

OGURA



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INTRODUCTION OF AUTOMATED TRANSPORTATION SYSTEM

Akabori, Japan

As a result of the TS16949 process, the Akabori Manufacturing Plant in Japan realized that their in-house transportation system could be improved. Akabori manufactures all of the PTO clutch/brakes and mobile clutch products.

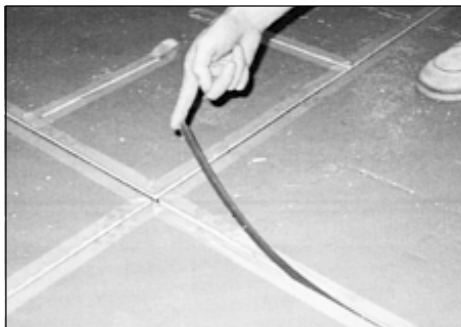
The current plant transport system uses nine manned forklifts. Those forklifts bring product to the line for assembly, remove assembled



New 1.5 ton automated vehicle



Automated vehicle picking up inbound parts to deliver to the assembly line



Guide wires were installed in the floor of the Akabori Plant

product over to the shipping department and then also return the empty returnable containers.

After review, it was determined that the nine manned forklifts could be condensed to two 1.5 ton automated forklifts. These forklifts are guided by a wireless guide wire, which was determined to be the least costly and provided Akabori with the most functional options versus laser guided vehicles. For safety, the floors in the regular work areas were painted green, the forklift transporta-

tion area was painted blue and the lifting/loading areas were in brown. All areas were outlined in yellow. The colored areas help workers to avoid potential interference with the automated vehicles.

This change eliminated the need from anywhere from five to eight people. (This will depend upon how fast the assembly line needs are being met.) The ultimate goal is to fully eliminate all processes that do not add value to Ogura's products.

Ogura receives ISO/TS16949 Certification

Kiryu, Japan

The two plants that produce a majority of the mobile and automotive products have received the ISO/TS16949 Certification. All mobile clutches/lawn and garden PTO clutch/brakes and automotive related clutches that are sold to Ogura's customers in the US and Europe will now be made under this certification.

This certification goes beyond Ogura's ISO9001 and QS9000 certification



ISO/TS16949 certificate

to show how Ogura is leading the way in clutch and brake quality. TS16949 embraces the concept of a process approach, which enables continuous improvements by examining the influential factors of each part of the business process.

By reviewing each process, each area becomes more defined and the related areas requiring improvement become more distinguishable. As a result, critical problems can be foreseen and steps to prevent these problems can be implemented more easily.

OIC EMPLOYEE PROFILE

Gaku Sato Design Engineer

Hi, my name is Gaku Sato. I recently joined Ogura Industrial as an application engineer. I will be involved in the technical side of sales, interacting with customer engineers and the Ogura engineering team in Japan.



Gaku Sato

I was born in Japan, raised in New York, schooled in Pittsburgh and now work in New Jersey. I got my degree in mechanical engineering at Carnegie Mellon University. I interned at Ford Motor as a product engineer in the system development of a digital interface between the powertrain control module and a computer system for diagnostic purposes during this time. They let us test drive cars and served enchiladas on Tuesdays. It was great. After graduation, I spent a year in the industrial quality department at a Kiehl's manufacturing plant for L'Oreal USA. I was primarily involved in product- and component-testing; as well as, compatibility testing, procedure standardizations, system updates and data management. It was a relatively small facility with most departments consisting of a few people. This allowed for more interdepartmental collaboration on a personal level; which was usually good, but sometimes really, really bad. Realizing that the cosmetics industry was not a career match, I was introduced to Ogura, and here I am.

I love music. My free time is usually spent playing or creating music. I also enjoy video games, skating, computers, drawing, cars, etc.; typical male hobbies, I suppose.

I enjoy working here. I look forward to learning more from Ogura and tackling more challenges that I will face.



Artist's rendering of new Ogura manufacturing facility with employee dormitories

Ogura Clutch Ground Breaking in China

The ground breaking ceremony was held in August at the Dong Guang Industrial Park in Canton, China. There were approximately 70 attendees on hand, not only Ogura management personnel, but also local government officials. In his opening speech, Mr. Ogura said that this is the fifth plant to be built outside



Mr. Ogura and local mayor in groundbreaking ceremony

of Japan in the last 10 years. He is confident that the technically oriented work force in the area will help Ogura supply not only the Chinese market, but will also allow for additional growth outside of China.

Ogura on Parade at Kiryuu Yagibushi Festival

Ogura personnel participated in the annual Jumbo Parade held in August on the final day of the 40th Kiryuu Yagibushi Festival. Roughly 120 company personnel participated in the parade. Both men and women dressed in traditional Japanese attire carried a total of 34 Ogura clutch flags and also helped support the five floats that were in the parade.



Ogura employees in traditional dress

Although the weather was great and Ogura had good participation in the parade, they were not able to win the prizes for the floats that they had won before. The Ogura team leaders were quoted in saying that they were disappointed that they did not win the grand prize this year, but they were glad that there were no injuries and no one got sick. (It seems maybe less sake was involved in this year's parade.)

APPLICATION STORY

European Manufacturer Sets Benchmark in Europe with New Z-Turn Commercial Mower

Stella Engineering has successfully tested Ogura's GT5 PTO clutch/brake for a Z-turn, diesel engine, commercial mowing application. The high quality commercial Z-turn mower will be available in the year 2004, with

diesel engines up to 34 horsepower.

The mower uses a multi purpose deck designed for side discharge, rear discharge and mulching. Decks are available from 48" to 72".

Ogura electromagnetic PTO clutch /brakes were chosen by the customer to

meet their demanding load requirements. (The 72" mulching load is significant.) When power is applied to the clutch, the armature and the customized output flange (with heavy duty support bearings for the U-joint) are magnetically coupled to the rotor and engine power is transmitted by a direct drive shaft to the mower deck.

When the coil is switched off the armature is mechanically pulled against a brake surface to assist in

slowing the blades for safe and dependable stops.

Ogura's GT5 PTO clutch-brake is a one piece design, which is simple to install and requires no adjustment. The clutch is also pre-burnished which reduces costs for the manufacturer or the dealer.

Stop time is not the only critical safety issue. The mower also includes roll over protection system (ROPS), which also protects the operator under bushes and trees. The ROPS system includes seat belt and mounting hardware with a sun canopy as an option.

A Diesel engine was chosen by the manufacturer because they typically have a longer life and are more efficient versus a gas engine.

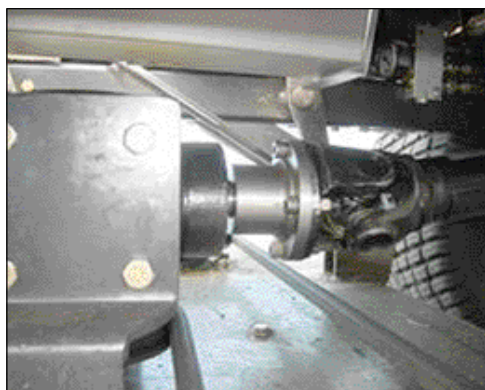
(This is a very important point in Europe.) Diesel operated mowers also have a smaller tank volume and less weight so gas costs can be mini-



New Euro Commercial Mower



GT5 with U-Joint Flange



Mower Clutch Mounted to U-Joint

mized as well.

More durability, less down time and longer life cycles is what this European commercial mower manufacturer was striving for.

The new GT5 clutch/brake from Ogura helped to make this customer's high quality, heavy-duty design goal a reality.



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Seasons Greetings from the staff of **Ogura Industrial**

OGURA IN THE NEWS



Booth showing Ogura's quality. Customers at the 2003 Louisville Expo.

New Products Displayed at Louisville Expo

Louisville, KY

At the Outdoor Power Equipment EXPO, held in October, Ogura displayed the new GT2.5, GT3.5 and GT5 PTO clutch/brakes. Samples of all three units were on display for both manufacturers and users to inspect. All three units offer increased torque capacity, pre-burnishing (this means higher out-of-box torque, which reduces the chance for clutch slip), and stronger backing plates to reduce the chance of physical damage due to accidental contact.



New GT3.5 show graphic

To highlight these and the other Ogura design advantages, new graphics were made for the Louisville Show. The cutaway graphic made it very easy for customers to see both the internal and external design improvements.

OGURA CLUTCH GETS AIR TIME ON ESPN2

On Nov. 1 the Sta-Bil Race of Champions from Mansfield OH was shown on ESPN2. Driver, Shane Shellnut, driving the Ogura Clutch sponsored # 11 tractor, positioned himself near the front of the pack for almost the entire race. The driver that Shane trailed in the front of the pack had an onboard television camera which showed both how close and how fast the tractors in the race were moving. (During an interview with one of the drivers, the driver of the tractor said the modifications they made allowed the tractor to achieve a speed of 91mph on a straight-away.)



Shane during the spill

During the race, Shane got tangled up with another driver and took a spill off his tractor but gave the Ogura Clutch name some very good TV coverage.



Shane being interviewed by ESPN2

The ankle injury that Shane sustained during the race is almost totally healed. In fact, Shane has already been in a couple of November races and is looking forward to an exciting 2004 season.