

# Highlights 2004

We wish to keep creating a sustainable society.



With our eyes set toward our future, we establish an "eco-and human-friendly corporate culture"

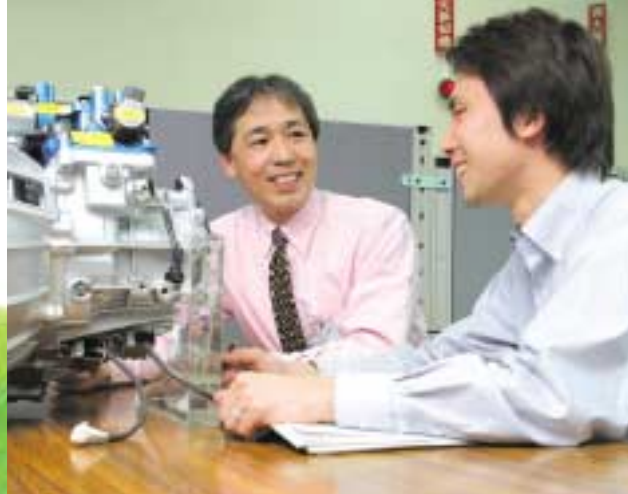


"Innovate, Create and Refine"  
Bring people into harmony with the earth

# Our Keywords are Products.

Pushing for Even Higher Fuel Economy

Development of a new auto-transmission with excellent



"The automated manual transmission was a totally new product to me, so I discovered something new every day. That's why the completion of the product brought us a deep sense of satisfaction and fulfillment," said Mr. Naito, TL of the Drive Train Engineering Department, left. On the right is Mr. Imai.

Currently, our global society is facing the challenge of reducing carbon dioxide and preventing global warming. Under these circumstances, higher fuel economy and reduction of emissions are strongly demanded of automobiles. While the development of a transmission with higher transmission efficiency has become an urgent mission, our company succeeded in developing a motor-operated automated manual transmission.

This automated manual transmission was designed by providing the manual transmission (MT), which already has excellent transmission efficiency, with an electronic control system and an automatic transmission system. Unlike the conventional automatic transmission (AT), this system disengages the clutch when shifting gears, and its computer conducts the same operation that humans

Equipped with Wide-Ranging Human-friendly Systems

Launch of super-lightweight wheelchairs

We offer a wide range of welfare-related products including self-support reclining beds, electric wheelchairs, and compact electric lifters for physically impaired people and aged people. In March 2004, we developed and launched an "eco-and human-friendly," recyclable, super-lightweight wheelchair, which is equipped with the latest wide-ranging systems. The wheelchair offers strengthened human-friendly systems and achieves the world's highest level of features: 10 kg weight reduction from our existing wheelchair and a 20 km range on a single charge. Environmental considerations have been incorporated into the wheelchair, as hazardous cadmium is eliminated by using Ni-MH batteries, and recyclable parts are used.



# Manufacturing "Eco-and Human-friendly"

## and Reduction of Emissions

### Automated manual transmission efficiency

Highlight  
**2004**  
2004 Released  
in April 2003

usually provide. This technology that we have developed has earned an excellent reputation and has begun to be used in F1 racing cars. While the fuel economy of an AT has been improved by introducing multi-step transmissions and continuously variable transmissions (CVT), the automated manual transmission has attained automatic shifting operations, taking advantage of the benefits of the MT, such as low cost, excellent transmission efficiency, and direct drivability.

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Mr. Hosoi, Mr. Naito, and Ms. Sugimoto on the development team (from left to right)

### Integration of AT convenience and MT energy conservation

This new technology has combined the structure of MT and the convenience of AT. The automated manual transmission is operated by three motors, clutch, shift, and select motors, which replace the operations of the drivers' hands and feet. This transmission offers high fuel economy, low cost, and stick-shift drivability.



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## Development of the World's First Intelligent Parking Assist (IPA)

### We pursue the development of eco-and human-friendly ITS (Intelligent Transport Systems)

Highlight  
**2004**  
2004 Released  
in September 2003  
**The first of its kind**

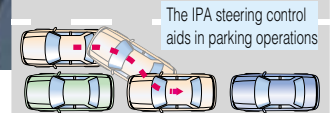
We are stepping up efforts to build up a more comfortable, convenient, and environmentally friendly ITS (Intelligent Transport System) society. From an environmental viewpoint, ITS can help achieve a smooth, congestion-free flow of traffic, resulting in higher fuel economy and a reduction in nitrogen oxide emissions. Our efforts have been put into the development of ITS-related driving assist systems, including the parking assist system that helps back-in parking operations into parking spaces or garages, and the lane departure warning system that helps drivers stay in their driving lanes.

We incorporated the world's first Intelligent Parking Assist (IPA) into the new Prius that was released in September 2003. This system, jointly developed with Toyota Motor Corporation, is an innovative system that helps park the car. Simply set the parking spot on the display, and the car will control the steering into the parking spot. The IPA provides safe, smooth parking operations and also has the benefits of higher fuel economy and reduced nitrogen oxide emissions during complex parking operations.

We will continue to work toward the development of intelligent and information systems for automobiles in order to establish safer, more efficient systems for the automobile.



IPA performance check



### Interview with a developer

### "I want to startle the world"

The Award for Technological Development was granted by our customers (February 2004)

The IPA, jointly developed with Toyota Motor Corporation, became one of the most popular subjects in automobile magazines as a pioneering innovation for future automotive systems and demonstrated our company's great potential. I'm most delighted with this award, because with the help of our development sections, we devoted all our energies to wide-ranging efforts, from advanced development to in-vehicle tests on test tracks. I would like to take this award as an encouraging opportunity to develop more user-friendly cars that will startle the world.



Mr. Saiki, ITS Engineering Department

Highlight  
**2004**  
2004 Released  
in March 2004



Ms. Sasaki from the Keep-Able Department is trying out the super-light wheelchair.



The wheelchair weighs just 19.8 kg (with an electromagnetic brake as standard equipment and without a battery) and is the lightest ever in the industry! The lightweight benefit reduces the burdens of the caregiver, allowing for easier trips.



Mr. Goto, group manager (left), and Mr. Yuki pursue the development of products, keeping in mind "go further more comfortably, easily, and safely."

# We Thrive in a Sound Society

Our Policy is "We Take Care of our Own Emissions"

## A waste-incineration facility with super-low dioxin emissions began operations

Highlight  
**2004**  
2004 Launched  
in June 2003

To establish a recycling-based society through the effective use of resources, we have been actively promoting waste reduction and resource-saving activities with a target of zero emissions. As the Waste Management and Public Cleansing Law and the Law concerning Special Measures against Dioxins place tighter restrictions on dioxin emissions, we introduced a state-of-the-art waste incineration facility in June 2003 based on our policy "We take care of our own emissions."

2002, we began operating a plant waste-recycling facility called the Aisin Eco-center, allowing maximum recycled use of our own waste materials. Now that all our factories have already reached the goal of zero landfills in FY 2001, we are currently working to achieve a new and challenging goal, zero waste materials by the end of FY 2005.

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Checking the combustion status in the furnace at the centralized monitoring room in the waste incineration facility

### Facility description

Materials for incineration: sludge, waste oil, liquid wastes  
Incineration capacity: 1,510 kg/ h  
Installation period: June 2003  
Disposal performance: 1,192 kg/ h (2003)  
Dioxin reduction capability  
Old incinerator: 0.96 ng-TEQ/ Nm<sup>3</sup>  
New standard level: 0.1 ng-TEQ/ Nm<sup>3</sup>  
New incinerator: 0.0000014 ng-TEQ/ Nm<sup>3</sup>

"I'm relieved that we have cleared the strict environmental standard by a substantial margin. However, there is no end to our environmental efforts. We are going to try to meet the zero emissions challenge!" said Mr. Sekiguchi (left) from the Environment Department and Mr. Miura from the Nishio Plant.

Generation of dioxins is a major problem for incineration facilities. To achieve the maximum reduction in dioxin levels, we additionally installed a state-of-the-art catalysis tower, thus enabling reductions in the levels of dioxin in the gas emissions to 0.0000014 ng-TeQ/Nm<sup>3</sup>, which is far better than the 0.1 ng-TEQ/Nm<sup>3</sup> standard agreed to by our city. In recognition of such activities, our facility was chosen as one of the "Eco Spots Aichi" in March 2004.

Prior to the introduction of the incineration facility in May

Eco Spots Aichi...Aichi Prefecture's Web site, which carries information on companies that have introduced environmental conservation technologies and affluent nature spots

### Our facility

Scraps of used brick are recycled



Aisin Eco-center

## Company-wide Efforts toward Normalization

# To establish a harmonious working environment for all employees, including people with disabilities

**Highlight 2004**  
2004 Award granted in March 2004

We are proud to be the industry leader in employing persons with disabilities, with an employment rate of 2.51%. With the aim of establishing a harmonious working environment for all employees, including people with disabilities, we have been providing consistent assistance to employees with disabilities from initial employment and education to long-term employment stability. Among these, long-term employment stability, in particular, is given top priority. In order to secure a comfortable work environment for people with disabilities, we are stepping up consultation activities by holding meetings and providing active assistance in preparation for the qualification tests. Thus, we are expending utmost efforts in creating an environment where all workers will feel positive about working for our company.

### "Award for Creating a Human-friendly Town"

We made a variety of improvements to the hardware aspects of all processes so that employees with disabilities can work comfortably together with other employees. Our efforts include not only improving work desks and tools, and setting up a barrier-free environment, but also installing accessible toilet stalls, textured paving blocks, and "Patlite" security systems. In recognition of such activities, in March 2004, we won the Aichi Prefecture "Award for Creating a Human-friendly Town" for the FY 2003.

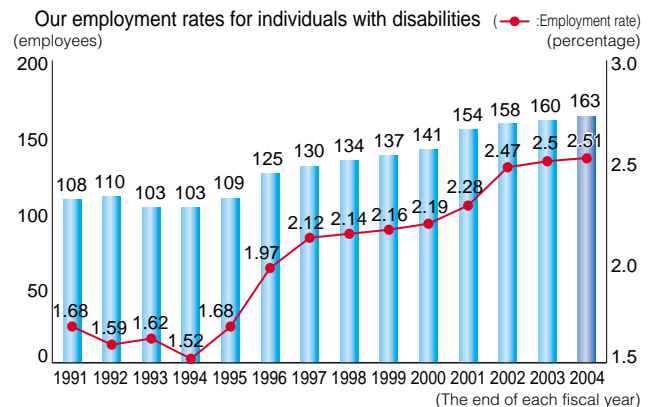
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"I would like to create a more comfortable and dynamic work environment from the perspective of people with disabilities," said Ms. Takabayashi, a staff member at the Volunteer Promoting & Health Service Center



Ms. Takabayashi (right) makes time to talk to employees and Mr. Sawada at the Handa Plant



## Used for beautification of factories

### Recycling process for brick scraps



Brick scraps collected from each plant



Sizing and crushing of brick scraps

Brick scraps are consigned to ceramic manufacturers for recycling



Handa Plant flower garden made with recycled bricks

## Interview with a promoter of waste reduction activities



### Mr. Sugiura, Aisin Eco-center

Many phases of the Aisin Eco-center have been improved and reinforced, but we have just arrived at the beginning stage. We have been tackling daily activities, searching for ways to recycle items that have been conventionally disposed of, and re-using them for society. We will reinforce our facilities, employees, and technologies, aiming for 100% recycling.