ORBITEK®

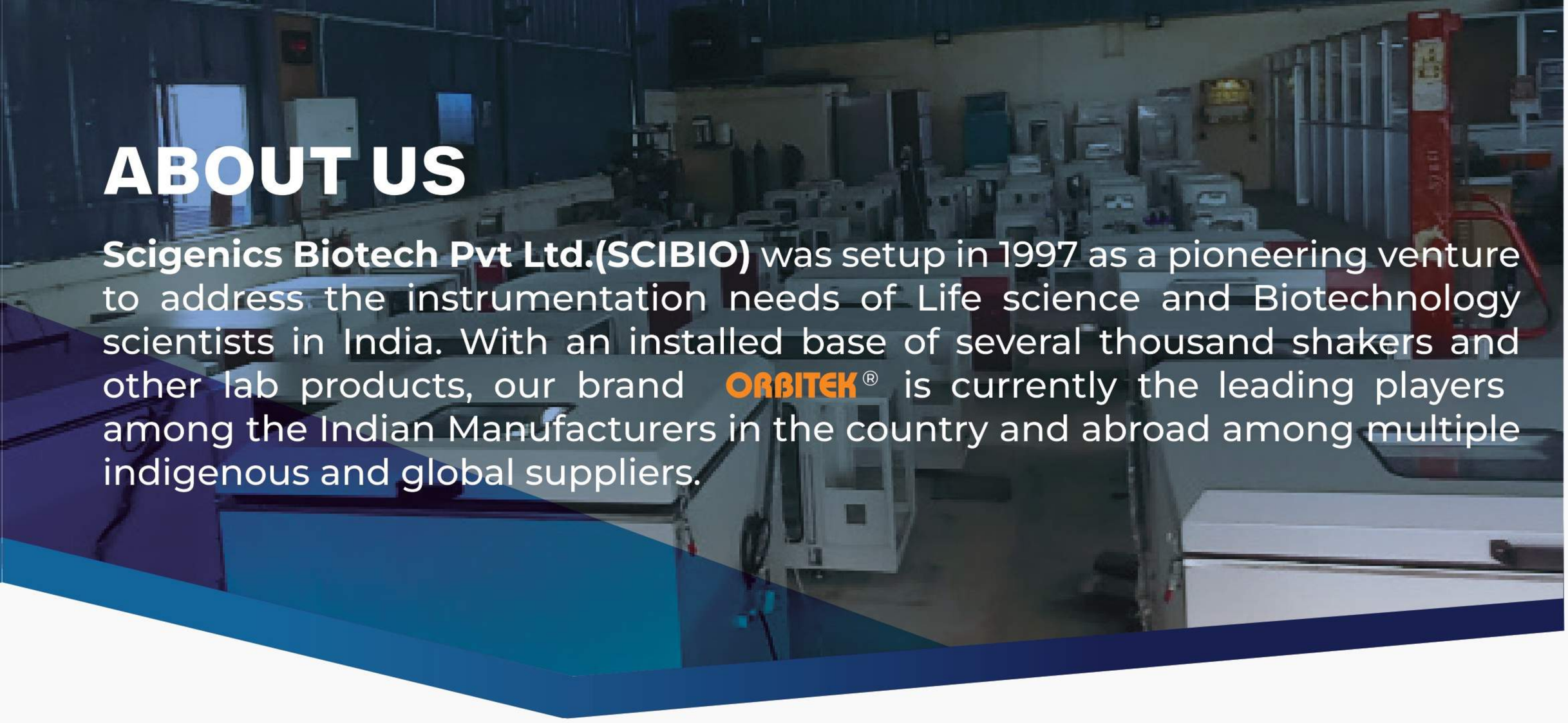
Range of Bio-equipment

PILOT SHAKER

Reliable Solutions for Large Scale Microbial & Cell Culturing

CELEBRATING 25+ YEARS OF TRUST

www.scigenicsbiotech.com



ABOUT US

Scigenics Biotech Pvt Ltd.(SCIBIO) was setup in 1997 as a pioneering venture to address the instrumentation needs of Life science and Biotechnology scientists in India. With an installed base of several thousand shakers and other lab products, our brand ORBITEK® is currently the leading players among the Indian Manufacturers in the country and abroad among multiple indigenous and global suppliers.

RECOGNITION

- ORBITEK® is now synonymous with shakers among the user scientists.
- Globally recognized CE marking
- Largest installed base of shakers with prestigious customers from Pharmaceutical majors and Research Institutes.
- Government of India (DSIR) Recognized in-house R& D unit.
- ISO 9001-2015 certified

APPLICATION

Designed with flexibility to support a wide range of applications, including algal growth, microbial fermentation, and plant cell culture.

MILESTONES

- Global installation presence including Japan, Saudi Arabia, Egypt, Omen, Europe, Finland, Bangladesh etc.
- Installations in USFDA certified facilities, meeting cGMP norms including 21 CFR Part 11 compliance.

HIGHLIGHTS

The Pilot series of Shaker are designed to address critical application for microbial Cultivation – Speed preparation in Bio-pharmaceutical Industry, R&D involving large scale cultivation of Micro-organisms, etc.

- Engineered for durability and consistent, trouble-free operation over time.
- Ergonomically designed for easy handling of large capacity flasks.
- Smooth, silent operation for seamless performance.
- Cooling unit optimized for the high ambient temperatures commonly experienced in Indian climates.
- Uniform temperature distribution across the chamber ensures consistent, homogeneous culture growth.
- Various options of clamps and holders for different types of flasks, test tubes etc.

OPEN AIR SHAKER

Open air pilot shakers are typically designed to suit research application demands in large scale cultivation of microbial and tissue cultures. The constant agitation with a large orbital diameter provides the optimum oxygen transfer to the cultures, resulting in better and homogeneous yield.

Model: P Part No. P-A

Model: P Part No. PXL-A

Model: P Part No. PDX-IL

GENERAL FEATURES

Construction

- Exterior: durable powder coated mild steel; interior: hygienic, corrosion resistant SS304 for effortless cleaning and disinfection.
- Large toughened, double glazed viewing window for enhanced chamber visibility.
- Universal platform to accommodate Erlenmeyer, round bottom, volumetric flasks, test tube holders, micro plate, deep well plate holders, etc.
- Pluggable drains are provided to capture accidental spillage in the chamber.
- Noiseless operation with less than 55 db.

Shaking

- Equipped with a penta-eccentric counterbalance drive on permanently lubricated bearings, providing stable amplitude to promote uniform culture growth.
- Smooth Start/Stop cycle with programmed, acceleration and deceleration circuit to prevent cell shear, contamination due to cotton wetting, etc.,
- Large 50mm orbital diameter accommodates diverse growth requirements by enhancing aeration and uniform mixing.

Temperature

PILOT REFRIGERATED - PE / INCUBATOR SHAKER - PT

- Finned tubular air heater for superior heat transfer efficiency.
- Hermetically sealed CFC free refrigeration system for temperature Incubator Shaker.
- Controlled air circulation achieves an optimal balance between temperature homogeneity and reduced evaporative loss.
- High grade insulation on all sides for uniform temperature maintenance and low energy consumption.
- Designed with a wide temperature range to support varied microbial growth and experimental protocols.

Safety

- Thermostat cut-off prevents temperature overshoot, ensuring sample safety.
- Audible and visual alarms alert users to temperature deviations for enhanced safety and monitoring.
- Residual current circuit breaker (RCCB) for user safety.
- Non-Volatile memory for automatic power failure restart.
- Imbalance detection system ensures safety by halting movement during excessive vibration.
- Safety stop switch activates automatically when the door is opened.

Model : PE Part No. PE-A

Advanced Features & Compliance Options

All-Stainless-Steel Construction (Optional)

Designed to meet cGMP requirements, the system is available with an all-stainless-steel interior and exterior-ideal for cleanroom and sterile production environments.

21 CFR Part 11 Compliant System (PE/PT Series)

Supports GMP documentation and regulatory standards with integrated electronic records, secure user access, digital signatures, and audit trails in full compliance with 21 CFR Part 11.

Custom LED Light Bank (Optional)

Tailored LED lighting system with linearly variable, multiple color temperature settings, and specific-wavelength monochromatic options. Includes gas purging capability to support algae and microalgae cultivation under optimized growth conditions.

High-Capacity Shaking Platform

Designed for demanding bioprocess applications, the system supports simultaneous agitation of up to four 50L containers. Ensures uniform mixing and aeration for both upstream (cell cultivation) and downstream (cell suspension) operations-enabling consistent results and scalable performance.

OPEN AIR SHAKER

Part No.	P-A	PX-A	PXL-A	PD-A	PDX-A
Shaking Frequency (50mm Throw)	50-300 RPM	50-250 RPM	50-200 RPM	50-250 RPM	50-200 RPM
Deviation	± 2 RPM				
Diameter of Orbital Motion	50 mm (2inchs)				
Drive	Brushless AC motor (BLAC)				
Control	Frequency Control				
Diplay	Digital LED				
Parameter setting	Soft touch keypad				
Material of construction (MOC): External	MS Powder Coated / Stainless steel SS304 optional				
Platform Size (W x D)	770 x 770 mm (30" x 30")	1000 x 1000 mm (39" x 39")	1200 X 1200 mm (47" x 47")	770 x 770 mm (30" x 30")2 nos	1000 x 1000 mm (39" x 39")2 nos
loading maximum (kg)	22kg (250ml flask fully loaded with 1/3 of filling volume)	30 kg (1000ml flask fully loaded with 1/3 of filling volume)	40kg (1000ml flask fully loaded with 1/3 of filling volume)	36 kg (1000ml flask fully loaded with 1/3 of filling volume)	55 kg (1000ml flask fully loaded with 1/3 of filling volume)
External Dimension (W x D x H) per unit	1000 x 1142 x 580	1250 x 1465 x 470	1251 x 1465 x 470	1000 x 1142 x 980	1250 x 1500 x 1060
Noise Level	Less than 55 db(A)				
Net Weight	280kg	320kg	330kg	350kg	375kg
Erlenmeyer Flask Size & Range (on standard Universal Platform)	100mL to 5L				
Electricals	6 A, 230 V, 50Hz, 1				
Electrical Safety	MCB				
Non Volatile Memory	Yes				
Emergency Stop	Yes				

NOTES

1. Achievable Maximum speeds dependent on load
2. Permissible Ambient condition 10°C to 35°C
3. Uniformity Across the tray
4. For details holding capacity- review accessories

PE & PT SERIES - PILOT INCUBATOR SHAKER SERIES

Part No.	PE-A	PT-A	PEX-A
Shaking Frequency (50mm Throw)	50-350 RPM	50-350 RPM	50-300 RPM
Deviation	± 2 RPM		
Diameter of Orbital Motion	50 mm (2inches)		
Drive	Brushless AC motor (BLAC)		
Temperature Range	10°C to 60°C	Ambt +10°C to 60°C	10°C to 60°C
Accuracy	Cooler on +/- 0.5°C Cooler off +/- 0.1°C	+/- 0.1°C	Cooler on +/- 0.5°C Cooler off +/- 0.1°C
Uniformity	±1°C	±1°C	±1°C
Sensor	Class PT 100		
Control	Microprocessor Based PID		
Diplay	Digital LED		
Parameter setting	Soft touch keypad		
Construction Material of construction (MOC): Internal	Stainless steel (SS 304)		
Construction Material of construction (MOC): External	MS Powder Coated / Stainless steel SS304 optional		
Universal platform Size (W x D)	770 x 770 mm (30" x 30")		900 x 900 mm
Equipment Size Internal Dimension (W x D x H)	900 x 900 x 600		1030 x 1030 x 540
External Dimension (W x D x H) per unit	1000 x 1385 x 1025		1165 x 1515 x 935
Noise Level	Less than 55 db(A)		
Net Weight	**500 kg**		
Chamber Capacity /(Litre/Cft)	490/18		572/20
Erlenmeye Flask Size & Range (on standard Universal Platform)	10mL to 6L		
Electricals	16 A, 1 phase, 230 VAC		
Safety Standard Door safety	Door Switch for stopping the shaking as the door is opened		
Alarm - visual/ audio Temperature deviation	YES		
Alarm - visual/ audio Speed deviation	YES		
Electrical Safety	RCCB, VP Relay		
Spillage protection	YES		
NOTES 1. Achievable Maximum speeds dependent on load	2.Permissible Ambient condition 10°C to 35 °C	3. Uniformity Across the tray	4. For details holding capacity- review accessories

CLAMP CAPACITY

	Model		Pilot open air shaker			Pilot Double deck open air shaker		Pilot Refrigerated incubator shaker	
	Part Name		P-A	PX-A	PXL-A	PD-A	PDX-A	PT-A/PE-A/ PE-AH	PEX-A
Universal tray clamp capacity	Clamps Size	Flasks Type	Capacity						
	100 ml/ 125ml	Erlenmeyer flask	64	100	169	60+64	96+100	64	81
	250ml/ 300ml	Erlenmeyer flask	64	100	169	60+64	96+100	64	81
	500ml	Erlenmeyer flask	36	64	81	32+36	60+64	36	64
	1L	Erlenmeyer flask	25	36	64	21+25	32+36	25	36
	2L	Erlenmeyer flask	16	25	36	16(Top)	25(Top)	16	20
	4L	Erlenmeyer flask	9	9	16	No	No	9	9
	5L	Erlenmeyer flask	9	9	16	No	No	9	9
	6L	Erlenmeyer flask	9	9	16	No	No	9	9
	2.8L	Fernbach	9	9	16	5+9	12+16	9	9
	2.8L	Halfkine flask	5	9	16	5(Top)	9(Top)	5	5
Dedicated tray clamp capacity	100 ml/ 125ml	Erlenmeyer flask	81	144	188	81+77	144+140	81	121
	250ml	Erlenmeyer flask	72	121	188	72+68	121+117	72	100
	500ml	Erlenmeyer flask	49	81	105	49+45	81+77	49	64
	1L	Erlenmeyer flask	30	40	81	30+26	40+36	35	36
	2L	Erlenmeyer flask	16	28	36	-	-	16	25
	4L	Erlenmeyer flask	9	16	20	-	-	9	9
	5L	Erlenmeyer flask	9	16	20	-	-	9	9
	6L	Erlenmeyer flask	9	16	20	-	-	9	9
	2.8L	Fernbach	9	16	20	9+9	16+16	9	9
	2.8L	Halfkine flask	5	9	12	5(Top)	9(Top)	5	5

Flask Holders

Single piece SS holder for standard Erlenmeyer flasks. spring tied leaves for high speed applications

SPECIAL HOLDER

Model		Pilot open air shaker			Pilot Double deck open air shaker		Pilot Refrigerated incubator shaker	
Part Name		P-A	PX-A	PXL-A	PD-A	PDX-A	PT-A/ PE-A/ PE-AH	PEX-A
Flasks Type	Clamp size	Capacity						
Round Bottom Flask Holder	50ml (49 nos in 1 holder)	4 holders						
	50ml (49 nos in 1 holder)	4 holders						
	500ml	5	9	9			5	5
	1000ml	5	9	9			5	5
96 Well plate/ Microplate holder	2 nos in 1 holder	8	12	12	8*2	12*2	8	10

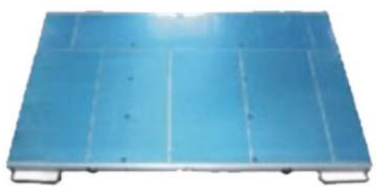
NOTES

1. Test Tube holders supporting 5–55 ml tubes, including Falcon types, with multiple diameter options (12–30 mm) and 12-place configurations.
2. Spring wire racks (small and large) compatible with 50–2000 ml volumetric and conical flasks, with variable speed range of 30–180 rpm.
3. Plain tray with anti slip rubber mat
4. Anodized 200 × 200 mm sticky mat platform with up to 16–25 mats per tray, maximum speed up to 250 rpm, and operating temperature range of 16°C to 60°C

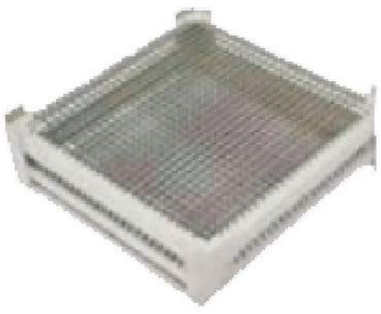
Microplate plate Holder

Test tube Holder

Universal Tray



Sticky Mat



Spring wire rack

Additional Accessories

Illumination with Linearly Variable: LED lighting system delivering 5000 lux at 1.5 ft with 6W, 6500K daylight LEDs, timer control, and 15°C–60°C operating range.

UV-C/UV-B decontamination (PE/PT series): lamp with 8W power, 1-ft size, timer-based operation with expiry alarm (optional), and integrated humidity (%RH) measurement.

Data logging (PE/PT series) for speed and temperature with RS-485 (RJ connector) and USB PC connectivity, 21 CFR Part 11 compliance (optional), and optional printer output

Real-time or cyclic timer (0.1 s to 999.99 hr) with programmable control for speed, temperature or both.

OTHER ORBITEK® RANGE OF PRODUCTS

LE-TT-AH

LE-BT-AH

LE4676-AH

GC 350

CINC 200

INC 100

LE4676-AS-AH

WO-E-D

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