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SLING FOR CHANGING LARGE TIRES

Trucks/Trucking: tires

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INTRODUCTION: Changing large equipment tires without a safe handling method can create a dangerous situation. Many injuries have been documented from tire changing, particularly crushing injuries due to an insecure grasp of the tire. FRA Safety Alert 98-S-10 illustrates how an insecure grasp of a tire can result in severe injury and recommends a sling as one method of making the situation safer.



GENERAL FEATURES: In 1999, FRA's Northeastern Technical Division published *Mechanical Harvesting Safety in the Workplace*, outlining the usefulness of a tire sling. A sling should be easy to use, inexpensive to build or purchase, adjustable to fit different size tires, and adaptable so as to be held by different lifting devices. Most importantly, it needs to hold the tire securely.

The NETD Safety and Training Committee has developed and used an effective tire sling that can be built from easily available components for about \$150. This sling has been designed to hold up to a 4,000-pound tire, with 1,300 pounds of side load. It can be adjusted to hold tire sizes ranging from 16.1x24 to 30.5x32.

SPECIFICATIONS & COST: Parts and labor needed to build the sling, with estimates of their cost, follows.

Parts

Two 15-foot nylon straps, rated at 10,000 pounds, typically three-inch-wide freight tiedown straps	\$ 25
Two 1-ton swivel hoist hooks, with enough eyelet room to loop the strap through	\$ 50
Three-quarter-inch keyhole sling link	\$ 15
Four nylon load tiedown straps, rated at 660 pounds	\$ 15

Labor

Straps can be sewn and eyelets installed at a canvas shop	\$ 45
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TOTAL	\$150
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Fig. 1: Using a tire sling can help prevent injuries associated with changing large tires.

APPLICATION: The sling is made of two straps that loop around the bottom of the tire. One end is

sewn to a three-quarter-inch keyhole-shaped sling link, and the other is sewn to a swivel hoist hook. The straps have eyelets sewn into their center at six-inch intervals.

To use the sling:

- Attach the sling link to the lifting device and suspend it over the tire.
- Hang the straps over the back of the tire and wrap them under and up the front of the tire, attaching the swivel hooks back onto the sling link. This configuration supports the weight of the tire.
- Attach a tiedown strap in an eyelet on the top half of the tire, and around the outside of the tire, to the same eyelet on the backside of the tire. Do this on both sides. This keeps the tire from rolling out of the sling.
- Finally, put a tiedown in the corresponding eyelets near the bottom half of the front and rear of the tire. This keeps the sling straps from slipping off of the ends of the tire.

Lifting slightly on the sling to take up any slack will help keep the sling in place. The user can now safely remove the lug nuts and remove the tire.

These slings are inexpensive enough to have one in each service vehicle. It can be used for many different tire sizes, and hoisted with any type of lifting device. The sling also allows the tire to be pushed and twisted, which allows alignment of the lugholes. It is important to keep the straps in good condition so that cuts, fraying, mildew, and oils don't reduce the strength of the sling.

Proper use will help prevent serious injury while changing tires. FRA's Northeastern Technical Division Safety and Training Committee hopes that all contractors will consider using a sling.

For more information or answers to any questions, please contact the author.

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