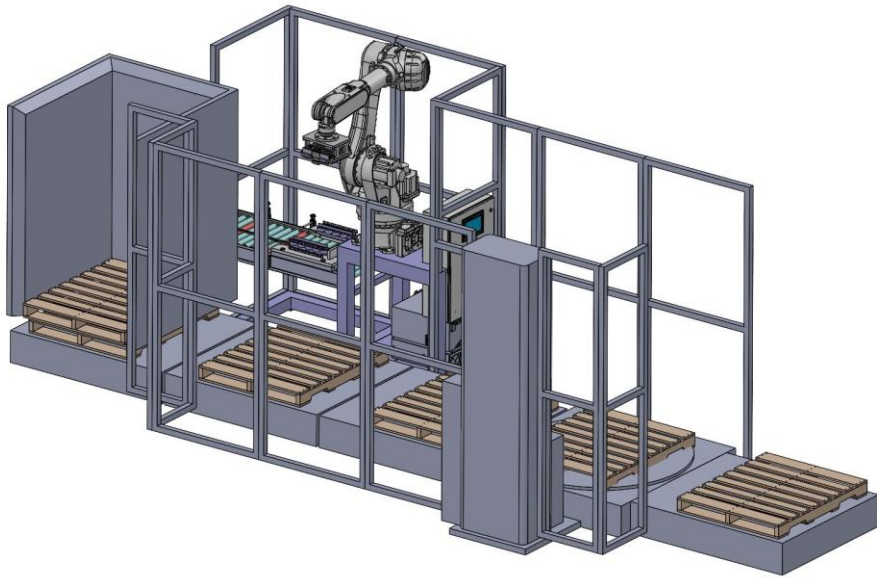


TX-ROBOTICS®

ROBOTIC AND COBOTIC SYSTEMS PRODUCT SPECIFICATIONS



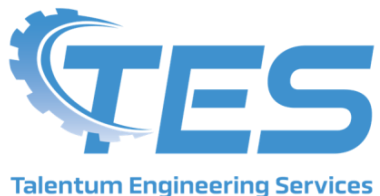
This Product Guide provides information for the TX-Robotics product line.

The Guide describes the capabilities for each system we offer, and the range of robot payloads and capabilities.

If needed, we offer Engineering drawings, with dimensions and specifications should that information be required.

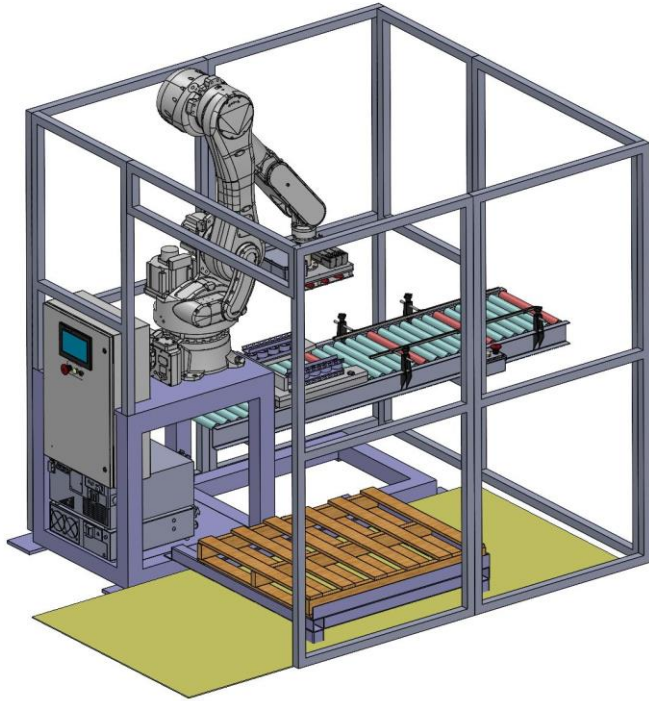
TX-Robotics can provide a complimentary system proposal to customers who are considering purchasing a system. The Proposal contains all system information, with pricing and delivery timeline.

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TX-ROBOTICS® SINGLE PALLET COMPACT SYSTEMS

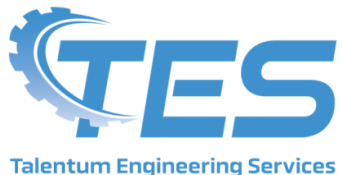


Single Pallet Systems offer a cost effective solution for palletizing where production does not require continuous stacking, or where there are space constraints. Systems are available with a variety of robots with payloads from 20kg to 180kg.

PRODUCT SPECIFICATIONS

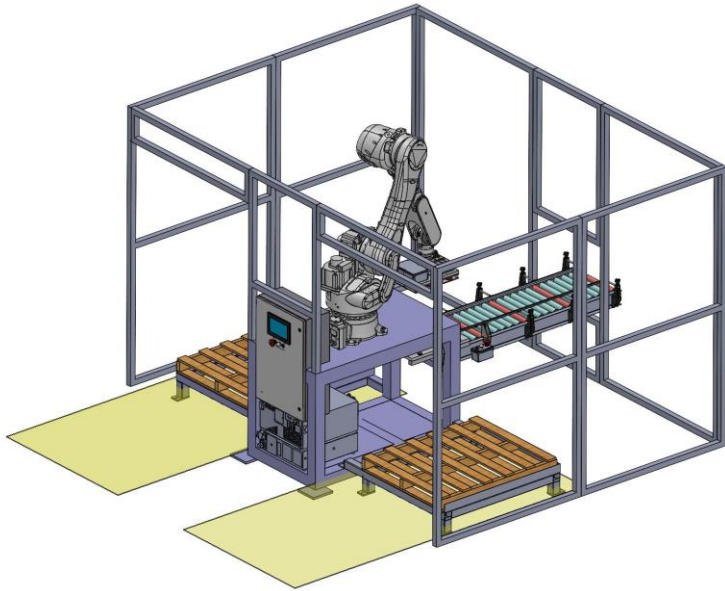
	TXR-20-1	TXR-80-1	TXR-180-1
Payload	Max 44lbs/20kg	Max 176lbs/80kg	Max 396lbs/180kg
Stack Hgt.	Max 76in/1930mm	Max 82in/2100mm	Max 105in/2667mm
Cycle Time	Max 8 cycles/min	Max 7 cycles/min	Max 7 cycles/min
Input	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
Pallet Removal	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)
Footprint	102in x 102in	102in x 102in	123in x 118in

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TX-ROBOTICS® 2 PALLET CONTINUOUS OPERATION SYSTEM

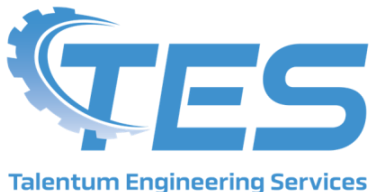


Double Pallet systems offer continuous stacking capability, with the ability to alternate between the two positions. If equipped with two product nests, the system can stack two different products. Double Pallet systems are available with a variety of robots with payloads from 20kg to 180kg.

PRODUCT SPECIFICATIONS

	TXR-20-2	TXR-80-2	TXR-180-2
Payload	Max 44lbs/20kg	Max 176lbs/80kg	Max 396lbs/180kg
Stack Hgt.	Max 76in/1930mm	Max 82in/2100mm	Max 105in/2667mm
Cycle Time	Max 8 cycles/min	Max 7 cycles/min	Max 7 cycles/min
Input	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
Pallet Removal	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)
Footprint	120in x 156in	120in x 156in	132in x 169in

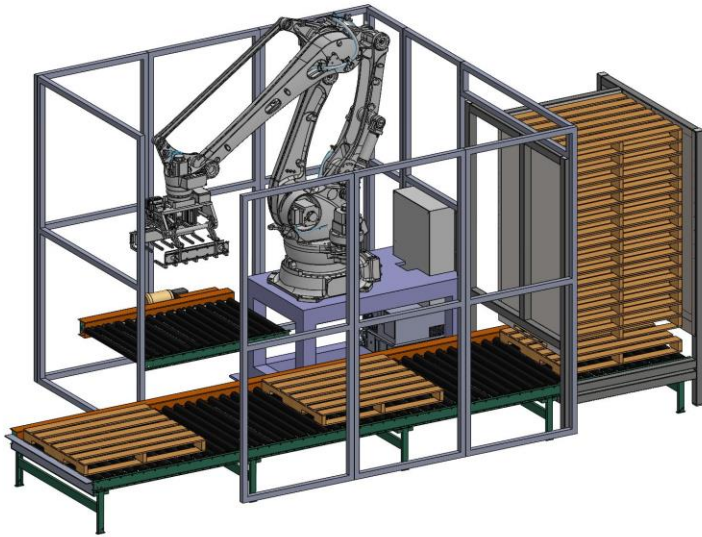
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TX-ROBOTICS® AUTOMATIC PALLET DISPENSING SYSTEMS

Automatic Pallet Dispensing Systems offer continuous stacking without the need to manually place pallets in the stacking position. The automatic Pallet Dispenser places up to 20 pallets automatically. Operation is continuous as long as finished pallets are removed in a timely manner. These systems are available with a variety of robots from 20kg to 180kg payloads.



PRODUCT SPECIFICATIONS

	TXR-20-3	TXR-80-3	TXR-180-3
Payload	Max 44lbs/20kg	Max 176lbs/80kg	Max 396lbs/180kg
Stack Hgt.	Max 76in/1930mm	Max 82in/2100mm	Max 105in/2667mm
Cycle Time	Max 8 cycles/min	Max 7 cycles/min	Max 7 cycles/min
Input	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
Pallet Removal	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)
Footprint	120in x 156in	120in x 156in	132in x 169in
Pallet Loading	Pallet Dispenser	Pallet Dispenser	Pallet Dispenser

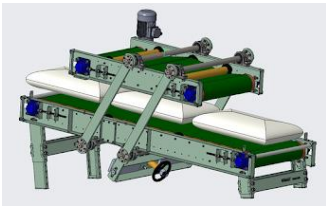
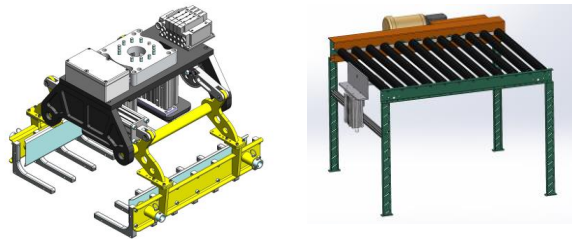
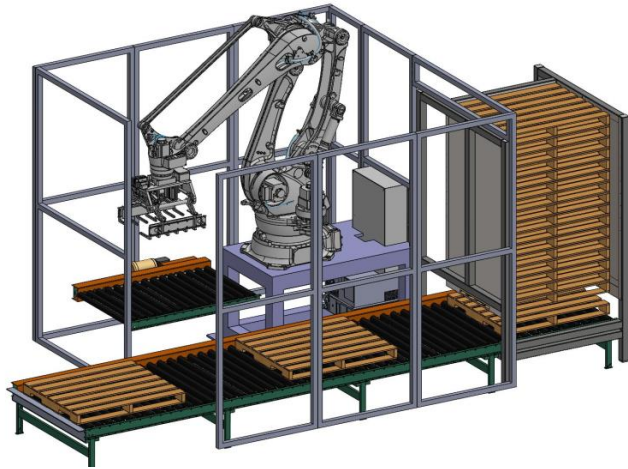
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TX-ROBOTICS® AUTOMATIC PALLET DISPENSING SYSTEM FOR BAGS

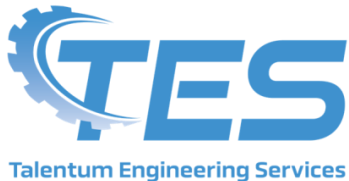


Our Automatic Pallet Dispensing System is available configured to stack bagged products. The system is equipped with our Bag Gripper, Bag Nest Assembly and Bag Flattening unit. The system is available with a variety of 20KG, 80kg, and 180kg payload robots.

PRODUCT SPECIFICATIONS

	TXR-20-4	TXR-80-4	TXR-180-4
Payload	Max 44lbs/20kg	Max 176lbs/80kg	Max 396lbs/180kg
Stack Hgt.	Max 76in/1930mm	Max 82in/2100mm	Max 105in/2667mm
Cycle Time	Max 8 cycles/min	Max 7 cycles/min	Max 7 cycles/min
Input	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
Pallet Removal	Forklift only	Forklift only	Forklift only
Footprint	98in x 242in	98in x 242in	98in x 242in
Pallet Loading	Pallet Dispenser	Pallet Dispenser	Pallet Dispenser

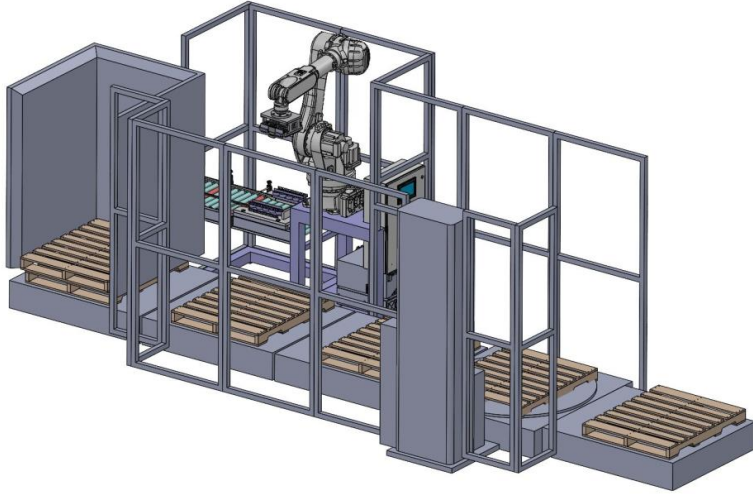
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TX-ROBOTICS® AUTOMATIC PALLET DISPENSING / STRETCH WRAP SYSTEMS

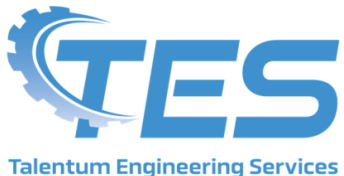
Automatic Palletizing systems can be configured with automatic Stretch Wrapping Units to provide an extremely efficient palletizing solution due to reduction in operators and manual input. These systems are available with a variety of robots from 80kg to 180kg payloads, and with a variety of End of Arm Tool options to suit any product type.



PRODUCT SPECIFICATIONS

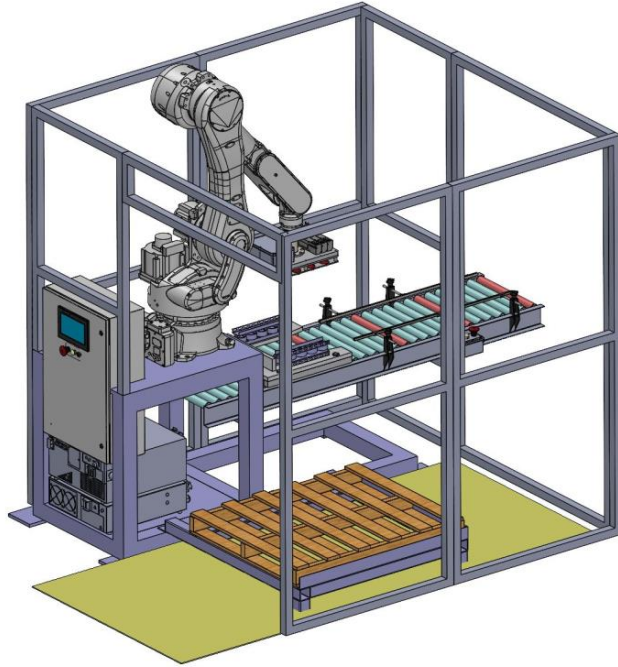
	TXR-20-5	TXR-80-5	TXR-180-5
Payload	Max 44lbs/20kg	Max 176lbs/80kg	Max 396lbs/180kg
Stack Hgt.	Max 76in/1930mm	Max 82in/2100mm	Max 105in/2667mm
Cycle Time	Max 8 cycles/min	Max 7 cycles/min	Max 7 cycles/min
Input	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
Pallet Removal	Forklift only	Forklift only	Forklift only
Footprint	98in x 242in	98in x 242in	98in x 242in
Pallet Loading	Pallet Dispenser	Pallet Dispenser	Pallet Dispenser
Stretch Wrap	Fully Auto Wrapping	Fully Auto Wrapping	Fully Auto Wrapping

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TX-ROBOTICS® DEPALLETIZING SYSTEMS



Depalletizing Systems remove products from stacked pallets, generally placing the products onto a conveyor system for processing in a manufacturing process. These systems typically employ a vision system to precisely locate and pick the products. These systems are available with a variety of robots with payloads from 20kg to 180kg. End of arm tools can be specifically designed to pick products such as bottles, and other difficult to handle products.

PRODUCT SPECIFICATIONS

	TXR-20-6	TXR-80-6	TXR-180-6
Payload	Max 44lbs/20kg	Max 176lbs/80kg	Max 396lbs/180kg
Stack Hgt.	Max 76in/1930mm	Max 82in/2100mm	Max 105in/2667mm
Cycle Time	Max 8 cycles/min	Max 7 cycles/min	Max 7 cycles/min
Input	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
Pallet Removal	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)
Footprint	102in x 102in	102in x 102in	123in x 118in

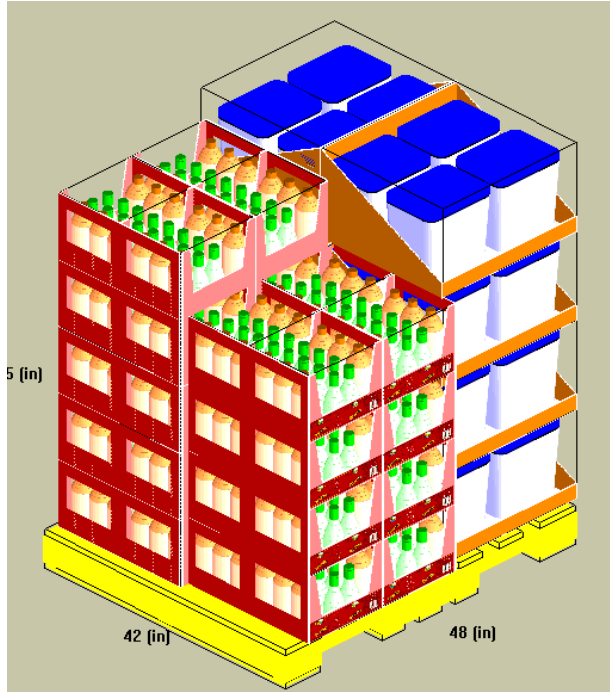
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TX-ROBOTICS® MIXED CONTAINER PALLETIZING SYSTEMS



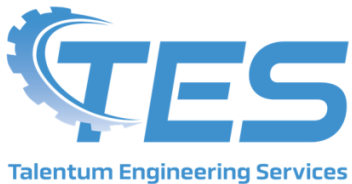
Mixed Container Palletizing systems have the ability to stack products of different Carton dimensions. Our systems employ cutting edge application software to make this possible. Typically, Mixed Container Palletizing is designed to stack taped cardboard containers, with vacuum pickup.

Systems are available with a variety of robots with payloads from 20kg to 180kg. Mixed Container Palletizing can be incorporated into all of our Palletizing products.

PRODUCT SPECIFICATIONS

	TXR-20-7	TXR-80-7	TXR-180-7
Payload	Max 44lbs/20kg	Max 176lbs/80kg	Max 396lbs/180kg
Stack Hgt.	Max 76in/1930mm	Max 82in/2100mm	Max 105in/2667mm
Cycle Time	Max 8 cycles/min	Max 7 cycles/min	Max 7 cycles/min
Input	Power Roller Conveyor	Power Roller Conveyor	Power Roller Conveyor
Pallet Removal	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)	Forklift/Pallet Jack (Specify)
Footprint	Varies with system	Varies with system	Varies with system

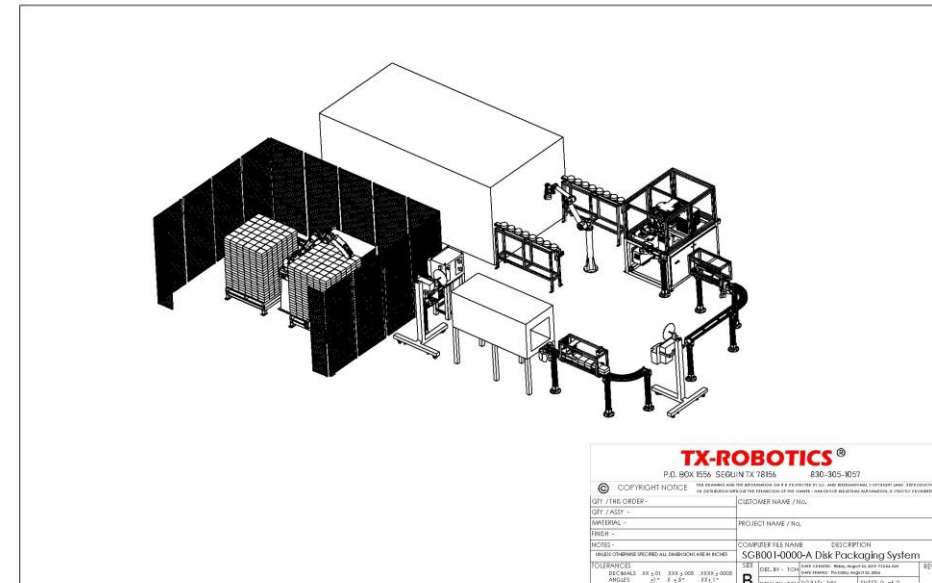
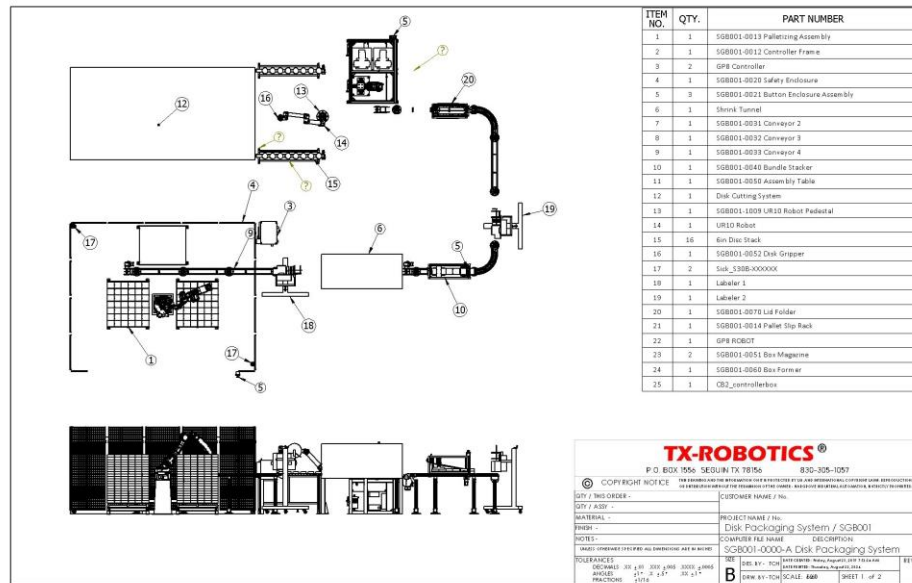
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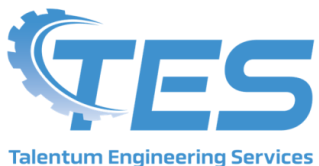
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TX-ROBOTICS® CUSTOM PALLETIZING SYSTEMS

Some manufacturing solutions require a custom designed system that satisfies specific requirements. Our Engineering team can provide you with a complete manufacturing solution. We offer Turnkey capabilities, or can offer consulting Design Services if the circumstances dictate a planning and evaluation phase . We can produce a complete Design Package to verify your requirements.



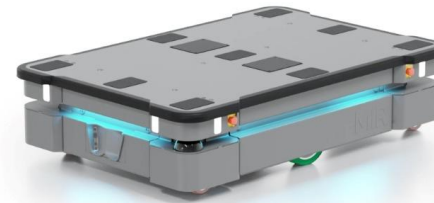
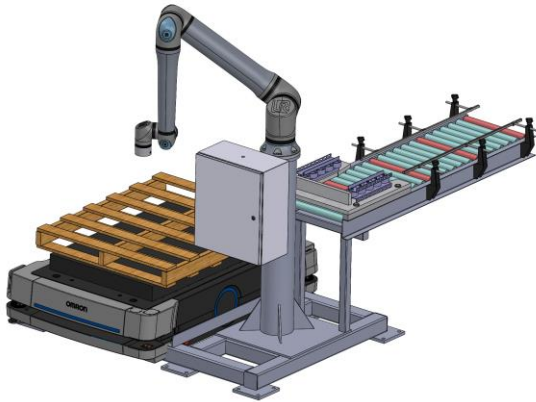
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TX-ROBOTICS®

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.

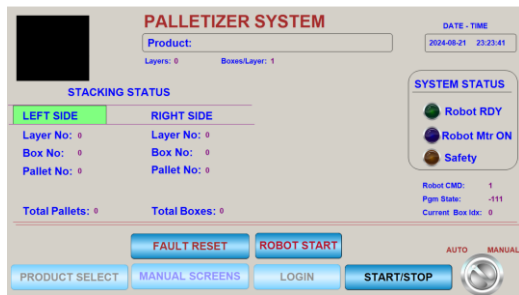
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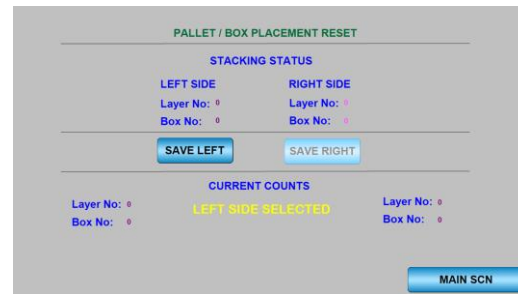
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TX-ROBOTICS® TX-STACK® USER INTERFACE AND OPERATING SYSTEM

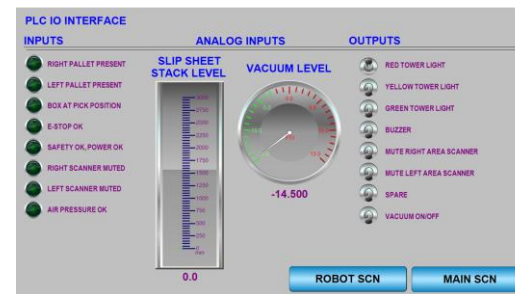
All TX-Robotics systems are controlled by our **TX-STACK®** Operating System, which runs on a State of the Art Hybrid Industrial PC/PLC system using a Windows 10 Embedded operating system. This system is capable of real time PLC control in addition to concurrent execution of Windows 10 apps, which includes 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.



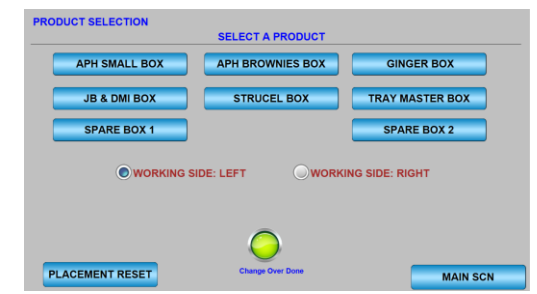
System Main Screen



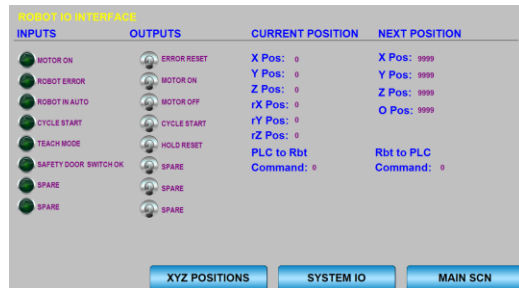
Box Placement Screen



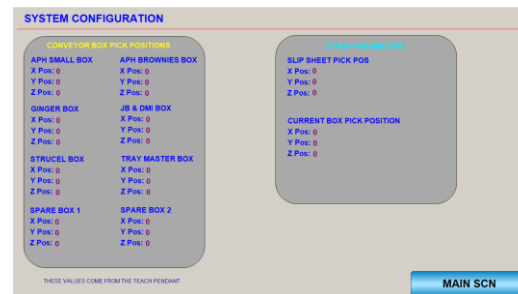
PLC - I/O Interface Screen



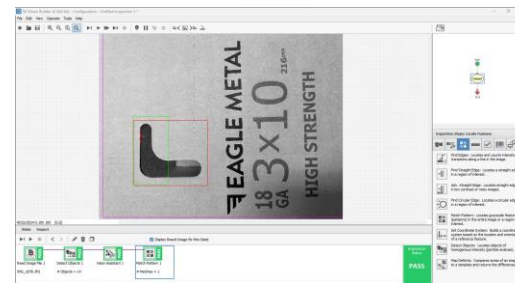
Product Selection Screen



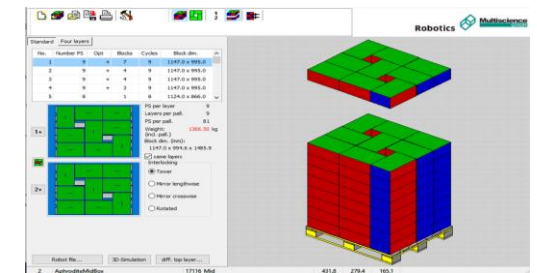
Robot Interface Screen



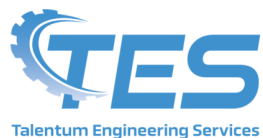
System Configuration Screen



Vision Inspection Screen



Pallet Pattern Management Screen

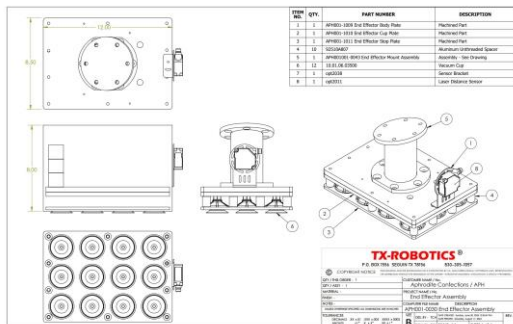


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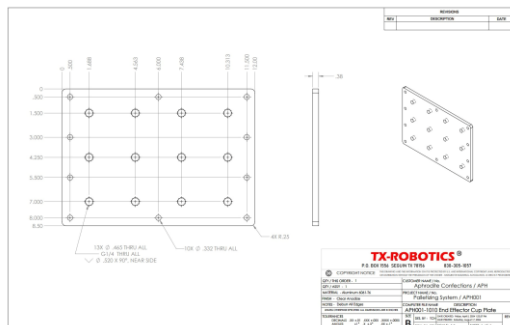
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TX-ROBOTICS® DOCUMENTATION AND OPERATION MANUALS

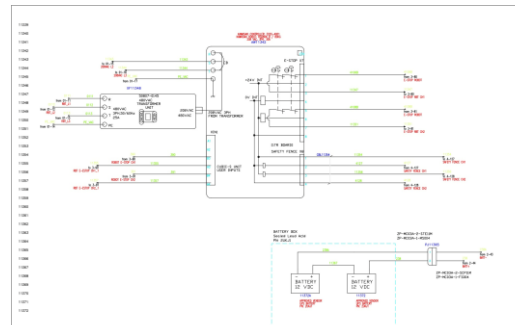
All TX-Robotics Systems are delivered with a complete set of documentation, which is provided in easy to access PDF format, and available directly from the Touchscreen User HMI.



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	USC Welding and Fabrication	USC Welding and Fabrication	1
3	APR001-0020	End Effector Assembly	TX-Robotics	TX-Robotics	1
4	2002	Concrete Anchor package of 10	McMaster-Carr	McMaster-Carr	2
5	2353	Concrete Anchor package of 10	McMaster-Carr	McMaster-Carr	2
6	17000-0010	Security Force Assembly	McMaster-Carr	McMaster-Carr	10
7	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	1
8	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	1
9	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	1
10	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	1
11	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	1
12	2472 Mesh Panel, cut to length 36.0" x 48.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	1
13	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
14	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
15	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
16	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
17	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
18	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
19	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
20	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
21	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
22	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
23	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
24	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
25	40-4500-Like Extension, cut to length 80.0"	Security Force Assembly	McMaster-Carr	McMaster-Carr	12
26	1133075	Clear Image	McMaster-Carr	McMaster-Carr	1
27	1133075	Clear Image	McMaster-Carr	McMaster-Carr	1
28	APR001-0030	End Effector Assembly	TX-Robotics	TX-Robotics	1
29	APR001-0040	End Effector Assembly	TX-Robotics	TX-Robotics	1
30	APR001-0050	End Effector Assembly	TX-Robotics	TX-Robotics	1
31	APR001-0060	End Effector Assembly	TX-Robotics	TX-Robotics	1
32	APR001-0070	End Effector Assembly	TX-Robotics	TX-Robotics	1

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	E221.8H88	E-Stop Switch	Eaton	Automation Direct	1
3	E220P81	Push Button Switch	Automation Direct	Automation Direct	1
4	0A5611-48-24	Safety Relay	Dold	Automation Direct	1
5	Z1124H-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 ---

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

WEEKLY ---

- Clean dust filters on Vacuum Generators
- Clean dust off sensor heads and Safety Scanners

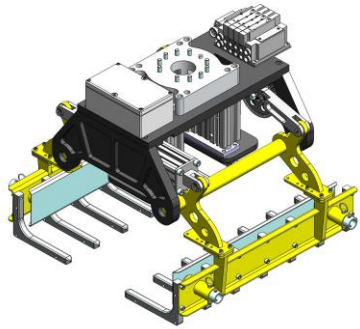
Periodic Maintenance



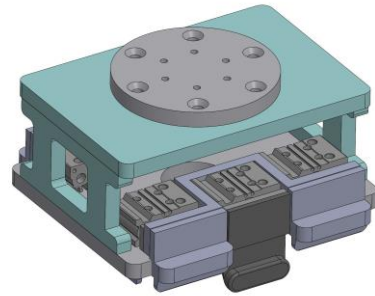
Keyence Safety Scanner PLC Programs Robot Programs Stacking Patterns

Program Backups

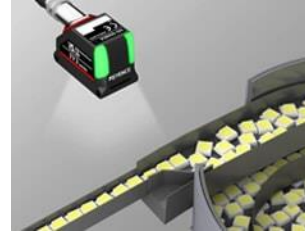
TX-ROBOTICS® END OF ARM TOOLS, AND OPTIONAL FEATURES



BAG GRIPPER



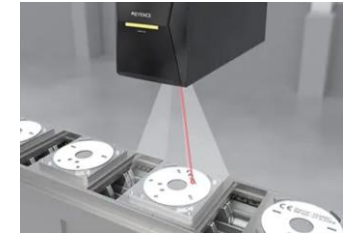
RPC CRATE GRIPPER



VISION SYSTEMS



LABELING

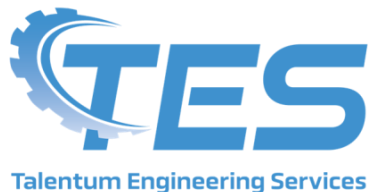


LASER MARKING

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

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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