	Technical Specification	Specification No. LC-002/15
	Gas Leak Clamp (For 3/4" to 6" and above for Gas Distribution Mains)	Revision 01
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1. GENERAL REQUIREMENTS:

1.1 Pipeline leakage repair half circle clamps suitable for fixing on leaking gas pipelines and shall be capable of stopping gas leaks, which may occur due to pin holes, punctures, or a damage, or cracks without disturbing the continuity of gas flow. Leak clamp to be used on steel gas pipelines.

1.2 Half circle Leak clamps are to be precisely engineered to a balanced design and accurately manufactured to produce a clamp with high performance characteristics.

2. CONSTRUCTION:

2.1. Pipe leak clamp shall be constructed of a single stainless steel band. Having stainless steel reinforcement clamp plate type SS 304 at the end to equalize the clamping pressure on the pipeline. A gridded gasket is to be fitted fully on inside surface of the band. A specially designed bolt with heavy shoulder fixed in slots of guide plate for tightening of clamp on the pipe.

2.2. Leak clamp should be easy to install and be effective.



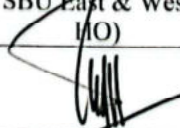
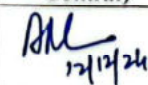
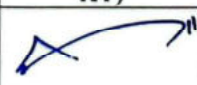
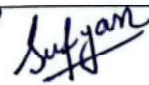
2.3. Each clamp consists of stainless steel bands (material conformance to (AISI 304 SUS-304) with stainless steel SUS-304 bolt securely attached to the reinforcement clamp plate. The reinforcement clamp plate and guide plate accommodate bolts when mounting the clamp on the pipe (conformance to table No. 1& la).


3. PRESSURE & TEMPERATURE:

The full seal gas leak clamp will be used in steel pipe natural gas distribution system with minimum operating pressure up to 100 psig (689 KPa) having maximum working temperature of 180F.

4. STEEL BANDS:

The steel bands are made up of AISI Type 304(SUS 304) having necessary corrosion resistance, flexibility and strength requirements. Dimensional parameters to be as given in the table 2.

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			 12/12/24		

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5. TAPERED END GRIDDED GASKET :

It is made of NBR (nitrile-butadiene) Rubber to DIN 3535 / EN 682. Rubber in conformance to specially compounded NBR Rubber to resist oil, Acids, Alkalies, water and chemicals. Nominal temperature range from -20°F to 180°F. (As per Table No.3)

The gridded gasket have 16 grids to the square inch or equivalent and have a thickness 0.225 inch ± 0.0225 inch (5.715 + 0.5715mm) to conform irregularities on the pipe surface: and seal effectively against rough or pited surfaces to prevent development of a leak path and provide a uniform distribution of gasket pressure over the surface of the pipe. (As per Table No. 3)

6. STAINLESS STEEL GASKET SLEEVE:

A stainless steel 304 half circle sleeve is provided along with the rubber gasket in order to hold gasket in place and avoid clearance during tightening of the leak clamp.

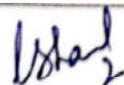


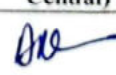
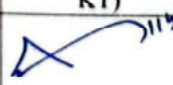

7. BOLTS, GUIDE PLATE , REINFORCEMENT CLAMP AND RETAINER BOX:


High Strength Type 304 Stainless Steel captive bolts having deep non-galling, spin-fit threads should conform to the ASME B18.2.1 standard. Heavy shoulders to prevent turning in retainer and reinforcement plate. (As per Table No. 1 & la.).(Refer to drawing of component 06)

A guide plate is spot welded at the end of the clamp band having holes as per the required bolts fixtures. Material of the plate should be stainless steel 304.(Refer to drawing of component 05)

A retainer box is spot welded to hold the reinforcement plate having holes as many as the guide plate and reinforcement plate. The material of the retainer box should be stainless steel. .(Refer to drawing of component 04)

A reinforcement clamp plate is placed inside the retainer box having threaded holes to fasten the bolts. Thread should be made in such a way that it tightens in the clockwise direction and prevent the losing of the bolts. .(Refer to drawing of component 03)

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All the stainless steel component should be machined in such a way that there should not any sharp edges and all the corners have fillets (round corner)

8. PASSIVATION:

All bolts, clamp & other stainless steel component should be fully passivated by means of the latest chemical technique, which restores the corrosion resistant characteristics of the stainless steel. In addition, must compatible with the SSGC distribution system. Must have at least 20 years' service life expectancies.

9. SALT AND SPRAY TEST:

Salt and spray test report (through SSGC approved lab) should be submitted by the bidder. The test should conform to the ASTM B117 or ISO 9227 standards. Salt and spray test report of 96 hours should be submitted by the bidder.

10. HYDROSTATIC PRESSURE TEST:

Hydrostatic pressure is to be performed on gas leak clamp; pressure range should be 1.5-2 times to the design pressure. The test should conform to the ASTM B31.3 or API570 standards.

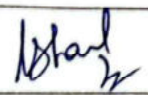
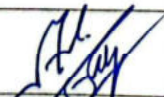

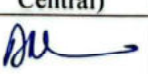

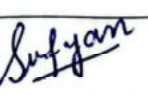
11. SAMPLES


Bidders should submit sample of the product they propose to supply for each size. Samples should be marked clearly with the tender reference number, name and address of the bidder. Failure to comply with the submission of samples at the time of bid opening may invalidate the tender. Samples to be arranged by the bidder on their expense, SSGC will not reimburse any expenditure whatsoever; in this regard.

11. STANDARDS & ISO 9001 (latest version 2018 & 2015) REGISTRATION CERTIFICATION

11.1 Bidders must indicate to what internationally accredited standards materials are subject to compliance for manufacturing of leak clamps in terms to this standard.

11.2. Bidders are bound to certify that materials in question are manufactured to the said standards.

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11.3. All standards quoted are to be taken to refer to the latest edition. Other equivalent internationally accredited standards are acceptable.

11.4. Only bidders who have in operation at their manufacturing facilities a quality assurance System in accordance with ISO 9001 (Latest Version) with certification for both product and manufacturing functions will only be considered.

12. WARRANTY & EXPECTED LIFE:

Warranty certificate against manufacturing and workmanship defects etc. is mandatory. Minimum two-year warranty from the date of delivery is required. Replacement of defective clamps would be borne by the supplier at his own risk & cost.

13. MARKING ON EACH CLAMP:

The supplied clamps should have non-removable marking showing

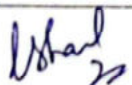

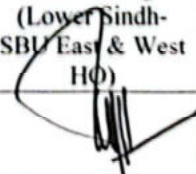


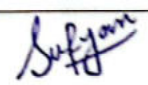
- i- Company logo
- ii- Clamp diameter and
- iii- Clamp length.

14. PRINTED LITERATURE

Original technical printed literature showing materials dimensions etc. must accompany with the bid.

15. SALES TRACK RECORD

Sales Track record for supplying of sheet metal/fabrication components to public sector, MNCs and Private sector company with documented evidence.

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16. REFERENCE TABLES:

Chemical Composition of Stainless Steel SUS 304L – Table 1										
C	Mn	P	S	Si	Cr	Ni	Mo	N	Cu	other
0.03	2	0.045	0.03	0.75	18.0-20	8.0-12	--	0.1	--	--

Mechanical Properties Of Stainless Steel SUS 304L- Table 1a			
Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation in 2in or 50mm %	Hardness Rockwell B
485	170	40	92

DIMENSIONAL PARAMETERS OF CLAMPS TABLE-2							
N.D of Pipe inches	O.D of Pipe inches	Width 3" no. of bolts	Width 6" no. of bolts	Width 9" no. of bolts	Width 12" no. of bolts	Width 15" no. of bolts	Width 20" no. of bolts
3/4	1.05	2	2	3	4	-	-
1	1.315	2	2	3	4	-	-
2	2.375	2	2	3	4	-	-
4	4.5	-	2	3	4	-	-
6	6.625	-	2	3	4	-	-
8	8.625	-	2	3	4	-	-
10	10.75	-	2	3	4	-	-
12	12.75	-	2	3	4	-	-
16	16	-	-	-	-	5	6
20	20	-	-	-	-	5	6
24	24	-	-	-	-	5	6
30	30	-	-	-	-	5	6

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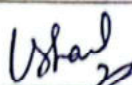
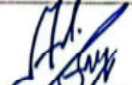

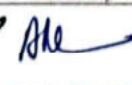

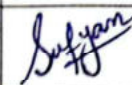
Rubber Gasket (NBR) Table – 03					
Thickness (mm)	Hardness (ShA)	Density (g/cm ³)	Strength (N/mm)	Tensibility (%)	Temperature Range (°C)
6	60-80	1.35	13	250	-15 / +80

17. PROCESS AUDIT

SSGC is authorized to carry out process audit to assess material, process, Inspection, Testing, quality control and other facilities of the vendors as and when required.

18. Mandatory Terms

- i. SSGC holds the right to test the components during technical Evaluation or regular supplies
- ii. Rejected samples must be replaced by vendor free of cost.
- iii. SSGC will carry out Manufacturing / inspection process capability Audit during technical evaluation or course of the regular supplies.
- iv. Material Test reports have to be submitted by Vendor twice a year or as & when required by SSGC
- v. All cost of testing shall be borne by Vendors.
- vi. Vendor shall submit Assembly drawings of Transition Fittings to SSGC along with samples.
- vii. Valid ISO 9001 (latest edition) Certificate is Mandatory
- viii. In-house inspection and test reports shall be submitted by vendor with each lot.
- ix. Sample submission is mandatory along with the bid documents, the bidder if not submitted the sample for against the bid document is consider non-compliant for the technical evaluation.

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Technical Specification

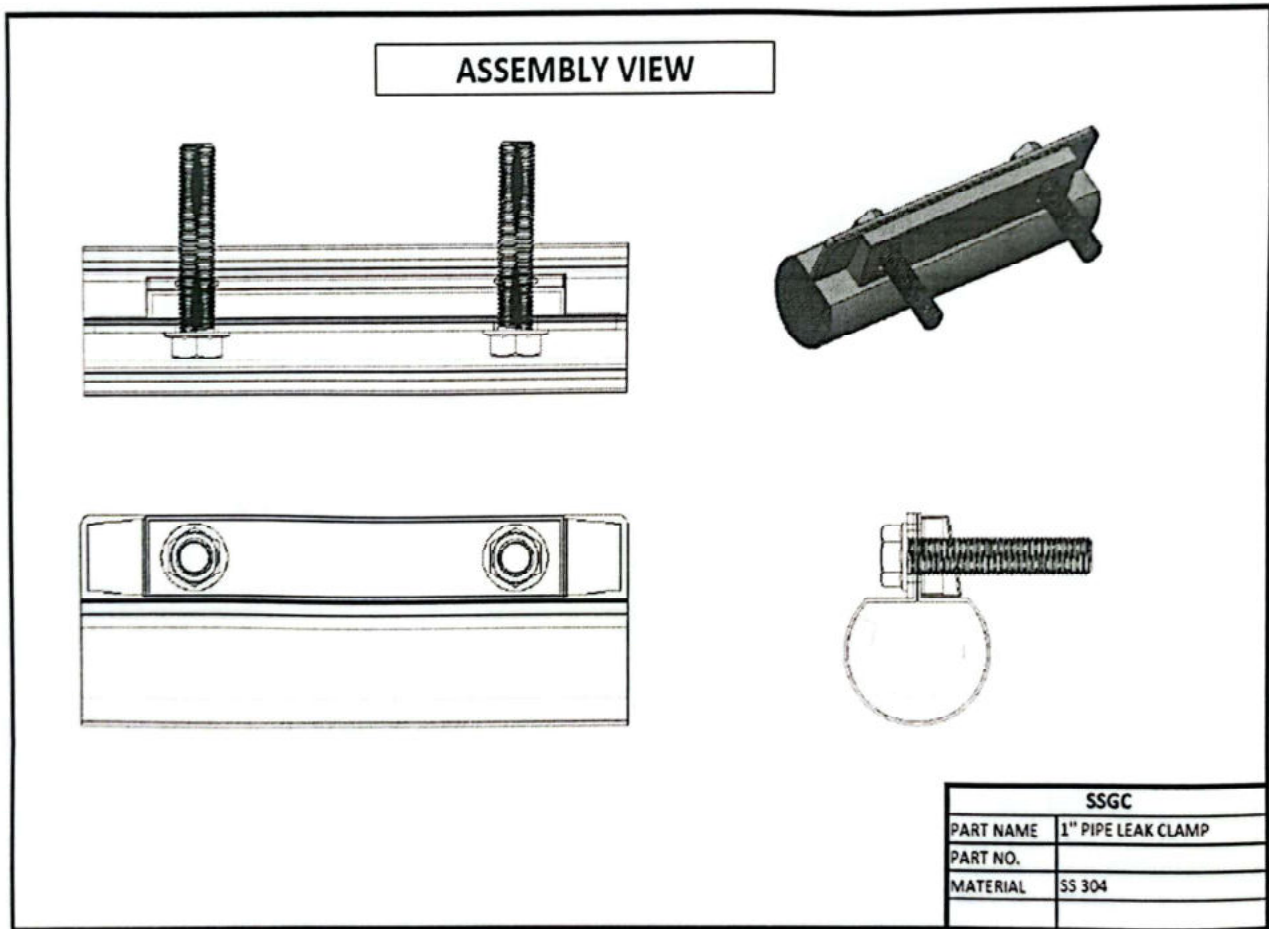
Specification No.
LC-002/15

Gas Leak Clamp (For 3/4" to 6" and above for Gas Distribution Mains)

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LEAK CLAMP TECHNICAL DRAWINGS



Shamail Haider (HSE HO)	Madni Siddiqui (Upper Sindh)	Kamran Nagi (Lower Sindh- SBU East & West HO)	Adnan Rehman (SBU Lower Sindh- Central)	Adeeb Ur Rehman (Distribution KT)	Muhammad Sufyan Qamar (HSE&QA)



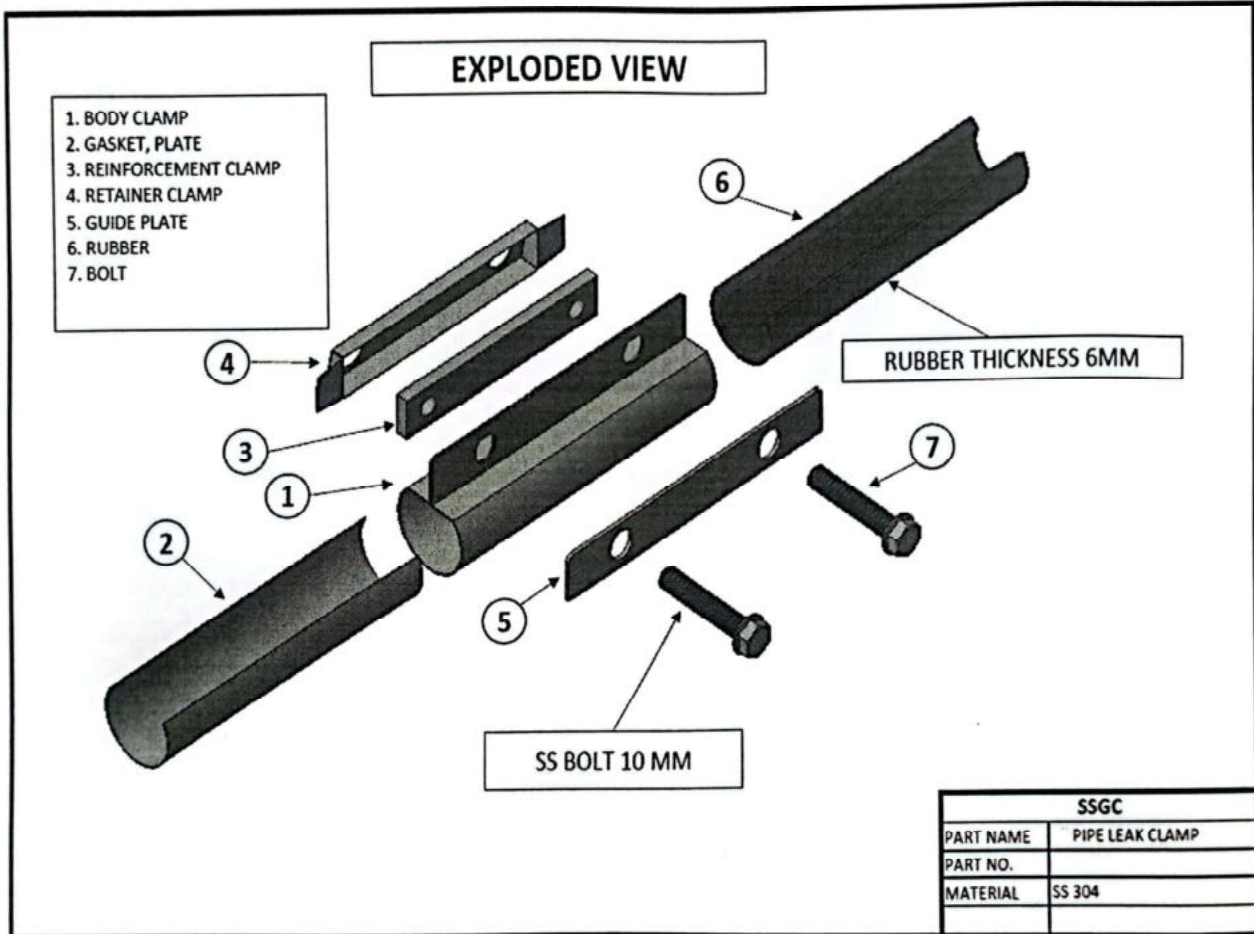
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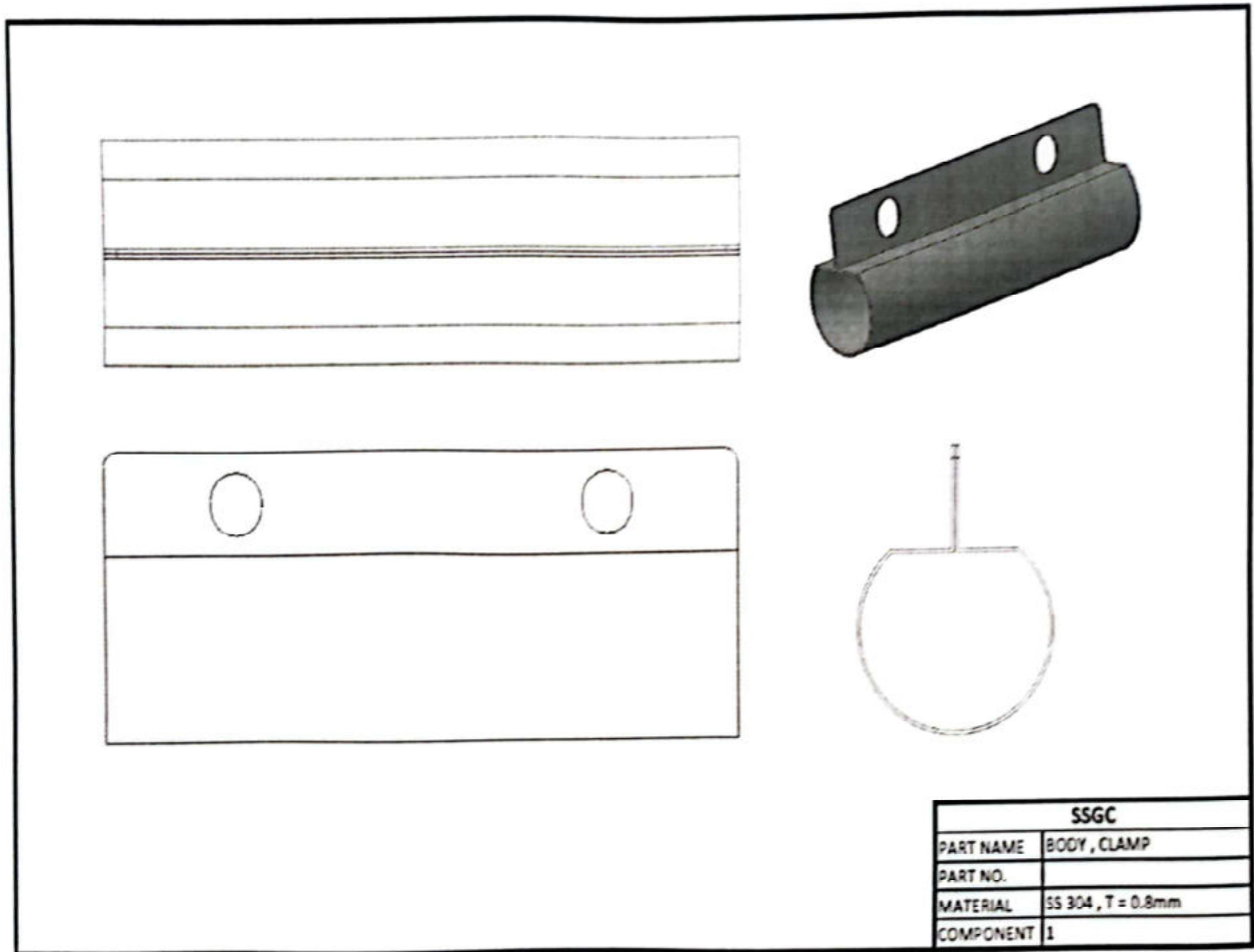
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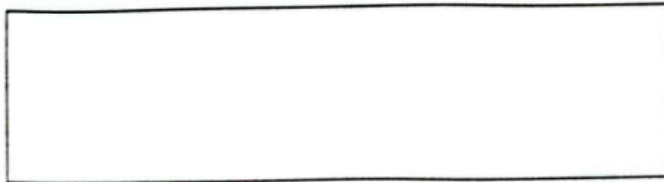
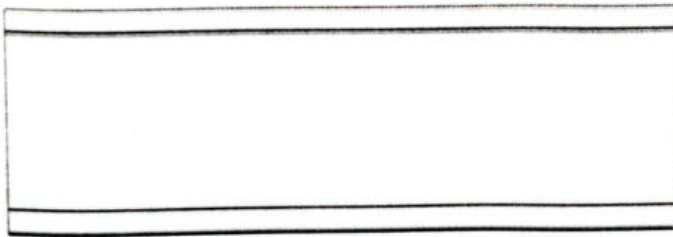
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SSGC	
PART NAME	GASKET, PLATE
PART NO.	
MATERIAL	SS 304, T = 0.4 mm
COMPONENT	2

Shamail Haider (HSE HO)	Madni Siddiqui (Upper Sindh)	Kamran Nagi (Lower Sindh- SBU East & West HO)	Adnan Rehman (SBU Lower Sindh- Central)	Adeeb Ur Rehman (Distribution KT)	Muhammad Sufyan Qamar (HSE&QA)



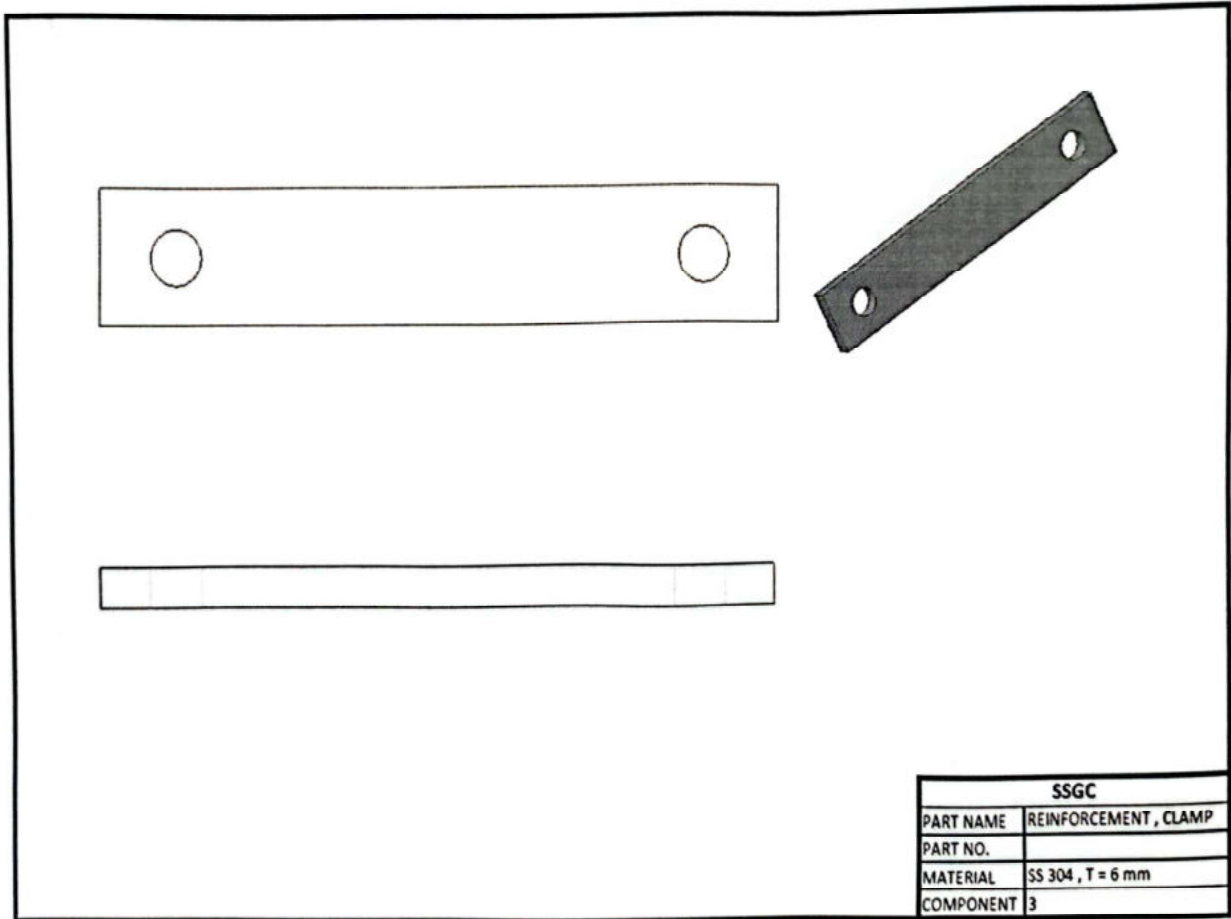
Technical Specification

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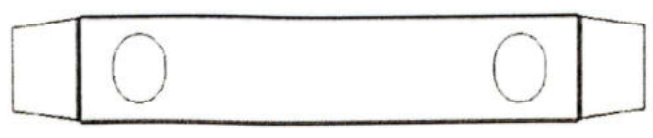
Technical Specification

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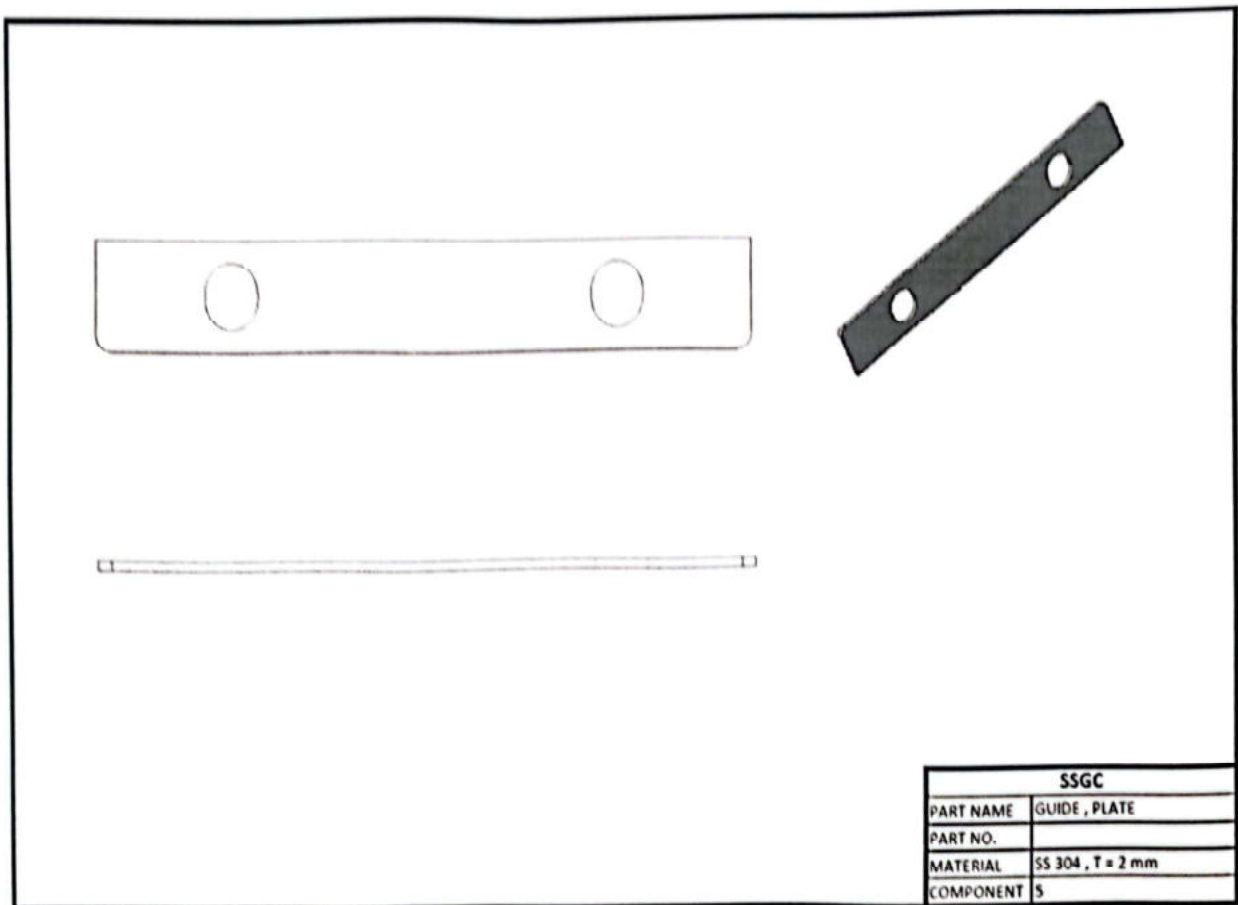
Date of Issue: 10-12-2024

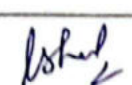



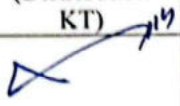
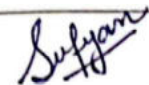


SSGC	
PART NAME	RETAINER, CLAMP
PART NO.	
MATERIAL	SS 304, T = 0.4 mm
COMPONENT	4

Shamail Haider (HSE HO)	Madni Siddiqui (Upper Sindh)	Kamran Nagi (Lower Sindh- SBU East & West HO)	Adnan Rehman (SBU Lower Sindh- Central)	Adeeb Ur Rehman (Distribution KT)	Muhammad Sufyan Qamar (HSE&QA)

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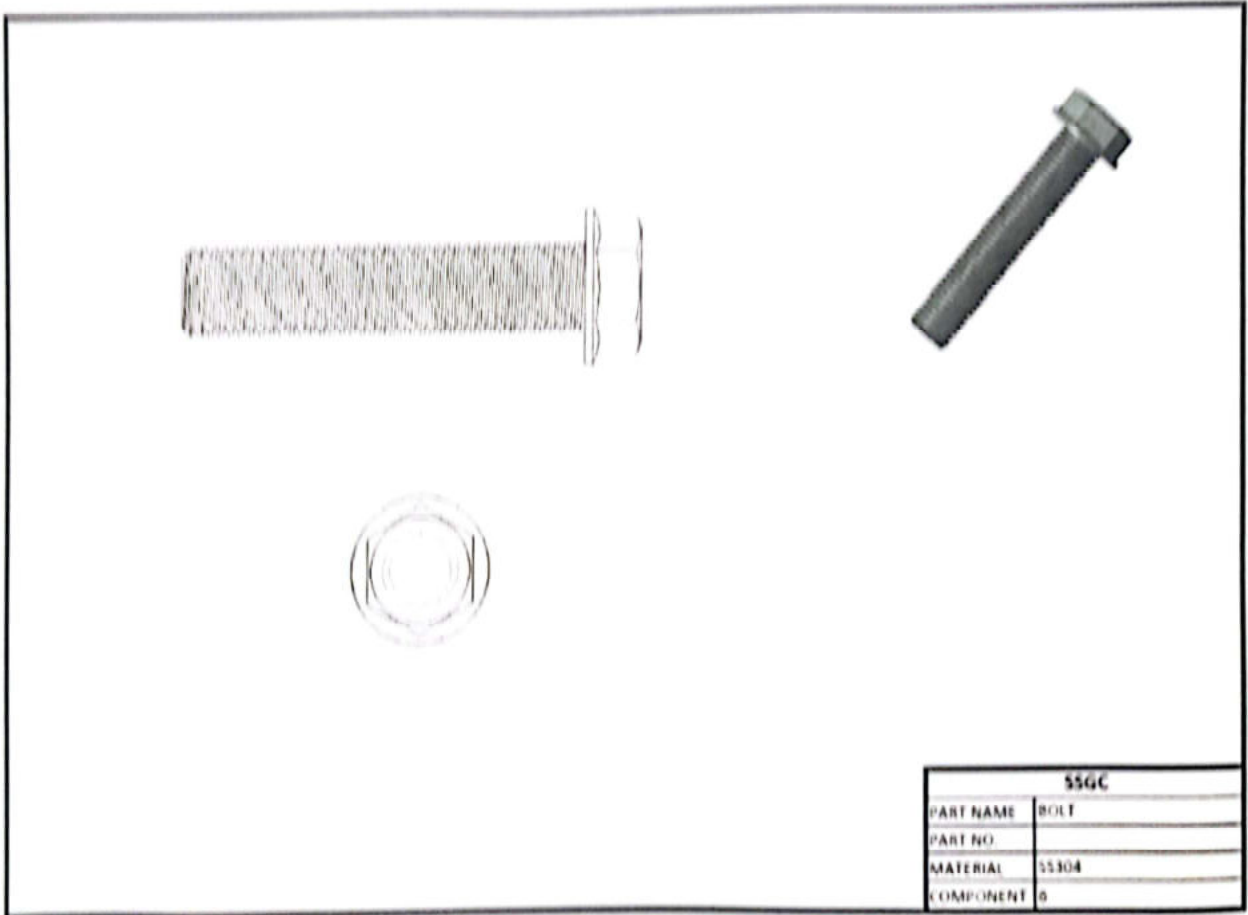
Technical Specification

Specification No.
LT/19/2024

Gas Leak Clamp (For 3/4" to 6" and above for Gas Distribution Mains)

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Date of Issue: 19-12-2024



SSGC	
PART NAME	BOLT
PART NO.	
MATERIAL	A5104
COMPONENT	0

Shamail Haider (HSE HO)	Madni Siddiqui (Upper Sindh)	Kamran Nagi (Lower Sindh- SBU East & West HO)	Adnan Rehman (SBU Lower Sindh- Central)	Adeeb Ur Rehman (Distribution KT)	Muhammad Sufyan Qamar (HSE&QA)