ZeroClamp®

machine tool components
The tailor-made solution

How do you increase machine productivity?
Standard optimizations, such as higher feed rates and cutting speeds, only go so far - and because of their high investment cost, zero point clamping systems have played a minor role in optimization efforts - until now.

With ZeroClamp®, a high-end system with simple construction and robust features has been made affordable for the first time.

Example 1:
Changing parts once per day, taking 30 minutes = $40 dollars per day.
With a standard 4-element ZeroClamp®, your return on investment is only 7 months.

Simple operation

Another advantage of the zero point clamping system is the safety of the process. Even an untrained worker can change pallets without making errors with respect to clamping element positioning.
Example 2:
On a Vertical Machining Center, a part with a 20 minute cycle time requires an average of 3 minutes to clean, remove, and stage the next part. ZeroClamp® saves 2 minutes per part or 1 hour per day. With ZeroClamp® the parts are staged on a second pallet during machining and exchanged in 1 minute. Based on a 10 hour day, a 2-Clamp Receiver will pay for itself in as little as 9 weeks, and the payback on a 4-Clamp Receiver is less than 15 weeks.

Example 3:
Since the zero point of the receiver is always the same, operators can now change over from a vise to a 5C or 16C indexer, or to a magnetic chuck, grid plate, custom built fixtures or a combination of workholding in 1 minute instead of half an hour. The ability to easily change over from one part to another greatly supports Lean manufacturing efforts to achieve one-piece flow, accommodate a customer’s emergency requirements, or deliver to JIT schedules.

Flexible palletization
Beyond fast initial payback, the ZeroClamp® product line offers a long term cost advantage as well. Competing systems often lock you into a using their pallets as well. While ZeroClamp® offers standard pallets, you are able to use ZeroClamp® clamping bolts to create your own pallets.
ZeroClamp

Zero point clamping system for clamping pallets and work pieces
Design and operation

Operation 1: Pallet not inserted

Operation 2: Pallet inserted

Operation 3: Pallet inserted and clamped
Advantages

- Simple design, few parts
- High-end system at an **economic price**
- **Not self-locking.** Pressure necessary to remove bolts approximately 5,500 pounds.*

*25,000 N for single element, 5 Bar version.*
Advantages

- Compensation for possible thermal expansion of pallet.
- The radial spring clamping cones facilitate a balancing function.
In this way the center of the pallet will always stay in the center of the pallet supports, even with changes in temperature.
Outstanding Features

· ZeroClamp® clamps over cones without any backlash.
· ZeroClamp® has an integrated balancing function.
· ZeroClamp® is simple and robust in construction (without delicate ball cages etc.) and is therefore less expensive to produce.
· ZeroClamp® is opened pneumatically and pressurised through spring retention. Because of its clamping principle it attains the same results as a hydraulic clamping system.
· ZeroClamp® dampens vibrations.
· ZeroClamp® is not self-locking.
  With any failure the pallet can be removed through compression screws (required force approximately 5500 lbs. per clamping element with 70 psi version*).

ZeroClamp® is intentionally designed in such a way that it is not self-locking. As a result it has a further great advantage. ZeroClamp® will fail safe in the event of a collision between spindle and the work piece. Depending on collision point and type of collision, expensive damage to the spindle can be avoided through this feature.

*25,000 N per clamping element with 5 Bar version.
Pallet Receiver

Examples

Two-element standard unit
Base plate constructed of high-strength aviation aluminum F50 Gage 200 mm
P/N: 10077

Four-element standard unit
Base plate constructed of high-strength aviation aluminum F50 Gage 200 mm
P/N: 10008

All dimensions in millimeters.
Pallet Receiver
Examples

Six-element standard unit
Base plate constructed of high-strength aviation aluminum F50
Gage 200 mm
P/N: 10024

Overview of standard pallets

Pallets constructed from AL F50 are available in the following standard dimensions:
Other dimensions may be available by request.

Gage 200

<table>
<thead>
<tr>
<th>Size:</th>
<th>Part Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Element Receiver Pallet: 396 x 196 x 40</td>
<td>10068</td>
</tr>
<tr>
<td>4-Element Receiver Pallet: 396 x 396 x 40</td>
<td>10053</td>
</tr>
<tr>
<td>6-Element Receiver Pallet: 396 x 546 x 40</td>
<td>10419</td>
</tr>
</tbody>
</table>
Peripheral Components

Proven solutions for clamping and aligning to your machine table.
Standard accessories

**Standard connection block**
With release, clamp, and blow-out functions.

P/N: 10115

**Positioning set for T-nut slots**
(2 required)
P/N 10045, for 12 mm slot
P/N 10042, for 14 mm slot
P/N 10043, for 16 mm slot
P/N 10044, for 18 mm slot

**Positioning set for center hole of machine table**
P/N 10047, for 32 mm center hole
P/N 10046, for 50 mm center hole

All dimensions in millimeters.
ZeroClamp®
Zero point clamping system for clamping pallets and work pieces
Single clamping elements

for the construction of customer specific solutions

Standard clamping element

Standard clamping element with centering function. Release pressure: 75 psi

P/N: 10012

Clamping bolts

Corrosion-resistant steel optimally suited for use with the clamping element.

P/N: 10004

All dimensions in millimeters.
Construction

Recommended sizes for the construction of a clamping unit

All dimensions in millimeters.
Recommended sizes for individually manufactured pallets.

All dimensions in millimeters.
Customer specific solutions

Zero point clamping system for Horizontal Machining Center with Gage 200 mm 12-element clamping tombstone with separate clamping actuation for each clamping element.
Zero point clamping system for 5-axis Machining Center.
Gage 140 mm
Integrated air connection block with recessed quick coupling, clamping function activated with hex key (Allen wrench).
DISTRIBUTED BY: