

KDDBR SYSTEM

(Kiran Dynamic Bio-Reactor Systems)

*It's a Mobile, Packaged, Compact
Sewage Treatment Plant*



THINK
PLAN
DO

It treats waste water
and saves money
at the same time

APPLICATIONS :

SEWAGE TREATMENT PLANT FOR

1. Residential Colonies and Townships
2. Institutional Areas (Offices, Schools, Colleges, Office complexes etc.)
3. Shopping Malls
4. Hospitals and Health Resorts
5. Camping Sites
6. Hotels and Resorts
7. Labour Colonies
8. Mobile Camping Sites
9. Construction sites.



WHAT IS KIRAN DYNAMIC BIO-REACTOR (KDBR) SYSTEM?

Conventional methods of treating sewage wastewater are Extended Aeration or Aerobic Treatment. KDBR is quite a different method although the basic process is the same. In KDBR treatment, during pre-treatment coarse particles, grit, oil and grease are removed. After this, oxygen is dissolved into wastewater through a process called aeration. The objective of dissolving oxygen into wastewater is to ensure that bacteria in wastewater survive and proliferate. Basically wastewater treatment is generally a bacteriological process and the most critical part i.e. cleaning the wastewater is done predominantly by bacteria. Same principle is also applied in Kiran KDBR systems, but with a slight difference.

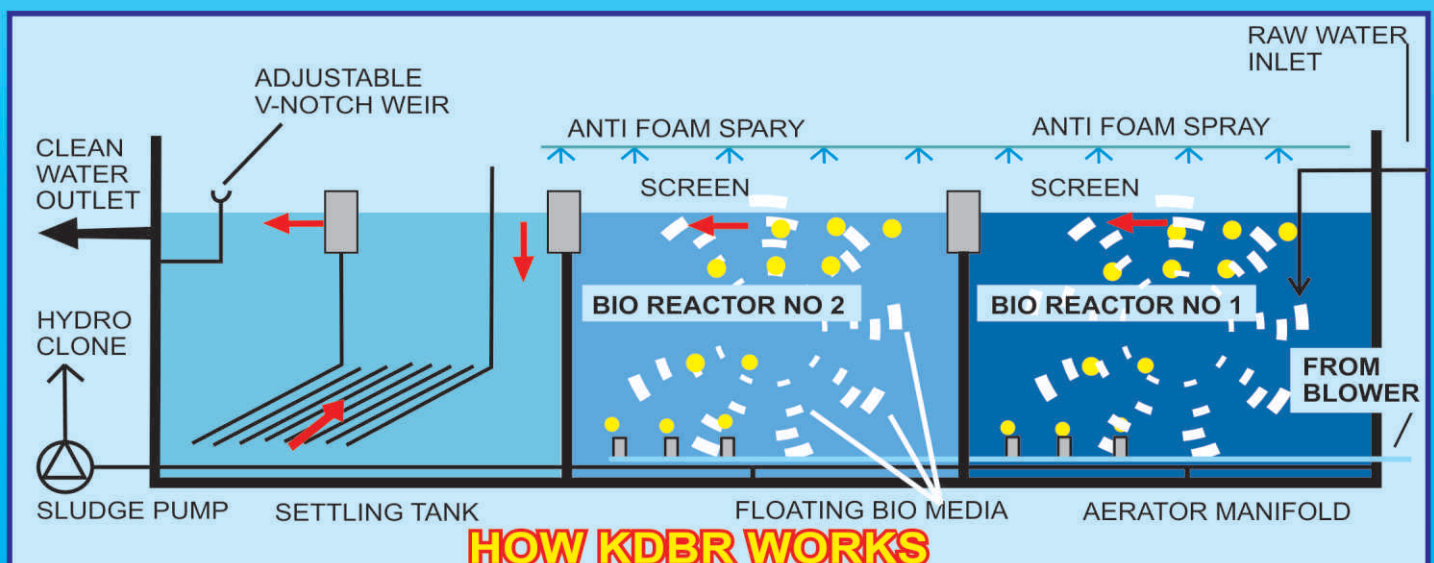
In the conventional systems, aeration is done in a water basin in uncontrolled manner. In Kiran KDBR system, aeration is carried out in controlled condition in the presence of media. This process is also known as Moving Bed Bio-Reactor System or in short MBBR.

WHY KDBR SYSTEMS?

The "KDBR" system has so many advantages over the conventional bio-reaction processes that it is very safe to say that "The KDBR system is a unique and revolutionary system."

Kiran manufactures and markets Dynamic Bio-Reactor Waste Water Treatment Packaged Plants of different capacities starting from 20 KLD (Kilo Litres per Day) up to One MLD (Million Litres per Day) in the Mini and Midi range. Higher capacities are also supplied generally in multiples of 100 KLD. The basic advantages of ADBR are:

1. No foul smell - Plant is fully enclosed.
2. Treatment process retention time reduced by more than 60%. Hence space and energy saving of more than 60 %.
3. KDBR System can handle 10 times the loading in less than 1/5 the time as compared with conventional systems.
4. Almost ready for immediate installation.
5. Easily transportable. Mounted on skid.
6. Can be mounted on trailer (if required) or can be supplied in containerized form.
7. No major civil concrete works required at site.
8. Saving on piping works requirement at site.
9. Lockable from front. (If Required)



WORKING OF KDBR SYSTEM :

Incoming sewage is collected in an incoming sump (outside KDBR) which has a screen fixed at the entry of sump. A cat ladder and manhole are provided to clean the screen and enter the sump when required. A sewage pump is provided as a part of the KDBR to transport liquid to the bio-reactor system from the incoming sump located outside KDBR. This pump can be submersible or centrifugal, depending on application. The pump operates through a level controller for ensuring automatic operation. Once in the bio-reactor, the sewage undergoes aeration and subsequent attached growth.

Aeration is done through a blower mounted within the KDBR. Extensive aeration coupled with slow circular movement of high surfaced media pushed by air flow ensures that bacteria form large settlements on the media. This settlement is exposed to oxygen constantly and bacteria are never devoid of oxygen. This results in increased biological process due to presence of two systems namely, aerobic suspended growth and attached growth. The reactor also enhances the degradation of organic matter present in the sewage. It is the organic matter in sewage that gives rise to BOD. This results in high efficiency of treatment. From bio-reaction section the sewage is transferred to lamella plate type settler in which all sludge (bacteria along with organic matter) is separated from sewage and only traces are discharged with sewage within limits of the Pollution Control Authority norms.

The treated sewage is chlorinated and transferred to treated water tank (outside KDBR). Treated water pump diverts water to horticulture application or disposal as desired by client. Sludge is pumped to filter press or hydro cyclone (optional) for conversion to sludge cakes or concentrated sludge which is dried and is made available in solid form for easy disposal. The sludge cakes may be used as manure. Thus this system offers complete environment friendly solution to pollution problems.

The pre-fabricated KDBR is a completely enclosed system with pumps, blower, panel, piping etc. housed in a pre-fabricated unit. The system is pleasing in appearance and completely enclosed like a container. The system could also be transferred to another location by container if so desired and provides flexibility of location.

Model No. @	KDBR 50	KDBR 100	KDBR 150	KDBR 200	KDBR 250	KDBR 300	KDBR 400	KDBR 500	KDBR 600
Capacity (in m ³ / day or KLD	50	100	150	200	250	300	400	500	600
Suitable for population of	350	670	1000	1350	1670	2000	2700	3400	4000
Area required in sq. meters. For ADBR	7	14	18	22	24	27	54	60	68
Total area required in sq. mtrs. *	40	60	90	120	180	220	280	300	400
Electrical power required of 440 V 3 phase, 50 hz. **	6	8	10	12	15	18	20.0	26.0	26.0

Technology up-gradation is a continuous process and specifications are thus subject to change without prior notice. In case larger systems are required, 2 or more systems could be used in parallel. In case of large condominiums, systems could be provided for a group. Systems could also be built at site using tanks in RCC or brick masonry construction. This would however necessitate considerable work at site.

@ Designed at a maximum BOD of 300 mg/ ltr.

* Total area means area required for KDBR plus civil works, electrical works and for other infrastructure activities.

** Power and area requirement includes tertiary treatment.

Kiran is able to supply larger systems also in KDBR up to any size in multiples of 100 KLD. We have exported recently KDBR of 5 MLD capacity.

KDBR IN DIFFERENT CONFIGURATIONS

Kiran KDBR systems are packaged systems. However, they are also available in different configurations. KDBR systems can also be designed in civil works. We have supplied many KDBR systems with tanks and equipment room in civil works. Apart from this, KDBR also available in containerized configuration. There are hundreds of Containerized KDBR systems in operation in many parts of the world.



Containerized KDBR is called ACONSET (Kiran Containerized Sewage Treatment) system. A picture of the same



This picture shows the equipment fitted in the ACONSET system



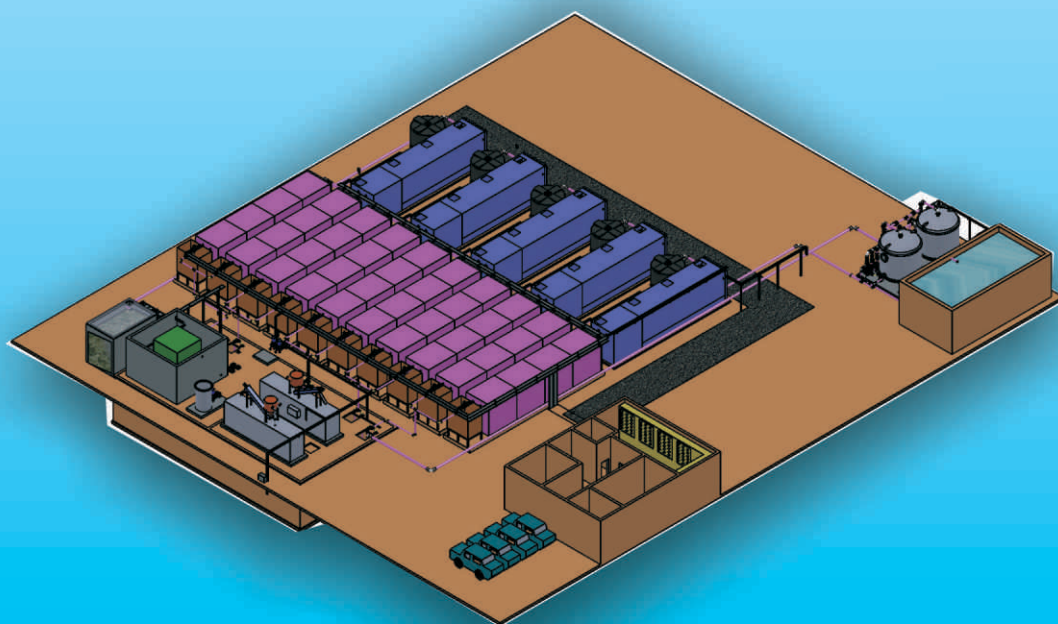
A standard Packaged KDBR system installed in an educational institute in India.

Kiran also manufactures following equipment in their works:

WATER TREATMENT- WASTE WATER TREATMENT / EFFLUENT TREATMENT

- | | |
|---|--------------------------------|
| * Softening / DM plants. | * Fixed aerators. |
| * Electro-Static scale control systems | * Floating aerators. |
| * Reverse osmosis plants | * Mixers / agitators. |
| * Pressure filters. | * Screens : fixed / mechanical |
| * De-alkalizers. | * Diffused aeration systems. |
| * De-gasifiers. | * Sludge thickeners. |
| * Activated carbon filters. | * Trickling filters. |
| * Mixed media filters. | * Filter presses. |
| * Drinking water treatment. | * Clarifier mechanisms. |
| * Fluoride removal systems. | * Oil removal systems. |
| * Iron removal filters. | * Iron removal systems. |
| * Many other types of equipment and systems in both categories. | |

www.kiranequipments.com



KIRAN
ELEVATORS

KIRAN **TECHNO SERVICES**
PRIVATE LIMITED



Delhi : A - 39, Street No.5, Chander Industrial Estate, I.P Extension, Delhi - 110 092

Gujarat : 308/4, GIDC Estate, Makarpura Industrial Estate, Baroda – 390 010,

Andhra Pradesh : No. 6-5-351/5, Astal Heights, Road No. 1, Banjara Hills, Hyderabad – 500 034

Tamil Nadu : No.33-B4, Sidco Industrial Estate Phase - II, Sundarapuram, Coimbatore - 641 021

Kerala : 333/9, Para Road, Near NIDA, Kanjikode, Palakkad - 678 621

Helpline : +91 9751725000, +91 9751625000, + 91 9751425000, + 91 9751215000, + 91 9751245000

Email : kirangroup108@gmail.com, kiranindia108@gmail.com, kiranbiz108@gmail.com

Website : www.kirangroupofcompanies.com, www.kiran.biz, www.kiranshop.in, www.kiranindia.in,
www.kiransurgicalsyste.ms.com, www.kiranmedicareequipments.com, www.kiranpump.com,
www.kiransolarsyste.ms.com, www.kiranled.com, www.kiranincinerationsyste.ms.com
www.kiranequipments.com, www.kirancompressors.com, www.kiranappliances.com
www.kiranairventilators.com, www.kiranfrprproducts.com, www.kiranpebsyste.ms.com,
www.kiranpanels.com, www.kiranfabssyste.ms.com