



May 18, 2022 DRIPS Inc. Yamato Transport Co., Ltd.

# DRIPS, Yamato Transport to Launch Orthodontic Mouthpiece Manufacturing Using 3D Printer and Delivery on May 18, 2022

— Enabling speedy delivery of mouthpieces in line with progress of treatment —

DRIPS Inc. (Headquarters: Chiyoda-ku, Tokyo; Representative Director: Yasutaka Kakumu, hereinafter "DRIPS"), which offers the "hanaravi" mouthpiece orthodontic service, and Yamato Transport Co., Ltd. (Headquarters: Chuo-ku, Tokyo; Representative Director and President: Yutaka Nagao, hereinafter "Yamato Transport") will launch the manufacturing and delivery of orthodontic mouthpieces using 3D printers installed in Yamato Transport's domestic network and their delivery on Wednesday, May 18, 2022.





# 1. Background and Purpose

Although wire has traditionally been the standard for orthodontic treatment, the use of mouthpiece orthodontics—which offers the advantages of transparency, being less conspicuous, and lower cost than wire—is expanding for mild to moderate cases. Mouthpiece orthodontics requires 20 to 30 different phases of dental models per patient because the mouthpiece is changed every week

or two to gradually adjust detention. Moreover, the uniqueness of each mouthpiece to the patient makes mass production of mouthpieces challenging, so it was previously common practice to manufacture in bulk from the start of orthodontic treatment to completion based on the initial plan at overseas dental laboratories, where labor costs are lower, and import them.

DRIPS, which aims to prevent disease and maintain health by improving the oral environment, established a partnership in 2019 with an orthodontic specialist and started offering mouthpiece orthodontic services. Since the launch of the service, the company has received inquiries from more than 10,000 people wanting to receive in the service because the remote follow-up consultations via social media makes it easy even for people with busy schedules, or those who do not have a clinic in the vicinity, to start orthodontic treatment. Moreover, since effectiveness verification to date has shown that it is possible to shorten the treatment period by changing mouthpieces more promptly in accordance with tooth movement, DRIPS was seeking to reinforce its manufacturing system to reduce patient burden through faster mouthpiece changes and to achieve mass customization, including mechanization.\*1

With the aim of optimizing the supply chain for medical device and pharmaceutical manufacturers demanding high operational quality, Yamato Transport introduced a 3D printer at its Haneda Chronogate facility in 2017. It has since been making and delivering prototypes in the medical domain, in addition to modeling surgical jigs for artificial joints. The company has now developed a tool that automatically corrects dental modeling data into data suitable for 3D printer modeling. By mechanizing the entire process—from creation with a 3D printer to finishing—Yamato Transport has achieved Japan's first on-demand, customized production of mouthpieces.

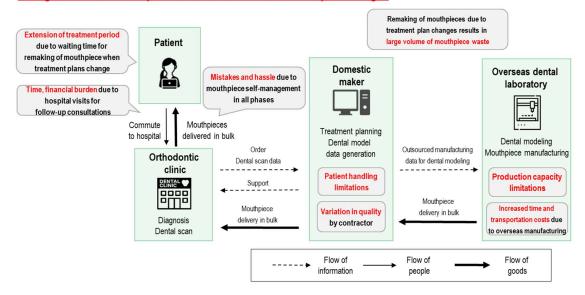
DRIPS and Yamato Transport will contribute to the orthodontic mouthpiece market with growth potential by establishing a stable manufacturing system for mouthpieces in Japan. They will also provide new value to the orthodontic realm in Japan by providing services in line with the treatment progress of patients toward shortening treatment time, and reducing the loss of mouthpieces that end up being disposed of due to changes in treatment plans.

\*1. Mass customization: The manufacturing of products that satisfy individual customer needs while maintaining productivity rivaling that of mass production.

# 2. Service Delivery Flow and Value

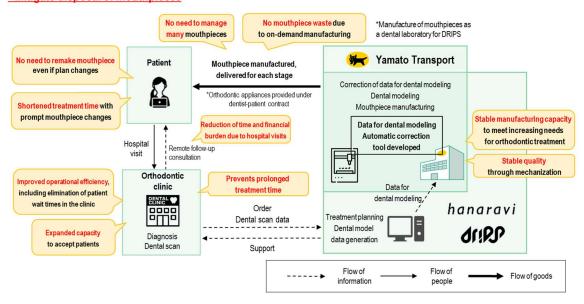
# General Service Delivery Flow and Issues

- · Patients abandoning orthodontic treatment due to prolonged treatment time and other factors
- · Large number of mouthpieces discarded due to treatment plan changes



#### Flow of Our Service and Benefits

- Further shorten treatment time, facilitating orthodontic treatment
- · Mitigate disposal of mouthpieces



## Value Offered to Patients

Prompt receipt of the appropriate mouthpiece in line with treatment progress contributes to the avoidance of trouble such as self-management of many mouthpieces and wearing of the wrong mouthpiece, as well as prolongation of treatment period due to remaking of mouthpieces. This helps to prevent patients from abandoning treatment. Moreover, a mouthpiece that matches the individual's dental movement is delivered more promptly, allowing for faster replacement and shorter orthodontic treatment period.

#### Value Offered to Orthodontic Clinics

- 1) Reinforced mouthpiece manufacturing system and shortened orthodontic treatment time, expanding patient handling capacity
- 2) Elimination of patient wait times through remote follow-up consultations, resulting in improved operational efficiency
- 3) Reduced risk of extended treatment duration and disposal caused by extra time required for mouthpiece production when treatment plans are changed
- 4) Provision of safe, stable quality mouthpieces manufactured in Japan

#### 3. Future Development

DRIPS will continue to increase the number of trusted partner clinics to allow for the accommodation of more patients. Going forward, the company intends to expand its services from the field of dentistry to preventive medicine for the entire body, thereby contributing to the reduction of social security costs in Japan. DRIPS further plans to accept manufacturing on an OEM basis.

Following the installation at Haneda Chronogate, Yamato Transport will sequentially add 3D printers to major Yamato Transport bases nationwide to reinforce its services for more rapid delivery by manufacturing at locations closer to patients. In addition to mouthpieces, the company will attempt manufacturing of other products using 3D printers and new means of transport and provide integrated solutions—from design and development to manufacturing and delivery—to satisfy requirements of digital manufacturing including high-mix, low-volume production and ondemand manufacturing, and adopt mold-less manufacturing with the aim of reducing costs, as well as contribute to the transformation of manufacturing processes and supply chains of makers who are bolstering additive manufacturing for the future.\*<sup>2</sup>

\*2. Additive manufacturing: A method of modeling or processing in which manufacturing is accomplished by adding materials or layers, such as with clay sculpture.

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#### Reference:

# "hanaravi" mouthpiece orthodontic service

hanaravi, provided by DRIPS Inc., is a mouthpiece orthodontic service launched by company founder Yasutaka Kakumu—also a doctor—who saw people suffering from various diseases resulting from the deterioration of the oral environment and wanted to contribute to preventive measures being taken from the early stages. By lowering the total price to about 300,000 yen (approximately one-third the conventional cost) with the application of cutting-edge technology and reducing the number of hospital visits to at least one through remote follow-up consultations, thereby lowering the hurdle of financial burden and hospital visits, DRIPS helps more people to live healthier lives in the era of the 100-year lifespan.

DRIPS Inc.: <a href="https://www.hanaravi.jp/corporate/">https://www.hanaravi.jp/corporate/</a> hanaravi special website: <a href="https://www.hanaravi.jp/">https://www.hanaravi.jp/</a>

## Related press release:

Yamato System Development Launches 3D Printing and Delivery Service (January 27, 2017) https://www.yamato-hd.co.jp/news/h28/h28\_103\_01news.html