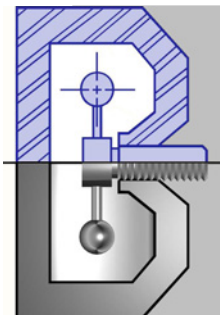


# BIACH INDUSTRIES

Engineered Tooling Systems



## Biach Hydraulic Crimping System

**New, safer effective crimp-off of damaged, heavy wall reformer tubes...while reformer remains on steam.**

**Assures continuous 24-hour, 7-days-per-week production of sophisticated high-temperature, high-pressure ammonia/urea reformers.**

Today's sophisticated high-temperature, high-pressure reformers used in petrochemical processes are designed for continuous operation. Process loss due to downtime can run up to \$250,000 per day and more.

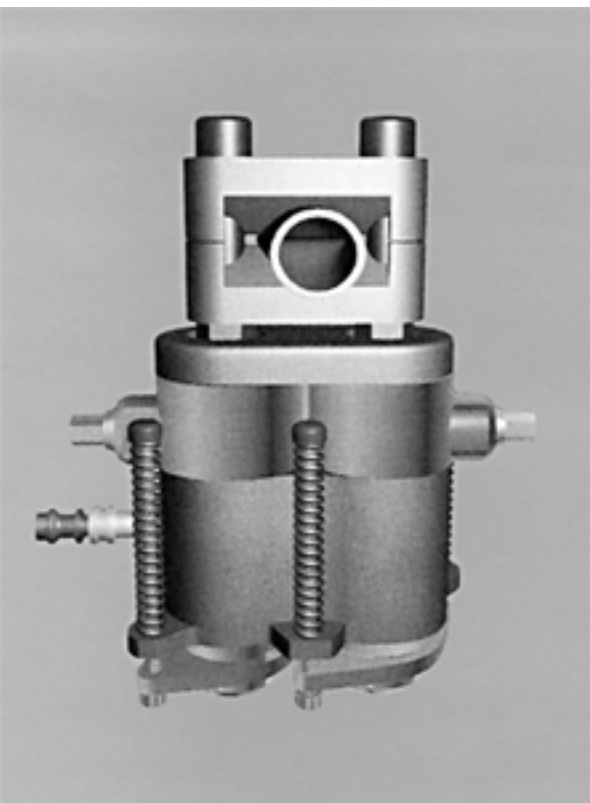
A typical hydrogen reformer in an ammonia processing plant has more than 100 catalyst tubes operating with an inlet condition of 1390°F at 500 psi.

To maintain this continuous operation, Biach Industries has developed the Biach Hydraulic Crimping System to safely crimp-off damaged tubes while the equipment remains on stream. The unique crimper system is used as "standby equipment" in petrochemical plants around the world.

This Biach tool can be remotely operated at a distance of 50 feet or more from the reformer to eliminate direct exposure to possible tube rupture.

**Crimping is readily performed with a crew of only two or three men.**

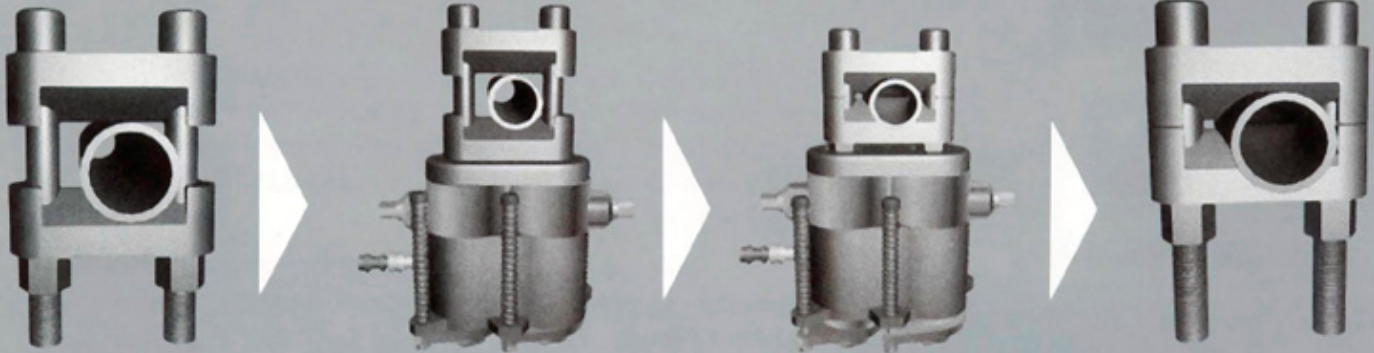
**Operation is faster...safer and effective.**



# Biach Hydraulic Crimping System can be remotely operated to improve crew safety during the crimping operations.

Biach's Hydraulic Crimping System consists of two compact Biach hydraulic stud tensioners mounted on a single base- as shown in the photographs below. This compact system is 54.5 lbs., and only 5" wide x 12 ¼" deep x 8½" high. These tensioners have a 1¾" stroke, which is sufficient to handle 90% of the reformer tube diameters and heavy wall thicknesses now in use. Customized Units can be designed to meet special needs. Both

tensioners are pressurized hydraulically, compressing the tube between the two inner faces of the clamps. Pressure is calculated and accurately applied to assure uniform crimp-off. Nuts are turned down using the patented Biach internal nut turning mechanism. Hydraulic pressure is then released and the tool is removed from the clamps, which are left permanently in place on the isolated tube.



**1** Mount the two sections of the clamp in place on the damaged tube. The clamp can be located with nuts above or below the damaged tube depending on space availability. Turn down on the bolts evenly to assure the clamp jaws are parallel.

**2** Place the Biach Hydraulic Crimping System on the clamp studs with the puller bars screwed onto the ends of the two studs. Connect the tool and the portable Biach Hydraulic Pump using sufficiently long hose to assure that personnel are safely away from the reformer.

**3** Pressurize the twin tensioners . . . the damaged tube is now crimped and inoperative.

**4** Turn down the clamp nuts to hold jaws in crimped position, using the internal nut turning mechanism. Then release the hydraulic pressure. Photograph above shows the tensioner in final position with pistons retracted and the puller bars (on bottom) extended.

**5** The Biach Crimping System is removed. The clamp is left permanently in place on the isolated tube. *Generally, each damaged tube is crimped at both the inlet and the outlet ends.*

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75 Chestnut Street • Cranford, NJ 07016  
(908) 276-3110 • FAX (908) 276-0815