OGURA ON THE MOVE

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NEW AUTO GUIDED VEHICLES IMPROVE PRODUCTIVITY

Kiryu, Japan

Main Industrial Manufacturing Plant (Plant No.1) Kiryu Japan

The main manufacturing plant in Kiryu (Plant No. 1) makes general industrial clutches and brakes that are used in industrial manufacturing machinery. There are currently over 5,000 different industrial clutch and brake designs. Since the plant makes many different kinds of clutches and brakes in relatively small lot sizes, its challenge is to transport the parts efficiently.

Automated Guided Vehicles (AGV) have been used in Ogura's mobile clutch manufacturing plant for many years. The challenge with putting this transportation system into Plant No. 1 was that the plant had many parts in small lots and there were many routes within the plant that these parts could take.

After mapping the production flow, it was determined that AGVs would help with plant efficiency because it would reduce the amount of workers needed to transport the parts by push cart and in many cases would eliminate the need for loading and unloading of the parts from those push carts.

Magnetic tape was laid down along all of the main routes of the plant. Off of the main route, ten side routes were created with appropriate pick up stations. All plant workers need to do is to push a button and a command can be sent to call an AGV and have it transport parts to the next station. The AGV does not have to take the same route every time. The workers can instruct it to take an alternate route to the next process if it makes sense to do so.

With some AGVs the AGV itself transports the parts; however, to provide the most flexibility Ogura Production Engineering chose a cart type AGV. This makes it easier to drop off and pick up component part work in progress. The difficulty was how to control both the AGV and the cart regarding stopping and starting. Since the weight of the cart can change, depending upon the part type and quantity, the acceleration and deceleration rate needs to be controllable to avoid parts falling from the cart. Test work was conducted to determine a ratio between weight, acceleration and deceleration. This is now automatically programmed into the AGV. The goal to make a flexible AGV system that can be modified, changed or added onto in the future was achieved. More importantly it was achieved by using personnel from Ogura's Production and Robotic Engineering departments. No outside contractor was involved with the project. In the future, Production Engineering plans on linking the robotic machining centers to automatically call and load the AGVs which will help to automate the production process even further. ●

Magnetic Tape applied to the Production floor

Ogura in-house designed Automated Guided Vehicle with pull cart

NEW ADMINISTRATIVE ASSISTANT

Somerset, New Jersey

Lisa Beninato

Hi, my name is Lisa Beninato and I recently joined Ogura Industrial as an Administrative Assistant. I was born and raised in Sayreville, New Jersey.

I have been an administrative assistant for the past 8 years and I am working towards being an executive assistant. I've worked in various business industries where I've developed many skills and have dealt with many challenges.

When I am not working, I spend time with my two year old nephew Brandon. I enjoy reading, going to the movies, long rides, computers, concerts, shopping, cars, traveling and experiencing different restaurants, especially in NYC.

I am very excited to be working here and look forward to being a part of the continuous growth and success of Ogura Industrial. ●

2008 GIE /EXPO SHOW

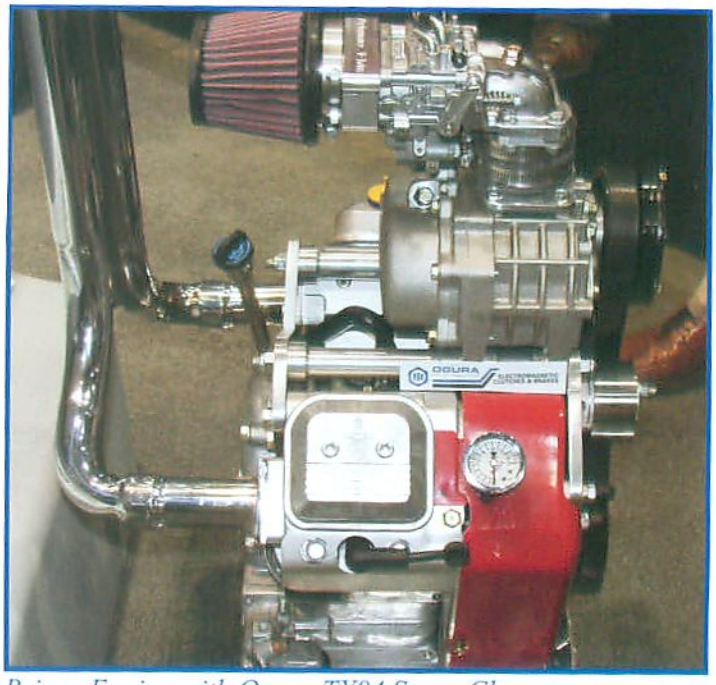
Louisville, Kentucky

In October Ogura participated in the Louisville GIE-EXPO for the 16th time. As with past shows it's an opportunity for Ogura personnel to meet directly with both the end users and the original equipment manufacturers. As a parts supplier to OEM's it's rare that Ogura personnel get to discuss potential improvement directly with the end users. The Louisville Show provides an opportunity for those important discussions. In 2009 Ogura will participate once again in the Louisville show to help maintain this important customer connection.

Besides all models of PTO clutches Ogura also displayed a small supercharger on a Briggs engine. This is the same type of engine that Bobby Cleveland uses for his mini tractor racing. The engine/supercharger received a lot of attention and sparked some potential interest for other customers that need a momentary high boost of horsepower but don't want the expense of a larger engine. ●

Ogura Employees and Sales Reps at the GIE-EXPO Show

Ogura personnel answering customers' clutch questions



Briggs Engine with Ogura TX04 Super Charger

OGURA ACHIEVES 300TH MILLION AIR CONDITIONING CLUTCH

Akabori, Japan

At the end of September Ogura produced its 300th million air conditioning clutch. It took until 1995 for Ogura to reach its 100th million air conditioning clutch. Seven years later the 200th million air conditioning clutch was reached and now within six years the 300th million mark was made. As air conditioning becomes standard in more cars around the world, air conditioning clutch usage continues to grow. ●

Application Story

BAM! ZOOM! TO THE MOON!

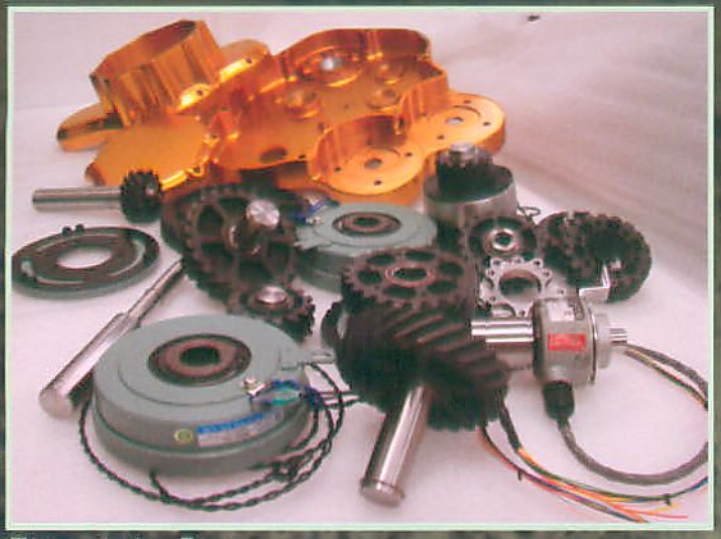
NASA's new Chariot Lunar concept vehicle uses Ogura MMC 5 clutch…

Lunar Vehicle

It sounded strange. Every day Ogura receives calls from customers with far out applications. But this one was really far out.

NASAs Johnson Space flight center (Houston TX) was designing a vehicle that would have six double wheels, each with independent traction, steering and (active) suspension. In addition, the wheels needed to be capable of raising or lowering the entire machine so that they could traverse rocky, uneven terrain, or "Crab Walk" as they now call it.

The machine also needed to be very robust and able to continue on its way, even if one or two wheel sets became completely disabled. This robustness was a must because it would be operated far away from any repair depot; about 240,000 miles away on the MOON!!! NASA's goal for this machine is to help Astronauts set up an outpost on the Moon by 2020.



Transmission Parts

The Ogura MMC5 clutches are used to electrically engage and disengage each of the six motorized gearbox drive systems from the paired drive wheels. (This gives the vehicle a form of Traction Control.) In addition, the clutched drive system can disconnect one drive wheel from the motor and gearbox in the event of crash damage, a locked wheel, electric motor or transmission failure. When technical difficulties arise, the Ogura clutch helps to insure that the mission can be completed and get our Astronauts safely back to base.

Ogura worked with NASA to specify Ogura MMC high torque, single surface electric clutches into their transmissions. These clutches are used by our Marine customers on fishing vessels and are very reliable. They are the most lightweight, highest torque Industrial Clutches available today. The double flux design, together with a special metal to metal friction surface, make it perfect for the important size and weight concerns of this customer.

Ogura meets challenges of earth based projects every day. So it was a nice change for Ogura to consider the unique application presented to us by NASA. In these challenging times, Ogura continues to break new ground in applications for our products.

Ogura is pleased to help NASA kick up a little moon dust as we continue to explore this amazing universe of ours!

MMC Series Clutch

For a video of the Chariot in action see: http://www.newscientist.com/article/dn13529-lunar-chariot-prepares-to-tear-up-some-moon-dust.ht ●

OGURA INDUSTRIAL CORP.

Happy Holidays From the Staff of Ogura Industrial Corporation

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Happy Holidays

In The News

OGURA SPRING APPLIED BRAKE FEATURED IN MACHINE DESIGN ARTICLE

REPORTER'S NOTEBOOK

Safety brake helps put **high-def eye** in the sky

Next time you watch a major sports event on TV, especially those in high definition, you could be seeing it through the lens of an ActionCam HD from **ActionCam** (*actioncamhd.com*) Tulsa, Okla. Thanks partly to **Ogura** RNB-20G spring-applied brakes, ActionCam suspends a camera moving at up to 60 mph over the field of action — and that field can cover a million square feet. (Current "flying" cameras are restricted to covering 250,000 ft².)

The setup is relatively simple: Four cable reels sit in the corners of the venue. An Ogura brake mounts on the central shaft of each reel. And from each reel, lightweight, high-tension rigging cables, along with a military-grade fiber-optic cable, are strung 90 ft or higher to the top of the venue's corners then to the center of the field, where they meet to support a camera. The cables measure ¼ in. in diameter and have a brake strength of over 2,500 lb. The camera weighs about 100 lb, and if the cables are rigged properly, no static or dynamic force should exceed 250 lb. So the system has a safety factor of 10 to 1.

Using a computer controller, operators reel in or let out cable from the four reels, letting them move the camera down and across the field, as well as pan and zoom using two joysticks. The camera itself is a Fujinon HD-grade model with an 18× zoom lens. The camera is fully stabilized linearly and rotationally.

For safety, a fifth reel and Ogura brake are mounted midfield and its cable attaches to the camera. If the ActionCam controls detect a malfunction, or if any of the four corner reels lose power, this safety reel pulls the

An Ogura brake on each reel acts an emergency stop in case of power failures. It also holds the cable in position when the reel motor is not engaged.

In the December 11th issue of Machine Design an article about one of Ogura's customers (ActionCam, featured in last quarter's newsletter) showed how they were using an Ogura RNB-20G spring applied brake to hold the control cables for high definition cameras.

The high definition camera is the one that's used in stadium events, like football, where they can get a direct overhead view of the action. The camera can actually be programmed to follow the ball or the runner to get an up close feel of being right in the center of the action. The brakes make sure that when the camera is not supposed to be moving, it isn't. More information on the Ogura RNB brakes can be found on the Ogura website www.ogura-clutch.com ●

OGURA INTERVIEWED IN MOTION SYSTEM DESIGN

Motion System Design asked Ogura to participate in their productivity forum for their December issue. Ogura's President, Frank Flemming, was interviewed for an article describing the current and future needs for clutches and brakes in industrial applications. For more information on this please pick up a copy of the December issue of Power Transmission Design. ●

BOBBY CLEVELAND TAKES 3RD IN POINTS CHAMPIONSHIP

Delaware, Ohio

In September at the "Race of Champions" Bobby Cleveland took an overall 3rd place in the Points Competition. 2008 was a very hectic year for Bobby so he didn't get to race in all the races he wanted to but in 2009 he is going to be back at it. Also in 2009 Bobby is going to be competing in mini tractor pulls. These tractors will utilize an Ogura Supercharger to boost engine horsepower. ●

Bobby Cleveland holding his 3rd place trophy from the Championship Race

Chuck Miller driving a supercharged mini tractor