

PART – I

The control valves are required for an experimental test facility. The installation of control valves is not in the scope of this indent. The control valves for high temperature application shall be installed in thermally insulated lines. The detail specifications for Valve sizing, Valve Body, Bonnet, Trim, Plug, actuator is as under.

Sr. No.	Parameter	Specification		Bidder/Comments
Process Conditions				
1.	Tag Name	CV-1, CV-2		
2.	Design temperature	260 degC		
3.	Design pressure	100 bar		
4.	Line Size	50 NB SCH-80		
5.	Process Fluid	Water		
6.	Flow & Pressure drop data across control valve	Kg/s	Bar	
		1 kg/s	Least pressure drop	
7.	Flow rangeability	Atleast 5:1		
Valve Body Assembly				
8.	Valve Cv	Maximum Possible Cv		
9	Opening/Closing Time	Better than 5 seconds		
10.	Valve size	To be specified by bidder		
11.	Type of valve	Globe		
12	Valve Characteristics	Modified Equal Percentage		
13	Body rating	1500#		
14	End connection	Butt Weld		
15	Fail Safe Position	Open for CV-1 and Close for CV-2		
16	Trim Design	To be specified by bidder based on process conditions given in Sr. No.1 to Sr No.7.		
17	Trim Type	To be specified by bidder based on process conditions given in Sr. No.1 to Sr No.7.		
18	Trim, Plug & Seat material	SS-316L		

Sr. No.	Parameter	Specification	Bidder/Comments
Valve Body Assembly			
19	Seat/Trim coating	Stellited/Depending upon process condition as mentioned in Sr. No.1 to Sr. No.7.	
20	Bonnet type	To be specified by bidder based on process conditions given in Sr. No.1 to Sr No.7.	
21	Bonnet connection	Bolted	
22	Body material	SS-316L	
23	Stud & Nuts material	Bidder to specify based on process conditions given in Sr. No.2 & 3	
24	End to End dimensions	Bidder to specify. As per the standard.	
25	Number of ports	Input,output	
26	Gland Packing	grafoil	
27	Seat leakage rate	As per IEC-60534-4/FCI 70.2 or equivalent, Class-IV.	
28	Actuator	Pneumatic actuator	
29	Style	Spring return	
30	Travel	Bidder to specify	
31	Actuator shut off pressure	1.7 times design pressure	
32	Actuator Operating pressure	Less than 7 bar	
33	Actuation signal	From Positioner	
34	Manual Override	Mechanical with hand wheel.	
Positioner			
35	Type	Electro pneumatic	
36	Input signal	4-20 mA	
37	Enclosure	Weatherproof	
38	Accessories	Air PRV with filter is scope of bidder	

Sr. No.	Parameter	Specification	Bidder/Comments
Limit Switch for sensing Valve position (open/close)			
39	Switch Type	Mechanical	
40	Switch acting	Separately for each position open and close (TWO NO Contacts)	
41	Rating	24 VDC, 1A	
42	Assembly	Built into positioner or external	
Others			
43	Inspection & Testing	1. Mechanical, chemical and radiography test. 2. Dye penetrant test, 3. Hydrostatic test as per ASME Sec-8, Div-1, UG-99. 4. Seat Leakage Test, 5. Cv Test, 6. flow characteristics, 7.) Rated Valve Travel (0 to 100 %) 8) Opening & closing time.	

Sr. No.	Parameter	Specification	Bidder/Comments
Process Conditions			
1.	Tag Name	CV-3, CV-4	
2.	Design temperature	320 deg	
3.	Design pressure	100 bar	
4.	Line Size	4" SCH-80	
5.	Process Fluid	Saturated steam	
6.	Flow & Pressure drop data across control valve	Kg/s	Bar
		1 kg/s	Least pressure drop
7.	Flow rangeability	Atleast 5:1	
Valve Body Assembly			
8.	Valve Cv	Maximum possible Cv	
9	Opening/Closing Time	Better than 5 seconds	
10.	Valve size	To be specified by bidder	
11.	Type of valve	Globe	
12	Valve Characteristics	Modified Equal Percentage	
13	Body rating	2500#	
14	End connection	Butt weld	
15	Fail Safe Position	Close for CV-3, Open for CV-4	
16	Trim Design	To be specified by bidder based on process conditions given in Sr. No.1 to Sr No.7.	
17	Trim Type	To be specified by bidder based on process conditions given in Sr. No.1 to Sr No.7.	
18	Trim, Plug & Seat material	SS-316L	

Sr. No.	Parameter	Specification	Bidder/Comments
Valve Body Assembly			
19	Seat/Trim coating	Stellited/Depending upon process condition as mentioned in Sr. No.1 to Sr. No.7.	
20	Bonnet type	To be specified by bidder based on process conditions given in Sr. No.1 to Sr No.7.	
21	Bonnet connection	Bolted	
22	Body material	SS-316L	
23	Stud & Nuts material	Bidder to specify based on process conditions given in Sr. No.2 & 3	
24	End to End dimensions	Bidder to specify. As per the standard.	
25	Number of ports	Input,output	
26	Gland Packing	grafoil	
27	Seat leakage rate	As per IEC-60534-4/FCI 70.2 or equivalent, Class-IV.	
28	Actuator	Pneumatic actuator	
29	Style	Spring return	
30	Travel	Bidder to specify	
31	Actuator shut off pressure	1.7 times design pressure	
32	Actuator Operating pressure	Less than 7 bar	
33	Actuation signal	From Positioner	
34	Manual Override	Mechanical with hand wheel.	
Positioner			
35	Type	Electro pneumatic	
36	Input signal	4-20 mA	
37	Enclosure	Weatherproof	
38	Accessories	Air PRV with filter is scope of bidder	

Sr. No.	Parameter	Specification	Bidder/Comments
Limit Switch for sensing Valve position (open/close)			
39	Switch Type	Mechanical	
40	Switch acting	Separately for each position open and close (TWO NO Contacts)	
41	Rating	24 VDC, 1A	
42	Assembly	Built into positioner or external	
Others			
43	Inspection & Testing	1. Mechanical, chemical and radiography test. 2. Dye penetrant test, 3. Hydrostatic test as per ASME Sec-8, Div-1, UG-99. 4. Seat Leakage Test, 5. Cv Test, 6. flow characteristics, 7.) Rated Valve Travel (0 to 100 %) 8) Opening & closing time.	

Sr. No.	Parameter	Specification		Bidder/Comments
Process Conditions				
1.	Tag Name	CV-5		
2.	Design temperature	250 deg		
3.	Design pressure	100 bar		
4.	Line Size	4" SCH-80		
5.	Process Fluid	Water		
6.	Flow & Pressure drop data across control valve	Kg/s	Bar	
		1 kg/s	Least pressure drop	
7.	Flow rangeability	Atleast 5:1		
Valve Body Assembly				
8.	Valve Cv	Maximum possible Cv		
9	Opening/Closing Time	Better than 5 seconds		
10.	Valve size	To be specified by bidder		
11.	Type of valve	Globe		
12	Valve Characteristics	Modified Equal Percentage		
13	Body rating	2500#		
14	End connection	Butt weld		
15	Fail Safe Position	Open		
16	Trim Design	To be specified by bidder based on process conditions given in Sr. No.1 to Sr No.7.		
17	Trim Type	To be specified by bidder based on process conditions given in Sr. No.1 to Sr No.7.		
18	Trim, Plug & Seat material	SS-316L		

Sr. No.	Parameter	Specification	Bidder/Comments
Valve Body Assembly			
19	Seat/Trim coating	Stellited/Depending upon process condition as mentioned in Sr. No.1 to Sr. No.7.	
20	Bonnet type	To be specified by bidder based on process conditions given in Sr. No.1 to Sr No.7.	
21	Bonnet connection	Bolted	
22	Body material	SS-316L	
23	Stud & Nuts material	Bidder to specify based on process conditions given in Sr. No.2 & 3	
24	End to End dimensions	Bidder to specify. As per the standard.	
25	Number of ports	Input,output	
26	Gland Packing	grafoil	
27	Seat leakage rate	As per IEC-60534-4/FCI 70.2 or equivalent, Class-IV.	
28	Actuator	Pneumatic actuator	
29	Style	Spring return	
30	Travel	Bidder to specify	
31	Actuator shut off pressure	1.7 times design pressure	
32	Actuator Operating pressure	Less than 7 bar	
33	Actuation signal	From Positioner	
34	Manual Override	Mechanical with hand wheel.	
Positioner			
35	Type	Electro pneumatic	
36	Input signal	4-20 mA	
37	Enclosure	Weatherproof	
38	Accessories	Air PRV with filter is scope of bidder	

Sr. No.	Parameter	Specification	Bidder/Comments
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41	Rating	24 VDC, 1A	
42	Assembly	Built into positioner or external	
Others			
43	Inspection & Testing	1. Mechanical, chemical and radiography test. 2. Dye penetrant test, 3. Hydrostatic test as per ASME Sec-8, Div-1, UG-99. 4. Seat Leakage Test, 5. Cv Test, 6. flow characteristics, 7.) Rated Valve Travel (0 to 100 %) 8) Opening & closing time.	

PART – II
NOTE TO BIDDER

- The test facility for carrying out PDI should be NABL approved lab or in-house lab with calibration instruments traceable to NABL/NABL approved lab. The bidder shall take care for inclusion of Inspection/Testing cost as per requirement given in this specification in your quotation. Failing of which / subsequently inclusion of any inspection/Testing cost in later stage, the quotation will be rejected.
- The bidder must make point-by-point comments on each of the specifications, clearly indicating either the compliance or deviations between offer and the specified requirements.
- Offers should be accompanied by relevant technical literature (catalogue related to the product offered, mentioned standards etc.) complying with technical specifications to prove its ability to supply the machine.
- The bidder shall clearly give the references to previous DPS orders executed by him for similar items.
- Post Supply inspection in respect of supplies made is not permitted. Any offer containing the conditions of post supply inspection can be out rightly rejected. It is therefore mandatory for bidders, while quoting, to indicate in clear terms the requirement of post supply inspection by any outside agency.