Labindustries

REPIPET® II Dispensers

Assembly, Operation and
Maintenance Instructions,
Parts List and Warranty
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The REPIPET II dispenser is constructed entirely of durable, chemically inert fluorocarbons (HALAR® and TEFLON®) with an extra-thick borosilicate glass barrel and plunger. A tough HALAR sleeve protects the instrument’s extra-heavy glass cylinder and plunger against damage.

The REPIPET II dispenser is rugged and accurate for use with all laboratory reagents except organic solvents and HF. (Although HALAR and TEFLON fluorocarbons are chemically inert to all laboratory reagents, slight distortions may occur at autoclaving temperatures and with some strong solvents). The REPIPET II dispenser is adjustable the full length of the scale. Each scale has 100 divisions.

© HALAR is a registered trademark of AUSIMONT USA, Inc.
© TEFLON is a registered trademark of Dupont.
Unpacking

Remove the components from the shipping carton, examining them carefully for breakage, defects, or shortages. DO NOT discard packaging if breakage is found.

Contents of Package
Examine the contents of the shipping carton carefully. Each package includes the following:

Standard REPIPET II Dispenser
1 Standard REPIPET II Dispenser
1 Glass bottle, amber
1 Dispensing tip assembly
1 Inlet tube w/locknut
1 Instruction manual
1 Warranty card

Universal REPIPET II Dispenser
1 Universal REPIPET II Dispenser
3 Cap and liner sets
1 Dispensing tip assembly
1 12" inlet tube with locknut
1 Instruction manual
1 Warranty card

Breakage in Shipment
Notify your supplier at once if you find breakage, defects, or shortages upon opening packages. DO NOT RETURN INSTRUMENTS UNTIL INSTRUCTED BY YOUR SUPPLIER.
Shipping Breakage Replacement Instructions

CHECK SHIPMENT FOR BREAKAGE

IF THERE IS BREAKAGE, DO NOT discard the packaging.

Contact your supplier. Supplier should initiate any claim for damages. Barnstead|Thermolyne cannot be held responsible for damages to shipments not shipped directly from Barnstead|Thermolyne.

FOLLOW INSTRUCTIONS BELOW ONLY IF THE SHIPPER IS Barnstead|Thermolyne.

UPS (UNITED PARCEL SERVICE), TRUCK LINE, RAIL, OR AIR FREIGHT SHIPMENTS

1. LEAVE instrument in the same shipping carton in which it was received. HOLD it in your receiving department.

2. CONTACT the delivering carrier to report the damage. Request the carrier to inspect the damage and to return the shipment to Barnstead|Thermolyne. The packing list should be returned with the shipment.

3. DO NOT RETURN the shipment yourself. Claims are invalid without an inspection by the carrier.

4. A REPLACEMENT will be shipped as soon as we receive the damaged instrument and the claim. For an immediate replacement, contact Barnstead|Thermolyne.

PARCEL POST SHIPMENTS

1. FILE a claim with your Post Office for “partly damaged” goods only. The Post Office will forward the instrument and the claim to Barnstead|Thermolyne.

2. NOTIFY Barnstead|Thermolyne by telephone or mail.

3. A REPLACEMENT will be shipped as soon as we receive the damaged instrument and the claim. For an immediate replacement, contact Barnstead|Thermolyne.

NOTE: BARNSTEAD|THERMOLYNE CANNOT BE HELD RESPONSIBLE FOR DAMAGES IN SHIPMENT, IF THESE INSTRUCTIONS ARE NOT FOLLOWED. For further information call toll free (800) 227-0128 in U.S.A.
Specifications

Accuracy
± 1.5% of full scale

Reproducibility
± 0.2% of full scale

Graduations

<table>
<thead>
<tr>
<th>Barrel Volume (ml)</th>
<th>Divisions (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.00</td>
<td>0.05</td>
</tr>
<tr>
<td>10.00</td>
<td>0.10</td>
</tr>
<tr>
<td>20.00</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Materials

1. Valve Body         HALAR fluorocarbon
2. Sleeve Handle      HALAR fluorocarbon
3. Plunger            Borosilicate glass
4. Barrel             Borosilicate glass
5. Dispensing Tip     Teflon fluorocarbon
6. Holder             Polypropylene
7. Locknut            Teflon fluorocarbon
8. Inlet Tube         Teflon fluorocarbon
9. Cap Liner          Teflon fluorocarbon
Assembly

Standard REPIPET II Dispenser
This instrument is shipped assembled except for the dispensing tip assembly.

Universal REPIPET II Dispenser
This instrument is supplied with a selection of caps. Choose the cap that fits your reagent bottle. To assemble, unscrew the mounting nut from the dispenser and carefully remove the grooved washer. Referring to the illustration on page 19, place the selected cap and liner over the threaded portion of the body. Carefully slide the grooved washer on the threaded portion, grooved side toward pump.

Cut the inlet tubing to the required length. Slide it firmly onto the inlet valve body. Lock it into place with the locknut which is supplied on the inlet tubing. Slide the mounting nut over the tubing and tighten the cap, liner and washer into place. Install the assembled REPIPET II dispenser on your reagent bottle.

Dispensing Tip Installation and Removal
To install:

1. Insert the connector with threads outward over the valve body outlet and snap into place.

2. Remove the sizing pin from the end of the tip. Do not discard. (This must be inserted in flared end of dispensing tip when autoclaving to retain shape.)
3. Holding the dispensing tip with thumb and forefinger in the window of the holder at the bend, push the dispensing tip and locknut spacer as far as possible onto the valve body outlet now located inside the connector until the holder is snug against tip will now be held securely in place.

4. Finger tighten the large locknut onto the threads of the connector. The dispensing

To remove:

1. Unscrew the large locknut and expose threads on connector. Then, while holding the tip with thumb and forefinger in the window of the holder at the bend, simultaneously twist and pull until removed.

Dispensing Tips and Tip Closures
Tip closures are connected to the holder. To prevent evaporation and recession of the reagent from the dispensing tip, cap the outlet tip with the tip closure whenever the instrument is not in use.
To Prime
To remove all air bubbles and fill the dispensing tip, gently pump the plunger. An empty REPIPET II dispenser may be primed without losing a drop of reagent by using short strokes of the plunger after the reagent has reached the level of the outlet tube. If necessary to remove a stubborn air bubble beneath the plunger, the instrument may be tilted to raise the dispensing tip while pumping.

To Set
The magnifying indicator is used for precise volume adjustments. Loosen the knurled set screw and, with the plunger fully inserted, slide the magnifying indicator on the metering rod to the selected scale line, visually lining it up with the two red lines on the magnifying indicator. Lock the magnifying indicator in place with the knurled set screw. Do not use pliers or tools to tighten the knurled set screw. Rotating the indicator further from the barrel will increase magnification from 2X to 10X.

To Operate
Lift the plunger gently all the way. Wait an instant. Press down gently all the way, delivering the preset volume.
Achieving Highest Precision and Efficiency

Avoid pre-dispense or post-dispense droplets by lifting and pressing the plunger gently, particularly when approaching the top limit and bottom limit of the plunger. Always check the dispensing tip before dispensing (pressing the plunger sleeve down) to see that the reagent fills the dispensing tip. Try to operate the dispenser in the same manner each time. Be alert to any malfunctions (See malfunction chart on page 15). The REPIPET II dispenser is a ‘to-contain’ system with its inherent high reproducibility. Keep it free of air bubbles. If the REPIPET II dispenser has been unused for a long time, the reagent may drop back a considerable distance into the reservoir. Bring the reagent back up to the end of the dispensing tip.

Calibration

Your REPIPET II dispenser is a precision instrument. Calibration should be done gravimetrically by weighing a dispensed volume of distilled water on an analytical balance. Do not calibrate by dispensing into graduated containers, because they are inherently not as accurate as REPIPET II dispensers.

As part of your calibration procedure, check the zero point of the scale by sliding the magnifying indicator as far up the metering rod as it will go, when the plunger is in closed position. The two red lines of the magnifying indicator should line up with the zero mark on the scale. To correct for even the smallest inaccuracy at the zero line, the magnifying indicator may be set higher or lower on the scale by the same distance as the zero is offset (as seen through the magnifier). However, for any error
greater than 1.5% of full volume, the unit, without its container, should be returned to Barnstead|Thermolyne for a "no charge" repair or realignment.

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**Breakage in Use**

There is a one year guarantee against manufacturing defects. In case of non-warranted breakage, you may make minor repairs with replacement parts purchased from Barnstead|Thermolyne.

All instruments being returned must be clean and free of reagents. Instruments containing any reagents will be returned to sender, unrepaired.

For major repairs, in lieu of returning your instrument to Barnstead|Thermolyne, repair kits are available. The Repipet II Repair Kit consists of:

1. Glass Barrel
2. Plunger Assembly
3. Handle
4. Magnifying Indicator
5. Valve Body

<table>
<thead>
<tr>
<th>Kit catalog no.</th>
<th>size</th>
<th>model using kits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS832X1</td>
<td>5ml</td>
<td>9005, 9005U</td>
</tr>
<tr>
<td>LS832X2</td>
<td>10ml</td>
<td>9010, 9010U</td>
</tr>
<tr>
<td>LS832X3</td>
<td>20ml</td>
<td>9020,9020U</td>
</tr>
</tbody>
</table>
Preventative Maintenance
To keep your REPIPET II dispenser in perfect working order, use clean, particulate-free reagents. Reagents with suspended matter may be used, but frequent flushing with water or suitable solvent is necessary to avoid build up of foreign matter in the valves and barrel.

Cleaning The Barrel and Plunger
To clean the barrel and plunger, remove the plunger from the instrument by detaching the stiffening ring at the bottom of the sleeve by pulling it down. Loosen the knurled screw in the magnifying indicator and slide the indicator down and off the metering rod. The sleeve and plunger may now be withdrawn and the barrel and plunger cleaned with a clean tissue.

Flushing
If cleaning becomes necessary due to a change in reagent or build up of suspended matter, flush with water, detergent solution or solvent, as applicable. Lower the inlet tube of the REPIPET II dispenser system into the cleaning liquid and pump the plunger until the REPIPET II dispenser is thoroughly flushed.
Frozen Plunger
To prevent freezing of the plunger and barrel during storage of strong alkalies, check the plunger often to see that it moves easily. If evaporating reagent leaves a residue above the stop-ring, wash it away with an appropriate solvent. If the plunger should freeze, do not force it. Soak the entire instrument in water or solvent to loosen the plunger.

If your instrument is broken in the process, it may be replaced with the Repipet II Repair Kit (page 11).

Caution
Do not force a frozen plunger. It will break the barrel.
Special Applications

Dispensing Viscous Fluids
The REPIPET II dispenser dispenses viscous liquids. For very viscous liquids, the orifice at the tip may be enlarged by cutting off the last few millimeters of the tip. No modification is required for liquids of viscosity up to 45 centipoises.

Avoiding Deposits of Residues
To prevent the deposit of residues due to the evaporation of alkalies, solutions of salts, etc., place a small amount of stopcock grease on the top of the stop-ring. This will create a sealed system when the plunger is in closed position. If any deposit begins to build up on the plunger, raise the plunger to expose the deposit and wash it off with water or an appropriate solvent. Renew the stopcock grease from time to time, if it wears off. Greasing the glass of the plunger will help prevent residue deposits, but will slow the action of the plunger.

Special Problems
The REPIPET II dispenser is an exceedingly versatile instrument. If you have unusual requirements, Barnstead|Thermolyne will be pleased to make recommendations.
## Malfunctions & Corrections

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plunger does not move smoothly, or moves with difficulty.</td>
<td>Dust in barrel.</td>
<td>Remove plunger. (See page 12, Cleaning the Barrel and Plunger.) Wipe plunger and barrel with clean tissue.</td>
</tr>
<tr>
<td>Solute deposit on plunger.</td>
<td>Lift plunger and wash away solute with water or suitable solvent. Never force plunger up or down.</td>
<td></td>
</tr>
<tr>
<td>Particles adhering to plunger.</td>
<td>Wipe plunger with paper towel or finest grade emery cloth.</td>
<td></td>
</tr>
<tr>
<td>Air inlet blocked, causing vacuum in container.</td>
<td>Loosen cap; remove obstruction from air inlet.</td>
<td></td>
</tr>
<tr>
<td>Grooved washer blocked.</td>
<td>Wash out grooves.</td>
<td></td>
</tr>
<tr>
<td>Outlet orifice too small for viscosity of reagent.</td>
<td>Enlarge orifice with razor blade by cutting tip back about 1 mm.</td>
<td></td>
</tr>
<tr>
<td>Dispensed volumes inaccurate as determined gravimetrically.</td>
<td>Leakage due to valve inefficiency.</td>
<td>First test valve. When lifting plunger, reagent at tip should withdraw no more than 1 mm. When dispensing, there should be no flow out of inlet tube. Flush with water or appropriate solvent to clean valves.</td>
</tr>
<tr>
<td>Air entering instrument.</td>
<td>Reagent leakage due to warped body.</td>
<td>Replace with Repipet II Repair Kit.</td>
</tr>
<tr>
<td>Magnifying indicator not at zero when plunger is fully down.</td>
<td>Magnifying indicator slipping.</td>
<td>Look for bubble formation. Tighten connections as required. (See pages 7-8.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Observe the distance of the error and correct desired volume setting by the same distance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tighten thumbscrew. (Do not use tools). Operate instrument with less force and more care.</td>
</tr>
</tbody>
</table>
### MALFUNCTIONS & CORRECTIONS

<table>
<thead>
<tr>
<th>Malfunction</th>
<th>Cause</th>
<th>Repair/Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reagent drips from dispensing tip.</td>
<td>Air inlet blocked, causing vacuum in container.</td>
<td>Loosen cap. Remove obstruction from air inlet. (See diagrams pages 18 &amp; 19).</td>
</tr>
<tr>
<td>dispensing tip loose.</td>
<td>Grooved washer not properly installed.</td>
<td>Tighten connection. (See pages 7-8.)</td>
</tr>
<tr>
<td>Reagent density and/or viscosity too great for ball valve system.</td>
<td>Instrument is not appropriate for this reagent.</td>
<td></td>
</tr>
<tr>
<td>Instrument does not dispense reagent remaining at bottom of container.</td>
<td>Inlet tube too short or does not reach into the bottom at the side of the container.</td>
<td>Order new #8 FEP TEFILON standard wall tubing from Barnstead</td>
</tr>
<tr>
<td>Indicator becomes cloudy.</td>
<td>Plexiglass aging.</td>
<td>Polish with toothpaste or cleanser.</td>
</tr>
<tr>
<td>Air bubbles form below plunger.</td>
<td>Loose inlet tubing connection or leak in inlet tubing.</td>
<td>Tighten connection or replace tubing if necessary.</td>
</tr>
<tr>
<td>Air bubbles form above plunger.</td>
<td>Poor fit between glass barrel and plunger.</td>
<td>Return to Barnstead</td>
</tr>
</tbody>
</table>
The REPIPET II dispenser cannot be disassembled without special tools. You can replace the magnifying indicator, and the inlet and outlet tubing with their retainers. Other repairs must be made at Barnstead|Thermolyne. (See below.)

## Parts and Accessories for REPIPET II Dispensers

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12W</td>
<td>12 inch long TEFLON inlet tube with locknut</td>
</tr>
<tr>
<td>24W</td>
<td>24 inch long TEFLON inlet tube with locknut</td>
</tr>
<tr>
<td>TP830X1B</td>
<td>Consists of locknut spacer, locknut with washer, holder, dispensing tip, and sizing pin. For 5 ml size.</td>
</tr>
<tr>
<td>TP830X2B</td>
<td>Consists of locknut spacer, locknut with washer, holder, dispensing tip, and sizing pin. For 10 ml &amp; 20 ml sizes.</td>
</tr>
<tr>
<td>TP830X1A</td>
<td>Dispensing tip only for 5 ml size</td>
</tr>
<tr>
<td>TP830X2A</td>
<td>Dispensing tip only for 10 ml and 20 ml sizes</td>
</tr>
<tr>
<td>95M</td>
<td>Magnifying indicator with TEFLON thumb screw, for 5 ml size</td>
</tr>
<tr>
<td>920M</td>
<td>Same as above, but for 10 and 20 ml sizes</td>
</tr>
<tr>
<td>9500</td>
<td>500 ml amber bottle with closed cap for 5 ml size</td>
</tr>
<tr>
<td>91250</td>
<td>1250 ml amber bottle with closed cap for 10 ml and 20 ml sizes</td>
</tr>
<tr>
<td>9500C</td>
<td>Open cap for 9500 bottle</td>
</tr>
<tr>
<td>91250C</td>
<td>Open cap for 91250 bottle</td>
</tr>
<tr>
<td>9500CL</td>
<td>Closed cap for 9500 bottle</td>
</tr>
<tr>
<td>91250CL</td>
<td>Closed cap for 91250 bottle</td>
</tr>
<tr>
<td>9GW</td>
<td>Grooved washer</td>
</tr>
<tr>
<td>9LN</td>
<td>Mounting nut</td>
</tr>
<tr>
<td>1102</td>
<td>28/430 drilled cap with TEFLON liner for use with customer’s bottle</td>
</tr>
<tr>
<td>912</td>
<td>33/430 drilled cap with TEFLON liner for use with customer’s bottle</td>
</tr>
<tr>
<td>1062</td>
<td>38/430 drilled cap with TEFLON liner for use with customer’s bottle</td>
</tr>
<tr>
<td>132LN</td>
<td>TEFLON locknut for securing inlet tubing, for all sizes</td>
</tr>
</tbody>
</table>

Write to Barnstead|Thermolyne for complete Catalog and Price list.
Standard REPIPET II Dispenser Assembly
Universal REPIPET II
Dispenser Assembly

SLEEVE HANDLE
PLUNGER
METERING ROD
KNURLED SET SCREW
OUTLET VALVE
SIZING PIN
(REMOVE BEFORE ASSEMBLING)
LOCKNUT SPACER
WASHER
LARGE LOCKNUT
WINDOW AREA
HOLDER
DISPENSING TIP
CONNECTOR

STOP-RING
BARREL
MAGNIFYING INDICATOR
STIFFENING RING
VALVE BODY
AIR INLET
INLET VALVE BODY
LOCK NUT
CAP
TEFLON® CAP LINER
GROOVED WASHER
INLET TUBE
MOUNTING NUT
One Year Limited Warranty

Barnstead|Thermolyne Corporation warrants that if a product manufactured by Barnstead|Thermolyne and sold by it within the continental United States or Canada proves to be defective in material or construction, it will provide you, without charge, for a period of ninety (90) days, the labor, and a period of one (1) year, the parts, necessary to remedy any such defect. Outside the continental United States and Canada, the warranty provides, for one (1) year, the parts necessary to remedy any such defect. The warranty period shall commence either six (6) months following the date the product is sold by Barnstead|Thermolyne or on the date it is purchased by the original retail consumer, whichever date occurs first.

All warranty inspections and repairs must be performed by and parts obtained from an authorized Barnstead|Thermolyne dealer or Barnstead|Thermolyne (at its own discretion). Heating elements, however, because of their susceptibility to overheating and contamination, must be returned to our factory, and if, upon inspection, it is concluded that failure is not due to excessive high temperature or contamination, warranty replacement will be provided by Barnstead|Thermolyne. The name of the authorized Barnstead|Thermolyne dealer nearest you may be obtained by calling 1-800-446-6060 or writing to:

Barnstead|Thermolyne
P.O. Box 797
2555 Kerper Boulevard
Dubuque, IA 52004-0797
USA
FAX: (319) 589-0516
E-Mail: mkt@barnsteadthermolyne.com

Barnstead|Thermolyne’s sole obligation with respect to its product shall be to repair or replace the product. Under no circumstances shall it be liable for incidental or consequential damage.

THE WARRANTY STATED HEREIN IS THE SOLE WARRANTY APPLICABLE TO Barnstead|Thermolyne PRODUCTS. Barnstead|Thermolyne EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR USE.