# GTP - Steel Heddle offers unique heddle eye design for lowest warp yarn friction

With 110 years of experience in producing heddles, Steel Heddle® has always strived to improve the weaving performance of its weaving accessories. This makes GTP - Steel Heddle the largest heddle manufacturer in America and one of the largest in the world. Steel Heddle® recognizes the importance of lowest friction between warp yarn and heddles. The Jet-Eye® is the key element to reduce this friction and to help the weaving performance.

## Influence of friction with warp yarns

As weaving speeds have increased significantly, warp yarns are getting finer and more delicate, densities are increasing, the fabric quality has to be optimum. These higher performance requirements demand the reliable quality of Jet-Eye® heddles from GTP – Steel Heddle.

Every millimeter of warp yarn comes in contact with heddles. This contact has a strong influence on the heddle life and the warp yarn itself. It is commonly known that in order to optimize the quality of the fabric, warp yarns should have minimal friction. Friction can damage the warp yarn, resulting in damaged yarn, filamentation and overall the final quality of the fabric.

## Jet-eye® - Dramatic reduction of friction

In 1994, Steel Heddle® created the first perfect heddle eye to reduce dramatically the friction of warp yarn with heddle: the Jet-Eye®. This unique eye shape has been patented and incorporates the following distinctive features:

***Heddle eye is 100% parallel to the warp yarn***

The Jet-Eye® design provides full opening to the extreme upper and lower ends of the eye to prevent pinching the yarn and to reduce the heddle eye cutting. This causes the least friction of warp yarn with heddle eye inside, as well as outside (fig. 1. and fig. 2.).

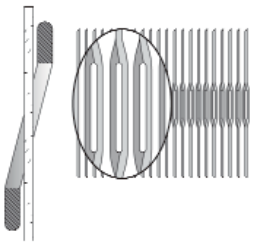


Fig. 1. Jet-Eye® Patent Steel Heddle.

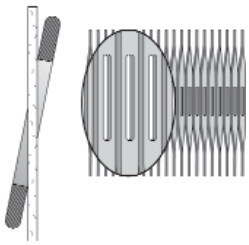


Fig. 2. Standard heddle eye.

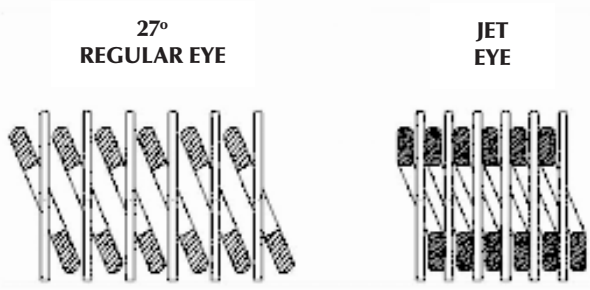
***Smooth heddle formation at the heddle opening***

The outside design of the heddle, where the heddle eye is located, has been further optimized: the heddle is curved into a very smooth form (see fig. 3.). This provides less abrasion between warp yarn and the outside of the heddle as the adjacent warp yarns are gliding smoothly along the heddle sides.

Because of the slimmer design of the Jet-Eye® heddle compared with standard heddles, higher weaving densities (up to 32%) can be achieved.

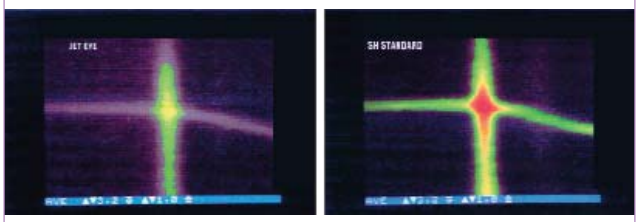
Fig. 3. Jet-Eye®: smooth outside heddle design.

Additionally, independents tests with spun yarns show improvements in both warp and filling stops because Jet-Eye® heddles increase the air space in the harness area which provides a cleaner, more responsive shed opening.




### The only heddle eye design that works

Today, the Jet-Eye® heddles are used around the world giving clear advantage over heddles with standard eye shape or 'special' heddles from competition. Analysis have been done on the performance of the Jet-Eye and standard eyes. Below, these images demonstrate the heat that is causes in the heddle eye by the friction of warp yarn and heddle.




The above heat images confirm that Jet-Eye® reduces friction with the warp yarn. As a result, warp yarn filamentation, damage and heddle cutting are reduced significantly; providing best fabric quality and extended heddle life time.

Therefore, Jet-Eye® heddles are recommended for both delicate and aggressive yarns such as filament yarns, silk, coated yarns, aramide, glass, and other critical applications.

At ITME INDIA 2008, the GTP specialists of weaving accessories will provide the visitors first-class advice to achieve better weaving performance. The right selection of GTP weaving accessories guarantee better fabric quality, higher productivity and significant cost savings. GTP will also celebrate the 110th anniversary of Steel Heddle® at GTP booth (Hall 2, Booth C109).

**More information on the complete GTP product range is available on www.globaltextilepartner.com.◆**