



Kerala State Homoeopathic Co-Operative Pharmacy Ltd.

(sponsored by government of Kerala & aided by govt. of India)
Office:Pathirappally, Alappuzha, India Pin-688 521

Phone : 477 2258012
:477 2258665
Fax : 0477 2258012

Website : www.homcokerala.com

Email : homcokerala@gmail.com

Supplier's Copy

USER REQUIREMENT SPECIFICATION

Name of the Company	:	
Contact Person	:	
Address	:	
Contact Details	:	
Department	:	Utility (On service Floor)
Equipment and Code No.	:	1) Pure Steam Generation Plant <u>Capacity 100 kgs/hr.</u> 2) Pipe and pipe fittings for pure steam distribution system
Name of work	:	Supply, Installation, Commissioning & Validation of cGMP model Pure Steam Generation (PSG) & distribution system at M/s. HOMCO -Kerala
Ref. No.	:	
Date	:	
Enclosures	:	



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PURE STEAM GENERATION PLANT Capacity: 100 kgs/hr.

ANNEXURE - I : BASIC DETAILS OF THE MACHINE

DESCRIPTION	
(To be specified by the supplier, if any variation)	
Scope	: Supply, Installation, Commissioning and Validation of Pure Steam generation system including following : 1) Pure steam Generation System 2) Distribution system including instrumentation Along with all interconnecting pipes, valves, instrumentation, electrical cables, Skid , support and all accessories required for successful working of this system at site of M/s. Homco -Kerala
Design Data	
Standard	: cGMP and IP,BP and USP guidelines
Working Principle	: Finn Aqua Type
Output (Flow rate)	: 100 kgs/hr
No. of columns	: 1 No.
No. of pre heaters	: 2 Nos.
Pure steam Temp	: 95 to 120 °C
Outlet pure steam pressure	: 4 to 5 kgs/cm ²
Feed Water	: Purified water
Conductivity	: <5.0μ Siemens/cm *
Temp	: 25°C*
Feed water Consumption	: 110-120 LPh *

* To be specified and confirm by the supplier as per their equipment design



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DESCRIPTION		
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Plant steam consumption	:	120 to 150 kgs/hr *
Steam pressure	:	6 kgs/cm ² *
Compressed air Consumption	:	8-9 cfm @6-8 bar ,dry and oil free*
PSG Output quality		
Endotoxins	:	<0.25 EU/ml
TOC	:	<500 ppb
Conductivity	:	<1.3 uS/cm at 20 °C
Microbial Limit	:	<10 cfu/ml
Non Condensable Gases	:	<3.5%
Dryness	:	>90%
Colour ,Test and odour	:	Clear
Feed water Input quality		
Endotoxins	:	<250 EU/ml*
TOC	:	<500 ppm
Conductivity	:	<1.3 uS/cm at 20 °C *
Microbial Limit	:	<100 cfu/ml*
Colour ,Test and odour	:	Clear
Design parameter		
Shell	:	6 to 9 kgs/cm ² *
Tube	:	5 to 7.5 kgs/cm ² *
Separator shell	:	5 to 7.5 kgs/cm ² *

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DESCRIPTION

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SYSTEM DIScription

- The pure steam generation system should consist of two columns – Evaporator and Separator.
- The Evaporator should be a shell and tube type of heat exchanger.
- The driving force i.e. plant steam heats the feed water in the tube side of the evaporator to generate vapor.
- The generated vapor should enter the Separator column. The separator column should use a double punch separation technique for particle entrainment and separation of impurities such as droplets and pyrogenic material.
- The first punch should offer by the multi- directional baffle, which should makes, the vapour traverse a torturous path. In the second stage, the steam should passes through a cyclone type centrifugal separator.

1) Generation System:

Evaporator & separator heat exchanger	:	Shell Type : SS 316 L double tube sheet Tube type : SS 316L seamless tube Duly argon welded with purging
Insulation	:	Resin bonded glass wool covered with SS 304
De gasser system	:	In built
Sampling condenser	:	MOC SS 316L, for condensing generated pure steam for sampling

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ANNEXURE - II : cGMP FEATURES

DESCRIPTION	
(To be specified by the supplier, if any variation)	
MOC	
<ul style="list-style-type: none">• Evaporator and separator : SS 316 L• Insulation : Resin bond glass wool duly covered with SS 304• Structure : SS 304 pipe• MOC for all contact parts should be AISI 316L and non-contact parts SS 304• Piping : Contact parts : SS 316 L and non-contact : SS 304 TC end and orbital welding• Sight and light glass : Toughened• Valve: SS 316 L (Pneumatic piston valve, non return valve, safety valve, diaphragm valve and control valve.• Steam trap : Float type• Float switch : SS 316 L• Pressure gauge : Bourdon type SS 316 L• All gaskets should be of pharmaceutical grade PTFE, silicon, or Viton.• A safety relief valve and vacuum breaker should be installed within the piping to protect the pressure vessels.	
Working Area Environment	: Temperature : $26 \pm 2^{\circ}C$: Relative Humidity : NMT 75%
Finish	Ra $\leq 0.4 \mu m$ for contact parts. Matt finish for non-contact parts
The equipment should be smooth finished without any sharp edges and crevices	

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ANNEXURE - III : OPERATIONAL FEATURES

DESCRIPTION

(To be specified by the supplier, if any variation)

1) Pure steam generation plant – 100 kgs/hr.

Process & Instrumentation

- SS316 horizontal centrifugal feed pump
- SS316L pressure switch with TC end
- FRL: Filter regulator and lubricator for incoming compressed air.
- PLC : RS 232 port for data communication, In built real time clock with data and time function , battery backup and 21 CFR part 11 compatible
- HMI: 5.7" screen size, with color display and resistive type touch screen.
- Printer: 80 column dot matrix data printer.
- SS316 conductivity sensor to measure the conductivity of feed water
- Rota Flow meter: SS 316 L to monitor flow of inkling feed water.
- Temperature sensors : Type PT100 duplex type class A
- Temperature indicator cum controller: To control the temperature.
- Skid structure for instrumentation and distribution system.

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DESCRIPTION

(To be specified by the supplier, if any variation)

Tube & Shell Type	:	Single Shell & Seamless Tube*
Material Of Construction	:	Contact Parts -SS 316L*
Insulation	:	SS 304*
Finish	:	Tube-Internally Electro polished <0.38 Ra*
Shell	:	Inside Mirror Finished Manual Buff*
Position	:	Vertical*
Accessories	:	Sight Glass*
Quantity	:	1 No.*
Make	:	WSPL*
PSG Preheater		
Material Of Construction	:	Contact Parts -SS 316L*
Tube & Shell Type	:	Single Shell & Seamless Tube*
Insulation	:	SS 304*
Position	:	Vertical*
Quantity	:	2 No.*
Make	:	WSPL*
Non Condensable gases Remover (NCGR)		
Material Of Construction	:	Contact Parts -SS 316L*
Quantity	:	1 No.*
Make	:	WSPL*
PSG Column		



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Sampling Condenser

Material Of Construction	:	Contact Parts -SS 316L*
Quantity	:	1 No.*
Make	:	WSPL*

Insulation

Material of Insulation	:	Resin Bonded Rock Wool Asbestos Free*
Insulation Cover Material	:	SS 304*
Quantity	:	1 Lot*
Make	:	WSPL*

Sight glass/View glass

Type:	:	Toughened*
Material of Construction	:	SS 316L*
Function	:	To View The Water Level In Each Columns & Distillate Outlet*
Quantity	:	1 No.*
Make	:	WSPL*

Vent Filter

Type	:	Plain*
Material of Construction	:	SS 316L*
Size	:	10" Long*
End Connection	:	TC End*
Location	:	On top of the NCGR*

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Vent Filter Cartridge

Type	:	Hydrophobic*
Material of Construction	:	PTFE*
Size	:	10" Long, 0.2 Micron*
End Connection	:	Code-7*
Location	:	Over The Tank Inside The Vent Filter*
Temperature	:	Ambient to 125°C*
Quantity	:	1 No.*
Make	:	WSPL*

Feed Water Pump

Capacity	:	0.115 m ³ /hr*
Head	:	3 Kg/cm ² *
Type	:	Centrifugal Pump*
Application	:	Purified Water*
MOC	:	SS 316*
End Connection	:	TC End/Flange End*
Supply	:	415V/3 Phase/50Hz*
Quantity	:	1 No.*
Make	:	Grundfos/Xylem/Equivalent*

Instruments

Pressure Gauge

Type	:	Bourdon type*
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Range	:	0 to 10 Kg/cm ² *
Contact Parts	:	SS 316L*
Non-contact parts	:	SS 304*
Dial Size	:	100 mm*
Dampening Liquid	:	Glycerin Filled*
Marking	:	White Background With Black Marking*
Sensing Elements	:	Bourdon Gauge*
End Connection	:	TC End*
Location	:	Feed Water Pump Outlet, Plant Steam Inlet & Plant Steam Line To Preheater*
Quantity	:	3 No.*
Make	:	Baumer/Equivalent*
Level Switch		
MOC	:	Wetted Parts SS 316L*
Type	:	Top Mounted Magnetic Level Switch*
End Connection	:	TC End*
Location	:	For Column & NCGR*
Quantity	:	2 No.*
Make	:	Pune Techtrol/Equivalent*
Flow Indicator Switch		
MOC:	:	SS 316L*
Installation:	:	Upward Flow Vertical Installation*
Fluid:	:	Water*

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End connection:	:	TC End*
Quantity	:	1 No.*
Make	:	Danfoss / Indfos*
Temperature Sensor Cum Transmitter		
Type	:	Pt 100/Simplex/3 Wire/Fixed*
MOC	:	SS 316L*
Range	:	0 To 200°C*
Length	:	50mm*
Accuracy	:	Class A, 4 – 20 mA*
End connection	:	TC End*
Quantity	:	4 No.*
Make	:	Radix / Equivalent*
Conductivity Sensor & transmitter		
Range	:	0 to 10 μ S/cm*
MOC	:	SS 316L*
Size	:	DN 20*
Output	:	4-20 mA*
Location	:	Sampling Condenser Outlet*
End Connection	:	TC End*
Quantity	:	1 No.*
Make	:	Forbes marshal/ Mettler/ Jumo*
DESCRIPTION (To be specified by the supplier, if any variation)		

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Pressure Transmitter

MOC	:	SS*
Rang	:	0 to 10 bar*
Location	:	Pure Steam Outlet*
End Connection	:	TC End*
Quantity	:	1 No.*
Make	:	Keller/Equivalent*

Valves

Pneumatic Actuated Angle Seat Piston Type Valve

MOC	:	SS 316*
Size / Quantity	:	DN 20-2 No.; DN 25-1 No.*
Actuator	:	Single Acting (Air to Spring)*
Operation	:	Pneumatic Operated*
Operating Temperature	:	Upto 180°C*
Operating Pressure	:	Upto 16 bar*
End Connection	:	TC End/Flange End*
Make	:	Mascon/Avcon/Equivalent*

Actuated Diaphragm Type Valve

Size / Quantity	:	DN 20-4 No.; DN 25-1 No.*
Type	:	Two Way Actuated Diaphragm valve*
MOC	:	Body-SS 316L, Bonnet- SS 316, Stem-ASTM A276*

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MOC of Diaphragm	:	PTFE Backed EPDM*
Operation	:	Pneumatic Operated*
Operating Temperature	:	Upto 180°C*
Operating Pressure	:	Upto 16 bar*
End Connection	:	TC End*
Make	:	Mascon/Avcon/ Leistung*
Manual Diaphragm Valve		
Size / Quantity	:	DN 15-1 No.; DN 20-2 No.; DN 25-1 No.*
Type	:	Two Way Manual Diaphragm Valve*
MOC	:	SS 316L*
MOC of Diaphragm	:	PTFE backed EPDM*
Operation	:	Manually Operated*
Operating Temperature	:	Upto 180°C*
Operating Pressure	:	Upto 16 bar*
End Connection	:	TC End*
Make	:	Mascon/Avcon/ Leistung*
Sampling Valve		
Size / Quantity	:	DN 15-1 No.*
Type	:	Two Way Manual Diaphragm Valve*
MOC	:	SS 316L*
MOC of Diaphragm	:	PTFE Backed EPDM*

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End Connection	:	TC End*
Make	:	Mascon/Avcon/ Leistung*
Non-Return Valve		
Size / Quantity	:	DN 20-4 No.*
MOC	:	SS 316*
Type	:	Disc Check Valve*
End Connection	:	TC End*
Make	:	WSPL*
Pressure Safety Valve		
MOC	:	SS 304*
Size / Quantity	:	DN 15-1 No.; DN 20-1 No.*
Type	:	Disk Type*
Location	:	Plant steam Inlet & Pure Steam Outlet*
End Connection	:	TC End/Threaded End*
Make	:	TRAX/Forbes Marshall*
Steam Trap For Condensate Drain		
Size / Quantity	:	DN 15-1 No.; DN 20-2 No.*
MOC	:	SS 316L*
Type	:	Ball & Float Type*
End Connection	:	BSPT(F)*
Make	:	Pennent/ TRAX*

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Y-Type Strainer

Size / Quantity	:	DN 25-1 No.*
Type	:	Thermodynamic*
MOC	:	Carbon Steel*
Location	:	Plant Steam Inlet*
End Connection	:	DN 25 BSP*
Make	:	Trax/Equivalent*

Manual Ball Valves

Type	:	3 piece full port*
Size / Quantity	:	DN 20-8 No.; DN 25-5 No.*
End Connection	:	SS 304*
Application	:	Steam Condensate Removal*
Operating Temperature	:	Upto 180°C*
Pressure Rating	:	Upto 10 bar*
Make	:	Unison/Aira/Racer/Equivalent*

Globe valve

MOC	:	SS 304*
Size / Quantity	:	DN 25-1 No.*
Operation	:	Manually Operated*
Operating Temperature	:	Upto 180°C*
Operating Pressure	:	Upto 16 bar*
Location	:	Plant Steam Inlet*

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End Connection	:	TC End*
Make	:	Avcon/Airmax/Equivalent*
Interconnecting piping		
MOC	:	SS 316L for Contact parts Internally Electro polished/SS 304 for Non-Contact parts
End Connection	:	Sanitary Triclover
Welding	:	Orbital Welding & 10% Boroscopy of welded joints
Finish	:	Electro polished to Ra <0.38 Internally
Make	:	Rensa/Equivalent
Quantity	:	1 Lot
<i>Any other detail not mentioned above, also to be included.</i>		
<i>Client will provide & connect the required cable in to vendor's panel. From machine panel to machine and its other accessories to be supplied and connected by vendor at site.</i>		
DESCRIPTION (To be specified by the supplier, if any variation)		

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DESCRIPTION		
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2) Pipes & Pipe Fittings For Pure Steam Loop System		
Description	Size	Quantity
SS 316L Pipe Stainless Steel bead removed tubes of Schedule 40 (Wall thickness around 1.6mm), material shall be as per ASTM A 270 TP 316L ERW , Internal finish shall be electro polished to better than 0.5 Ra & externally mirror polished to 180 grit. Flanges Class ASA150 SORS	1.0"OD	70 mtrs.
	¾" OD	15 mtrs.
	½" OD	15 mtrs.
SS 316L Elbow of Schedule 40 (Wall thickness around 1.6mm), made out of ASTM A270 TP 316L tube bead removed wall thickness to match with respective match with respective pipe wall thickness. Internal finish shall be electro polished to better than 0.5 Ra ASTM A270 TP 316L ERW & externally mirror polished to 180 grit	1.0"OD	30 nos.
	¾" OD	07 nos.
	½ " OD	07 nos.
SS316L TEE of Schedule 40 (Wall thickness around 1.6mm), made out of ASTM A270 TP 316L tube bead removed wall thickness to match with respective match with respective pipe wall thickness. Internal finish shall be electro polished to better than 0.5 Ra ASTM A270 TP 316L ERW & externally mirror polished to 180 grit	¾"	3 nos.
SS316L UNEQUAL TEE of Schedule 40 (Wall thickness around 1.6mm), made out of ASTM A270 TP 316L tube bead removed wall thickness to match with respective match with respective pipe wall thickness. Internal finish shall be electro polished to better than 0.5 Ra ASTM A270 TP 316L ERW & externally mirror polished to 180 grit	1" x ¾"	3 nos.
	1" x ½"	6 Nos.
SS316L Reducer of Schedule 40 (Wall thickness around 1.6mm), made out of ASTM A270 TP 316L tube bead removed wall thickness to match with respective match with respective pipe wall thickness. Internal finish shall be electro polished to better than 0.5 Ra ASTM A270 TP 316L ERW & externally mirror polished to 180 grit	¾" to ½"	3 nos.
TC Gasket , MOC PTFE	1"	20 nos.
	¾"	10 nos.
	½"	10 nos.
TC Clamp, MOC : SS304 , Standard : ASTM A270	1"	20 nos.
	¾"	10 nos.
	½"	10 nos.



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DESCRIPTION		
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Description	Size	Quantity
TC Liner, MOC : SS316L	1"	20 nos.
	¾"	10 nos.
	½"	10 nos.
Insulation of PSD Line, Nitrile rubber with Aluminum Cladding	1"	70 mtrs.
	¾"	10.5 mtrs.
	½"	15 mtrs.
Pipe in pipe , MOC - SS 304	3/4" x 2.5" OD	03 nos.
SS 304 Pipe Holding Clamp	1"	20 nos.
	¾"	10 nos.
	½"	10 nos.
Standard Support (SS)	100mm	15 nos.
SS Studs	100/50MM	30 nos.
SS Anchor Bolt / panel bolt	M10×75mm	40 nos.
MS Square Plate	100×100×5mm	30 nos.
MS Anchor Bolt	M10×75mm	20 nos.
MS Angle	40 × 40× 6 mm	20 mtrs.
Insulation Tap	3/4" x 3.0" OD	2 Roles
Manual Diaphragm Valve		
Type: Two Way Manual Diaphragm Valve , MOC: SS 316L (Base), MOC of Diaphragm: PTFE backed With EPDM, Operation: Manually Operated, Operating Pressure: Up to 16 bar, End Connection: TC End, Location: Inlet & At Condensate Drain Line Of Header & POU	DN 15	5 Nos.
	DN 20	3 Nos.
	DN 25	1 No.
Actuated Diaphragm Valve For Vent Filter Isolation :		
Type: Two Way Actuated Diaphragm Valve, MOC: SS 316L (Base), MOC of Diaphragm: PTFE backed With EPDM, Operation: Pneumatically Operated, Operating Pressure: Upto 16 bar, End Connection: TC End, Location: For Vent Filter Isolation	DN 15	1 No.



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DESCRIPTION		
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Description	Size	Quantity
Vent Filter with Accessories : Type: Electrically heated Insulated & cladded, MOC: SS 316L, Temperature sensor: PT 100, 3 wire, Heater Make: Hot Watt, End Connection: TC End, Accessories: Temperature sesnsor with transmitter, Make: Radix	10" long	1 No.
Vent Filter Cartridge : Type: Hydrophobic, MOC: PP/PTFE, Size: 10" Long, End Connection: Code-7, Location: Inside the Vent Filter	0.2 Micron	1 No.
Pressure Gauge : Type: Bourdon Type, MOC: SS 316L, Range: 0 to 10 kg/cm2(g), Sensing Elemen: Bourdon Gauge, End Connection: TC End, Marking: White Background with Black Marking, Location: Pure Steam inlet	4" Dial size	1 No.
Pressure Switch : Range: 0.2 to 3.0 bar, Contact System: Single Pole Changeover Switch (SPDT), MOC: SS 316, Power Supply: 24 VDC, Enclosure: IP 66, End Connection: TC End with Diaphragm Seal	0.2 to 3.0 bar	1 No.
Temperature Sensor Cum Transmitter : MOC: SS 316L, Model: PT100, 3 wire Type, Size: 1/2" BSP, Length: Approx. 50 mm, End Connection: TC End, Location: In pure steam line after vent filter, Temperature Range: 0 to 200 °C	0-200 °C	1 No.
Clean steam trap for condensate removal : MOC: SS 316L, Location: At condensate drain line, End Connection: TC End	DN 15	5 Nos.
ORBITAL WELDING PER INCH DIA	1",3/4",1/2"	dia
Hydro testing	1",3/4",1/2"	1 lot
passivation	1",3/4",1/2"	1 lot
Boroscope inspection (10% only)	1",3/4",1/2"	1 lot
Pipe erection /Laying of piping per inch meter	1",3/4",1/2"	mtr



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ANNEXURE - IV : ELECTRICAL DETAILS

DESCRIPTION		
(To be specified by the supplier, if any variation)		
Standard Operating Frequency	:	50 Hz
Standard Operating Voltage	:	230 / 415 V *
Total power consumption	:	Vendor to specify
Motor Details with rpm	:	Vendor to specify
Gear Box Details (If any)	:	Vendor to specify
PLC and HMI details	:	Vendor to specify
VFD details (If any)	:	Vendor to specify
Tower lamp	:	Vendor to specify
Starter	:	*
Major Cabling details		
For Main supply (In client's scope)	:	*
For Main drive motor	:	*
End connection details	:	MCB or Socket should be with equipment
Earthing requirement	:	Arrangement should be with system
An Isolator Circuit breaker	:	To be supplied with machine at power supply in point of appropriate capacity by vendor. *
Cable length with equipment	:	*
<i>Any other detail not mentioned above, also to be included.</i>		
<i>Client will provide & connect the required cable in to vendor's panel. From machine panel to machine and its other accessories to be supplied and connected by vendor at site.</i>		

*** To be specified and confirm by the supplier as per their equipment design**



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- ❖ Wiring between Panel and the Machine is in the Scope of Vendor. The exact measurements shall be taken by visiting the site.
- ❖ The Incomer to the Operating Panel shall be provided by HOMCO, however any Cable Trays or SS 304 Conduits required for the same shall be provided by the Vendor.
- ❖ Cable routing from Operating Panel to the Machine shall be done as per cGMP i.e. routing through Cable Trays outside Clean Room Areas and SS 304 Conduits inside Clean Room Areas.
- ❖ All the Component Makes should match the Approved Makes list provided. Any deviation from this should be documented and communicated to HOMCO.
- ❖ All Calibration Certificates are to be produced during Installation of Machine, without which the Installation is deemed incomplete. All the Certificates should be Traceable to National / International Standards.
- ❖ The Validity of Calibration shall be minimum 9 months and maximum 12 months from the date of Installation.
- ❖ All the Signal Cables should be shielded to avoid interference.
- ❖ Complete Earthing should be provided to Equipment.
- ❖ Complete covering of Electrical Cables and Other Connections.



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ANNEXURE - V : SAFETY FEATURES

DESCRIPTION
(To be specified by the supplier, if any variation)
Safety of system operation is of utmost importance. All guards to be with interlock switches.
Equipment to be provided with overload safety relay.
In the event of malfunction or stoppage of utilities, the unit must contain all necessary protection devices to ensure that equipment and product remain in safe condition.
Equipment settings should not get disturbed due to power failure and should not Re-start without human intervention.
Equipment should indicate fault through audio / visual signal with details on Control panel/PLC (Failure mode detection).
An easily accessible emergency stop to be provided on main control panel door.
Lubricant should not come in product contact.
Wherever possible, warning symbols should be provided.



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ANNEXURE - VI : SAFETY interlock

DESCRIPTION

(To be specified by the supplier, if any variation)

Safety Features & Alarms

- The Plant Steam supply should not start unless the Feed Water is filled up to the Level Switch.
- AUTO PURGING FACILITY: To prevent build-up of impurities in the evaporator and NCGR columns an auto purging facility should be wherein feed water should be purged at pre-defined time interval.

Alarms should be generated if:

- Feed Pump Trip.
- Plant Steam Pressure Low.
- Feed Water Pressure Low.
- Compressed Air Pressure Low.
- Pure Steam Pressure High / Low

ANNEXURE - VII : CLEANING TECHNIQUE

DESCRIPTION

(To be specified by the supplier, if any variation)

Mode of machine cleaning

:

*

Use of Lubricants

:

*

All contact parts should be easily dismantled and cleanable.

If CIP is required , please provide the details of CIP and water consumption*

Drain points: Vendor should specify the pipe size and location of drain points required as per system requirement *

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ANNEXURE - VIII : UTILITY REQUIREMENT

DESCRIPTION (To be specified by the supplier, if any variation)		
Plant Steam	:	*
Vacuum	:	*
Compressed Air	:	*
Purified Water	:	*
WFI water	:	*
Cooling water	:	*
Power	:	*
Any other	:	*

ANNEXURE - IX : PHYSICAL DETAILS

DESCRIPTION (To be specified by the supplier, if any variation)		
Dimension (In mm)	:	*
Net Weight (In Kgs.)	:	*
Type of Packing	:	*
Case Dimension (In mm)	:	*
Gross Weight (In Kgs.)	:	*
Foundation details if required	:	*

*** To be specified and confirm by the supplier as per their equipment design**



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ANNEXURE - X : LIST OF ANCILLARY / ACCESSORIES / OPTIONAL ITEMS

DESCRIPTION

(To be specified by the supplier, if any variation)

- Optional Items (If any , Vendor should provide the list with rate) *
- Recommended Spares along with list & quantity (Vendors should submit with tender) *
- If any items required but not included in URS , to be mentioned and submitted with unit rate and quantity * (And it can be indicate during pre-bid meeting)

Details of Bought out components to be specified.

Any other ancillary or accessories or optional items not mentioned above also to be quoted.

*** To be specified and confirm by the supplier as per their equipment design**

ANNEXURE - XI : TRAINING REQUIREMENT

- Training to all concern of HOMCO, Kerala for Installation, Operation, Maintenance and Cleaning of Blister Packing Machine should be provided by vendor and training record will be documented.
- Vendor shall support client in execution of all the Qualification Phases.



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ANNEXURE - XII : APPROVED MAKES

Stainless Steel Sheet : Tata / Jindal	:	*
Stainless Steel Pipe: Rensa / Reliant / Vishal	:	*
Pump: Groundfoss / Lowara / Wilo	:	*
PLC: Siemens / Allen Bradely / Delta / ABB / Mitsubishi	:	*
HMI: Siemens / Allen Bradely / Delta / Exor	:	*
Valve/Diaphragm Valve: Mascon/Avcon/ Leistung	:	*
Steam Trap: Unikigler/ Sterflow /FORBSMARSHAL	:	*
VFD: Schnieder / ABB /Siemens / Allen Bradely / Delta	:	*
FRL Unit & Pressure Switch: Festo / Euroswitch / SMC	:	*
Pressure Guage: Baumer / Wika / Cole-Parmer / Bourden	:	*
Level Indicator / Flow Indicator :Spink / Pune Tectrol / Krohne	:	*
Valve/Safety Valve : Mascon / Avcon / Leistung / IDMC /	:	*
Spray Ball :Jetspray / Spraytech	:	*
Flow Meter : Krohne Marshal / Emerson / E&C	:	*
Sensors/ Transmitter : Forbes / Mettler /Jumo / Radix/ Keller/ GE / Membra Pure	:	*
Cables: Finolex / Polycab	:	*

- ❖ **Any other components, not mentioned above, to be specified by the vendor.**
- ❖ **All the Component Makes should match with the Approved Makes listed above. Any deviation from this should be documented and communicated to HOMCO .**
- ❖ **Material Test & Warranty Certificate should be provided for the applicable items.**

*** To be specified and confirm by the supplier as per their equipment design**



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ANNEXURE - XIII : DOCUMENTATION

List of all Documents to be supplied along with equipment [AS APPLICABLE]			
Sr. No.	Document to be supplied	Qty	Remarks
1	Design and operational qualification	2 sets	
2	SAT/FAT procedures and format	2 sets	
3	Operation manual	2 sets	
4	Maintenance manual	2 sets	
5	Spare parts manual	2 sets	
6	All engineering drawings (GA drawing)	2 sets	
7	List of instruments	2 sets	
8	Calibration certificates	2 sets	
9	Warranty / Guarantee	2 sets	
10	List of all components with referencing	2 sets	
11	Civil foundation drawings if required	2 sets	
12	Pre installation requirements	2 sets	
13	Installation requirements	2 sets	
14	Installation manual	2 sets	
15	Technical literature, data sheets and equipment catalogues	2 sets	
16	DQ, IQ, PQ documents.	2 sets	
17	Calibration Report of all sensors, controllers, PLC, transmitters, indicators etc.	2 sets	
18	Test Certificates of all material of construction	2 sets	
19	Test Certificates of the software used in machine control / monitoring system.	2 sets	



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ANNEXURE - XIV : TERMS AND CONDITIONS

Delivery Period	:	*
Payment Terms	:	AS mentioned in tender.
Packaging and Forwarding	:	By Vendor
Un- loading at site	:	By vendor /Supplier (If required, help for the arrangements of unloading can be done by client) Installation in position by the vendor under the client's supervision
GST	:	*
Material for Trial if any	:	* (To be arranged by client)
Installation and Commissioning	:	By Vendor
Submission of documents and drawings		
Response to URS and submission of quotation	:	Within 1 week
Submission of detail functional design specification and schematic drawings	:	Within a week after order finalization
Submission of FAT / SAT specification	:	2 weeks before FAT
Submission of DQ, IQ, OQ, PQ documents	:	With equipment delivery
Final drawings / diagrams	:	With one week of receiving PO
The supplier should notify customer 2 weeks in advance of the beginning of FAT.		
Catalogue, Equipment drawing (As built), List of clients and year of establishment to be submitted alongwith quotation.		
<i>Any other terms, not mentioned above, also to be specified.</i>		

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ANNEXURE - XV : ABBREVIATION

1.	URS	:	User Requirement Specification.
2.	HOMCO	:	Kerala State Homeopathic Co-operative Pharmacy Ltd.
3.	DQ	:	Design Qualification
4.	IQ	:	Installation Qualification
5.	OQ	:	Operational Qualification
6.	PQ	:	Performance Qualification
7.	SS	:	Stainless Steel
8.	RHS	:	Right Hand Side
9.	MOC	:	Material of Construction
10.	KW	:	Kilo Watt
11.	HP	:	Horse Power
12.	RPM	:	Rotation Per Minute
13.	FLP	:	Flame Proof
14.	cGMP	:	Current Goods Manufacturing Practices
15.	O&M	:	Operation and Maintenance
16.	GA	:	General Arrangement
17.	SLD	:	Single Line Diagram
18.	HOD	:	Head of Department
19.	QA	:	Quality Analysis
20.	MRP	:	Maximum Retail Price
21.	NMT	:	Not more than
22.	VFD	:	Variable frequency drive

Any other details, not mentioned in Annexure I to XV, to be specified in the quotation/specification by the vendor.