



# BIOLOGICAL SOLUTIONS

FOR A CLEANER, HEALTHIER ENVIRONMENT



# “Our Company

Since incorporated in Year 1998, Weimar Enterprise Sdn Bhd had emerged as the leading fabricator and supplier of Biomatic Grease Interceptor System. Its Grease Interceptor Brand, “BESTEC” had been a well known brand among the Building Mechanical Consultant, Architects and Plumbing Contractor. The product is also an approved brand from the local authority.

Additionally, we also established a Maintenance and Technical Support Team for the Maintenance Service of Grease Interceptor System. A periodical maintenance service is a MUST for the Grease Interceptor System in order to ensure its function able. Our Maintenance and Technical Support Team is equipped with full range of maintenance service equipment thus providing efficient Grease Interceptor Sludge Removal Service and Pipeline Blockages Clearing Service.

Beside the periodical maintenance and technical support, an effective bio treatment is also needed for the Grease Interceptor and Drain Line System. The bio treatment products contents highly active microbes continuously grow on the surfaces by degrading grease deposits and organics found in the Grease Interceptor and Drain Line System. With the degradation of the grease deposits, the odour surrounding the Grease Interceptor is kept to a tolerable level, while the problems of drain line blockages is reduced and eliminated. Weimar's Bio Treatment Products is specialized formulated for a wide range of applications. Our sales and service team is expertise in recommend the best formulations for improving flow in slow-running drains, cleaning drain lines and maintaining efficient function able of grease Interceptor.

Weimar Enterprise Sdn Bhd adheres to strive for further improvement in products, service and cutting-edge technologies.

# Our Philosophy”

The advancement in modern technology has brought about a rapid change in building techniques. As a result, products must not only meet and exceed many measurable parameters, they should also be capable of delivering the kind of performance that end-users can rely on confidently. In order to deliver products of unsurpass reliability, we are in WEIMAR ENTERPRISE SDN BHD always keep this policy - keep on improving our products and total commitment to meet changing requirements of new technology, building techniques and standards. Everything in WEIMAR ENTERPRISE SDN BHD will constantly be changing to meet this Bio Technology age society, but there is one thing that we will never change. That is our commitment to you - our

customers. Our product are of superior quality and you can count on our quick and reliable services. Most importantly, we want you to benefit from using our products, and with satisfaction.

WEIMAR ENTERPRISE SDN BHD products are particularly suitable for use in industrial/commercial kitchen, food processing, hospitals, hotels, restaurant and leisure facilities anywhere in fact that requires hygienic and maintain the performance of drainage system products.

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# Introduction

## *Fat, Oils and Grease (FOG) Generation*

The greatest drainage problems faced in kitchens and food preparation areas is the collection of fat, oils and grease (FOG) within the drainage system. These substances form naturally from animal and vegetable foodstuffs that can expensive burden in sewer pipes, leading to blockage and reduced capacity, causing the need for frequent blockage clearing. Sometimes, sewer pipe must be replaced due to solidification of the grease and other debris.

## *Why Are Grease Interceptors Needed?*

- 1) To prevent drainage system in buildings from becoming clogged.
- 2) To prevent sewer lines from clogging and improve operation of sewerage treatment plants.
- 3) To prevent environmental problems caused by FOG with other debris at landfills and in waterways.
- 4) To promote the recycling of recovered clean grease. Recovered grease can be used in manufacturing of fertilizers, soaps, animal feed, cosmetics, and components of explosive such as nitroglycerine.

### *Pipe Failure Cycle*

#### *New Condition*



A new 4" pipe has a capacity of 450gpm

#### *Critical Stage*



Grease clogged down to 3", the capacity is 125gpm, a 70% reduction.

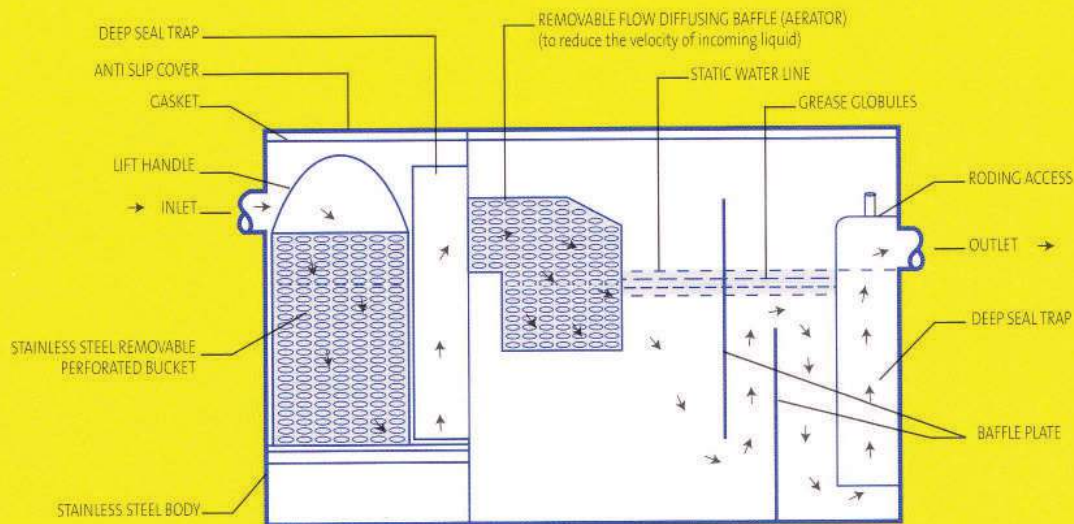
#### *Failure Stage*



At 2", pipe capacity is 50gpm, only 11% of new capacity.

Hygienic, effective and reliable methods of dealing with FOG therefore vital if a clean and efficient working environmental is to be maintained. WEIMAR ENTERPRISE SDN BHD provides solutions to these problems with wide range of effective grease interceptor and accessories to suit all applications.

# Biological Grease Interceptor



## Operation

BESTEC Biological Grease Interceptor is compact, efficient unit that operate by separating FOG from the drainage water by reducing the velocity and hence the momentum of the incoming liquid into the Interceptor. Any heavier solids in the liquid settle into a removable perforated bucket as the turbulence of the incoming fluid reduces and the FOG globules being less dense than water, float above the water.

The separated water is then forced under a stainless steel baffle plate arrangement to ensure any grease, oil or fat residues are not discharged into the main drainage system from the grease interceptor.

## Typical Applications

- Kitchens
- Hotels
- Restaurants
- Fast food restaurants
- Public Houses
- Food processing areas
- Canteens

## Selection Considerations

When selecting a biological grease interceptor, careful consideration should be given to the following factors:

- Location of the grease interceptor sited inside or outside the building
- In-ground or free standing application
- Traffic/wheel loads for in-ground applications
- Connecting drainage invert levels for in-ground applications
- Correct hydraulic size of grease interceptor for the application



# Grease Interceptor Sizing

Selecting the correct size of grease interceptor for a particular application is probably the most difficult task facing the specifier as each installation tends to be unique in the equipment contained in the food production area and the type of food being processed. Unfortunately there are no hard and fast rules to determine the size of interceptor to be used. However there are two areas that do need careful consideration in order to reach a satisfactory conclusion.

Clearly, any grease interceptor must have the hydraulic capacity to cope with the maximum volumetric flow rate entering the interceptor from the drainage system. But in addition, consideration also needs to be given to the concentration of fats, oils and grease within the waste water. For example, a fast food restaurant is likely to produce a higher concentration of FOG from the production process than that of a salad production plant of the same size.

Very often, grease interceptors are generally sized on flow rate alone, but this takes no account of the food production process being used. In practice, this is very difficult to assess as the flow rates from various appliances and fittings within the food preparation area are often unknown. Flow rate alone is therefore not particularly helpful. A more reliable indicator is to combine flow rate with the number of meals per day produced in the food processing area.

## Flow Rates

For BESTEC grease interceptors, the main consideration in selecting the proper size is the gallon per minute of flow through the drainage line into the interceptor. Volume of grease and other light density substances

entering the grease interceptor should also be taken into consideration. Generally, the larger the interceptor, the higher the flow rate.

- To determine the flow rate from sinks for example, calculate the total volume of all fixtures (length inches x width inches x height inches) and divide by 231 to convert cubic inches to gallons. The actual drainage volume is calculated to be approximately 75% of the total fixture volume due to pots, pans and other utensils displacing around 25% of the water volume, therefore:

Actual drainage volume = Total fixture volume (gallons) x 0.75 gallons.

- To determine the drainage period and flow rate: Drainage period is the actual time required to completely drain the fixture. Normally, good practices dictate a one minute drainage period.

Flow rate = Actual drainage volume / Drainage Period.

### Example:

#### Step 1

A Sink 28" long by 20" width by 13" deep. Cubic content  $28 \times 20 \times 13 = 7280$  cubic inches.

#### Step 2

Contents in gallons:  $7280 \div 231 = 31.5$  gallons.

#### Step 3

Actual drainage load =  $0.75 \times 31.5 = 23.6$  gallons.

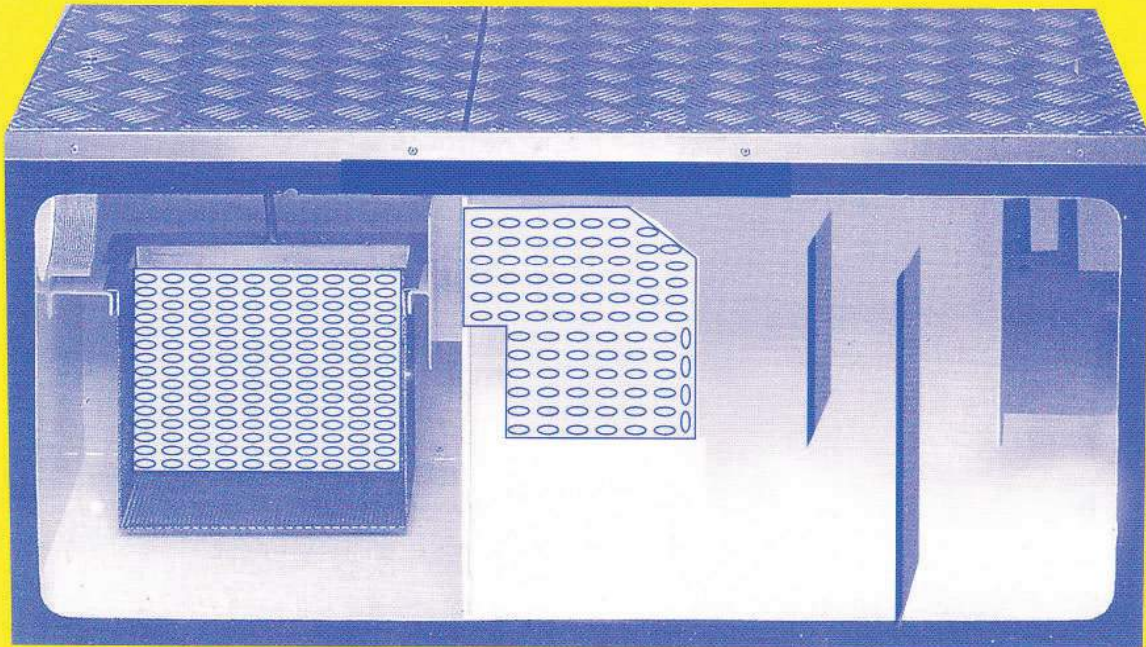
#### Step 4

Calculate flow rate for one minute period  
= 23.6 gallons / 1 minute  
= 23.6 GPM Flow rate.

#### Step 5

Select interceptor, for one minute period:  
23.6 GPM requires BESTEC 25 GPM.

# BESTEC Dimensional Data



## *Specification Clause*

The BESTEC Biological Grease Interceptor is supplied by WEIMAR ENTERPRISE SDN BHD. Main body component manufactured from G.304 – Stainless Steel. For In ground / Free / Suspended application(s), complete with the below features;

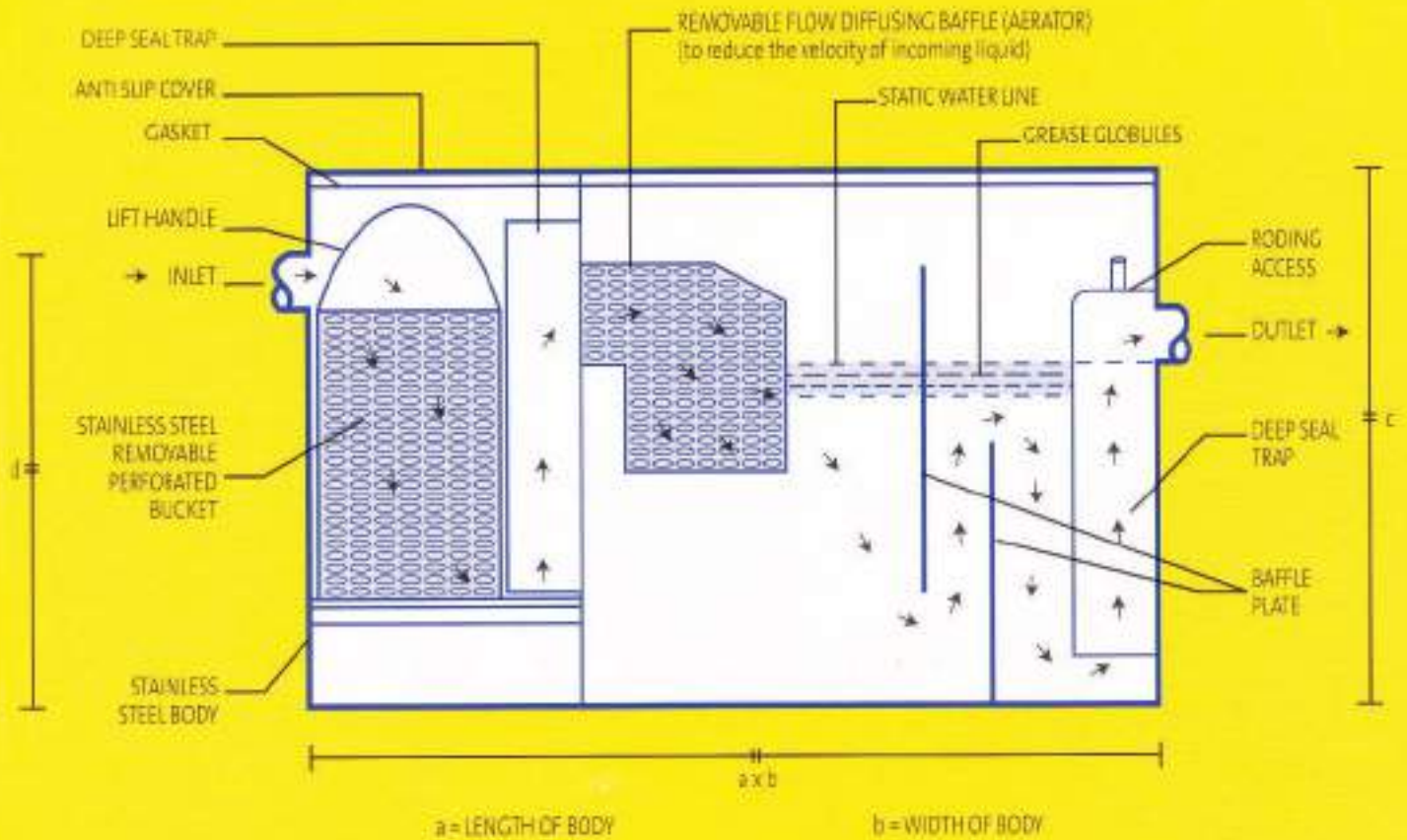
- a) Extension,
- b) Deep Seal Trap,
- c) Stainless Steel Perforated Bucket,
- d) Removable Flow Diffusing Baffle (Aerator),
- e) Non Skid Gasket Bolt Cover, and
- f) Roding Access for Future Maintenance.

Prior to commissioning Grease Interceptor, kindly contact SC MECHANICAL SUPPLIES SDN BHD for more operating instruction.

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BESTEC Grease Interceptor Model	a (mm)	b (mm)	c (mm)	d (mm)	Approx wt. (kg) in full	Inlet/Outlet Diameter (mm)	Approx Meals per Day	Flow Rate GPM	Number of Cover
BEGS 8010 E	575	350	300	225	68	50	0-100	10	2
BEGS 8015 E	600	450	350	250	85	75	100-200	15	2
BEGS 8020 E	700	450	375	300	108	75	200-300	20	2
BEGS 8025 E	750	500	425	325	124	75	300-400	25	2
BEGS 8035 E	800	575	450	375	160	75	400-500	35	2
BEGS 8050 E	1100	500	500	400	215	75	500-600	50	2
BEGS 8075 E	1200	500	500	425	360	100	600-1000	75	2
BEGS 8100 E	1200	850	600	575	720	100	1000-2000	100	2
BEGS 8125 E	1220	1000	700	625	990	100	2000-2500	125	3
BEGS 8150 E	1500	1050	750	650	1250	100	2500-3000	150	3
BEGS 8200 E	1525	1100	900	750	1450	100	3000-4500	200	3
BEGS 8250 E	1525	1200	1200	900	1800	150	4500-6000	250	3
BEGS 8300 E	2000	1475	1175	1000	2150	150	6000-7500	300	3
BEGS 8350 E	2400	1500	1200	1100	2350	150	7500-8500	350	3
BEGS 8400 E	2800	1500	1300	1200	2700	150	8500-9500	400	3
BEGS 8450 E	2900	1500	1400	1225	3500	150	9500-13500	450	3
BEGS 8500 E	2925	1525	1450	1300	4500	150	13500 and above	500	3

# *Unlocking The Magic of Nature*

Biotechnology is a tool that utilizes natural cleaning, waste degradation, and growth systems. Our company's Bio-enzyme falls broadly into three categories:

## ***Wastewater***

Wastewater treatment and remediation products, generally marketed under the **WEIZYME Biological Activator** Brand, provide highly specialized microbial solutions for industrial and municipal water treatment facilities. **WEIZYME Biological Activator** enhance the vitality of a system's biomass enabling it to degrade specific components of wastes. In addition to biotreatment additives, we also markets products that prevent deposits in sewer lines, control spills, and reclaim areas that have suffered environmental damage.

## ***Institutional & Household***

Institutional and household products harness natural processes to clean and deodorize that are actually beneficial for the environment. Products include hard surface cleaners, drain line maintenance products, septic tank activators and waste degraders, carpet and fabric care products and odour controllers.

## ***Agricultural***

Agricultural products provide natural growth enhancement for plants and turfgrass. With an extensive record of achievement in the golf industry, we selectively develop unique strains of natural soil bacteria that control disease and improve the vigor of plants, resulting in improved quality and yield. This back-to-nature approach yields healthy grass, ornamentals, and crops that resist stress and suppress disease. Our micro-based products replace chemical fertilizers and pesticides with products that safer for people and wildlife.



# WEIZYME Biological Activator

*"Bio Treatment for Grease Interceptor, Sewage & Effluent Treatment"*

**WEIZYME Biological Activator** can best be described as a "biological boost" or biological accelerator. It is an aid to Nature's method of recycling organic wastes.

**WEIZYME Biological Activator** is a facultative organism, operating in both aerobic and anaerobic conditions. It is a biological complex of selected micro-organisms, enzymes, nutrients and buffer materials. The micro-organisms are obtained by a fermentation process in which a special mutant culture of Bacillus Spores is grown on a combination of sterile grains including wheat, corn and rice. Major enzymes presents are amylase, protease, lipase and cellulose.

**WEIZYME Biological Activator** reduce Unscheduled Drain Line Blockages and Grease Interceptor Overflow Problem, thus Grease Interceptor is able to function efficiently. When used in drain lines and grease interceptor, **WEIZYME Biological Activator** work in conjunction with indigenous organisms to develop thin, active biofilms that line the surfaces (wall) of pipes and grease interceptors. These highly active microbes continue to grow on the surfaces by degrading FOG and organics found in drain line deposits and in the waste stream. New microbes produced by this growth continue to eliminate FOG and organics in several ways. These new microbes activate the entire waste stream system for FOG removal. Regular addition of **WEIZYME Biological Activator** maintains a highly active waste stream system.

**WEIZYME Biological Activator** is recommended in all type of waste stream system such as, Grease Interceptor, Sewage Treatment Plant, Pump Stations, Oxidation Pond, Septic Tank and etc.

**WEIZYME Biological Activator** is easy to dispense and can be administered either manually via the sink outlet or more conveniently via easy to use, cost effective flexible programmable AUTOMATIC DOSING UNIT (ADU).

**WEIZYME Biological Activator** is available in the Plastic Container packing of

- 5 Litres
- 20 Litres

## Dosage Guideline

BESTEC Grease Interceptor Model	Flow Rate GPM	Daily Dosage Rate
BEGS 8010 E	10 GPM	100 ml (0.1 Litres)
BEGS 8015 E	15 GPM	100 ml (0.1 Litres)
BEGS 8020 E	20 GPM	200 ml (0.2 Litres)
BEGS 8025 E	25 GPM	200 ml (0.2 Litres)
BEGS 8035 E	35 GPM	200 ml (0.2 Litres)
BEGS 8050 E	50 GPM	400 ml (0.4 Litres)
BEGS 8075 E	75 GPM	500 ml (0.5 Litres)
BEGS 8100 E	100 GPM	500 ml (0.5 Litres)
BEGS 8125 E	125 GPM	600 ml (0.6 Litres)
BEGS 8150 E	150 GPM	600 ml (0.6 Litres)
BEGS 8200 E	200 GPM	750 ml (0.75 Litres)
BEGS 8250 E	250 GPM	750 ml (0.75 Litres)
BEGS 8300 E	300 GPM	800 ml (0.8 Litres)
BEGS 8350 E	350 GPM	800 ml (0.8 Litres)
BEGS 8400 E	400 GPM	1000 ml (1 Litres)
BEGS 8450 E	450 GPM	1000 ml (1 Litres)
BEGS 8500 E	500 GPM	1000 ml (1 Litres)

## Technical Data

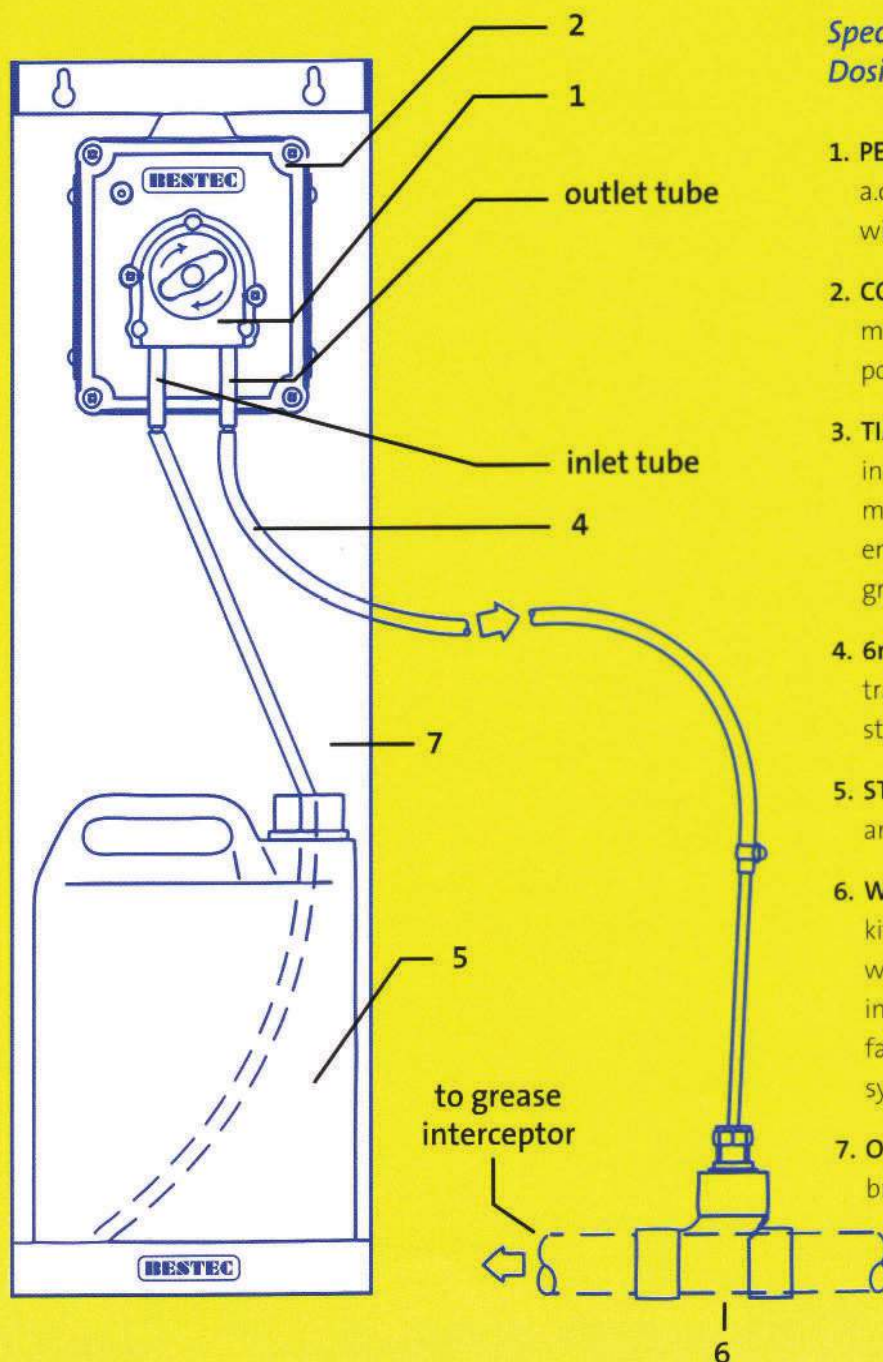
Bacteria Specification :	54.0 x 10 <sup>9</sup> cfu/ml (2 trillion/gal)
Bacteria Type :	Blend of Bacillus Spores
pH Range :	4 – 10
Appearance :	Brown Colour Liquid
Fragrance :	No fragrance added
Temperature :	at 35°C to 44°C (Optimum Condition)

## Benefits of WEIZYME Biological Activator

- Reduced FOG deposits at surfaces (wall) of grease waste pipe.
- Reduced FOG build up in Grease Interceptor.
- Reduced odors (including sulphide).
- Keep odors of surrounding Grease Interceptor to a tolerable level.
- Reduced ammonia nitrogen.
- Clearer waste water discharged.

# BESTEC Automatic Dosing Unit (ADU)

**WEIMAR ENTERPRISE SDN BHD** now offer a choice of programmable ADU for dispensing WEIZYME Biological Activator. The BESTEC ADU consists of an electrical motor-220-240V, 50HZ, single phase and a 24 hours rechargeable back-up battery in case of power failure. The pump driving a roller guide assembly around a peristaltic tube. The roller guide assembly is made up of two rollers, sprung-loaded to minimise tube wear. These rollers squeeze the activator liquid out of the peristaltic tube whilst keeping the tube closed at any position of the roller guide assembly, and also provide the valve action to prevent fall-back of the Biological Activator.



## *Specification For The Automatic Dosing Unit*

- 1. PERISTALTIC PUMP** - 220-240V, 50HZ, a.c current, delivering 10 litres per hour with 4.8mm tube.
- 2. CONTROL BOX** - Wall mounting, material made of flame retardant polystyrene with removable cover.
- 3. TIMER** - Rechargeable back-up battery in case of power failure. This is to maintain the time programme to ensure the biomatic treatment for the grease Interceptor is regularly.
- 4. 6mm Nylon tube** - Nylon tube is to transfer the Biological Activator from storage drum to the grease Interceptor.
- 5. STORAGE DRUM** - Available is 1 gallon and 5 gallon drum.
- 6. WASTE FITTING KIT** - The waste fitting kit comprises a solvent weld 1.5" tee waste pipe connector adapted to include an 8mm O/D copper pipe to facilitate easy connection of dosing system to drainage network.
- 7. OPTIONAL** - Stainless Steel G-304 wall bracket for activator storage drum.

# Grease Interceptor Maintenance Guide

## ***1. Inspect inside of Grease Interceptor any foreign materials and remove all such materials.***

Regular inspection of the Grease Interceptor will be required particularly in the early stages after commissioning to determine how often the solid waste food inside stainless steel perforated bucket need to be remove and whether or not the dosing quantities of biological activator is controlling the grease levels in the system. Each application tends to be different, so it is important to characterize the maintenance requirements for the system at an early stage. It is recommended to clean up the Stainless Steel Perforated Bucket daily or once every few days which is installed before the grease interceptor depending on the volume of incoming solid waste food.

## ***2. Biological Activator***

Depending upon the application, WEIZYME Biological Activator needs to be applied to the drainage system on a daily basis preferably applied at a quiet period of the working day when there is little or no drainage activity. Kindly use the Dosage Guideline at Page (9) as a Guideline.

Shock dosing of the grease interceptor is an important element to start the biological process. To rapidly establish a biomass, dose the system with three or four days of Biological Activator to begin the process. Thereafter, apply the Dosage Guideline.

With Biological Activator, Grease Interceptor is needed to be cleaned up twice every month. If Biological Activator is not introduced, manual clean up of the fat, oil and grease (FOG), which is trapped in the grease interceptor, is required and should be carried out once a week. More frequent cleaning if the activities and fat content of wastewater is high.

## ***3. Tubing connection of the Automatic Dosing Unit (ADU)***

Cut off the proper lengths of LDPE tubing that will reach from the container of product to the inlet of the BESTEC ADU and the outlet of the ADU to the drain or grease interceptor.

Insert the chemical supply tubing into the end of the 1/4" ID ADU tube located on the left side of the ADU (1/2" - 3/4" insertion required). Loop one wire tie around the squeeze tube/LDPE tube joint. The other end of the chemical supply tubing can be connected to the 10" PVC pickup tube that has been supplied. This should be done by slipping the LDPE tubing through the compression nut and sleeve and into the threaded end of the pickup tube until LDPE tubing is about 1/4" from the bottom of the pickup tube. The pickup tube can be placed in the containers of Biological Activator. If the pickup tube is not used, the supply tube should be properly secured to the Biological Activator to assure that Biological Activator product is delivered.

Insert the outlet tubing into the end of the 1/4" ID ADU tube located on the right side of the ADU (1/2" - 3/4" insertion required). Loop one wire tie around the squeeze tube/LDPE tube joint. The other end of the outlet tubing must be secured into drain or grease interceptor to assure that Biological Activator is properly delivered. It is suggested to use a 1/8" NPT male x 1/4" compression fitting when fitting discharge into the side of a drain pipe.



**IBESTEC®**



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