



PIPING SPECIFICATIONS

SPECIFICATION NO

1C1

SHEET 5 OF 6

REV 0

REDUCERS CHART

SMALL SIZE

	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"
1/2"																				
3/4"	X																			
1"	X	X																		
1.1/2"	X	X	X																	
2"		X	X	X																
3"				X	X															
4"				X	X	X														
6"						X	X													
8"							X	X												
10"							X	X	X											
12"								X	X	X										
14"																				
16"																				
18"																				
20"																				
24"																				
28"																				
30"																				
32"																				
36"																				
42"																				

L
A
R
G
E

S
I
Z
E

LEGEND

X :CONCENTRIC AND ECCENTRIC REDUCERS-BW



PIPING SPECIFICATIONS

SPECIFICATION NO

1C1

SHEET 6 OF 6

REV 0

BRANCH CHART

BRANCH SIZE

H
E
A
D
E
R

S
I
Z
E

	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"
1/2"	T																			
3/4"	TR	T																		
1"	TR	TR	T																	
1.1/2"	W	TR	TR	T																
2"	W	W	TR	TR	T															
3"	W	W	W	TR	TR	T														
4"	W	W	W	W	TR	TR	T													
6"	W	W	W	W	W	TR	TR	T												
8"	W	W	W	W	W	BW	TR	TR	T											
10"	W	W	W	W	W	BW	BW	TR	TR	T										
12"	W	W	W	W	W	BW	BW	BW	TR	TR	T									
14"																				
16"																				
18"																				
20"																				
24"																				
28"																				
30"																				
32"																				
36"																				

LEGEND

T : TEE EQUAL-BW

TR : REDUCING TEE-BW

W : WELDOLET- BW

BW : BRANCH WELD-CHECK IF REINFORCING PLATE IS NECESSARY ACCORDING ANSI B 31.8

I. PROCESS DATA

- PIPE CLASS : 1C1
- FLUID : Natural Gas Fluid Symbol : NG
- OPERATING CONDITIONS
 - Pressure (barg) : 4 Barg
 - Temperature (°C) : 03 to 48 (°C)
- DESIGN CONDITIONS
 - Pressure (barg) : 19 Barg
 - Temperature (°C) : -20 to 60 (°C)

II. VALVE DATA

- CONSTRUCTION DESIGN : BS 1873
- TYPE : HIGH RESISTANCE TO VIBRATIONS
AND HIGH DIFFERENTIAL PRESSURE
UNIDIRECTIONAL
GLAND TYPE-BOLTED BONNET-NON ROTATING STEM
- PATTERN : STRAIGHT THROUGH GLOBE
- END CONNECTION : FLANGED RF - ANSI B16.5, 150#
- FACE TO FACE : ANSI B16.10
- BODY MATERIAL :

Below 2"	2"& above
ASTM 105	ASTM or ASTM A 216 Gr WCB
- DISC MATERIAL : ASTM 216 Gr. WCB +STELLITED or Equivalent/Superior
- SEAT : ASTM 216 Gr. WCB +STELLITED or Equivalent/Superior
- TRIM : ASTM A182 F6 or Equivalent/Superior
- STEM : ASTM A182 F6 or Equivalent/Superior
- GASKET : GRAPHITE or Equivalent/Superior
- PACKING : GRAPHITE or Equivalent/Superior
- OPERATOR : Wrench Upto 4", Gear for above 4"
- EXTENSION STEM : NO
- **PAINTING**
 - Surface preparation : SA 2.5
 - Primer : 30 - 40 µm
 - Finish : 30 - 40 µm
 - Final Paint DFT : 300 µm (min.)
- INSULATION : No

DATE	REV	BY	CHK	APP	REMARK
18.06.2018	0	PK	MD	AD	



III. VALVE INSPECTION AND TESTING

- SHELL TEST : SEE API 598
- BACKSEAT TEST : SEE API 598
- LOW -PRESSURE CLOSURE TEST : SEE API 598
- HIGH-PRESSURE CLOSURE TEST : SEE API 598
- VISUAL EXAMINATION OF CASTINGS : SEE API 598
- HIGH-PRESSURE PNEUMATIC SHELL TEST : SEE API 598
- FIRE SAFE TEST : N/A

IV. QUALITY CONTROL

- MATERIAL CERTIFICATES : EN 10204 - 3.1
- ALL NECESSARY CERTIFICATES : ALL TEST CERTIFICATE INCLUDING FIRE SAFE.
ANTISTATIC, PHYSICAL, IMPACT, CHEMICAL,
PAINTING ETC.

NOTE :

- 1 Unless otherwise stated, all tests will be witnessed by the purchaser.
- 2 For detail of Painting, refer Painting Table

DATE	REV	BY	CHK	APP	REMARK
18.06.2018	0	PK	MD	AD	



DATA SHEET FOR MANUAL
GLOBE VALVES (1C1)

I. PROCESS DATA

- FLUID : Natural Gas
 - FLUID SYMBOL : NG
 - OPERATING CONDITION : A/G
 - TEMPERATURE (°C) : 0-50 °C
 - PRESSURE (Barg) : 04 barg

- DESIGN CONDITION : A/G
 - TEMPERATURE (°C) : 0-60 °C
 - PRESSURE (Barg) : 19 barg

II SPECIFICATION

- DIMENSIONAL STANDARD : ANSI B 16.10
 - CONSTRUCTION DESIGN : API 6D
 - PIPE CLASS : 1C1
 - RATING : 150#

- TYPE : SWING CHECK

- END CONNECTION : FLANGED (RF)
ANSI B 16.5

- BODY MATERIAL : ASTM A 350 Gr. LF2/ASTM A352 or LCB or Equivalent/Superior

- WEDGE : ASTM A 350 Gr. LF2/ASTM A182 F6 or Equivalent

- DISC : ASTM A 350 Gr. LF2/ASTM A182 F6 or Equivalent

- HINGE PIN : ASTM A 182 F6

- GASKET : GRAPHITE

- PUPS (Applicable only for BW end)

- LENGTH : At least 2.0 D for size below 6" & 300mm for 6" and above size valves

- MATERIAL OF CONSTRUCTION : Suitable to Connecting pipe material in terms of strength and thickness

- PAINTING (Refer Annexure II of PTS) : A/G

- SURFACE PREPARATION : SA 2.5
Type of paint, DFT and total DFT shall be as per paint system number

- PRIMER : Choose from table AS ISO 12944-5 suitable for highly corrosive environment

- FINISH : Final shade of valve shall be as per attached painting table. Final Paint DFT - 300 microns minimum

- INSULATION : NO

DATE	REV	BY	CHK	APP	REMARKS
18.06.2018	0	PK	MD	AD	



DATA SHEET FOR
CHECK VALVES
(1C1)

III. TEST :

- **HYDROSTATIC SHELL TEST**
- Test pressure : 1.5 x Design Pressure

- **HYDROSTATIC SEAT TEST**
- Test pressure : 1.1 x Design Pressure

- **AIR SEAT TEST :**
- Test pressure : 6 barg

- **HIGH PRESSURE CLOSURE TEST** : API 598
- **LOW PRESSURE CLOSURE TEST** : API 598
- **LEAK TEST** : API 598
- **FIRE TEST** : API 6FA
- **VISUAL AND DIMENSIONAL EXAMINATION TEST** : YES

IV. QUALITY CONTROL :

- **MATERIAL CERTIFICATES** : EN 10204-3.1
- **ALL TEST CERTIFICATES** : TEST CERTIFICATES INCLUDING, FIRE SAFE, ANTISTATIC, PHYSICAL IMPACT, CHEMICAL, PAINTING

DATE	REV	BY	CHK	APP	REMARKS
18.06.18	0	PK	MD	AD	



DATA SHEET
FOR CHECK
VALVES (1C1)

CLIENT : INDRAPRASTHA GAS LIMITED

**DATA SHEET (1C1)
Y-TYPE STRAINER**
FOR ABOVE GROUND (A/G) SERVICES

DATA SHEET No. :

VCS-DS-PL-023

Page 1 of 2

I. PROCESS DATA :

- FLUID : Natural Gas
- FLUID SYMBOL : NG

- OPERATING CONDITION

- FLOW RATE (m³/hr) : NA
- TEMPERATURE (°C) : 0 to 60
- PRESSURE (Barg) : 04

- DESIGN CONDITION

- FLOW RATE (m³/hr) :
- TEMPERATURE (°C) : -20 to 65
- PRESSURE (Barg) : 19

II. STRAINER DATA :

- DIMENSIONAL STANDARD : ASME B16.5, B16.9, B16.11, B16.20, B18.2.1 & B18.2.2
- CONSTRUCTION DESIGN : AS PER CODES AND TECHNICAL SPECIFICATION DOC. NO. 14588-CD-SS-001, PMS
- PIPE CLASS : 1C1
- ANSI PRESSURE RATING : 150#
- TYPE : Y-TYPE
- SIZE : 1"
- END CONNECTION : FLANGED (RF) AS PER ASME B16.5
- BODY MATERIAL : ASTM A 216 Gr. WCB
- CAP / PLUG : ASTM A105
- SCREEN MESH : SS-304, CYLINDRICAL WIRE MESH WITH PERFORATED SHEET
- FILTRATION SIZE : 100 MICRON
- STUD BOLTS / NUTS : ASTM A193-B7 / ASTM A194 2H (GALVANISED)
- GASKET : SS-304 SPIRAL WOUND, GRAPHITE FILLED, 4.5MM THK. WITH CS OUTER RING

III TESTS

- HYDROSTATIC BODY TEST :


Test pressure : 1.5 x Design Pressure
Test Duration : 1/2 HR

NOTES:-


- 1 Unless otherwise stated, all tests will be witnessed by the purchaser/authorised inspector
- 2 Net opening area of element shall be minimum 3 times X sectional area of inlet
- 3 Strainer body casting shall be defect free and shall be MPI/DP tested.

DATE	REV	BY	CHK	APP	REMARKS
17.07.2018	0	ADE	RNR	AD	ISSUED FOR REVIEW




GAS DETECTOR					Rev.		
GENERAL	1	Tag Number	To be provided later				
	2	Quantity	As per SOR				
	3	Ambient Temperature	- 5 to 50 Deg.C				
	4	Service	Natural Gas				
	5	Purpose	Gas Detection in CGD application				
	6	% of Governing Component in Gas	94.5% Methane				
	7						
	8						
GAS DETECTOR	9	Sensor Type	IR Absorption Sensor *				
	10	Power Supply	24 VDC				
	11	Alarm Limit	10% LEL				
	12	Enclosure Material	Aluminium / CPVC				
	13	Enclosure Protection	IP42 or Better				
	14	Response time	T90 < 5 Seconds				
	15	Accuracy	± 1%				
	16	Electrical Connection size	3/4" NPT				
	17	Wattage	*				
	18	Mounting Accessories	Required				
	19	Relay Output	8A max*				
	20	Alarm Indication	LED's for alarm status (Power On, Failure, Gas Detection)				
	21	Hooter	Required, Integral				
	22	Allowable Hooter Sound Limit	Max. 85 dBA				
23							
MISC.	24	Make / Model	*				
	25	Dimensions	*				
	26	Weight	*				
	27						
	28						
TABLE	S.NO	TAG NUMBER	LOCATION	QTY	MAKE / MODEL		
	1	To be provided later	-	As per SOR	*		
Notes: * TBD							
1 Vendor to specify.*							
2 Tagplate (SS 316) stamped with instrument tag number and service in 10mm characters shall be attached via SS wire (1 mm).							
3 Calibration certificates shall be provided by the Vendor.							
4 Gas detector shall be installed above piping arrangement at a maximum distance of 30 cm from ceiling.							
	CLIENT:	INDRAPRASTHA GAS LIMITED (IGL)					
	PROJECT:		0	22.04.2021	ND	UM	KP
			REV.	DATE	PRPD	CHKD	APPD

Document No.: 15792-PL-IC-DS-001

SOLENOID VALVE				Rev.			
GENERAL	1	Tag Numbers	To be provided later (Note-2)				
	2	Quantity	As per SOR				
	3	Service	Natural Gas				
	4	Enclosure Certification	IP65				
	5	Operation: Direct/Pilot	Direct				
	6	Operating Mode NC/NO/UNIVERSAL	NO				
	7						
PROCESS DATA	8	Max. operating pressure (Kg/Cm2g)	*				
	9	Design Pressure (Kg/Cm2g)	*				
	10	Design Temperature (Deg.C)	-20 to 60				
	11	Ambient Temperature (Deg.C)	- 5 to 50 Deg C				
	12						
	13						
	14						
	15						
VALVE	16	Body Size/ Rating	As per SOR / 150#, Socket Weld				
	17	Body Material	SS 316 / Brass*				
	18	Trim Material	SS 316 / Brass*				
	19						
	20						
SOLENOID	21	Style of Coil	*				
	22	Coil Voltage	230 VAC				
	23	Coil Insulation Class	H				
	24	Electrical Connection	Required				
	25	Cable Entry	1/2" NPTF				
	26	Manual Reset	Required				
	27	Close Time	< 1 sec				
	28						
	29						
	30						
	31						
MISC.	32	Make	*				
	33	Model No.	*				
	34						
	35						
	36						
Notes:							
1 **As per site requirement							
2 Vendor to specify *							
3 Tag no. is to be finalised later.							
4 Tagplate (SS 316) stamped with instrument tag number and service in 10mm characters shall be attached via SS wire (1 mm).							
	CLIENT:	INDRAPRASTHA GAS LIMITED (IGL)					
	PROJECT:		0	22.04.2021	ND	UM	KP
			REV.	DATE	PRPD	CHKD	APPD

Document No.: 15792-PL-IC-DS-001

SLAM SHUT VALVE					Rev.
GENERAL	1	Tag No.	To be provided later (Note-3)		
	2	Inlet Line No.	-		
	3	Outlet Line No.	-		
	4	Line Size & Schedule	**		
	5	Service	Down stream pressure protection		
	6				
	7				
PROCESS DATA	8	Fluid	State	Natural Gas	Gas
	9	Flow Gas : Min. / Nor. / Max.		**	
	10	Inlet Pressure		4 barg	
	11	Pressure Drop at Various Flow Rates		**	
	12	Shut Off Pressure		**	
	13	Temperature : Operating / Maximum		**	
	14	Oper S.G	Mol Wt.		**
15	Cp/Cv	Compress. Factor		**	
VALVE DATA	16	Kg or Cg Min.	Kg or Cg Max.		*
	17	Kg or Cg Selected		*	
	18	Predicted Sound Level (dBA)		* Less than 85 dBA	
	19	Valve Setpoint	Adjustable Range		* *
	20	Inlet Velocity (meters/second)		* Less than 40 m/sec	
VALVE BODY	22	Type of Valve		Slam Shut	
	23	Body Size	Port Size		* *
	24	End Conn: Flgd. Size & Rating		*, As per PMS	
	25	Facing & Finish		RF, 125 - 250 AARH	
	26	Body Material		ASTM A216 Gr. WCB or better	
	27	Trim Material		SS 316 / Brass*	
	28	Other Wetted Parts		SS 316 / Brass*	
	29	Leakage Class		Class VI as per FCI 70.2	
	30	Closing Time		Less than 2 secs	
	31				
	32				
	OPTIONS	33	Pilot Operated		Integral Pilot Required
34		Manual Reset		Required	
35		Failure Position		Close	
36		Limit Switch		-	
37		Valve Position Indicator (Local)		Required	
38		Radiography		Not Required	
39		Charpy V-Notch		Required	
40		Impulse Tubing/Fittings		Required	
41		Pressure Indicator		-	
42		Installation		Horizontal / Vertical	
MISC.	43	Make		*	
	44	Model No.		*	
	45				
	46				
	47				
Notes:					
1 ** As per site requirement.					
2 Vendor to specify *					
3 Tag no. is to be finalised later.					
4 Tagplate (SS 316) stamped with instrument tag number and service in 10mm characters shall be attached via SS wire (1 mm).					
5 Vendor shall provide detailed GA drawing along with all parts name and MOC for the slam shut valve along with data sheet.					
	CLIENT:	INDRAPRASTHA GAS LIMITED (IGL)			
	PROJECT:		0	22.04.2021	ND UM KP
			REV.	DATE	PRPD CHKD APPD

Document No.: 15792-PL-IC-DS-001