

July 25, 2017

## Development of an autonomous running/gathering cleaning robot "TO gather"

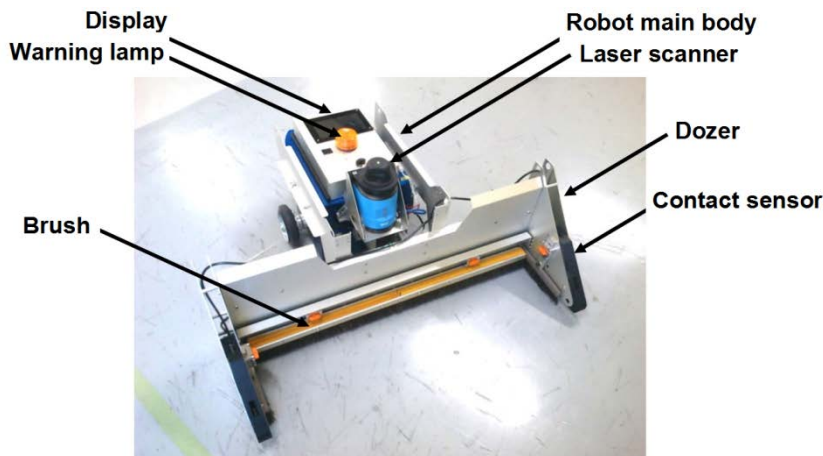
Teaming up with Takenaka Corporation (Mr. Masahiro Miyashita, President), Okaya & Co., Ltd. has successfully developed a cleaning robot, "TO gather"<sup>\*1</sup> (Patent pending), that automatically collects refuse as a means to reduce the burden on workers in workshops and factories.

Amid the increasing demands for new building construction in Japan, a lack of construction workers is becoming an outstanding issue. One of the features of the cleaning robot "TO gather" is to collect refuse from construction site floors, in an area that forms part of a rectangular cleaning area enclosed by colored safety cones. The laser scanner detects the safety cones placed at the four corners of the cleaning area to identify the area to be cleaned, while automatically generating the movement routes.

Regarding fireproof covering construction work, workers conventionally clean up excess materials dropped on the floor at the end of the day's work. Since this heavy task takes as much as 20% of the total hours, an automatic cleaning robot has been desired to improve the labor environment. The amount of refuse is so much that for a conventional vacuum cleaner the tank is soon filled up, making the work inefficient and taking more man hours. This cleaning robot, however, gets to work at any time during the day; workers collect and handle the refuse that has been collected from the designated areas, so it aims to reduce the cleaning time by half. The robot is capable of cleaning 100 m<sup>2</sup> in 30 minutes (area and time for reference purposes)

Going forward, Okaya & Co., Ltd. and Takenaka Corporation will join a rent/lease firm to continue trials and improve the developed autonomous gathering robot, so that we can launch sales by October 2017.

The robot "TO GATHER" will see you at the Okaya & Co., Ltd. booth of the "Robo Cup 2017 (Robot Technology and Industry Fair)" at Portmesse Nagoya (Nagoya International Exhibition Hall) from July 27 to 30, 2017.



### Specifications:

Main body: 64 cm long, 40 cm wide and 29 cm high, Blade section: 100 cm wide and 29 cm high

Main body weight: 22 kg (including Dozer), Travelling speed: 0.1 m/second,

Continuous operation time: 8 hours

Safety device: Emergency stop switch, obstacle detection sensor and contact stop sensor

\*1 Okaya & Co., Ltd. is now filing trade mark registration.