USER INSTRUCTION MANUAL

SCILOGEX

D-500 HOMOGENIZER

CE/ cULus-Declaration of Conformity

EC-Declaration of Conformity

Contents

Product Description

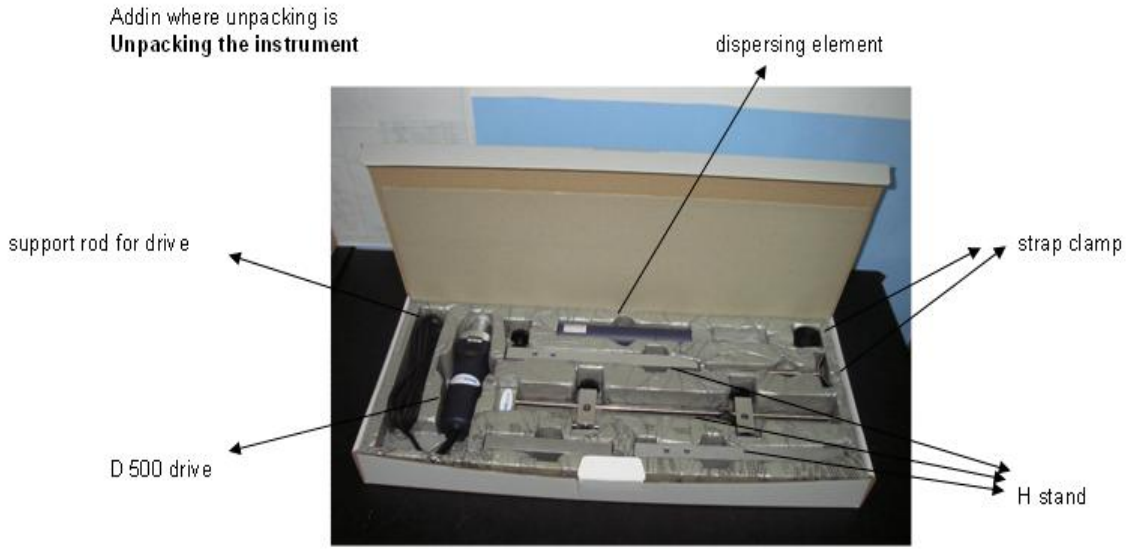
The D-500 Disperser is a high speed dispersing instrument. It is based on the Rotor/Stator Technology. The shaft and rotor/stator can be disassembled for easy cleaning. You will receive the dispersing tools completely assembled for immediate use with your disperser. Should you dismantle these (e.g. for cleaning) please refer to page 6. This product is for laboratory use only and is used in chemical industry, cosmetic industry, pharmaceutical industry, paint industry as well as in universities and a wide range of medical laboratories. The unit is a high performance dispersing/homogenizing unit and also can be used as a high speed mixing unit with certain dispersing shafts. The drive unit can be used, based on the dispersing shaft used for volumes from 10ml to 8,000ml. There is a wide range of dispersing shafts with diameters of 20mm, 30mm and 40mm stator diameters. It is to be mounted on a stand and not used as a hand held instrument.

Safety Instructions

- When using electrical equipment, basic safety precautions are necessary to reduce the risk of fire, electric shock and personal injury.
- Only use the instrument for its intended purpose.
- Ensure that the correct electric voltage of the instrument and the power supply correspond correctly.
- Do not use this instrument in a hazardous area or manner. When handling hazardous chemicals, use appropriate hand and eye protection.
- Do not immerse electrical equipment in water.
- The drive must not be used in highly combustible areas and operated with easily inflammable liquids. It is recommended to run the units in fume hoods during operation.
- To avoid electrical shock, do not open housing. Remove cord from the power source when it is being checked or serviced. This instrument should only be opened by a qualified service personnel only.
- **The D-500 is designed for continuous operation, however normally the ultimate fineness will be reached within a few minutes. Any further dispersing will only introduce unnecessary heat into the medium.**
- The D-500 must never run without liquid – the lower slide bearing is cooled and lubricated by the liquid phase of the treated medium. Any dry running will destroy the slide bearing!
- Ensure that the dispersing shafts are cleaned properly after every use. When cleaning, remove the power cord from the power source.
- Never touch the spinning rotor, or shaft, or motor side coupling parts.

- It is recommended that the operator should be using hearing protection when operating the unit at maximum speed.
- Do not operate after the equipment malfunctions or has been damaged in any manner. Return unit to our service center for examination and repair.
- Switch off the unit before changing the dispersing element.
- Only suitable dispersing shafts from SCILOGEX may be used.
- Glass vessels must always be secured with a clamp to prevent them from sliding.
- Use caution when adjusting the speed to avoid possible spraying of medium.
- The ventilation slots of the drive must not be obstructed.
- Never let the aggregate touch the bottom of the vessel.

Unpacking the Instrument



Please unpack the instrument carefully and inspect the unit, the tools and the stand for damage. It is important that any damage during transport is noted at the time of unpacking. In certain cases it may be necessary to follow up with the forwarder.

D-500: A typical package includes:

- **D-500 drive**
- **One support rod for the drive**
- **One or more dispersing element according to your order**
- **One H stand with double rod, boss head and strap clamp**

  or
- **A plate stand with boss head and strap clamp**
- **Operating instructions**

Proper Use

The voltage on the name plate must match the main voltage. If it does not, do not operate the instrument.

Screw the support rod into the flange of the drive and tighten it. Make sure that the “nylon” washer is between the flange and the nut to avoid scratching and rubbing marks on the flange.

Make sure that the unit is switched off when connecting or disconnecting the dispersing shaft into the drive.

For correct use the D-500 drive must be secured to a stand with a boss head. We recommend that for this purpose you only use the H-600 plate stand or the PT-plate stands. For safety reasons the container should be fixed with a strap clamp (which is a part of the H-600 stand).

Insert the dispersing element into the drive flange by pressing upwards and turning clockwise until it locks into place. A click confirms the correct insertion. Once inserted the dispersing element should not move any longer.

To remove the dispersing element from the flange, hold the dispersing element and turn anticlockwise and gently remove the dispersing element downwards. The distance between the bottom of the vessel and the shaft should not be less than 8mm.

Dispersing Aggregates

• Disassembly of the dispersing tool

1. Hold the dispersing tool with a cloth (to avoid cutting of your hand due to sharp edges at the stator). At the same time turn the shaft tube clockwise. Screw the shaft tube of the stator and pull it over the axle and put it aside.

Use a piece of cloth to hold the stator as the teeth are sharp and can cut you!
While holding the stator turn the shaft tube clockwise!

remove shaft tube and put it at a place where it cannot fall down as impact might damage it

2. Now hold the rotor with a cloth and turn the axle anticlockwise. Slowly screw the axle from the rotor and put it aside.

Next hold the rotor with the cloth and turn the axle clockwise (yellow arrow) or hold the the axle and turn the rotor anticlock wise (red arrow)

remove rotor. stator and teflon bearing

To assemble backthe shaft follow the procedure in reverse order!
Handtight assembly is sufficient!

3. Remove the PTFE bearing from the axle. After this disassembly you should have the following five parts: shaft tube, axle, rotor, stator and PTFE bearing.

To assemble the dispersing tool please follow above 3 steps in reverse order (3./2./1.)

When assembling the dispersing tool, always make sure that the PTFE bearing is fixed correctly and cooled by the working medium. Otherwise, it may cause serious defects to the whole dispersing tool. Examine the PTFE bearings regularly. Treat the dispersing tools carefully as they are the hearts of your dispersing unit. In particular the axle reacts very sensitive to impacts.

Cleaning

• Immediately after finishing work with the apparatus, the dispersing element must be cleaned so that substance residues do not stick to the threads.
• Small bacterial cultures can form in the small grooves, and this will create difficulties. For this reason, and to clean the dispersing tool effectively, it should be run in a solvent that dissolves the residue, but does not harm the Teflon bearing and the steel.
• For proper cleaning, the dispersing element must be disassembled.
• Proper care and cleaning of the equipment will ensure a longer and better use of the equipment.

Sterilization

• Chemical processes: Germicidal solutions (formalin, phenol, alcohol etc) can disinfect in most cases. However, residues must subsequently be removed with sterilized water.
• Sterilizing by humid heat: This means sterilizing with steam at a pressure bar of 2 above atmospheric and a temperature of 120°C
• Sterilizing by hot air: Hot air sterilization is normally carried out at 160°C or 190°C

Corrosion

• Stainless steel is not corrosion proof. Certain chemicals can seriously attack this material.
• All corrosive agents should only be in contact with the fine steel for a short period of time. Make sure they do not dry out the material.
• Ensure that the dispersing element is always cleaned properly after every use. Neutralize lye with solutions and acids.
• Protect all parts from aggressive agents.

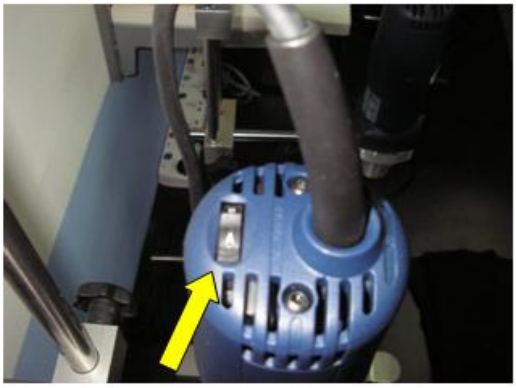
Working with D-500

The optimal immersion depth of the dispersing shaft is **approximately 2/3 below the liquid surface** and **1/3 above the bottom of the beaker**. When inserting the dispersing shaft slightly slanted (**approximately at an angle 15 degrees**), it improves the efficiency of the disperser. The dispersing shaft should not be immersed more than 30mm below the flange.

Working with Speed Control

The drive and control are in the same housing. Before using the unit, run a test without the dispersing shaft by switching the ON button on the front of the drive. The speed is selected by the control knob on the top of the drive. Approximate rpm of the drive is: 1= 10,000rpm 2= 14,000rpm 3= 18,000rpm 4= 22,000rpm 5= 26,000rpm 6= 30,000. (+/- 1000rpm at each setting.)

Speed control of the D 500



For an emergency stop, press the large button on the drive.

For reaching the best effects, the rotor speed of D-500 should be adapted to the dispersion problem.

IMPORTANT

The maximum rotor speed depends on the kind of sample and its viscosity. The speed is reduced by its viscosity in order to protect the drive from overload. If the viscosity is too high, the motor will stop automatically to prevent damage to the equipment. The electronic control system prevents damage to the motor drive.

Overload Protection

When the motor overloads and the power supply cuts off, switch off the main switch to O, disconnect the aggregate and re-start the instrument as fast as possible, without the load in order to accelerate cooling by the built-in fan.

Maintenance of Motor

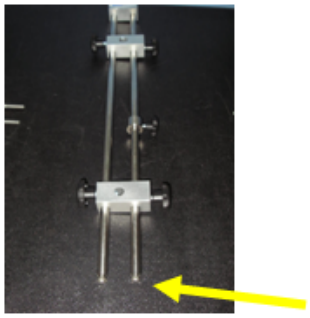
The motor does not need any maintenance and there are no parts inside which can be repaired by the user. The only parts which are excluded from this are the carbon brushes. Please contact or your authorized supplier for replacement and use original spare parts only. The carbon brushes can be replaced after disconnecting the power supply!

Stand

The D-500 homogenizer is normally delivered with either the H-600 stand or the PT 800 plate stand. It is always important to safely fix the unit even when not using the original stand for it, as the center of gravity is relatively high.
Make sure that the motor drive is fixed safely and cannot move downwards at any time as this may cause damage to the instrument, the user or the sample.

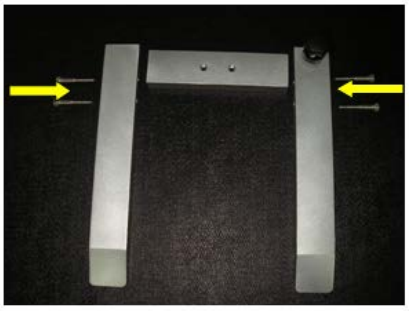
Assembly of H stand

This H stand consisting of a double rod, two boss heads, a safety ring and a strap clamp to secure the vessel.
The unit comes semi-assembled as the two double rods are connected and the two boss heads and the safety ring is fixed in place already.

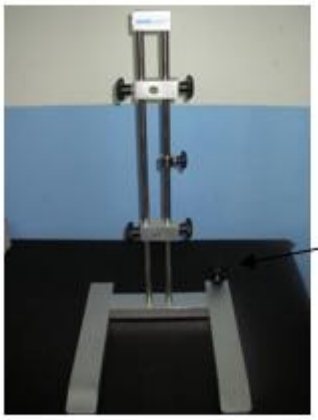


Note: Screws to fix the double rod onto the base H are attached where the arrow is located!

Put together the foot of the stand as following: put each of the two bolts into its place in the middle foot piece and screw the both side pieces together with the provided larger screws and the allen key.



Once this bottom “H” has been fixed, take the double rod and insert into the middle piece of the foot stand. Turn it around and fix it with the other allen key using the smaller screws for it. Turn it around and fix the drive with the support rod at the upper boss head and the strap clamp at the lower boss head.



Ready assembled stand

If used on an uneven surface you may want to level it with the level screw!

Assembly of the PT plate stand

This stand is delivered with a base plate and a rod which is either 600mm, 800mm or 1000mm long. Assembly is very easy as you only have to screw in the rod into the plate stand and secure it with the counter nut. Attach necessary boss heads such to the rod.

Warranty

This instrument has a warranty of **24 months** from date of purchase which covers material and workmanship.

Scilogex will repair or replace free of charge the defect parts which were found defective after an inspection finds that the defect is due to materials or workmanship.

The warranty for this equipment does not cover normal wear from using it and does not apply to any instrument or part which has been altered by anyone else than an employee of Scilogex or its authorized agents.

It also does not cover instruments which have been damaged due to accident, negligence of the user, failure to follow the operating instructions, the use of electric currents and circuits other than in this manual, misuse of the unit or abuse of it.

We reserve the right to change or modify or improve any of our instruments without any obligation to make corresponding changes to any instrument previously sold.

EXCLUSIONS AND LIMITATIONS

This Limited Warranty applies only to the product manufactured by or for Scilogex that can be identified by Name Plate.

Scilogex is not liable for any damage to or loss of any products or material stored or tested in the instruments or programs, data, or other information stored on any media contained within the product, or any non-Scilogex product or part not covered by this warranty. Recovery or reinstallation of programs, data or other information is not covered under this Limited Warranty.

This warranty does not apply: (a) to damage caused by accident, abuse, misuse, misapplication, or non-Scilogex products; (b) to damage caused by service performed by anyone other than Scilogex.; (c) to a product or a part that has been modified without the written permission of Scilogex; or (d) if any Scilogex. serial number has been removed or defaced; or (e) if the unit is not used according to its purpose; or (f) no original spare parts are used.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. SCILOGEX SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF SCILOGEX CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN TO THE EXTENT POSSIBLE ANY CLAIMS UNDER SUCH IMPLIED WARRANTIES SHALL EXPIRE ON EXPIRATION OF THE WARRANTY PERIOD.

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TO THE MAXIMUM EXTENT PERMITTED BY LAW, SCILOGEX IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING ANY COSTS OF RECOVERING OR REPRODUCING ANY PRODUCT OR MATERIAL STORED OR TESTED IN THE INSTRUMENTS, PROGRAM OR DATA STORED IN OR USED WITH THE SCILOGEX PRODUCT, AND ANY FAILURE TO MAINTAIN THE CONFIDENTIALITY OF DATA STORED ON THE PRODUCT. SCILOGEX SPECIFICALLY DOES NOT REPRESENT THAT IT WILL BE ABLE TO REPAIR ANY PRODUCT UNDER THIS WARRANTY OR MAKE A PRODUCT EXCHANGE WITHOUT RISK TO OR LOSS OF MATERIAL, PROGRAMS OR DATA.

FOR CONSUMERS WHO HAVE THE BENEFIT OF CONSUMER PROTECTION LAWS OR REGULATIONS IN THEIR COUNTRY OF PURCHASE OR, IF DIFFERENT, THEIR COUNTRY OF RESIDENCE, THE BENEFITS CONFERRED BY THIS WARRANTY ARE IN ADDITION TO ALL RIGHTS AND REMEDIES CONVEYED BY SUCH CONSUMER PROTECTION LAWS AND REGULATIONS. TO THE EXTENT THAT LIABILITY UNDER SUCH CONSUMER PROTECTION LAWS AND REGULATIONS MAY BE LIMITED, SCILOGEX'S LIABILITY IS LIMITED, AT ITS SOLE OPTION TO REPLACEMENT OR REPAIR OF THE PRODUCT OR SUPPLY OF THE REPAIR SERVICE AGAIN.
Note: Before you deliver your product for warranty service it is your responsibility to remove all products or materials stored in the instrument.

Before returning a defective unit, please contact local representative or Scilogex Support Center at info@scilogex.com

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