GDP FILTER

Membrane and Separation Technology

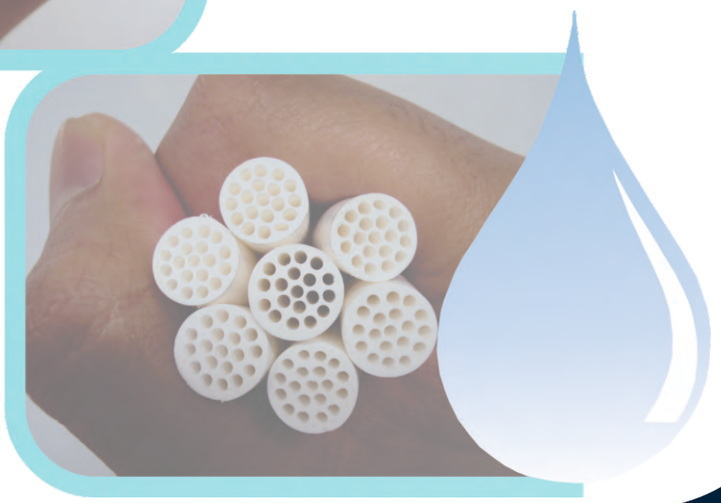
Innovative Solutions for A Better Life

Profile

GDP FILTER

As a South Asian's leading membrane manufacturer, GDP Filter produces ultrafiltration and reverse osmosis membranes. It also designs and builds various water treatment package plants with constant focus on protecting resources. GDP Filter's products range from production of clean and drinking water and industrial process water to waste water treatment, and even several uniqe cases of palm oil filtration, pervaporation, and waste-lube oil recycling.

South Asian's best universities-GDP Filter's Research and Development Division partnership contributes lots of breakthrough applicative technologies. GDP Filter's principle of never ending improvement to aim perfection is devoted to brighter future of human being, as its motto said, “Innovative Solutions for A Better Life”.



Interview With Founder Dr. I.G. Wenten

What can you tell us about history of GDP Filter ?

Founded in 2000, GDP Filter was born from the dreams of its founder, Dr. I Gede Wenten, to offer innovative solutions of membrane-based technology society. It only took one year to complete our first workshop which enable us to start production lab-scale equipments and residential units. The subsequent years were time of expanding range of our services to agro industry, aquacultre, oil, and gas industry. Two monumental monuments of GDP Filter in those years were when we started large scale production of our own ultrafiltration membrane and roll spiral wound module of reverse osmosis in 2007 and when we succesfully developed non-modular ultrafiltration train in 2010. Now, we have second larger workshop as infrastucture to become larger yet competitive company.

That sounds a high expectation and even far away, so how is GDP Filter struggle to realize it ?

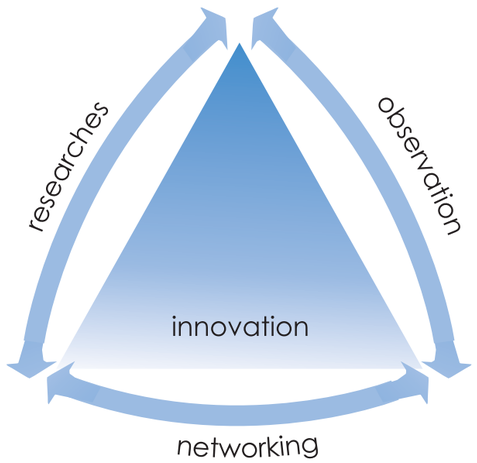
Yes, it's a high expectation. In order to ensure continuous improvement to meet the expectation, we have Research and Development Division. Supported by professional experts, our R&D Division also worked along with top researches from South East Asian top universities. We constantly observes development of membrane technology and the market. We also develop network relation with reputable membrane manufacturers in Asia and Europe. The triangle of researches, observations, and networking leads us to grow as company with high sense of awareness about market demands. Our innovations in water treatement, agro-industry, aquaculture, oil and gas industry are the results. As we are growing in the membrane and separation technology, we'll hope that GDP Filter will give lots of contribution to our custumers, partners, and eventually society.

What is the main drive for GDP Filter ?

We always apply engineering approach to provide innovative solutions in every products. We put the top priority on water treatment since water, alongwith energy and environment, are the main focus on the issue of sustainable earth. We improve our technology to become sustainable and yet economical. We are highly aware about the increasing demands of clean and pure waters in many places. With suchs demands and constraints, our "Inovative Solutions for A Better Life" motto is highly relevant.

From your explanation, it seems that GDP Filter have wide range of products, don't you think those will cause biased ?

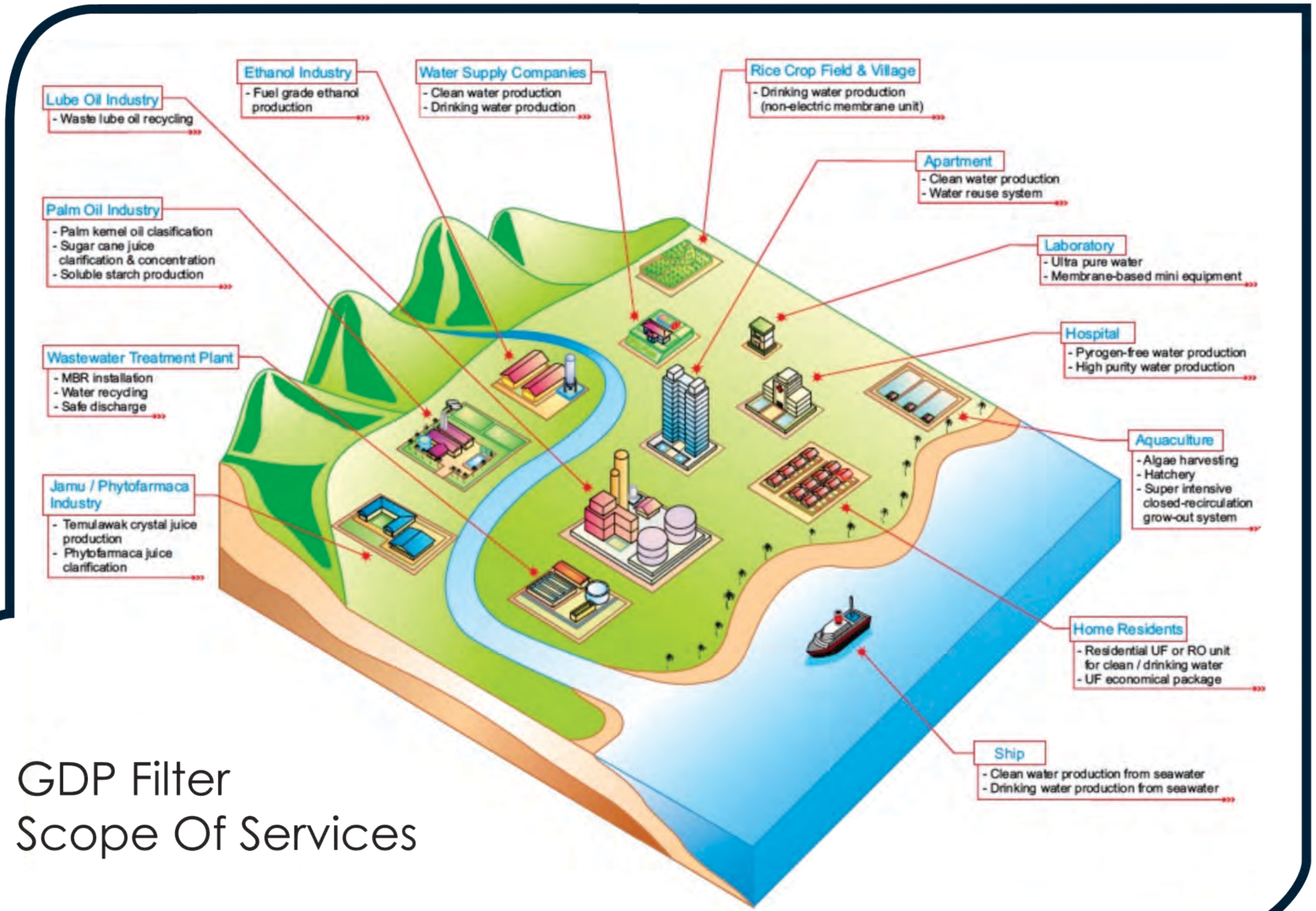
Since our innovation are born from the triangle of researches, observations, and networking that supported by our nature as engineering membrane technology-based company, those are our responses to our customers'demand. A wide range of our applicative technology will give you more choices to get the best services from us.



"We always apply engineering approach to provide innovative solutions in every product. We put the top priority on water treatment since water along with energy and environment, are the main focus on the issue of sustainable earth"

Can you share the most pride moments for GDP Filter ?

As a professional company, we are very consider about our product's and services' quality. As a part of this world, we are moved by people who have a wide of humanity respect. This is why we've developed our emergency units which are user-friendly and versatile to many conditions. The moments when they were used at Aceh Tsunami and Jogja Earthquake to help survivors get clean water, are the most pride moments for GDP Filter.



GDP Filter
Scope Of Services

Products

INDUSTRIAL

Ultrafiltration Package

Ultrafiltration (UF) is a pressure-driven barrier to suspended solids, bacteria, viruses, endotoxins and other pathogens to produce water with very high purity and low silt density. GDP Filter UF Membrane has pore diameter of 0.01 micron and consistent product water quality from any source water.

1.Modular UF Package

Modular UF Package is highly recommended for producing free pathogen water in small capacity. Its compact design resulting in small footprint.

Type : Modular UF Package
Product Flow Rate : 1 – 10 m^3/hour
Features : - Centrifugal pump for normal operation
- Skid mounted
- Cleaning in Place System
- Pre-treatment Set (additional)
- Post-treatment Set (additional)

Modular UF Package

2. Non-Modular UF Train

Innovative Non-Modular UF Train is unique product developed and patented by GDP Filter Indonesia. This invention relates generally to the improvement in multitube hollow fiber membrane or hollow fiber cartridge assembly for minimizing membrane investment cost in larger plant.

Advantages :

- Easier operation,
- Less instruments,
- Simple piping and installation,
- More economical membrane process in a larger capacity

Type : Non-Modular UF Train
Product Flow Rate : 10 – 100 m^3/hour
Features : - Centrifugal pump for normal operation
- Skid mounted
- Cleaning in Place System
- Pre-treatment Set (additional)
- Post-treatment Set (additional)

Non Modular UF Package

RO Package

Reverse Osmosis (RO) membrane retains most of total dissolved solids and high molecular weight metal ion traces, ensure high quality drinking water and highly recommended for industrial process water.

1. LPRO

Type : Low Pressure Reverse Osmosis Package
TDS Feed : up to 1000 ppm (special case up to 5000 ppm)
Product Flow Rate : 1 - 20 m^3/hour
Features :
- Centrifugal pump for normal operation
- Skid mounted
- Cleaning in Place System
- Pre-treatment Set (additional)
- Post-treatment Set (additional

2. BWRO

Type : Brackish Water Reverse Osmosis Package
TDS Feed : 1000 – 10.000 ppm
Product Flow Rate : 1 – 20 m^3/hour
Features :
- Centrifugal pump for normal operation
- Skid mounted
- Cleaning in Place System
- Pre-treatment Set (additional)
- Post-treatment Set (additional)

RO Package

3. SWRO

Type : Seawater Reverse Osmosis Package
TDS Feed : 10.000 – 50.000 ppm
Product Flow Rate : 0.1 – 3 m^3/hour
Features :
- Centrifugal pump for normal operation
- Skid mounted
- Cleaning in Place System
- Pre-treatment Set (additional)

SWRO

UF-RO Package

Combination of Ultrafiltration and Reverse Osmosis for pure water production is regarded as both technically and economically competitive solution. As a pretreatment package, UF dramatically increases performance and life time of RO membrane

Type	: Ultrafiltration-Reverse Osmosis Combined Package
TDS Feed	: up to 10.000 ppm
Product Flow Rate	: 1 – 20 m^3/hour
Features	: - Centrifugal pump for normal operation - Skid mounted - Cleaning in Place System - Pre-treatment Set (additional) - Post-treatment Set (additional)

UF-RO Package

Demin Water System

Demineralized Water (Demin Water) is water of which the minerals or salts are removed. It is used in applications where water with low salt content or low conductivity is required such as boiler feed water, phamaceutical application, electronics industry, and food industry.

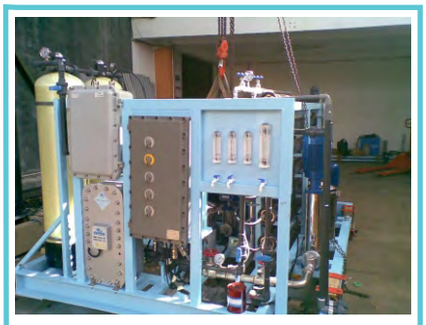
GDP Filter has two alternative design for Demin Water System, which is (1) Conventional combination of RO – Mixbed Resin to produce normal grade of Demin Water, and (2) Combination of RO – EDI technology to produce Ultra Pure Water.

Electrodeionization (EDI) is usually considered a water treatmane technology that utilizes an electrode to ionize water molecules and separate dissolved ions (impurities) from water. EDI operates chemical free, consume only electricity, and eliminating expensive regenerating cycle of conventional mixbed resin.

RO-MIXBED

Type	: Demin Water System RO – Mixbed
Product Flow Rate	: 150 – 300 liter/hour
Features	:- Centrifugal pump for normal operation - Skid mounted - Cleaning in Place System - Pre-treatment Set (additional) - Post-treatment Set (additional)

Type	: Demin Water System RO –EDI
Product Flow Rate	: 150 – 300 liter/hour
Features	:- Centrifugal pump for normal operation - Skid mounted - Cleaning in Place System - Pre-treatment Set (additional) - Post-treatment Set (additional)



RO-EDI

WASTE MANAGEMENT

Answering the challenges in clean production, GDP Filter design several applicative innovation to deal with waste management. GDP Filter firmly believe that good waste management will ensure sustainability of an industry and give good economical impact.

1. Waste-water reuse system

Specially designed for waste-water reuse in apartment, hotels, laundry, and general industrial waste water. Application of UF membrane ensure consistent product water quality from any source of water with smaller footprint yet higher quality.

Type : Waste-water Reuse Package
Waste Feed Flow Rate : 5 – 20 m3/hour
Features :- Centrifugal pump for normal operation
- Skid mounted
- Cleaning in Place System
- Pre-treatment Set (additional)
- Post-treatment Set (additional)

Water Re-Use System

2. MBR

Compared to conventional wastewater treatment processes, MBR has many advantages, include small footprint and reactor requirement, higher effluent quality, good disinfection capability, higher volumetric loading, and less sludge production.

Type : Membrane Bioreactor Package
Product Flow Rate : 0.1 – 3 m^3/hour
Features : - Centrifugal pump for normal operation
- Skid mounted
- Cleaning in Place System
- Pre-treatment Set (additional)


MBR

3. Waste lube oil recycling

High demand of lube oil in Indonesia due to large market of automotives, have a negative excess of high amount of waste lube oil. GDP Filter swiftly response this problem and transform it into economical potential by apply ceramic membrane for waste

Type : Waste Lube Oil Recycling System
Product Flow Rate : 0.1 – 3 m^3/hour
Features : - Centrifugal pump for normal operation
- Skid mounted
- Cleaning in Place System
- Pre-treatment Set (additional)

Waste lube oil recycling

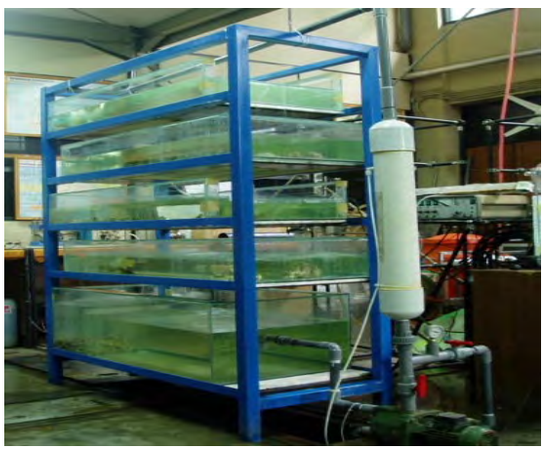
Aquaculture and Agriculture

1. Aquaculture

Despite of its ability to generate large scale production of aquatic organism, aquaculture does have to answer the questions about sustainability. The term sustainability must satisfy three aspects: economical, environmental, and sociological. Recirculating Aquaculture System (RAS), with its ability to reduce water consumption, is expected to be the answer for sustainable aquaculture. However, it does suffer from several drawbacks, i.e. accumulation of lethal substrate, fine solids, pathogens, and low efficiency of aeration.

GDP Filter offer a new perspective in aquaculture, applying membrane technology to acquire higher quality of water and resolving the problem of Recirculating Aquaculture System.

- Super Intensive Closed-Recirculation Grow-Out
- Ultrafiltration for Hatchery
- Micro-Algae Production



Super Intensive Closed - Recirculation Grow - Out System

Ultrafiltration for Hatchery

2. Sugar & Stach Industry

- Sugarcane Clarification
- Sugarcane Concentration
- Clean Production In Starch Industry

Sugar Cane Juice Clarification

3.Palm Oil Industry

·Palm Kernel Oil Clarification
·Clean Production in Palm Oil Milling Plant

Palm Kernel Oil Clarification

4.Jamu Industry

"Jamu" is an unique extract of Indonesia phytofarmaca, widely known for herbal medication. Application of membrane technology into the hundreds-old herbal industries, produce higher grade of herbal juice, e.g. crystal clear juice of Temulawak..

Temulawak Herbal Juice Clarification

Pervaporation

Fuel grade ethanol is widely known as bio-fuel and its popularity is growing on recently. GDP Filter offers pervaporation system to purify 95% wt ethanol into 99% wt ethanol. With small footprints and lower energy consumption, pervaporation is much superior than conventional multiple column distillation.

Type	: Pervaporation package
Product Flow Rate	: 500 – 3000 LPD
Features	: -Vacuum pump & gear pump for operation -Silica or Zeolite Pervaporation Ceramic Membrane Module - Feed Tank with heater - Skid mounted

Pervaporation

RESIDENTIAL

GDP Filter cares for the society's need for clean water and high quality drinking water. That's why we design various high tech user-friendly residential units. Please contact us for free consulting about which product suit for you.

UF S-630

Type : UF S-630
Rejection rate : 99.9% of bacteria, virus, colloid, dirt, turbidity, and sediments.
Product Flow Rate : 750 – 1500 liter/hour
Features :
- Centrifugal pump for normal operation
- Skid mounted
- Centrifugal pump for Cleaning in Place
- Pre-treatment Set (additional)
- Post-treatment Set (additional)

UF S-630

UF U-210

Type : UF -210
Rejection rate : 99.9% of bacteria, virus, colloid, dirt, turbidity, and sediments.
Product Flow Rate : 50 – 60 liter/hour
Features :
- Pump (additional)
- Pre-treatment : Cartridge Filter (additional)
- Post-treatment : Activated Carbon (additional)

UF U-210

Integrated Membrane System (IMS)

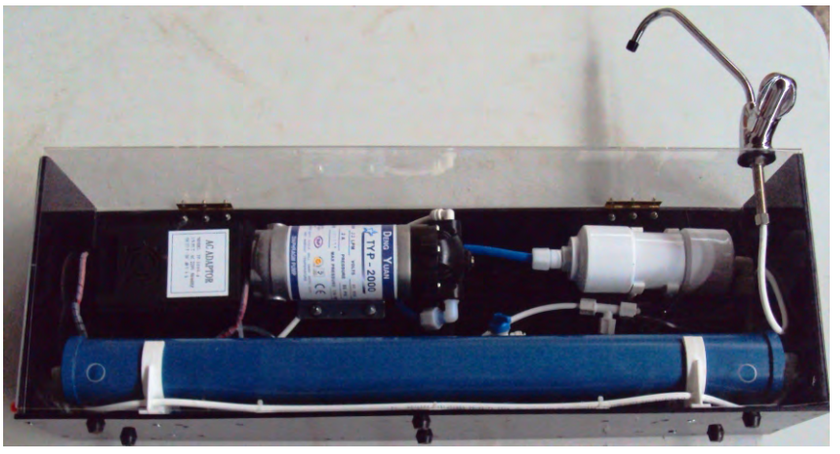
Integrating UF and RO system, IMS produced high quality drinking water.

Type : Integrated Membrane System
Product Flow Rate : 20 – 50 liter/hour
Features :
- Mini high-pressure pump for operation
- Pre-treatment : Cartridge Filter
- UF membrane for bacteria, virus, colloid, dirt, turbidity, and sediments removal
- RO membrane for dissolved solids and heavy metal removal
- Activated Carbon for taste & odor removal
- Post Bio-Ceramic (additional)
- Pressure Tank (additional)

Integrated Membrane System

Residential Mini RO

Type : Residential Mini RO
Rejection rate : 99.9% of bacteria, virus, colloid, dissolved solids & heavy metals.
Product Flow Rate : 20 – 50 liter/hour
Features : - Mini high-pressure pump for operation
- Pre-treatment Set (additional)
- Post-treatment Set (additional)



Residential Mini RO

UF Economical Pack

Special product from GDP Filter, UF Economical Pack for drinking water production from tap water.
Type : UF Economical Pack
Rejection rate : 99.9% of bacteria, virus, colloid, dirt, turbidity,and sediments
Product Flow Rate : 20 - 50 liter/hour

UF Economical Pack

EMERGENCY UNIT

Mobile (Land) RO Package

Type : Mobile RO
Rejection rate : 99.9% of bacteria, virus colloid,dissolved solids & heavy metals.
Product Flow Rate : 1 – 5 m^3/hour
Features : - Ship or car mounted
- Pre-treatment Set (additional)
- Post-treatment Set (additional)

Mobile (Land) RO Package

Mobile (Boat) RO Package

Mobile (Boat) RO Package

Technology : Reverse Osmosis
Apllication : Produce Water Desalation Salt Water
Capacity : 1 m^3/Hour
Pump Type : Centrifunggal
Power : 3,0 kW
Pump Material : Stainless Steel
Opertion Time : 24 Hour (Continue)
Operation Model : Semi Auto
Included : Boat & Genset

IGW Emergency Pump

IGW Emergency Pump

Special product from GDP Filter. Uniquely designed mini ultrafiltration membrane for producing clean or even drinking water without electricity. Very suitable for emergency cases and outdoor activities.

Type : IGW Pump
Rejection rate : 99.9% of bacteria, virus, colloid, dirt, turbidity, and sediments.
Product Flow Rate : 200 ml/stroke
Features : - Two sets of membrane module
- Post-treatment Set (additional)

Emergency U-660

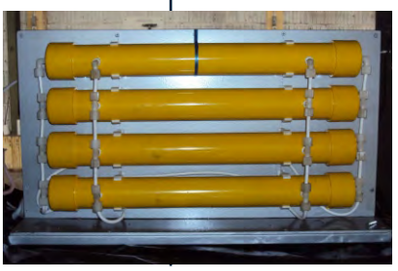
Emergency U-660

Special product from GDP Filter. Uniquely designed ultrafiltration membrane for producing clean or even drinking water without electricity. Very suitable for emergency cases and outdoor activities.

Type : Emergency U-660
Rejection rate : 99.9% of bacteria, virus, colloid, dirt, turbidity, and sediments.
Product Flow Rate : 500 – 750 liter/hour
Features : - Manual hand-pump
- Post-treatment Set (additional)

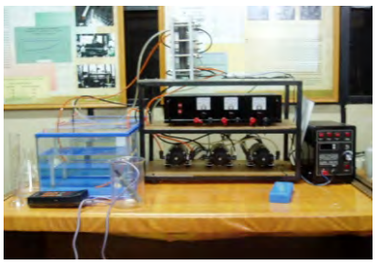
LABORATORY

GDP Filter provides lab-scale of its industrial and residential products. Most of lab-scale products are custom and specially made for unique experiments.



Vegetable Oil Clarification

MBR

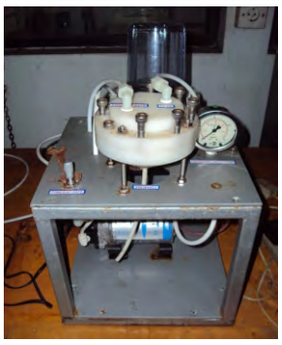


Electrodialysis

HPRO For Juice Concentration

LPRO

Membrane Contractor For Co2 Removal

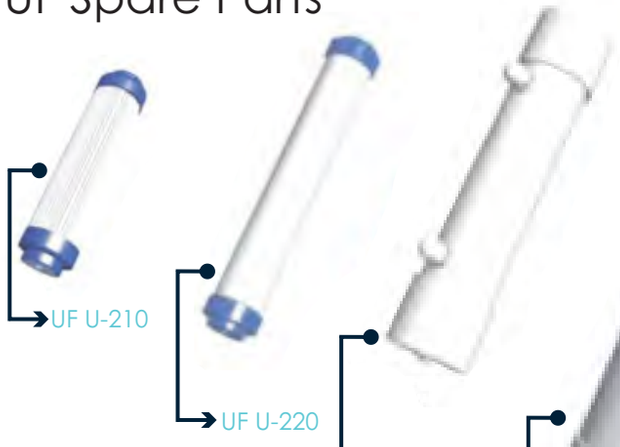


Membrane Permeability Test Tools

Pyrogen Free Water (UF - RO)

SPARE PARTS

UF Spare Parts



UF U-210

UF U-220

UF S-630

UF S-660

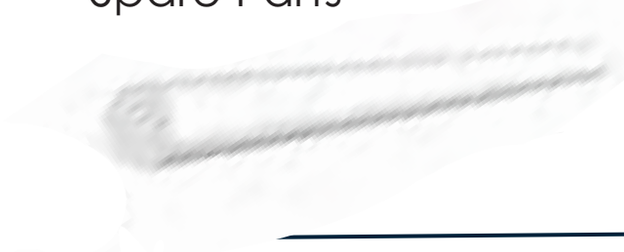
Ceramic Membrane Spare Parts

RO Spare Parts

RO-2012

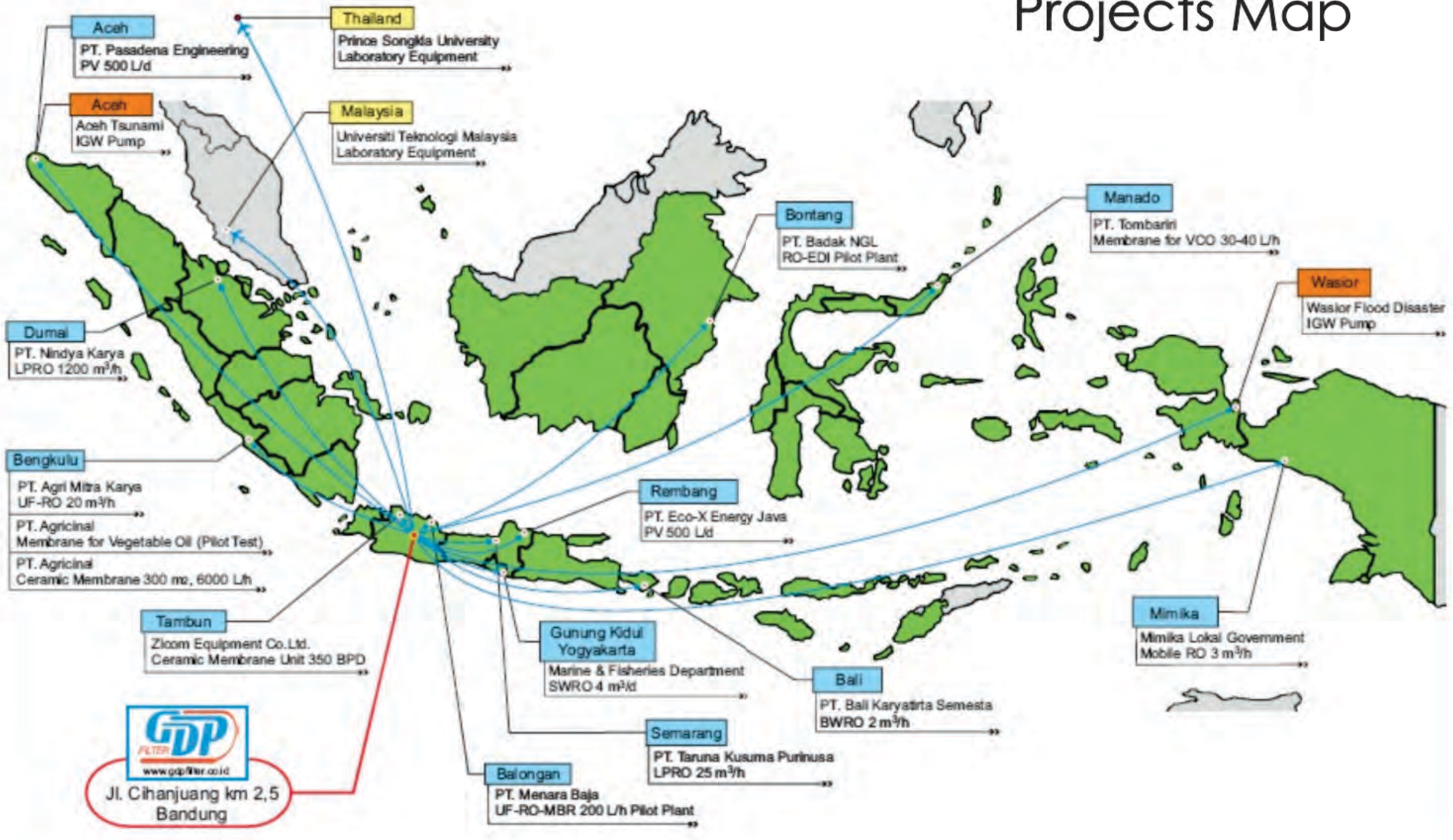
RO-4040

RO-8040



Ceramic Membrane

GDP Filter Projects Map



Our Experiences

Mobile Reverse Osmosis

No boundaries for GDP services even the distance is so far from the manufacturing plant. We have realized that the need of clean and pure water is very important for our costumers. We have supplied a mobile reverse osmosis package plant for Hotel Jayakarta, Bandung. Its capacity was about 3 m^3/hr.

(Hotel Jayakarta) Bandung

Pervaporation

There is only few membrane manufacturers which produced membrane for pervaporation. GDP Filter has a good networking with one of popular ceramic membrane manufacturer in Europe. The environmental need to use biofuel forced us to fulfil it nationally and abroad. GDP Filter has become the only one supplier of this technology in Indonesia. Now, we have project experiences with PT. Pasadena Engineering and PT. Eco-X Java. We supplied pervaporation technology to produce 500 Liter per day ethanol fuel grade. We always improve our

(PT. Eco-X Java and PT. Pasadena Engineering)
Aceh and Rembang

Palm Oil Mill Effluent (POME) Treatment and Solid Recovery for Fodder.

Palm Oil Mill Effluent (POME) Treatment and Solid Recovery for Fodder, PT. Agricinal, Bengkulu, Indonesia,2006.GDP Filter realized that agro-industry and livestock is very promising for the membrane technology, we always tries to get involved in this field and completely fulfil the customer's need. One of our experiences is the ceramic membrane for POME and solid recovery for fodder. The plant was established in 2006 and reached the second largest ceramic membrane in the world.

(PT. Agricinal) Bengkulu

Ultra Pure Water (Reverse Osmosis-Electrodeionization)

For industries, the ultra pure water is a must. We can't supply them with SWRO and BWRO technologies, we must use RO-EDI because the industries need very low TDS and conductivity. Now, we have project experience with PT. Badak, Bontang, East Kalimantan. The capacity is 2 m^3/hr. The RO-EDI package was designed for Class 1 Div 1 condition.

(PT. Badak) Bontang

Low Pressure Reverse Osmosis (LPRO)

Answering the need of high purity water of our customers, GDP Filter designed and constructed a complete system of LPRO. We've supplied the technology to many customers in Indonesia, such as PT. TKPN, PT. Dharma Polimetal, PT. Agrimitra Karya, and PT. Nindya karya. We are able to design, construct, and supply the low-TDS water from 1 m^3/ hour to 1200 m^3/hour. We've also involved in Brackish Water Reverse Osmosis (BWRO) which will be explained in the next page.

(PT. TKPN) Semarang

The same owner with PT. Agricinal, PT. Agrimitra Karya became our client for LPRO project with capacity of 20 m^3/hr. The plant has been commisioned on September 2010. This plant was one of our special projects in LPRO system. We have made 36 housing for type of 4040 (Dia. 4 in and Length 40 in) for this plant. Each housing contains up to 3 membrane

(PT. Agrimitra Karya) Bengkulu

The biggest LPRO project in our experiences is here. The plant was designed and established in 2009 at Sudirman and Bukit Timah, Riau, Indonesia. This project has applied "Non-Modular Ultrafiltration" for the pre-treatment of RO. The Sudirman's capacity is 80 Liter per Second and Bukit Timah's is 250 Liter per Second. This project has become our best milestones in the track of membrane technology in Indonesia. On behalf of PT. Nindya Karya, GDP Filter designed and constructed the plant from the beginning.

(PT. Nindya Karya) Dumai

Sea Water Reverse Osmosis (SWRO)

An SWRO system marketplace is justifiably anywhere there is a lack of adequate fresh water supplies, insufficient brackish water for lower pressure brackish RO operation and a good source of available seawater. This tells us that anywhere there is growth and development in water shortage areas, there is a candidate for desalination by RO. GDP Filter has applied the SWRO plant for local government in Mimika, Papua for capacity of 2-3 m3/hr.

Local Goverment, Mimika

CV. Gede Darma Putra

Office:
Jl.Cihanjuang 124, Km. 2,5
Bandung 40559
Indonesia
Phone : +62 - 22 - 6648498
Fax : +62 - 22 - 6652139

www.gdpfilter.co.id