Report on the 52nd Japan National Skills Competition

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2015 New Year’s Message from the President

I would like to express my great appreciation for your continuous support.

Looking back on the Fujikura Group in 2014, although there was progress in the resumption of nuclear power plant operations and a positive turnaround in certain areas, including an improvement in the export environment owing to the depreciation in the yen’s value, the domestic market continued to mature and shrink. Consequently, aiming to successfully execute our structural reforms, we spent the year focused on tackling the restoration and revitalization of the Electronics business, and on the improvement of earnings in our domestic Infrastructure businesses.

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The Fujikura group will work together as a team and will become a company with a stronger & higher profit structure.

Now, I would like to introduce our initiatives by each in-house company.

The Power & Telecommunication Systems Company will head for completing structural reform that have been conducted to adjust itself to the changes of the domestic market. It has also decided Brazil, Indonesia and Myanmar as focal points for its global expansion and will steadily explore each market.

The Electronics Business Company has recovered its production capacity, and big orders have been back from last year. It is expected to be profitable in this fiscal year, and will aim at increasing its volume and improving its productivity.

The Automotive Products Company has been growing every year, and will continue to be so in the future. It will expand its business by strengthening customers relation functions through setting up customer service centers to respond customers’ needs adequately and proceed business expansion that regards automobiles as platforms.

The R&D will enhance commercialization of fiber lasers, optical interconnections, superconductors and medical. It will create metabolism for the future.

We will inform you of our new products and technologies through Fujikura NEWS. I would like to ask you for your continuous support.

Yoichi Nagahama, President & CEO

WIND EXPO 2015 - Third International Wind Energy Expo & Conference

Fujikura will be exhibiting at WIND EXPO 2015 - Third International Wind Energy Expo & Conference of Tokyo Big Sight.

This exhibition will show torsion resistant power cables for wind turbines. In addition, it will also present IEC- or IEEE-conforming separable connector used in Ring Main Unit or transformer.

Fujikura has been working on the development of low-cost, good workability 33 kV materials to meet growing demands for materials connected to 33 kV systems in step with increasing power generation from wind turbines and windfarm sizes.

Our exhibits will center on the new products for 33 kV systems.

We are really looking forward to seeing you at our booth.

Yoichi Nagahama, President & CEO
Development of
High-power Pulse Fiber Laser FLP-G75S

Pulse fiber lasers found widespread applications in the micromachining field, especially in metal marking and scribing and now require higher performance. Fujikura has developed a high-power pulse fiber laser rated at 75 W (FLP-G75S). This laser has achieved the industry’s top-level features including high-power (75 W average output power, 1.1 μJ pulse energy) and high beam quality (M²≤1.7). They contribute greatly to productivity increases by enabling machining in hard-to-machine areas (Fig. 1), deeper and higher speed machining (Fig. 2). In addition, the new device has substantially more compact and lighter in weight than existing ones, which helps drastic improvements in flexibility in assembling to laser equipment or systems.

Fig. 1: Conceptual drawing of beam quality vs power between other company products and ours

Fig. 2: Conceptual drawing of power vs machining speed between other company products and ours

Features
- Mating method (CM21 Connector)
  The junction has two positioning keys conforming to IEC61076-2-101 M12 D-coding standards to prevent improper mating. The mating screw is M12 (1 mm pitch) and capable of mating and demating smoothly.
- Water-and dust-proof (Non-water proof modular plug for CM21 connector only)
  The inside of a CM21 connector plug has an O-ring that thoroughly prevents water and dust from entering when the connector is connected.
- Cable
  The cable uses a AWG22 (0.3 SQ) conductor, which displays reliable communication ability, and double shields as greater importance is put on noise resistance.
- Combination of connector and plug
  We produce a cable with a CM21 connector at one end and a modular plug at the other end using modular plugs of AWG22 conductor size in addition to a cable with CM21 connectors at both ends.
- Reduction in total man-hour count
  The products are supplied as over-molded cable assembly, which enables our customers to reduce the total man-hour count.

Product Specifications

<table>
<thead>
<tr>
<th>Items</th>
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</tr>
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<tbody>
<tr>
<td>Rated power</td>
<td>75 W</td>
</tr>
<tr>
<td>Oscillation mode</td>
<td>Q-switch pulse</td>
</tr>
<tr>
<td>Wavelength</td>
<td>1080-1090 nm</td>
</tr>
<tr>
<td>Pulse width</td>
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<td>Beam quality</td>
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<tr>
<td>Dimensions</td>
<td>220x240x140 (mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 7.5 kg</td>
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<tr>
<td>Interface</td>
<td>Analog/digital (logic) USB</td>
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FLP-G75S

Rated current: 3A/contact
Rated voltage: DC30 V
Dielectric withstand voltage: 1,000 V AC (p.m.u) / minute
Insulation resistance: 100 MΩ or higher/500 V DC
Operating temperature range: -25°C to +70°C
Waterproofness: IP 67 (mated) / CM21 (PE), Modular plug: IP20
Number of contacts: 4 contacts

Development of CM21 Series Connector Harness for Industrial Ethernet

Fujikura has developed the CM21 over-molded cable assemblies for industrial Ethernet. These cables conform to IEC61076-2-101 M12 D-coding standards and can be used as an interface for industrial Ethernet.

The junction of the CM21 cable plug has an O-ring, which prevents water and dust from entering when the connector is connected. Modular plugs are also available as options regarding the connector to cope with a variety of uses. The products are supplied to customers as over-molded cable assembly and thus help to reduce the total man-hour count of connecting parts.

New Business Development Center  fiber_laser@jp.fujikura.com

FLP-G75S

Machining speed: Approximately 4 folds
General-purpose products

Output power
Low  Beam quality (M²)  High
40W  50W  75W
20W  50W  75W

Output power
General-purpose products

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Fig. 2: Conceptual drawing of power vs machining speed between other company products and ours

Output power
General-purpose products

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DDK LTD.  ddk.contact@jp.fujikura.com
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Power & Telecommunication System Strategy & Sales Engineering Division  telcon@jp.fujikura.com

WIND EXPO 2015 - Third International Wind Energy Expo & Conference

Feb 25 (Wed)-27 (Fri) 2015, 10:00-18:00 (10:00-17:00 on Feb 27)

Tokyo Big Sight (Fujikura booth W2-23)

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