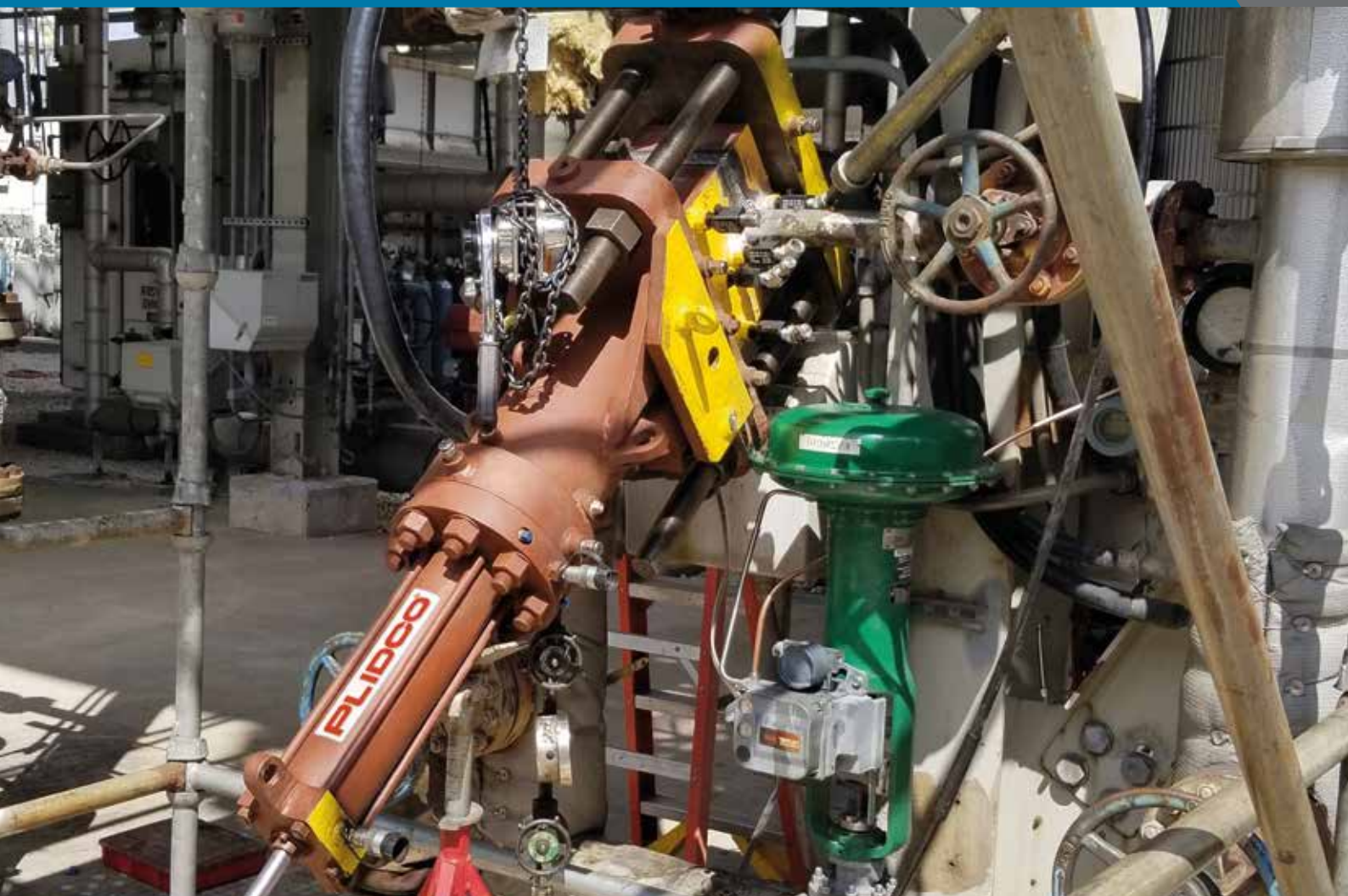
SEPS

SPECIAL SERVICES FOR PIPELINES

*... when the quality matters!*

# REPAIRS AND REPLACEMENT OF VALVES, PIPING AND TECHNOLOGIES WITHOUT SHUTDOWN AT HIGH TEMPERATURE AND HIGH PRESSURE



# REPAIRS AND REPLACEMENT OF VALVES, PIPING AND TECHNOLOGIES WITHOUT SHUTDOWN

## AT HIGH TEMPERATURE AND HIGH PRESSURE
BY ISOLATING THE PIPING SYSTEM WITH
**PLIDCO® SHEAR+PLUG**

Using the PLIDCO® SHEAR+PLUG isolating system
**we perform under pressure without shutdown:**

- Replacement of a damaged or leaking valve
- Replacement of a damaged piping part
- Replacement of any device installed in the pipe
- Piping isolation (shutdown of a piping section)
- Replacement or shutdown of a part of technology and solving other problems on the in-service piping

PLIDCO® SHEAR+PLUG isolating technology is used on the in-service piping containing gaseous or liquid products **from DN20 (3/4") to DN450 (18").** This maintains the maximum productivity of the piping system even during the repair works, as there is no need to interrupt or shutdown the technological processes, thereby **reducing the financial losses caused by a possible shutdown.**

A pipe holding assembly is welded on the in-service pipe. The hydraulic device with a shear blade is installed on the pipe holding assembly and then, without a need for piping shutdown, it cuts the pipe and closes the pipe at the cut-off point. A coupon is caught in the coupon receptacle housing and then removed.

Using the pipe shearing technology and retrieving the coupon from the assembly, there are **no steel chips falling into the pipe** as in the case of the standard tapping and plugging technologies, which would have to be caught by the filters. This method of pipeline isolation is particularly required in cases, when it is necessary to prevent having any chips, impurities or fragments flowing in the piping that could possibly damage any technological process connected to the isolated pipe.

**Perfect sealing, even at high temperature and pressure** up to + 537°C and 17,0 MPa, is achieved by a unique metal-to-metal contact with a channel to hold injected sealant.

The basic technical conditions for using SHEAR+PLUG technology depend on a combination of factors such as product temperature, pressure, pipe material and pipe wall thickness. These conditions must be always assessed in advance by PLIDCO® specialists.

**The sediments inside the pipe,** which in most cases make the use of standard pipe plugging technologies impossible, **do not limit the use of PLIDCO® SHEAR+PLUG.**

The design of the blind plate and the pipe holding assembly allows **the pipe to be temporarily closed for several days, months and even** years until the next planned shutdown of the technological process, or repeated commissioning, after the defect or problem has been rectified.

Thanks to the design and the metal-to-metal seal, **we guarantee 100% sealing of the isolated section,** which is absolutely necessary for repairs or interventions into the piping transporting products dangerous to people and/or the environment.

## TYPICAL PROCEDURE OF ISOLATING A PIPE WITHOUT SHUTDOWN:

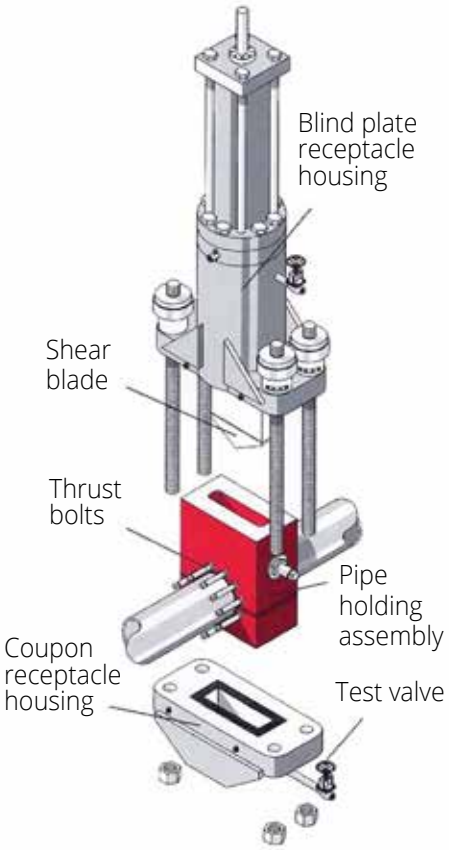
1. A pipe is tested ultrasonically.
2. Reinforcing rings are welded on the in-service pipe.


3. The pipe holding assembly is placed in position on the pipe, and fully welded.


4. A Pipe notching equipment is positioned on the pipe holding assembly and the pipe is notched.
5. The Shear+Plug assembly is installed onto the pipe holding assembly and then the whole assembly is pressure tested.
6. The „shear blade“ cuts the pipe through by the hydraulic cylinder being actuated and the coupon is pushed into the coupon receptacle housing.
7. The blind plate is pressed into the sealing position by the thrust bolts thus causing metal-to-metal seal and then the sealant is injected into the channel providing 100% sealing.

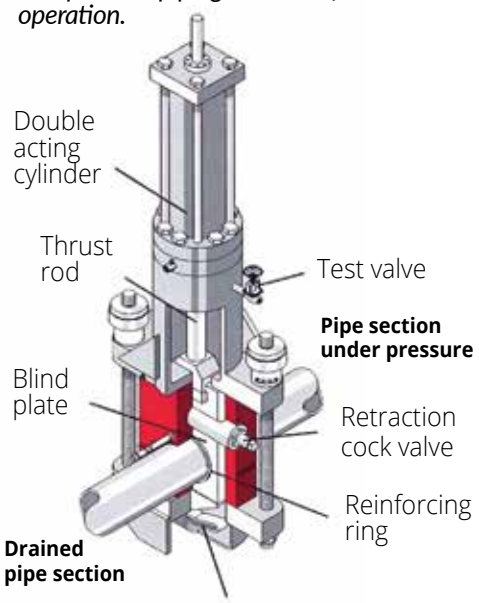
A test valve is opened to release downstream pressure and to make sure **the pipe is closed and sealed.**

*If there is any leak on the plate, it is sealed by the sealant injected into the channel.*

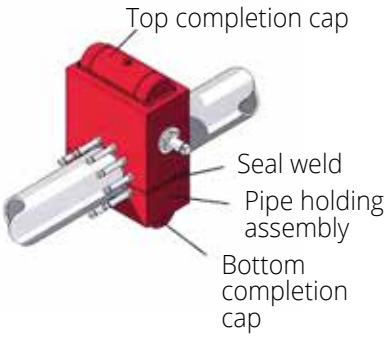



8. As the shut-off pipe section is depressurised, the scheduled work is carried out.
9. While the scheduled work is in progress, the coupon receptacle housing is removed and the coupon is retrieved together with the shear blade. The first completion cap is welded on the bottom of the pipe holding assembly.
10. Upon completion of the scheduled work, the pipe can be put back on stream. Thrust bolts of the blind plate are loosened and the blind plate is retracted into its housing.

*This puts the piping back into full operation.*




11. After the blind plate is retracted, the retraction cock valve is closed, and the sealant is injected in. The Shear+Plug is removed, and the second completion cap is welded onto the pipe holding assembly.




Do you have a problem on the piping needed to be resolved without shutdown? Do not hesitate to contact us! We will provide you with a **solution for repair with no need for shutdown,** suitable for your operating conditions.

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# PIPELINE INSPECTION, INTEGRITY, MAINTENANCE AND **REPAIRS WITHOUT SHUTDOWN**

SAFETY • QUALITY • RELIABILITY

- Online leak sealing
- Repairs of damaged valves, pipes, and welds while pipeline remains in service
- Pipeline cut-outs and replacement of piping components without shutdown
- Additional installation of measuring and sampling points without shutdown
- Repairs and reconstructions of pipes, tanks and pressure vessels
- Making a branch connection (hot tapping and tie-ins)
- Pipeline relocations, repairs and tie-ins without pipeline shutdown by pipeline plugging and bypassing
- Extending the service life of pipelines and pipeline integrity verification
- Pipeline plugging (pipeline isolation)
- Hot tapping (pressure tapping) to pipes, tanks and pressure vessels
- Pipeline cleaning and dewatering
- Stress tests and pressure tests
- Pipeline drying
- Repumping of gas by a mobile gas compressor unit
- Remaining life and reliability assessment of pipelines, tanks and pressure vessels
- Pipeline decommissioning and decontamination before repairs or shutdowns by mobile nitrogen generators
- Special welding procedures for welding on the in-service pipelines
- Corrosion mapping and monitoring of pipes, pressure vessels, tanks and other steel structures
- Advanced NDT (TOFD, Phased Array, Guided Waves, PECA™, PEC, EMAT and others)
- NDT/NDE (defectoscopy) field services by the mobile NDT laboratory accredited according to EN ISO/IEC 17025
- Positive material identification (PMI) and chemical analysis of metals using a mobile optical emission spectrometer (OES)
- On-site hardness testing of steel materials and welds
- Inspection and defect assessment of pipelines, tanks, pressure vessels and steel structures
- Localization and verification of defects identified by inline inspection (in-ditch verification)


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