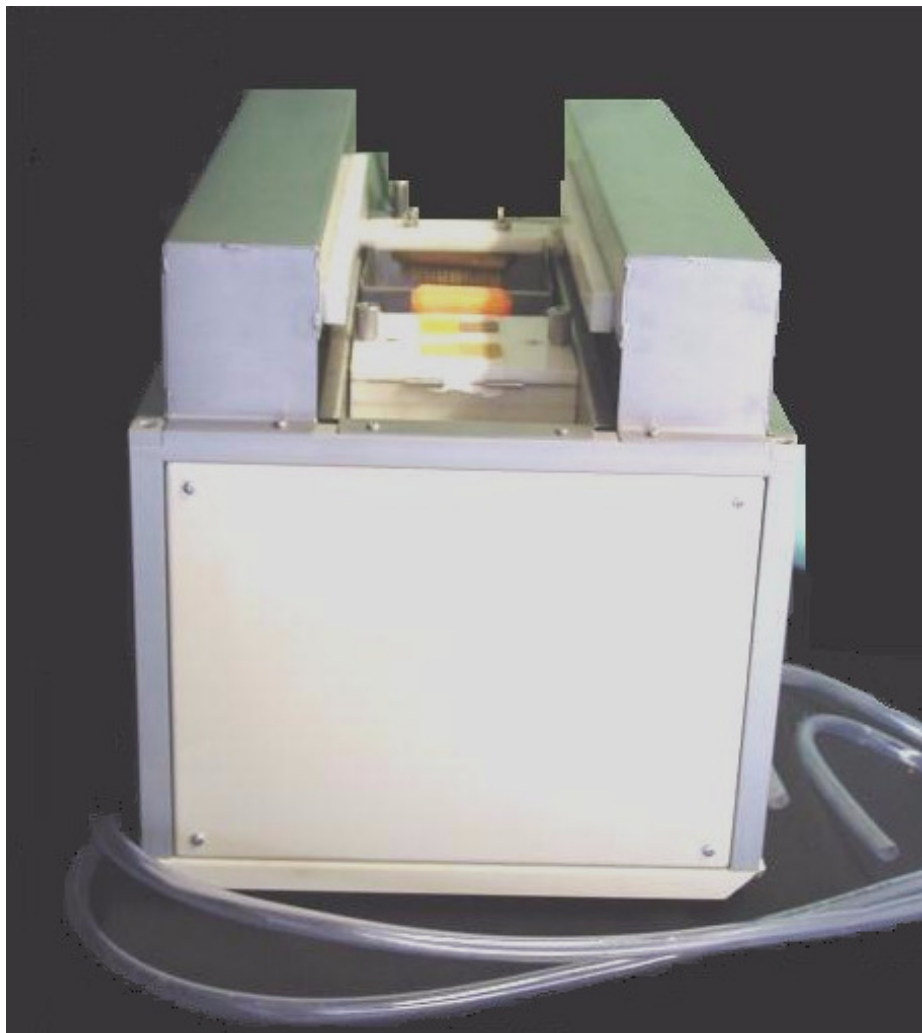


The ASP Machine

Automated Soap Performance



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The ASP Machine

Introduction

Hand washing of fabrics is the most important method used in many parts of Latin America, Africa and Asia. Worldwide, over 9 million tons of laundry bars and pastes are used, mainly for this purpose. In an attempt to improve the performance of such products it was necessary to develop a method for the evaluation of products under hand washing conditions and the ASP evolved from this development.

Washing method

A generalised method of hand washing practiced by consumers in most countries consists first of applying the product to the wetted fabric placed on a hard surface. The fabric is then either kneaded between the hands, or a brush is used to scrub the fabric. After this operation the fabric is usually soaked for at least an hour in the water containing the product and then the earlier operation is repeated. Finally the fabric is rinsed in clean water.

Although this could be copied in a laboratory exercise, it was found to be very operator sensitive and very time consuming. Because of the operator variability, it was necessary to carry out a large number of replicates to obtain any degree of significance between products. It was therefore necessary to automate the process for evaluation purposes, to eliminate operator variability and improve reproducibility, and reduce operator time.

Automated washing method

The machine was designed to simulate the hand washing method and uses a semi-stiff brush to pick up water from a container, pass across a laundry bar held at a fixed height, then brush over stain cloths held taut on a solid plate, again at a fixed height. The brush then returns to the water container and in passing through the water is effectively rinsed clean. The various stages are shown in the accompanying photographs.

This operation is then automatically repeated as many times as considered necessary. In practical operations it has been found that 50 machine cycles, followed by 1 hour soaking in the water in the container, and then a repeat 50 operations, still using the same water, gave good correlation with a laboratory hand washing method. The water temperature usually used is 20°C but this may be increased if thought necessary to reproduce conditions in warmer countries.

Stain cloths

The machine can be used with any stain cloth, but it is particularly suited to the appraisal method developed in the Savonnerie Anglaise Laboratories, known as the SA Split Stain technique. In this method any given piece of stained cloth is cut into two pieces, one half to be washed in a standard product, the other half to be washed in the test product. By careful selection of stain cloths, up to 4 stains can be evaluated in one operation, all being given equal treatment. The arrangement is shown in photographs 2 & 3.

Details of this method are contained in the operating manual supplied with each machine.

Other uses

Although relatively little work has been carried out so far on other uses, the machine, in principle can be used for hard surface cleaning appraisal. This is achieved by replacing the stained cloths with a soiled hard surface.

Trials are also in hand to evaluate fabric hand wash products, by using a solution of the product in the water container at an appropriate concentration.

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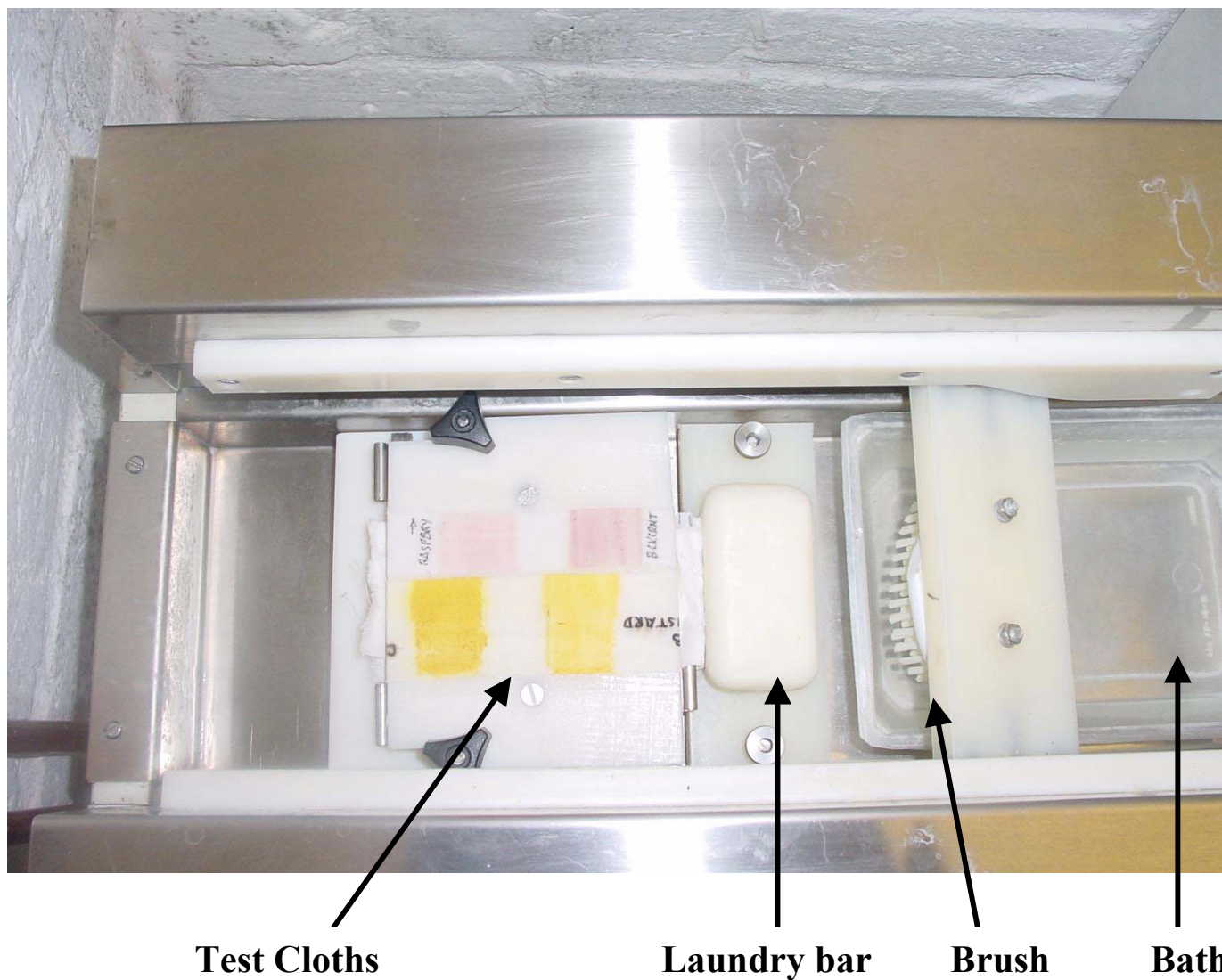
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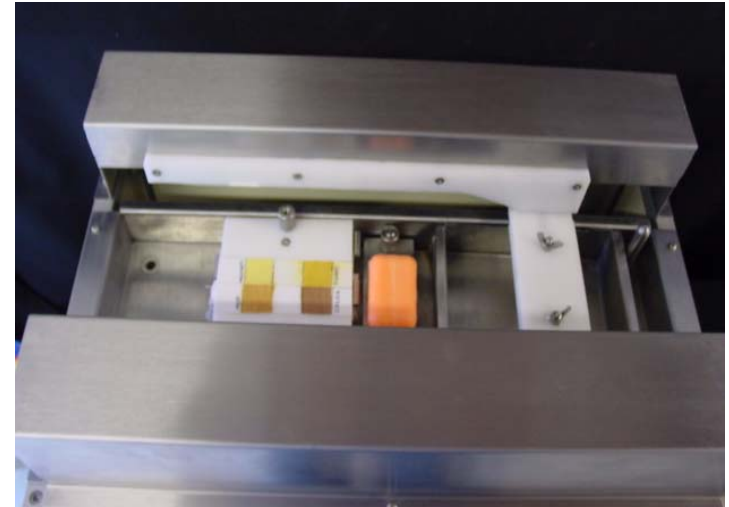


Automated Soap Performance (ASP) Machine Views

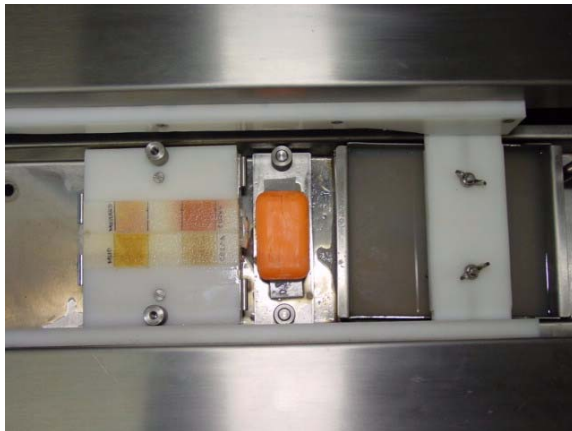
ASP Front View



ASP Top View



ASP Start



ASP 1st Pass Completed

