

TOSHIBA MACHINE

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AUTOMATED BOX OPENING TECHNOLOGY

**THE FIRST AND ONLY
AUTOMATED BOX
OPENING SOLUTION**



TOSHIBA MACHINE

ABOT - The first and only automated box opening solution

ABOT (Automated Box Opening Technology), from TM Robotics and Cornerstone Automation Systems, is the first fully automated box opening machine to be launched anywhere across the Globe. It improves the flow of incoming goods, massively reduces labour requirements and increases safety standards. With its high level of operating efficiency and safety, ABOT will appeal to management, finance, health and safety and operational staff involved in a wide range of logistics applications and product return.

As incoming boxes and cartons arrive, they are simply passed onto ABOT's inbuilt conveyor, either manually or using a conveyor feed and ABOT opens them without any risk of damaging the goods inside. The box then emerges from the other end of the conveyor ready to be processed with the lid fully cut, a picking window prepared or the tape cut. As a result, the process is faster, more cost effective and doesn't require human operatives to handle dangerous blades such as utility knives. ABOT finds applications in retail, returns handling, manufacturing, inbound goods and any other sector where a large quantity of boxes have to be opened.

"THIS PROCESS IS THREE TO EIGHT TIMES FASTER THAN THE MOST CAREFUL AND EXPERIENCED MANUAL OPERATORS,"

Nigel Smith, managing director, TM Robotics (Europe) Ltd

ABOT can handle an infinite range of box sizes without pre-programming or setup for any specific size. It's easy to use and there is no need for an operator. Because it's founded on industry leading Toshiba Machine robot technology, ABOT runs unattended with the ability to process work, detect and correct jams and change worn out blades automatically.



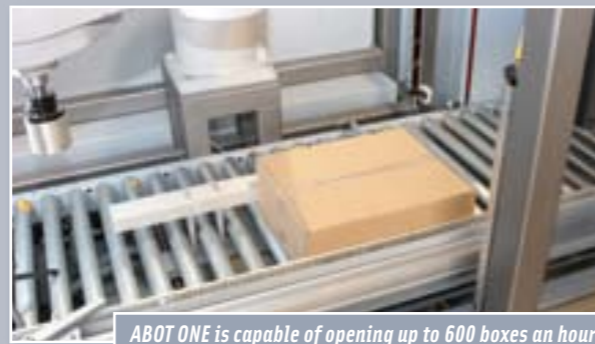
ABOT DUO is capable of opening an impressive 1000 boxes an hour

It's easy to use

Generic cut patterns are programmed as recipes using touch screen controls indicating location and depth of cuts. 'Recipes' are automatically scaled and instantaneously applied to cut any box size in its wide range without prior programming. In effect, ten thousand different box sizes are programmed in seconds. ABOT can 'talk' to its programmer in several different languages and accents to help him or her acclimatise to its use. Support is a push button away with ABOT STAR a full remote diagnostics and two-way voice communications program that allows the user to speak with a human technician.

ABOT's ability to safely cut boxes at high speeds provides fast return on investment with payback in as little as six months!

- Does the work of up to eight manual operatives
- Reduces lost time and injury claims from lacerations
- Cuts the damage rate and not the product



ABOT ONE is capable of opening up to 600 boxes an hour

It's safe to use

ABOT provides a high level of operational safety exceeding all domestic safety requirements and meeting the more stringent European Conformity standards (CE). ABOT locks out operators preventing access to fast moving parts and sharp blades until stopped and de-energised, further enhancing safety standards.

It's easy to integrate

ABOT requires a single power connection of 230 VAC 3ph supplied via conduit to the standard junction box at the back of the machine. The mains disconnect and power distribution breakers are located in the front panel.

As a result of all this, ABOT is not just the first and only automated box opening solution on the market; it is likely to remain unchallenged and unique. If your objective is increased throughput, enhanced safety or reduced costs there is no better solution.

A global partnership

TM Robotics and CASI (Cornerstone Automation Systems Incorporated) form a potent partnership with global reach, outstanding levels of innovation and the backing of one of the world's most respected brand names.

TM Robotics specialises in the supply and integration of industrial automation into applications ranging from handling to logistics. The company is the sole partner for the sale, marketing and support of all Toshiba Machine robots, throughout Europe. The relationship between the two companies is a guarantee of quality that cannot be matched by any similar company across the continent.

Toshiba Machine was established in 1938 and employs nearly 3000 people worldwide. As a member of the Toshiba group of companies its origin can be tracked back as far as the establishment of the Shibaura Engineering Works in 1875. The expertise gathered over almost thirteen decades contributes to the refinement of the robot core of Cornerstone's ABOT product.

"CORNERSTONE PROVIDES INNOVATION, DESIGN EXPERTISE AND MANUFACTURING WHILE OUR RELATIONSHIP WITH TOSHIBA MACHINE MEANS THAT THERE IS THIRTEEN DECADES OF EXPERIENCE IN THE ROBOT CORE OF ABOT"

Nigel Smith, managing director, TM Robotics (Europe) Ltd

Cornerstone is an innovative designer and manufacturer of world class logistics, warehouse and handling solutions and software. The company has been in operation since 2002, providing highly cost effective solutions for a range of Fortune 100 companies.

Cornerstone's long line of flexible off-the-shelf components and software provides the logistics market with customised automation at a fraction of the typical systems integrator cost. The effectiveness of CASI's designs and niche market solutions is evinced by three digit growth in every year since the company's inception.

CASI provides:

- In-house engineering and manufacturing
- Systems completely setup and tested before shipping and installation
- Guaranteed throughput as described in our proposal
- 24/7/365 support with remote system access for real-time evaluation



Toshiba Machine's plant in Numazu, Japan, is a globally renowned centre of manufacturing excellence



ABOT MAGNUM is capable of opening an amazing 1800 boxes an hour



Cornerstone Automation Systems designs and manufactures ABOT in house in its US plant

The **ABOT** range

Features and benefits

ABOT ONE

- Throughput: 600 boxes an hour
- Conveyor lanes: One
- Maximum case size: 762mm (L) x 533mm (W) x 482mm (H)
- Minimum case size: 100mm (L) x 100mm (W) x 100mm (H)



ABOT DUO

- Throughput: 1000 boxes an hour
- Conveyor lanes: Two
- Maximum case size: 762mm (L) x 533mm (W) x 482mm (H)
- Minimum case size: 100mm (L) x 100mm (W) x 100mm (H)



ABOT MAGNUM

- Throughput: 1800 boxes an hour
- Conveyor lanes: Three
- Maximum case size: 762mm (L) x 533mm (W) x 482mm (H)
- Minimum case size: 100mm (L) x 100mm (W) x 100mm (H)



- Automatically captures, aligns and positions each box regardless of how well it is fed
- Capable of automatically recognising turned or rotated boxes
- Positions blades with the highest accuracy of any system in the world
- Measures boxes more accurately than most "cubers" in the world
- Automatically senses and changes dull or damaged blades
- Capable of handling severely damaged boxes without jams
- Automatically changes box cutting pattern on-the-fly based on box size or bar code
- Capable of cutting both the box top and box front
- Self recovery from jams and faults allows for automated operation without intervention
- ABOT communicates with operators via voice and touch screen graphical controls
- Can be programmed or commanded to pass any particular box through without processing or delays
- All eight blade cutting surfaces are changed as a single unit for speed and simplicity
- Immediate support, remote diagnostics and hands free communication with support technician



ABOT Automatically captures, aligns and positions each box regardless of how well it is fed



ABOT can easily remove a 'lid' by cutting a narrow portion of the top of the box



ABOT finds applications working with global brands across the continent

Features and benefits

Large box option - the 12M case splitter

Optional oversized inducts allows ABOT to handle boxes up to 558mm in height, for instance 12M cigarette cartons (that hold 12,000 cigarettes), which can be cleanly split without damaging the contents. DUO and Magnum model ABOTs can be optionally equipped to handle standard sizes and oversized boxes simultaneously.

Point of sale - the pick window cut option

ABOT's pick window cut option provides additional tooling and programming to cut a window into the short side of the case. The window location and resulting cut pattern minimises the chance of damaging the box contents and keeps them from spilling. The resulting flap can be folded down or torn away.

This feature can be used for preparing point of sale boxes or making cartons or packages ready for use in a lean manufacturing system.

ABOT can easily cut picking or point of sale windows into boxes and cartons



Technical assistance just a push button away - ABOT STAR

Technical assistance for ABOT is a push button away with ABOT STAR online support. Following a request from the user, ABOT technicians can remotely access all screens and functions over an internet connection using Webex - secure and proven technology. Furthermore, microphones and speakers are provided with ABOT to give operators hands-free two way communication with Cornerstone support personnel.

Easy as ABC - automatic blade changing



ABOT is available with an optional automatic blade changer (ABC) that senses dulling blades and replaces them automatically in moments. The operation is lightning fast, delaying box cutting operations for just a few seconds.

Accurate blade position within the cutting head is critical for consistent cut depth. The ABC option accomplishes the change with remarkable precision, attaching blade holders with a repeatable tolerance of a thousandth of an inch.

The ABC results in significantly less blade changing time, maximising throughput in high volume multi-shift operations.

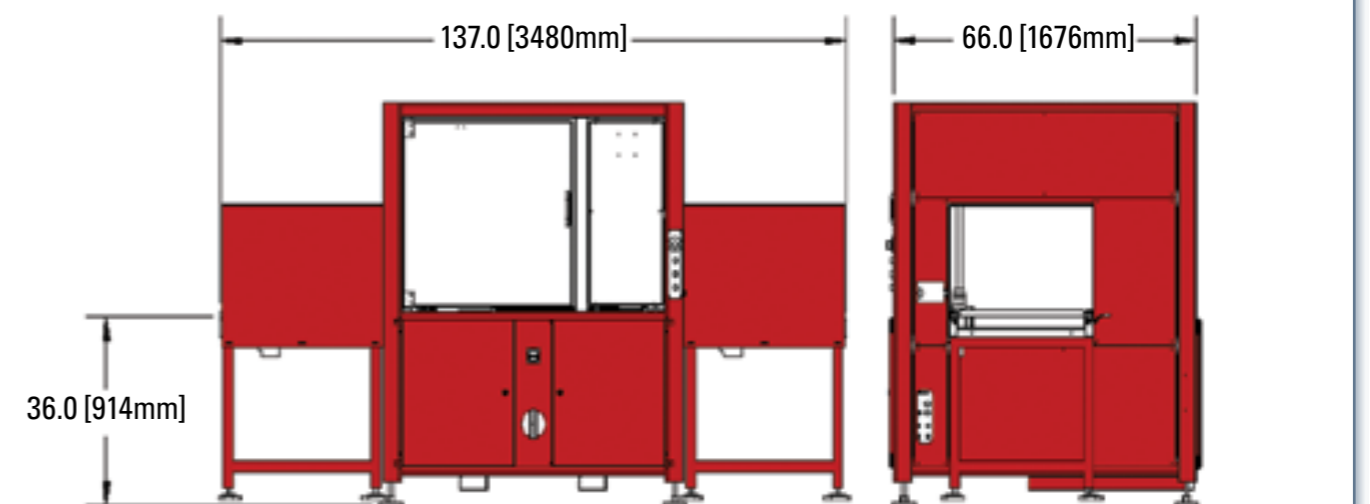
ABOT's automatic blade changing feature is easy as ABC

Sizes and specifications

Specifications

	ONE	DUO	MAGNUM
Maximum rate	600 boxes per hour	1000 boxes per hour	1800 boxes per hour
Maximum cut depth	11mm (3 ply)	11mm (3 ply)	11mm (3 ply)
Minimum box size (LxWxH)	100 mm x 100mm x 100mm	100 mm x 100mm x 100mm	100 mm x 100mm x 100mm
Maximum box size (LxWxH)	762mm x 533mm x 482mm	762mm x 533mm x 482mm	762mm x 533mm x 482mm
Power requirements	230 VAC 3 PH 20A	230 VAC 3 PH 30A	230 VAC 3 PH 30A
Air requirements	90 psi 4 CFM	90 psi 6 CFM	90 psi 6 CFM

Dimensions for the ABOT ONE



Dimensions for the ABOT DUO

