ItalTechnics
Mechanics & Industrial Application

MOBILE SYSTEMS FOR DRINKING WATER PRODUCTION

FRESH WATER SOURCES

Fresh Water Sources

Sources of fresh water include **rivers, lakes, groundwater, and rainwater**.

The quality of fresh water can vary from source to source and can also \or undergo variations depending on the activities adjacent to the water source.

Depending on the characteristics of the fresh water, the COMPACT & Mobile drinking water units employ various purification technologies and combinations including those of lamellar sedimentation, filtration, microfiltration, ultrafiltration and disinfection.

IT-FW-T (Twins)

DESCRIPTION

Italtechnics IT-FW-T (Twins) is a compact mobile drinking water treatment unit ideal for prolonged use in a wide range of environments.

Capable of treating **non saline water**, without industrial pollutants, hydrocarbons and chemical waste, from a wide range of sources such as rivers, lakes, dams, rainwater and ground water, the unit will produce safe drinking water, free of physical and bacteriological contamination.

The high mobility of the makes it ideal for emergency intervention such as may be needed following natural disasters or in camps for displaced people.

HOW IT WORKS

The **IT-FW-T (Twins)** drinking water treatment unit operates without electricity! The only component requiring power is the intake pump which is either a standard diesel pump or can be a solar powered pump.

Following aspiration, the feed water passes through sedimentation and pre-chlorination before being filtered through sand and active carbon which remove solid particles and organic compounds.
Then the water is disinfected and is ready to be consumed or stored.

IT-FW-T (Twins) are user friendly and have been designed to minimize chemical use without compromising performance.

MAIN FEATURES

❑ Autonomous operation

- The unit doesn't require any external power so can work alone making it ideal for remote or hard-to-get-to locations
- **IT-FW-T (Twins)** units are also ideal for use with alternative energy sources (e.g., sun, wind)
- Italtechnics supplies all units with all fixtures and fittings, accessories and chemicals required for immediate start-up

❑ Rapid response

- The water treatment unit and all accessories are packed together ready for immediate road, air &/or sea transport
- **IT-FW-T (Twins)** units are delivered "ready to start"
- Once on the ground components can be easily disconnected for easy handling by two people
- An optional covered trailer can also be supplied

TECHNICAL DATA	IT-FW-T (Twins)
Raw (feed) water	Non saline fresh water
Drinking water flow rate (depending on salinity)	4 m^3 / hr
Ambient working temperature	5 ° C ~ 50 ° C
Water temperature	5 ° C ~ 25 ° C
Pump type	Diesel motor pump
Dimensions (approx)	1400 x 1600 x 800 h mm Approx.
Total weight	750 kg

SPARE PARTS & ACCESSORIES	IT-FW-T (Twins)
Spare parts and consumables kits (1, 2 or 3+ year's supply)	√
Chemicals, cleaning and conservation products (kits)	√
Covered trailer	√
Raw and treated water storage tanks (various types)	√
Photovoltaic system	√
Training on-site or in Italtechnics facilities	√
User and O&M manuals	√

IT-FW-U (Ultra)

DESCRIPTION

The **IT-FW-U (Ultra)** is designed to purify microbiologically and chemically affected water for the production of drinking water and is capable of treating water from a wide range of sources such as rivers, lakes, dams, rain water reservoirs and wells.

The version: **IT-FW-U (Ultra)** SOLAR is ideal for remote locations with good sun exposure as it can operate independently collecting solar energy from its own photovoltaic panels.

The UFV unit is easy to use and ideal for installation in an onsite service room where it takes up very little space. Alternatively it can be supplied in an insulated cabinet and/or trailer mounted.

HOW IT WORKS

The **IT-FW-U (Ultra)** combines sedimentation, microfiltration, ultra-filtration and UV sterilization to remove visible particles from the water and also eliminate bacteria, viruses and many other substances potentially hazardous to health.

The low energy consumption of the **IT-FW-U (Ultra)** unit make it ideal for use with alternative energy sources such as solar power and eolic energy generated by wind turbines.

Alternatively the system can be connected to a generator or the main power supply.

MAIN FEATURES

❑ Autonomous operation

- The **IT-FW-U (Ultra)** units are designed to work with power provided by their own photovoltaic system so can work alone making it ideal for remote or hard-to-get-to locations;
- Sedimentation and cartridge filtration improve water quality and protect other components upstream thereby reducing maintenance requirements and extending the unit's life.

❑ Performance

- ELIMINATES: algae, mold, spores, Giardia, Crypto, Bacteria Viruses and Colloids
- The Systems are configured to optimize treatment times, minimize bulk & weight, minimize maintenance requirements and guarantee water quality

TECHNICAL DATA	IT-FW-U (Ultra)
Raw (feed) water	Fresh water
Drinking water flow rate (depending on raw water quality)	500 l/h - 1000 l/h - 1500 l/h - 2000 l/h
Ambient working temperature	5 ° C ~ 50 ° C
Feed water temperature	1 ° C ~ 30 ° C
Installed power	1,0 kW - 1,0 kW - 1,5 kW - 1,5 kW
Indicative dimension of vertical model	600 x 280~ 580 x 1500h mm
Indicative dimension of horizontal model (trailer excluded)	800 x 800 x 1000 (to 1200) h mm

SPARE PARTS & ACCESSORIES	IT-FW-U (Ultra)
Spare parts and consumables kits (1, 2 or 3+ year's supply)	√
UV disinfection	√
Raw water intake pump (various types)	√
Floatation device for raw water intake pump	√
Raw and treated water storage tanks (various types)	√
Photovoltaic system	√
Power generator	√
Protective pannelling/cabinet	√
Training on-site or in Italtechnics facilities	√
User and O&M manuals	√

IT-FW-F (Filter)

DESCRIPTION

The **IT-FW-F (Filter)** unit is designed for the production of drinking water from a wide range of fresh water sources such as rivers, lakes, dams, rainwater and ground water.

The unit can produce drinking water free of physical and bacteriological contamination (it won't treat industrial contaminants such as hydrocarbons and chemical waste).

The **IT-FW-F (Filter)** is trailer mounted and therefore ideal for emergency intervention such as may be required after a natural disaster or in a camp for displaced people.

Alternatively, the units can be used to provide drinking water in workers camp, temporary or mobile exploration camps, villages or missions.

The units are supplied "ready to use" and a wide range of accessories suitable for use in the field are available.

HOW IT WORKS

Water entering the **IT-FW-F (Filter)** undergoes rapid sedimentation then flows through sand and active carbon filters for complete removal of turbidity and organic compounds (with possible coagulant dosing if necessary). Following this, the water passes through a UV sterilization unit, then, in order to guarantee the water remains disinfected the unit foresees post chlorination disinfection, with built in chlorine generator, recommended for water that's to be stored.

A big advantage of using an onsite chlorine generator is the elimination of problems related to the transport and handling of the dangerous chemical chlorine. The water treatment unit is managed automatically through a dedicated control panel.

MAIN FEATURES

❑ Advantages

- User friendly
- Easy to maintain thanks to the automatic back washing system installed as standard
- Low energy consumption

❑ Rapid Installation

- Delivered “ready to start” and already mounted on its own trailer making the unit highly mobile and ideal for emergency interventions
- The configuration optimizes space for both on site movement and for containerized transport

TECHNICAL DATA	IT-FW-F (Filter)
Raw (feed) water	Fresh water
Drinking water flow rate (depending on raw water quality)	5,0 m^3 / h MAX
Ambient working temperature	5 ° C ~ 50 ° C
Installed power	1,2 Kw - 380 V 50 Hz
Dimensions (without trailer)	1140 x 2850 x1400h mm
Total weight (including trailer)	2300 kg

SPARE PARTS & ACCESSORIES	IT-FW-F (Filter)
Spare parts and consumables kits (1, 2 or 3+ year's supply)	√
Trailer with innovative twist lock connections	√
Trailer with NATO hitch and height-adjustable tow bar	√
Floatation device for raw water intake pump	√
Raw and treated water storage tanks (various types)	√
Photovoltaic system	√
Training on-site or in Italtechnics facilities	√
User and O&M manuals	√

IT-FW-FP (Filter Plus)

DESCRIPTION

The **IT-FW-FP (Filter Plus)** units are drinking water treatment plants designed to treat fresh water from a wide range of sources such as rivers, lakes, dams, rain water and ground water. The units are capable of producing safe drinking water free of physical and bacteriological contamination (they won't treat industrial contaminants such as hydrocarbons or chemical waste).

These drinking water plants are easy to use and to maintain, they come mounted on a robust skid designed to travel in standard shipping containers. This characteristic renders the **IT-FW-FP (Filter Plus)** plants ideal for use in remote locations such as mobile or temporary camps, villages or missions and their surrounding communities.

The plants are supplied ready to use and are available with a wide range of accessories suitable for use in the field.

HOW IT WORKS

Once in the system, the water, which may be pre-treated with chemical products, passes through a series of sand filters for the complete removal of the turbidity in the water. Before being discharged from the plant the water is disinfected via chemical dosing.

The **IT-FW-FP (Filter Plus)** plants can be supplied with manual or automatic filter back washing systems using water and air.

The **IT-FW-FP (Filter Plus)** plants are capable of working 24 hours per day and require minimal daily maintenance in order to verify correct operation of the electro-mecchanical equipment and the quality of the drinking water being produced.

MAIN FEATURES

❑ Advantages

User friendly;
Easy maintenance;
Low energy consumption.

❑ Rapid installation

Delivered “ready to start”, robust skid mounted installation easy to position on-site;
The configuration optimizes space for both on site movement and for containerized transport

TECHNICAL DATA	IT-FW-FP (Filter Plus)	
	25	Custom
Raw (feed) water	Fresh water	
Drinking water flow rate (depending on raw water quality)	25 m3/hr	< 25 m3/hr
Ambient working temperature	5 ° C ~ 50 ° C	
Installed power	8 kW	< 8 kW
Indicative dimensions	4000 x 2050 x 2200h mm	

SPARE PARTS & ACCESSORIES	IT-FW-FP (Filter Plus)
Spare parts and consumables kits (1, 2 or 3+ year's supply)	√
Floatation device for raw water intake pump	√
Raw and treated water storage tanks (various types)	√
Photovoltaic system	√
Training on-site or in Italtechnics facilities	√
User and O&M manuals in languages other than English/Italian	√

IT-FW-L (Lamella)

DESCRIPTION

The **IT-FW-L (Lamella)** unit is a drinking water treatment plant specifically devised to treat elevated levels of turbidity up to 500 NTU (Nephelometric Turbidity Units). The **IT-FW-L (Lamella)** unit includes a water intake system able to draw from conventional or non-conventional water sources such as rivers, lakes, shallow wells, reservoirs, harvested rainwater and groundwater and is designed to produce 3-4 m^3/hour of safe drinking water conforming to W.H.O. guidelines. The unit is ideal for regions where the rainy season bring lots of water but stirs up rivers and dams etc making the water very turbid (cloudy or muddy).

AND HOW IT WORKS

Once in the system, the water to be treated passes through the following treatment stages: flocculation, rapid sedimentation, slow sedimentation with a lamella settler, sand filtration, activated carbon filtration, chlorination and storage. All the components required for the these treatment stages, and the plant operation in general, are included in this compact, trailer mounted system designed to be easily transported to different locations where safe drinking water is scarce or nonexistent. Another important feature to note is that the unit is equipped with its own built in generator (seen in the photo above) which ensures the units complete autonomy.

MAIN FEATURES

❑ Sedimentation and filtration

The sedimentation processes included are important to achieve the desired water quality and to protect other components upstream thereby reducing required maintenance and extending he unit's life.

❑ Rapid installation

Delivered "ready to start" and highly mobile making it ideal for emergency interventions;
The configuration optimizes space for both on site movement and for containerized transport.

❑ Trailer

Optional but included as standard;
Innovative rapid twist-lock attachments available;
NATO specification tow bar and hitches available;
Built-in storage compartments for accessories.

❑ Integrated Generator

The unit is autonomous with its own power source;
Mounted on sliding frame for maximum ventilation;
Diesel or petrol generators available.

TECHNICAL DATA	IT-FW-L (Lamella)
Raw (feed) water	Turbid fresh water
Drinking water flow rate (depending on raw water quality)	3 ~ 4 m^3 / h MAX
Ambient working temperature	5 ° C ~ 50 ° C
Required power	1,5 kW - 220 V o 400V 50 Hz o 60 Hz
Dimensions (without trailer)	1100 x 2850 x 1400h mm

SPARE PARTS & ACCESSORIES	IT-FW-L (Lamella)
Spare parts and consumables kits (1, 2 or 3+ year's supply)	√
Chemicals, cleaning and conservation products (kits)	√
Chemical dosing system	√
Floatation device for raw water intake pump	√
Raw and treated water storage tanks (various types)	√
Photovoltaic system	√
Custom canvas cover	√
Trailer	√
Trailer with NATO hitch and height-adjustable tow bar	√
Training on-site or in Italtechnics facilities	√
User and O&M manuals	√

IT-FW-LP (Lamella Plus)

DESCRIPTION

The **IT-FW-LP (Lamella Plus)** system is designed to produce safe drinking water from fresh water sources with high turbidity, up to 500 NTU (Nephelometric Turbidity Units).

The treatment plant includes a raw water intake system capable of drawing from the source specified such as river lake, shallow well, borehole, tanks including rain water reservoirs. From this source the **IT-FW-LP (Lamella Plus)** plants can produce up to 100 m^3/hr each (note: modularity means higher yields are always possible) of drinking water meeting WHO guidelines.

The **IT-FW-LP (Lamella Plus)** is ideal for use in regions where rainy seasons bring a lot of water that collects in rivers, lakes and dams along with soil and mud which causes the high turbidity.

The **IT-FW-LP (Lamella Plus)** systems deliberately employ technologies that allow us to significantly reduce their physical footprint whilst optimizing performance.

HOW IT WORKS

Once in the system, the water passes through the following treatment stages: chemical dosing, slow sedimentation in a lamella settler followed by sand filtration. The system includes filter backwashing and is equipped with a sludge dewatering unit with drainage bags.

The standard **IT-FW-LP (Lamella Plus)** plants produce 10, 40 and 100 m^3/hr but combinations and other sizes are available.

TECHNICAL DATA	IT-FW-LP (Lamella Plus)		
	10	40	100
Raw (feed) water	Turbid fresh water		
Drinking water flow rate (depending on raw water quality)	10 m^3/hr	40 m^3/hr	100 m^3/hr
Ambient working temperature	5 ° C ~ 50 ° C		
Required power	10 kW 400V 50Hz	18 kW 400V 50Hz	24 kW 400V 50Hz
Dimensions	1x 20' cntr	2x 20' cntrs	2x 40' cntrs

	IT-FW-LP (Lamella Plus)		
SPARE PARTS & ACCESSORIES	10	40	100
Spare parts and consumables kits (1, 2 or 3+ year's supply)	√	√	√
Floatation device for raw water intake pump	√	√	√
Raw and treated water storage tanks (various types)	√	√	√
Photovoltaic system	√	Let's see	Let's see
Training on-site or in Italtechnics facilities	√	√	√
User and O&M manuals	√	√	√

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