

GLOBAL Processing

SOLUTIONS FOR THE PROCESS INDUSTRIES

FLOWMETERS IN RUSSIA

The Russian Federation has given its approval to FCI to import its precision mass flow meters and mass flow/level/temperature switches into the Russian Federation. FCI's manufacturing and calibration facilities have been inspected and approved for GOST R applications (GOST Russian Certification of Conformity). They have been found to be fully in compliance with Russian standards, resulting in the approval for the MT Series. Both the GOST R and the RTN approvals are required for importing flow instruments and their use in hazardous areas of the Russian Federation.

FLUID COMPONENTS INTL
www.fluidcomponents.com

EUROPE



FEATURES

December 2006



SOUTH AMERICA

RO IN SAO PAULO

GE's RO technology saves US\$2 million in Sao Paulo, Brazil. To find out more, click here or go to page 12.



ASIA

DEAD SEA MINERALS

SKF uses mineral processing to reduce MTBF by 400%. Click here or go to page 6.

CONTENTS

by region

ASIA	3
SOUTH AMERICA	12
WORLD	14, 23
EUROPE	17
AFRICA	24
NORTH AMERICA	27

CONTENTS

by category

POWDER HANDLING	11, 17
INSTRUMENTATION	10, 14, 16, 21, 22, 24, 28
PLANT SAFETY	6, 26
FLUID FLOW HANDLING	12, 31

EUROPE



The secret to my success

How UK lubricant company M & I Materials tripled capacity

M& I Materials Ltd. posted increases of up to 194 percent in throughput of a lubricant it manufactures for electrical transformers, due primarily to the addition of a bulk bag unloader and a flexible screw conveyor system from Flexicon Europe, Ltd., Herne, Kent, U.K.

Pre-installation throughput averaged 16 to 20 tonnes (35,264 to 44,080 lb.) per week of the lubricant, MIDEL 7131. Current production is 47 tonnes (103,588 lb.) per week. The gain in productivity, and attendant benefits of improved worker safety, product quality, and higher profitability, were the result of two installations and a plant relocation. M & I doubled the production of MIDEL lubricant with the first installation of

Flexicon equipment at its former plant in Old Trafford, U.K., and effectively tripled throughput after the move to Manchester and specification of a larger process reactor.

M & I Materials manufactures industrial oils, greases, and powder metallurgy products. MIDEL 7131, a halogen-free synthetic ester-based fluid, is one of its best-known products. Demand for the lubricant is growing because of its efficiency as an insulator and its biodegradability and nontoxic composition, which suit it for use in environmentally sensitive applications and facilitate disposal.

Manufacturing the MIDEL lubricant involves blending raw material monopentaerythritol ester, or "penta" with various

acids under heat and pressure in a reactor. Raw material was shipped to M & I in 25-kg. (55-lb.) sacks that were stored on a mezzanine, manually selected, and moved 5 meters (16.5 ft.) to one of two process reactors. There the bags were slit open by workers and gravity-fed through a hatch into a pre-mix batch tank that was already loaded with acids. Each batch required 225 kg. (495 lb.) of penta. After loading a batch into one of two 1-tonne-capacity (2204-lb.) reactors, processing took nine hours.

The process procedure had drawbacks. The use of 25-kg. sacks prevented M & I from achieving economies of scale by buying penta in bulk. Some product was lost during opening and loading of the raw ma-

terial. Moisture contamination caused some of the penta to solidify into chunks, which affected discharge and could damage process equipment. Manual handling posed risk of injury to workers; and there were inhalation dangers, even though plant personnel had safety equipment and a vacuum



Secret, continued

was installed on the reactor to contain dust. The empty penta sacks, moreover, generated waste-disposal costs. As demand for the product grew, so did the need for a way to increase productivity and workplace safety.

Flexicon (Europe) Ltd., worked with M & I engineers to design, install, and bring on-line a bulk-bag discharge and conveyor system that doubled output in the Old Trafford plant to 32 tonnes (70,528 lb.) per week. The system was engi-

neered to handle 1-tonne loads of penta shipped in bulk bags (also known as flexible intermediate bulk containers or FIBCs). M & I was thus able to substitute 25-kg. sacks for more economical purchases of 20 bulk bags at a time.

The system consists of a 4-meter-high (13.2-ft.) bulk-bag frame equipped with motorized hoist and trolley, mounted on load cells for loss-in-weight metering accuracy; a 200-liter (7-cubic-ft.) hopper complete

K-Tron & Premier



...Now, 1 Source Serving Your Feeding, Pneumatic Conveying and Systems Engineering Needs

With the recent addition of Premier Pneumatics, the K-Tron Process Group has greatly expanded the resources and solutions available to process industry customers. **Together, K-Tron and Premier share 1 vision and 1 goal:**

To offer the most complete range of material handling solutions *and* the highest level of customer satisfaction.

Together we offer:

- Gravimetric and Volumetric Feeding Systems
- Pneumatic Conveying Systems/Components
- Bulk Unloading and Storage Systems
- Comprehensive Systems Engineering Capabilities

For more information on the greatly expanded capabilities of the K-Tron Process Group, the only company able to offer total material handling solutions globally, go to www.1processgroup.com



K-Tron America
Routes 55 & 553
Pitman, NJ 08071
Tel: 856-589-0500
E-mail: info@ktron.com
www.ktron.com

606 North Front St.
P.O. Box 17
Salina, KS 67402
Tel: 785-825-1611
premier@premierpneumatics.com
www.premierpneumatics.com



EUROPE

with mechanical agitators to provide an even flow of material into the throat of the conveyor; a 4-m-long (13.2-ft.) flexible screw conveyor with high performance polymer tube, powered by a 2.2-kw (3 hp) gear drive; a discharge-transition adapter that channels material into a pre-mix batch tank; and a control panel.

With the greater bulk-handling capacity of the Flexicon equipment, up to four 225-kg. (495-lb.) batches could be blended with acids in the pre-mix batch tank, which increased production. M & I engineers also installed an acid-stripping tank next to the pre-mix batch tank. The acid-stripping tank removed excess acids from the batch by esterification. This was previously done in the reactors. The pre-mix batch tank and the acid-stripping tank were engineered with a shared heat-exchange

system, which reduced process time to 5 hours from 9 hours, further increasing the amount of material that could be blended. Following esterification, the blend was transferred to one of the two reactors.

When M & I moved its plant to Manchester, the Flexicon Bulk Bag Discharge and Conveyor System required slight modification because the company's engineers settled on a single 5-tonne (11,020-lb.) reactor in place of the 1-tonne reactors at Old Trafford. This eliminated the need for a pre-mix batch tank, since it accepted process batches of 900 kg. (1,980 lb.).

FLEXICON CORPORATION
www.flexicon.com

Secret, continued

SPX Process Equipment

www.spxpe.com

LISTEN

INNOVATE

DELIVER



Pumps

Valves

Mixers

Filters

Manufacturers Of

Bran+Luebbe Copes-Vulcan DeZURIK GD'Engineering LIGHTNING M&J Valve
 OFM Plenty Premier Mill Waukesha Cherry-Burrell WCB-Flow Products