

Two Stomacher Accessories

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Two useful and easily constructed accessories for the Colworth Stomacher blender are described. The first automatically opens and holds Stomacher bags above a balance for weighing in the sample. The second stores bags on the bench between manipulations and opens and holds them as required for pipetting, etc.

Widespread use of the Colworth Stomacher (1-9, 11, 12) for preparing suspensions in microbiological analyses has become evident since its first report in this journal (10). Samples for stomaching are enclosed in sterile disposable plastic bags, which completely isolate them from the machine. Most pronounced among the many advantages of the Stomacher are its ability to eliminate labor normally required for washing or sterilizing blender assemblies and to reduce aerosol formation and the level of interfering debris carried into petri dishes.

Until recently, technicians tended to develop their own methods of handling bags for weighing, storing, pipetting, etc. However, with the rapidly increasing popularity of the Stomacher, our laboratory has received numerous requests for better means of: (i) holding bags on a balance for weighing in the sample and adding diluent; (ii) storing several bags after stomaching, while samples await further manipulations; and (iii) obtaining access to the bag contents for pipetting.

We have developed two accessories for the Stomacher, which appear to satisfy these requests and which can be easily made in the average workshop or laboratory. Dimensions shown are suitable for the Stomacher 400 (A. J. Seward Co. in the United Kingdom; Dynatech Laboratories in the United States; and Canadian Laboratory Supplies in Canada). Construction details are very tolerant and may be interpreted to suit local capabilities.

Balance bag holder. The balance bag holder is suitable for many mechanical or electronic single-pan balances. Figures 1 and 2 show the apparatus (designated Highwayman). The curved flexible wings (A) are preferably made from 1/16-inch (1.6-mm) Plexiglas; stiffer material should not be used. Foam rubber pads (B) are cut from door-sealing strip and coated with adhesive solution (see below). The aluminum

base (C) preferably features a centering ring (D) to aid its location on the balance, but this is not essential. The Highwayman replaces the normal balance pan; its weight should be as high as possible consistent with being within the taring range of the balance. Table 1 shows suitable dimensions for some common laboratory balances. The wings (9 inches or 230 mm high) are kept shorter than the average Stomacher 400 bag (11 inches or 280 mm) to avoid having to reach to an inconvenient height when adding sample.

In use, a bag is folded and placed between the wings with its mouth just above the pads (B). The wings are pressed together momentarily; on release they open and hold the bag. After adding sample and/or diluent the bag may be easily removed by taking hold of its edges and lifting vertically.

Bench bag holder. Figures 3 and 4 show an apparatus (designated Keep) to hold six bags, but the number of compartments is obviously quite arbitrary, as are the materials. The model shown was constructed from Plexiglas of the following thicknesses: 3/8 inch (9.5 mm) for the base (E) and side (F), 1/8 inch (3 mm) for the

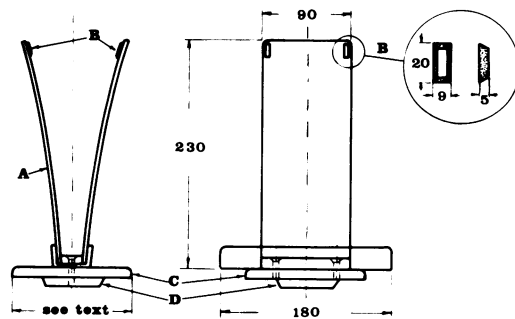


FIG. 1. Highwayman and suggested dimensions (in millimeters). See text for explanation of symbols. Plexiglas wings (A) are curved by heating.

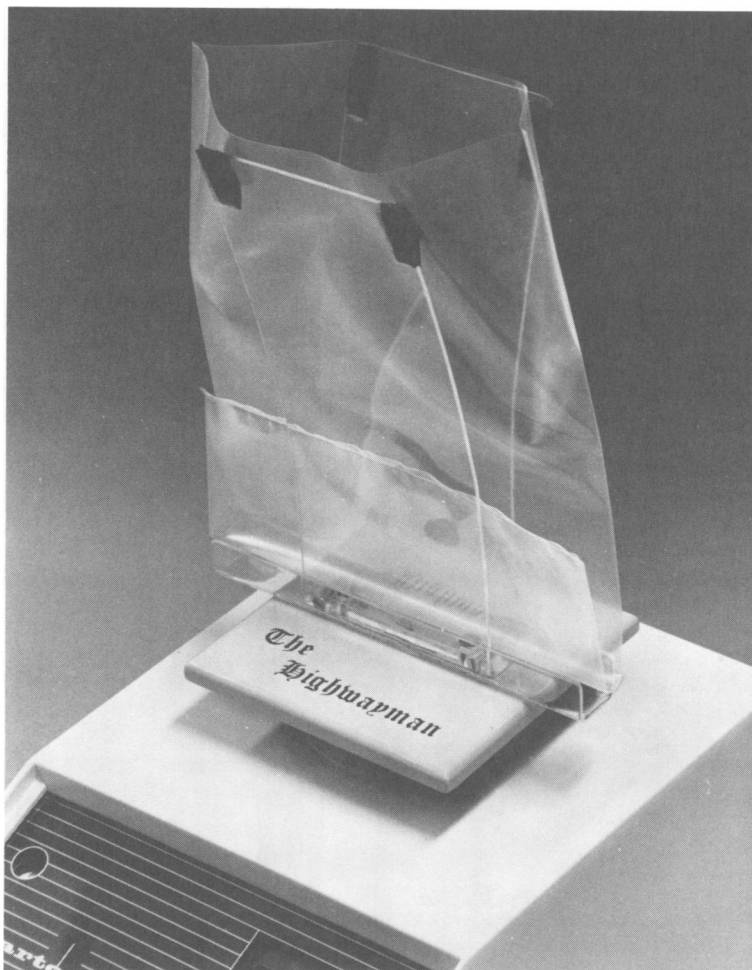


FIG. 2. Highwayman in use, showing a Stomacher bag gripped by sticky pads (B).

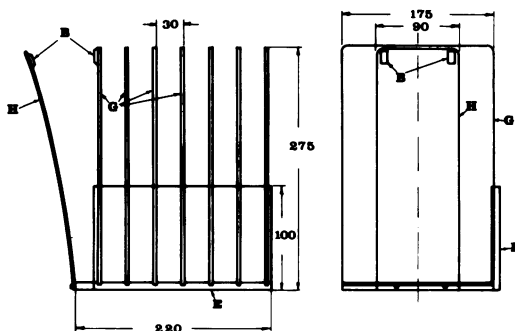


FIG. 3. Keep and suggested dimensions (in millimeters). See text for explanation of symbols. Plexiglas wing (H) is curved by heating.

supports (G), and 1/16 inch (1.6 mm) for the single 11-inch (280-mm) wing (H). Glue and screw construction is satisfactory; assembly is

facilitated if slots can be milled in the base and side to receive the supports.

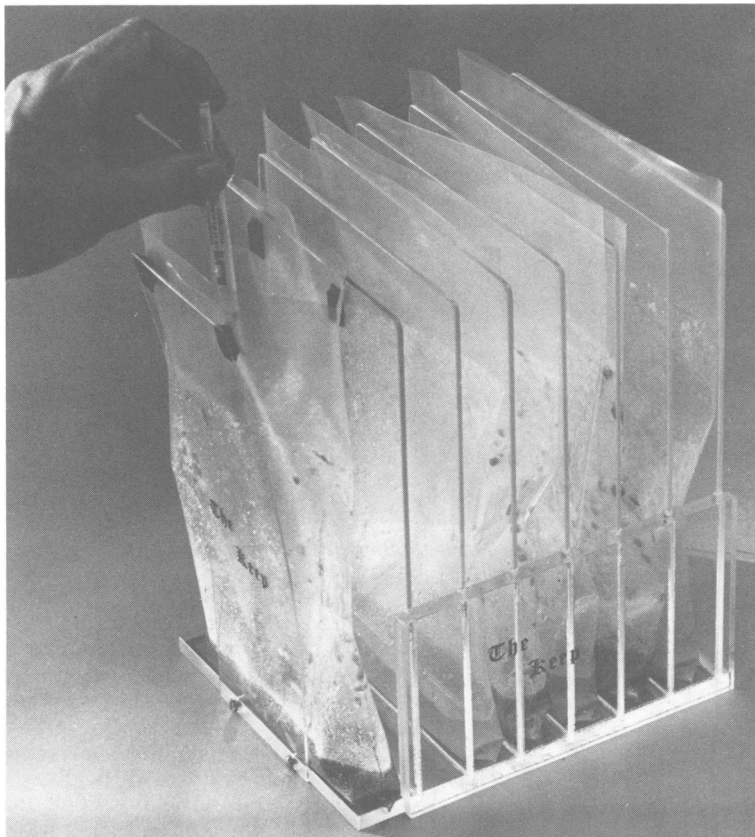
In use, Stomacher bags are dropped into the compartments of the Keep. To pipette from a bag, it is simply moved to the front position and opened by pressing the wing (H) against the first support (G). Again, the bag is removed from the sticky pads by lifting vertically.

Pads and adhesive. The foam pads (B) should be glued on in such a way that opposed members register with one another. They are then coated with an adhesive solution; a stock may conveniently be prepared by stomaching about 6 feet (2 m) of 1-inch (25-mm) masking tape with 50 ml of chloroform; the viscous liquid may be stored in a bottle equipped with a cotton applicator. Depending on the amount of use, the dust level, etc., pads should retain their stickiness for up to 1 week. They are instantly restored by painting with the adhesive.

TABLE 1. *Highwayman construction data for common laboratory balances*

Balance	Permissible highwayman wt range (g)	Centering ring (D) diam (inches)	Suitable aluminum base (C) dimensions (inches)
Mettler P1200 (mechanical)	270-370	2.7, ID (68) ^a	4.7 by 4.7 by 0.25 (120 by 120 by 6.4) ^a
Mettler PR1200 (electronic)	Not important	6.0, OD (150)	5.0 by 5.0 by 0.375 (127 by 127 by 9.5)
Mettler PL1200 (electronic)	Not important	5.0, OD (127)	5.0 by 5.0 by 0.375 (127 by 127 by 9.5)
Sartorius 2254 (mechanical)	500-600	3.0, OD (76)	5.0 by 5.0 by 0.375 (127 by 127 by 9.5)
Sartorius 3716MP (electronic)	Not important	Not necessary, or use shaft 7 mm in diameter by 20 mm long	5.0 by 5.0 by 0.375 (127 by 127 by 9.5)

^a Values in parentheses are metric equivalents in millimeters.

FIG. 4. *Keep in use.*

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