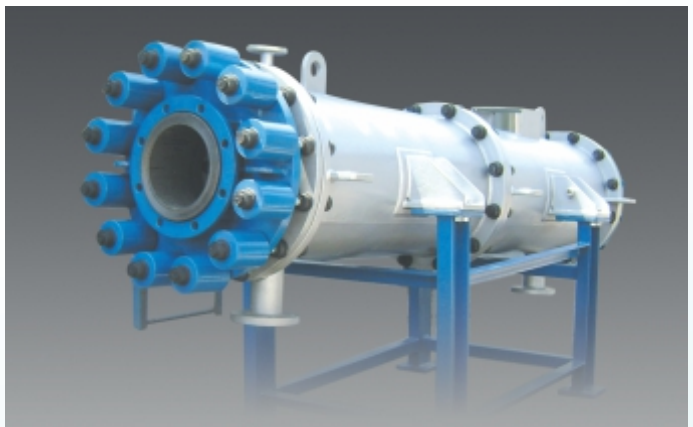
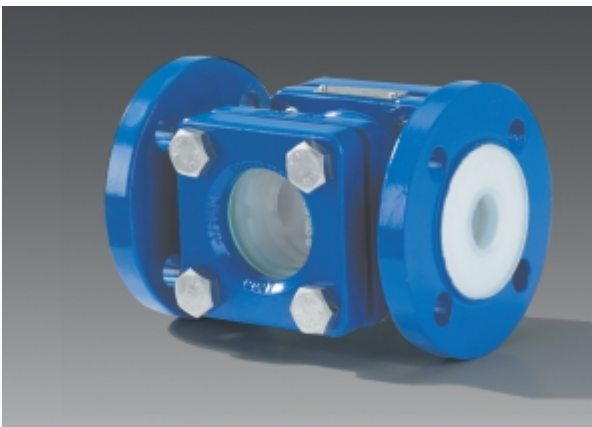
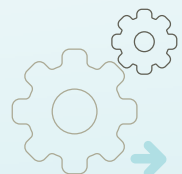


⇒ www.glassconindia.com

GLASSCON
PROCESS SYSTEMS
Quality • Competence • Innovation



BOROSILICATE GLASS 3.3
TEFLON FEP, PFA, PTFE
AND GRAPHITE PRODUCTS
FOR INDUSTRIAL APPLICATIONS



Who We are

We take immense pleasure to introduce our company GLASSCON PROCESS SYSTEMS as one of the leading Designer, Manufacture & Exporter of Borosilicate 3.3 Glass Heat Exchangers, Glass Distillation Units, Customised Pilot plant, Dry HCL Generations Plants, Turnkey Projects, PTFE Lined Pipes & Fittings (High Vacuum applications), Impervious Graphite Heat and Mass transfer equipment's.

Our activities include design and development, erection & commissioning as well as Providing after sales service for Glass / PTFE Lined / Graphite heat transfer equipment's used for various applications such as Heating / cooling, condensation, evaporation Through forced / thermo-siphon re-boilers, gas absorption by packed bed scrubbers, Falling film absorbers, vacuum creation by ejectors, equipment's for special applications Like sulfuric acid dilution & Cooling units etc. we also offer spares and devices such as Rupture Discs, Thermo-wells, Pipes and Nozzles etc.

Glasscon Process Systems is established and run by technocrats having extensive experience of Engineering industry. We have rich experience of Glass / PTFE / Graphite as well as chemical industry.

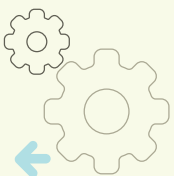
Glasscon Process Systems is continually developing as an engineering partner for industry with special emphasis on the chemical industry and chemical engineering companies where ever aggressive media are handled and protection against corrosion is required. It is promoted by qualified and experienced engineers for high quality fluid management products and services.

We provides the best solution to your corrosion - resistant piping and vessel problems.

We can respond quickly to your needs with both the manufacturing and the engineering necessary to assist in developing cost effective solutions.

We have supplied our products to Pharma / API / Bulk Drugs manufactures, fertilizers manufactures, Agro chemicals manufactures, pesticide manufactures, cold Rolling mills, Gelatine manufactures etc. Our all products have been performing satisfactorily at Various sites. The products supplied by us Confirms to the requirements of international standards.

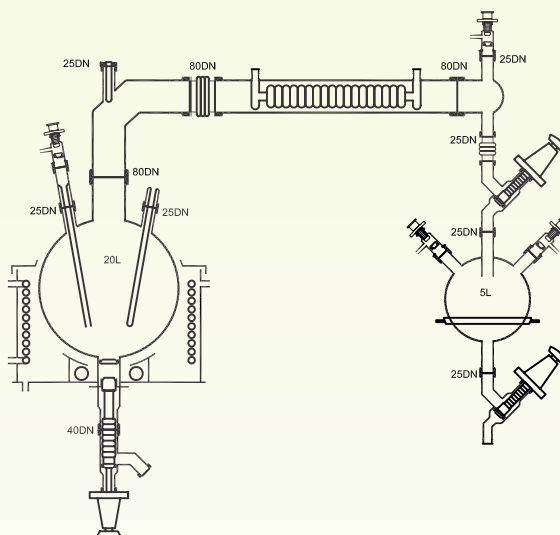
We have our Branches / Ware House Ex-Stock / Technicians in Hyderabad & Visakhapatnam to ensure immediate delivery for spares & services to our esteemed clients.



SIMPLE DISTILLATION UNIT

It consists of a vessel mounted in a heating bath and fitted with a condenser for condensing the fumes. Receiver with drain valve can be added for receiving the condensate. The unit is available in vessel sizes of 20, 50, 100, 200 & 300 L and is suitable for operation under atmospheric pressure and full vacuum.

Reactor Capacity	Bath KW	Vapour Line	CONDENSER HTA (m2)	Unit Cat. Ref.
10 L	2	50 DN	0.2	SDU 10
20 L	3.6	80 DN	0.35	SDU 20
50 L	4.5	100 DN	0.5	SDU 50
100 L	6	150 DN	1.5	SDU 100
200 L	8	150 DN	1.5	SDU 200
300 L	12	225 DN	2.5	SDU 300



- * This units is also available in cylindrical vessel.
- * Heating Mantel is also available in the same unit, please specify before the order.

REACTION DISTILLATION UNIT

This unit is used for carrying out reactions under stirred condition and with provision for simple reflux distillation.

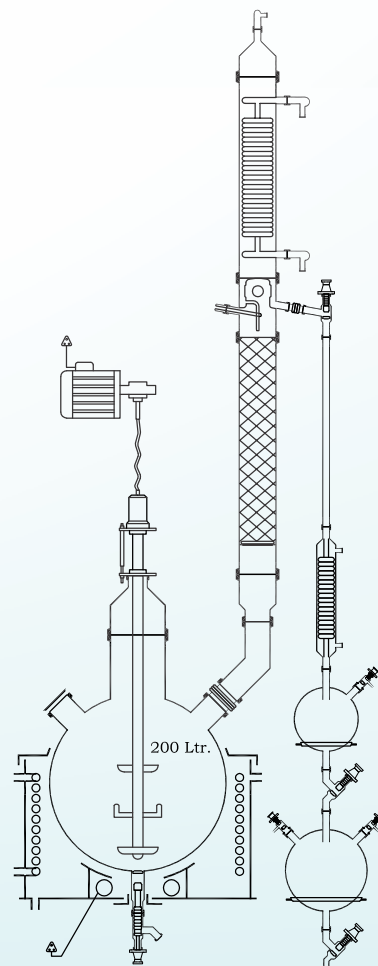
The reaction vessel is mounted in a heating bath and fitted with addition vessel, motor-driven stirrer and provision for condensation with refluxing.

The product is sub-cooled and collected in a receiver.

The units is available in vessel sizes of 20, 50, 100 & 200L, 300L and is suitable for operation under atmospheric pressure and full vacuum.

Reactor Capacity	Bath KW	Addition Vessel Size	Vapour Line	Condenser HTA (m2)	Pro.cooler HTA (m2)	Receiver Vessel Size	Unit Cat. Ref.
10 L	2	2 L	50 DN	0.2	0.1	2L	RDU 10
20 L	3.6	5 L	80 DN	0.35	0.1	5L	RDU 20
50 L	4.5	5 L	100 DN	0.5	0.2	10L	RDU 50
100 L	6	10 L	150 DN	1.5	0.35	20L	RDU 100
200 L	8	20 L	150 DN	1.5	0.35	20L	RDU 200
300 L	12	20 L	225 DN	2.5	0.5	20L	RDU 300

- * This unit is also available in cylindrical vessel.
- * Heating Mantel is also available in the same unit , please specify before the order.



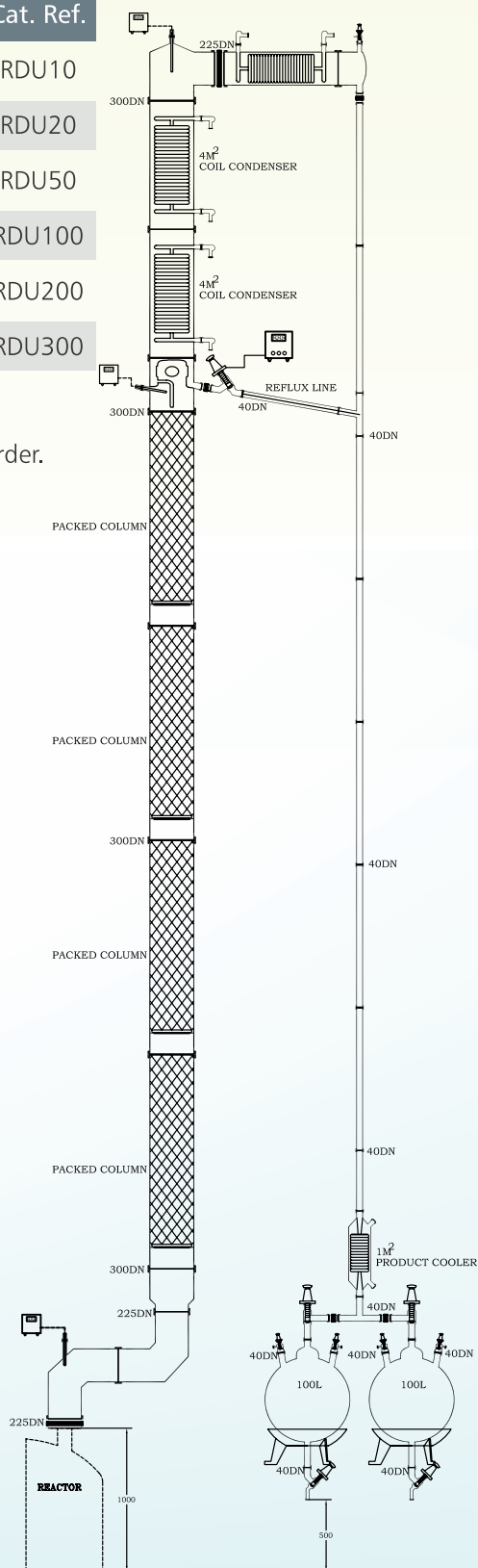
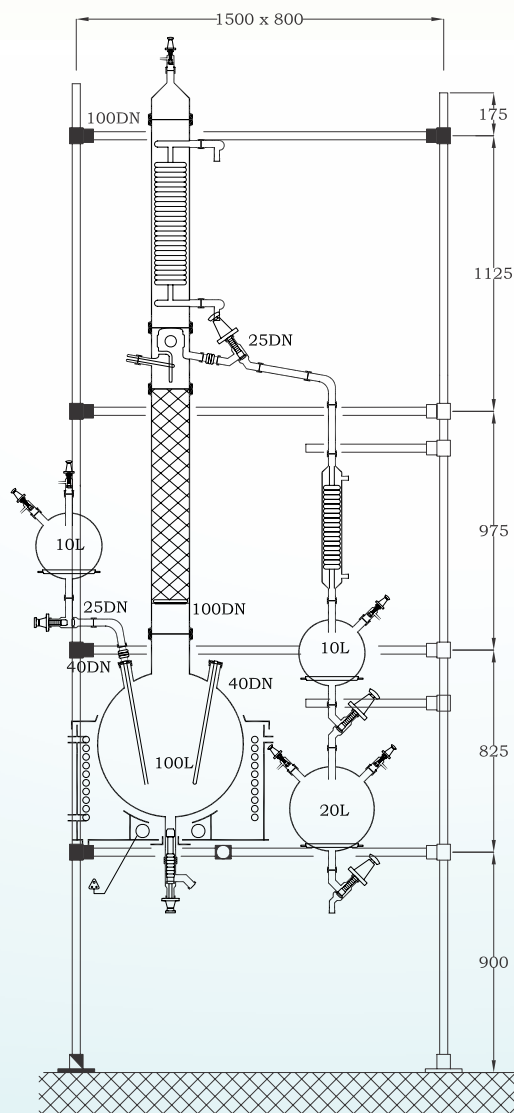
REFLUX REACTION CUM DISTILLATION UNIT

This is a versatile unit and can be used as Reaction Distillation Unit, Fractional Distillation Unit or a combination of both. All features of Reaction Distillation Unit and Fractional Distillation Unit are incorporated.

The units is available in vessel sizes of 20, 50, 100 & 200L, 300L and is suitable for operation under atmospheric pressure and full vacuum.

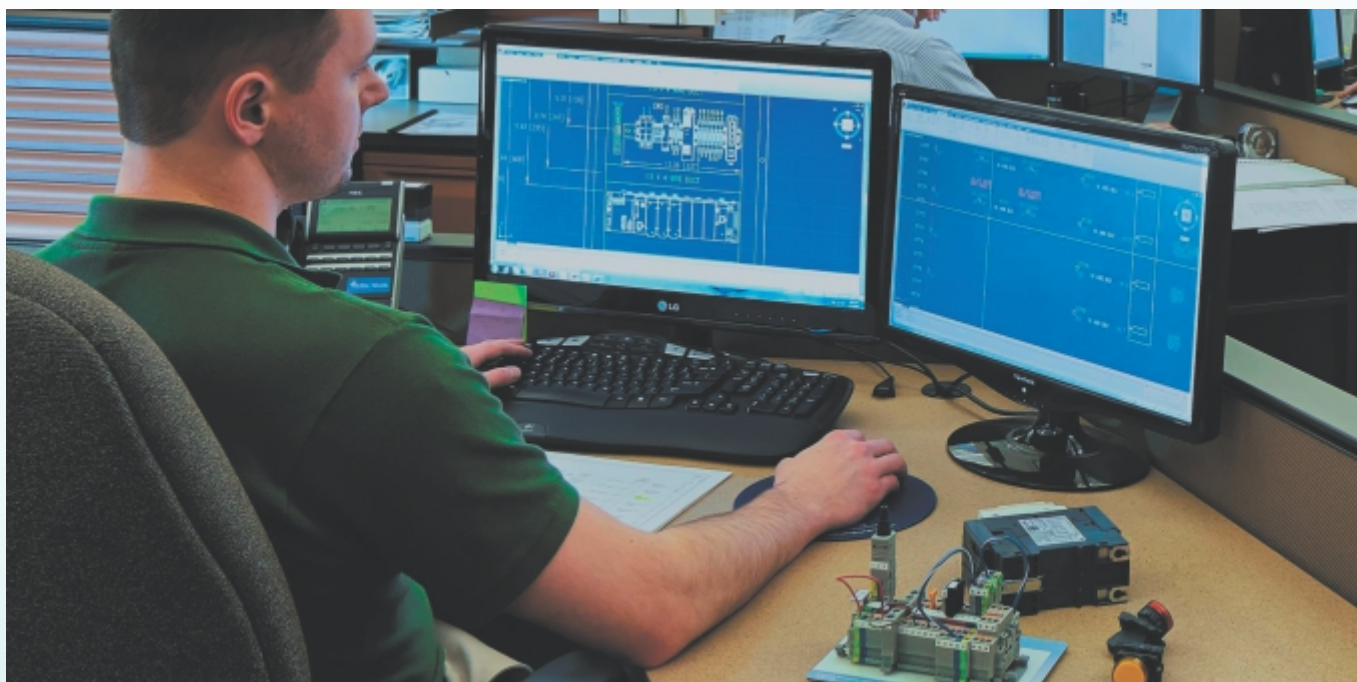
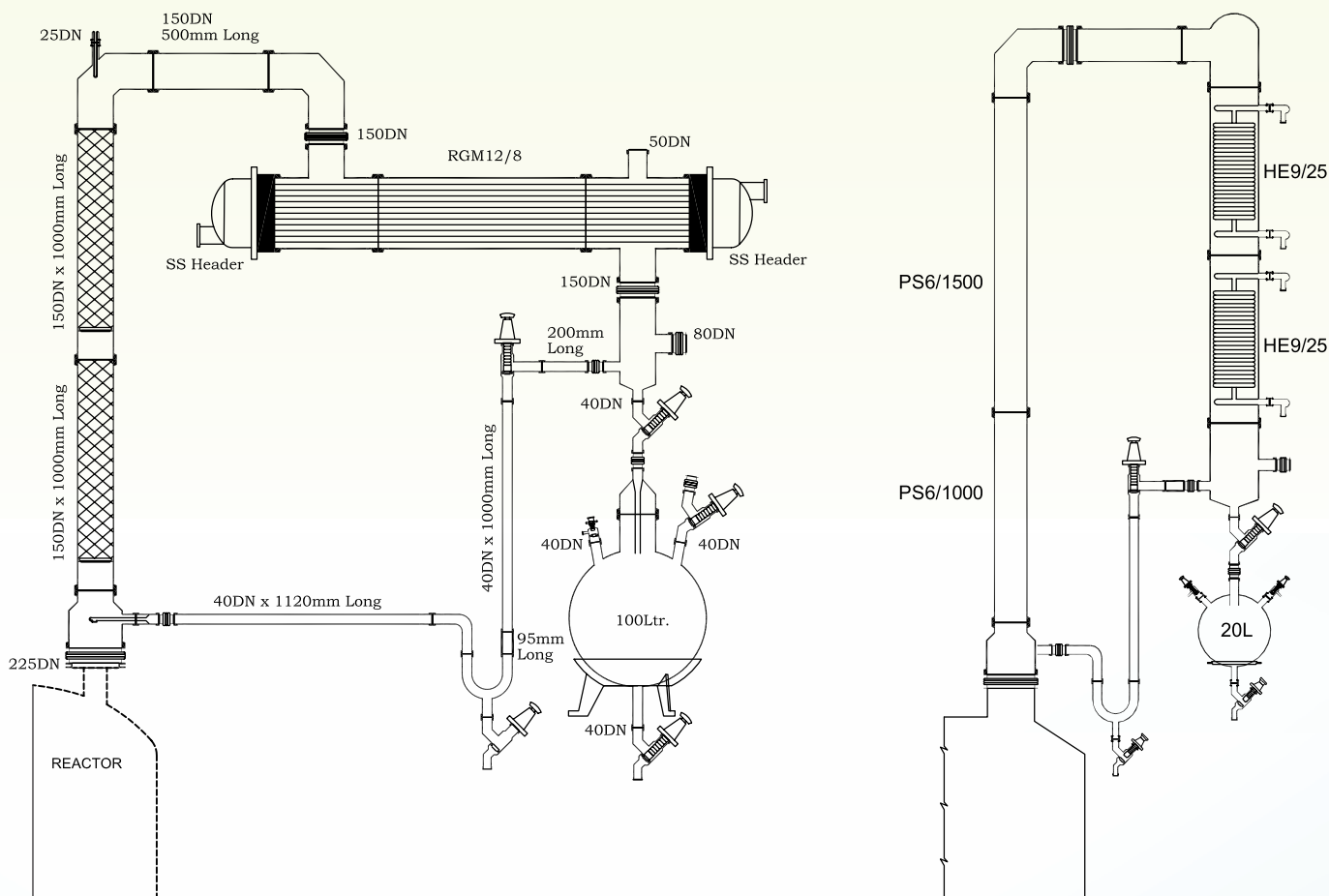
Reactor Capacity	Bath KW	Addition Vessel Size	Vapour Line	Condenser HTA (m ²)	Pro.cooler HTA (m ²)	Receiver Vessel Size	Unit Cat. Ref.
10 L	2	2 L	50 DN	0.2	0.1	2 L, 2L	RDU10
20 L	3.6	5 L	80 DN	0.35	0.1	2L, 5L	RDU20
50 L	4.5	5 L	100 DN	0.5	0.2	5L,10L	RDU50
100 L	6	10 L	150 DN	1.5	0.35	10L, 20L	RDU100
200 L	8	20 L	150 DN	1.5	0.35	10L, 20L	RDU200
300 L	12	20 L	225 DN	2.5	0.5	20L, 20L	RDU300

- * These unit is also available in cylindrical vessel .
- * Heating Mantel is also available in the same unit , please specify before the order.



ASSEMBLIES OVER GLASS LINED REACTOR

Glass Lined Reactors are used instead of glass reactors specially when scale of operation is large and relatively high pressure steam is to be used as heating media. Quite often assemblies like Simple Distillation Unit, Reaction Distillation Unit, Fractional Distillation Unit etc. are installed above glass lined reactors. The basic features of these assemblies remain the same but glass shell and tube heat exchanger is preferred due to large scale of operation. A typical fractional distillation unit type assembly over GLR is shown in nearby figure. The assembly can be separated into different categories.



HCL GAS GENERATION - AZEOTROPIC BOILING ROUTE

Commercial hydrochloric acid is available in the market as 30% aqueous solution and is widely used in industry in large quantities. But for certain applications e.g. in bulk drug/pharmaceutical industry HCL gas is required in gaseous form. Such users generate anhydrous HCL from commercial grade for their captive consumption. Several methods have been adopted and generation through BOILING ROUTE is also a reliable technique.

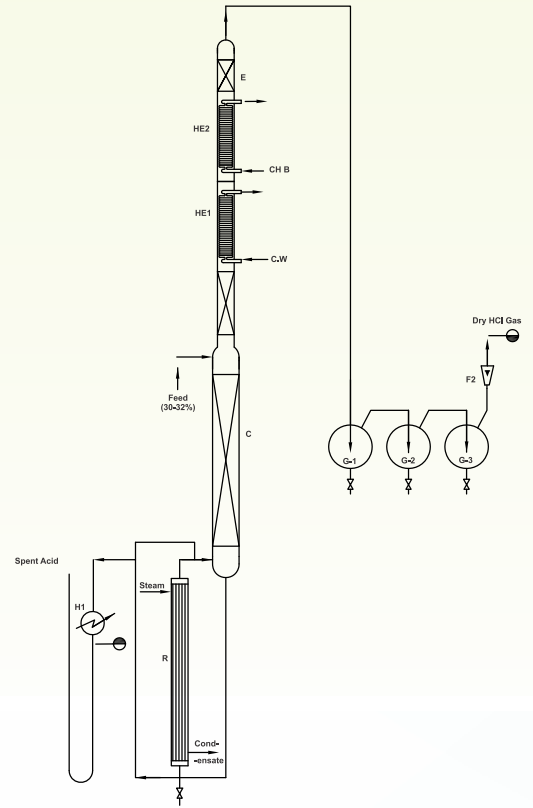
Salient features

1. Operational reliability.
2. Available in wide range capacities - from 5kg to 300kg/hr of dry HCL.
3. Except commercial hydrochloric acid, no other raw-material is required.
4. The spent acid about 21% HCL usually finds use for captive consumption.
5. Capable of operating from 25-100%.
6. Ease of installation.
7. Negligible pressure drop.

Raw Material & Utility Requirements

The indicative requirements for 20kg/hr HCL gas generator are given below :

1. 30-32% HCL, (kg/hr) : 250
2. Cooling water at 30° C (M3/hr) : 3.5
3. Chilled brine at -10° C (M3/hr) : 4
4. Saturated Steam at 2.5 Kgs/cm² - g (Kgs.) : 50



HCL GAS GENERATOR

Anhydrous HCL generation unit - Extractive Distillation with Calcium Chloride.

The material system hydrogen chloride/water displays a maximum azeotrope at a boiling temperature of 108.6°C, for a system pressure of 1 bar and a HCL concentration of 20.2wt%. If the acid concentration is lower than the azeotrope mixture, the acid can be concentrated only up to the azeotropic point. Further concentration needs special procedures. We have considered the most economical contemporary technology "Extractive Rectification & Absorption Technology".

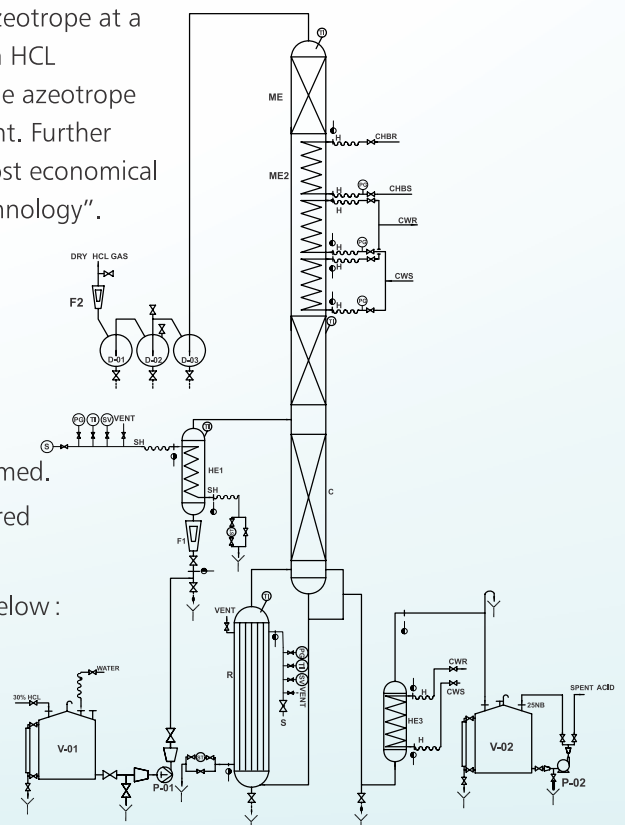
Salient Features

1. Continuous operation.
2. Maintenance free operation.
3. Turn-down ratio of 25%
4. No Effluent (No Sulfuric Acid or 21% Hydrochloric Acid) except 1% Acidic Water. 99% acid water 99% acid shall be consumed.
5. Onetime Calcium Chloride to be used Only make up quantities required

Raw Material Requirement

The indicative requirements for 20 kg/hr HCL gas generator are given below :

- | | | |
|---------------------------------|---------------------|---------|
| Description | 30% HCL (kg/h) | : 90 |
| Calcium Chloride 50% Soln. (kg) | : 600 | |
| Steam (dry & saturated) | : 3.5 Bar & 5 Bar = | 160kg/h |
| Cooling water | : 30oC ; | 3m3/h |
| Chilled Brine | : -10oC ; | 1.5m3/h |



TEFFLON FEP, PFA, PTFE LINED PIPES & FITTINGS



Products Include

- PTFE lined Dip pipe/Sparger
- PTFE lined steel pipes & fittings
- PTFE bellows for pressure/vacuum applications
- Nozzle liners/solid bush
- PTFE lined envelop gaskets
- FEP/PFA lined valves

ANSI/ASTM Pipe And Fittings Standards

Carbon Steel Pipe

CS pipes material are seamless or welded conforming to ASTM A 106 Gr.B/ ASTM A53 in standard wall thickness.

Stainless Steel Pipe

SS pipes material are 55304, seamless ASTM A213, schedule 40 wall thickness.

Flanges

Flange material is as per ASTM A 105 and for DIN/BS 10 standard. Flange is made from plate material 152062 Gr. - A. Stainless steel flange is as per ASTM A 182.

Fittings

Fittings are fabricated from pipe or alternatively ductile iron casting conforming to ASTM A395, casting grade. Flange material ASTM A 105 (optional)

Design Standard

Flanges for lined products shall have ANSI class 150 bolt circle diameters, bolt hole diameter and numbers of bolt holes in accordance with ANSI 816.5, unless otherwise specified flanges are ductile iron as per ANSI B 16.42. Fittings shall have ANSI class 150 face to centerline dimensions in accordance with ANSI B 16.42 unless otherwise specified. No welding shall be done on pipe components in the field.

All lined pipes and fittings shall generally conform to ASTM F1545.

Application

Temperature

PTFE: Maximum continuous service temperature 200° C. Melting temperature 327° C.

PFA: Maximum service temperature 200° C. Melting temperature 305° C.

FEP: Maximum service temperature 160° C. Melting temperature 260° C.

Pressure Rating

As per ANSI B 16.5, 150 lbs.

Chemical Resistance

The well known PTFE / PFA / FEP is chemically inert to most of the chemicals and solvents with the exception of molten alkali metals.

PTFE can be used with aggressive media such as hydrofluoric acid, fluoric acid, fuming sulphuric and nitric acid hot sodium hydroxide solutions and chlorine gas, hydrogen and nitric oxides.

Operating Pressure

PTFE lined pipe work can be used upto 20 bar I 300 psi.g.

Full vacuum resistance depending upon the process conditions. Details to be provided by client for specific applications.

Resistance to Light & Atmospheric Conditions

PTFE may be used without any problem in the open air and there are no mechanical and electrical characteristics even then subject to extreme climatic conditions.

Electrical Properties

PTFE has goods electrical insulations with a very low dielectric constant.

* Specifications are subject to change without notice. Dimensions are indicative and informative only.

Inspection

Dimensional check: As per standard:

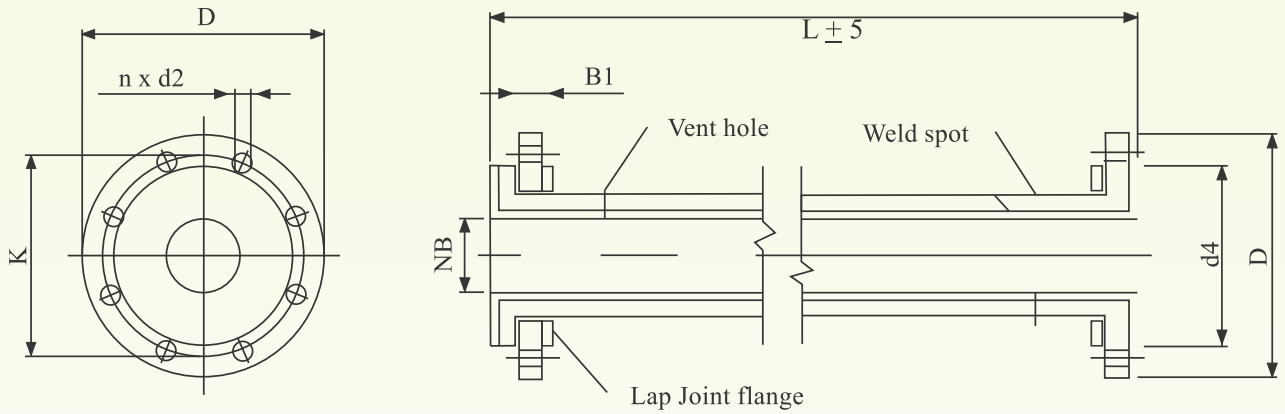
Hydro Test

All 150 class pipes and fitting shall be tested at 25 bar after lining and 46.5 bar for 300 class pipes and fittings.

Electrostatic Test

A test voltage of 15 kv to 25 kv depending upon liner thickness.

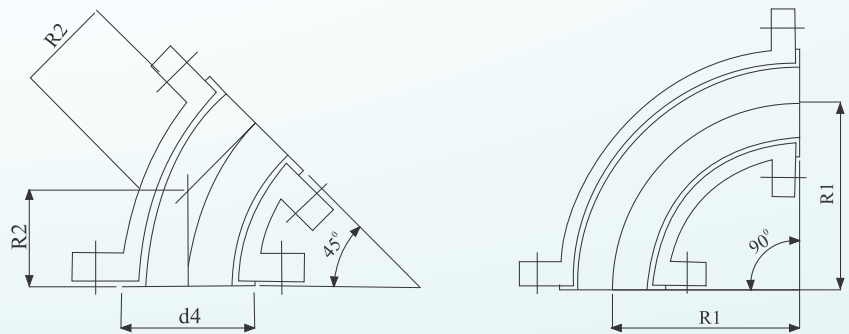
SPECIFICATION FOR PTFE / FEP / PFA LINED PIPES



NB		Lining Thickness	d4	D	K	No. of Holes x Dia of Holes	Length max.	B ₁
MM	Inches							
25	1	3	50.8	108.0	79.4	4 x 15.9	3000	14.5
40	1.5	3	73.0	127.0	98.4	4 x 15.9	3000	17.5
50	2	3	92.1	152.4	120.7	4 x 19	3000	19.5
80	3	3	127.0	190.5	152.4	4 x 19	3000	24.0
100	4	3	157.2	228.6	190.5	8 x 19	3000	24.0
150	6	3	215.9	279.5	241.3	8 x 22.2	3000	25.5
200	8	4	269.9	342.9	298.5	8 x 22.2	3000	29.0
250	10	4	323.9	406.4	362.0	12 x 25.4	3000	30.5
300	12	5	381.0	482.6	431.8	12 x 25.4	3000	32.0

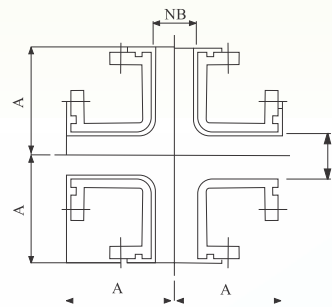
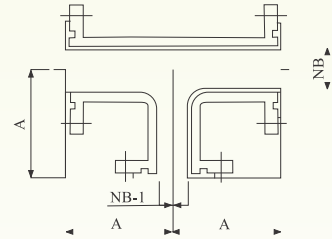
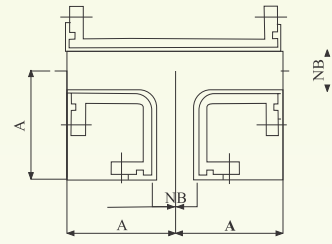
SPECIFICATION FOR LINED ELBOWS

NB	R ₁	R ₂
25	89	45
40	102	57
50	114	64
80	140	76
100	165	102
150	204	127
200	228	140
250	279	165
300	305	190



PTFE / FEP / PFA LINED EQUAL TEE, REDUCING TEE, CROSS

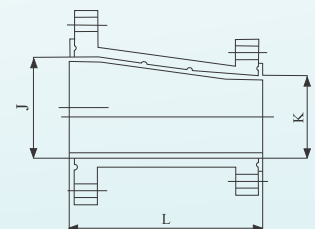
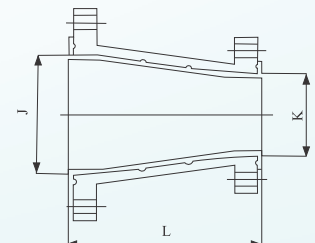
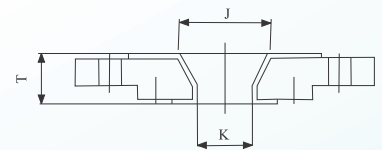
NB		NB,	A
MM	Inch		
25	1	25	89
40	1.5	40	102
50	2	50	114
50	2	25	114
50	2	40	114
80	3	25	140
80	3	40	140
80	3	50	140
80	3	80	140
100	4	100	165
100	4	25	165
100	4	40	165
100	4	50	165
100	4	80	165
150	6	50	203
150	6	100	203
150	6	150	203
200	8	200	229
250	10	250	279
300	12	300	305



PTFE / FEP LINED REDUCERS

J	K	L	T
25	20	114	35
40	25	114	35
50	25	127	35
50	40	127	35
80	25	152	35
80	40	152	45
80	50	152	45
100	25	178	45
100	40	178	45
100	50	178	45
100	80	178	45
150	25	229	54
150	40	229	54

J	K	L	T
150	50	229	54
150	80	229	54
150	100	229	54
200	80	279	54
200	100	279	54
200	150	279	54
250	100	305	54
250	150	305	54
250	200	305	54
300	150	356	54
300	200	356	54
350	300	406	60



GRAPHITE HEAT AND MASS TRANSFER EQUIPMENTS

CYLINDRICAL BLOCK TYPE HEAT EXCHANGERS

GLASSCON PROCESS SYSTEMS is leading manufacturer of impervious graphite heat and mass transfer equipments. Renowned for high product quality, GLASSCON PROCESS SYSTEMS is serving chemical industry for more than a decade in india and abroad.

PTFE IMPREGNATED CONDENSER FOR HOSTILE APPLICATIONS

GLASSCON PROCESS SYSTEMS have its own sound technological and infrastructural base to manufacture graphite heat exchangers with impregnation process like phenolic impregnation and PTFE impregnation.



THERMOWELLS AND RUPTURE DISCS

GLASSCON PROCESS SYSTEMS also serves chemical industry by supplying products such as graphite rupture discs, thermowells as well as special components as per customers requirements.





SERVICE SUPPORT

After Sales service & Support has always been our USP. Our Team provides service not just at the development & design phase but also after execution in scale up & up gradation of existing plants.

Engineering & Design of Plants:

Our Team of Engineers help design efficient and Optimised plant from the core process concepts. These are mainly customised to suit the clients process needs.

Installation of Plants:

Use of Superior quality raw material, good manufacturing practices & performance testing of individual components is done at our end to ensure minimum problems during commissioning at site of the customer. Our team of experienced personnel ensure hassle free installations of plants at site & deliver running trials to the satisfaction of the customer. Training to the technical staff at the customer's plant is imparted to ensure that smooth operations of the plants or systems can start with immediate effect.

Scale Up of Existing Plants:

We have expertise in laboratory scale units, pilot plants as well as production scale plants. This experience aids us in optimizing scale up of existing units and plants at customers end. We understand the scale up needs to be done smoothly with maximum utilization of existing facilities. Our Pilot plants and Kilo labs are designed keeping this in mind.

Automation of Existing Plant:

We understand that it is essential to automatically monitor & control some parameters during chemical process especially in research & development and in academic application.

To cater this requirement, we offer automated plants & process systems. The degree of automation can be varied to suit the customers requirement. High quality instruments and real time automation systems like SCADA are used to provide precise controls over the process.

Onsite Maintenance:

We offer onsite maintenance for the process plants and unit we supply. Our Team is always available to offer technical support & services to our customers to ensure that their plants runs smoothly.

Our Franchise

SG POLYMERS

308, Tower 1, Swanlake, Opp. Metro, Kukatpally, Hyderabad - 500072. Mobile : 9394 000 883

SG ASSOCIATES

16-11-511/C/47, 104, 1st Floor, Pratapnagar, Dilshukhnagar, Hyderabad - 500 036. Mobile : 8897 544 433



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