



VWCO

cobot solutions



SMART

Built-in vision system

SIMPLE

Revolutionary user interface, easy to use

SAFE

Complies with ISO 10218-1 & ISO/TS 15066

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VWCO was established in 2018 as a new division of the Valk Welding Group. VWCO is engaged in the sale and integration of collaborative robots also called cobots. To this end, Valk Welding obtained the rights for the Benelux distribution of the cobots from manufacturer Techman Robot.

Meanwhile VWCO is an independent mature division of the Valk Welding Group with its own facility in Alblasterdam. Here space is provided for, among other things, a demonstration room and training centre. In addition, manufacturer Techman Robot has housed its European branch in the same building which ensures a strong connection between partner and supplier. Together with Techman's colleagues, we sell the cobots in Europe.

Techman cobot Robots are unique in their kind due to the standard integrated vision system. Cobots are relatively inexpensive, can be used in a plug & produce manner, have user-friendly programming and can be operated without additional safety features. Cobots are increasingly being integrated into assembly lines for machine loading and other applications.

Because of a strong bond with the Valk Welding Group, considerable efforts are being made to integrate cobots with the welding robots of Valk Welding. Meanwhile, several concepts for this have already been designed. This will bring about an extra step in automation within the industrial sector.



Facility VWCO, Alblasterdam

Why the Techman cobots?

The collaborative robot, also called cobot, of the company Techman are characterised by the simple programming, the innovative vision possibilities, and their versatile applicability. In addition, the TM robots are equipped with safety measures that meet current standards. Unlike industrial robots, the TM robot can work together with people and alongside people without the need for additional safety measures.

Techman Robot was founded in 2012 by Taiwan-based Quanta Storage Inc. The brand name Techman consists of the words "Technology" and "Human," which perfectly explains the purpose of the Techman Robot. As the world moves to support Industry 4.0 and the era of the Internet of Things (IoT) and cloud computing, the TM cobots focus on upgrading developments in automation.



Valk Welding develops and builds turnkey welding robot systems for small to medium production requirements and is your partner for all your welding needs.

The strong connection

Smart - Simple - Safe



Smart

The TM robot is equipped with a built-in vision system, which integrates perfectly with both hardware and software. Through the Built-in vision system, TM robots are able to: recognise patterns, locate objects, read barcodes, recognise colours, etc. All these functions are integrated into the user-friendly user interface.

Simple

With the revolutionary, easy-to-use interface, virtually any automation task can be created online on notebooks and tablets. This makes a teach pendant unnecessary. TM robots, even without programming experience with cobots, are easy and quick to use.

Another reason TM robots are easier to use than other cobots is the intuitive teach function. The robotic arms can be manually guided to any position and fixed on a point-by-point basis. By combining the smart vision system and hand-guiding functions, anyone, even without programming experience, can perform a visual pick and place task within 5 minutes.

Safe

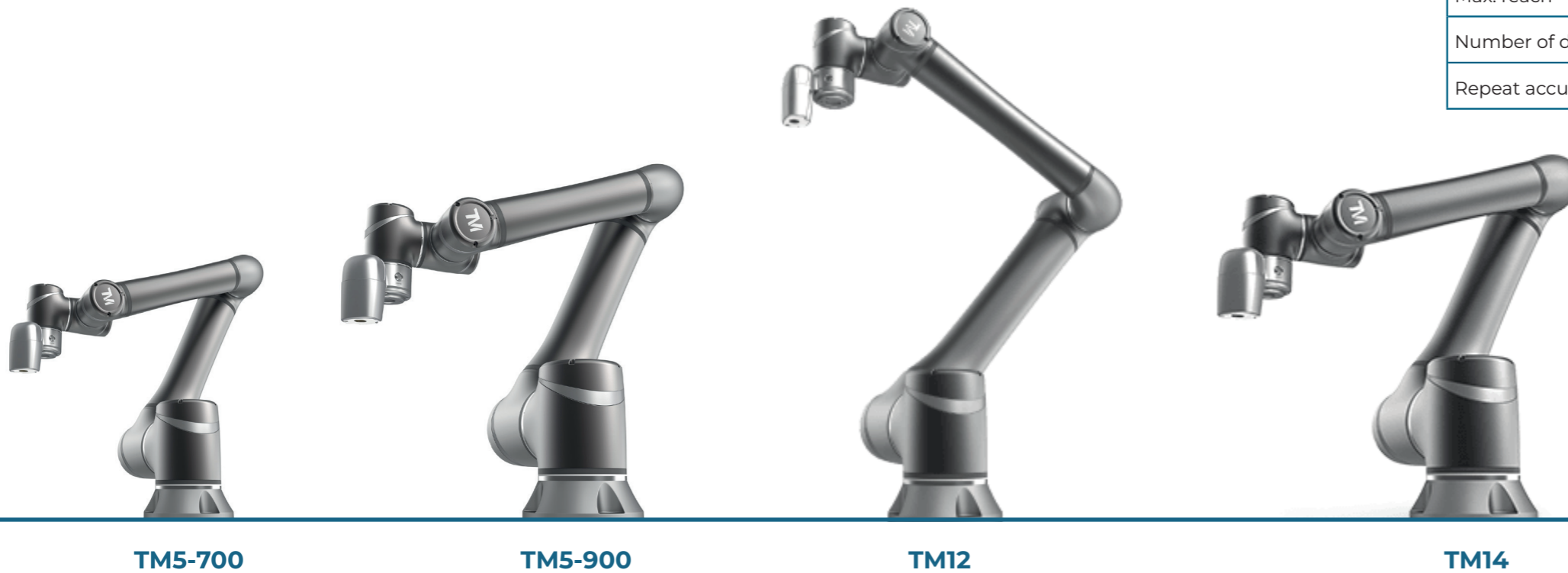
Unlike traditional industrial cobots, TM robots automatically and safely stop when loaded above a set value. This allows TM robots to safely perform tasks in cooperation with your employees.

TM robots meet ISO 10218-1:2011 and ISO/TS 15066:2016 human-cobot collaboration safety requirements for collaborative cobots, allowing the cobot to be programmed with both speed and force limits.


In addition, TM robots are physically designed to be safe for their environment think soft end caps, but the cobot also has no sharp edges.



TM Robot series



Model	TM5-700	TM5-900	TM12	TM14
Weight	22kg	22.2kg	33.3kg	32.6kg
Max. payload	6kg	4kg	12kg	14kg
Max. reach	700mm	900mm	1300mm	1100mm
Number of degrees of freedom	6 axes	6 axes	6 axes	6 axes
Repeat accuracy	+/- 0.05mm	+/- 0.05mm	0.1mm	0.1mm

Download the specifications sheet 



Machine loading



Polishing

Stand-alone cobot solutions offer a variety of payload capabilities and reach. The hand, eye and brain were traditionally separate systems for traditional industrial robots, Techman has integrated all three into one robot. The built-in vision system allows the robot to identify different objects, perform self-calibration and perform visual tasks. The innovative, intuitive user interface and handheld learning mode make working with cobots as easy as using a mobile phone for operators.

Its payload capacity exceeds that of other collaborative robots with the same range on the market. The robot can move heavy objects weighing up to 12 kg (TM12) and 14 kg (TM14). The robot's working area is also extended thanks to the large reach radius of the TM12 (1300 mm) and TM14 (1100 mm).



Welding



Palletising



Screwing

Cobot - Tooling - Table

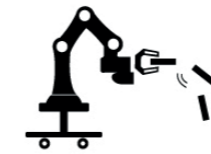
An installation often consists of three parts. The cobot, the table, and tooling. A good composition makes a perfectly working installation. Thus, the TM robot can be used for packaging, assembling, loading, and unloading, screwing, gluing, polishing, palletising, testing and performing inspections. The possibilities are endless, and this makes the TM cobot multi-deployable within various sectors.

VWCO has entered into multiple collaborations with both tooling and table suppliers. VWCO maintains a close relationship with these suppliers and together we achieve the best results.



[Read more about the table here](#)

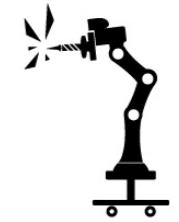
[Watch some videos of different tooling applications here](#)



Testing



Assembly



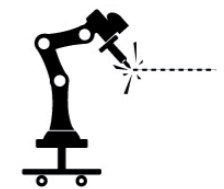
Screwing



Gluing



Loading and unloading



Soldering



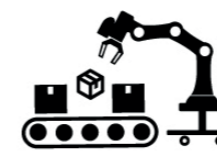
Packaging



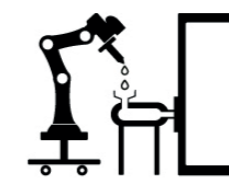
Machine management



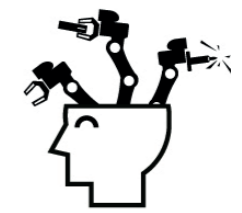
Quality inspection



Conveyor tracking



Injection moulding



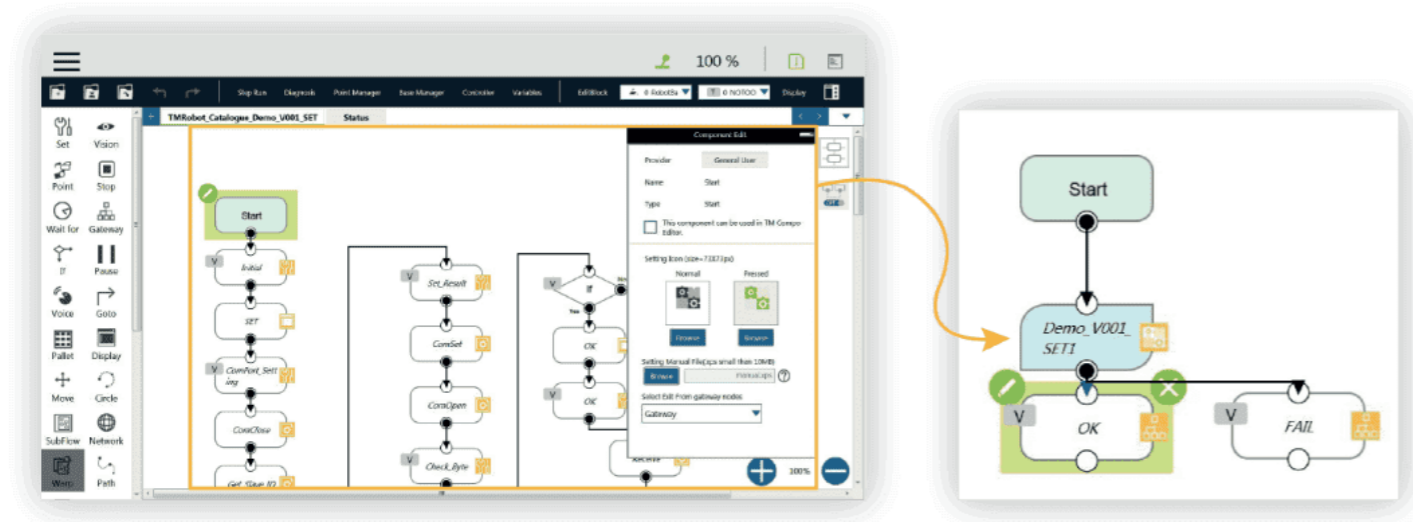
Unlimited potential

Programming



TMflow™

TMflow™, developed by Techman Robot, is the innovative flow-based cobot editing software. Each function is displayed as a different image and features intuitive click and drag methods. Users with no programming experience can create a pick and place program in 5 minutes.



With the revolutionary, easy-to-use interface, virtually any automation task can be created online and easily on notebooks and tablets. This eliminates the need for a teach pendant.



Complex
Ease
Programming Ease



In this video, we show you the programming ease of the cobot. Scan the code to view the video.



Complex
Ease
Programming Ease

Intuitive teach functie

Another reason TM robots are easier to use than other cobots is the intuitive teach function. The robotic arms can be manually guided to any position and captured on a point-by-point basis. The combination of the smart vision system and the hand-guided functions make the cobot easy to use.

TMvision™ is a function built into the software of the TM robots. It allows the cobots to recognise patterns, locate objects, read bar codes, recognise colours, etc. These various functions are integrated into the cobots robot control system, the TMflow™, and can therefore be programmed easily. The software has two functions: Standard built-in vision system and a licensed function. The standard function supports most robot applications, while the licensed function consists of individual modules that can be purchased as needed.

modules

Object detection module (search)



Template matching

Pattern matching based on shape:
Use the shape characteristics of the object to find its location on the image.



Position alignment

Fiducial-mark matching:
The cobot uses two points on the target for positioning.



Anchor Point

Change the home coordinates of object detection by manually adjusting the anchor point.



Template matching

Image-based pattern matching:
Uses the pixel value distribution of the item to find its location on the image.



Irregular Item Detection

blob finder:
The cobot uses the colour difference between the object and the background to find the object in the foreground.



External detection module

Use the external image processing system to perform object detection and return the result.

Image enhancement module (Enhance)



Contrast enhancement is used to adjust image contrast



Threshing puts the image in black and white



Image smoothing



Morphology can make lines thicker or thinner, fill gaps, or separate lines from each other



Extracting colour areas can extract specific colour areas such as red, blue, green, or saturation



Flip image

Image identification module (Identify)



The cobot read barcodes, 2D DataMatrixes or QR codes.



Colour classifier



Matching characters

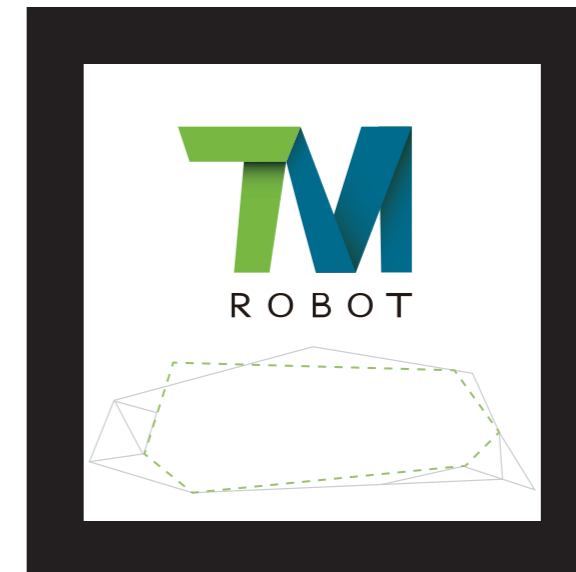


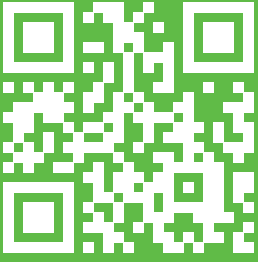
External Classification:

The cobot uses an external image processing system to perform classification and return the result.

TM Landmark

TM Landmark allows the cobot to reposition itself. When the cobot or product moves, the cobot reads the TM Landmark and can then start the program in the right place.





vision with cobots

