



# TECHNOLOGIES



## OMRON TM COLLABORATIVE ROBOT

**Omron's TM series collaborative robots help companies produce a high mix and low volume of products, as well as harness the true potential of human resources.**

The versatility of these robots makes them adaptable for a number of applications, especially machine tending, loading and unloading, assembling, screwing, gluing, testing and soldering.

Omron TM Collaborative robot advantages that provide customer benefits in easy set up and intelligent operation.

- 3D vision Intelligence
- Interactively teach the robot
- Visual based user programming
- Integrated industry based safety





## 3D VISION INTELLIGENCE

3D Vision Intelligence will greatly reduce your project cost and improve operational capabilities.



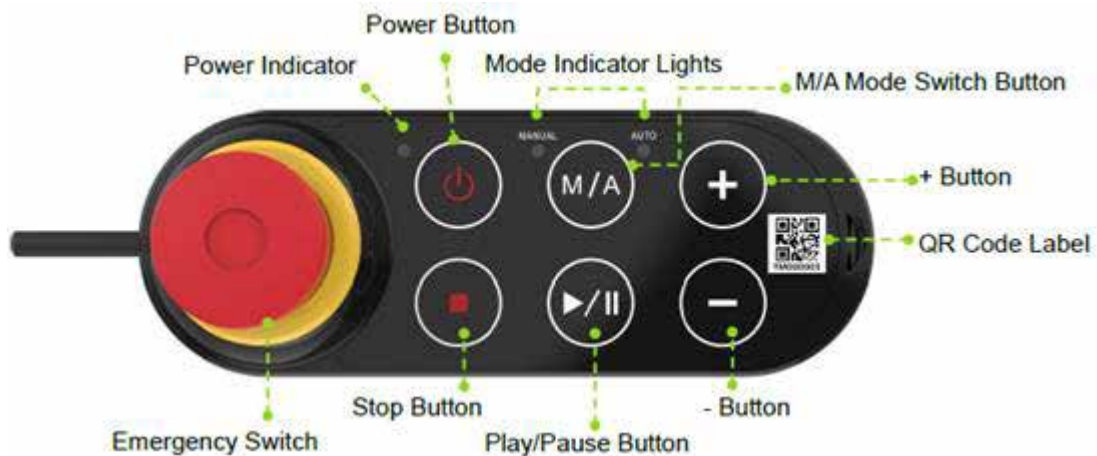
- Using a 2D camera the TM Landmark is measured to calibrate a 3D robot position.
- Eliminates the need for rigid and costly robot work fixtures
- Stacking applications and high mix product applications can be easily accomplished
- Different machines, parts, and work tasks can be automatically detected

### Are you smarter with eyes? Well so is the TM collaborative robot.

- Use Vision to determine if machine doors are open or closed along with machine indicators to initiate robot tending eliminates control and communication integration.
- Use the vision to operate machine controls from buttons to switches to touch screens
- Use vision to provide quality inspections
- Use vision to identify or read codes for new products and line changes

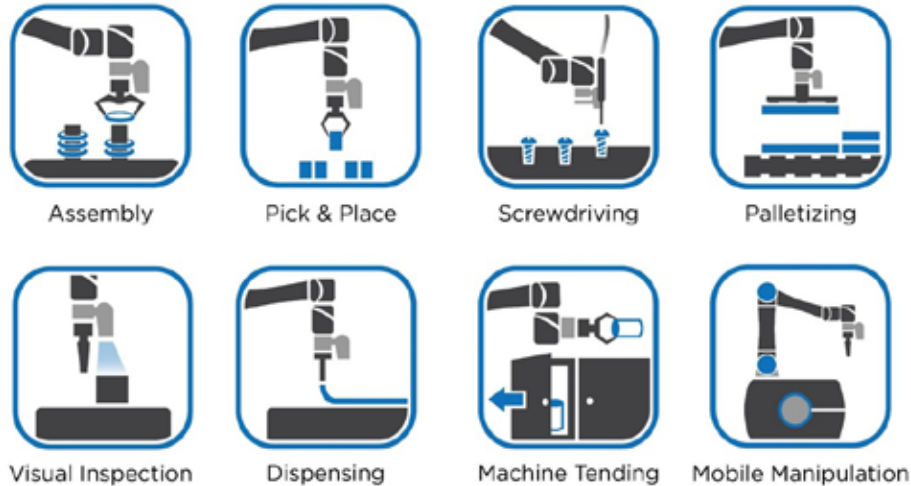
## OMRON'S ROBOT STICK

Omron's robot stick is included with every TM Cobot, and has 6 function buttons, 3 indicator lights, 1 emergency switch and 1 QR-code. It can be used for basic function input to the cobot.



## OMRON TM APPLICATIONS

Boost production and reduce employee fatigue by automating repetitive tasks.  
The most common applications are:



*“The knowledgeable and experienced staff at AOP Technologies provide priceless information and product consultation.”*

## OMRON TM SAFETY

Guided Safety set up makes initial operation fast and safe.



### Guided industry safety set up.

TM Robot complies with the combined scope of ISO 10218-1:2011 and ISO/TS-15066 for human-robot co-operational safety, allowing the robot to be programmed with both speed and force limits even at the joint level.

# TEACHING IS SAFE & INTERACTIVE

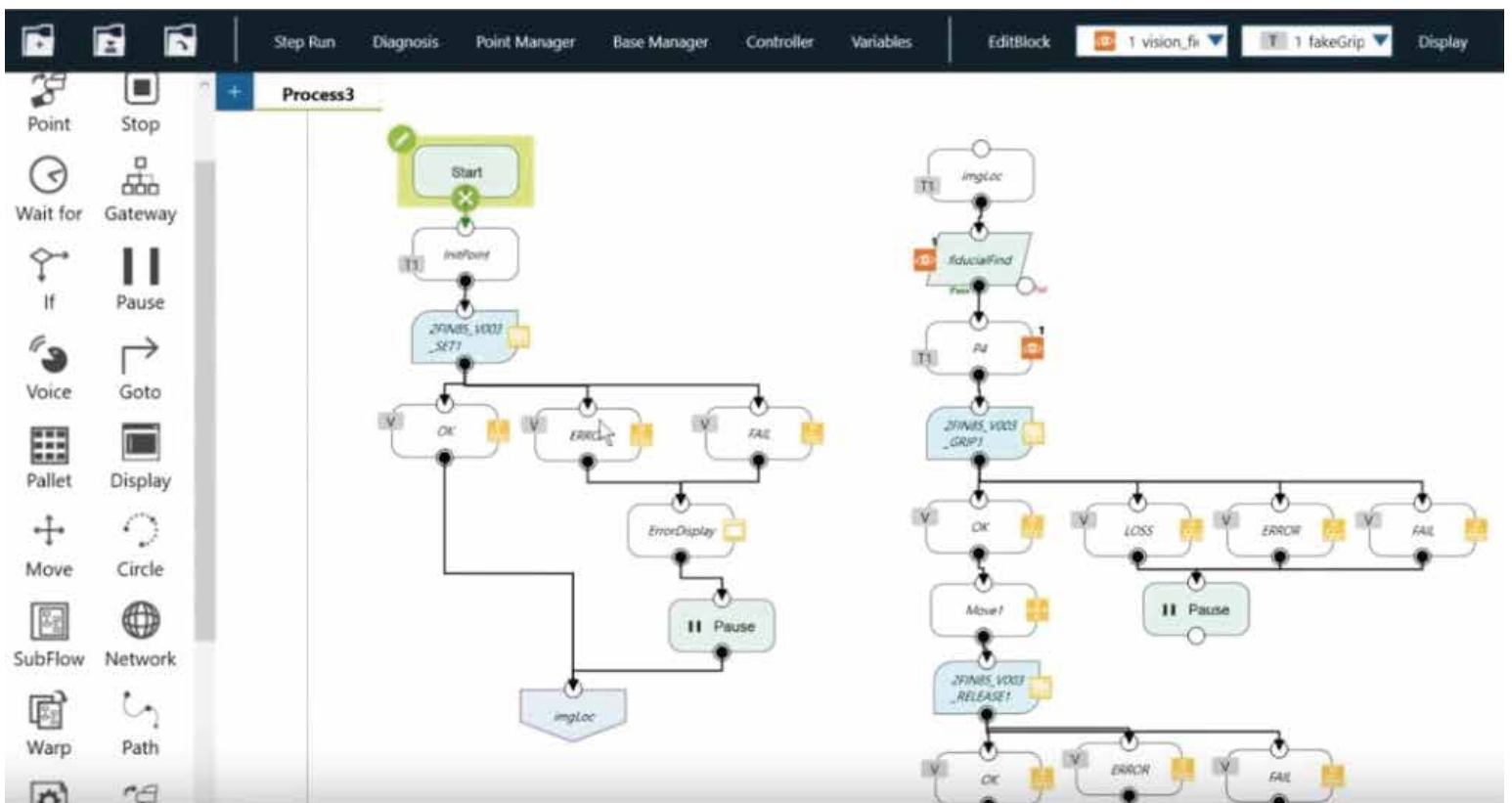
Interactively teach the robot by simply using your hands.

- Interactive and visual teaching makes applications simple
- Cobot teach buttons are directly located on the camera housing of the cobot arm for hands on position teaching, gripper triggers, and vision task placements.
- Collaboratively teach the robot positions and gripper actions
- Integrated vision display with drag and drop vision functions
- Press RUN and you are DONE



You can also use TMflow, the intuitive flow based robot editing software.

- You can accomplish your automation tasks with our revolutionary simple-to-use TMflow™ Software.
- Users without coding experience of industrial robots can complete a pick & place application in 5 minutes.
- Omron TM robot reduces your time-to-production and the total cost of automation integration.





# SPECIFICATIONS

**Omron TM5, 12 and 14 models offer broad reach and load capabilities for larger applications.**

Model	TM5-700				TM12		TM14		
	TM5-700	TM5M-700	TM5-900	TM5M-900	TM12	TM12M	TM14	TM14M	
Weight kg (lbs)	22.1 (48.7)		22.6 (49.8)		33.3 (73.4)		32.6 (71.8)		
Max Payload kg (lbs)	6 (13.2)		4 (8.82)		12 (26.4)		14 (30.8)		
Reach mm (inches)	700 (27.5)		900 (35.43)		1300 (51.1)		1100 (43.3)		
Max Speed m/s (in/sec)	1.1 (43.3)		1.4 (55.1)		1.3 (51.1)		1.1 (43.3)		
Joint ranges	J1	±270°				±270°			
	J2, J4, J5	±180°				±180°			
	J3	±155°				±166°		±163°	
	J6	±270°				±270°			
Joint speeds	J1, J2	180 °/s				120 °/s			
	J3	180 °/s				180 °/s			
	J4, J5	225 °/s				180 °/s		150 °/s	
	J6	225 °/s				180 °/s			
Repeatability (mm)	±0.05				±0.1				
IP (arm)	IP54								
Operating Temp celsius (F°)	0 to 50 (32 to 122)								
Power Supply	100-240 VAC, 50-60 Hz	20-60 VDC	100-240 VAC, 50-60 Hz	20-60 VDC	100-240 VAC, 50-60 Hz	20-60 VDC	100-240 VAC, 50-60 Hz	20-60 VDC	
Max Power Capacity (w)	1400	1500	1400	1500	2200	1500	2200	1500	
I/O Ports	Control Box/Tool								
	Digital in	16/4							
	Digital out	16/4							
	Analog in	2/1							
	Analog out	1/0							
I/O Interface	3 X COM, 1 X HDMI, 3 X LAN, 4 X USB2.0, 2 X USB3.0								
Communication	3 X RS232, TCP/IP(Master), Modbus TCP/RTU (Master & Slave)								
Integrated Camera	5M pixels, color (AOI tasks: 5M; Others: 1.2M)								
I/O Power Supply	24V 1.5A (control box and tool)								
Programming Environment	TMFlow, flow chart based								
SEMI S2 Certified	Yes, as an option								

## Control Box



## Grippers

Omron TM supports generic gripper control plus an ecosystem of grippers from Robotiq and Schunk that have integrated programming inside TMFlow.

### Robotiq



### Schmalz

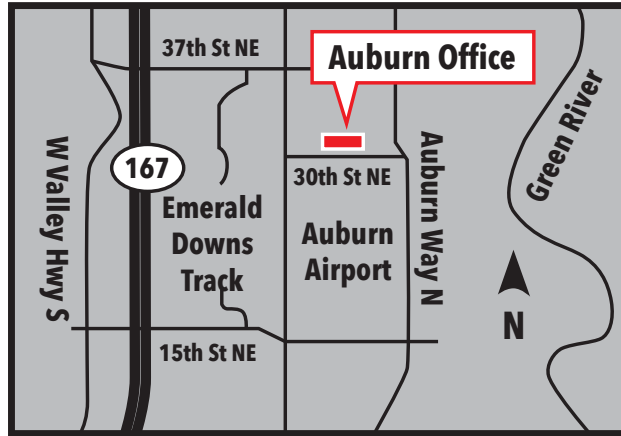


### OnRobot

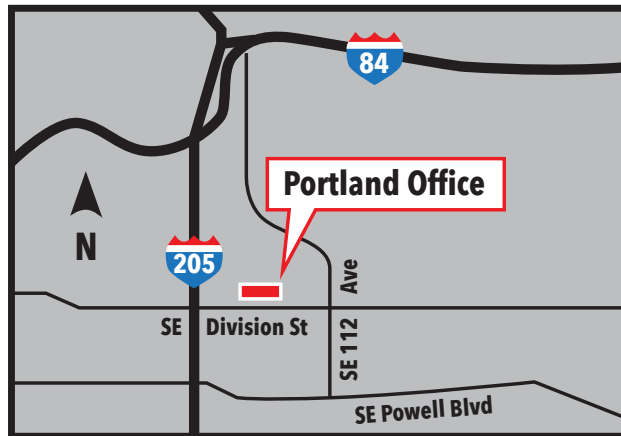


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