

## THE 2-FINGER ADAPTIVE GRIPPER – 85 AND UNIVERSAL ROBOTS: A FLEXIBLE AND EASY TO USE SOLUTION FOR SME

Learn how [Inertia Switch](#) used the full benefits of automation for a machine tending application with the Robotiq Adaptive Gripper and Universal Robots.

### INERTIA SWITCH – COMPANY PROFILE

**Industry:** Industrial Goods & Services

**Application:** Machine Tending

**Robot:** UR5 – Universal Robots

**Product:** [Robotiq 2-Finger Adaptive Gripper - 85mm](#)



### INERTIA SWITCH – A SWITCH MANUFACTURER FOR HIGH-TECH INDUSTRIES

Inertia Switch designs and manufactures switches of all kinds for high-tech industries. They also offer full-service manufacturing in aerospace, mechanical and electrical products. Brian DiGirolamo, Chief Engineer and Owner of Inertia Switch has been thinking of a new robotic approach for his company since their first robot integration 3 years ago. This company of 20 workers already has an impressive portfolio of advanced technologies and like many companies they have limited resources.

### APPLICATION BACKGROUND

Most of the components made at Inertia Switch have an aluminum body. One of their main production processes is to machine raw aluminum with CNC lathes and milling centers. A lot of different parts are involved and their shape is changing throughout the machining process. This machine tending application is at the beginning of the production chain and has a



major impact on the production output. At the time they started to automate the process, they decided to go ahead with a conventional workcell, fully guarded, that cannot easily be reprogrammed for their needs. The current pneumatic grippers are limited to a few parts.

### KEY APPLICATION FACTS

- Inertia Switch makes over 1,000 different parts
- Machine tending – CNC lathe and milling center
- This application represents up to 20% of the production output
- 1 standard guarded robot installed

## THE CHALLENGE – OPTIMIZING MACHINE TENDING PRODUCTION PROCESS

Despite increasing their capacity with the first robotic cell and standard pneumatic gripper, the workcell still doesn't meet the flexible manufacturing needs required at Inertia Switch. Furthermore, they have found the management of the standard robot system to be overwhelming. They don't want to hire a full-time programmer or an automation engineer and they would prefer to let their current workers run the shopfloor. As they have always counted on versatile machinists and technicians, they were only interested in investing in a robot and a gripper that can be as adaptive as their workforce.

### KEY APPLICATION CHALLENGE

- **Inertia Switch needs to do more with less**
- **Any machinist should be able to easily manage the robot system and the gripper**
- **A minimum setup time and fast turnarounds are essential**
- **1 year payback**

## SOLUTION – WHEN ROBOTICS FLEXIBILITY IS ACCESSIBLE TO EVERYBODY IN THE SHOP

For the Inertia Switch people, nothing is impossible.

Brian DiGirolamo has always planned to implement a flexible and easy-to-use robot and gripper system, just like the small robotic arm with a joystick that he got once as a gift. Their team has always kept an eye out for the latest technologies and they found the perfect package in a



UR and Robotiq Adaptive Gripper. This was the perfect gripper combo that anyone could integrate and use. The easy setup and flexibility of the Robotiq Adaptive Gripper and software package for the UR robot were key points in moving forward towards the right solution. Even though they were not fully ready to implement another robot, they went ahead and purchased the [2-Finger Adaptive Gripper - 85 and the UR5](#).

### KEY APPLICATION SOLUTION

- **2-Finger Adaptive Gripper - 85 and UR package for quick and easy programming**
- **No additional cost or special expertise to install the Robot Gripper**
- **Easy production setup for CNC machinists**
- **Ability to manage short runs of 100 parts with a fast turnaround**
- **Only solution that fits with almost all of the parts**

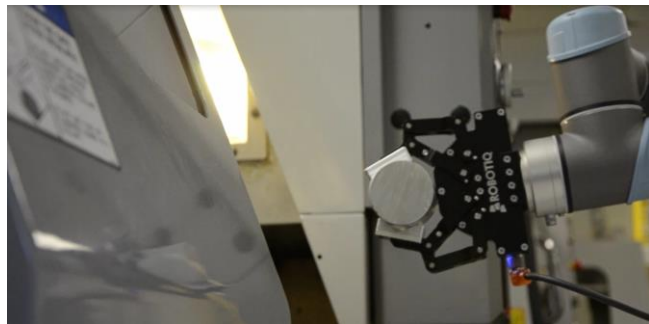
## RESULT – PRODUCTION IMPROVEMENT AND A NEW TOOL FOR R&D!

The Robotiq Gripper package for UR allows the machinists to control the Gripper with ease. Subsequently, machinists for this workcell, even though they don't have a programming background, are already able to perform advanced tasks with the Gripper. Inertia Switch also took the opportunity to use the Gripper to handle the CNC lathe door, as they were not satisfied with



their current automatic door opening system. The payback has been faster than expected as they can easily use the robot and gripper for other applications and parts. Furthermore, this solution was 3 times less expensive than a regular robotic cell.

Their new robot system with the Robotiq Gripper is so easy to manage that Inertia Switch can do advanced manufacturing research with it during their spare time. If they need to automate other processes, they can dismantle the whole system and re-install it in another area of their plant in less



than 2 hours. If Brian DiGirolamo had the possibility of going back and changing the first robot integration they did 3 years ago, he would replace the standard robot system and pneumatic gripper with [this robotic package](#).

### KEY APPLICATION BENEFITS

- A single robot and gripper system to handle almost all the parts
- Time saved on changeovers and robot setup
- Less than 1 year payback
- New robot application opportunities using the 2-Finger Adaptive Gripper – 85 and UR robot
- Only 1 day of training for a machinist to operate the robot and gripper

## KEY DATA

	Before	After
<b>Overhead</b>	6 Workers 7 Machines	2 Workers 3 Machines 2 Robots
<b>Flexibility</b>	Limited to 1 application	3 applications: <ul style="list-style-type: none"><li>➤ Machine Tending – Full time</li><li>➤ Hazardous material handling – Spare time</li><li>➤ Electronic assembly – Spare time</li></ul>
<b>Production Capacity</b>	3,000 parts production lot	10 000 parts production lot

## WOULD YOU LIKE MORE INFORMATION?

If you are interested in learning more about this application or other applications using the [2-Finger Adaptive Gripper – 85](#) on Universal Robots contact us at: [info@robotiq.com](mailto:info@robotiq.com) or at: 1 418-380-2788 ext.124