

# A GUIDE TO WORKSTATIONS



 Cisco-Eagle

shop talk

## ORGANIZATION AND ERGONOMICS

[www.cisco-eagle.com/workstations](http://www.cisco-eagle.com/workstations)

# EFFICIENCY & ERGONOMICS

## WORKSTATIONS FOR ASSEMBLY, PACKING, PICKING AND SHOP WORK



“We can help you design exactly the right workstation for the most demanding work flows, most specialized tasks and tightest spaces. A workbench is much more than its top, legs and accessories (from bins to balancers to lighting and more)—it’s a way for people to increase their productivity. When built to the right specifications, workbenches help you work faster, more accurately and more ergonomically.”

—Cameron, Employee-Owner Since 2016  
Sales Director



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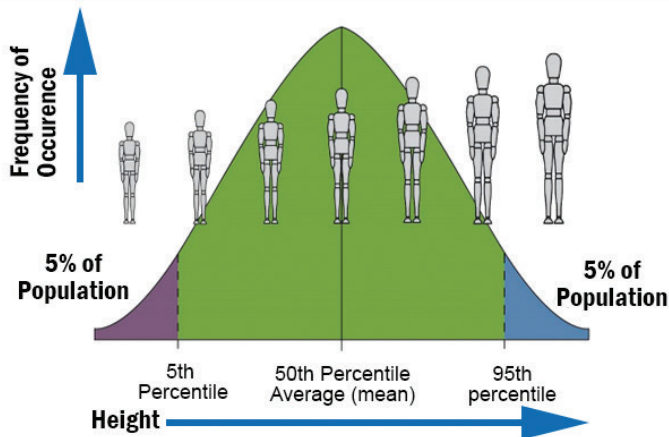




# WORK POSITION & ERGONOMICS

## WORK POSITION EFFECTS ON PICKING, ASSEMBLY, PACKING AND SHIPPING

The goal of ergonomics is to create work spaces that accommodate the majority of workers in ways that reduce stresses and strains, whether they differ by height, reach capabilities, strength, flexibility or other factors.

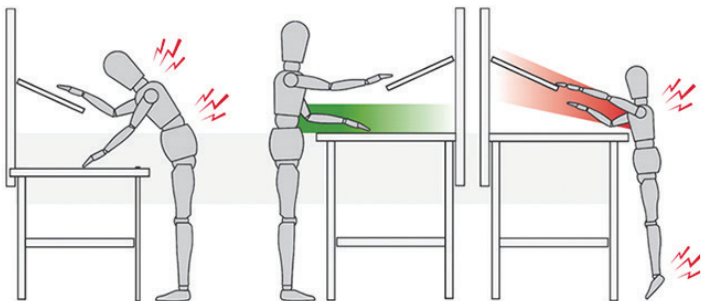


*Work-related musculoskeletal disorders cause 33% of all worker compensation costs—a total of \$20 billion a year.*

### Optimize position

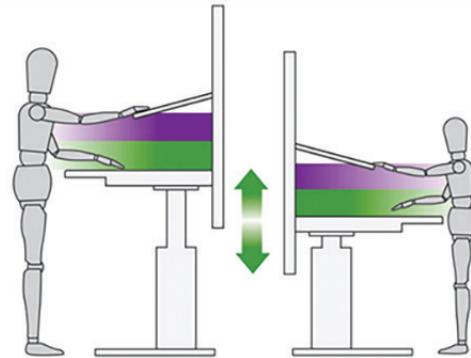
People are different, so workstation design should accommodate a variety of people. One of the chief differences is height. While the majority of people are average height, even within that group the variations can be important for ergonomics.

### Adjustable height workstations



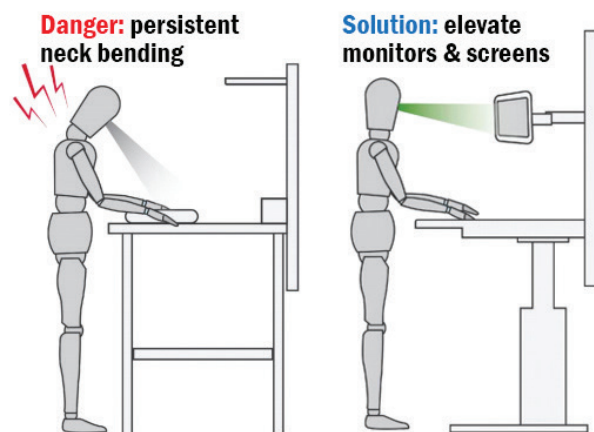
**Challenge:** Multiple operators with varying heights

A workstation built to average won't be as comfortable for very tall or short workers. Height adjustability is useful not only for the tallest and shortest, though. For specific tasks, the ability to adjust the bench top to the application helps workers of all sizes execute tasks more ergonomically.



Provide height-adjustable workstations that let operators set it to their preferences. The 6'6" and 5'2" worker can use the same station on different shifts without either person suffering from damaging muscular stress.

### Reduce neck bends



Over time, persistently bent necks will cause injuries and disorders. Having documents or screens on the surface of a workstation causes the worker to look down day after day, year after year.

For operations where invoices, pick tickets, drawings or assembly instructions must be read by an operator, a simple solution is a monitor arm or document holder that elevates the material to reading height. These solutions range from height-adjustable arms to articulating arms to keyboard trays. They're economical and will speed task completions, aside from ergonomic benefits. Like height adjustability, arms work for people of various heights and sizes.

# DESIGN FOR USERS—NOT TASKS

## Small movements add up over time

When workers move from a neutral position, they must return to it—which doubles the time and energy used for each step. While this time is minor one time, accumulating movements over time add up tens of thousands of movements. Organizing materials to coincide with the flow of the work creates efficiency.

## Don't enlarge work surfaces for storage purposes

If there isn't enough storage area at the workstation, making the table larger is not the answer. The tabletop surface should not be considered storage space—that's counterproductive. When the work surface is cluttered with supplies, actual working space is reduced.

## Typical workbenches have four basic available storage areas

Upper reach zones are areas accessible without bending and awkward movements.

## FRONT AREA UPPER REACH ZONE



This is **prime** space because it requires little or no movement from basic work position. Put your most frequently-accessed items here. Enhance it with shelves, bins and dividers that organize and maximize the space.

## LEFT & RIGHT AREA UPPER ZONES



These zones are accessible, but aren't as easy to reach as the upper front area because people must turn or step to access them. Shelves mounted perpendicular to the workbench and shelf extensions are good examples of left/right zone storage.

## REAR AREA UPPER REACH ZONE



This area is above the waist and requires workers to turn 180° to reach stored items. This tends to require a step or two and a turn back to the work area. Use this for larger cartons or parts bins with bulk items for assembly.

## Lower Reach Zones

Each storage area has a lower reach zone, which is typically inefficient since the worker must step, stretch or bend to access it. Low-reach areas are used more for bulk storage, larger items and slow-moving materials. Access requires steps, bending and sometimes awkward reaches and movements.



# SEATING FACTORS



“It’s all about people and how they work best. The right workstation puts everything within easy reach and reduces bending and over-exertions. Put people in the position to succeed with a design that works both for the workers and the task.”

—Don, Employee-Owner Since 2017



shop **talk**

## WORKSTATION SEATING ERGONOMICS

### Leg Room

Knee spaces should allow a worker to feel uncrowded and to allow some changes of position. Leave a space for knees of at least 30" wide by 19" deep by 27" high to comply with the requirements of the Americans with Disabilities Act. For those using a footrest, clearance must be calculated with the legs in place on the footrest. Likewise, depth of the "clearance envelope" for both legs and toes should be evaluated while the workstation user is in a normal working position at the work station (determined by the design of the seating system and the way the user sits). Drawers and support legs (for furniture) should not go where human legs need to fit.



### Seating & Stools

Seat height should be adjustable while seated. Thighs should be horizontal, lower legs vertical, feet flat on the floor or on a footrest.

## SIT OR STAND? IT DEPENDS

What's the best situation for workers who can either sit or stand? According to ergonomists, sitting places a higher compressive load on the spine than standing, especially on inexpensive and unforgiving seats.

### The greatest benefit is derived from alternating sitting and standing positions while at work

The standing desk fad has taken full hold because the better desks allow workers to alternate. In studies, people who alternate sitting/standing tended to show less spinal shrinkage. They also felt less fatigued and more alert. This also applies to assemblers, packers and pickers. Workstations that alternate between sitting and standing are effective when posture is appropriate to the task. Heavy assembly task stations should be lower while fine motor tasks with high visual demands should be higher.



### Sitting is recommended when:

- All items are within reach
- No large forces (more than 10 pounds) are required
- Fine assembly/writing is done the majority of the time
- Foot controls are utilized

### Standing is recommended when:

- No knee clearance for seated operations is provided
- Objects weighing more than ten pounds are handled
- Operations are physically separated and require frequent movement between workstations

### Backrests

Backrests should offer firm support, especially in the lumbar (lower back) region, should be 12-19" wide, and adjustable both in angle and height while sitting. The optimum angle between seat and back should permit a working posture of at least 90° between spine and thighs. Seat pan angle and backrest height and angle should coordinate to allow the most comfortable weight load on the spinal column.



# SELECTING A WORK SURFACE

## STEEL WORKBENCH TOPS

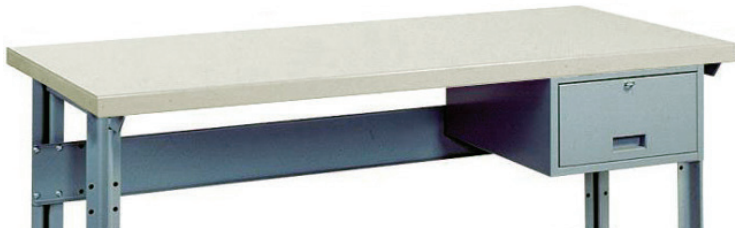


Steel tops are best for industrial applications, shop work, heavy repair and assembly operations. They work well in maintenance departments, machine shops and heavy-duty work areas.

- Excellent for corrosion and scratch resistance
- Good resistance to chemicals and solvents
- Excellent for impact resistance
- Excellent for top capacity and durability—can support heavy loads

## PLASTIC LAMINATE TOPS

Plastic laminate tops are typically used where liquids, oils, solvents or other chemicals are present. They resist those liquids better than steel or wood, and are easier to clean. They are used for technical



and laboratory applications.

- Applications where scratch resistance is important
- Where aesthetics matter (they don't show scratches as much as wood or steel)
- Good for assembly, packaging, inspection and quality control

Plastic laminate tops are frequently used in ESD applications. ESD style plastic laminate tops are great for electronics and inspection operations, electrical charge dissipation and an overall attractive appearance. A broad variety of benches can be specified with an ESD top, but most all of them are based on a plastic laminate surface.

## STAINLESS STEEL TOPS



Stainless steel tops are used for a variety of food handling and clean room applications. They resist rust, corrosion and moisture and can be used on washdown areas.

## WOOD, LAMINATE & HYBRID TOPS



Wood tops include solid hardwood, laminated wood and wood-over-steel. Wood tops are used in tool cribs, work areas, general usage, craftsman, or medium duty assembly operations. They're an aesthetic option, either in varnished hardwood or laminated hardwood. The attractive appearance of a wood top is hard to beat.

- Good impact resistance
- Excellent durability; wood tops can be scratched over time
- Many types can be sanded and refinished over time
- Can support medium to heavy loads

### Other top options

Other workbench tops can include specialty types such as plastic or graphite. These are often used for lighter duty assembly applications, and can resist most chemicals, abrasion, corrosion, impact and moisture, including most oils and solvents. It's important to understand why a particular workbench top would be best for your application.

# PACKING STATIONS

The packing area is a common bottleneck, especially in distribution applications. When workers spend more time doing the actual packing job—and less time bending, searching, or walking—it's easy to justify the efficiencies of better packing stations.



## Packing Area Questions

- **Is your packing area cluttered?** Look for the source—why is there clutter?
- **Are there bottlenecks along your conveyor lines?** This is often due to packing inefficiencies.
- **Do workers spend time and motion trying to get product, supplies or tools?** This takes time to evaluate, but is worth it. Interview packers and look for common issues. Study people at work to identify activities that waste time and motion.
- **Are there cartons or other packing materials in places outside the packing area?** These indicate a lack of adequate storage and organization in the process.
- **Is material flow inefficient?** Do you find your team designing workarounds too often? This indicates systemic issues you can address by increasing packing efficiencies.
- **Does there seem to be a disorganized or chaotic nature to the packing area?** If you see it, focus on identifying root causes.
- **Is the packing area a bottleneck?** When pickers consistently overwhelm packing, there are design issues, capacity scarcity—or both. Identify the reasons why packing is slow.



Visit [www.cisco-eagle.com/packstations](http://www.cisco-eagle.com/packstations) for specs, prices and much more

# OPTIMIZE BY OBSERVATION

## IMPROVE PACKING AND MANIFESTING WITH SIMPLE OBSERVATIONS

### Observe packers as they work to identify issues

Because the packer is your last employee to touch a shipment before it reaches your customer, the packer's work is often the face of your company. Packing requires special attention in customer-focused order fulfillment operations. Packers are the last line of defense for preventing incorrect or damaged shipments and deserve good systems, equipment and support.

Remember: these observations are about processes, not people.

Look for constant foot traffic in and out of the shipping area, and where that foot traffic is going. One frequent issue is packers looking for supplies. It's inefficient for packers to stop picking in order to find boxes or tape.

### Observe the following factors

- Do packers often have to bend, reach or strain? Do they reach outside the "golden zone" between waist and chest? Find ways to move things to ergonomic positions.
- Do administrative tasks like keyboarding, waiting on printouts or stuffing packing slips take significant time?
- Note in particular how long it is taking them to replenish supplies.
- If product is delivered in a way that doesn't easily flow, note that and calculate how many minutes—or hours—a day all of this activity takes. The transition from conveyor or cart to packing station should be scrutinized.
- Do packers spend time walking? Use pedometers to track movement over time to identify inefficiencies. The lower the step count, the better.
- Over time as you make improvements, track your packer's steps. The trend should be fewer.

The more time packers spend doing these things, the less time they spend on the value-added work—packing orders fast and accurately.

### Work flow at the packing station level

Is the packing station you're using adequate? Correctly designed packing stations significantly reduce labor by putting everything in position for the packer to succeed.

#### Look at these factors:

- Does the work "flow" at the packing station? This simply means trying to find out if the placement of various elements makes sense for the way the job is done. Is the material flow into and out of the packing station efficient?
- Is the packing area cluttered? Do unnecessary objects get in the way of efficiently performing the packing operation?
- Are cartons, rolls of paper and other packing materials hard to reach or located outside the packing area?



- Could the workstation be made more effective if you added a shelf for a monitor? Is there enough working space to keep the packers focused on task rather than dealing with clutter?
- Can manual processes (void filling, taping, weighing) be automated or semi-automated?



# SHIPPING WORKSTATIONS



“Specialized workbenches are available for nearly every kind of work. In human-centered design, you have to consider the following: (1) Enhance human abilities, (2) overcome human limitations and (3) Foster user acceptance. So if you’re designing a shipping workstation, start with activities—reading terminals, packing cartons, working from pick lists—and work backwards.”

—Kevin, Employee-Owner Since 2020, Account Executive



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## CUSTOMIZED SHIPPING STATIONS

- Organize your computers and related equipment, printers, scanner, scale, etc.
- Simplify product flow and increase shipping times
- Fully customizable to meet your shipping/receiving needs

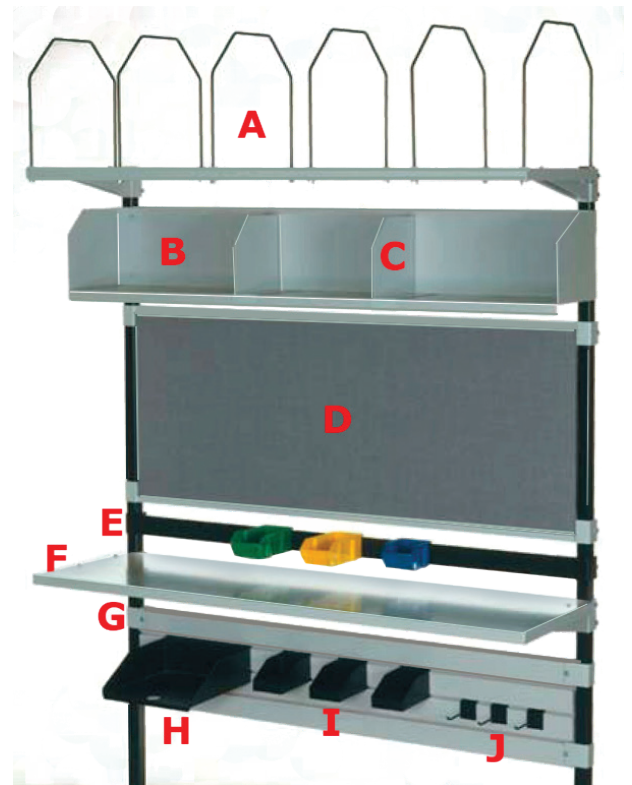
A key to better shipping operation is to reduce needless motions, walking and reaching. To help minimize no-value movement, adjustability is key. Components can be added to or deleted from the shipping and receiving stations to make them more ergonomically correct for your requirements.



### Accessories & customizations

Components let you design your workbench to match your tasks. A wide selection of options are available to make workstations more efficient and productive. See photo (right) for some of the available options.

- A. Carton racks
- B. Document shelves
- C. Document shelf dividers
- D. Tackboards (other types available)
- E. Tote bin rails
- F. Flat shelves
- G. Slat wall tray
- H. Slat wall bins
- I. Bin louvers
- J. Slat wall hooks



# CONVEYOR WORKSTATIONS

## MAKE FULL USE OF THE SPACE OVER YOUR CONVEYOR LINES



### Turn wasted air space above conveyor lines into productive packing, manifesting, assembly or testing space

Over-conveyor workstations install over your conveyor line to provide workers with things like dunnage, computers, flat surfaces, wrapping materials, boxes, tools and parts without taking up scarce line-side space. They organize product flow, maximize floor space, stimulate organization, boost productivity, raise morale and improve aesthetics.

- “Cantilevers” over the top of a conveyor line without impeding conveyor flow
- Improves conveyor operations where workstations are used because they allow easy, ergonomic access to the line without taking floor space
- Great for space-starved areas like shipping docks, assembly lines and packaging departments
- Cisco-Eagle specializes in conveyors and the equipment that conveyors serve, including conveyor workstations. We can help you design lifts, hoists, pallet positioners and workstations into your conveying process.

Visit [www.cisco-eagle.com/conveyorstations](http://www.cisco-eagle.com/conveyorstations) for extensive information



### Conveyor Workstation Ergonomic Considerations

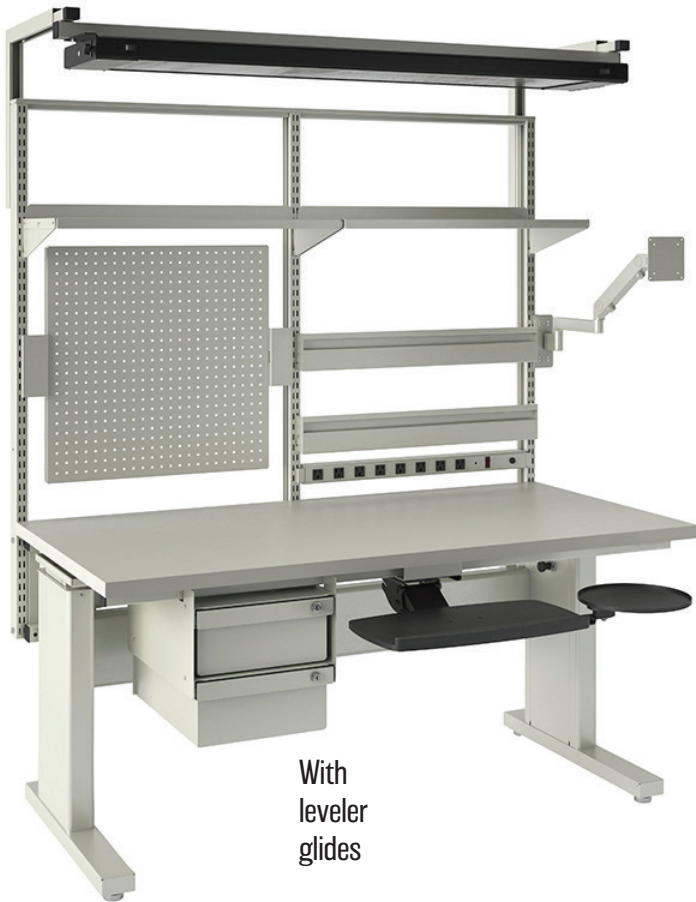
Reduce musculoskeletal injuries by designing your conveyors and workstations with ergonomics in mind.

**Work surface height:** Height of the belt or roller from floor level. Set heights at an appropriate level for the operators according to the size and weight of the load.

**Working height:** The height at which the hands are held to perform work on objects on the conveyor (surface height + load height). Set for worker comfort and ergonomic ease.

**Reach distance:** The distance in front of and to the side of the operator's body over which the worker must reach. Set these distances to minimize reaching and stretching.

# ASSEMBLY WORKSTATIONS



With  
leveler  
glides



With  
casters

Preconfigured assembly workstations include two drawers, under-surface keyboard and mouse tray and monitor arm, overhead LED light, peg board, bin rails and power strip.

## A WORLD OF COMPONENTS FOR VERSATILE DESIGN

- Sturdy cantilever base frames provide the foundation for a solid laminate work surface plus numerous optional additions to fit out your workstation to the demands of your operations
- Durable construction for long life and excellent return on investment
- Select manual adjustable for single-user applications and electric adjustable with quick touch-of-a-button adjustments for multiple users or multiple shifts, so that people can easily adjust the workbench height
- Most popular sizes include 30"D x 60"L, 30"D x 72"L and 36"D x 72"L. Additional sizes upon request
- Optional accessories: bin rails, corrugated steel shelf, steel shelves, shelf dividers, spool rods, electrical power strip, fabric and white board back screens, uprights for accessories, single and stackable 3-drawer units, CPU holder, and flat screen display & monitor arms



# TECHNICAL & MANIFEST

## MANIFEST WORKSTATIONS



### Fast, efficient shipping operations

Manifest stations organize product flow, maximize floor space, stimulate organization and boost productivity.

- Access shipping schedules, prepare manifests, manage and store paperwork and reference materials
- Customizable to meet your individual needs
- Some workstations include shelving, monitor & keyboard trays and label dispensers

## TECHNICAL WORKSTATIONS



Modular technical workstations offer affordable, modular, ergonomic workbench function. Excellent for lab, technical, assembly and other sensitive work that requires customized storage and features. Structure is finished in durable powder coat beige with blue accent strips for excellent aesthetics. 82" overall height. Top is ESD laminate for working with various technical functions and electronics with 180° rolled work edges for ergonomic comfort.



- Configure to your needs with a variety of accessories and options for technical purposes, including adjustable metal shelves, lights, bins, footrests, wire harness boards and more
- Ideal for lab, technical, assembly and other sensitive work that requires customized storage and features
- Connect starter units to adders to create a row of workbenches; also utilize optional corner units to make L-shaped configurations
- Built tough with solid slotted aluminum uprights that allow work surface or optional accessories to be mounted anywhere. Heavy-gauge steel frame bolts to top supports for extra work surface strength and lateral support with heavy, 1,000-pound capacities
- 82" overall height, with 60" & 72" standard top widths, 30" top depth (other sizes are available - 48" & 60" lengths)



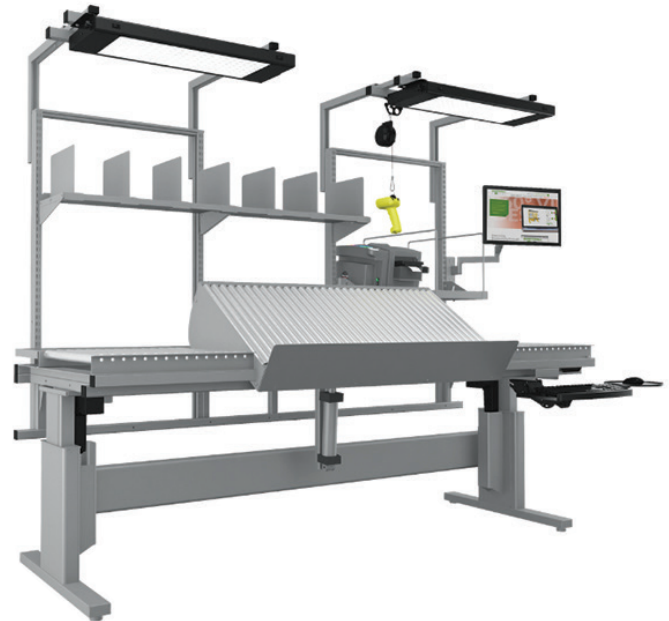
# CUSTOM & SPECIALTY



"The combination of sizes, materials, surfaces and accessories for standard workbenches will often serve your needs, but some applications require more specialized approaches. When you can't find what you need, we can help you design and build exactly the right work station."

—Patrick, Employee Owner  
Account Executive

shop **talk** 



# STEEL & HEAVY-DUTY

## HEAVY-DUTY WORKBENCHES



### For the tough jobs

With 15,000-pound capacities, these all-welded steel work tables handle punishing applications. Thick C-channel legs support a reinforced 7-gauge steel top with 12-gauge lower shelf. Feet include 5/8" lag holes for anchoring.

## WELDED SHOP TABLES



### Platforms for assembly, rework and maintenance

Capacities up to 10,000 pounds overall, 2,650 pounds per shelf. Choose drawers, adjustable legs, back shelves and more for versatile function. All models have lower shelves.

## METAL SHOP DESKS



### For shop, warehouse & industrial operations

All-welded shop desks are built with 12-gauge steel for longterm durability. Found in assembly areas, maintenance departments, warehouses and docks. Three-point lock system, wraparound design, 3/16" steel legs and shelves secured by 3/8" carriage bolts.

- Standard-duty, 1-drawer shop desk
- Heavy-duty, 1-drawer shop desk
- Heavy-duty, 2-shelf, 1-drawer shop desk
- Heavy-duty, 3-shelf foreman's desk
- Heavy-duty, 6-shelf shop desk
- Heavy-duty, 4-locker 1-drawer shop desk

## METAL WORK STANDS

When work and storage are needed in the same space



All-welded, high-capacity steel tops for heavy jobs like engine work & assembly.

Aluminum stands for loads up to 1,000 lbs. Easy to clean and NSF certified.



# WHY CISCO-EAGLE?



“Since all our employee-owners own shares and are empowered to make decisions that help our customers succeed, we go to lengths to take care of you!”

—Missy, Employee-Owner Since 2013  
Web Sales & Service



## Dedicated to Partnership

You can count on us to put in the time and energy to become your trusted partner—the people you can trust to handle your business in such a way that you won't have to worry.

## Big-Company Resources, Small-Company Service

Most companies in this industry are either small, specialized local companies or large international manufacturers. As a mid-size company, Cisco-Eagle is uniquely positioned to combine deep resources and focused customer service.

## Exceptional Service by Employee-Owners

Our employees all own shares and consider each other partners. We have an owner mindset, which means we'll work to be sure you're satisfied. Our employees stay at Cisco-Eagle twice the national average, meaning we retain key players for your future needs.

## 50 Years of Experience and Stability

Companies come and go on economic tides. With 50 years of performance, you can count on Cisco-Eagle to deliver for you today, tomorrow and in a decade.

## Relentless Customer Service

Without working with a company, it's impossible to say whether it's good at service. We release our customer ratings so you can read what real customers say about us.

## Innovative Project & System Engineering

We maintain a fully-staffed systems integration team that handles simultaneous complex material handling projects.

## Field Services Teams

Our in-house conveyor and material handling technicians are available 24/7. Few of our competitors can combine the ability to design, sell and service projects in-house.

## Warehouse Safety Systems

We help companies utilize equipment, technology and processes to increase employee safety in industrial environments.

## Documented Safety Compliance

Modern companies demand documented safety procedures for their contractors, and we offer quick compliance. We can submit detailed safety plans to comply with third-party certification services such as ISNetworld.

## Strategic Manufacturing Partnerships

Few competitors can match our buying power or influence with key manufacturers or subcontractors who can make or break a project.

## A Website for Modern Customer Needs

Most companies see their websites as nothing more than electronic lead generators, but we provide significant informational resources, tools, downloads, videos and more.

## ABOUT US: QUICK FACTS

- Founded in 1970 with annual sales over \$80 million.
- An atmosphere of individual initiative and creativity with a culture that nurtures the family lives of employee-owners.
- We are all partners in Cisco-Eagle. Every employee owns shares in the company.
- Multifaceted customer base in manufacturing and distribution, including most every industrial segment.
- Customers in every U.S. state and over 70 countries.
- Headquartered in Dallas; major offices and sales offices in multiple states.



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