



JOEL PROCESS ENGINEERING PRIVATE LIMITED

Since 2006



Mfg. & Exporters of Pharmaceutical Machineries, Bioreactors & Fermenters



OUR VALUES



Safety &



Customer Satisfaction



Commitment & Enthusiasm of Our Teams



Industrial Excellence & Technical **Expertise**



Durability & Strength



International market Development



Innovation & ability to face Challenges

VISION

A Step towards Innovation

To achieve and establish a worldwide reputation, Leadership as a unique manufacturer as well as supplier of specialized, innovative plus reliable machines in addition to accessories for pharmaceutical industry to encounter their cGMP needs and goals.

MISSION

To Innovation

To work closely with the pharma industry in direction of understanding their present as well as future needs. On the way to help them with the right solutions by adopting the research based engineering practices inclusive of a proactive attitude along with delivering the best quality performing machines and services on time.

R & D

Constructs Innovation

We have a dedicated research and development team with highly qualified to develop superior quality machines giving advanced features taking every possible angle into consideration before starting production. Joel Process Engineering Pvt. Ltd. is committed to invest more for R&D for upgradation of technology and process



Vertical Sliding

Autoclave / Sterilizer





Vertical Sliding Sterilizer

D00R

- The Sterilizer is supplied with single or double doors made of 304 or 316/L quality stainless steel
- The doors can be vertical, automatic sliding type or swinging (radial arm) type as per the customer's requirement
- The doors will have unique arrangement to open manually in case of power failure.
- While closing the door, it also automatically opens in case it is obstructed by an object
- These doors are sealed with movable Silicone Rubber gasket with the help of pneumatic pressure

VACUUM SYSTEM

- The system is used for effective air removal from the sterilizer's chamber
- It consists of efficient water ring type vacuum pump, condenser etc

MATERIAL HANDLING

- Sterilizers can be supplied with stainless steel removable shelves/
- · Trays or loading carriages & trolleys
- The trolley is made of Stainless Steel / Mild steel & has its base with four heavy duty castors

AUTOMATIC PROCESS CONTROL UNIT

- The control unit is based on advance PLC or microprocessor technology with or without SCADA & 21 CFR Part II Compliance
- This unit controls different sterilization cycles with the help of in-built different programmed combinations
- · The control units are backed up with manual operation



Model	Chamber Size (W x H x D in mm)	Volume (Litters)	Steam Generator Electrical load (Kilowatts)
JPE - VS - 120	450 x 450 x 600	120	12
JPE - VS - 180	450 x 450 x 900	180	18
JPE - VS - 300	500 x 500 x 1200	300	18
JPE - VS - 325	600 x 600 x 900	325	18
JPE - VS - 430	600 x 600 x 1200	430	24
JPE - VS - 506	750 x 750 x 900	506	24
JPE - VS - 540	600 x 600 x 1500	540	36
JPE - VS - 675	750 x 750 x 1200	675	36

Horizontal Sliding

Autoclave / Sterilizer





STANDARDS The sterilizers can be manufactured to comply with any other International Standards

DOOR

- The Sterilizer is supplied with single or double doors made of 304 or 316/L quality stainless steel
- The doors can be horizontal automatic sliding type or swinging (radial arm) type as per the customer's requirement
- The doors will have unique arrangement to open manually in case of power failure
- While closing the door, it also automatically opens in case it is obstructed by an object
- These doors are sealed with movable Silicone Rubber gasket with the help of pneumatic pressure

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Model	Chamber Size (W x H x D in mm)	Volume (Litters)	Steam Generator Electrical load (Kilowatts)
JPE - HS - 120	450 x 450 x 600	120	12
JPE - HS - 180	450 x 450 x 900	180	18
JPE - HS - 300	500 x 500 x 1200	300	18
JPE - HS - 325	600 x 600 x 900	325	18
JPE - HS - 430	600 x 600 x 1200	430	24
JPE - HS - 540	600 x 600 x 1500	540	36
JPE - HS - 648	600 x 900 x 1200	648	36
JPE - HS - 810	600 x 900 x 1500	810	36
JPE - HS - 970	900 x 900 x 1200	970	36
JPE - HS - 1275	900 x 900 x 1500	1275	36

Horizontal Rectangular

Autoclave / Sterilizer





TYPICAL FEATURES

The Sterilizers designed for a standard working pressure of 1.2 kg/cm i.e., 121° c or an optional High Speed (flash) working pressure of 2.1 kg/cm i.e., 134° C which substantially reduces cycle time.

Our high efficiency Steam Sterilizers are designed for maximum thermodynamic efficiency and robust in construction Built with an inner chamber of AISI 304/316 grade stainless steel, jacket of AISI 304 grade stainless steel, door of AISI 304 grade stainless steel, the strong argon arc welded chamber and jacket ensure a leak proof construction. Mounted on a corrosion resistant stand further ensures greater durability.

Working on the principle of downward displacement of air, the sterilizer assure you that only a minimal quantity of water and steam are required for optimism sterilization. A steam trap is provided for effective, economical removal of air and condensate from the chamber. This help to achieve sterilization temperature quicker. The option of a steam generator feed water pump assists uninterrupted operation.

A powerful ejector fitted in the multi-port operating valve circulate air in the chamber for vacuum drying. With minimum heat loss the sterilizer enables a pleasant, comfortable, working environment.

CENTRALIZED CONTROL POINT

- Multi-port operating valve / Solenoid valve, control for the entire cycle of the operation
- Permits two exhaust speeds, fast & slow
- Easy to read pressure of chamber through compound gauge and pressure of jacket through pressure gauge

Horizontal Rectangular Autoclave

Model	Chamber Dim. (W x H x D in mm)	Chamber Volume (Litters)	External Dimension Without 4 Side Panel (W x H x D in mm)	KW
JPE - RA - 18	450 x 450 x 900	182	650 x 1800 x 1400	18
JPE - RA - 43	600 x 600 x 1200	432	800 x 1800 x 1400	24
JPE - RA - 64	600 x 900 x 1200	648	800 x 2000 x 1400	36
JPE - RA - 81	600 x 600 x 1500	810	800 x 2000 x 1700	36
JPE - RA - 97	900 x 900 x 1200	972	1200 x 1800 x 1400	36
JPE - RA - 127	900 x 900 x 1500	1275	1200 x 1800 x 1700	36
JPE - RA - 264	1050 x 1200 x 2100	2646	1250 x 2000 x 2300	NA
JPE - RA - 345	1200 x 1200 x 2400	3456	1400 x 2000 x2600	NA

High Speed / High Pressure

Autoclave / Sterilizer





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A powerful ejector fitted in the multi-port operating valve circulate air in the chamber for vacuum drying. With minimum heat loss the sterilizer enables a pleasant, comfortable, working environment.

Horizontal Cylindrical Autoclave

Model	Chamber Size (in mm)	Capacity In Litres	KW
JPE - CRA - 50	300 Dia. X 500 Depth	50	9 KW
JPE - CRA - 76	400 Dia. X 600 Depth	76	9 KW
JPE - CRA - 110	400 Dia. X 900 Depth	110	9 KW
JPE - CRA - 150	400 Dia. X 1200 Depth	150	9 KW
JPE - CRA - 175	500 Dia. X 900 Depth	175	9 KW
JPE - CRA - 230	500 Dia. X 1200 Depth	230	12 KW
JPE - CRA - 275	600 Dia. X 900 Depth	275	12 KW
JPE - CRA - 340	600 Dia. X 1200 Depth	340	12 KW
JPE - CRA - 460	750 Dia. X 1200 Depth	460	18 KW

CENTRALIZED CONTROL POINT

- Multi-port operating valve / Solenoid valve, control for the entire cycle of the operation
- · Permits two exhaust speeds, fast & slow
- Easy to read pressure of chamber through compound gauge and pressure of jacket through pressure gauge

SAFETY FEATURES

- Self locking safety door cannot be opened while chamber is under pressure
- Sight glass for viewing water level inside steam generator
- · Heat resistant SILICONE door gasket
- Pressure switches (on electric models)economize power consumption
- Low water protection system, to protect the electric heaters
- Temperature gauge/ Digital temp. Indicators / Controllers (optional)
- · Vacuum breaker / dryer
- Safety valve for the Jacket / boiler
- · Hydraulically tested @ 2.5 times the working pressure

Vertical Autoclave

Single Lever





SAFETY FEATURES:

- Safety valve for chamber & Jacket.
- · Automatic purging system.
- WLC System for Heater protection.
- · Separate Ball Valves for water Iniet and Drainage.
- · Dial type Pressure Gauge to indicate pressure in the Chamber
- Pressure Release valve to release excess pressure from chamber.
- · Audio visual Alarm system after completion of cycle.
- · Gauge glass facility for water visibility.
- Thermal Printer with FO Value Calculation.

OPTIONAL:

- · 21 CFR Part II Compliance
- SCADA Compliance

APPLICATION

 For use in Microbiology, Hospital, QC & Research laboratories, Pharmaceutical Industry etc.

Fully Automatic Model:

Temperature automatically maintained by digital Controller, which control / pressure and temperature with auto air purge, digital timer, auto steam exhaust, low water level cutoff.

- · Vertical Triple wall design has triple chamber and water.
- Working chamber made of Stainless Steel 316 grade of 3 mm thickness.
- · Outer cover made of stainless steel 1 mm thick.
- Lid. flange & bottom sheet also made of stainless. All joints argon welded
- · Joint less silicon gasket, heavy duty industrial flange heater.
- · Pressure range: 15 to 22 PSI. factory set at 15 PSI.
- Lid fitted pressure gauge 0-30 PSI, safety spring loaded pressure valve and steam release valve.
- · Hydraulically tested at 60 PSI.
- · Single lever operated Door.
- Electrical: 230v / 32A / 50Hz.
- Temperature Control: Microprocessor based digital display.

Temperature Sensor: PT - 100
 Temperature Range: 121°C to 125°C

Temperature Resolution: 0.1°C

• Temperature Resolution: 0.1°C

Temperature Accuracy: <u>+</u>0.5°C

Model	Size of Worki	ng Chamber	Capacity	Rating
	Dia x Height (inches)	(Height (inches) Dia x Height (cms)		KW
JPE - SL - 35	12 x 20 + 150mm	30 x 50 + 150mm	35	2
JPE - SL - 52	14 x 22 + 150mm	35 x 55 + 150mm	52	3
JPE - SL - 75	16 x 24 + 150mm	40 x 60 + 150mm	75	3
JPE - SL - 85	18 x 24 + 150mm	45 x 60 + 150mm	95	4
JPE - SL - 125	18 x 30 + 150mm	45 x 75 + 150mm	125	4

Table Top

Autoclave



APPLICATIONS FOR

Joel's Table Top High Pressure High Vacuum High Speed Sterilizers are ideal for all applications requiring rapid, reliable and total destruction of all types of living Microorganisms. Ideal for Research Lab, Hospitals, Dental clinics, Operation theaters, QC/Micro etc.



Table Top Autoclave

Model Available are in liters: JPE-8 / 12 / 16 / 18 / 23. (B- CLASS & N CLASS)

FEATURES & ADVANTAGES

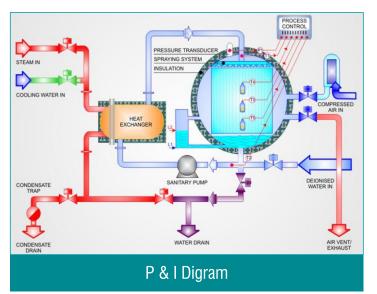
- · Automatic computer control, LCD dynamic display, fault self diagnosis, display the error code.
- Reference European class B standard, three pre vacuum and vacuum deep drying function, to make the sterilization and drying sterilization, drying
 to achieve the best working conditions.
- · Preset sterilization procedures, sterilization and the drying time can be adjusted.
- SS 316 L stainless steel containers and a sealing cover, double pressure protection safety door lock.
- · Start working procedures prevent when door is not locked well.
- · Safety pressure protection lock, automatic induction sterilizing cavity pressure, can't open door during sterilization process.
- · Built -in independent steam generator, fast saturated steam, so that the high temperature steam fully reaches every corner.
- · Simple and convenient operating interfaces, LCD dynamic display, display the status information in real time.
- · Open type top water tank, filling and cleaning for user.
- With liquid sensor for water level, to remind user to add water or drainage.
- The built-in safety valve, automatically exhaust and unloading pressure when over pressure.
- Equipped with temperature protection device, in the cavity wall temperature and steam generator device is too high will automatically disconnect.
- With B&D test, Helix Test, and Vacuum test program.
- · With optional external printer.
- The optional USB function and U disk, the data stored in the U disk, connect the computer to view and save.

Superheated

Water Spray Sterilizer







STERILIZER CHAMBERS:

- · Available in different types and for different application with single or double walled with rectangular OR circular cross section.
- · In hot water shower sterilization, circular chambers available with inscribed square/ rectangular doors.
- Being optimum circular shape, the non occupied area other than square/rectangular shape accommodates major internal accessories.

DOORS, SEALING & SAFETY:

- · Fully automatic (horizontal / vertical type) pneumatically operated sliding doors as per dimensional availability.
- · Hinged type, hand wheel operated doors with radial bars sealing.
- · Peripheral milling edged door surfaces to maintain critical tolerances for smooth and uninterrupted frictionless movement.
- · Independent front & back side door sealing's to ensure effective barrier for product during pre & post sterilization.
- · Precisely machined gasket grooves.
- Food grade quality silicon rubber gasket ensures effective pressure sealing by virtue of compressed air and Unsealing under vacuum creation.
- · Important safety, eliminating any risk of accidents through door safety sensors causes the reverse action of doors in case of detecting any obstacle during the closing movement.

Superheated

Water Spray Sterilizer

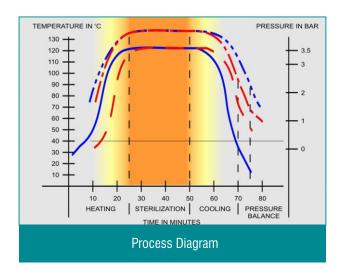


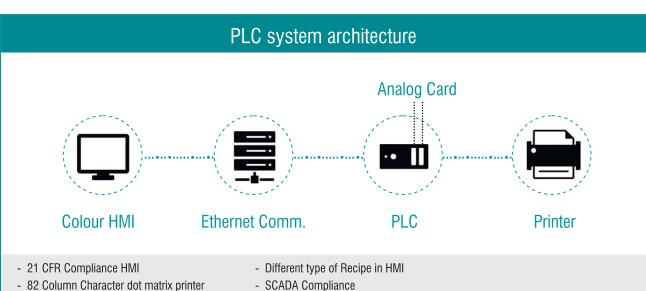


Ethernet Protocol Communication

CONTROL SYSTEM

- · Process interlocks to avoid any door openings during the process run mode.
- · Fully Automatic PLC based control system covering on line and offline printing & recording facility for all process parameters , Fo calculations in conformance with 21 CFR PART 11.
- The touch-screen for visual process control and connections for measuring signals and printers.
- · 3 Level password protections for access levels.
- · Manual operation mode independent to PLC.
- Guaranteed precise chamber temperature control with temperature uniformity as per EN285/554 & HTM2010. Temperature distribution within the chamber, including drain temperature, is guaranteed to be within $\pm~0.5^{\circ}\text{C}$ of the process sterilization temperature (exposure set point). This exact temperature distribution ensures the repeatability that is needed for validation of cycles.





Pure Steam

Generator





Ideal for generation of sterile pyrogen free steam used in the steam sterilizers and for SIP of vessels, pipelines, lyophilizers, etc.

DESCRIPTION

Pure Steam Generator meets the ASME, BPE & cGMP specifications. Pure Steam Generator produces pyrogen from sterile steam for sterilization which meets international standards including Indian, British & United States Pharmacopoeia . The Pure steam generated is widely used in medical field, biochemical, piping & tank & sterilization. The Pure steam produced from PSG is according to FINN AQUA Design & it is low maintenance & low operational costs.

SALIENT FEATURES

- · All Contact Parts are in AISI 316/AISI SS 316L
- To assure High Purity Steam quality & increase the life of equipment Inner Contact Surfaces are electro
- Double Tube Sheets is constructed in the first column where boiler steam is present
- Sanitary Tricolor fittings are used for quick & easy preventive maintenance
- All pipes & Tubes are seamless & gaskets made from PTFE material
- PLC based system for automated operation with all required inter locks & validated logic with skid mounted AISI SS 304 control panel with printing facility
- High Purity Flow Diversion Valve is provided for protection of High Purity Steam Quality
- Insulation is made with 3cm Mineral Wool covered by AISI 304 Stainless Steel sheet
- Magnetic Control System is provided for first column to control Water i.e. High Level & Low Level
- Fast response to Pure Steam demand.

OPTIONAL FEATURES

- Fully Automatic Plant supplied with boiler steam & feed water flow rate
- All pipes & tubes are as per ASME & BPE stamping with less than 0.5 Ra
- · Double tube sheet for all pre heaters & both top coolers
- Magnetic Float Switch is provided for Surge Tank to control Water i.e., High level & Low Level
- Air Eliminator is provided for removing toxic gases

Technical Specification

Model	Capacity	Feed Water	Industrial Steam Dry & Saturated	Output	EST. WT.	Dimensions
	Kg / Hr.	7 Kg / CM ²	6 Kg / CM ²	3 Kg / CM²	Kg	LxWxH
JPE - PSG - 100	100	120	125	100	185	950 x 900 x 2450
JPE - PSG - 150	150	180	185	150	225	1100 x 1100 x 2450
JPE - PSG - 200	200	240	250	200	300	1100 x 1100 x 2450
JPE - PSG - 300	300	360	375	300	330	1100 x 1100 x 2450
JPE - PSG - 500	500	600	625	500	530	1500 x 1225 x 3050
JPE - PSG - 750	750	900	925	750	650	1500 x 1300 x 3050
JPE - PSG - 1000	1000	1200	1250	1000	800	1600 x 1500 x 3550
JPE - PSG - 1500	1500	1800	1875	1500	1200	1550 x 1000 x 3600

[•] Plant steam 6 bar-dry and saturated • Feed water (purified water) at 30 to 35 deg. °C

Multicolumn

Distillation Plant





Uses Superior three-punch entertainment technology for producing sterile, pyrogen free USP grade WFI for manufacture of critical sterile dosage forms.

OPTIONAL FEATURES

- Fully Automatic Plant supplied with boiler steam, cooling water flow rate & feed water flow rate
- All pipes & tubes are as per ASME & BPE stamping with less than 0.5 Ra
- Double tube sheet for all pre heaters & both top coolers
- Magnetic Float Switch is provided for Surge Tank to control Water i.e., High level & Low Level
- · Air Eliminator is provided for removing toxic gases

DESCRIPTION

Multi Column Distillation Plant is a key system for cGMP Standard. MCDP is the perfect solution for high purity sterile pyrogen free distill water. The vapour with high velocity & under pressure passes over a 'SPECIALLYDESIGNED SPIRAL BAFFLE' System which develops tremendous centrifugal force & thus eliminates any chances of pyrogens in the carry over vapours. It is available in capacities from 50 Ltrs/Hr. The Water for injection (WFI) produced from MCDP is according to FINN AQUA Design & it is low maintenance & low operational costs.

SALIENT FEATURES

- 'All Contact Parts are in AISI 316/AISI SS 316L
- To assure WFI quality & increase the life of equipment Inner Contact Surfaces are electro polished
- Double Tube Sheets is constructed in the first column where boiler steam is present
- Sanitary Tricolor fittings are used for quick & easy preventive maintenance
- All pipes & Tubes are seamless & gaskets made from PTFE material
- PLC based system for automated operation with all required inter locks & validated logic with skid mounted AISI SS 304 control panel with printing facility

Technical Specification

Model	No. Of Columns	Industrial Steam A3 Bar Pressure			Industrial Steam At 8 Bar Pressure			essure	Approx.	EST.	
		Capacity	Supply Steam	Cooling Water	Feed Water	Capacity	Supply Steam	Cooling Water	Feed Water	Dimensions (mm)	WT.
		Ltrs/Hr.	Kg/Hr.	Ltrs/Hr.	Ltrs/Hr.	Ltrs/Hr.	Kg/Hr.	Ltrs/Hr.	Ltrs/Hr.	LxWxH	Kg
JPE - M - 80	4	80	40	120	90	145	70	180	165	1400 x 900 x 2050	350
JPE - M - 150	4	150	48	180	175	285	85	350	330	2100 x 1300 x 2600	800
JPE - M - 300	4	300	97	365	545	570	170	700	1000	2100 x 1300 x 2600	900
JPE - M - 500	5	500	130	605	575	920	275	1130	1060	2800 x 1300 x 3200	1250
JPE - M - 1000	5	1000	238	1265	1150	1920	575	2360	2210	3300 x 1600 x 3250	2000
JPE - M - 2000	6	2000	440	900	2300	3835	1150	4720	4410	4400 x 1650 x 3800	3400
JPE - M - 3000	6	3000	660	650	3450	5500	1650	6770	6325	4900 x 1800 x 4300	6800

Our Products



Lab Fermenter

Fermenter units used for small-scale fermentation process. They are usually made of glass ranging from 1L to 10L and stainless-steel ranging from 1L to 15L.



Lab Fermenter

We Design Based On

- Cost-effectiveness and premium quality of components, which eases maintenance and enhances fast delivery.
- User-friendliness, while providing advanced instrumentation and automation options.
- Modularity derived from the Plug and Play -concept, which allows for expansion of additional functionalities in the future
- A tidy and neat design, which takes up minimal space in the lab bench.
- Interchangeable glass vessels in a range of volumes for different uses.
- A precise and adaptable agitation module with simple maintenance
- A premium quality flexible pump configuration with advanced control

- A simple, effective and easy-to-maintain temperature control system.
- Includes an external touch PC/HMI and software license.



Industrial Bioreactors, Fermenters & Process Equipments



Our Services



Basic Engineering

Our competency embrace in designing Process Equipments, Fermenters, Bioreactors and Filtration System which includes major products inhouse manufacturing. we are specialized in customization.



Feasibility Study

We will assist and support the clients in the design of process equipment and plants through the design of feasibility studies, aimed at the identification of the costs related to the realization of certain projects.



Preventive Maintenance & System

We offer preventative maintenance and calibration packages for all systems provided. All PM/calibrations are performed by factory trained technicians.



Installation & Maintenance

Our highly trained technicians and engineers will mobilize to the location of installation to perform & supervise installation. We also provide AMC for all Bio Processing Equipments.









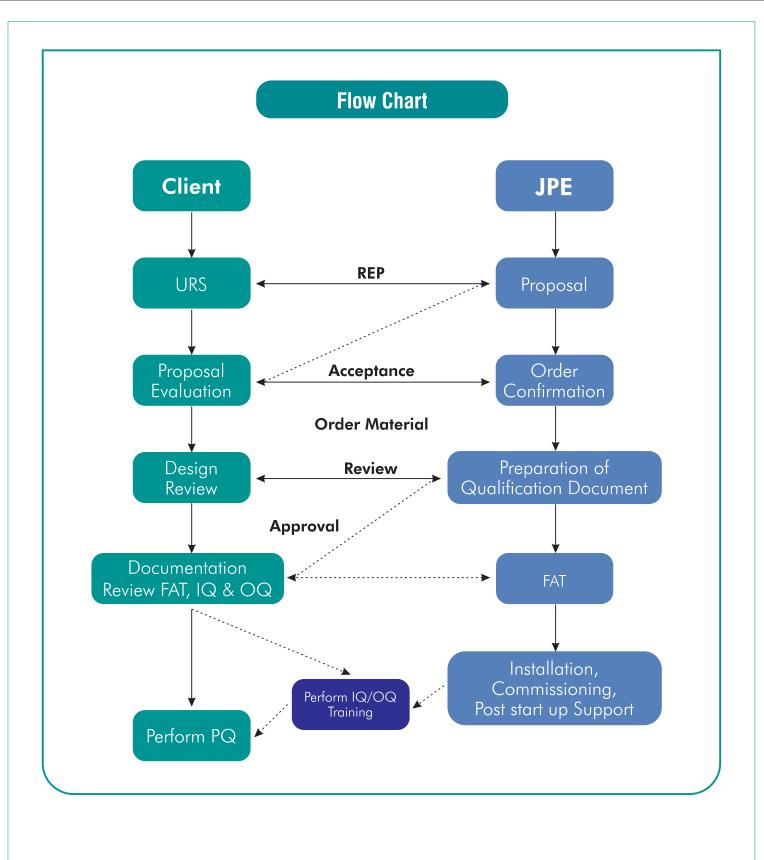


Automation Compliance











Our Prestigious











































Regd. Office:

Joel Process Engineering Pvt. Ltd.

Regd. Office: 87/B, Bokadam Wadi, Digha Holi Bazar, Vasai (W) - 401 201. Dist.: Palghar, Maharashtra. www.joelprocessengg.com

L+91 74000 48545 | 89768 16545