Cost effective robotic and automated cell configurations are delivered fully assembled, tested, calibrated, and ready for part programming. Part tooling and programming can also be provided by ACT.

Standard Robotic cells from ACT can be applied to various applications like grinding, cutoff, polishing, contouring, blending, deburring, buffing, masking and dispensing, and more. Wide range of part shapes and sizes can be handled by these cells. They can also be customized based on customer's process and production requirements.

Please contact us at sales@actrobots.com with any inquiries.
Robotic Cells

Grinding/Polishing:

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DUAL CELL WITH CENTER PART FEED CONVEYOR - 15284

ACT-15284 is a robotic grinding/polishing system made up of 2 robotic cells and a part feed conveyor. The conveyor detects parts fed in standard plastic trays and automatically distributes them to robotic cells for processing. Then, the parts are picked up from simple tray nests using vision and processed on the belt, 2 abrasive wheels, and/or drill/reamer stations. Finished parts are dropped on the exit chute to be collected in customer bins. The robots automatically pick the tool/gripper from the magazine based on the incoming part number.

- Robot arm with 50-80 kg payload (Yaskawa or ABB)
- Automatic tool changer EOAT
- Robot mounted vision system
- 5 HP belt grinding head
- 5 HP dual wheel head with wheel wear sensors
- Tool/Gripper magazine with 3 or 6 docking nests
- 3 or 6 Gripper assemblies
- Part exit chute
- Enclosure and Base
- Dust collection ducting with automatic gates
- Human Machine Interface (HMI)

SINGLE CELL WITH PART FEED CONVEYOR - 17292

ACT-17292 is a robotic grinding/polishing system made up of a single robotic cell and a part feed conveyor. The conveyor detects parts fed and distributes them to the robotic cell for processing. Then, the cell parts are picked up from simple tray nests using vision and processed on the belt, 2 abrasive wheels, and/or drill/reamer stations. Finished parts are dropped on the exit chute. The robot picks the tool/gripper from the magazine based on the incoming part number.

- Robot Arm with 50-80 kg payload (Yaskawa or ABB)
- Automatic tool changer EOAT
- Robot mounted vision system
- 5 HP Belt grinding head
- 5 HP Dual wheel head with wheel wear sensors
- Tool/Gripper magazine with 3 or 6 docking nests
- 3 or 6 gripper assemblies
- Part exit chute
- Enclosure and Base
- Dust collection ducting with automatic gates
- Human Machine Interface (HMI)
SINGLE CELL WITH PART FEED CONVEYOR - 17287

ACT-17287 is a grinding/polishing system. The conveyor detects large fed parts and automatically distributes them for processing. Then, the cell parts are picked up from the conveyor and processed on the belt, 2 abrasive wheels, and/or drill/reamer stations. Finished parts are placed back on the conveyor. Robot arm 120-350 kg payload (Yaskawa or ABB)

- 10 HP belt head with linear compliance
- 10 HP dual wheel head with linear and automatic wear compensation
- Automatic tool changer EOAT
- Robot mounted vision
- Tool magazine with docking nest for grippers and tool assemblies
- 90 deg grinder tool, debur tool assembly, 3-4 gripper assemblies
- Enclosure and Base
- Dust Collection ducting with automatic gates
- Human Machine Interface (HMI)

DUAL CELLS, ROBOT AND TOOL MAGAZINE IN BETWEEN - 18296

ACT-18296 is a robotic polishing or grinding system consisting of 3 areas. The center area includes part load drawers, and the robot and tool magazine. The left and right areas are redundant process areas where the robot switches part processing based on the abrasive configuration and part recipe. Polishing or grinding operations can be programmed to be done in one area with an automatic switch to the other when abrasives reach maximum wear. Both can be employed at the same time when a multi-abrasive process is needed.

- Two 5 HP belt head with linear compliance
- 5 HP single wheel head with linear compliance
- Overhead safety roller gate
- Triple vertical drawer part load magazine
- 50-80 kg robotic arm
- Automatic tool changer end of arm
- Tool magazine with up to 20 tool/gripper docking nest
- Enclosure and Base
- Dust collection ducting with automatic gates
ACT Robots, Inc.
Grinding/Polishing: Part to Media

**POLISHING CELL WITH 1 BELT & 2 WHEELS - 14274**

ACT-14274 is a polishing cell designed for smaller parts such as bathroom and kitchen faucet fixtures. It consists of a robot arm with a gripper EOA, 5 HP belt head, two 5 HP wheel heads, and a dual drawer part load mechanism.

- Robot arm with 20 kg payload
- Gripper and pass-through device EOAT
- 5 HP belt head with linear compliance
- Front and reverse belt configuration arm
- Two 5 HP single wheel heads with linear compliance
- Wheel wear sensor
- Dual drawer part load station
- Enclosure and Base (7H x 10H x 8H)
- Part exit chute
- Enclosure and Base
- Dust collection ducting with automatic gates
- Human Machine Interface (HMI)

**COATING THICKNESS POLISHING - 13270**

ACT-13270 is a portable robotic polishing or deburring cell originally designated for coating stripping and polishing. The coatings could be plasma spray of aerospace components. The process consists of picking parts from static load nests after vision detection, polishing on 2 servo driven wheel spindles, and dropping them off at the unload area. Polishing includes closed loop force control.

- Robot arm with 6 kg payload
- Automatic tool changer EOA
- Tool/gripper magazine
- Two servo drive wheel spindles w/ auto collets
- Automatic wheel change picture with gripper, arbors, and docking nests
- Part load and unload areas w/ vision and safety
- Human Machine Interface
- Enclosure and base (61" x 61" x 94")
- Dust collection ducting
POLISHING OR DEBURRING CELL - 17997-0000
ACT-17997 is a polishing or deburring robotic cell with a base floor integrated down-draft style dust collector. This cell is portable and self contained with 6-10 kg robotic arm, part load drawer, rotary indexer tool magazine, high speed debur spindle, small wheel spindle, 2HP belt station, 5HP wheel head, small belt head, and dust collector in the floor.

- Robot Arm (6-10 kg) w/ auto tool changer EOA
- High speed deburring spindle with 360 deg compliance
- Servo or air driven spindle for small wheels up to 6" OD
- Belt head, 2HP
- Wheel head, 5HP, for large abrasive wheels up to 16" OD
- Small belt tool with radial compliance for belts up to 1/2" W x 18" L
- Part load drawer
- Rotary indexer tool magazine with up to 16 tool docking positions
- Down-draft dust collector integrated in machine base
- Enclosure and base
- Human Machine Interface (HMI)

GRINDING CELL WITH 2 BELTS - 12262
ACT-12262 is a robotic grinding cell for medium size parts such as wrenches and pliers, with a robotic arm part load indexer, two heavy duty 5HP belt heads, and a part exit chute.

- Robotic arm (50-80 kg payload) with gripper EOAT
- Two heavy duty 5HP belt grinding heads with linear compliance
- Indexer with framing for part load fixtures
- Dust collection ducting, scoops, and automatic gates
- Enclosure and base
- Human Machine Interface

Options
- Vision or laser scanner to measure part deformation and offset robot motion
- Automatic tool change adapters
- Tool magazine
CELL WITH 3 BELTS AND TOMBSTONE - 07229

ACT-07229 is a polishing or grinding cell for parts such as door handles or faucet fixtures, requiring a 3-5 step abrasive process.

- Robotic arm (50-80 kg payload) with gripper EOA
- Three 5HP belt heads with linear compliance
- Dual wheel 5HP head
- 4-sided vertical part load magazine (tombstone) on 90 deg indexer
- Human Machine Interface
- Enclosure and base

Options
- Automatic wheel wear measuring sensor
- Dust collector
- Laser scanner for part measuring and offsets

WELD BLENDING CELL - 19305

ACT-19305 is a precision weld blending machine that utilizes a 6-axis robotic articulated arm, blade scanner, and a finishing process that yields consistent and accurate airfoil shape, blade height, and chord width of tip weld repaired blades. ACT-19305 eliminates hand grinding of weld tip repaired blades, increases productivity, minimizes scrap rate, and produces consistent blade geometry at a very low cost of consumables. The tip welds are ground to within 0.002” (0.05mm) from airfoil without cutting into the substrate material.

- 6-axes articulated robotic arm with controller
- Grinding stations
- Part surface and weld scanner
- Indexer for part loading
- Part tooling
- Base and Enclosure
- Dust collection ducts

Options
- Automatic gripper change
- Squealer groove grinding
- Final inspection and measurement with data collection
- Offline programming software
BLADE POLISHING CELL - 18996
ACT-18996 is a robotic cell for polishing blades and other smaller parts. It had a robotic arm, part load drawer(s), vision scanner, polishing area with 3 wheel spindles, down-draft dust collection, and tool/gripper magazine.
- Robotic arm (20 kg payload)
- Automatic tool changer adapter EOA
- Tool/gripper magazine with gripper and wheel arbors docking nest
- Three auto collet 1/2HP servo wheel spindles
- Two part load/unload drawers
Options
- Vision scanner
- Re-grip station for parts reorienting
- Wet or dry dust collector

BLADE POLISHING CELL - 18996-0001
ACT-18996-0001 is a robotic cell for polishing blades and other smaller parts. It had a robotic arm, part load drawer(s), vision scanner, two separate polishing areas with 3 wheel spindles and down-draft dust collection, and finally tool/gripper magazine.
- Two separate polishing areas to process parts of different materials which cannot mix such as steel and aluminum or titanium
- Robotic arm (20 kg payload)
- Automatic tool changer adapter EOA
- Tool/gripper magazine with gripper and wheel arbors docking nest
- Three auto collet 1/2HP servo wheel spindles
- Two part load/unload drawers
Options
- Vision scanner
- Re-grip station for parts reorienting
- Wet or dry dust collector

CELL WITH 4 BELTS OVER/UNDER - 07226
ACT-07226 is a polishing or grinding cell for parts such as door handles or faucet fixtures, rifle barrels, etc. requiring a 3-5 step abrasive process.
- Robotic arm (50-80 kg payload)
- Gripper for long barrels with rotating lathe
- Four 5HP belt heads in an over/under configuration
- Dual wheel 5HP head
- 4-sided vertical part load magazine (tombstone) on 90 deg indexer
- Human Machine Interface
- Enclosure and base
POLISHING AND BURNISHING CELL FOR PLASTIC PARTS - 18301

ACT-18301 is a polishing/burnishing cell for light plastic parts with precise flat surface polishing. This cell utilizes robotic arm with pneumatic floating pusher to hold and press parts against static sandpaper on precision plate for very accurate flatness polishing of plastic parts surfaces. Parts are dragged across the abrasive in a programmed pattern while floating tool pushes down with programmable force. The float mechanism keeps part flat against the grinding plate thus eliminating errors from robot and gripping. Abrasion sandpaper feeds automatically when used to present fresh section for next batch of polishing.

- Robot arm (12-24 kg payload)
- End of arm tool with gripper for part handling and programmable floating pusher for polishing
- Sandpaper roller feeder with precise polishing plate
- Interlocked part load area
- Part and tool detection sensor
- Enclosure and base

17997-0000.122217 - POLISHING OR DEBURRING CELL

ACT-17997-0000.122217 is a polishing or deburring robotic cell with a base floor integrated down-draft style dust collector. This cell is portable and self contained with 6-10 kg robotic arm, part load drawer, rotary indexer tool magazine, high speed debur spindle, small wheel spindle, two 5HP wheel heads, small belt head, and dust collector in the floor.

- Robot Arm (6-10 kg) w/ auto tool changer EOA
- High speed deburring spindle with 360 degree compliance
- Two servo or air driven spindles for small wheels up to 6" OD
- Two wheel heads, both 5HP, with auto collet spindles for quick or automatic wheel change
- Small belt tool with radial compliance for belts up to 1/2" W x 18" L
- Part load drawer
- Rotary indexer tool magazine with up to 16 tool docking positions
- Re-grip station with 2-jaw gripper and 180 deg rotary index
- Down-draft dust collector integrated in machine base
- Enclosure and base
- Human Machine Interface (HMI)
**SINK DEFLASHING AND GRINDING CELL - 19303**

ACT-19303 is a robotic grinding or polishing cell originally designed for processing of marble sinks where parts are mounted on fixtures located on a 180 deg indexer, rotated inside the cell, and processed with a 90 deg grinder mounted to robotic arm. Dust collection included.

- Robotic arm (50-80 kg payload)
- Grinder, 90 deg, 3HP equivalent, with compliance mounted to robot EOA
- Indexer, 180 deg, with part fixtures equipped with pneumatic part clamps
- Dust collection system with circulating air

**17288 - DUAL ROBOTIC CELL FOR COATING BURNISHING/POLISHING**

ACT-19303 is a robotic grinding or polishing cell originally designed for processing of marble sinks where parts are mounted on fixtures located on a 180 deg indexer, rotated inside the cell, and processed with a 90 deg grinder mounted to robotic arm. Dust is collected using wall style collector with circulating air.

**Loading Robot Cell:**
- Robotic arm (10 kg) with vacuum gripper
- Dual eddy current probe tool
- Part load and unload drawers
- Overhead vision system
- Barcode printer
- Vision or barcode reader

**Polishing Robot Cell:**
- Robotic arm (20 kg) with servo driven spindle with auto collet
- Abrasive disks magazines (hook & loop style)
- Disk pads mounted on arbors docked in nests
- Automatic abrasive disk application
- Disk peeler

**Indexer**
- I/O data network, pneumatics, and power fed to top plate through rotary unions and slip rings for continuous rotation
- Vacuum part holding fixtures
- Interlocked with both loading and polishing robots

**Cell**
- Enclosure and base
- Dust collector
**IBR POLISHING CELL - 15282**

ACT-15282 is a robotic cell for automatic polishing of machining lines on IBR blade sides, fillet radius, and air flow path. The cell utilizes robotic arm and series of abrasive belt tools and rotary spindle programmed to gradually polish all IBR blades in pre-determined sequence. As belts and other abrasive are used the robot swaps tools with fresh abrasives to continue its polishing operations on the rest of IBR blades.

Parts are loaded on servo controlled rotary table, automatically positioned by locating first blade before the polishing process begins. Offline motion programming software allows development of complex tool paths on contoured surfaces such as concave ad convex blade sides. Latest in robotic safety devices and methodologies compliant with RIA regulations are used. The entire system is surrounded by a dust and sound reducing enclosure with door safety interlocks.

- Robot arm payloads: 50kg
- Automatic tool changer
- Servo controlled rotary table with part chuck
- Tool magazine with belt and spindle tools
- ACTView Human Machine Interface software
- Common base and full enclosure

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**POLISHING AND BUFFING OF KETTLES - 11257**

ACT-11257 is a drum shaped parts polishing and buffing cell (kettles). Parts are loaded onto the rotary spinner table and upon starting program execution, the robot arm performs part fixture adjustments for the part type and size. The fixtures were designed to be adjustable for holding down drum rims of parts without bottom fixturing features.

Next, robot equipped with 5-10HP servo drive spindle with auto collet would pickup series of programmed abrasives mounted on 1" diameter arbors and docked in nests in tool magazine. The abrasives were used for polishing drum surfaces while part was spinning. Some finishing steps were buffs with compound which was applied automatically in the dual compound station.

Vacuum tool is included for automatic vacuuming of polishing dust from part surfaces.

- Robotic arm (80-150 kg payload)
- Auto collet servo driven spindle (10-13HP)
- Tool magazine with various arbors and abrasives
- Dual compound application station
- Part rotary spinner
- Part hold-down fixtures with automatic size adjustments

Options:
- Industrial vacuum tool system
- Human Machine Interface
ROBOTIC BUFFING CELL FOR LARGE OBJECTS (I.E. PIANO) - 16285

ACT-16285 is a robotic buffing cell for large objects such as pianos, furniture, or metal housings where buffing media is manipulated on the object surface. Parts like pianos are loaded on the low profile high capacity rotary tables and locked in fixtures. Upon program execution robotic arm equipped with high power auto collet spindle buffs surfaces using various pads and buff wheels mounted on 1" (25 mm) diameter arbors docked in tool magazine.

As part of buffing process the robot automatically rakes and evens out buff surfaces, and applies 3 different compounds. Part rotates in synchronization with the robot motion program on the rotary table controlled by 7th or 8th servo axis of the robot controller. Buffs and pads are pressed against part surfaces with tightly controlled programmable force. Robot alters its motion path to maintain constant force against the part in closed loop force control function using feedback from force/torque sensor.

- Robotic arm (150 kg payload)
- Force control function and sensor
- Servo driven auto collet spindle mounted to robot's EOA
- High capacity servo driven low profile rotary table
- Tool magazine with docking nests for buffing tools
- Buffing tools including straight arbors of various lengths and 90deg attachments
- Liquid compound spray system including tank, hose bundle on reel, spray gun arbor.
- Compound application station with 3 different bar compound applicators, buff rake, buff sandpaper treatment plate
- Human Machine Interface on teach pendant

Options
- 2nd part rotary table
- 2nd compound and buff treatment station
ROBOTIC BUFFING CELL FOR SMALL PARTS - 14276

ACT-14276 is a robotic buffing cell where smaller parts such as faucet fixtures or door hardware are handled by robotic arm and manipulated on buff wheels. Parts are picked up from one of two load drawers and buffed as programmed on up to 4 wheels with liquid or solid compound applied to the wheels automatically. Spray guns or solid compound applicators are mounted above or behind the wheels. Wheels are arranged in over/under configuration with top wheels recessed to give access to the bottom buffs.

- Robotic arm (20-80 kg payload)
- Two or three jaw gripper with signal pass-through mounted to robot's EOA
- Four wheel head (5-10HP)
- Liquid compound spray system with pressure pod or pump and continuous or pulse spray guns
- Dual drawer part load mechanism
- ACTView HMI Interface

Options:
- Solid bar compound applicators
- Wheel wear sensors
- Other part load mechanisms
GATE CUTOFF WITH BAND SAW MODEL - 18297

ACT-18297 is a robotic cell for casting gate cutoff with a band saw. The cell is equipped with a 600 kg payload 6-axis articulated robotic arm, automatic tool changer, tool magazine, part load nests, re-grip indexer station, scrap bins, and a 5 HP hydraulic powered band saw.

- Robot arm payload: 600 kg
- Band saw: 5 HP hydraulic
- 60” x 60” mouth
- Tool change EOAT
- Tool magazine with 3 docking nests
- Regrip station with 180 degree indexer
- Force control for part sensing
- Band saw present sensor

CUTOFF AND GATE GRINDING CELL MODEL WITH OPTIONAL EDGE GRINDING - 17294

ACT-17294 is a robotic cell for automatic casting tree cutoff, trim cuts, and gate grinding operations. It utilizes 6-axis articulated and programmable foundry rated robotic arm as well as heavy duty 40HP belt grinding and 60HP dual wheel stations with linear compliance slides allowing force of abrasive on the parts to be programmable.

Parts are loaded outside the machine on 180deg indexer table which rotates them inside the cell for processing. Cutoff pieces as well as parts after gate grinding are transferred outside on a conveyor. Latest in robotic safety devices and methodologies compliant with RIA regulations are used. The entire system is surrounded by dust and sound reducing enclosure with door safety interlocks.

- Robot arm payloads: 300—800kg
- Belt grinding station: 40HP
- Dual wheel station: 60HP
- 180deg indexer
- Steel slat conveyors
- Common base and full enclosure
- Standard cell size: 6.1 x 5.5 meters
ACT-04196 is a robotic cell for automatic casting tree cutoff, trim cuts, and gate grinding operations. It utilizes 6-axis articulated and programmable foundry rated robotic arm as well as a pivoting, chop saw style 60 HP cutoff wheel station, and 5 HP belt station. Parts are loaded outside the machine on 180deg indexer table which rotates them inside the cell for processing.

Cutoff pieces as well as parts after gate grinding are transferred outside on a conveyor. Latest in robotic safety devices and methodologies compliant with RIA regulations are used. The entire system is surrounded by dust and sound reducing enclosure with door safety interlocks.

- Robot arm payloads: 300—800kg
- Belt grinding station: 40HP
- Dual wheel station: 60HP
- Automatic tool change EOAT adapter
- 180 degree indexer; tool magazine/indexer
- Steel slat conveyors
- Common base and full enclosure

ACT-09240 is a robotic cell for casting gate cutoff with a band saw. The cell is equipped with a 50 kg payload articulated robotic arm, automatic tool changer, tool magazine, part load nests, re-grip indexer station, scrap bins, and a 5 HP cutoff wheel.

- 50 kg robot arm
- 5 HP cutoff wheel
- 5 HP belt grinding station
- Part tray magazine
- Tool magazine
- Automatic tool change
- Part scanner
- Enclosure
- Dust collection system
- HMI
- Common base
ACT-18298 is a robotic cell for deburring or polishing round components such as compressor disks. Parts loaded on servo controlled rotary chuck are processed by abrasives manipulated with articulated robotic arm. These abrasives are stored in docking nests inside the tool magazine and picked up with the auto collet electric spindle carried by the robot. They may include carbide bur bits, deburring wheels, brushes, or sandpaper rolls.

Electric spindle tool equipped with pneumatically operated collet not only allows for automatic handling of such abrasives but also has a programmable speed up to 20,000 RPM and force via rotary compliance. The system has two integrated vision tools: one for inspecting abrasive tools and the other for inspecting and measuring the parts. Motion programs can be offset to compensate for tool deformation and part positioning errors.

- Robotic arm (20 kg) with automatic tool change adapter EOA
- Dual part load rotary spindles with 3-jaw chucks mounted on 180 deg indexer
- Tool storage magazine with spindle and vision tool assemblies and abrasive arbors docking nests
- Electric spindle tool with auto collet for handling abrasives mounted on standard tapered adapters
- Vision tool assembly integrated with robot controls and automatic cabling retract reel. This tool is used for part inspection.
- Stationary vision integrated with robot controls for inspecting abrasive tools.
- Hydraulic or electric 3-5HP brush/wheel tool assembly
- One servo driven rotary table with 3-jaw pneumatic chuck of part loading. Part can be spun or positioned precisely in synchronization with robot motion because it is controlled by robot's 7th axis motor.
- 180 deg indexer for rotating part rotary chuck in/out of the robot cell. This allows parts to be loaded outside the cell and indexed inside for processing. Parts are orientated vertically.
- Enclosure and base
DEBURRING OR POLISHING CELL FOR ROUND PARTS - 13271

ACT-13271 is a cell for deburring or polishing round parts such as compressor disks or hubs and housings. These parts are loaded on servo driven rotary table with 3-jaw chuck located inside the cell.

First, chucked part features such as slots, holes, or flanges are located using robot held laser or vision tool, which not only allows for random part loading but compensates for part positioning errors. Next, the robotic arm processes part features using abrasive tools placed in docking nests inside tool magazine. These tools can include small belt polishers or auto collet spindles and abrasives on arbors. The abrasive tools measuring and reset station is included, as is the dust collection system.

- Robotic arm (20 kg) with tool change adapter
- Rotary table with 3-jaw chuck for part loading. Continuous rotation or positioning is possible with robot's 7th axis servo motor.
- Tool magazine with operator access sliders outside and robot automatic access doors inside
- 4-6 tool assemblies docking nests and 10 or 20 abrasive arbors nests
- Auto collet electric servo spindle tool (1/2HP)
- Laser scanner tool
- Abrasive measuring and reset station
- Integrated dust collector and ducking
- Enclosure and base

DEBURRING/POLISHING FOR ROUND PARTS (35 KG) - 11256

ACT-11256 is a cell for deburring or polishing round parts such as compressor disks or hubs and housings. These parts are loaded on servo driven rotary table with 3-jaw chuck located inside the cell. First, chucked part features such as slots, holes, or flanges are located using robot held laser or vision tool, which not only allows for random part loading but compensates for part positioning errors. Next, the robotic arm processes part features using abrasive tools placed in docking nests inside tool magazine. These tools can include small belt polishers or auto collet spindles and abrasives on arbors. The abrasive tools measuring and reset station, and dust collection system are both included.

- Yaskawa robotic arm (35 kg payload) with tool change adapter
- Rotary table with 3-jaw chuck for part loading. Continuous rotation or positioning is possible with robot's 7th axis servo motor.
- Tool magazine with operator access sliders outside and robot automatic access doors inside
- 4-6 tool assemblies docking nests and 10 or 20 abrasive arbors nests
- Auto collet electric servo spindle tool (1/2HP)
- Laser scanner tool
- Abrasive measuring and reset station
- Integrated dust collector and ducking
- Enclosure and base
**LARGE DISK, HOUSING, HUBS DEBURRING/POLISHING - 18999**

ACT-18999 is a cell for deburring or polishing large round parts such as disks, hubs, and housings. These parts are loaded on rotate and tilt positioner located inside the cell, which allows parts to be rotated and tilted for better access to internal features. First, part features such as slots, holes, or flanges are located using robot held laser or vision tool, which not only allows for random part loading but compensates for part positioning errors. Next, the robotic arm processes part features using abrasive tools placed in docking nests inside tool magazine. These tools can include small belt polishers or auto collet spindles and abrasives on arbors. The abrasive tools measuring and reset station is included, as is the dust collection system.

- Robotic arm (20-80 kg) with tool change adapter
- Precision positioner top plate for part fixture mounting
- Tool magazine with operator access sliders outside and robot automatic access doors inside
- 4-6 tool assemblies docking nests and 10 or 20 abrasive arbors nests
- Auto collet electric servo spindle tool (1/2HP)
- Laser scanner tool
- Abrasive measuring and reset station
- Integrated dust collector and ducting
- Enclosure and base

**LARGE ROUND COMPONENTS DEBurring/Polishing Cell - 08236**

ACT-08236 is a deburring or polishing cell for very large round components such as hubs and housings. Parts are first loaded on a servo driven, heavy duty rotate and tilt positioner with 3-jaw pneumatic chuck located inside the cell. Next, the robotic arm processes part features using abrasive tools placed in docking nests inside tool magazine. These tools can include small belt polishers or auto collet spindles and abrasives on arbors. The abrasive tools measuring and reset station is included, as is the dust collection system.

- Robotic arm (50-150 kg) with tool change adapter EOA
- Heavy duty rotate/tilt positioner with 7th and 8th robot axes motors
- Heavy duty 3-jaw pneumatic chuck
- Tool magazine with docking nests for tool assemblies like high speed spindles, small wheel spindles large servo spindle, small abrasive arbors, and large abrasive BT-style adapters. Interlocked operator access from outside and automatic door for robot access from inside is part of the tool magazine.
- High speed debur spindle with 360 degree compliance
- One 1/2HP electric spindle with auto collet for small abrasive arbors
- One 5HP electric spindle with auto collet for BT-style tapered adapters with large abrasives
- 7 docking nests for large abrasives with BT-style arbors
- 10 or 20 docking nests for small abrasives mounted on arbors
- Dust collection ducting
- ACTView HMI interface
- Enclosure and base
ACT-07223 is a deburring and buffing cell for large diameter round components such as compressor disks for gas or solar turbines. The robotic arm deburs and generates chambers or radii of various part features like dovetail slots, holes, notches, etc. The process is programmed to use small bur bits, small deburring wheels, large deburring brushes, and large buffs with compound.

These abrasives are driven by small high speed spindles, small (1/2HP) auto collet spindle, and large servo spindles (5-10HP). Compound system with liquid pump is integrated and spray gun is mounted on spindle which handles buffing step of the process. All tools and abrasives are stored in docking nest inside tool magazine. Parts are loaded on heavy duty rotary table with 3-jaw chuck driven by robot’s 7th axis servo motor.

- Robot arm (min. 120 kg) with tool change adapter EOA
- Rotary table with 3-jaw chuck for large diameter heavy parts
- Tool magazine with interlocked outside slider doors for operator and automatic doors for robot access
- 1-5 high speed bur bit spindles with 360 degree radial compliance
- One electric spindle (0-20,000 RPM) with pneumatic auto collet for small abrasive wheels mounted on arbors
- One large servo spindle for deburring brush
- One large servo spindle for buffing wheel with compound spray gun
- Liquid compound system (pump and hoses)
- 10 small abrasive arbors and docking nests
- Machine enclosure with safety interlocks
- Machine base

Options
- Large auto collet spindle for BT-style taper adapters
- Deburring and buffing wheels mounted on BT tapered adapters
- Docking nest for BT- adapter mounted finishing wheels
- Rotate/tilt positioner
ACT-13267 is a robotic cell for deburring or polishing of smaller parts like turbine blades, vanes, or gears. Parts are loaded on vertical framing mounted on 90 degree indexer. This allows part load/unload while robot continues cycling. Various tools/gripper assemblies are staged in tool magazine for automatic handling by the robot. With the correct gripper, the robot picks up raw parts from indexer fixtures and processes them on 1 of 2 large servo driven spindles, wheel spindles, smaller wheel spindle, and small belt polisher. Finished parts are placed back on indexer fixtures.

- Robotic arm (20-50 kg payload) with automatic tool change adapter
- Tool magazine with up to 8 gripper tool docking nests. Interlocked outside slider doors for operator and automatic doors inside for robot access are included.
- Two 5HP electric spindles with linear compliance mounted in over/under configuration
- One small belt polisher station
- One small wheel spindle - air or electric motor driven
- Dust collection ducting with automatic gates
- Enclosure and base

Options
- 2-jaw and 3-jaw gripper tools
- Dust collector (wet or dry)
- Other part load mechanism like drawers, indexers, conveyors, static nests
PORTABLE SMALL PARTS CELL - 17997-0001

ACT-17997-0001 is a portable robotic deburring or polishing cell with floor integrated dust collector. This unit is a self contained cell for polishing or deburring of smaller parts like turbine blades, vanes, or gears. The robotic arm, after picking the appropriate gripper from rotary tool magazine, picks up parts loaded in load drawer and processes them in programmed sequence on two 5HP wheel spindles, high speed bur bit spindle, and two smaller 1/2HP electric wheel spindles. Parts can be re-orientated in gripper using 2-jaw re-grip station. Finished parts are dropped off in the drawer. The system measures and automatically compensates for wheel wear. Dust generated during finishing process is pulled in through the floor into down-draft style dust collector integrated in the cell base.

- Robotic arm (6-10 kg payload) with tool change adapter EOA
- Rotary revolver-style tool/gripper magazine with up to 16 docking nests. Accessible by operator from outside the cell and inside by the robot
- Part load drawer
- Two 5HP electric wheel spindles with pneumatic auto collect (linear slide compliance with programmable force is included) for quick wheel replacement.
- Rotary compliance included with programmable force
- High speed bur bit spindle with 360 degree compliance
- Down-draft style through the floor dust collector

PORTABLE SMALL PARTS CELL - 17997-0000

ACT-17997-0000 is a portable robotic deburring or polishing cell with floor integrated dust collector. This unit is a self contained cell for polishing or deburring of smaller parts like turbine blades, vanes, or gears. The robotic arm, after picking the appropriate gripper from rotary tool magazine, picks up parts loaded in load drawer and processes them in programmed sequence on 5HP wheel spindle, high speed bur bit spindle, and smaller 1/2HP electric wheel spindle. Parts can be re-orientated in gripper using 2-jaw re-grip station. Finished parts are dropped off in the drawer. The system measures and automatically compensates for wheel wear. Dust generated during finishing process is pulled in through the floor into down-draft style dust collector integrated in the cell base.

- Robotic arm (6-10 kg payload) with tool change adapter EOA
- Tool magazine
- Part load drawer
- One 5HP wheel spindle with linear compliance
- One 2HP belt head with linear compliance
- One 1/2HP electric spindle with auto collet for smaller finishing wheels. Pneumatic collet allows for quick wheel change. Rotary compliance included.
- High speed bur bit spindle with 360 degree compliance
- ACT small belt polisher with rotary compliance
- Down-draft style through the floor dust collector

Options
- Gripper tool assemblies
- ACTView HMI interface
- Offline programming software
ACT Robots, Inc.
Deburring and Polishing: Part to Media

**BLADES AND VANES DEBURRING/POLISHING - 11253**

ACT-13267 is a robotic cell for deburring or polishing of smaller parts like turbine blades, vanes, or gears. Parts are loaded on vertical framing mounted on 90 degree indexer. This allows part load/unload while robot continues cycling. Various tools/gripper assemblies are staged in tool magazine for automatic handling by the robot. With the correct gripper, the robot picks up raw parts from indexer fixtures and processes them on large wheel dual 5HP electric motor driven spindle, two ACT small belt polisher stations, small wheel electric spindle. Parts requiring orientation change are regripped in station with 180 degree rotator. Finished parts are placed back on indexer fixtures.

- Robotic arm (50-80 kg payload) with tool change adapter EOA
- Tool magazine with 6 gripper docking nests, two ACT belt polisher nests and 10 small finishing wheel arbors docking nests
- One dual wheel 5HP spindle with linear compliance
- Two stations with docking for ACT small belt polishers
- One electric spindle for smaller finishing wheels
- Part re-grip station with 180 degree rotator
- 90 degree indexer with part fixture framing for loading raw parts
- Safety and dust enclosure
- Machine base

**Options**
- 2-jaw and 3-jaw gripper tools
- Dust collector (wet or dry)
- Other part load mechanisms like drawers, indexers, conveyors, or static nests

**SMALLER PARTS DEBURRING/POLISHING - 09244**

ACT-09244 is a simple yet effective robotic deburring or polishing cell for smaller parts like blades, vanes, or gears. Robotic arm with gripper end effector processes parts on two 5HP wheel spindles. The system has automatic tool change and wheel wear compensation, as well as automatic wheel change for easy operation. Integrated dust collector/safety enclosure and machine base complete this cell.

- Robotic arm (20 kg) with tool change adapter
- Tool magazine with gripper and wheel arbors docking nests
- Two 5HP wheel spindles with linear compliance and auto collet for automatic wheel change
- Up to 4 gripper tool assemblies including one for changing abrasive wheels
- Up to 4 wheel arbors
- Dust collection ducting
- Static part load/unload area with overhead vision for part recognition and automatic program selection
- ACTView HMI interface

**Options**
- Dot peen engraving station
- Dust collector
ACT-08235 is a simple yet effective robotic deburring or polishing cell for smaller parts like blades, vanes, or gears. Robotic arm with gripper end effector processes parts on two 5HP wheel spindles. The system has automatic wheel wear compensation and automatic part program selection. Enclosure, base, and dust collection complete this compact cell.

- Robot arm (20 kg) with gripper EOA
- Two 5HP wheel spindles
- Static part load/unload area with vision
- Dust collection ducting
- Enclosure and base
- ACTView HMI interface
- Wheel wear measuring and compensation

Options
- Dot peen engraving station
- Dust collector
ACT-12258 is a robotic deburring or polishing cell capable of processing parts such as blades, vanes, or gears by manipulating them against abrasive media as well as round parts like compressor disks by manipulating finishing media on the part. When executing programs for parts like blades, the robot selects proper gripper from tool magazine, picks up parts from load fixtures on 180 degree indexer, and processes them on two 5HP wheel spindles, one 1/2HP smaller wheel spindle, and high speed bur bit spindle. All spindles are equipped with compliance devices for easier programming.

Round parts like compressor disks are picked up from load nests and can be processed on the same spindles as smaller parts. These parts are then loaded on rotary table with 3-jaw chuck and robot processes them using tools such as high speed bur bit spindle and auto collet electric spindle. The auto collet allows robot to use abrasives such as bits, wheels, and brushes, mounted on simple arbors and staged in docking nests inside tool magazine. Round parts can be continuously rotated on table or precisely positioned for processing of features like dovetail slots holes or notches

- Robotic arm (50-80 kg) with tool change adapter
- Tool magazine with grippers, spindles, abrasive media arbors docking nests
- Two 5HP wheel spindles with linear compliance
- One stationary high speed bur spindle with 360 degree compliance
- One smaller (1/2HP) wheel spindle with radial compliance
- Smaller parts load/unload 180 degree indexer
- Rotary table with 3-jaw chuck for round parts
- Gripper assemblies
- 2-jaw and 3-jaw grippers are available
- Round parts locating sensor tool assembly
- 10 abrasive media arbors and docking nests
- 3 round parts load/unload nests
- One high speed spindle tool assembly
- One 1/2HP spindle with auto collet tool assembly
- Dust collection system
- ACTView HMI interface on teach pendant screen
WET DEBURRING CELL (MULTIPLE HOLDERS) - 14273

ACT-14273 is a deburring cell for finishing processes requiring liquid coolant and high production rates by handling multiple parts at once. The cell was originally built for deburring of fuel injection holder tubes but can be used in other applications. All components are mounted on compact base with coolant collection and re-circulating system integrated in it.

Parts loaded in trays are moved into the cell and located on conveyor. SCARA type robot picks up multiple parts from tray (6 in this case) and brings them to multi-head spindle station where abrasive media deburrs all parts in one cycle (in this case bottle brushes). Coolant is automatically sprayed as programmed. Finished parts are placed back in tray and next batch picked up. Once the tray is completed it is conveyed out of the cell and the next one is metered in.

- SCARA type robotic arm with multi-gripper end effector
- Tray conveyor with metering and locating devices
- Multi-head electric motor driven reversible abrasive media spindle
- Coolant system
- Base and enclosure
- Human Machine Interface
- Mist collector

Options
- Custom part trays
- Custom part grippers
ACT 12261 is a deburring cell for processes requiring liquid coolant and high production rates by handling multiple parts at once. The cell was originally used for deburring of fuel injection needles but can easily be adapted for use in other applications. All components are mounted on a compact base with integrated coolant collection and re-circulating system. Parts located in trays are moved into the cell and located on a 2-level conveyor system where the upper level inputs and lower level outputs the trays. The trays are automatically lowered from upper level by an elevator mechanism. SCARA type robot picks up parts from load area (2 at once in this case) and loads them into gripper spindle station on 90 degree indexer at the same time 2 other spindle stations on the indexer perform brushing operations by lowering parts and spinning them in both directions while brushes are moved against them. Last station on indexer has finished parts unloaded from it by another SCARA robot and placed in tray.

Multi-head part spindles on indexer have up/down linear motion and continuous rotation in both directions. Multi-head brush station outside the indexer have linear in/out motion and reversible rotation with speed control. Brush wheel wear is compensated automatically via system software. Coolant is sprayed through multiple nozzles at the brush stations as programmed. Indexer rotates 90 degrees advancing parts from load, through 2 brushing operations, to unload when all station cycles are completed. These rotary process steps allow very high production rates.

- SCARA load robot w/ 2 grippers
- SCARA unload robot w/ 2 grippers
- Part tray 2-level conveyor system with metering and locating mechanisms
- Part magazines or trays load area
- Two 4-wheel spindle stations
- Indexer with 4 multi-head part spindles
- 4 part spindles with up/down linear motion and reversible speed control rotation of individual part holding heads
- Coolant system
- Base and enclosure
- HMI interface
- Mist collector

Options
- Custom part trays
- Custom part loading mechanisms
**DISPENSING, LAMINATE MOLDING, ROTARY INDEXER CELL - 17291**

ACT-17291 is a dispensing and laminate molding machine based on a 3-position indexer. The process starts with operator loading part to be laminated in fixtures on indexer in position 1. Upon program start, polymer is dispensed using 3-axis gantry in programmed pattern. This gantry dispensing station is equipped with two dispensing valves allowing different needle sizes or 2 different polymers to be used. Motion path can be programmed using individual target editing or can be derived from CAD. Once polymer(s) are dispensed on the part or mold, operator places overlay to be molded and activates process continuation which rotates part to next station where floating roller presses down on the laminate and moves across it, squeezing it to distribute the polymer evenly. Next part is indexed into UV station where polymer is cured using ultra-violet light. Finished part comes back to operator position where it is unloaded. Any process parameters can be adjusted on touch screen interface.

- 3-position rotary indexer with I/O network, air and power fed to top plate allowing continuous rotation/indexing.
- X-Y-Z gantry dispensing station with two valves
- Polymer cartridge and pressure tank
- Roller press station with programmable press-down force and 1-axis motion
- UV curing station
- Touch screen operator interface
- Enclosure and base

**PORTABLE DISPENSING AND MASKING CELL - 18294**

ACT-18294 is a portable robotic dispensing and masking cell for small components like aerospace blades or surgical implants, requiring complex manipulation to mask specific part features or areas. Robot arm picks up parts from load fixtures using its gripper and effector, and manipulates them at the dispensing and/or spray nozzle while polymer is applied as programmed. Next, part is cured by articulating it under UV lamp. Finished part is dropped off at unload area.

- Robot arm (3-6 kg) with tool change adapter
- Bead dispensing and/or spray valve with controller
- Cartridge or pressure tank polymer supply system
- UV curing station
- Tool storage with 2 gripper tools
- Enclosure and base
- Static part load area
- ACTView HMI

**Options**

- Part load drawer
- Offline programming software with virtual cell calibrated to the real one
- Vision system for measuring/inspecting parts and offsetting for deformation