



On-line Leak Sealing - Relieving the Pressure From You

**TXY-TECH, INC.**

Stop the Leak  
Back to Safety  
and Green 



## Realizing NO-LEAK for Process Industries

### Background:

TXY-Tech, Inc. is a wholly owned subsidiary of TXY China. Since 1997, TXY China has commercialized founders' R/D and service experiences accumulated from early '80s by effectively integrating three attributes of On-line Leak Sealing (OLS) Technology; namely, Sealants, Clamps & Tools, and management of services to respond to a variety of services inclusive of emergency calls.

Under Chinese National Industrial Guidelines, nearly 3,000 Certified Professionals have been trained and have deployed TXY OLS Technology for Process Industries in China who enjoy their services of plant uptime maximization, environmental impact minimization, risk reduction and legal liability mitigation.

TXY China, the parent company of TXY-Tech enjoys high prestige both home and abroad. Its products are recognized world-wide, e.g. Malaysia, Singapore, Indonesia, the Philippines, Bahrain, Qatar, Saudi Arabia, Australia, Canada, etc. And its customers range from Transnational Corporations such as Shell, Exxon Mobil and BASF etc. to medium and small size plants.



World Maintenance Conference 2008  
Co-sponsored by TXY China



Chairman of TXY China and President of  
European Maintenance Association



Middle East Oil & Gas  
Trade Show



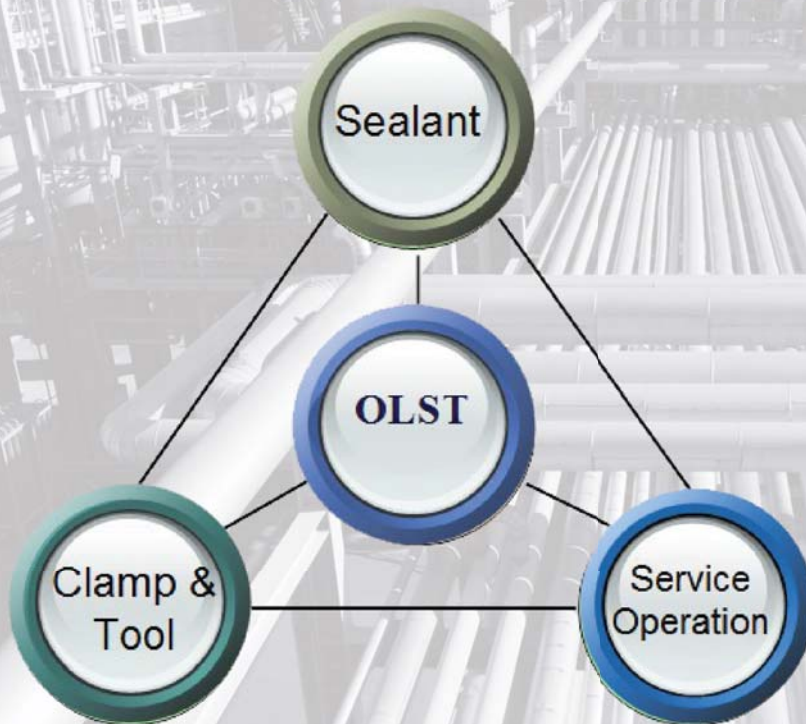
## Our Mission:

TXY recognizes our OLS Technology can be the much needed solution to Process Industries beyond Chinese borders. Therefore, we are here in the U.S. to share our experiences and success with potential customers, and service partners for OLS Technology to achieve much greater problem solving together.

## Our Technology -- Online Leak Sealing (OLS) Technology

On-line Leak Sealing (OLS) Technology is a modern maintenance technology that came into existence in 1920s. Through TXY's own research and development efforts during the past 30 years, OLS Technology has been structurally innovated and advanced to a new level of wide application and safety guarantee.

In principle, the OLS Technology consists of three attributes illustrated as below:



### Technology Application Scope:

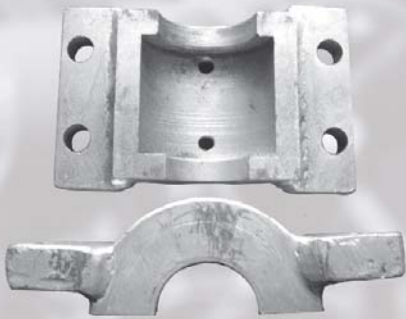
- Applicable Temperature: -380°F - 1650°F
- Applicable Pressure: vacuum - 4641 psi
- Applicable Industries: Petroleum, Petrochemical, Chemical, Fertilizer, Pharmaceutical, Nuclear Power Plant, Pulp and Paper, Steel, Offshore, Power Generating, Food, Ship Building, Water and Heat Supplies, Synthetic Fiber, Coal Gas, Hydrocarbon Preservation and other more process plants.
- Applicable Medium: Water, Steam, Oxygen, Nitrogen, Sulfuric Acid, Nitric Acid, Alkali, Fumes, LPG, Coal Gas, Benzene, Hydrocarbon etc.





# Clamp & Tool

Clamp material selection and clamp structure design are critical for successful leak sealing operation. By taking leaking process physical conditions into account, stress analysis and calculation are rendered to ensure a pressure/temperature-resistible clamp structure. The TXY-Tech's unique clamp provides connections between an injection gun and the clamp cavity for the sealant to be optimally injected. Meanwhile, the shape (geometry) of a clamp varies depending on the location of leaking piping or equipment.



**Piping Clamp**



**Piping Reinforcing Clamp**



**Tee Clamp**



**Flange Clamp**



**Injection Tool Kit**



**Hand Pump Set**



**G-clamps and Injection valves**



**Injection Gun**



## Sealant

Invented by TXY-Tech's founders, TXY serial sealants enjoy the quality of covering wide range of low/high temperature (from cryogenic to 1650°F), low/high pressure (from vacuum to 4641 psi) and wide process medium resistance. Years of research and development on sealants by TXY have considerably contributed to sealant diversification applicable to a wide range of leaking conditions. Recently, we further developed sealant products for moving parts (such as valve stem) application.  
Storage Conditions: Sealed under normal temperature.

### UNIVERSAL

TXY-18 # sealant could be applied to almost any leaking condition.

#### TXY-18 # (tube & flat)

**Feature:** Wide medium resistance with good flexibility and pliability; heat-curing; applicable for flanges, pumps, piping, boilers, heat exchangers etc. under high temperature and high pressure.

**Temperature Range:** 175°~1470° F



#### TXY-18A # (tube & flat)

**Feature:** As an upgraded version of TXY-18# sealant, TXY-18A# includes nano material in its composition, which significantly improves its heat-resistibility and its sealing effect.

**Temperature Range:** 300°~1650°F



### SPECIALITY

Customized types of sealants tailored for special leaking condition.

#### TXY-8 #

**Feature:** Non-curing with strong chemical, oil and liquid resistance; applicable for all kinds of leaks on piping or equipments.

**Temperature Range:** -380°~500°F



**TXV-16# (tube & flat)**

**Feature:** Heat-curing with high flexibility and pliability; applicable for stuffing boxes, rotary pumps and flanges etc.

**Temperature Range:** <1260°F

**TXV-20 #**

**Feature:** Thermal-expansion; heat-curing; outstanding fumes resistibility; applicable for flanges, valves and piping etc.

**Temperature Range:** 175° ~ 1330°F



**TXV-22#**

**Feature:** Heat-curing; outstanding fumes resistibility; applicable for flanges, valves and piping etc.

**Temperature Range:** 175° ~ 1330°F

**TXV-24T#**

**Feature:** Metal wires and glass fibers are added to prevent sealant from being extruded outside the sealing cavity when the leaking equipment has an extremely rough and uneven surface.


**Temperature Range:** 175° ~ 1470°F



**TXV-B8#**

**Feature:** Thermal-expansion, non-curing, excellent pliability under high temperature, applicable for stuffing boxes, rotary pumps and rotating shafts etc.

**Temperature Range:** 32° ~ 1652°F



### 1. Clamp Design:

Equip designated third-party service providers with method of designing clamps.

### 2. Technical Consultation:

Provide continual support of on-line leak sealing procedures and advice for special case requirements in line with our project management guidelines.

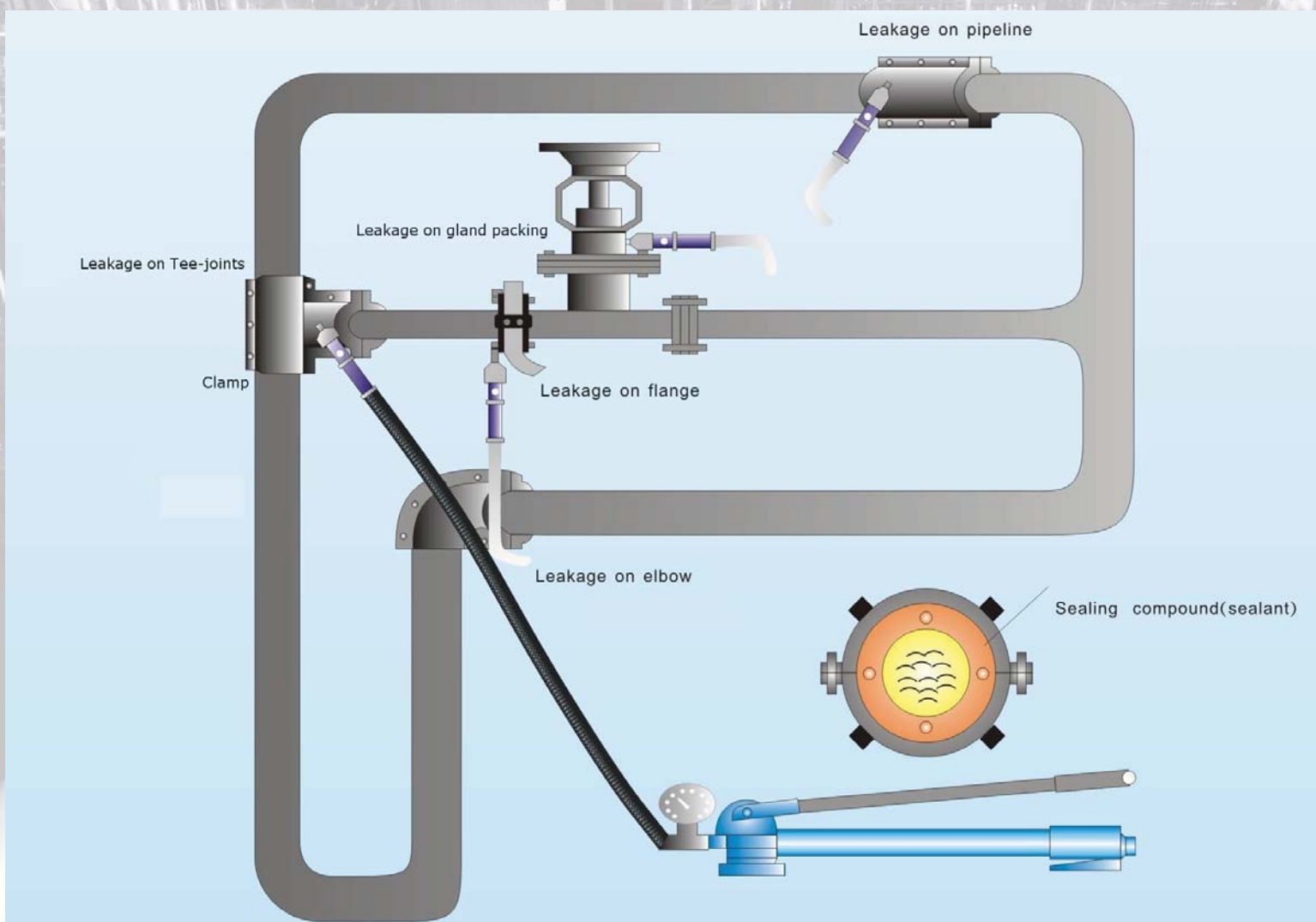
### 3. Training:

Formal training is available.(See Training Chapter)

### 4. Emergency Call Service:

Our designated third-party service providers respond to customers' emergency calls for site services.

## Leakage Schemes and Sealing Operation



### Technical Consultation

Over years of field works and training experience, TXY-Tech has developed a set of Standard Operational Procedures (SOP) which has been approved as Chinese National Standard for Pressure Vessel Personnel Qualification. Along the lines of the SOP, TXY-Tech provides technical consultation on project management and quality control of online leak sealing tasks.

To illustrate the above mentioned SOP that TXY-Tech has initiated and developed, a representative case study from our third-party providers is presented below to help promote better understanding of TXY’s OLS Technology and its advantages.

#### I. BASF Corporation in China: Vessel Head Flange Gasket Leakage

##### 1. Leakage Location:

Leaking from the gasket of flat cover flange



##### 2. Physical Dimension:

Medium	System pressure	System temperature	Energy Saving
Steam	507.6psi	466°F	1204.74Btu/Lb

##### 4. Standard Operational Procedures:

- a. Survey the leaking location and surrounding environment;
- b. Select sealing method (Clamp/Steel Strap/Threading);
- c. Order clamp, as required in this case;
- d. Install the clamp to establish the sealing cavity;
- e. Inject sealants;
  - ① The first Injection hole should be opposite to the original leaking point;
  - ② Inject sealants in an order that approaches the leaking point;
  - ③ Special technique: Inject by using the 90° reversing adaptor (Picture 1)
- f. Survey the result after sealing
- g. To avoid secondary leakage caused by stress relaxation, inject sealant once again after the injected sealant solidity.





## 5. Sealing effects

Repair the leaking, avoid the sound pollution, and save 793,133 Btu/d amount of energy.



## Training Service

Generally, the training program aims at equipping our trainees (site practitioners and management personnel) with technical knowledge, safety guidelines and practical operation capacity. Within the three-day training course, the following topics are clearly explained and thoroughly expended:

- Chapter 1 The overview of On-line Leak Sealing Technology
- Chapter 2 Leak Survey and Clamp Design
- Chapter 3 The Special Tooling
- Chapter 4 The Injectable Packing Compound
- Chapter 5 The Operation Technique and the Sealing Method
- Chapter 6 The Security Protection Information



Computer Exams



Training Classroom



**Preparation for On-site Training**



**Leak Inspection**



**On-site Training**



**On-site Training**

## **What OLS Technology Will Bring for Your Business?**

### **1. Safety and Freedom of Legal Liability**

With pioneering leak-sealing technology and best online leak sealing products, TXY-Tech assures you the peace of mind while maintaining NO-LEAK for your industry. Potential safety risks and legal liability caused by either fugitive leaks or major leaks are no longer your concern from now on.

### **2. Economic Benefits**

The priority for every industrial plant is to maximize production efficiency and minimize costs. TXY-Tech keeps your production process running while fixing the disturbing leak problem. This greatly enhances the plant uptime; meanwhile, energy, time and capital are all saved through OLS method.

### **3. A Green Solution**

TXY-Tech is committed to protecting the environment via eliminating potentially harmful and polluting fugitive emissions released into the atmosphere. Also, the OLS Technology is in line with Environmental Protection Agency's (EPA) Clean Air Act which requires refineries to develop and implement a Leak Detection and Repair program to control fugitive leaks. To that end, TXY-Tech would be an ideal partner to work with.

**TXY - Tech's Clients**



**中国石油天然气集团公司**  
CHINA NATIONAL PETROLEUM CORPORATION



**CNOOC Limited**

**中國海洋石油有限公司**



**国家核电**  
**SNPTC**

State Nuclear Power  
Technology Corporation

**bp**



**EXXON**

**Mobil®**

**TXY - Tech is also a member of**





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