EASYDIL

USER MANUAL

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Index

General information

MAGAPOR provides the EASYDIL equipment for the preparation of reconstituted extender. It raises and maintains the temperature of the distilled water and performs the complete dissolution of the powdered extender by magnetic stirring.

Your choice

The equipment you chose is designed to facilitate the process of preparation of extender in those centers where a large volume of extender previously reconstituted is needed to supply the productive process. The maximum mixing capacity is 100 L.

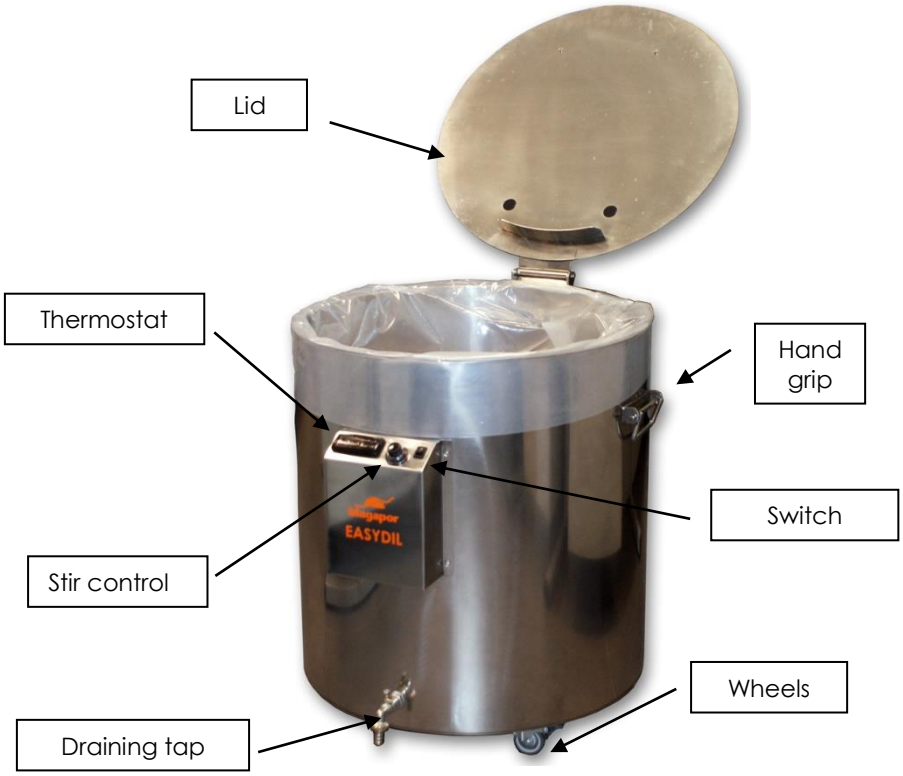
Its strong structure in stainless steel satisfies the highest requirements in terms of cleaning and guarantees durability.

It features industrial control and drive devices, which guarantee high reliability and quick availability of spare parts worldwide.

The use of mechanisms and electronics that do not need maintenance reduces the preservation of the equipment to a simple cleaning routine.

This equipment, together with the E-DISPENSER extender dispenser, is the complete solution to automate the process of semen dilution.

Description of the main parts



Installation and Operation

Controls and Display

The control and monitoring screen is located on the front electrical device:

- The main switch allows the equipment to be switched on and off.
- The digital thermostat allows regulating and knowing the operating temperature at all times.
- The speed regulator allows modifying the rotation speed of the agitator motor.

Placement

For optimum operation, place the equipment on a flat level floor. It is recommended to be placed near the dispensing equipment E-DISPENSER or any other that is used for the dosage. Avoid close proximity to hot or cold air.

***Warning**: Heavy equipment, handle with care and assistance of another person*

Electric connection

The equipment is provided with an electric base at the bottom. The appropriate power cable must be connected to this base according to the type of plug. It will only be considered that the equipment is totally disconnected when the power cable is removed.

The nominal consumption of the equipment must be taken into account to ensure that no overload is generated in the electrical installation, as well as in cases where the connection is made through devices such as timers.

The electrical installation should be provided with automatic means of disconnection to the electric power, such as a suitable magneto-thermal switch and a differential switch. The equipment has its own fuse to be protected against overloads.

***Important:** Check that the voltage of your installation corresponds to the voltage of the nameplate of your equipment. For the safety of users and the equipment itself, it must be connected to an effective ground wire according to the Electrotechnical Regulation for Low Voltage.*
*The equipment can consume a maximum intensity of 5.5 A***.**

The manufacturer declines all responsibility in the event that such security measures are not adopted.

Set up

Placement of the hygienic protective bag and the stirring magnet

In order to maximize the hygiene of the extender reconstitution process, the use of a hygienic protective bag is recommended. This bag for large capacity must be introduced inside the tank and contains the water and the extender during the working day. At the end of the day the cleaning of the equipment is only a simple operation of removal and disposal of the bag, so that only the cleaning of the lid and the external surface of the equipment is necessary, therefore, without having to perform complex cleaning protocols to guarantee the perfect sterility of the interior.

The way of placing the bag is very simple. Once opened the lid of the tank, the bag must be introduced completely unfolded until the circular bottom of the bag itself coincides with the base of the tank. It is possible to use hygienic gloves to avoid touching the film with your hands. Once this is done, you can fold the excess of the top of the bag so that it wraps the surface of the equipment interior wall and facilitates the closure of the lid.

The stirring magnet will be placed in the hygienic protective bag. Place it gently in the center of the bottom of the tank and note how it is automatically fixed in a natural way by the magnetic force generated by the dragging magnets.

Filling of the tank with distilled water

Knowing the needs of extender for the working day, the tank will be filled with distilled water with certified quality, suitable for the reconstitution of extender.

Park the tank with the built-in brake of the wheels and pour the water gradually, so that no creases or wrinkles are generated in the hygienic bag which can make difficult the correct dissolution later.

There are different ways to carry out the measurement of distilled water that should be introduced in the tank. The most common:

- Check the poured volume with a volumetric measurer.

- Check the poured weight with a scale of sufficient precision and capacity.
- Use bottled water (with known volume).

Important: *Do not switch on the equipment with the tank completely empty as this can cause overheating of the heating devices which can shorten its life and the melting of the hygienic bag.*
In the event of an accidental lack of water, a safety thermostat will prevent dangerous overheating.

Temperature and stir speed adjustment.

Once the equipment has been correctly filled with distilled water, actuate the main switch.

The temperature regulator will operate the electrical resistors to heat the water to the temperature set by the user, using a self-adjusting PID control algorithm. This type of control is adapted to the thermal inertia of the volume of water to be heated each day, and optimizes the energy required for heating.

The regulator is simple to operate. It has an internal programming protected by a security password, so that the user only can access the function of the temperature change (**SET POINT)**.

To modify the **SET POINT**, follow these steps:

- Press button 
- Increase or decrease the value to modify the SET POINT 
- Press the button  for 3 seconds or wait 10 seconds to save the new SET POINT and return to the normal mode.

The speed of the magnetic stirrer can be easily adjusted by means of the rotary knob next to the temperature regulator. This control is associated with an electronic speed

control device, which allows acting on the electrical power sent to the engine and regulate its speed directly.

The speed range of the engine is 0-400 rpm. It is recommended to adjust the stirring speed according to the volume of water contained in the tank, so as to avoid the appearance of a too pronounced vortex that may cause excessive oxygenation of the water.

Operating the magnetic stirrer during the water heating phase is beneficial as it helps to keep the temperature homogeneous and accelerates the heat transfer.

When the water has reached the desired temperature, the extender can be poured in a progressive manner, so that it is diluted as it falls and does not accumulate on the bottom undissolved, which occurs when pouring all at once.

Once diluted, it is advisable to maintain the stirring, so that no precipitation occurs during the working day.

Under usual conditions, for an increase of + 20 ° C in the water temperature (eg heating to 35 ° C starting from an initial temperature of 15 ° C) the equipment will employ approximately 5 hours for a volume of 100 litres and about 3 hours for a volume of 50 L. This provides an estimation of the warm-up time needed before starting to work.

It is recommended to use a self-timer device to prepare hot distilled water before the start of the day, well in advance.

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Maintenance and preservation

Cleaning Advice

For the cleaning of the equipment, do not use acidic agents or disinfectants that attack the brightness of the stainless steel or damage the plastic parts of the control panel.

It is recommended to keep the outside of the equipment clean.

A daily cleaning and sterilization of the inner tank must be carried out, if the hygienic bag is not used. In the case of using the bag, it should be discarded daily and not reused. The tubes used to evacuate the extender and the stirring magnet should be cleaned and sterilized daily.

It is good practice to check the tank temperature periodically with a calibrated thermometer, so that, with the passing of time, any possible deviations can be corrected.

In case of not using the equipment for a long period of time, disconnect it from the electric power and store completely empty in a dry place protected from dust.

Warning danger: *Before performing any cleaning or authorized maintenance task, check the area or components to be manipulated are disconnected from the electrical power:* ***disconnect the plug from the electrical outlet.***

Technical Specifications

Voltage	230 V
Frequency	50 / 60 Hz
Nominal power	750 W
Water bath power	600 W
Water bath temperature	Room temp.to 50º C
Regulator Accuracy	+/- 0.5ºC type PID
Stirring speed	0 – 400 rpm
Warm-up time	5 hours (100 L + 20ºC)
Mixing time	15-20 minutes (100 L)
External dimensions	Ø 58 x H 58 cm
Useful tank capacity (volume)	105 Litres
Approx. empty weight.	50 Kg

Troubleshooting

Problem	Possible cause	Solution
The unit does not start once connected to the electric power and pressed the switch-on button.	A. No voltage or blown fuse B. Defective cord C. Internal power supply failure	A and B. Check the voltage, the fuse and the cord. C. Contact the Technical Support Service.
The fluid does not reach the desired temperature in the set time interval.	A. Temperature set-point incorrectly entered B. Error in the control parameters of the temperature regulator C. Inner failure	A. Follow the instructions in the manual B and C. Contact the Technical Support Service.
The actual tank temperature deviates from the set-point by more than 1 ° C once stabilized	A. Failure in the calibration of the temperature B. Error in the control parameters of the temperature regulator	Contact the Technical Support Service.
The stirrer magnet does not respond to the speed controller	A. Incorrectly positioned magnet B. Speed control fault C. Engine failure	A. Follow the instructions in the manual B and C. Contact the Technical Support Service.

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