

SERVICING THE DRUMMOND "PIPET-AID"

NOSEPIECE:

- (a) We do not use any "cotton" filters. Remove cotton found in any nosepiece.
- (b) The Drummond Filter used in the TC Nosepiece (all Portable, some Regular units) provides unique protection against overpipetting. As little as "one" drop of aqueous liquid will **block** this filter. It must be replaced. Other filters do not provide this protection! DO NOT USE SUBSTITUTES.
- (c) The check valve (Regular Pipet-Aid) can become clogged with cotton, etc. There are two styles in use. Clean as follows:
 - (1) Original "white" plastic valve: Remove metal washer with forceps or other pointed object. Clean with alcohol and water, using swab. Reassemble and replace washer by pressing back in place.
 - (2) New "grey" plastic valve: Push wire (opened paper clip) through hole in center of "O" ring. Top will separate. Clean as above and reassemble.In either case, when reinstalling, "O" ring *faces* handle!
- (d) Rubber Insert should be replaced when worn, or tears become visible.

HANDLE:

Note: Before opening the Portable handle, we strongly suggest you contact Drummond for assistance, 800-523-7480.

To open standard handle, remove nosepiece and three screws. To open Portable handle, remove TC screw and bracket, cut serial number label at seam, remove 5 screws, turn over and lift other side. New Twist-Off TC Nosepiece simply unscrews from handle.

- (a) Buttons and valve assembly must not be broken or evidence any cracks; in either case, they must be replaced.
- (b) Micro-Switch, Portable Pipet-Aid, (at end of metal lever) should be firmly in place against back shell of handle. Press with finger to check.
- (c) To remove battery in Portable unit, pry away from back with screwdriver. Enough tape usually stays in place to secure new battery.
- (d) Replacement Battery supplied by Drummond is matched to our charging unit. Other batteries may require different charging rates. To get expected 2 years of use, use Drummond Battery only.

PUMP/POWER SUPPLY:

- (a) Pump problems are easily diagnosed by trying with another handle. Pump can be rebuilt with our kit (#4-000-010, pump repair kit). Pressure Housing (#4-000-016) and Vacuum Housing (#4-000-015) can be replaced if cracked. Electrical repairs are not suggested.
- (b) Hose connectors on pump should not be cracked or "taped" in place.
- (c) Portable unit will only run off "charger" if battery is good (and partially charged)! If Battery is dead, charger will not operate unit.
- (d) Check apparent "dead" battery by trying another Drummond Charger.
- (e) Routine overnight charging apparently has no detrimental effect on Battery.

OPERATING INSTRUCTIONS FOR THE DRUMMOND PIPET-AID (ALL MODELS EXCEPT XP)

OPERATING INSTRUCTIONS

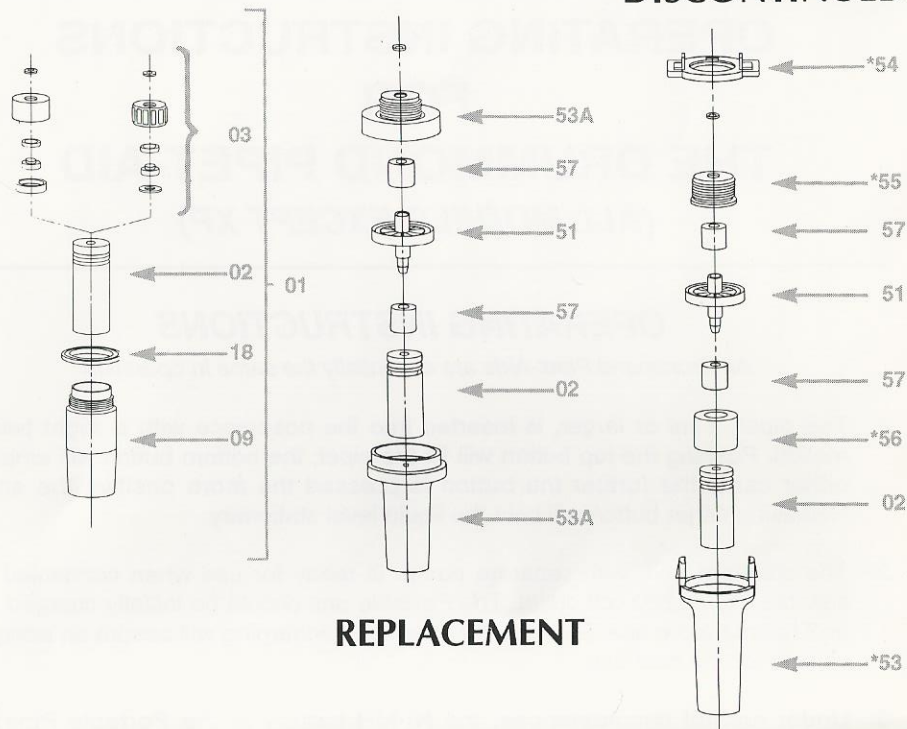
All Drummond Pipet-Aids are essentially the same in operation

1. The pipet, 1 ml or larger, is inserted into the nosepiece with a slight twisting motion. Pushing the top button will fill the pipet; the bottom button will empty. In either case, the further the button is pressed the more positive the action. Releasing either button will hold the liquid level stationary.
2. The standard unit, with separate pump, is ready for use when connected to a suitable 110 or 220 volt outlet. The Portable unit should be initially charged for 1 or 2 hours before use. Subsequent overnight recharging will assure an adequate voltage for the next day.
3. Under normal circumstances, the Ni-MH battery in the Portable Pipet-Aid should last approximately 2 years. It is user replaceable.
4. All Pipet-Aid nosepieces can be autoclaved in the event of overpipetting, as can the standard handle and hose. The Portable handle cannot be autoclaved; however, the TC Nosepiece on each unit, when used with the Drummond filter specified, should eliminate possible contamination. The TC filter, when challenged with 0.035 micron particles, showed no penetration. The filter must be replaced following contact with an aqueous liquid.
5. All filters lose efficiency as they accumulate particulate matter. Routine replacement is advised.

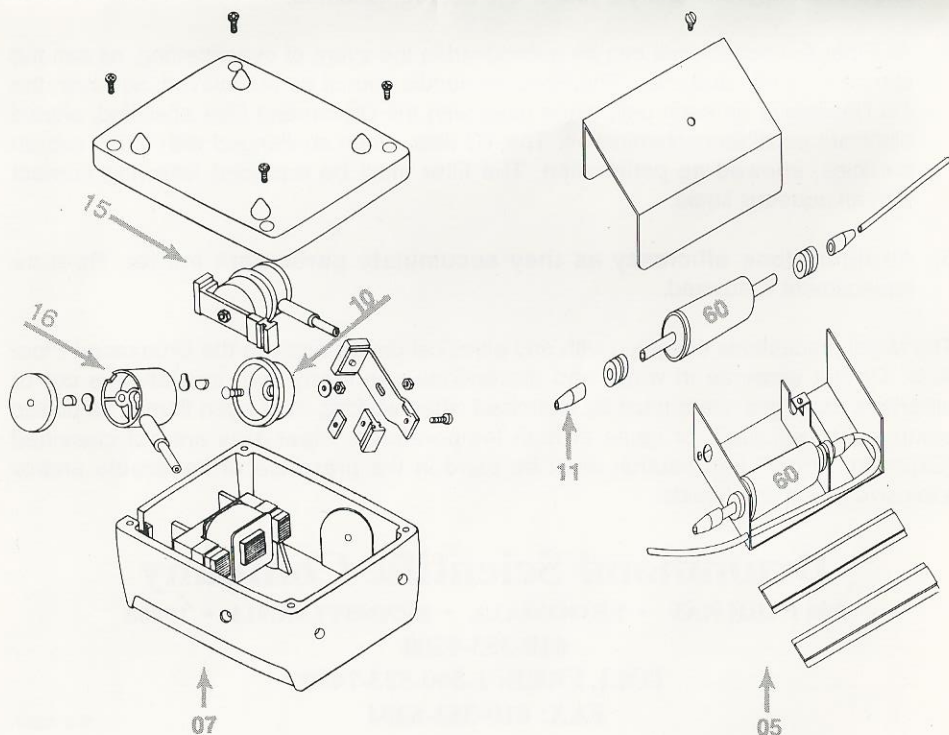
The usual precautions observed with any electrical device apply to the Drummond Pipet Aids. Do not immerse in water and discontinue use if any wire insulation is cut or otherwise damaged. Care must be exercised when working near open flames as plastic components will melt, or ignite at high temperatures. Pipet-Aids are not classified "Explosion Proof" and caution must be used in the presence of flammable and/or explosive gases and liquids.

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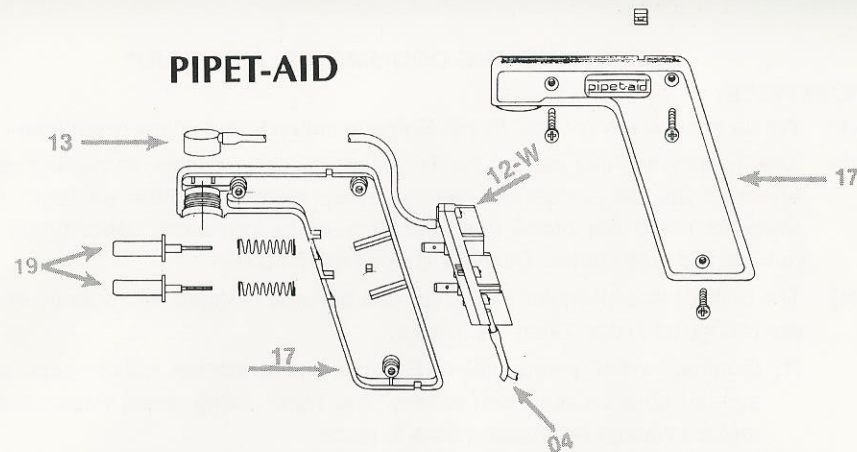
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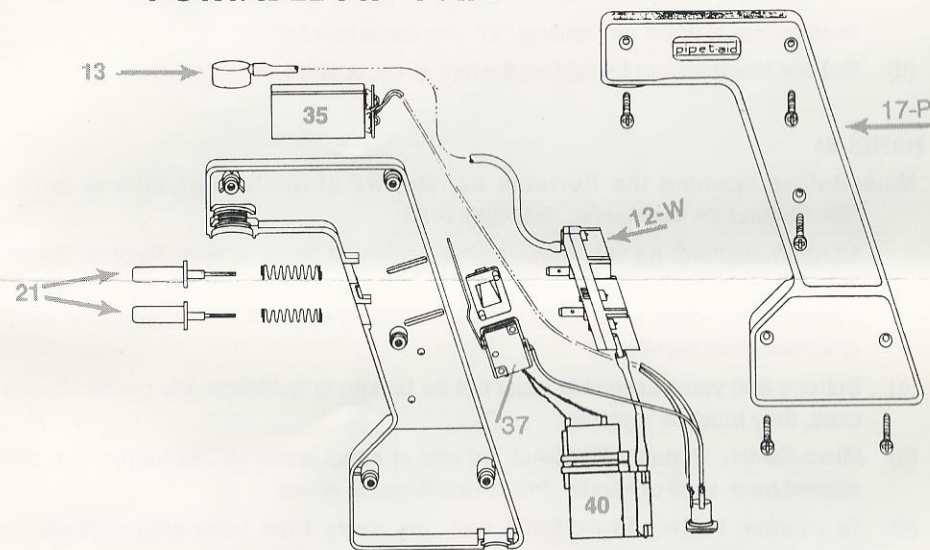
REPLACEMENT



PIPET-AID



PORTABLE PIPET-AID



Index Numbers Correspond to Last Digits in Catalog Number

- | | | | |
|-------------|---|-------------|----------------------------------|
| 4-000-001 | Holder Assembly (Includes 002; 003; 009; & 018) | 4-000-018 | Nose Ring |
| 4-000-002 | Rubber Insert (2/pk) | 4-000-019 | Button Assembly, Non-Portable |
| 4-000-003 | Check Valve Assembly | 4-000-021 | Button Assembly, Portable |
| 4-000-004 | Hose 5 Feet | 4-000-030 | Pipet Aid Charger 110V |
| 4-000-005 | Filter Adapter Kit | 4-000-031 | Pipet Aid Charger 220V |
| 4-000-006 | Complete Handle Assembly (Includes 001; 008; & 017) | 4-000-033 | 220 Volt Charger (England) |
| 4-000-007 | Complete Pump 110V | 4-000-035 | Repl. Rechargeable Battery |
| 4-000-008 | Internal Parts Kit
(Includes 004; 013, 012; & 2 Ea. 019) | 4-000-037 | Portable Switch |
| 4-000-009 | Nosepiece Shell | 4-000-040 | Portable Motor and Pump |
| 4-000-010 | Pump Repair Kit | 4-000-046 | Wire Harness Switch and Terminal |
| 4-000-011 | Hose Connectors Pair | 4-000-051 | Replacement TC Filters pkg. 5 |
| 4-000-012-W | Valve Body Only | 4-000-052 | Replacement TC Filters pkg. 50 |
| 4-000-013 | Handle Connector | * 4-000-053 | TC Housing |
| 4-000-014 | Complete Pump 220V | 4-000-053-A | TC Housing |
| 4-000-015 | Vacuum Housing | * 4-000-054 | TC Bracket |
| 4-000-016 | Pressure Housing | * 4-000-055 | TC Screw (Includes "O" Ring) |
| 4-000-017 | Handle Shell | * 4-000-056 | TC Spacer |
| 4-000-017-P | Handle Shell, Portable | 4-000-057 | TC Gasket (pair) |
| | | 4-000-060 | Balston Filter (pair) |

* 4-000-053, 4-000-054, 4-000-055 and 4-000-056 Replaced by 4-000-053-A