TITANIUM TOOLS

Why light hammers are better than heavier hammers

Light hammers reduce strain on the body.

By gauging muscle activity using electromyography (EMG), Hultafors has shown that the heavier a hammer is, the more it puts strain on the muscles. Other studies have shown that muscle activity increases if the handle needs to be gripped very tightly. By keeping the total weight of the hammer to a minimum and adjusting the size and shape of the handle, the risk of strain injury can be reduced.

The laws of physics mean that the speed of the hammerhead affects striking power, and thereby total work efficiency, more than the weight of the hammer itself. Because a lighter hammer can be swung faster than a heavy one, it puts less strain on the body without compromising work efficiency. Hammers sometimes need to be heavy, such as when banging in a 6" nail. However, to ensure minimum strain on your body, always use as light a hammer as possible.

How does a hammer-blow affect the body?

A swing of a hammer uses all kinds of muscle groups, all the way from the shoulder to the hand. Overloading the muscles can result in inflammation of particularly vulnerable muscle joints. Tennis elbow (epicondylitis) is just such an inflammation. Hand movement is dealt with by the muscles in the forearm. These muscles are joined to the fingers by tendons. The tendons, along with nerves, run through a narrow passage in the wrist called the carpal tunnel. When using a hammer, the tendons rub against one another and against other surrounding tissue. A long working session can result in an inflammatory swelling, which in turn imposes dangerous pressure on the nerves. This is called carpal tunnel syndrome, and often requires surgery. The pain is noticed in the hand either immediately, several hours later, or even after several days.

Cushion the blow and reduce recoil.

When a hammer hits a rigid work object, shock waves are generated which multiply in the head of the hammer and create a swinging momentum in the handle. Our studies indicated that the first shock wave is the one that most needs cushioning. Subsequent vibrations are absorbed by the handle and the soft parts of the palm, and we have found no research data to indicate any harmful effects from these. However, the most dramatic effect of the blow is when the hammer bounces back, rotates around its own centre of gravity and generates a recoil force. This force is compensated for by muscle activity in the forearm muscles, thereby stretching the tendons. Cushioning the

initial shock wave and reducing recoil places less strain on the muscles and tendons, and also gives the user more control over the next blow.

STILETTO TITANIUM TOOLS
13135 W. LISBON ROAD
BROOKFIELD WI 53005
(800) 357-1849 WWW.STILETTO.COM