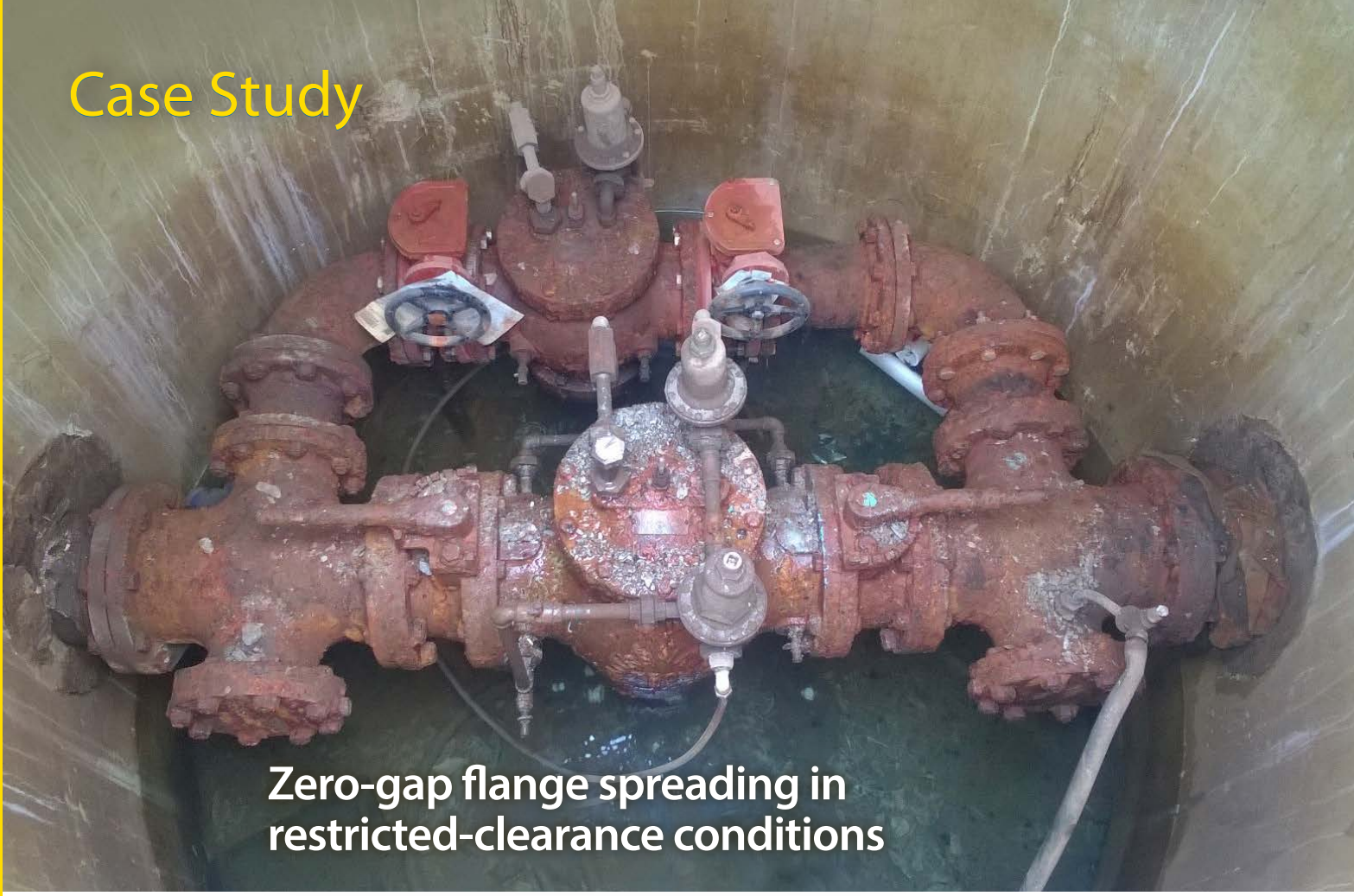
Case Study



Zero-gap flange spreading in restricted-clearance conditions

Near zero-gap flange spreading is further complicated by tough conditions and space restrictions in this pit

Background:

Mohawk Valley Water Authority
Utica, New York

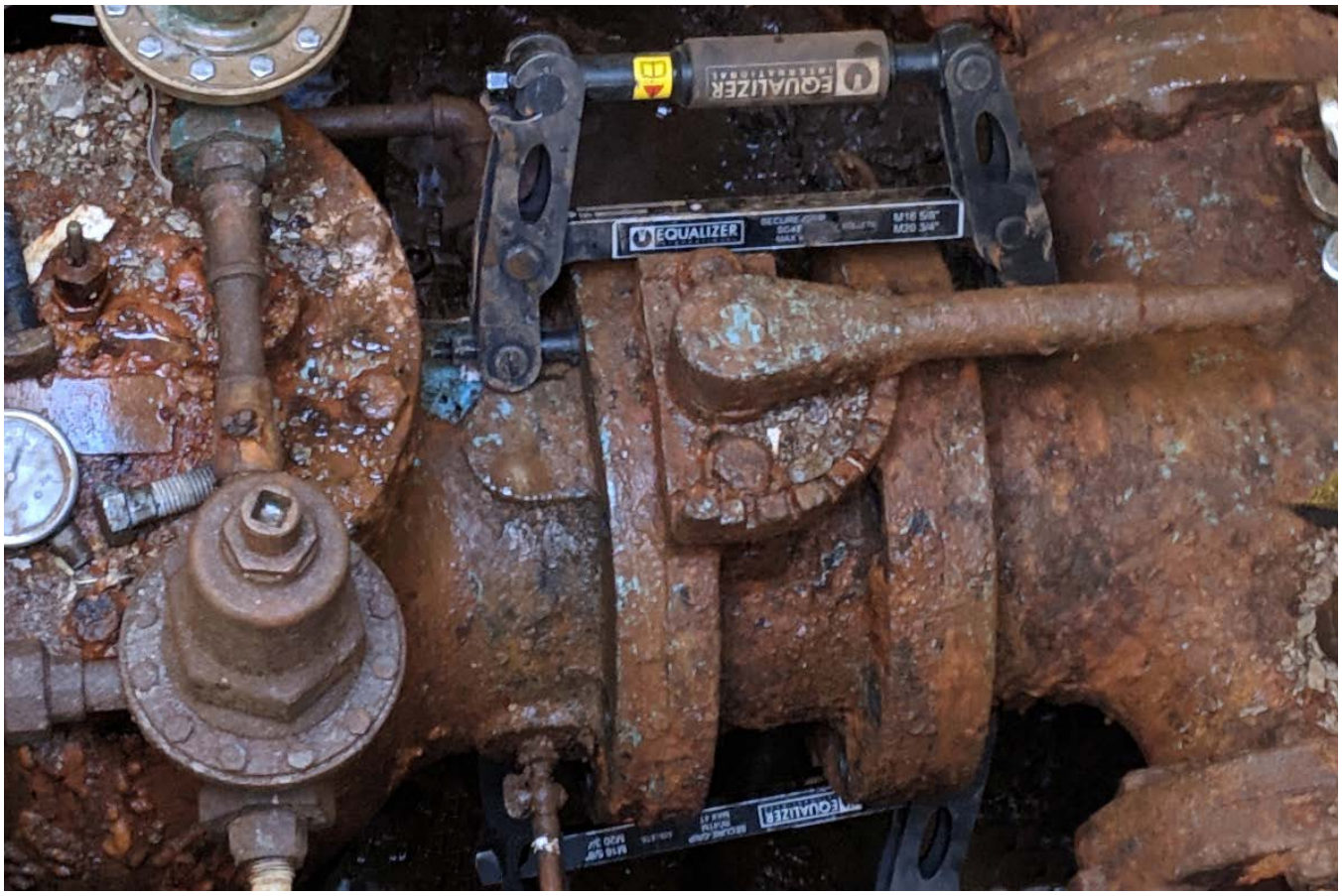
The Mohawk Valley Water Authority (MVWA) is a regional water system serving approximately 130,000 customers in the greater Utica, NY area. The MVWA distribution system consists of a network of mains, pump stations, four reservoirs, 24 storage tanks, 23 master meter stations and 89 pressure regulating altitude valve stations. Approximately 700 miles of mains for transmission and distribution of water are included within the regional service area.

Challenge:

In order to service an 8-inch pressure reducing valve (PRV) at a pressure regulation station, the MVWA needed to replace two inoperable, 8-inch, 150-pound butterfly valves that are used to isolate the PRV. Several complications existed, not the least of which was the subterranean location of the valves within a precast pit, creating a tightly confined working space. The valve connection points were also deteriorated, with rusted bolts and frozen flange joints from the effects of corrosion and age.

Too often, workers resort to unsafe, brute-force methods to free and spread stuck valve joints, including the use of striking tools such as sledge hammers, and unsafe, improper come-along winches, bottle jacks and pry bars. These manual methods create operator risk from possible flying objects, tool breakage and the potential for injuries, particularly to hands. In this case however, the zero-clearance working conditions in the pit immediately ruled out antiquated tools and blunt methods traditionally used to disassemble, spread and separate flanged joints. The challenge of restricted clearance required not only a unique solution, but discovery of a new best-practice method that enhances worker safety and provides far easier operations.

ENERPAC



Two Equalizer SG4TM Mechanical Flange Spreaders facilitate replacement of two isolation valves safely and efficiently

Solution:

Seeking a potential solution, MVWA Maintenance Manager, Joe Dodd, reached out to Equalizer Americas' Eduardo Castaneda to inquire about the Equalizer™ range of flange spreader solutions. Due to the limited access gap involved, Eduardo identified the Equalizer Secure-Grip (SG) Flange Spreader Series, model SG4TM, featuring patented Expanding Collet Technology. The mechanical SG4TM is the entry-level model in the Series but provides up to 3.7T (37kN) of flange spreading force to easily remove a spacer, wafer or butterfly valve between the flanges – and as a valuable added benefit, safely secure the separated flange in place during service or replacement operations.

The SG4TM secure grip flange spreader can be used on all flange types with bolt-hole sizes ranging from 17.5mm (0.69") to 23.5mm (0.91"). Opposing collets grip within the flange's bolt holes and are expanded as a drive nut is tightened. Mechanical leverage is created that simultaneously increases the gripping strength of the collets while spreading the flange, as the resisting forces are overcome by the increasing tool load. With no prying or flange gap contact, the innovative solution also eliminates the potential of damage to flange faces by the tool itself.

This technology delivers safe and controlled force in applications with as little as 1/8-inch access gap, but by virtue of its safe, easy and efficient operation, is also becoming the preferred "best practice" method to separate virtually all flange types, regardless of access gaps.

Results:

The MVWA rented two Equalizer SG4TM tools from Equalizer Americas to address this difficult application. Two tools are recommended to provide the most stable and equal applied force, and allows operators to secure the flange in a separated position for easier servicing without the need to re-spread.

Joe Dodd reported the Equalizer SG4TM tools performed exactly as intended, quickly resulting in a successful initial spread and break of the flange joints. The butterfly isolation valves were easily jacked out of the pit and replaced, and the PRV was serviced in place.

The ease, safety and efficiency of the operation so impressed the MVWA Maintenance Manager, they decided to purchase the tools for future flange spreading operations, even in less challenging and less space-restrictive conditions.

"In a matter of hours, the Equalizer SG4TM flange spreader allowed us to remove and replace two valves in an area where no other tools would work," said Joe Dodd, Maintenance Manager at Mohawk Valley Water Authority. "The fact that the tools can be left in place for valve servicing and reinstallation was a game-changer, and the effectiveness and safety factors alone convinced us that we need these flange spreaders as a permanent part of our maintenance tool inventory."

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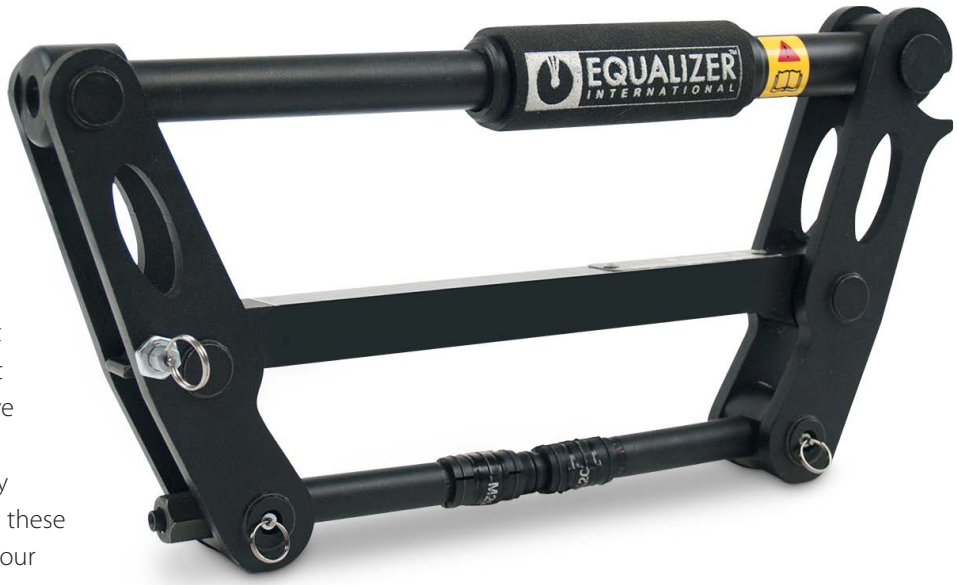

About Enerpac

Enerpac is an international market leader in high-pressure hydraulics, with 28 offices in 22 different countries and over 1,000 employees. Enerpac produces thousands of **high-pressure hydraulic products** that are distributed worldwide. Enerpac focuses on the design of products, from the smallest **cylinder** to complete electro-hydraulic **lifting & positioning systems**, which increase productivity and make work safer and easier to perform.

About Actuant

Enerpac is wholly owned by Actuant Corporation, a diversified industrial company serving customers from operations in more than 30 countries and is headquartered in Menomonee Falls, Wisconsin. Actuant trades on the NYSE under the symbol ATU. For further information on Actuant and its businesses, visit the company's website at **www.actuant.com.**

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