

## Industry Information

### Eyeing A Better Lift

#### Swivel Eyebolts Provide Safety and Cost Advantages

By Bill Paige

When a manufacturer is looking for significant safety and cost improvements within its operations, one of the last items that might come to mind is an eyebolt.

Often overlooked until there is a major failure, improper lifting points and incorrect applications are commonly used with standard (shouldered) eyebolts leading to potentially catastrophic injuries and loss of production time.)

Any non-vertical torque lift on a standard eyebolt significantly reduces the working load limits. An example of this is an eyebolt rated for 2000 pounds in a vertical plane has only a rating of 600 pounds (30 percent) at a 45 degree angle and merely a 500 pound (25 percent) rating at a 90 degree angle.

"The biggest issue of a shouldered eyebolt is any type of side load," said Barry Richardson, product advisor with I&I Sling, a rigging supplier headquartered in Aston, PA. "This should be taboo in any operation."

#### A Swiveling Solution

A solution to help eliminate the reduction in working load limits is the use of lifting points that permit the swiveling of the eye while maintaining full contact with the bolt in the item being lifted. These "points" adjust to the movement of the load, which leads to safe hoisting. The body of the lifting point and the threaded bolt or stud combines to support the weight of the load.

A swivel hoist ring is a viable option. This product requires the threaded fastener to be torqued to a specific rating to maintain its capacity. The body of the hook swivels as the bolt is stationary. Critical for many applications, the eye normally pivots up to 90 degrees.

A newer apparatus for addressing the lifting point and load limits is the true swiveling eyebolt. This technology allows the bolt to be threaded into the lifted object while independently permitting the eye to swivel a full 360 degrees.

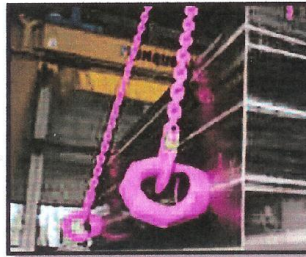
What is unique about the swivel eyebolt is that it can be loaded up to a 90 degree angle from vertical without a reduction in working load limits compared to the standard eyebolt that has a steady and significant loss in load ratings as it is taken out of vertical.

"The swivel eyebolt gives you a lot more flexibility than a standard eyebolt does," Richardson said. "Standard eyebolts have very limited applications. With a swivel eyebolt you have a wider spectrum to work with. You can



go from vertical to horizontal and everything in between as long as you are within your capacity."

An advantage of the swivel eyebolt over the swivel hoist ring is that it is considerably less expensive. There are few instances where a swivel eyebolt cannot be used where only a hoist ring can.



The cost benefits significantly increase when swivel eyebolts are compared to standard eyebolts. Money and time is saved as is damage and injury prevented from using the more versatile piece of equipment.

"It doesn't take companies long to see the benefits, it is almost immediate," Richardson said. "They quickly realize that they can save a lot of money and it is a heck of a lot safer."

#### Eyes on the Operation

Early in 2011 Barry Richardson and I&I Sling were approached by a turbine manufacturer located in the upper northeastern part of the United States to help them improve their ease of use on lifting applications while also cutting some costs.

This turbine maker was using both standard eyebolts and swivel hoist rings in their operation. Upon evaluation of the company's rigging processes, I&I Sling suggested the StarPoint swivel eyebolt line manufactured by RUD Chain, Inc.

"The StarPoint is cheaper than a swivel hoist ring, but more expensive than a standard eyebolt," Richardson said. "It basically falls in the middle and you get the best of both worlds. The perfect piece of equipment ideally developed for the application at a smaller cost."

The hexagonal socket of the StarPoint eyebolt can be tightened by hand or a standard wrench. It has a robust hexagonal shape that distinguishes it from a standard eyebolt. These true swivel eyebolts are forged of high-tensile steel. They are 100 percent electromagnetically crack tested and have the rated load forged on the body for easy viewing.

Not long after a set of trials it was apparent that the swivel eyebolt was a key factor in the company meeting its objectives.

"Once we showed the swivel eyebolts to them it was evident, they got the benefits of the swivel hoist ring with the ease of use of a standard eyebolt," Richardson said. "They got the capacity at all the angles and got it at reduced costs. They saw this was the route to take."