

Tensor™ RVH Stud and Nut Handling Equipment

Bolting Solutions for Refueling Outages

**CURTISS -
WRIGHT**

Originally founded in Göteborg, Sweden in 1978, Tensor is an industry leader in bolt tensioning. With over 43 plants having installed their products over the last 40 years, numerous nuclear facilities worldwide rely on Tensor's trusted bolt tensioners and supporting equipment during refueling operations. Curtiss-Wright and Tensor have been in a strategic partnership for 15 years, providing the nuclear industry with over four decades of combined knowledge, expertise, and proven solutions to complete the removal and installation of reactor vessel head (RVH) studs and nuts during each refueling outage.

Stud and Nut Runners

The Tensor Stud and Nut Runners are handling tools designed to install and remove studs and nuts from the flange, then securely lift and maneuver to a stud rack or mailbox configuration.

Components

- **Counterbalance Ram:** Connects stud and nut to hoist. Eliminating the weight of the stud or nut increases the speed and reduces risks of thread damage during installation and removal.
- **Stud Connector:** Custom-designed for each stud and nut configuration, the Connector threads onto studs or connects to the nut with pins.
- **Stud Driver:** An air drive that is adequately designed to handle the weight of the stud or nut. It installs the stud or nut both quickly and safely.

Operation

1. Secure counterbalancing ram to hoist.
2. Manually connect the stud/nut connector.
3. Ensure counterbalance device is set to float the stud or nut.
4. Run air drive to install or remove the stud or nut.
5. Raise the stud or nut with the stud runner.
6. Disconnect stud / nut connector.
7. Move on to the next stud.

Advantages

- Designed to speed up threading and unthreading of reactor vessel studs and nuts by reducing the friction between threads during installation and removal.
- Counterbalance Ram is fully adjustable to each application.
- Lightweight and easy to operate safely.
- Long-lasting design with minimal components.
- Can lift stud and nut together or individually.

Stud Racks

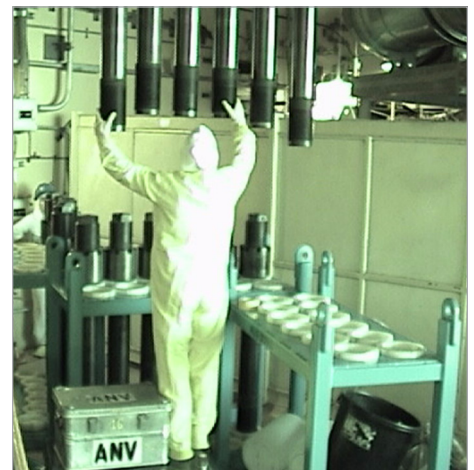
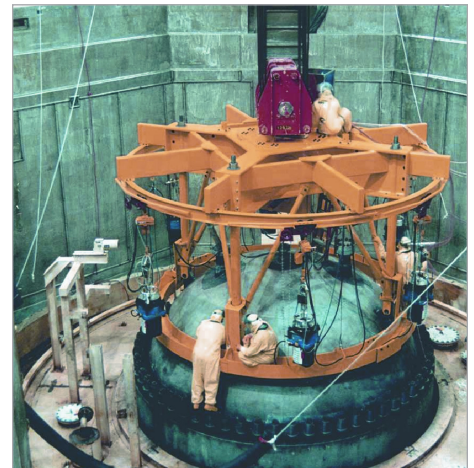
The Tensor Stud Rack is designed to lift and store multiple studs safely as part of the refueling operations.

- Holds up to 16 sets of studs and nuts.
- Designed to be handled with a forklift or lifting eyes.
- The frame is made of stainless steel with plastic bolt holes for protection.
- Custom designs can be outfitted with the same radius as the flange for ease of use.

Stud Lifting Device

The Tensor Stud Lifting Device is designed to minimize lifting sequences and provide a safe way to lift studs from the cavity, or to a stud rack or mailbox configuration.

- Lifts up to 8 studs at one time.
- Designed to match the radius of the flange.
- Studs and nuts can be removed or installed directly to beside the flange.
- Counterbalancing device for each stud to minimize handling damages.



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