Centrifugal-type dicer cuts nutmeats cleanly and uniformly

High-capacity unit meets increased production needs

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New Solutions to Plant Problems

PROBLEM: S.O.P.A.D. (Societe de Produits Alimentaires et Dietetiques), located in Marseilles, France, is a subsidiary of Nestlé S.A., Switzerland. The plant, established in 1952, was originally a research and development facility. Operations recently were changed over to full-time manufacture of Nestlé chocolate products.

Two of the company's more famous chocolate candy bars—Fitness and Merveilles du Monde—are brimming over with nuts. These bars are very popular in Europe, and demand for them is high.

S.O.P.A.D.'s existing nut-dicing equipment was outdated and incapable of meeting the new production requirements. Since proper size reduction of nuts prior to mixing them with chocolate is important, a more efficient and higher-capacity dicing machine was needed.

SOLUTION: Investigation of several dicers on the market led to nut dicing tests at Urschel France S.A.R.L. in Paris. Successful trials were made using a Model RA dicer manufactured in the U.S.

Size uniformity for the diced nuts was an important consideration in choosing new equipment. Uniform dices are easier to mix into liquid chocolate, and increase the attractiveness of the end product. Size control also results in more usable dices per nut, reducing waste.

The unit installed at S.O.P.A.D. is generally set to cut ⅛″ × ¼″ × ¼″ (3.3 mm × 6.4 mm × 6.4 mm) dices.

In operation, nutmeats are fed to an impeller which is rotating at high speed. Centrifugal action forces the product against the outer wall and past a slicing knife—cutting each nut to desired thickness. The nut slices then feed into the dicing section of the machine.

A revolving, corrugated feed drum and opposing feed spindle transfer each slice to a circular knife spindle for the second cut—into strips. Individual strips are fed directly to crosscut knives which cut them into cubes or rectangular pieces.

The machine has a totally enclosed 3-hp motor, and four impeller speeds, from 124 to 450 rpm. Crosscut dicing knives rotate at 1589 to 2463 rpm.

RESULTS: The Model RA dicer produces uniformly sized nutmeats for candymaking operations at S.O.P.A.D. The high-volume unit more than meets the increased capacity demands of the plant.

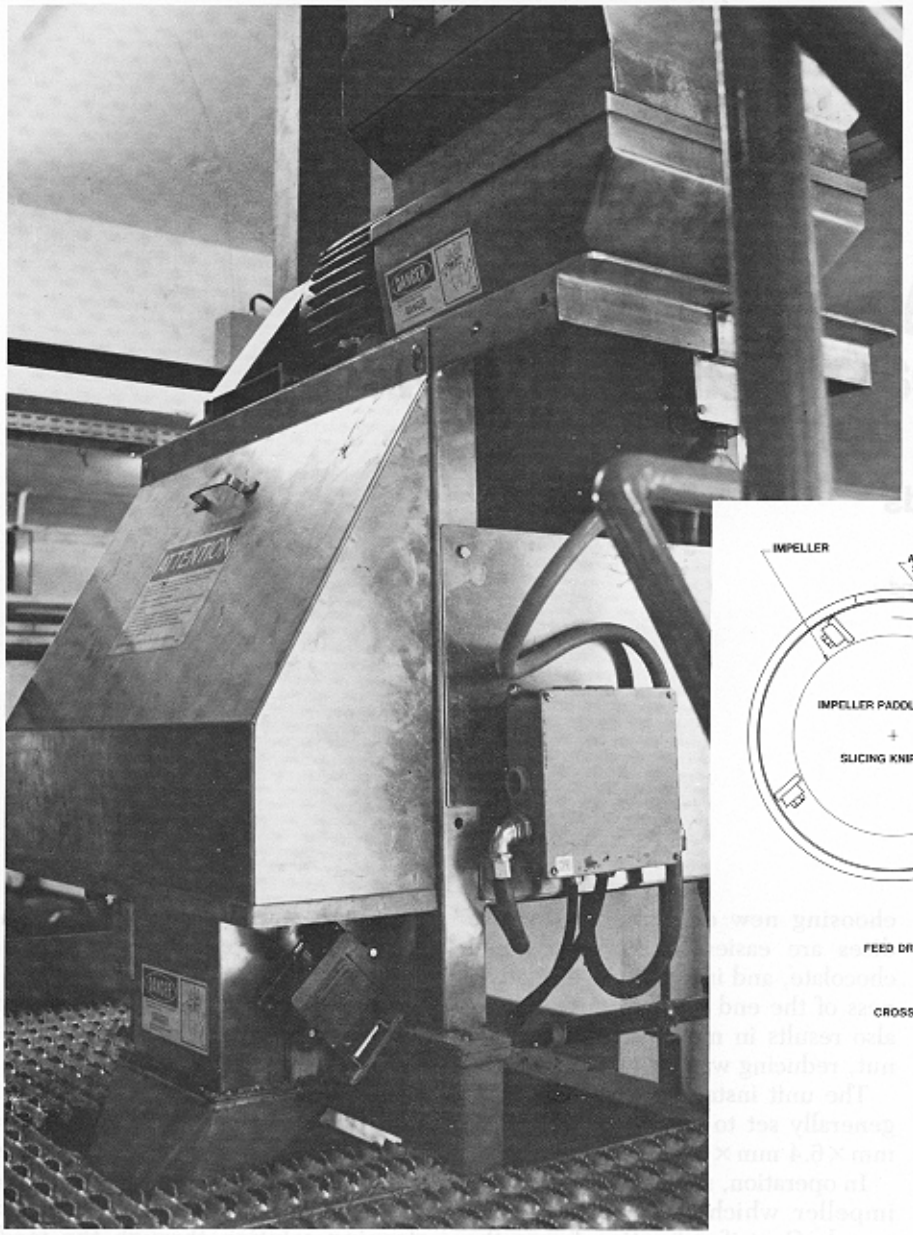
Operations are virtually free of "fines" or product dust due to the clean-cutting action of the knives. Plant officials also like the built-in safety features of the machine, and the fact that it is easy to maintain and keep clean. The stainless steel unit can be washed down by running water or cleaning solution through the feed hopper while the machine is in operation.

Chocolate-making aside, the production steps for Nestlé candy bars are as follows. The nuts are roasted, sorted to size, and fed through the dicer. Diced nuts are screened, weighed, and added to the liquid chocolate. The candy mixture is then molded into bars, hardened and packaged. END

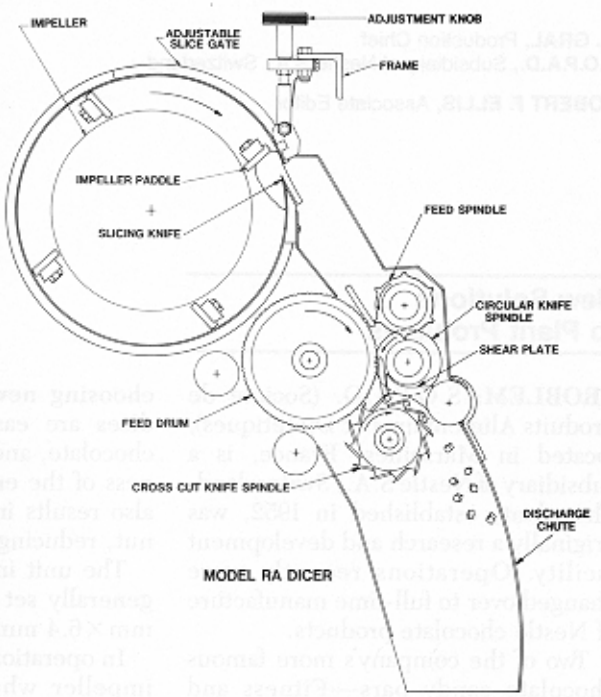
Information on precision size-reduction equipment for nuts or other food products is available from Urschel Laboratories, Inc., P.O. Box 272, Valparaiso, IN 46383.
Telephone: 219-464-4811
Telex: 258 337

Reprinted from FOOD PROCESSING magazine

Nut dicing operations at Nestlé plant



Centrifugal type dicer cuts products cleanly without crush or tear. Inset diagram shows location of cutting knives



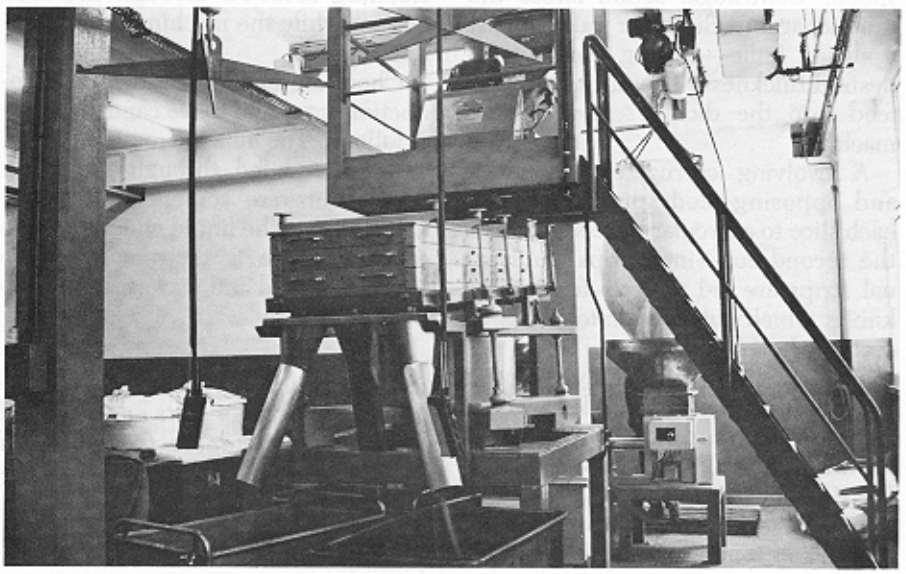


Photo shows complete nut dicing operation. Bags of shelled nuts are dumped into receiving hopper at right, and product is fed to elevated dicer in center. Diced nuts pass through screening apparatus and are discharged by chutes into mobile storage carts. Loaded carts are wheeled to processing room where nuts are mixed with chocolate and other ingredients