Handle: Boston Dynamics robot on wheels performs on stage

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(Tech Xplore)—Boston Dynamics videos never fail to wake people up to its high and mighty robots. The recent video that turned up on YouTube is a genuine attention-grabber. This time the robot's name is the Handle.

Various tech sites reported the robot has not been officially announced by the company; the video was taken by someone attending the company

presentation.

Why has it grabbed so much attention? Well, for one, the presenter, Marc Raibert, founder of Google's Boston Dynamics, jokingly said the audience was about to see what he thought will be a "nightmare-inducing" robot. Raibert said it jokingly, but one could feel some resonance nonetheless.

Actually, though, the robot evoked admiration more than nightmare shivers, judging by the attentive audience shown in the video. This was a debut presentation captured on YouTube video. (You can hear a background voice murmuring "Oh wow, look at this.")

Handle is quite agile. It is a humanoid with appendages that look like legs but it moves on two wheels. Andrew Liszewski in *Gizmodo* said the footage showed "a sweet robot creation" and the design imparted "impressive new capabilities."

Brittany Goetting in *Hot Hardware*: "Most Boston Dynamics robots incorporate two to four legs, and are intended for use on rough terrain. This latest robot, however, moves on two wheels and must constantly shift its weight to maintain balance."

Let us cut to the chase for why the robot is so interesting: its looks feed into its capabilities and purpose. Handle reminds one of an ice skater with a very big head moving into the rink, with elbows pulled back, head erect, or, like a wrestler moving into the ring, ready to grab opponents and roll them on to the floor.

The video shows the robot bending, raising itself and acting, as Raibert commented, like it has a lot of knowledge of "how to throw its weight around."

Jamie Condliffe in *MIT Technology Review*: "It's a complex engineering problem, staying upright on two wheels like that, and Raibert says that the robot is constantly shifting weight to stay balanced."

But, really, why shift robot design to wheels. We have seen videos of Boston Dynamics carrying heavy loads and managing rocky outdoor terrain and uneven road surfaces, managing obstacles like craggy rocks, making them ideal for military tasks.

The reason is because Handle, as its name suggests, is destined for another life than as a heavy supply-carrying legged robot. The robot this time is ideal for use in warehouses. Handle will likely be used in warehouses with smooth, concrete floors. Its value will lie in getting from place to place in the most efficient manner possible.

The video showed the company team testing out all its various capabilities, and Raibert noted that it can carry a reasonably heavy load on a small footprint.

As *Gizmodo* said, "Handle appears to be limited to mostly smooth surfaces, where it can roll with minimal resistance. The trade-off would allow Handle to move much faster and more efficiently, in a factory or warehouse environment where it doesn't have to worry about ever having to tackle rubble or debris."

Meantime, as demonstrated in the video, Handle is still able to tackle obstacles, as it did an adept leap over an obstacle in its way.

MIT Technology Review similarly pointed out that "its inability to handle rough terrain wouldn't matter, as it could glide across smooth concrete floors, reaching up to high shelves along the way."

In the video, Raibert said Handle has basically been an exercise in seeing

if they could do something like the humanoid that could be less expensive but still useful.

"We call this Handle because it is supposed to handle objects eventually," said Raibert.

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