

Gecko Robotics Unveils Latest Inspection Robot, the TOKA® Flex

Industrial plants demand more access to inspection by robots. Gecko Robotics announces the TOKA® Flex, their most maneuverable and adaptable robot, as a result.

PITTSBURGH, PA, UNITED STATES, March 31, 2021 /EINPresswire.com/ -- Robotic inspections of critical infrastructure are on the rise. Industrial plants are asking robots to access hazardous and difficult-to-reach areas to keep personnel out of harm's way. The core capability to complete these tasks is rugged mobility, on even the smallest surface. The TOKA Flex, Gecko's most advanced robot, was purposely designed to crawl on small diameter piping at dizzying heights. The company is excited to unveil this new capability to clients in Power, Oil and Gas, chemical and paper manufacturing.

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Jason Okerman, Gecko's TOKA Flex Product Manager



TOKA Flex achieves new heights in robotic piping inspections

“It allows us to reach and capture data on areas that previously had no robotic solution. What this means for customers is a strong step in the direction of getting complete coverage on assets without falling back to manual UT gridding with handheld,” states Jason Okerman, Gecko's TOKA Flex Product Manager.

Here are a few of the features that make the TOKA Flex [remarkable engineering](#):

Independent suspension and drive axles:

The TOKA Flex can dynamically adapt from flat surfaces to

pipes down to 6" in diameter. This is made possible by an independent steering, suspension, and electronic drive for each of the four (4) permanent magnetic wheels. This allows the robot to do some amazing things like navigating elbows, overcoming $\frac{3}{8}$ " obstacles, and even executing 180° turns. Aided by an onboard driving camera, the maneuverability of the robot guarantees the best positioning to capture accurate data.

Multi-probe data collection and coverage:

Continuing the tradition of our Rapid Ultrasonic Gridding (RUG) inspection technique, the TOKA Flex houses 12 single-channel ultrasonic probes at 1" spacing collecting A-scan, B-scan, and C-scan data. The payload combines with a fast drive system to cover over 30 sq. ft per minute. The data is processed in our cloud, reviewed by our NDE/NDT experts, and delivered interactively via Gecko Portal®, the same unified interface across the entire family of Gecko solutions. Advanced modifications of the TOKA Flex allow for even greater data-collection density offering 18 probes at $\frac{1}{4}$ " spacing.

Heat-hardened sensors and electronics:

A major shift in reliability programs is the desire to inspect equipment while it's on-line. In this regime, process piping is often under pressure and at elevated temperatures. TOKA Flex has been hardened to withstand temperatures up to 275°F. From the contact points on the pipe to the heat transfer within the robot itself, the robot is built to perform without degradation in data collection capability.

Inspecting elbows, bends, and joints:

Not only are elbows, bends, and joints tedious to inspect, they also represent places that due to flow changes, are susceptible to deposits and corrosion. Gecko's mantra is More Coverage; More Confidence. With that in mind, Gecko is committed to covering as many of these difficult areas as possible. For elbows, the TOKA Flex can completely inspect swept elbows on 10" diameter piping and the outer half of elbows, extrados, with >20" curvature. Should there be an insurmountable obstacle, the robot can be deployed from another entry point up and climb/crawl for up to 75' from our operators.

In addition to becoming our workhorse for piping inspections, the "TOKA Flex will enable us to explore, branch, and merge new product solutions for our customers faster than ever," says Kevin Low, Senior Mechanical Engineer. By delivering Robots as a Service (RaaS), clients can take immediate advantage of these innovations without needing the capital and human resources to invest in robots of their own.

Inspections with the TOKA FLEX are available immediately. For more information, visit resources.geckorobotics.com/toka-flex

About [Gecko Robotics](#): Gecko Robotics pioneers robotic technology and software to enhance infrastructure reliability via comprehensive NDT inspections. Each year over \$100B is spent to maintain the critical infrastructure that serves our world, inspections being a critical component. Using robots keeps workers away from hazardous environments and provides orders of magnitude better data coverage than traditional methods, especially in hard-to-reach areas. The data allows the owner to better diagnose equipment damage and predict future life. This results in better-targeted maintenance, lower costs, more up-time, and, most importantly, fewer deaths and injuries.

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