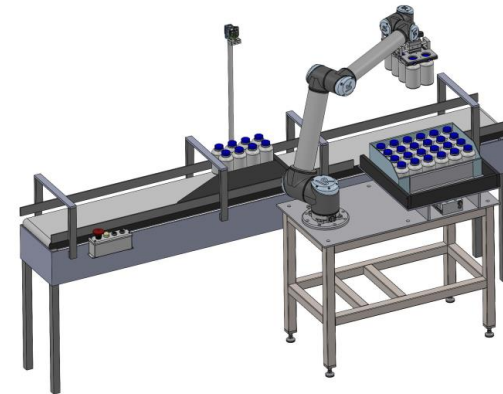
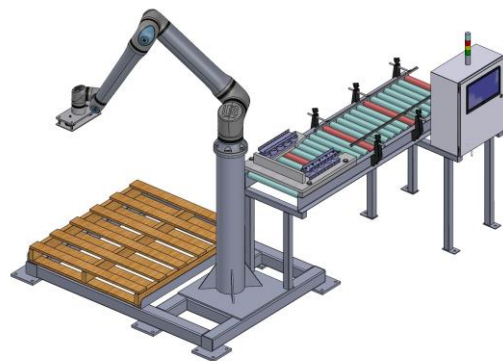


# TX-ROBOTICS® COLLABORATIVE—MOBILE—INTELLIGENT SYSTEMS

## TX-STACK® EQUIPPED

Our Collaborative-Mobile-Intelligent Systems redefine the concept of a modern Robotic system. These systems potentiate productivity in a diverse range of applications. We integrate a Safe Collaborative Robot with Mobility features, then incorporate our proprietary **TX-STACK®** operating system that brings all of the system's capabilities to the user's fingertips on the Touchscreen Monitor.

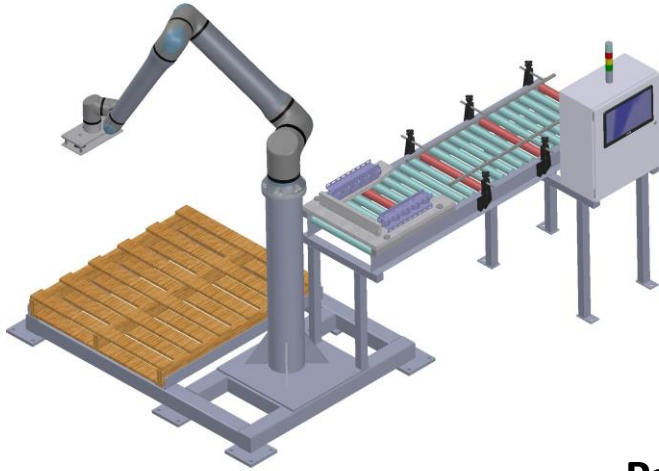
These systems are easily integrated into existing manufacturing processes to provide palletizing, cartonizing, pick-place, vision inspection, and more. Our latest Vision System Apps employ AI technology that makes difficult inspections seem easy. These systems are available with a variety of robots with payloads from 5kg to 30kg, and can be equipped with a variety of end of arm tools specifically designed for collaborative operation.



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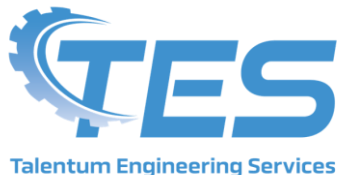


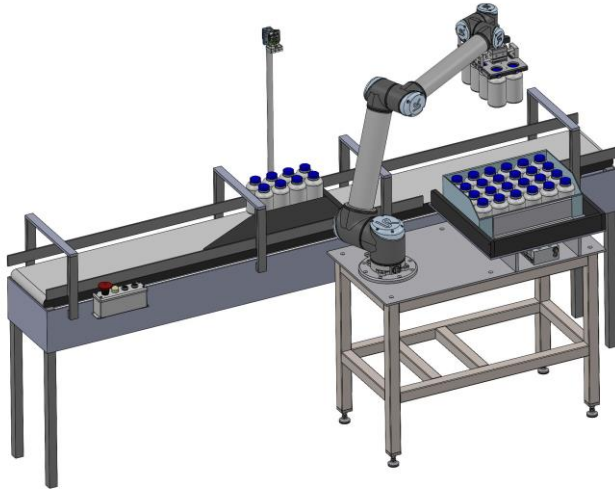
Single Pallet Systems offer a cost effective solution for palletizing where production does not require continuous stacking, or where there are space constraints. Systems are available with a variety of robots with payloads from 10kg to 30kg.

### PRODUCT SPECIFICATIONS

	TXRC-10-1	TXRC-20-1	TXRC-30-1-F
<b>Payload</b>	Max 22lbs/10kg	Max 44lbs/20kg	Max 66lbs/30kg
<b>Stack Hgt.</b>	Max 60in/1930mm	Max 60in/2100mm	Max 66/2667mm
<b>Cycle Time</b>	Max 10 cycles/min	Max 10 cycles/min	Max 10 cycles/min
<b>Input</b>	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
<b>Pallet Removal</b>	Forklift/Pallet Jack	Forklift/Pallet Jack	Forklift/Pallet Jack
<b>Footprint</b>	72in x 72in	72in x 72in	72in x 72in

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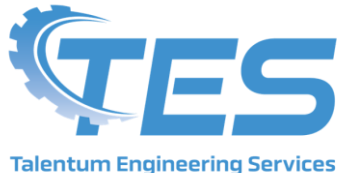


Cobotic Case Packing Systems place products into cardboard boxes. Typical systems are equipped with a product delivery conveyor, a box delivery conveyor, and a product pick nest assembly. The nest assembly is capable of nesting multiple products to be picked. Cobotic Case Packing Systems are Mobile and thus may be moved to various locations.

### PRODUCT SPECIFICATIONS

	<b>TXRCP-5-1</b>	<b>TXRCP-10-1</b>	<b>TXRC-20-1-F</b>
<b>Payload</b>	Max 11lbs/5kg	Max 22lbs/10kg	Max 44lbs/20kg
<b>Cycle Time</b>	Max 12 cycles/min	Max 12 cycles/min	Max 10 cycles/min
<b>Input</b>	Varies with Product	Varies with Product	Varies with Product
<b>Box Conveyor</b>	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
<b>Footprint</b>	72in x 72in	72in x 72in	72in x 72in

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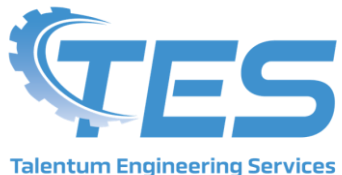


Cobotic Machine Tending Systems handle parts . Typical systems are equipped with trays or bins, nests, and optionally a Vision Inspection System. The system is capable of feeding and removing parts at other machines, such as machining systems or sheet metal systems. Cobotic Machine Tending Systems are Mobile and thus may be moved from machine to machine. Optionally, these systems can be set up for labeling and Laser Marking.

### PRODUCT SPECIFICATIONS

	TXRCP-5-1	TXRCP-10-1	TXRC-20-1-F
<b>Payload</b>	Max 11lbs/5kg	Max 22lbs/10kg	Max 44lbs/20kg
<b>Cycle Time</b>	Max 12 cycles/min	Max 12 cycles/min	Max 10 cycles/min
<b>Input</b>	Varies with Product	Varies with Product	Varies with Product
<b>Box Conveyor</b>	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
<b>Footprint</b>	72in x 72in	72in x 72in	72in x 72in

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# TX-ROBOTICS®

AMR / AGV READY SYSTEMS



All of our Systems can be configured for operation with Autonomous Mobile Robots, both Platform and Forked type units. Our **TX-STACK®** Operating System seamlessly integrates the AMR Fleet Management System to provide complete control of AMR traffic throughout the facility.

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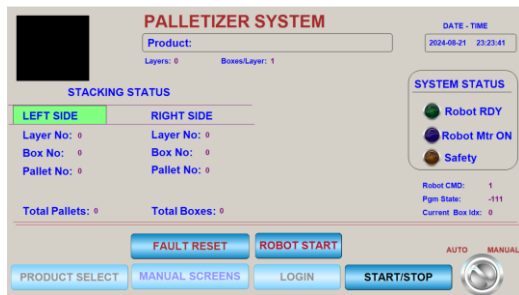


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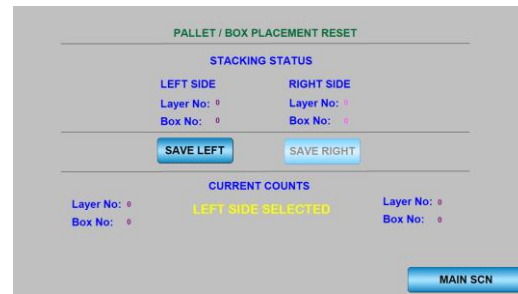


# TX-ROBOTICS® TX-STACK® USER INTERFACE AND OPERATING SYSTEM

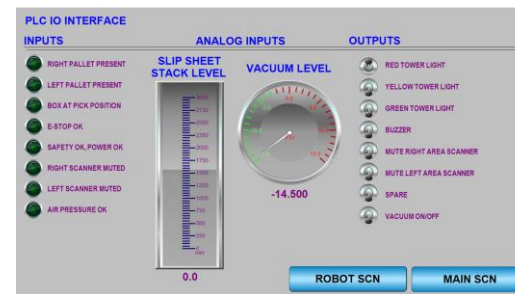
All TX-Robotics systems are controlled by our **TX-STACK®** Operating System, which runs on a State of the Art Hybrid Industrial PC/PLC system using a Windows 10 Embedded operating system. This system is capable of real time PLC control in addition to concurrent execution of Windows 10 apps, which includes the Pallet Pattern management, Vision System, and AMR Vehicle Fleet Management System, if equipped. **TX-STACK®** provides seamless integration of Vision Inspection using State of the Art camera systems that employ AI technology.



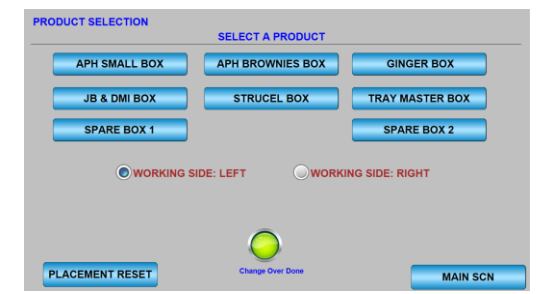
System Main Screen



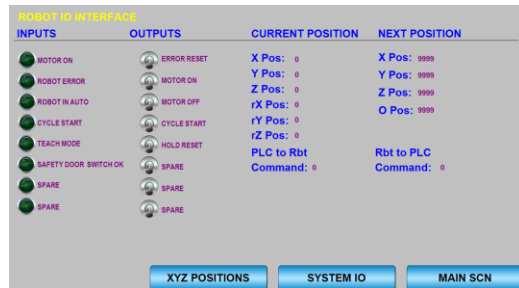
Box Placement Screen



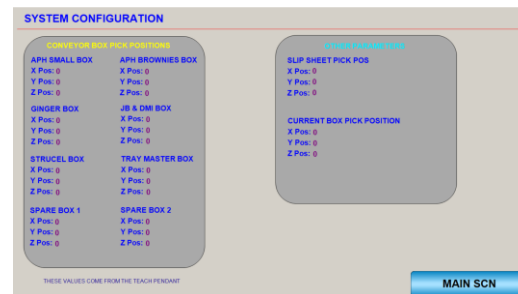
PLC - I/O Interface Screen



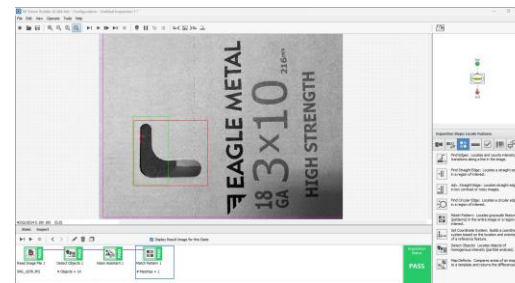
Product Selection Screen



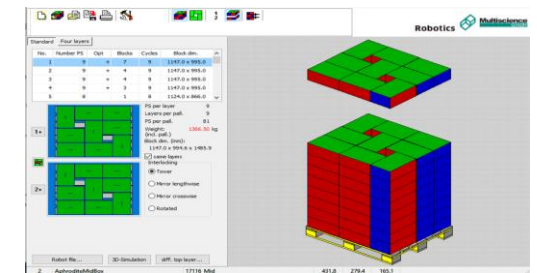
Robot Interface Screen



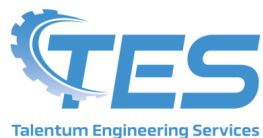
System Configuration Screen



Vision Inspection Screen



Pallet Pattern Management Screen

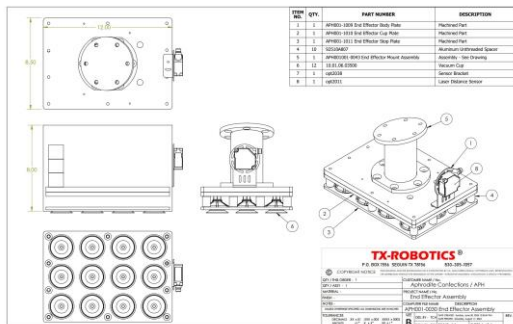


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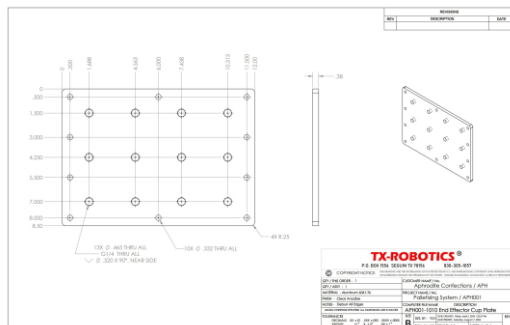
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# TX-ROBOTICS® DOCUMENTATION AND OPERATION MANUALS

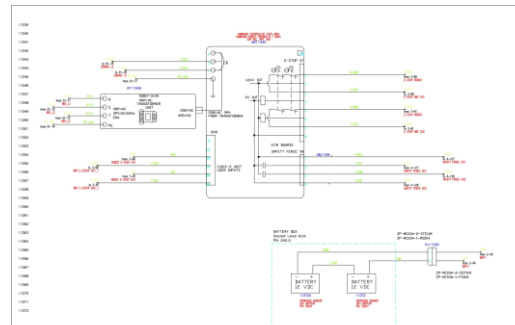
All TX-Robotics Systems are delivered with a complete set of documentation, which is provided in easy to access PDF format, and available directly from the Touchscreen User HMI.



Assembly Drawings



Part Drawings



Electrical Schematics

TX-ROBOTICS®					
BILL OF MATERIAL					
ITEM #	PART NUMBER	DESCRIPTION	MANUFACTURER	SOURCE	QUANTITY
1	APR001-0000	Robotics System	TX-Robotics	TX-Robotics	1
2	APR001-0010	Frame Assembly	LSC Welding and Manufacturing	LSC Welding and Manufacturing	1
3	APR001-0020	Robot Base Assembly	LSC Welding and Manufacturing	LSC Welding and Manufacturing	1
4	APR001-0030	Top Sheet Table	TX-Robotics	TX-Robotics	1
5	2002	Concrete Anchor package of 10	McMaster-Carr	McMaster-Carr	2
6	2351	Concrete Anchor package of 10	McMaster-Carr	McMaster-Carr	2
7	CT000-0010	Security Force Assembly	MCOD	McMaster-Carr	10
8	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	MCOD	McMaster-Carr	1
9	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	MCOD	McMaster-Carr	1
10	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	MCOD	McMaster-Carr	1
11	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	MCOD	McMaster-Carr	1
12	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	MCOD	McMaster-Carr	1
13	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
14	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
15	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
16	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
17	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
18	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
19	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
20	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
21	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
22	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
23	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
24	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
25	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
26	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
27	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
28	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
29	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
30	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
31	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12
32	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	MCOD	McMaster-Carr	12

Bill of Material

TX-ROBOTICS®					
RECOMMENDED SPARE PARTS					
ITEM #	PART NUMBER	DESCRIPTION	MANUFACTURER	SOURCE	QUANTITY
1	10.01.06.03500	Vacuum Cup	Automation Direct	Automation Direct	6
2	E221.8N88	E-Stop Switch	Eaton	Automation Direct	1
3	E22P881	Push Button Switch	Automation Direct	Automation Direct	1
4	0A5611-48-24	Safety Relay	Dold	Automation Direct	1
5	Z1124N-415102-G	Vacuum Generator	SMC Pneumatics	Automation Direct	1
6	QNR100-CP-CP	Thru Beam Sensor	Automation Direct	Automation Direct	1

Recommended Spare Parts List



### SYSTEM STARTUP



1. Energize the compressed air supply by opening the air supply valve on the regulator assembly.
2. Energize the control system by turning on the Main Power Supply switch, which is the Red and Yellow switch on the upper right-hand corner of the enclosure door.
3. When the system has initialized it will display the Main Screen.
4. Press the Product Select Button to select the Product to run. Make sure the Product selection matches the Product Nest on the conveyor.
5. Push the round button to put the system into Auto Mode and then press the blue Start/Stop Button to start the system. Make sure that boxes are conveying and pallets are in the racks.

Operations Manuals



### PERIODIC MAINTENANCE SCHEDULE



#### DAILY ---

1. Check Enclosure and Robot Controller vent fans for dust accumulation. Remove filters and clean by rinsing with tap water.
2. Check vacuum cups on End Effector for damage. Minimum acceptable vacuum is -3 psi.
3. Check Cables and Hoses on End Effector to insure they are supported and not binding. Make sure to keep adequate free play.
4. Remove any debris from pallet racks to insure proper nesting of pallets.

#### WEEKLY ---

1. Clean dust filters on Vacuum Generators
2. Clean dust off sensor heads and Safety Scanners

Periodic Maintenance

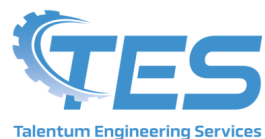


### PROGRAM BACKUPS





Program Backups



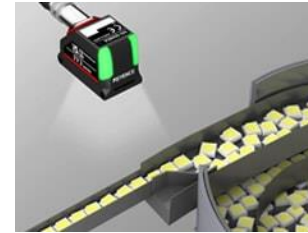
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# TX-ROBOTICS® END OF ARM TOOLS, AND OPTIONAL FEATURES



WE OFFER SMC PNEUMATICS COBOT GRIPPERS

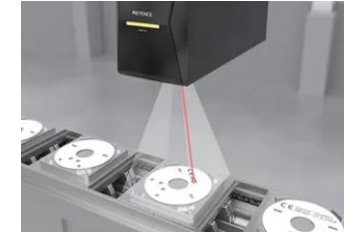
We offer a wide range of End of Arm Tools specifically designed for Cobots to suit whatever products you are stacking, We can also custom design tools to suit any application.



VISION SYSTEMS



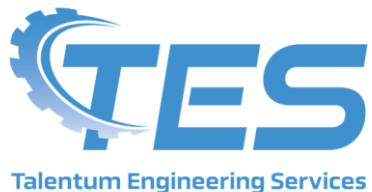
LABELING SYSTEMS



LASER MARKING

Where required, we can equip your system with a wide range of secondary operations such as vision systems, labeling, barcode reading, RFID tracking, and Laser marking.

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