



interesting engineering for life..™



DRYER & VACUUM DRYER

Prism Pharma Machinery®

An ISO 9001 - 2015 Certified Company



Greetings,

Prism Pharma Machinery founded in 2003 and has been manufacturing process equipments for process of Powder, Liquid & Semi Liquid in application in Pharmaceuticals, Biotech, Nutraceuticals, Cosmetics, Foods, Dairy, Bakery, Confectionery, Agro Chemical, Chemicals, Herbals, Paints, Ceramics & Catalysts for production, pilot & lab scale batch size.

Prism Pharma Machinery have wide range of equipments for processing for drying, granulating, mixing, milling, blending, tableting, coating, pelletizing, homogenizing, material conveying & cleaning as well as process integration and process automation service. Prism focuses on specialized mechanical engineering, especially process engineering and automation engineering by applies innovative technology approach and quality standard. We obtained the ISO 9001:2015 certificate and CE certificate for our products.

We sincerely would like express our thanks to our customers for supporting and affection. Prism has been and will be working more closely with all its precious customers and partner companies, keeping deep in mind the fact that sharing efforts makes sharing fruits.

Thanks you.....

Prism Pharma Machinery



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Fluid Bed Dryer

High Precision Fluidize Fast Drying & Agglomeration Process Technik

Application & Process:

Prism Fluid Bed Dryer involves fast drying, cooling and agglomeration of particulate materials. It is ideal for heat sensitive and non heat sensitive products in pharmaceuticals, chemicals and biochemicals, foods, confectionery and dairy industries.

The batch type Fluid Bed Dryer have a bed of solid particles which are fluidized by passing a stream of air upward through a specially designed perforated sheet. The upward velocity of air is so maintained so as to slightly lift the solid particles and set them in motion. This motion can be utilized to bring about mixing as well as forward movement of the solids particles. The air is heated and the process hot air evaporates the fluid and dries the solids. Fines get agglomerated to larger granules particles thus providing large size. The uniform drying is achieved by exposing the full surface of every particles of the solid mass to the incoming high velocity hot air.

The machine is designed with correct volume of bowl, air velocity, direction and the temperature of the clean inlet air is maintained throughout the fluidization, retarding, and expansion chambers, filtration area, pitch of the perforations of the plate at the bottom of product container, the leak-proof fluidization space by proper sealing, material of the filters and process controls with electrical & pneumatically.



Salient Features :

- Design is cGMP with product contact parts AISI 316.
- Single piece construction with integrated retarding & expansion chamber cum filter bag housing.
- Chamber built in explosion vents and isolation valve protect equipment.
- Product container with sampling pot & trolley mounted.
- Pneumatic sealing of filter bag and product container by inflatable silicon rubber tube.
- Inlet air handler with air filter, HEPA and heat exchanger steam or electric heat exchanger.
- Exhaust air blower with dynamic balance fan and can be air filter provided.
- Controls panel with auto controls for Inlet air temperature, filter bag shaking & process cycle time.

Safety features:

- Safe earthing, explosion vent, interlocked air pressure switch, interlock sealing system and overload protection.

Option Features:

- Double scan inlet air AHU, HEPA filtration, steam or electric heater, solid flow detection silencer at exhaust blower, wet or dry scrubber, PLC controls, differential pressure indicator, CIP/WIP system & explosion proof motor.
- SCADA System with 21 CFR part 11 compliance.

Technical Specifications

Model	Container Volume	Batch Capacity	Blower Motor	Heating Loads	Steam Consumption
	Liter	Kg.	HP/kw	Kw	kg/hr
PFBD- 30	100	30	5/3.25	18	25
PFBD -60	220	60	10/7.5	36	50
PFBD -120	410	120	15/11.25	52	100
PFBD -200	590	200	20/15	80	160
PFBD -250	750	250	25/18.75	90	200
PFBD -300	950	300	30/22.5		250
PFBD -500	1500	500	40/30		380



CIP spray nozzle



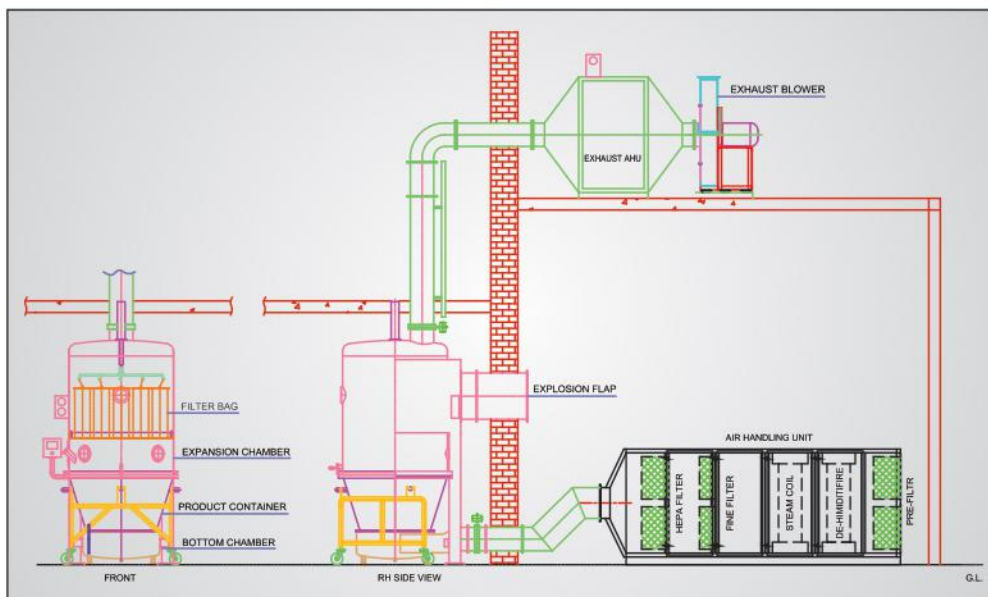
Quick released clamp assembly at product container



Exhaust air filter assembly



Product container & Expansion chamber assembly



Double scan inlet air handling unit

Tray Dryer- Shelf Drying Oven

High Effective Hot Air Re-circulation - Tray Drying Technik

Application & Process:

Tray Drying Ovens are used for drying of pharmaceuticals powders, granules, pigments, foods, bakery, harbels, chemicals, and plastic etc in an effective and economical way by hot air re-circulation.

Tray dryer is an enclosed insulated chamber in which trays are placed on top of each other. Heat transfer is does by circulation of hot air by electric heaters or any other heating media. Blower fans are installed inside to ensure proper air circulation and transfer of heat. Moisture contents is removes through exhaust gate. Fresh Inlet air and moisture air controls by inlet & exhaust damper.



Salient Features:

- Design is cGMP with product contact parts AISI 316.
- Highly effective uniform air re-circulating system by low speed fan.
- Available in 12, 16, 24, 48, 96 & 192 Trays loading capacity.
- Machine structure inside and outside are made from S.S.304.
- All walls are insulated with fiber glass wool.
- Insulated front door with high temperature silicon food grade seal.
- Inlet air filter and damper at inlet and exhaust air damper for air flow controls.
- Controls panel with digital PID temperature and timer control.

- Mobile trolleys are provided which are used to load and unload the trays into the dryer.
- Tray is designed with round corner and edges with mirror finish.

Safety Features:

- Temperature controller, over load protection.

Optional features:

- Separate inlet air handler unit with HEPA, steam or electric heating system, perforated tray, standard painted model.



Trolley assembly



Air circulation fan



Inlet air filter & damper



Exhaust air damper

Technical Specifications

Model	PTD - 12	PTD - 16	PTD - 24	PTD - 48	PTD - 96	PTD - 192
Number of Trays	12 Tray	12 Tray	24 Tray	48 Tray	96 Tray	192 Tray
Loading capacity	36 kg.	48 kg.	60 kg.	120 kg.	240 kg.	248 kg.
Blower motor Hp	1 HP	1 HP	1 HP	1 HP	1 HP X 2 Nos.	1 HP X 4 Nos
Electrical Heater- 100°C	3 kW	4 kW	6 kW	9 kW	15 kW	36 kW
No. of Trolleys	One	One	One	One	Two	Four
Tray Size in cm	80 x 40 x 3	80 x 40 x 3	80 x 40 x 3	80 x 40 x 3	80 x 40 x 3	80 x 40 x 3
M/c. Dimension in cm	105 x 167 x 156	105 x 167 x 189	115 x 211 x 155	122 x 221 x 235	138 x 344 x 235	147 x 344 x 235

Double Cone Rotary Vacuum Dryer (RCVD)

Uniform Low Temperature Vacuum Drying & Mixing Process Technology

Application & Process :

The Double Cone Rotary Vacuum Dryer is suitable for drying the material which cannot operate at high temperature, easily oxidized, poisonous in nature. The rota cone is a new drier that integrates mixing and drying in the one body and equips with condenser and vacuum pump. It can widely apply to dry raw materials of pharmaceuticals, chemicals, Pesticides, foodstuff & dyestuff industries.

The Double Cone Rotary Vacuum Dryer consists of a jacketed double conical shell rotating at 6 RPM with under the state of vacuum inside the shell, pass steam or hot water in to jacket for heating. The large heating surface area presented by the internals of the cone ensures uniform drying of the products, as the products gently tumbles while the cone rotates slowly. The vaporized steam can be pumped out through vacuum exhaust pipe when the damp raw material absorbed heat. The diffusive action induced by the tumbling cone constantly presents a fresh layer to come into contact with the indirectly heated walls of the shell, the dry speed of raw material is quickened and uniform drying efficiency is raised too. A well designed sealing system enable maintenance of deep vacuum inside the shell, and also ensures positive circulation of a heating media in the jacket.



Salient Features :

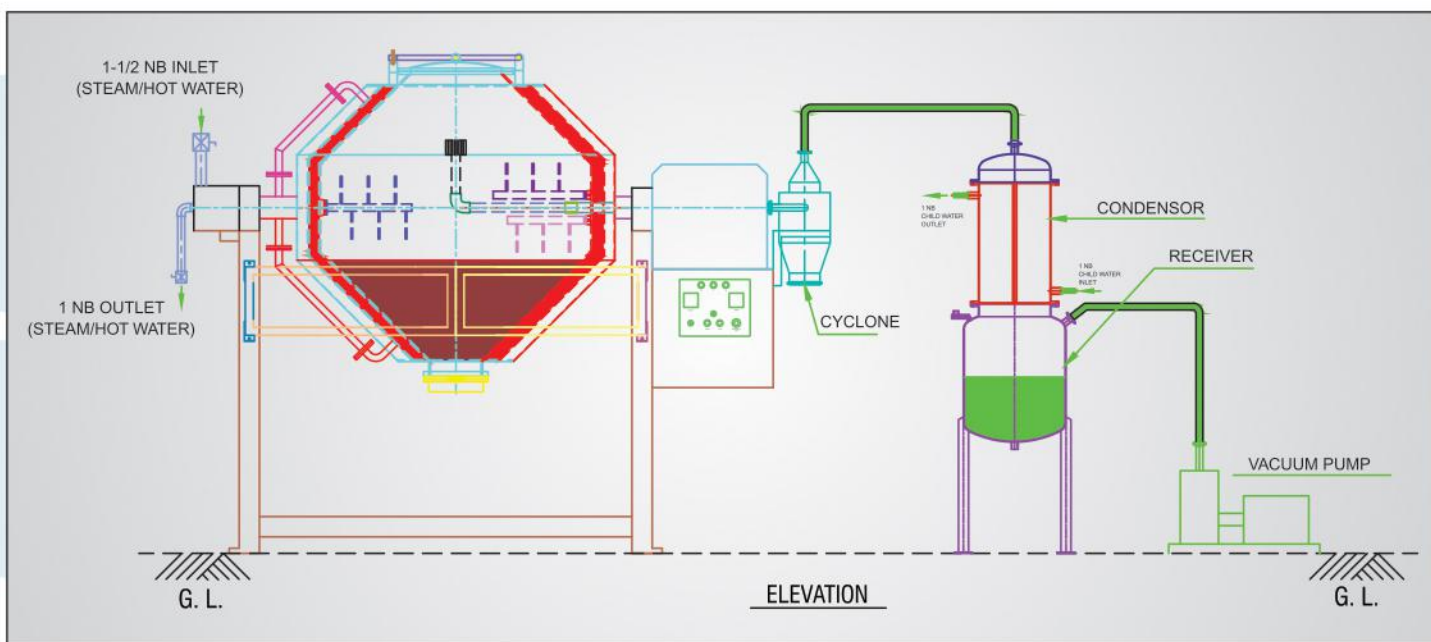
- Design is cGMP with products contact parts AISI 316.
- Mixing and low temperature drying process in single bowl with vacuum operation.
- Continuous rotation of container, material will make complex impacting motion in the container and reach to uniform mixing and drying at low temperature.
- Rigid structure with jacketed, insulated & vacuumize rotating double cone with drive unit.
- Vacuumize closed system can be with condenser, receiver for solvent recovery & cyclone separator to recovery the solid particle.
- Very low value of final moisture even at low drying temperatures.

Safety feature:

- Vacuum gauge, safety pressure relief valve, pressure gauge, overload protection.

Option features :

- Solvent receiver system.
- Lumps breaker.
- PLC controls with HMI.
- Explosion proof electrical.
- SCADA System with 21 CFR part 11 compliance.
- Also available in Hastelloy material.



Technical Specifications

Model	PRVD 100	PRVD 200	PRVD 350	PRVD 500	PRVD 750	PRVD 1000	PRVD 1500	PRVD 2000	PRVD 3000
Total Volume -Liter	100	200	350	500	750	1000	1500	2000	3000
Working Volume- Liter	50	100	175	250	375	500	750	1000	1500
Heating Area- m ²	1.16	1.5	2	2.63	3.5	4.61	5.58	7.5	9.6
Approx. RPM	6	6	6	6	6	4	4	4	4
Electric Power Kw	0.75	1.12	1.5	1.5	2	3	5.5	7.5	7.5
Height of Rotating Container	1810	1910	2090	2195	2500	2665	2915	3055	3330
Total Weight Approx	400	500	700	1000	2000	3000	3600	4300	5800
Design Pressure Inside Container	4 Kg/cm ²								
Design Pressure in Jacket	6 Kg/cm ²								

Ribbon Vacuum Mixer Dryer

Uniform Dry & Wet Mixing & Vacuum Drying Process

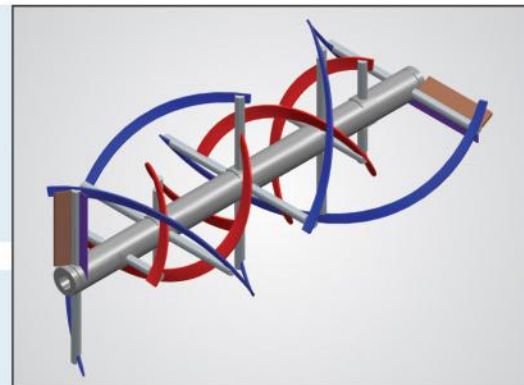
Application & Process :

The Ribbon Vacuum Mixer Dryer is suitable for mixing and drying the material which cannot operate at high temperature easily oxidized, poisonous in nature. It operates at low temperature under vacuum & used for drying and mixing powder of pharmaceuticals, herbals, crystallines, insecticides, pesticides, and food industry.

The Ribbon Vacuum Mixer Dryer consists of a jacketed cylindrical shell with rotating ribbon agitator by rigid gear motor drive. There is provision for application of vacuum inside the shell and circulation of heating media in the jacket during the rotation of the stirrer. The large heating surface area presented by the internals of the cylindrical shell ensures uniform drying of the product, as the product gently moving while the ribbon stirrer rotates. The diffusive action induced by the mixing stirrer constantly presents a fresh layer to come into contact with the indirectly heated walls of the shell. A well designed sealing system enable maintenance of deep vacuum inside the shell, and also ensures positive circulation of a heating media in the jacket.

Salient Features :

- Design is cGMP with product contact parts AISI 316.
- Uniform maxing & vacuumize drying process at low temperature.
- Vacuumize closed system with condenser, receiver for solvent recovery.
- The shape of container and mixing stirrer gives sufficient continuous movement to the powder.
- Fast, even liquid addition and coating by spraying system and drying with vacuums.
- Shaft seal with gland and adjustable pressure.
- Product container is with full welded wall for avoids cross contamination & easy clean.
- Top lid with charging hole, silicon seal, easy clamp device and interlock switch.
- Rigid direct drive through gear box with motor.



Ribbon blade

Safety Features:

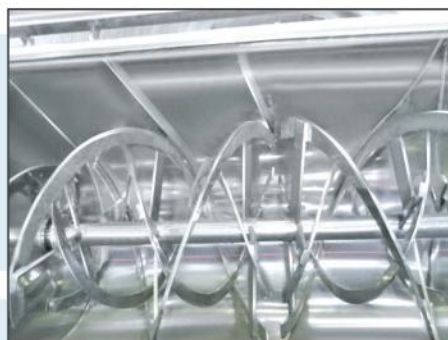
- Total drive transmission system enclosed
- Limit switch installed in the top lid ensure lid is closed
- Safety pressure gauge & relief valve for heating media & vacuum.

Optional Features:

- Variable speed drive for stirrer.
- Liquid spray coating system,
- PLC controls with HMI touch screen.
- Flame proof electrical.
- Heating media - steam/ hot water / hot oil.
- Option for design of shell is in cylindrical type or "U" shape.



Flush bottom discharge gate



Ribbon blade stirrer



Charging gate

Technical Specifications

Model	Capacity Working			Stirrer	Motor	Container Dimension			Over all Dimension		
	Total Liter	Working Liter	Loading in Kg.			RPM	HP	Length mm	Width mm	Height mm	Length mm
PRMD-50	75	50	25	40	1.0	750	275	400	1750	950	1700
PRMD -100	150	100	50	40	1.5	850	400	500	1900	1175	1850
PRMD -200	300	200	100	40	3.0	1250	450	600	2500	1300	1950
PRMD -300	450	300	150	40	5.0	1500	500	650	2800	1400	2050
PRMD -400	600	400	200	40	7.5	1700	550	700	3100	1450	2100
PRMD -500	800	500	250	40	7.5	1800	600	800	3400	1525	2100
PRMD -750	1100	750	325	30	10.0	1900	650	900	3550	1550	2200
PRMD -1000	1500	1000	500	30	12.5	1900	750	1050	3670	1650	2280
PRMD -1250	1900	1250	625	30	15	2100	850	1100	3850	1825	2450
PRMD -1500	2250	1500	1250	30	20	2250	900	1200	4000	1950	2500
PRMD -2000	3000	2000	1000	30	25	2500	1000	1350	4300	2050	2600
PRMD -3000	4500	3000	1500	30	40	2700	1100	1500	4780	2150	2800
PRMD -5000	7500	5000	2500	30	50	3500	1250	1700	6300	1900	3000
PRMD -7500	11000	7500	3750	30	60	3800	1600	2100	6350	2000	3500
PRMD-10000	15000	10000	5000	30	75	4000	1850	2250	6500	2150	3650

Paddle Vacuum Dryer

Uniform Fluidized Optimum Mixing & Vacuumize Drying Process Technik

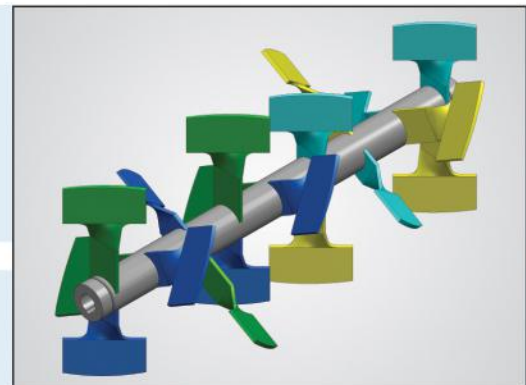
Application & Process :

The Paddle Vacuum Mixer Dryer is suitable for mixing and drying the material which cannot operate at high temperature easily oxidized, poisonous in nature. It operates at low temperature under vacuum is used for drying and mixing powder of pharmaceuticals, herbals, crystalline, insecticides, pesticides, and food.

The Paddle Vacuum Mixer Dryer consists of a jacketed "U" shape/cylindrical shell with rotating paddle agitator by rigid gear motor drive. There is provision for application of vacuumize inside the shell and circulation of heating media in the jacket during the rotation of the stirrer. The large heating surface area presented by the internal surface of the shell ensures uniform drying of the product, as the product gently moving & fluidized while the Paddle stirrer rotates. The diffusive action induced by the mixing stirrer constantly presents a fresh layer to come into contact with the indirectly heated walls of the shell. A well designed sealing system enable maintenance of deep vacuum inside the shell, and also ensures positive circulation of a heating media in the jacket.

Salient Features :

- Design is cGMP with product contact parts AISI 316.
- Mixing and low temperature drying process in single bowl with vacuum operation.
- Material will make continuous movement and fluidized in the container and reach to uniform mixing and fast drying at low temperature.
- Vacuumize system can be provides with condenser, receiver for solvent receiver.
- Very low value of final moisture even at low drying temperatures.
- Inner & outer paddles on the triple action multi-zone paddle rotor for movement of material.
- Fast, even liquid addition and spray coating system and drying at low temperature.
- Shaft seal with gland and adjustable pressure.
- Top lid with charging hole, Silicon seal, easy clamp device and interlock switch.
- Rigid direct drive through gear box with motor.



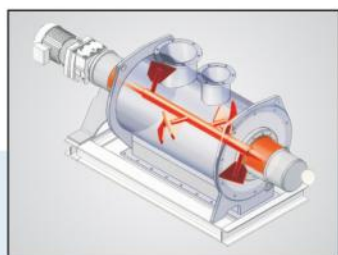
Paddle blade

Safety Features :

- Total drive transmission system enclosed
- Limit switch installed in the top lid ensure lid is closed
- Safety pressure gauge & relief valve for heating media & vacuum.

Optional Features :

- Variable speed drive for Stirrer.
- Liquid spray coating system.
- PLC controls with HMI touch screen.
- Flame proof electrical.
- Heating media - Steam/ Hot water / Hot oil.
- Shell is in cylindrical type or "U" shape.



Machine assembly



Paddle blade stirrer



Top lid with spray nozzle & cip



Chopper blade

Technical Specifications

Model	Capacity Working			Motor HP	Stirrer RPM	Container Size in mm.		
	Cub ft.	Liter	Kg.			L	W	H
PPMD-50	3.75	100	50	2	40	500	850	700
PPMD-70	5	152	71	3	40	550	920	720
PPMD-100	7.5	200	100	5	40	600	1100	800
PPMD-140	10	283	140	5	40	660	1220	840
PPMD-200	15	400	200	7.5	40	730	1300	920
PPMD-280	20	566	280	10	40	810	1370	990
PPMD-400	30	850	425	15	40	940	1680	1120
PPMD-550	40	1132	560	20	40	1070	1830	1250
PPMD-700	50	1416	705	30	40	1140	1980	1320
PPMD-1000	75	2124	1060	40	40	1270	2290	1450
PPMD-1400	100	2832	1415	50	40	1370	2440	1550
PPMD-1700	125	3540	1770	50	40	1520	2740	1700
PPMD-2100	150	4248	2125	60	40	1680	2740	1850
PPMD-2500	175	4855	2500	60	40	1680	3050	1850
PPMD-2800	200	5664	2830	75	40	1830	3050	2000
PPMD-3500	250	7080	3500	75	40	1830	3050	2000
PPMD-4000	300	8495	4250	100	40	2030	3660	2210

Vacuum Shelf Tray Dryer

Low Temperature Vacuum Dry & Mix Process Technology

Application & Process :

The Vacuum Shelf Tray Dryers are used to heat and dry material under the state of vacuum is called vacuum drying and where difficulties in drying materials due to high toxic contents, hygroscopic in nature, heat sensitive. It is widely used in the pharmaceuticals, herbals, chemicals & foodstuff.

The Vacuum Shelf Dryer is basically a tray dryer working under vacuum conditions. Its use vacuum to pump air and humidity out from the closed heat chamber due to vacuum making the chamber on the vacuum state thus increased drying rate greatly and saved energy. The boiling point of the material to be brought down for drying and the entire system is in closed loops so, no contamination occurs. The evaporation's evolved during the drying process is cooled down through a connected condenser and collected in receiver. Vacuum shelf dryer is closed chamber with heavy structure with air lock doors, Jacketed and insulated body. There are shelves for resting tray inside chamber. Shelves are manufactured in hollow construction with baffles cum stiffeners, inlet and outlet nozzle. Hot media is passed through the Inlet Header to each shelf, so heat transfer to the surface, which in turn heats up trays placed on the shelves. The hot media flows out from the shelves through the outlet header.



Salient Features :

- Design is cGMP with product contact parts AISI 316.
- Vacuumize shelves drying on low temperature system for high toxic, hygroscopic & heat sensitive materials.
- Vacuumize closed system can be with condenser, & solvent receiver.
- Very low value of final moisture even at low drying temperatures.

Safety feature:

- Safety valve, temperature controller & overload protection.
- Option for heating media can be steam/ hot water / hot tharmic fluid.

Option features:

- Condenser & receiver for solvent recovery & evaporation cooling, PLC controls, explosion proof electrical.



Technical Specifications

Model	PVTD - 6	PVTD - 12	PVTD - 24	PVTD - 48
Chamber Inner size in mm	1100 L X 620 W X 1190 H	1100 L X 1020 W x 1190 H	1100 L X 1420 W X 1190 H	1550 L X 1420 W X 2210 H
External Size in mm	1300 L X 900 W X 1700 H	1300 L X 1300 W X 1700 H	1300 L X 1700 W X 1700 H	1755 L X 1700 W X 2720 H
Layer of Backing Shelf	6	6	6	16
Size of Backing Tray in mm	400 x 800 x 40 (H)	400 x 800 x 40 (H)	400 x 800 x 40 (H)	400 X 800 X 40 (H)
No. of Backing Tray	6	12	24	48
No. of Dummy Shelf	1	1	1	1
No. of Tray Per Shelf	1	2	3	4
Permitted Pressure Inside Pipe & Shelf- Kg/cm ²	4	4	4	4
Temperature Inside Chamber- °C	≤ 150	≤ 150	≤ 150	≤ 150
Vacuum level Inside Chamber without load-mm Hg	710	710	710	710

Prism's Global Presence

Middle East Country	African Country	USA & Latin USA Country	Asian Country	European Country
UAE	Algeria	United state of America	India	Australia
Saudi Arabia	Nigeria	Mexico	Afghanistan	New Zealand
Egypt	Kenya	Peru	Nepal	Russia
Turkey	Malawi	Chile	Bangladesh	England
Jordan	Ghana	Ecuador	Malaysia	Belarus
Oman	Congo	Colombia	Singapore	Belgium
Iran	Uganda	Morocco	Thailand	Northern Poland
Iraq	Ethiopia	El- Salvador	Vietnam	Sweden
Syria	Tunisia	Canada	Hong Kong	Ireland
Yemen	Zambia	Cuba	Myanmar	Finland
Lebanon	South Africa		Sri Lanka	Bulgaria
			Indonesia	Netherland



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