA2 ≤ 2" EA3 ≤ 2" £44 € 2" FA2 FA3 JTM 11.01 93 CLOUGH 583 DHODAK GAS PROJECT Traced Client OD OL 1 GAS DEVELOPMENT CORPORATION (A) No Checked Set Engineering Group F5JWC Superium ED VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION Project Engineer BY SP-00-L-0001 947. 1 OF 1 DATA SHEET No. VALVE TAG RE. Ace la Construction 12/3/73 ISSUED FOR CONSTRUCTION JT H DS-00-L-0181 F5JWC

DESCRIPTION

VALVE TYPE JTES: CHECK (WAFER) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD API 594 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. PRESSURE CLASS ANSI 15001 3. FACE TO FACE DIMENSIONS SHALL CONFORM TO API 594. END CONNECTIONS 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE TO SUIT ANSI 816.5 RTJ SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM SIZE RANGE THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO 2" 70 12" MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT. CONSTRUCTION BODY : WAFER TYPE 5. ALL VALVE CASTINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-SS. IN ADDITION THE FOLLOWING INSPECTION IS REQUIRED NI ACCORDANCE WITH ANSI B16.34 SECTION 8. TRIM : METAL TO METAL SEAT ALL SIZES 100% LPI. DUAL PLATE 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS BODY MATERIAL STAINLESS STEEL TO ASTM A-351 CF8M AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. TRIM - ST. STEEL TYPE 316 TRIM DISCS - ASTM A-351 CF8M SPRING - INCONEL X VALVE OPERATOR HONE GLAND PACKING NONE BONNET GASKET NONE **BOLTING** NONE TEMP. LIMITATIONS -100°C (-150°F) TO 350°C (650°F) SERVICE CONDITIONS FC CLOUGH 583 DHOOAK GAS PROJECT OL & GAS DEVELOPHENT CORPORATION Engineering Group FSINS VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION

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SP-00-L-0001

DATA SHEET No.

NOTES: IN THIS DOCUMENT.

1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS

2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS \$146.

3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS, SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO

4. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION.

5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25.

6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.

	VALVE TYPE	CHECK (HORIZONTAL)
	VALVE STANDARD	B.S.5352
	PRESSURE CLASS	ANSI 1500Ab
	END CONNECTIONS	THREADED TO ANSI B16.11
0	SIZE RANGE	1/2" 10 3/4"
	CONSTRUCTION	BODY : BOLTED COVER
N		TRIM: PISTON TYPE RENEWABLE SEATS
		•
	BODY_MATERIAL	STAINLESS STEEL TO ASTM A-182 GR.316
	TRIM	STAINLESS STEEL TYPE 316
	VALVE OPERATOR	NONE
	GLAND PACKING	NONE .
	BONNET GASKET	SPIRAL WOUND (S. STL. TYPE 316) OR ST. STEEL, TYPE 316, RING JOINT
	BOLTING	STUDBOLTS : ASTN A320 GR L7 (ADMIUM PLATED (/W NUTS : ASTN A194 GR.4 (ADMIUM PLATED
	TEMP. LIMITATIONS	-29°C (-20°F) TO 150°C (300°F)
	SERVICE CONDITIONS	

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ê								Project Engineer 175	SP-00-L-0001	SHT. 1 OF 1
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NOTES: VALVE TYPE CHECK (HORIZONTAL) 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS VALVE STANDARD B.S.5352 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146. PRESSURE CLASS ANSI 15001b 3. FOR FERRITIC STEELS INTENDED FOR WELDING, THE CARBON CONTENT SHALL BE 0.25% MAXIMUM AND THE CARBON EQUIVALENT (CE) SHALL BE 0.45% MAXIMUM. END CONNECTIONS SOCKET WELD TO ANSI B16.11 THE CARBON EQUIVALENT SHALL BE ESTABLISHED USING THE FORMULA : SIZE RANGE 1/2" TO 1 1/2" CE = C + MN + 0.04 CONSTRUCTION BODY : BOLTED COVER 4. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY. SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO TRIM : PISTON TYPE RENEWABLE SEATS MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT. 5. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION. BODY MATERIAL CARBON STEEL : FORGED ASTM A105 NORMALISED 6. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25. 7. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TRIM DISC, STEM & SEAT RINGS 13% CHROME TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS HARD FACED SEATS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE. VALVE OPERATOR NONE GLAND PACKING NONE BONNET GASKET SPIRAL WOUND (S. STL.) OR SOFT IRON RING JOINT **BOLTING** STUDBOLTS: ASTM A193 GR 87 CADMIUM PLATED C/W NUTS : ASTM A194 GR 2H(SF) CADMIUM PLATED TEMP. LIMITATIONS -29°C (-20°F) TO 350°C (650°F) SERVICE CONDITIONS EA2 EA3 EA4 FA2 FA3 JTM 11.01.43 CLOUGH 583 DHODAK GAS PROJECT OL & GAS DEVELOPMENT CORPORATION Engineering Group F5ZPC VALVE DATA SHEET FOR PIPING MATERIAL SPECIFICATION 94T. 1 OF 1 SP-00-L-0001

I TH 12/3/93 ISSUED FOR CONSTRUCTION

REY BY DATE

VALVE TAG No.

F5ZPC

DATA SHEET No.

NOTES:

- 1. CERTIFICATES REQUIRED TO DIN 50049.3.1.b FOR ALL PRESSURE CONTAINING PARTS
- 2. VALVES TO BE INSPECTED AND TESTED IN ACCORDANCE WITH BS 5146.
- 3. MATERIALS SHALL BE EMPLOYED ONLY AS SHOWN ON THE VALVE DATA SHEETS OR OTHER APPLICABLE SPECIFICATION SHEETS. SUBSTITUTIONS SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE COMPANY, SUCH APPROVAL HOWEVER SHALL IN NO WAY DIMINISH THE VENDORS OBLIGATION TO MEET THE REQUIREMENTS OF THE LATEST ISSUES OF THE STANDARDS AND SPECIFICATIONS REFERRED TO IN THIS DOCUMENT.
- 4. FORGINGS ARE TO BE 100% VISUALLY INSPECTED IN ACCORDANCE WITH MSS-SP-55 IN ADDITION TO MANUFACTURER'S STANDARD INSPECTION.
- 5. EACH VALVE SHALL AS A MINIMUM BE MARKED IN ACCORDANCE WITH MSS-SP-25.
- 6. IN ADDITION TO THE PERMANENT MARKING EACH VALVE IS TO CARRY A STAINLESS STEEL IDENTIFICATION TAG WHICH IS TO BE STAMPED OR ENGRAVED WITH THE VALVE TAG NUMBER AND SIZE IN CHARACTERS AT LEAST 10mm HIGH AND ATTACHED SECURELY TO THE VALVE WITH STAINLESS STEEL WIRE.

	VALVE TYPE	CHECK (HORIZONTAL)
	VALVE STANDARD	B.S.53S2
r	PRESSURE (LASS	ANSI 1S00Ib
_	END CONNECTIONS	SOCKET WELD TO ANSI B16.11
0	SIZE RANGE	1/2" TO 1 1/2" .
	CONSTRUCTION	BODY : BOLTED COVER
ON S		TRM: PISTON TYPE RENEWABLE SEATS
	BODY MATERIAL	STAINLESS STEEL TO ASTM A-182 GR.316
	IRIM	STAMLESS STEEL TYPE 316
	VALVE OPERATOR	NONE
	GLAND PACKING	NONE
	BONNET GASKET	SPIRAL WOUND (S. STL. TYPE 316) OR ST. STEEL, TYPE 316, RING JOINT
	BOLTING	STUDBOLTS: ASTM A320 GR L7 CADMIUM PLATED C/W NUTS: ASTM A194 GRA CADMIUM PLATED
	TEMP. LIMITATIONS	-100°C (-150°F) TO 350°C (650°F)
	SERVICE CONDITIONS	.,
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